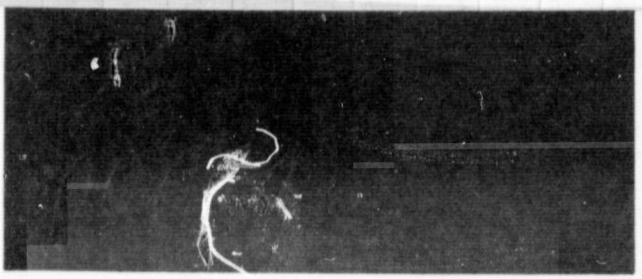


November 1977

RESEARCH REPORT 340

FROM THE MICHIGAN STATE UNIVERSITY AGRICULTURAL EXPERIMENT STATION EAST LANSING

NATURAL RESOURCES

Guide to Aerial Imagery of Michigan

TECHNICAL Information

Guide to Aerial Imagery of Michigan

by

William R. Enslin

and

Richard Hill-Rowley*

Remote Sensing Project
Michigan State University

Original photography may be purchased from:
EROS Data Center

Sioux Falls, SD

---

*Research Specialist and Graduate Research Assistant, respectively. Department of Resource Development and School of Urban Planning and Landscape Architecture.

The cover photo mosaic of Michigan was produced from separate images acquired by a Landsat satellite at an altitude of 570 miles. Reproduced from the General Electric Company's copyrighted U.S. Space Mosaic with permission of the General Electric Company.

FOREWORD

The Remote Sensing Project at Michigan State University is cooperating with Michigan agencies to develop practical uses of remote sensing technology for effective land/resource use decisions and actions. Part of this program is the organization of a centralized source of information on the availability, characteristics, sources and uses of aerial imagery. The Guide to Aerial Imagery of Michigan documents this inventory effort.

Preparation of the guide was made possible through a National Aeronautics and Space Administration (NASA) grant (NGL 23-004-083) to Michigan State University, which is administered by the NASA Office of University Affairs. Professor Myles Boylan, School of Urban Planning and Landscape Architecture, and Dr. Raymond D. Vlasin, Chairman of the Department of Resource Development, are the principal investigators. The research effort also involves staff from the departments of Botany and Plant Pathology, Computer Science, Crop and Soil Science, Forestry, Geography, and Geology, as well as the MSU Agricultural Experiment Station.

Assembling the guide was a major task, and its completion required the cooperative efforts of all the Remote Sensing Project staff. In particular, Stephen Tilmann and John Harrington developed the computerized indexing systems; Christopher Cialek, Kenneth Keifenheim and Dan Dueweke were responsible for the cartography and graphics; Christine Wettle and Joan Glass typed successive drafts of the manuscript; and Kathie Alcoze was responsible for the final typing. Publication and distribution was supported by the Michigan State University Agricultural Experiment Station and the Division of Land Resource Programs, Michigan Department of Natural Resources.

CONTENTS

FIGURES

TABLES

INTRODUCTION

This guide provides a single source reference which documents the coverage of aerial imagery available for areas in Michigan. The term "aerial imagery" refers to a variety of data products acquired from aircraft and spacecraft remote sensing systems. Photographic images are obtained by cameras using various types of film (e.g. black-and-white panchromatic, color and color infrared) but aerial images are also produced from non-photographic sensor data acquired by electronic devices such as multispectral and thermal scanners.

Aerial imagery of Michigan is grouped into five main categories for which a comprehensive index has been prepared. These are: a) NASA Landsat satellite imagery; b) Skylab spacecraft imagery; c) high altitude imagery acquired by NASA RB-57 and U-2 aircraft; d) aerial photo coverage of entire counties and regions secured by various federal and state agencies; and e) photo coverage of local areas obtained by state agencies, such as the Michigan Department of Natural Resources, and by aerial survey firms.

These categories reflect the resolution capabilities of different sensor/scale systems and thus are applicable to different levels of land cover/use or resource inventory needs. The most general level of information can be economically extracted from satellite imagery. For example, Level I land cover/use categories (urban or built-up land, agricultural land, forest land, and water) can be mapped efficiently and economically over large areas from orbital imagery, whereas the principal source for Level II data (approximately 30 land cover/use categories) is presently high altitude color infrared photography. Likewise, more detailed land cover/use data can be extracted from medium altitude regional/county imagery or local photography.

Choice of an image type is therefore dependent on the needs of the user. It is influenced typically by how well particular sensors or film/filter combinations provide an image of sufficient detail and clarity to emphasize features of interest. Many interrelated factors must be considered concurrently including film type, image scale and format, year and season of acquisition, frame coverage, image quality, percent cloud cover and cost. Each imagery level indexed in the guide presents, in a map or computer

listing format, information relative to these factors and the indexes are preceded by general background information and appropriate explanatory comments for effective use of the section.

A brief overview of the fundamentals of remote sensing and basic information on obtaining aerial imagery are included in the beginning of the guide to further assist users who may be unfamiliar with this material.

A variety of aerial imagery catalogs were used as basic references in the preparation of this guide and are listed in Appendix A. Appendix B contains a listing of mailing addresses for government, university and private sources of aerial imagery information and products.

SUPPLEMENTARY REPORTS REQUEST FORM

Gathering and indexing of aerial imagery is a continuous process and consequently the guide is bound in loose-leaf form to facilitate periodic updating. To ensure that the guide remains both current and accurate, if you notice any errors, or are aware of photographic coverage that is appropriate for inclusion, please contact the Project Office.

The information presented includes only that which was available as of June, 1977. As more imagery becomes available descriptions of its location and quality can be supplied. If you wish to obtain these supplementary reports, please fill out the coupon below and return it to:

Remote Sensing Project
201 UPLA Building
Michigan State University
East Lansing, Michigan 48824

- -

Please keep me informed of any additions to the Guide to Aerial Imagery of Michigan.

Date_____

NAME_____

POSITION OR TITLE_____

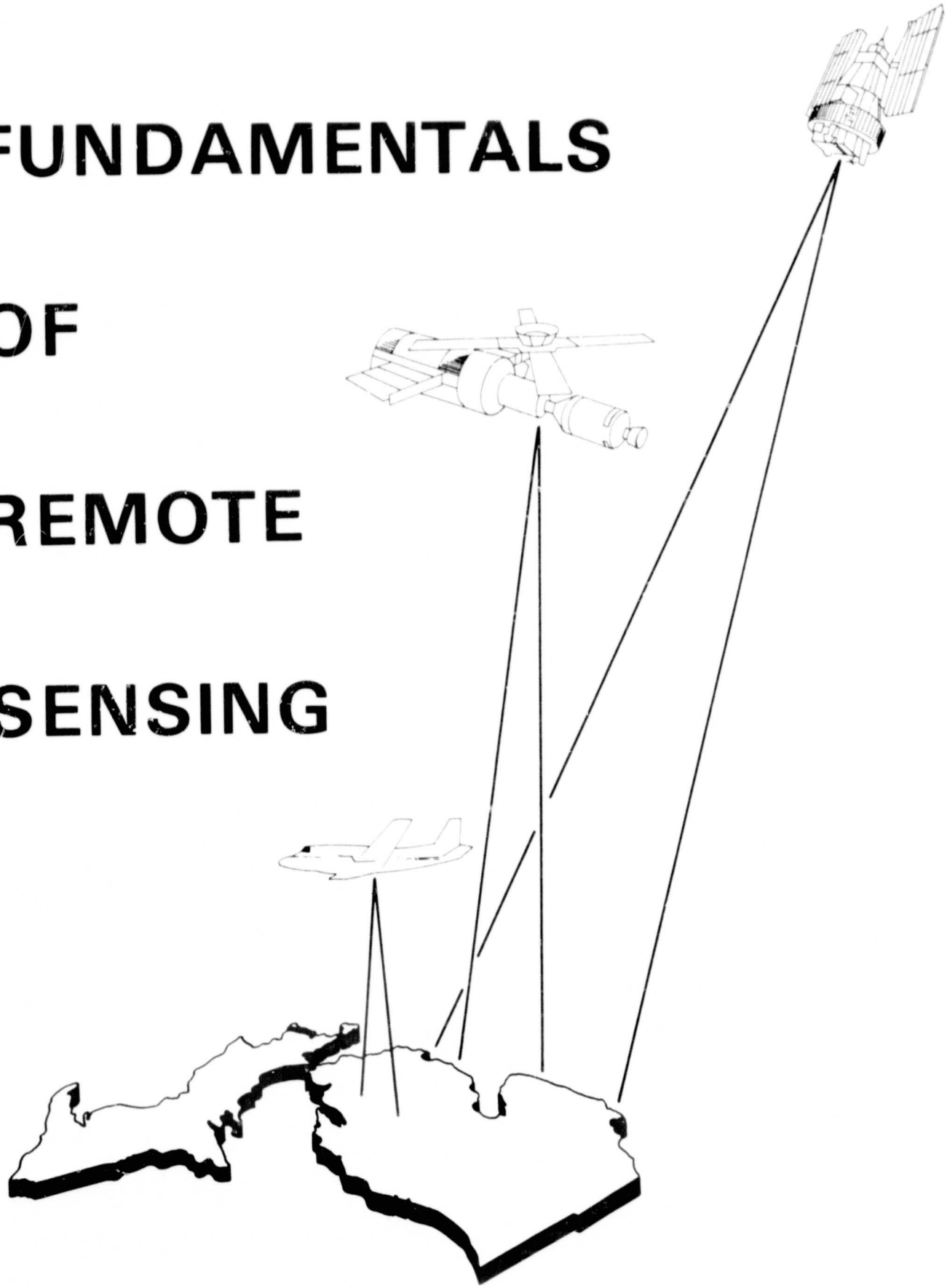
AGENCY_____

ADDRESS_____

ZIP CODE_____ PHONE NO._____

Comments:

FUNDAMENTALS OF REMOTE SENSING



SECTION 1
FUNDAMENTALS OF REMOTE SENSING

ELECTROMAGNETIC SPECTRUM

A basic definition of remote sensing involves a consideration of what is implied by each word. "Sensing" means detecting or measuring some property (characteristic) of a feature or object of interest. "Remote" signifies that the sensing activity takes place at some distance from the feature or object, i.e., not in direct contact.

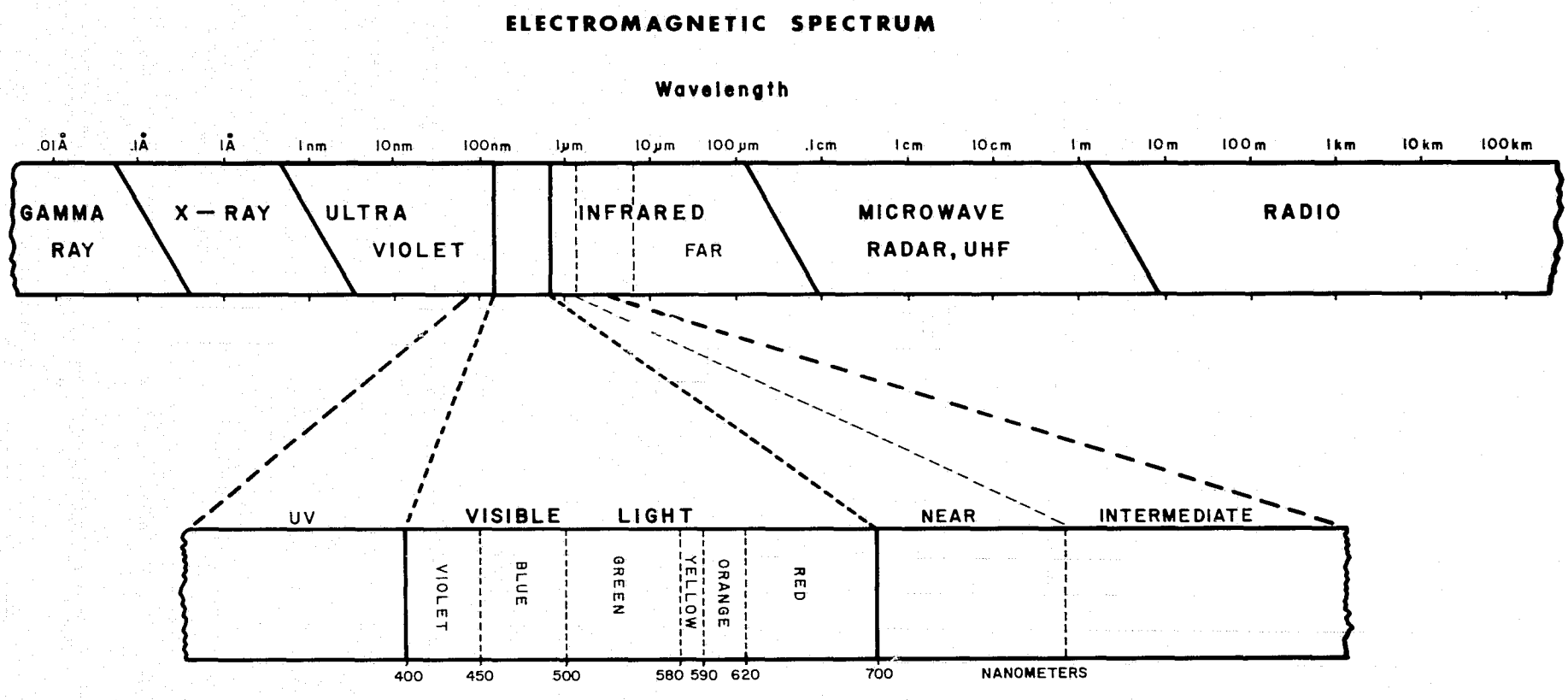
Remote sensors detect and record (typically on photographic film) differences in the wavelength and intensity of energy reflected or emitted from the features in the scene being sensed. This energy consists of particles that travel in waves and is called electromagnetic radiation.

Visible light is the most apparent form of electromagnetic radiation, yet a much wider spectrum of energy exists beyond the range of human vision. The electromagnetic spectrum can be represented as a continuum of energy (Fig. 1.1) classified according to wavelength (the distance between two successive wave crests) or frequency (cycles per second).

Each feature on the earth characteristically reflects and emits varying amounts of energy at different wavelengths dependent upon its physical properties. Remote sensors can detect specific portions of this range and consequently reveal different information about the feature. For example, in addition to photographing visible light, ultraviolet and near infrared radiation can be recorded on special films. Advanced mechanical sensors can detect energy in the far (thermal) infrared, microwave and radar ranges.

Remote sensors thus extend our detection capabilities to energy areas beyond the sensitivity range of our eyes, recording what they detect in an image form. This provides a visible record of features and conditions in an environment at the time of sensing.

An environment can be sensed at varying degrees of "remoteness," from ground level to elevated platforms, and from aircraft at various altitudes to orbital satellites.



Å - Angstrom = .000,000,000,1 meter
nm - nanometer = .000,000,001 meter
μm - micrometer = .000,001 meter
cm - centimeter = .01 meter
m - meter
km - kilometer = 1,000 meters

Figure 1.1.--Electromagnetic Spectrum.

The scale of the imagery varies accordingly and influences the level of detail obtainable. Figures 1.2 through 1.5 illustrate this capability.

TYPES OF AERIAL IMAGERY

Different kinds of remotely sensed imagery provide different kinds of information. Various film/filter combinations and types of sensors are used to focus on specific portions of the electromagnetic spectrum in order to highlight selected features of interest. Some general characteristics and typical uses of particular image types are described below.

Black-and-White Panchromatic Photography (PAN)

Panchromatic film is sensitive to the visible portion (400-700 nm) of the electromagnetic spectrum and records light intensity as tones of gray. Normally, a light yellow filter is used to eliminate blue wavelengths, thus minimizing the effects of haze. Black-and-white panchromatic photography is the most common type of aerial imagery. It is used in a wide variety of applications, notably the preparation of topographic and soil survey maps, site analysis studies, tax equalization, land use planning and resource management. The lack of color representation is perhaps the most serious limitation to effective photo interpretation since the human eye has only a limited capacity to distinguish among various tones of gray. Traditional sources of panchromatic photography are: the Agricultural Stabilization and Conservation Service, the United States Geological Survey and the Soil Conservation Service.

Black-and-White Infrared Photography (BWIR)

Black-and-white infrared film, when exposed through a deep red filter to block reflection of visible light, records only reflected infrared energy (700-900 nm). This film, as well as color infrared film, does not record thermal infrared radiation which is emitted, and thus does not indicate the temperature of features. Other filters are sometimes used which eliminate only blue or green wavelengths, and thereby allow some visible light and infrared radiation to be imaged at the same time (referred to as modified-infrared photography).

Black-and-white infrared photography is useful in vegetative studies because there is usually a strong contrast

Figure 1.2.--U.S. Army Corps of Engineers Panchromatic Photo of Downtown Detroit on March 15, 1973 (scale: 1:6,000).

Figure 1.3.--Agricultural Stabilization & Conservation Service Panchromatic Photo of Detroit in 1973 (reduced from 9 by 9 inches, original scale 1:40,000).

Figure 1.4.--NASA High Altitude Color Infrared Photo of the Detroit Metropolitan Area on June 29, 1975 (reduced from 9 by 9 inches, original scale 1:120,000).

Skylab Spacecraft
S-190B Color Photo,
August 5, 1973
(scale: 1:950,000)

Landsat Satellite
Color Composite
Image, April 14,
1973
(scale: 1:1,650,000)

Figure 1.5.--NASA Space Imagery of Southeast Michigan.

in infrared reflectivity among various plant communities, e.g. deciduous and coniferous trees are easily differentiated. The lack of color representation, however, limits the overall usefulness of BWIR photography. The Forest Service of the United States Department of Agriculture periodically acquires BWIR photography for forest cover-type mapping.

Color Photography (COL)

Normal color film has three emulsion layers sensitive to blue, green and red light, respectively. These layers are exposed by visible light (400-700 nm) and through a development process provide a natural color photograph of a scene. The tonal range of natural colors offers a distinct interpretive advantage over black-and-white photography. Good quality color photography is, however, difficult to acquire and more expensive than black-and-white. Consequently, uses tend to be restricted to small areas and specialized applications, e.g. coastline analyses, industrial site analyses, and identification of hydrographic features and vegetation. One notable exception is the color photographs from space, covering extensive areas of the earth, that were obtained during the Skylab spacecraft missions.

Color Infrared Photography (CIR)

Color infrared film is also a three-layer film but it has been designed so that one emulsion layer is sensitive to green light, another to red, while a third emulsion is sensitive to reflected infrared radiation (700-950 nm). A yellow ("minus blue") filter is used to eliminate blue light which is frequently scattered by the atmosphere, especially during hazy conditions.

The color representation of the landscape in CIR photography (see Fig. 1.4), where vegetation shows in red hues, is not natural. This is because healthy vegetation reflects a large amount of infrared energy which is recorded as red on the imagery. The red wavelengths are recorded as green and green wavelengths as blue.

Color infrared photography is being used increasingly in land cover/use mapping, especially for regional inventories. Additional uses include the identification of tree and crop types, plant vigor, aquatic vegetation, soil moisture and drainage, and water pollution. Much of the CIR

imagery of Michigan was acquired from NASA high altitude research aircraft. In addition, several regional planning commissions have acquired color infrared coverage of their region.

Multiband Photography (MB)

Various film/filter combinations can be used simultaneously to produce different types of photographs of the same area. The film/filter combinations record discrete portions (bands) of the electromagnetic spectrum and collectively are referred to as multiband photography. For example, the multiband system aboard the Skylab spacecraft provided six photographs of each scene including color, CIR, PAN and BWIR film types. In addition to Skylab photographs, several NASA research aircraft missions also have acquired multiband photography of Michigan.

Multispectral Scanner Imagery (MSS)

Multispectral scanners are optical-mechanical line scanning devices (not photographic cameras, see Fig. 1.6) that record radiation in several narrow bands simultaneously in the visible and invisible ranges of the electromagnetic spectrum. The scanner detects the level of spectral radiation (or the intensity of energy) reflected in each band from a feature and records the data on magnetic tape. The taped data can then be transformed into an image by an electron beam recorder which proportionately converts the recorded amounts of radiation to light intensity, resulting in tones of gray on the imagery. Individual bands can be color coded and combined to form a color composite image.

The Landsat satellites routinely produce multispectral images of Michigan areas in four discrete spectral bands. User applications have been confined mainly to the inventory of large areas and involve the identification of crops, soils, rock types, natural vegetation, lake ice and lake sedimentation and circulation patterns.

Thermal Infrared Imagery

Thermal infrared imagery is obtained with a scanning device which records on magnetic tape the emissivity or heat radiated from surface features in the 8.0 to 14.0 micrometers region of the electromagnetic spectrum. The taped data can then be transformed and compiled into a

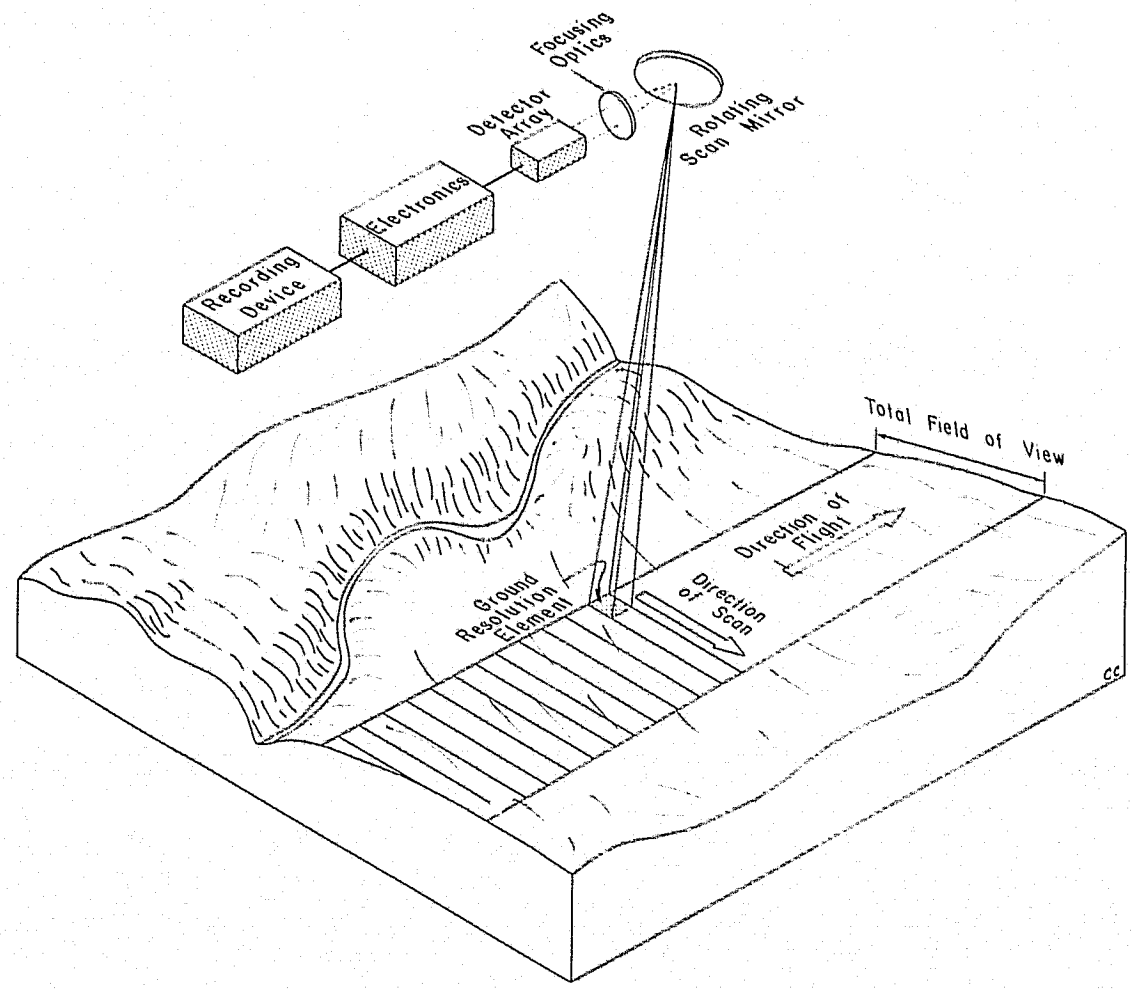


Figure 1.6.--Parameters of Optical-Mechanical Scanning.

photographic image using a system similar to that described for multispectral imagery.

Available coverage of Michigan is limited to a few research project areas flown by NASA high altitude aircraft and several site surveys conducted for private industry. In addition, the Environmental Research Institute of Michigan acquired thermal imagery of the Great Lakes Shoreline of Michigan in 1974. Thermal imagery has been used to advantage in drainage and ground water studies, seismic work, detection of air and thermal pollution and fire surveillance.

Radar Imagery

Radar (Radio Detection and Ranging) is an active sensing technique that provides feature illumination using high frequency radio waves. Current Radar systems operate in the 0.85-3.3 cm wavelength region although this division is somewhat arbitrary. The sensor transmits radio pulses of known wavelength to the terrain. Part of each pulse is reflected back to the sensor and is picked up and amplified by a receiver system. The signals are usually stored on photographic film and reconverted to a recognizable image by special optical processing equipment which exposes a second photographic film.

Radar has the advantage of being able to provide imagery in almost all weather conditions as well as at night. Resolution, however, is not as good as in some other image types. Radar allows acquisition of imagery for large areas in a single mission. It is being used frequently in reconnaissance mapping of geologic and physiographic features, drainage networks, urban/transportation patterns, and snow and ice distribution.

Passive Microwave Imagery

Microwave sensing is a passive technique which records natural long wave radiation in the 0.1-10 cm wavelength region. This radiation is influenced by the emittance, transmittance, reflectance and temperature properties of features within the scene. The imagery is obtained using a scanning device similar to that used in thermal infrared sensing with minor technical differences related to the quality of signal received. The signals are recorded on magnetic tape and the tape is computer processed in conjunction with a color electron beam system to produce an image where each temperature increment is represented by a different color. Lighter colors are usually chosen to represent higher radiometric temperatures. Passive microwave sensing is a recent innovation and has not been used extensively, although some studies of oil pollution, soil moisture and snow/ice monitoring have shown its potential.

IMAGERY PARAMETERS

The parameters of aerial imagery described below are sensor viewing angle, image scale and format, surface area covered by an image and date of acquisition. The relation-

ship of these parameters and the basic sensor system components and geometry are illustrated in Figure 1.6 (Parameters of Optical-Mechanical Scanning) and Figure 1.7 (Parameters of Aerial Imagery).

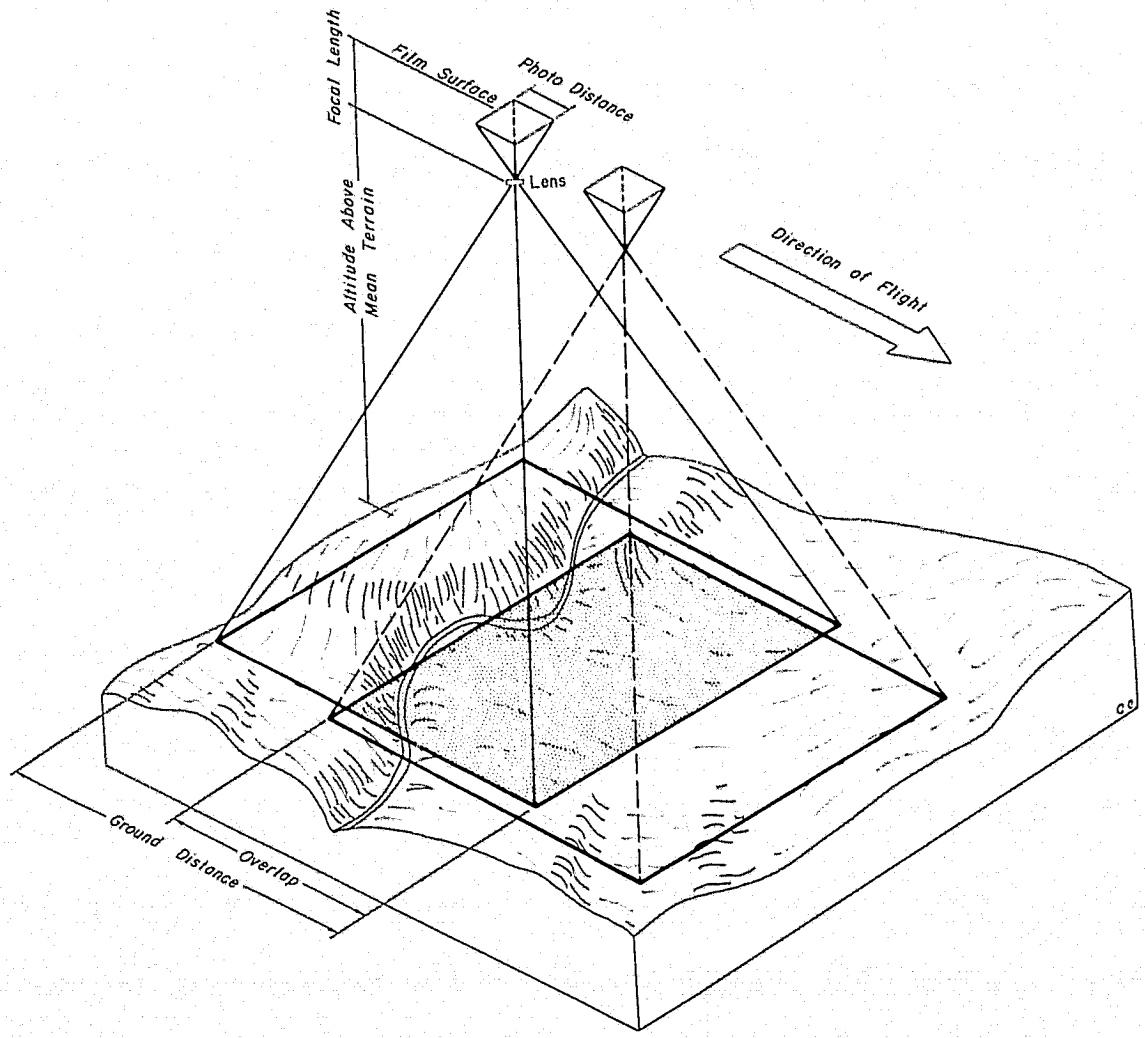


Figure 1.7.--Parameters of Aerial Photography.

Angle of Imagery

All imagery listed in this guide was taken with the sensor's axis perpendicular to the earth's surface, unless

otherwise noted. Vertical photography with 60% overlap between frames is preferable for most applications because it has good metric properties, angular directions are true and it provides three-dimension viewing. It is needed for virtually all interpretive purposes.

Oblique imagery, acquired by positioning the sensor's axis diagonally downward, provides a more "natural" view of an area than vertical photography (Fig. 1.8). Oblique views, however, are geometrically distorted, and consequently are mainly used for illustration and simple interpretation. If the horizon is not shown, the imagery is referred to as a low oblique, whereas views including the horizon are called high obliques. Oblique photography of Michigan has been obtained from the Skylab spacecraft and from light aircraft in support of specific projects documented in the "Local Imagery" section of this guide.

Figure 1.8.--MSU Remote Sensing Project Oblique Panchromatic Photo of Downtown Detroit on October 7, 1975.

Scale of Imagery

The scale of an image defines the fixed relationship between a given distance on a photograph and the corresponding distance on the surface of the earth, or the ratio of image size to actual size (see Fig. 1.7). Scale may be expressed in several different ways but is most commonly given as a representative fraction, e.g. 1:20,000 or 1/20,000. This fraction expresses a ratio whereby one unit distance on the photography (1 millimeter, 1 inch, etc.) is equivalent to 20,000 of the same units on the ground. In other words, features are actually 20,000 times larger than they appear on the photograph. Scale is also often indicated in feet per inch. Thus, a scale of 1:20,000 can be expressed as 1,667 feet per inch (20,000 ÷ 12 = 1,667), i.e., one inch on the photograph represents 1,667 feet on the ground.

Large-scale imagery (e.g. 1:10,000) is used for detailed study of small features and can be obtained by either flying at lower altitudes or using longer focal-length lenses. Small-scale images (e.g. 1:1,000,000), acquired at orbital altitudes, usually have low resolution, but they provide a synoptic view of larger areas for general analysis. In this guide, the nominal scale of the original imagery is given as a representative fraction, although copies are frequently available at either a reduced or enlarged scale.

Format of Imagery

Format may refer to film size, film medium or size of image area. The two most common aerial film sizes are 9.5 by 9.5 inches, used extensively in photogrammetric missions, and 70 mm film, typical for most photographic space missions. They provide an image area of 9 by 9 inches and 2.2 by 2.2 inches, respectively. The Skylab Earth Terrain Camera utilized 5 inch wide film providing a 4.5 by 4.5 inch image size. Enlargements of most formats can be obtained. The photographic media normally available are film negatives, film positives (transparencies) and paper prints.

Coverage of Imagery

The area of the earth's surface that is imaged on an individual frame is related to image scale and format. As the scale decreases (becomes smaller) or as image format

increases, the size of the area imaged increases. Table 1.1 gives the area covered on common image formats at representative scales and also indicates other characteristics of the imagery available from the major sources cited in this guide.

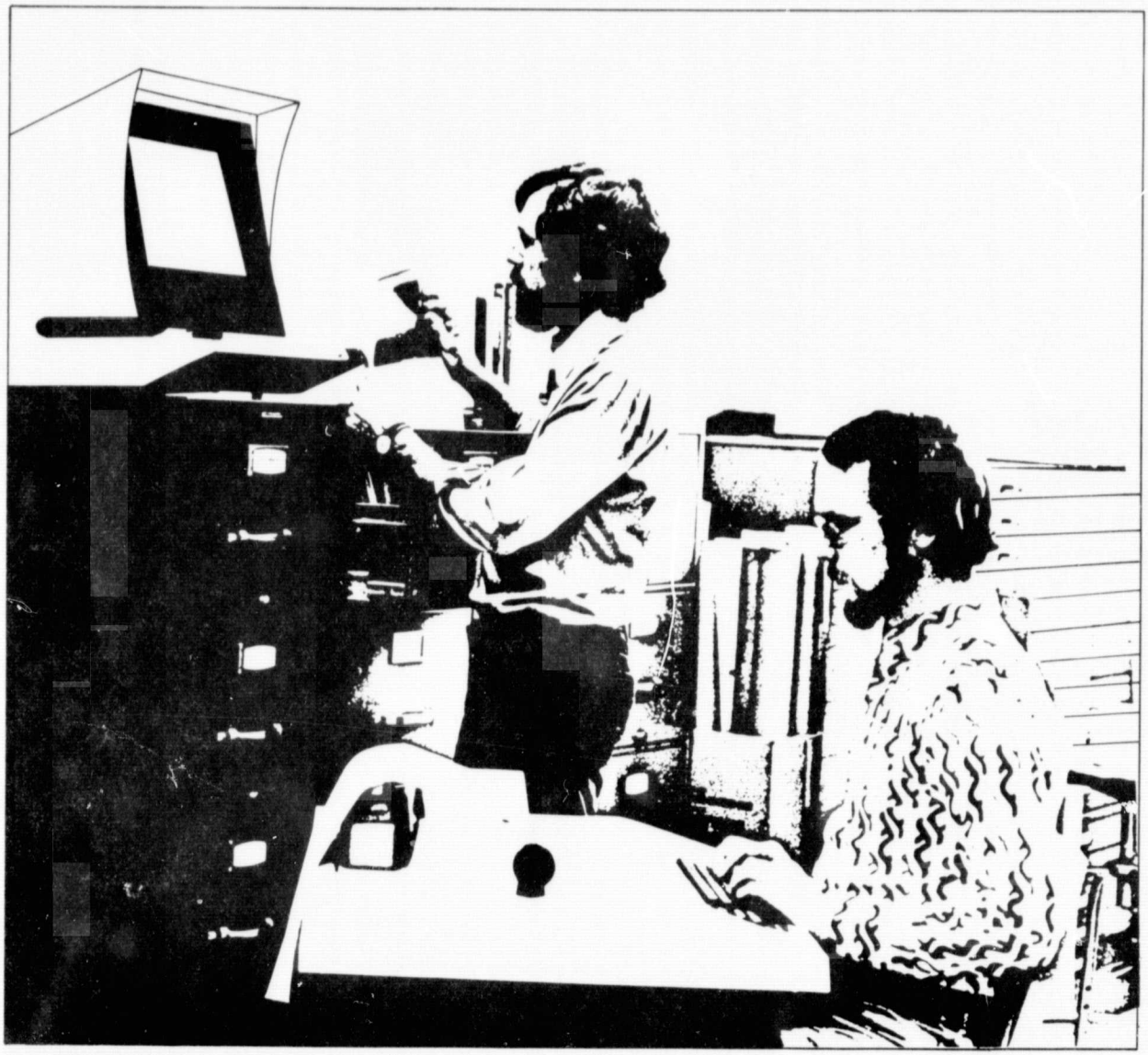
Date of Imagery Acquisition

Aerial imagery is acquired at different seasons of the year depending upon which features the user wants to highlight within the overall scene. If, for instance, the mapping of the ground surface or earth materials is of primary interest, imagery obtained in spring or late fall is most useful since vegetation and/or snow cover are not obscuring the soils. Topographic mapping, urban planning, or evaluation of terrain features from aerial imagery is accomplished more easily when deciduous vegetation is without leaves. Studies of vegetation, however, obviously need imagery procured during the growing season from late spring through fall. The Agricultural Stabilization and Conservation Service (ASCS) is interested in cropland and, therefore, acquires primarily summer imagery.

The year of imagery acquisition may also be significant. The most recent imagery of an area is required for most studies of relatively current conditions in the landscape. Older, repetitive imagery of an area, however, is important for studying landscape changes over longer periods of time. Seasonal, or in some cases bi-weekly, changes may be monitored using Landsat imagery.

Table 1.1.--Characteristics of Aerial Imagery.

Category	Image Scale	Image Type	Frame Coverage (sq. mi.)	Data Characteristics	Selected Michigan Applications
Landsat Imagery	1:3,369,000	MSS	13,225	Very small scale, synoptic view, low resolution, state-wide repetitive coverage, digital data.	State-wide and regional land cover mapping (Level I-II categories) Lake turbidity and circulation patterns Computerized land cover inventory files Illustration of synoptic land use patterns
Skylab Imagery	1:2,850,000	MB	10,201	Very small scale, synoptic view, low-moderate resolution.	Illustration of synoptic land use patterns Regional land cover mapping (Level I-II categories)
	1:950,000	COL	4,624		
NASA High Altitude Aircraft Imagery	1:450,000	MB	244.1	Small to moderate scale, moderate resolution, regional coverage on a project basis.	Regional land cover/use mapping (Level II-III categories) "Reference data" for satellite data analysis
	1:120,000	COL/CIR	290.0		
	1:60,000	CIR	72.6		
Regional/County Imagery	1:60,000	PAN/COL	72.6	Moderate scale, moderate to high resolution, periodic county coverage, potential periodic state coverage.	County and regional land cover/use mapping (Level II-IV categories), Watershed and county planning "Reference data" for satellite data analysis Tax equalization, Topographic map preparation Forest type mapping
	1:40,000	PAN	32.3		
	1:36,000	CIR	26.1		
	1:31,680	CIR	20.3		
	1:24,000	PAN	11.6		
	1:20,000	PAN	8.1		
	1:15,840	BWIR	5.1		
Local Imagery	1:12,000	Varies:	2.91	Large to very large scale, high to very high resolution, selected project sites.	City planning, Site analyses, Engineering studies, Detailed vegetative type mapping, Wetland & shoreline assessment, Crop biomass & stress estimation.
	1:9,600	PAN/COL	1.86		
	1:6,000		.73		
	1:4,800	CIR	.46		



INFORMATION ON OBTAINING IMAGERY

SECTION 2

INFORMATION ON OBTAINING IMAGERY

GENERAL INQUIRY PROCEDURES

The level of information included in this guide normally does not enable one to directly order imagery, since frame identification numbers are not provided. This information can be obtained by contacting the appropriate agency. Landsat and Skylab imagery, however, may be ordered directly since ordering numbers are included in the guide.

Order forms with cost information are included in the index sections of the guide. These forms may not reflect current prices, but new forms can be periodically obtained from the appropriate agencies and inserted in the guide.

To decide which image frames to order from federal sources, photo index sheets are available for inspection and purchase at the county, district, state or regional offices of the respective agencies. A photo index is an assemblage of individual photographs copied at a reduced scale (usually at 1" or 2" to the mile). Frame identification numbers are indicated on these photo indexes. Prepayment is required to purchase imagery from federal agencies.

General questions concerning imagery availability and acquisition can be answered by contacting the MSU Remote Sensing Project, whereas specific requests pertaining to ordering imagery should be directed to the appropriate source agency by providing as much information as possible. Written inquiries should include the following information:

1. Name, address, telephone number (business) and name of company, agency, etc.

2. Location of point or area of interest, specified if appropriate by state, county, town, township, range, section, latitude, longitude and a verbal description such as "gravel pit immediately west of Bear Lake Bog in southeast Lansing" or "sink holes on the northern tip of Grosse Ile island in the Detroit River." Inclusion of a map with the desired area specifically outlined is also helpful.

3. Type of imagery desired (panchromatic, color infrared, etc.) including image size (9 by 9 inch contact image or some enlargement), printing format (i.e., film negative, paper print or transparency) and whether stereo coverage is desired. If the date, roll number, frame number or project symbol is known, it should be included.

4. A statement concerning the proposed applications or intended use of the imagery will assist the agency in responding more concisely to your request.

EROS DATA CENTER

The EROS Data Center stores and reproduces aerial imagery, and provides user assistance and training. This facility is operated by the Earth Resources Observation Systems (EROS) program of the U.S. Department of the Interior. The EROS program was established in 1966 to apply remote sensing technology to the inventory, monitoring, and management of resources, and is administered by the U.S. Geological Survey.

The Data Center is the principal source of imagery acquired by NASA from the Skylab, Apollo and Gemini space missions, from the Landsat satellites, and from high altitude research aircraft. Photography obtained for aerial mapping by the U.S. Department of Interior, particularly the U.S. Geological Survey, is also available from the Center.

Information on the availability of imagery for a specific area can be requested from the EROS Data Center by mail, visit or phone. The inquiry will initiate a computerized geographic search and may be requested by:

1. Indicating the latitude and longitude coordinates of a selected point. All images that cover any portion of a 50 mile radius area around the point will be included in the supplied computer listing.

2. Indicating the latitude and longitude corner coordinates of an area of interest. All images covering any portion of the specified area will be listed.

3. Indicating a point or area on a map and forwarding it to the Data Center.

The Geographic Computer Search Inquiry Form (p. 2-7) is used to request a point or area computer search of imagery. Users should allow at least two weeks for the search to be completed and for the computer listing to be sent. There is no charge for a computerized geographic search.

For further information contact:

EROS Data Center
Sioux Falls, South Dakota 57198
Phone: (605) 594-6511, Ext. 151

NATIONAL CARTOGRAPHIC INFORMATION CENTER

The National Cartographic Information Center (NCIC) is an information service facility for cartographic data (including aerial photography) of the United States. The center was established by the U.S. Geological Survey, Department of the Interior, in July 1974.

NCIC has developed a computer information system for the storage and dissemination of information on existing or planned aerial photography, called the Aerial Photography Record System (APRS). APRS currently references photographic coverage of large geographic areas acquired by seven major federal agencies. The system will eventually include air photo holdings of agencies at the state, county and municipal level, private companies and other federal agencies.

User output consists of a standard APRS report (Catalog of Agency Holdings) and Tabular Graphic (TAG) maps of total holdings. The catalogs list aerial photography acquired by a single agency and include extent and date of coverage, photo scale, film type, agency project code and status (planned, in progress or complete). The TAG maps of agency holdings summarize the photo holdings in a 15 degree strip of longitude with four maps providing complete coverage of the coterminous United States.

Users of the APRS can also custom query the system to obtain specific summary indexes of photographic data for a desired area of interest and selected photo parameters. Some 29 parameters may be specified including geographic area (by latitude/longitude boundaries, state and county, or 7.5' quadrangle), film type and format, date or date range, cloud cover, and scale or scale range.

For further information contact:

National Cartographic Information Center
U.S. Geological Survey
507 National Center
Reston, Virginia 22092

Phone: (703) 860-6059

MSU REMOTE SENSING PROJECT

The Michigan State University (MSU) Remote Sensing Project, under the leadership of faculty members from eight University departments, has been working cooperatively with federal and state agencies and all levels of local government, as well as with a variety of corporations and consulting firms to develop a wide range of operational applications of remote sensing whereby land/resource use decisions and actions may be improved. To accomplish this objective, project staff conduct demonstration applications of remote sensing, provide user services and participate in many modes of educational activities.

Most of the NASA high altitude research aircraft imagery of Michigan, as well as some selected Skylab and Landsat coverage, is available for inspection at the project office. Staff are on hand to provide consultation on the use of imagery, technical assistance on user problems and additional support materials to foster remote sensing applications by present and prospective users.

For further information contact:

Remote Sensing Project
201 UPLA Building
Michigan State University
East Lansing, Michigan 48824

Phone: (517) 353-7195

INQUIRY FORM
GEOGRAPHIC COMPUTER SEARCH
U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DATE _____

NAME MR / MS _____ (FIRST) (INITIAL) (LAST) ACCOUNT NO (IF KNOWN) _____

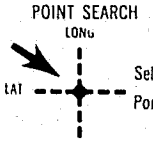
COMPANY _____ (IF BUSINESS ASSOCIATED) PHONE (Bus.) _____

ADDRESS _____ PHONE (Home) _____

CITY _____ Your Ref. No. (P.O. GOV'T ACCT OR OTHER) _____

TO INITIATE AN INQUIRY AND COMPUTER GEOSEARCH COMPLETE THE FOLLOWING

POINT SEARCH



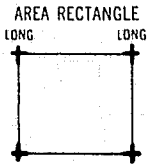
Imagery with any coverage over the selected point will be included.

POINT #1	POINT #2	POINT #3
Latitude ___° ___' N or S	___° ___' N or S	___° ___' N or S
Longitude ___° ___' E or W	___° ___' E or W	___° ___' E or W

Landsat Only (Worldwide Reference System)

Path ___ Row ___	Path ___ Row ___	Path ___ Row ___	Path ___ Row ___	Path ___ Row ___

AREA RECTANGLE



Imagery with any coverage over the selected area will be included.

AREA #1	AREA #2	AREA #3
Lat. ___° ___' N or S to	Lat. ___° ___' N or S to	Lat. ___° ___' N or S to
Lat. ___° ___' N or S	Lat. ___° ___' N or S	Lat. ___° ___' N or S
Long. ___° ___' E or W to	Long. ___° ___' E or W to	Long. ___° ___' E or W to
Long. ___° ___' E or W	Long. ___° ___' E or W	Long. ___° ___' E or W

If the above geographic coordinates cannot be supplied, please specify area by GEOGRAPHIC NAME AND LOCATION (include a map if possible.)

PREFERRED TYPE OF COVERAGE

	Black & White	Color or Color Infrared
☐ Landsat	☐	☐
☐ Skylab	☐	☐
☐ Nasa-Aircraft	☐	☐

☐ Aerial Mapping Photography (Minimum color available)

PREFERRED TIME OF YEAR
Check maximum of three

☐ JAN-MAR
☐ APR-JUNE
☐ JULY-SEPT
☐ OCT-DEC

☐ All coverage
☐ Latest coverage
☐ SPECIFIC DATES _____

NOTE: Seasonal coverage normally applies only to Landsat coverage.

MINIMUM QUALITY RATING ACCEPTABLE

☐ 0-2 (VERY POOR)	☐ 3-4 (POOR)	☐ 5-6 (FAIR)	☐ 7-9 (GOOD)

MAXIMUM CLOUD COVER ACCEPTABLE

☐ 10% ☐ 30% ☐ 50% ☐ 80% ☐ 100%

NOTE: Classification of percent of cloud cover is subjective and is relative to the amount of clouds appearing on the imagery and not to their location.

APPLICATION AND INTENDED USE _____

FORM 9-1936 (Jan. 1977)

Return completed form to the facility nearest you.

NCIC HEADQUARTERS
U.S. Geological Survey
507 National Center
Reston, VA 22092
FTS: 928-6045
COMM: 703-860-6045

EROS APPLICATIONS FACILITY
NSTL
U.S. Geological Survey
Bay St. Louis, MS 39520
FTS: 494-3541
COMM: 688-3472

NCIC MID-CONTINENT
U.S. Geological Survey
1400 Independence Rd.
Rolla, MO 65401
FTS: 276-9107
COMM: 314-364-3680

EROS DATA CENTER
U.S. Geological Survey
Sioux Falls, SD 57198
FTS: 784-7151
COMM: 605-594-6511

NCIC ROCKY MOUNTAIN
U.S. Geological Survey
Stop 510, Box 25046
Denver Federal Ctr.
Denver, CO 80225
FTS: 234-2326
COMM: 303-234-2326

NCIC WESTERN
U.S. Geological Survey
345 Middlefield Rd.
Menlo Park, CA 94025
FTS: 467-2427
COMM: 415-323-8111

HOW TO REQUEST A GEOGRAPHIC SEARCH

This form is used to request a computer search for imagery over a point or area of interest.

Data from this inquiry sheet will be used to initiate a computer Geosearch. The results will be returned on a computer listing along with a decoding sheet, from which imagery can be selected and ordered.

Complete the form as follows:

A. Enter your NAME, ADDRESS, and ZIP CODE clearly. If you have had previous contact with that facility, include your ACCOUNT number. Enter a PHONE number where you can be reached during business hours.

B. Complete the required information for either the POINT SEARCH, or AREA RECTANGLE inquiry, which includes the geographic LATITUDE and LONGITUDE coordinates. If coordinates are not available, please supply the GEOGRAPHIC NAME AND LOCATION or a map with the area of interest identified. It is beneficial that you minimize your area of interest, thereby allowing for a faster and more critical retrieval of information.

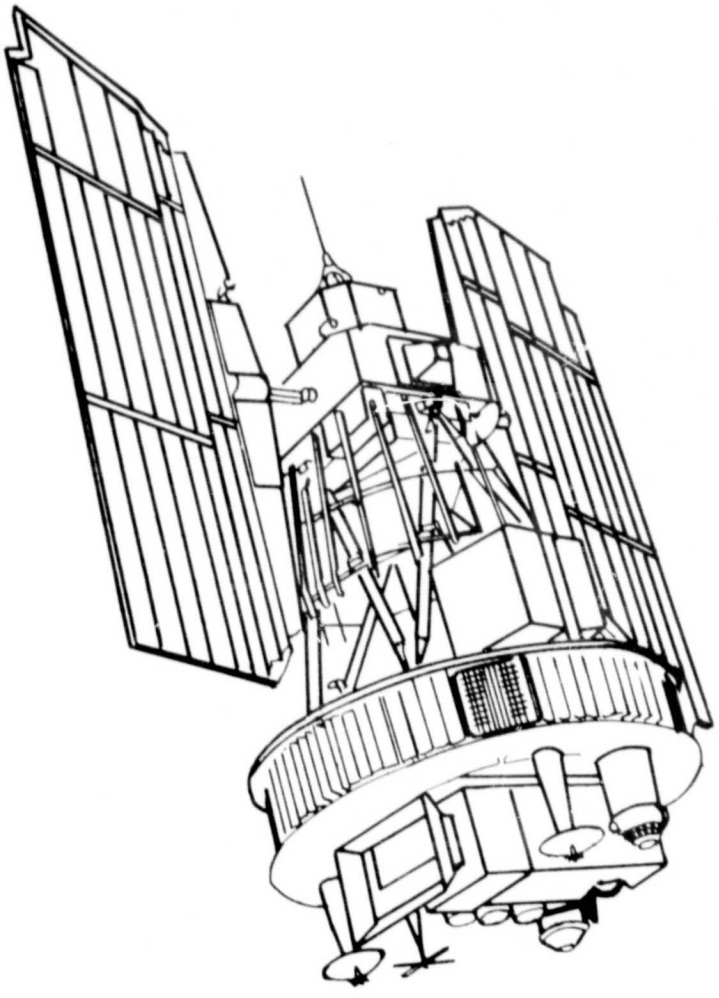
C. Complete all other information.

D. Complete the APPLICATION AND INTENDED USE portion of the inquiry. e.g. Will it be used for identifying buildings or will it be framed and placed on a wall. This information will assist our technicians in determining whether the products available will satisfy your requirements.

E. Return completed form to the FACILITY NEAREST YOU.

NOTE: If an inquiry is made for Landsat Data, and the Worldwide Reference of PATH and ROW numbers are available, please insert them in the appropriate locations. Otherwise, geographic coordinates will suffice.

☆ U.S. Government Printing Office: 1977—766-396 '54 Region No. 6



LANDSAT
SATELLITE IMAGERY

SECTION 3
LANDSAT SATELLITE IMAGERY

GENERAL INFORMATION

The first unmanned Earth Resources Technology Satellite (ERTS-1) was launched into orbit on July 23, 1972 by the National Aeronautics and Space Administration (NASA). While the satellite was still operational, a second ERTS satellite was launched into a similar orbit on January 22, 1975. A new name was adopted by NASA in January 1975 to refer to these satellites, and they are now known as Landsat (for land satellite) 1 and 2. These satellites are part of the Earth Resources Observation Systems (EROS) Program of the U.S. Department of the Interior.

These butterfly-shaped space observatories are in a sun-synchronous, near-polar orbit at an altitude of approximately 570 miles (920 km). They orbit the earth in a north-south direction every 103 minutes, or 14 times a day. The entire earth is covered by each Landsat every 18 days and, since they are 180 degrees apart (out of phase), one or the other of the satellites will be over a given earth location every 9 days.

The Landsat vehicles carry two types of sensor systems: 1) three Return Beam Vidicon (RBV) or television cameras, which became inoperable on Landsat-1 shortly after launch; and 2) a Multispectral Scanner (MSS). The MSS system is a mechanical line scanning device using an oscillating mirror to simultaneously scan the earth's landscape passing beneath the spacecraft in four spectral regions or bands. The spectral bands of the Landsat sensors are given in Table 3.1.

The scanner detects electromagnetic radiation (or the intensity of light reflected) from the earth's surface and records the amount of radiation detected on magnetic tape. The data are transmitted to a ground receiving station and recorded again on tape. The taped data can then be compiled as an image facilitating visual interpretation, or can be directly interpreted using special computer processing routines.

One Landsat scene covers an area of 115 by 115 miles (185 by 185 km). An arbitrary forward overlap of approximately 10% occurs between consecutive Landsat images, while

Table 3.1.--Landsat Spectral Bands.

Band	Sensor	Wavelength (nanometers)	Spectral Range
1	RBV	475-575	blue-green
2	RBV	580-680	red
3	RBV	690-830	near infrared
4	MSS	500-600	green
5	MSS	600-700	red
6	MSS	700-800	near infrared
7	MSS	800-1100	near infrared

sidelap between adjacent orbits ranges from 14% at the equator to 85% at a latitude of 80 degrees (about 37% for Michigan).

Landsat MSS images are parallelograms, not squares, due to the earth's rotation and the optical-mechanical scanning process which creates the images. RBV images, however, are acquired instantaneously and thus have a square format. Landsat imagery is produced in a Space Oblique Mercator projection format.

LANDSAT-C AND D SATELLITES

In early 1978, the NASA Office of Applications plans to launch Landsat-C which will contain an improved Return Beam Vidicon (RBV) system providing high-resolution (131 feet/40 meters) panchromatic imagery. A thermal infrared band (10.4 to 12.6 μm), in addition to the four bands presently provided, is planned for the Multispectral Scanner (MSS) system on-board Landsat-C. The resolution of the thermal imagery will be 787 feet (240 meters) whereas the four other channels will have the same resolving capability (262 feet/80 meters) as the Landsat-1 and -2 systems.

The Landsat-C RBV system consists of two identical cameras that operate in the spectral band from 500 to 750 nm. They will be aligned to view adjacent nominal ground scenes of 61 miles (98 km) on a side with a sidelap of 9 miles (14 km). Four RBV scenes (two successive scene pairs) will nominally overlap each MSS frame and will be designated A, B, C and D.

The MSS thermal band can be operated at any time, including night operation and at solar elevation angles less than the normal 10 degree minimum for the other four bands. This band should afford a capability of measuring gaseous and particulate pollutants, water temperature and ocean currents.

Planned for launch in early 1981, Landsat-D will contain a new remote sensing system known as the Thematic Mapper. The system will be a multispectral scanner with six spectral bands and a major improvement in geometric resolution to 30 meters. Provision has been made for adding a seventh band with even finer spatial resolution as required. The spectral bands selected are shown in Table 3.2.

Table 3.2.--Thematic Mapper Spectral Bands.

Band	Wavelength (nm)	Remarks
1	450 to 520	Added to aid in assessment of water quality
2	520 to 600	Similar to MSS band 4
3	630 to 700	Reduced from that of MSS band 5 to improve crop discrimination
4	760 to 900	Reduced from MSS bands 6 and 7 to avoid H_2O absorption
5	1,550 to 1,750	Added to aid in crop identification and geologic study
6	10,400 to 12,500	Unchanged from thermal band, Landsat-C

LANDSAT DATA PRODUCTS

The following types of remote sensing data products are prepared from the MSS taped spectral information and are available for purchase:

Computer Compatible Tapes: NASA Goddard Space Flight Center prepares computer compatible digital tapes of Landsat scenes for the EROS Data Center upon user request. These standard 0.5 inch (12.7 mm) magnetic tapes may be requested in either seven- or nine-track format at 800 or 1,600 bpi (bits per inch). For a given Landsat scene, the digital data for the four bands are interwoven among four computer compatible tapes (CCT). Thus, four CCT's are required per Landsat scene.

Black-and-White Images: A black-and-white image of each band scene is produced using an analog printer called an electron beam recorder. The printer translates the recorded amounts of radiation into small cells of light and dark shades at 3,300 cells per printed line, and 4,512 of these lines per 70 mm frame to form a picture. The resultant contact images (Fig. 3.1, p. 3-8) cover an area of 115 by 115 miles (185 by 185 km) at a scale of 1:3,369,000 (1 inch represents about 53 miles). A range of enlargements are available from the EROS Data Center. A common format is a 7.3 by 7.3 inch black-and-white transparency or print produced for all bands at a scale of 1:1,000,000.

False-Color Composites: In addition to images of individual bands, three band images (usually 4, 5 and 7) are assigned a particular color (e.g. blue, green and red, respectively) by exposing the bands through different color filters onto color film. The processed false-color composite (Fig. 3.2, p. 3-9) normally simulates a color infrared image. Color composite images depict healthy vegetation in various hues of red whereas cultural features are blue-gray and cleared land appears white to gray. Water is rendered dark blue to black and in lighter blues if sediment laden.

Color composites do not exist for all Landsat scenes because they are only produced upon customer request. However, for an additional one-time initial preparation charge, color composite images of Landsat scenes not previously prepared can be generated.

Microfilm: The Goddard Space Flight Center prepares a complete listing of Landsat scenes processed each month and a 16 mm "browse" microfilm of band 2 RBV and band 5 MSS images of those scenes. The microfilm provides a visual index to coverage, cloud cover and quality of each processed scene prior to the ordering of individual images, and is not intended for analytical purposes. The microfilms on open reels are available for purchase from the EROS Data Center.

Landsat Standard Data Catalogs: The NASA Goddard Space Flight Center prepares monthly and cumulative listings of Landsat imagery. These NASA ERTS/Landsat Standard Catalogs do not include photographs and are not always compatible with revisions made of film holdings. EROS therefore suggests that inquiries be made to the Data Center before ordering imagery.

Single Landsat Coverage: The EROS Data Center has selected for sale the best available Landsat image (black-and-white band 5) of each area in the coterminous United States based on quality, optimum time of year (generally spring or summer), and minimum cloud cover. Users who are interested in a Landsat image of their area and do not have special requirements (such as date and scale), can usually obtain the best image by ordering from the Single Landsat Coverage Map (Fig. 3.3, p. 3-10). This map identifies the nominal centers of all Landsat images of the United States by a dot at the intersection of Path and Row lines. To order a Landsat image, refer to the accompanying instructions.

Landsat Mosaics: Adjacent Landsat images can be compiled (matched) to produce photo mosaics of larger regions such as the State of Michigan or even the coterminous United States. Landsat mosaics are available from a variety of sources (addresses in Appendix B), some of which are described below.

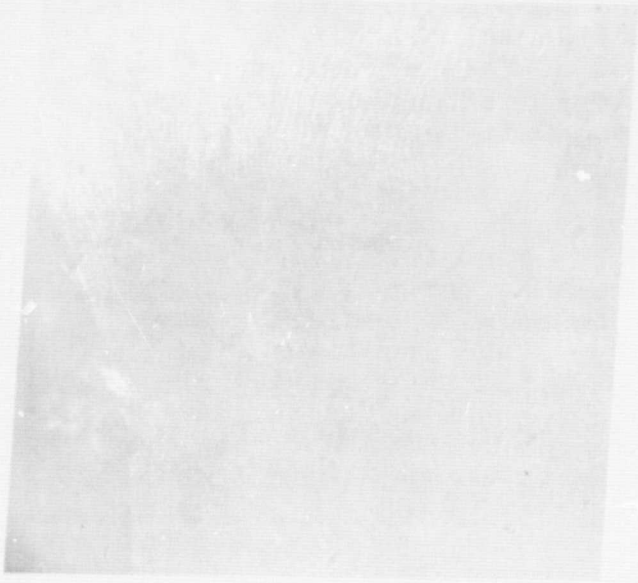
- Abrams Aerial Survey Corporation has produced a 16 by 20 inch black-and-white mosaic of Michigan from 1973-74 Landsat satellite imagery.

- General Electric Space Division has prepared a color composite Landsat mosaic of Michigan which is available in several formats. Mosaics for other states or areas may also be available.

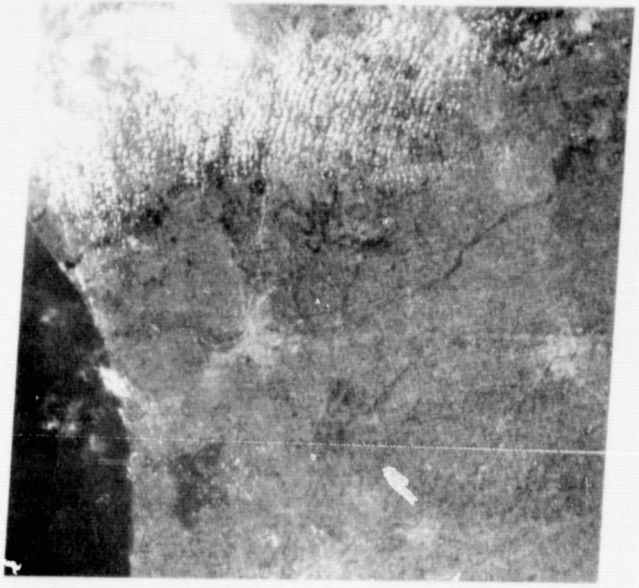
- The USDA Soil Conservation Service has assembled a Landsat image mosaic of the 48 contiguous United States and Alaska for NASA.

- An 11 by 14 inch color reproduction of a Landsat mosaic of the coterminous United States can be purchased from Space Photos.

- The U.S. Geological Survey, Branch of Distribution, has prepared mosaics of Landsat images of selected states as well as the coterminous United States.



BAND 4



BAND 5

BAND 6

BAND 7

Figure 3.1.--Landsat MSS Images of the Lansing-Grand Rapids Area.

Figure 3.2.--Landsat Color Composite Image of the Lansing-Grand Rapids Area.

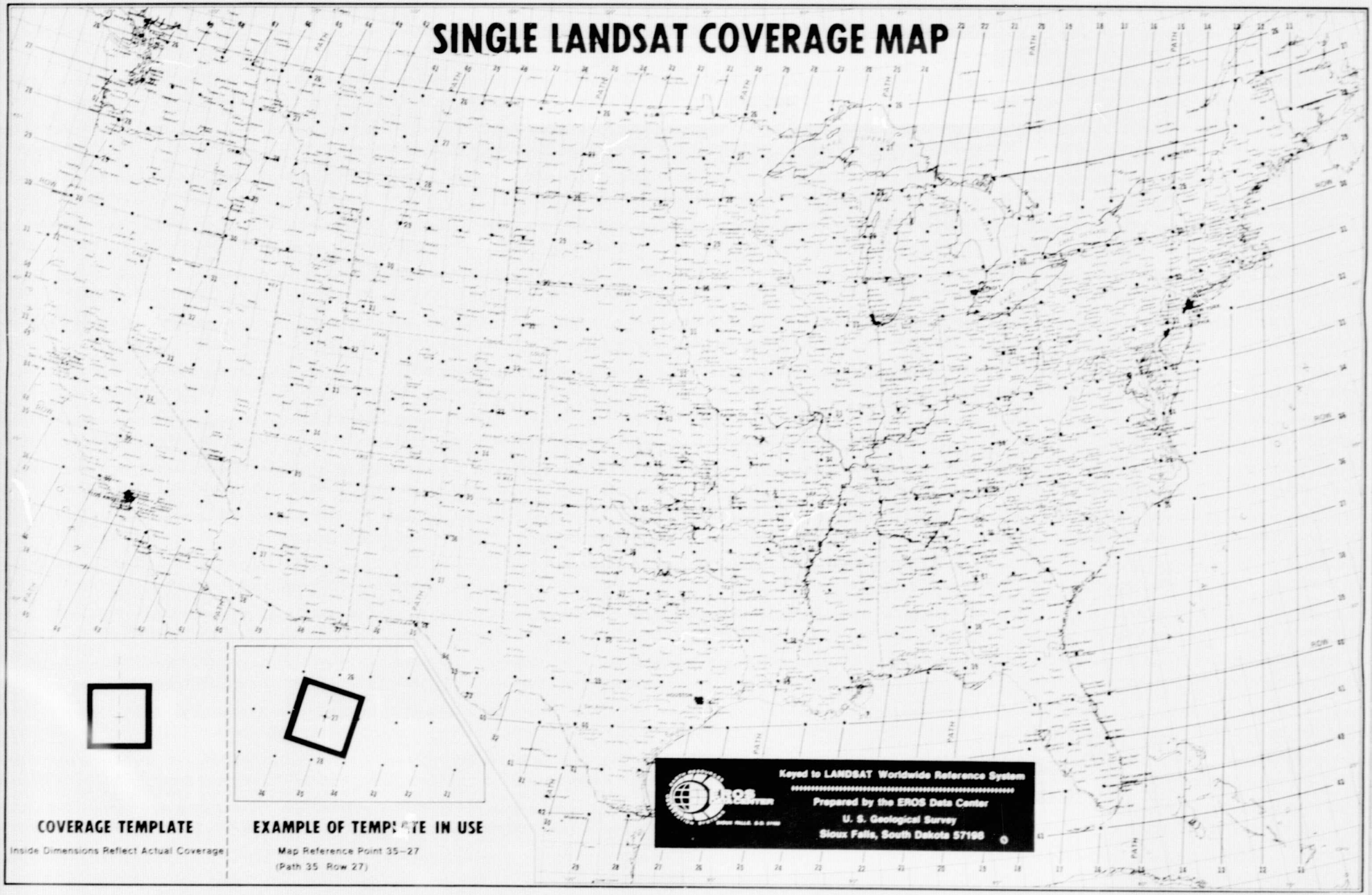


Figure 3.3.--Single Landsat Coverage Map.

ORDER FORM

SINGLE LANDSAT COVERAGE

CONTERMINOUS UNITED STATES

EROS DATA CENTER

Sioux Falls, S.D. 57198
Phone: 605/594-6511 Ext. 151
FTS: 605/594-6151

Date _____

NAME MR: MS: _____ Previous Contact No. _____ (IF KNOWN)
(LAST) (FIRST) (INITIAL)

COMPANY _____ Phone: (BUSINESS) _____

ADDRESS _____ Phone: (HOME) _____

CITY _____ STATE _____ ZIP _____ Your Reference No _____ (P.O., GOVT. ACCT. OR OTHER)

PLEASE TYPE OR PRINT PLAINLY

MAP REFERENCE NUMBER PATH	ROW	PRODUCT CODE	REMARKS	QTY	UNIT PRICE		TOTAL PRICE	

STANDARD PRODUCTS

BLACK AND WHITE

IMAGE SIZE	BANDS	SCALE	FORMAT	UNIT PRICE	PRODUCT CODE
7.3 IN	5	1:1,000,000	PAPER	3.00	47
7.3 IN	4, 5, 6, 7	1:1,000,000	PAPER	12.00	48
14.6 IN	5	1:500,000	PAPER	8.00	42
29.2 IN	5	1:250,000	PAPER	15.00	43

FALSE COLOR COMPOSITE

IMAGE SIZE	SCALE	FORMAT	UNIT PRICE	PRODUCT CODE
35 MM	_____	FILM POSITIVE	1.00	50
7.3 IN	1:1,000,000	PAPER	7.00	46
14.6 IN	1:500,000	PAPER	20.00	41
29.2 IN	1:250,000	PAPER	40.00	45

TOTAL ABOVE	A	
TOTAL FROM PREVIOUS SHEETS	B	
TOTAL COST	C	

PAYMENT MADE BY:

CHECK, MONEY ORDER ☐
PURCHASE ORDER ☐
GOVT. ACCOUNT ☐

HOW TO ORDER SINGLE LANDSAT COVERAGE DATA

This order form is used to order only SINGLE LANDSAT COVERAGE DATA over the Conterminous United States.

Please provide the following information in the indicated areas of the order form:

A. List your complete NAME, ADDRESS, ZIP CODE, and name of your COMPANY if applicable.

B. List a PHONE NUMBER where you can be contacted during business hours.

C. If you have had previous business with the Data Center and this order relates to that business, please list the previous CONTACT NUMBER if known.

D. Enter the MAP REFERENCE NUMBER

Turn to the SINGLE LANDSAT COVERAGE MAP foldout.

Identify your area of interest on the map. It may require that you reference a road map or atlas in locating the area on the map.

Trace the small coverage outline from the lower left corner of the map onto a sheet of thin paper. This outline portrays the ground coverage of a LANDSAT image on that map.

Center the coverage trace over the numbered dot nearest your area of interest on the map, aligning the extended dashed line through the dots above and below. (See example of template in use - lower left on map) Dots should fall in sequence, i.e. if your center dot is 35 - 27 the dots to align with will be 35 - 26 and 35 - 28. You may find that a photo centered over adjoining dots will also cover your area of interest. Select the framing you most prefer.

Transcribe the PATH number from the map to the first column of the Map Reference Number. Transcribe the ROW number from the map to the second column of the Map Reference Number.

NOTE: ROW numbers are identified on every FIFTH PATH.

E. Enter the PRODUCT CODE of the type product being ordered from the STANDARD PRODUCTS TABLE.

F. The REMARKS column is completed only when a CUSTOM PRODUCT is desired and you want to specify the parameters.

G. Enter the number of COPIES of that product which you desire in the QUANTITY column.

H. Enter the UNIT PRICE of the type product as reflected in the STANDARD PRODUCTS TABLE.

I. Multiply the figure in the QUANTITY column by the UNIT PRICE and enter the result in the TOTAL PRICE column.

J. Repeat the above for each product ordered.

K. TOTAL the costs of all products ordered on that order form and enter the net result in BLOCK A. TOTAL ABOVE.

L. If more than 1 order form is required, enter the sum of the figures in BLOCKS A in BLOCK B on the last order form.

M. Enter the SUM of BLOCK A and BLOCK B in BLOCK C. TOTAL COST.

N. Indicate the TYPE of payment being made with a CHECK MARK. Make all drafts payable to U.S. GEOLOGICAL SURVEY. DO NOT SEND CASH.

O. Mail ORDER FORM(S) and PAYMENT to the address listed on the front side of this form.

HOW TO USE THE LANDSAT INDEX

The decision as to whether Landsat imagery is suitable for any particular task must involve a range of factors. Two sets of characteristics are of basic importance and need to be considered before referring to the index.

1. Only very large features such as urban areas, forests, water bodies, agricultural areas and sand dunes can be recognized visually due to the small scale of Landsat imagery. For example, a 40 acre field would typically be the smallest area than can be identified with a minor (3X) magnification. Processing of Landsat Computer Compatible Tapes (CCT's) however, can improve resolving power to the 1.1 acre limit of the sensor system.

2. Each multispectral band also tends to emphasize different features which will inevitably influence image selection. Band 4, for instance, highlights areas of shallow water and sediment-laden water, but this 500-600 nm range is very susceptible to haze distortion. The red band, #5, shows the contrast between topographic, vegetational and man-made features (e.g. drainage patterns, forests, roads and cities) making it the most useful band for land use mapping. Bands 6 and 7 record reflected (not thermal) infrared energy and thus offer better haze penetration. They emphasize vegetation, landforms and the boundary between land and water. If only one black-and-white image is desired, band 5 will usually be the best selection since it offers a general-purpose view of the earth's surface. By ordering all four bands, however, additional features in the scene may be identified. A detailed list of features highlighted in each spectral band is given in Table 3.3.

To select Landsat imagery of Michigan, users should:

1. Examine Figure 3.4 (p. 3-19) to identify the nominal image center nearest the area of interest.

2. Actual frame coverage can vary slightly in any direction from the nominal coverage cited, so there is no assurance that every frame listed under a nominal center will cover an area of interest falling within .25 inches (64 mm) of a frame edge. In this case, check (a) and (b) below, but otherwise go on to number 3.

Table 3.3--Earth Features Highlighted in Landsat Spectral Bands.

MSS Spectral Bands	4	5	6	7	MSS Spectral Bands	4	5	6	7
Airfields		x			Marshes			x	
Air Pollution	x	x			Metamorphic Rock Alluvium Differentiation				x
Atmospheric Sensitivity	x				Rivers			x	x
Burned Rangeland				x	Roads	x	x		
Chlorophyll (Land)		x			Serpentine Outcrop				x
Chlorophyll (Sea Water)			x	x	Shallow Water	x			
Cloud Penetration				x	Shoals	x			
Cloud-Snow Differentiation			x		Shores			x	x
Clouds (Thin Cirrus)	x	x			Small Lakes				x
Crop Differentiation				x	Snow Detection	x			
Defoliation		x		x	Snow Lines (Transient on Glacier)			x	
Eddies		x		x	Snow Lines (Forest)	x			
Flood Plains				x	Soil Associations		x	x	
Forests		x			Soils Discrimination		x		x
Geologic Features			x	x	Soil Moisture Detection		x		
Grass Fires				x	Stream Channels			x	
Growth State	x			x	Stress		x		
Haze	x				Surface Water			x	x
Ice	x			x	Tectonic Features			x	x
Igneous Rocks			x	x	Topography		x		
Iron (Ferric)	x	x			Turbidity	x	x		
Irrigated Fields				x	Urban Areas	x	x		x
Jet Contrails	x	x			Water Boundaries			x	x
Lakes				x	Water Depth (Bathymetry)	x	x		
Lake Eutrophication	x				Water Pollution	x	x		
Landform Features		x			Water Sedimentation	x	x		
Large Bridges			x		Wetlands			x	x
Large Horizontal Concrete Structures		x			Wooded Areas	x	x		
Lithology		x							

SOURCE: Landsat Data Users Handbook (see Appendix A).

(a) Send the latitude and longitude boundary points of the area of interest to the EROS Data Center and request a computer listing of Landsat images available for the area (see Section 2).

(b) Request a similar computer listing from the MSU Remote Sensing Project by either sending the latitude and longitude boundary points of the area or a map indicating the outline of the area.

3. From the list in the Landsat index, identify the frame number(s) desired for the nominal center(s) selected, by examining the following information:

NOMINAL CENTER: The sequential nominal image center number as shown on Figure 3.4 (p. 3-19) is given followed by the corresponding path/row number of the Landsat Worldwide Reference System (see Single Landsat Coverage Map, p. 3-10).

IMAGE DATE: Date of exposure for the image

IMAGE TYPE: MSS = multispectral
RBV = return beam vidicon (television)
COL = color composite

BAND QUALITY: "0" = inferior to "9" = excellent, if blank = unavailable
MSS: individual availability and quality for MSS bands 4, 5, 6 and 7, respectively
RBV: individual availability and quality for RBV bands 1, 2 and 3, respectively
COL: first column indicates the quality of the color composite followed by the respective filters used for the composite (e.g. B = blue, G = green, and R = red).

Note: Only Landsat scenes (frame numbers) that have at least one band with a quality of 5 or better are listed in the index. If imagery taken on an unlisted date is required, refer back to "2a."

CLOUD COVER: Cloud cover percentage

Note: Only Landsat scenes (frame numbers) that have 30% or less cloud cover are listed in the index. If imagery taken on an unlisted date is required, refer back to "2a."

FRAME NUMBER: The Landsat frame identification number used for ordering imagery.

4. Landsat scenes can be ordered using the frame number(s) identified in the index, and the following Landsat Standard Products order form and the instructions given on its reverse side.

ORDER FORM
LANDSAT STANDARD PRODUCTS
U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DATE ______________________

NAME MR / MS ______________ (FIRST) ______________ (INITIAL) ______________ (LAST)   ACCOUNT NO (IF KNOWN) ______________

COMPANY ______________________ (IF BUSINESS ASSOCIATED)   PHONE (Bus.) ______________

ADDRESS ______________________   PHONE (Home) ______________

CITY ______________ STATE ______________ ZIP ______________   Your Ref. No (P.O. GOV'T ACCT OR OTHER) ______________

PLEASE TYPE OR PRINT PLAINLY

SCENE IDENTIFICATION NO.	PRODUCT CODE	BAND 4	BAND 5	BAND 6	BAND 7	TOTAL BANDS	QTY.	UNIT PRICE	TOTAL PRICE

TOTAL ABOVE	A
TOTAL FROM PREVIOUS SHEETS	B
TOTAL COST	C

STANDARD PRODUCTS

BLACK AND WHITE

IMAGE SIZE	SCALE	FORMAT	PRODUCT CODE
55.8mm (2.2 in.)	1:3,369,000	FILM POSITIVE	11
55.8mm (2.2 in.)	1:3,369,000	FILM NEGATIVE	01
18.5cm (7.3 in.)	1:1,000,000	PAPER	23
18.5cm (7.3 in.)	1:1,000,000	FILM POSITIVE	13
18.5cm (7.3 in.)	1:1,000,000	FILM NEGATIVE	03
37.1cm (14.6 in.)	1:500,000	PAPER	24
74.2cm (29.2 in.)	1:250,000	PAPER	28

COLOR COMPOSITE GENERATION

IMAGE SIZE	SCALE	FORMAT	PRODUCT CODE
18.5cm (7.3 in.)	1:1,000,000	PRINTING MASTER	90

NOTE: PRINTING MASTER IS RETAINED BY EDC. COST OF PRODUCTS FROM THIS COMPOSITE MUST BE ADDED TO TOTAL COSTS.

FALSE COLOR COMPOSITES

IMAGE SIZE	SCALE	FORMAT	PRODUCT CODE
18.5cm (7.3 in.)	1:1,000,000	PAPER	43
18.5cm (7.3 in.)	1:1,000,000	FILM POSITIVE	53
37.1cm (14.6 in.)	1:500,000	PAPER	44
74.2cm (29.2 in.)	1:250,000	PAPER	48

COMPUTER COMPATIBLE TAPES (CCT)

TRACKS	BPI	FORMAT	PRODUCT CODE
7	800	TAPE SET	82
9	800	TAPE SET	83
9	1600	TAPE SET	84

Please refer to current price list for cost determination.

PAYMENT MADE BY:

- CHECK, MONEY ORDER ☐
- PURCHASE ORDER ☐
- GOVT. ACCOUNT ☐

COMMENTS: ______________________

Return completed form to the facility nearest you.

NCIC HEADQUARTERS
U.S. Geological Survey
507 National Center
Reston, VA 22092
FTS: 928-6045
COMM: 703-860-6045

EROS APPLICATIONS FACILITY
NSTL
U.S. Geological Survey
Bay St. Louis, MS 39520
FTS: 494-3541
COMM: 688-3472

NCIC MID-CONTINENT
U.S. Geological Survey
1400 Independence Rd.
Rolla, MO 65401
FTS: 276-9107
COMM: 314-364-3680

EROS DATA CENTER
U.S. Geological Survey
Sioux Falls, SD 57198
FTS: 784-7151
COMM: 605-594-6511

NCIC ROCKY MOUNTAIN
U.S. Geological Survey
Stop 510, Box 25046
Denver Federal Ctr.
Denver, CO 80225
FTS: 234-2326
COMM: 303-234-2326

NCIC WESTERN
U.S. Geological Survey
345 Middlefield Rd.
Menlo Park, CA 94025
FTS: 467-2427
COMM: 415-323-8111

FORM 9-1938 (Jan. 1977)

HOW TO ORDER LANDSAT DATA

This order form is used to order all standard Landsat data. Necessary order information can normally be extracted from a computer listing of available data or from other Landsat references.

Please provide the following information in the indicated areas of the order form:

A. List your complete NAME, ADDRESS, ZIP CODE, and name of your COMPANY if applicable.

B. List a PHONE NUMBER where you can be contacted during business hours.

C. If you have had previous business with THAT FACILITY, please list your ACCOUNT NUMBER if known.

D. Enter the complete SCENE IDENTIFICATION NUMBER. This number can be transcribed directly from the COMPUTER LISTING. If the source of information is from other than a computer listing, please specify the date the scene was recorded and the time taken.

E. Review the STANDARD PRODUCTS TABLE on the ORDER FORM and determine the type of product desired.

F. Enter the PRODUCT CODE of the type product being ordered from the STANDARD PRODUCTS TABLE.

G. Enter an indicator for the band(s) desired.

H. The COMMENTS portion is completed only when a CUSTOM PRODUCT is deisred and you want to specify the parameters. Refer to the current price list for custom product cost determination.

I. Enter the Total Number of Bands ordered.

J. Multiply the total bands ordered by the number of copies desired and enter the result in the QUANTITY column.

K. Enter the UNIT PRICE of the type product as reflected on the current PRICE LIST.

L. Multiply the figure in the QUANTITY column by the UNIT PRICE and enter the result in the TOTAL PRICE column.

M. Repeat the above for each product ordered.

N. TOTAL the costs of all products ordered on that order form and enter the net result in BLOCK A, TOTAL ABOVE.

O. If more than one order form is required, enter the sum of the figures in BLOCKS A in BLOCK B of the last order form.

P. Enter the SUM of BLOCK A and BLOCK B in BLOCK C, TOTAL COST.

Q. Indicate the TYPE of payment being made with a CHECK MARK. Make all drafts payable to U.S. GEOLOGICAL SURVEY. DO NOT SEND CASH.

R. Mail ORDER FORM(S) and PAYMENT to the FACILITY NEAREST YOU. If payment has been previously forwarded, the order form(s) must be mailed to the same facility.

☆ U.S. Government Printing Office: 1977—766-400/56 Region No. 6

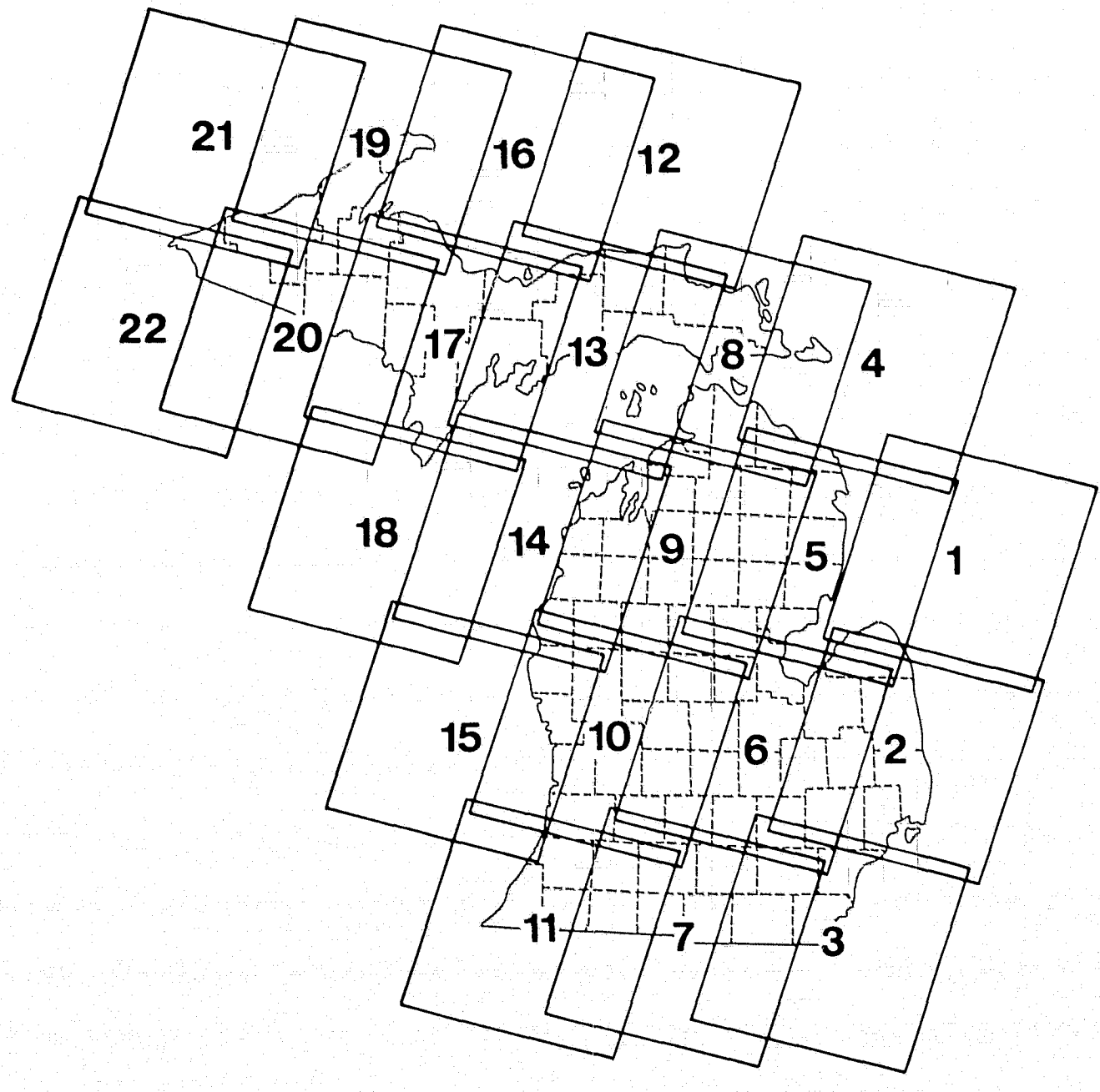


Figure 3.4.--Landsat Nominal Image Center Locations.

INDEX TO LANDSAT IMAGERY

AUGUST, 1972 -- JUNE, 1977

NOMINAL CENTER	IMAGE DATE	IMAGE TYPE	BAND QUALITY	CLOUD COVER	FRAME NUMBER
1					
(21,29)	1972				
	SEP 28	MSS	8888	30	81067154605N0
	1973				
	MAR 27	MSS	8888	10	81247154725N0
	APR 14	MSS	8888	0	81265154715N0
	JUN 25	MSS	8888	10	81337154635N0
	JUN 25	COL	8BGR	10	81337154635N2
	SEP 5	MSS	2888	30	81409154535N0
	1974				
	FEB 14	MSS	8888	10	81571154215N0
	APR 27	MSS	2822	10	81643154045N0
	JUN 20	MSS	8888	0	81697153905N0
	AUG 13	MSS	8888	10	81751153715N0
	SEP 18	MSS	8888	20	81787153555N0
	1975				
	FEB 1	MSS	8888	30	82010153335N0
	APR 13	MSS	8888	30	82081153505N0
	APR 22	MSS	8888	0	85003152725N0
	MAY 10	MSS	5858	0	85021152625N0
	JUL 3	MSS	5588	10	85075152325O0
	AUG 8	MSS	5555	0	85111152115O0
	AUG 17	MSS	5558	30	82207153405O0
	SEP 4	MSS	5588	20	82225153355O0
	OCT 28	MSS	5555	10	82279153325O0
	1976				
	MAR 11	MSS	8888	30	85327150745O0
	APR 7	MSS	5885	10	82441153025O0
	MAY 13	RBV	588	30	82477152922O0
	JUN 9	MSS	8888	30	85417150145O0
	JUN 18	RBV	585	10	82513152832O0
	JUN 18	MSS	5588	10	82513152835O0
	JUN 27	MSS	8588	10	85435150015O0
	JUL 6	MSS	8888	10	82531152805O0
	JUL 15	MSS	5888	10	85453145855O0
	JUL 24	MSS	8888	30	82549152735O0
	AUG 2	MSS	5888	10	85471145725O0
	AUG 20	MSS	5588	10	85489145555O0
	SEP 7	MSS	8888	30	85507145425O0
	SEP 25	MSS	8888	30	85525145255O0
	OCT 4	MSS	5888	20	82621152525O0
	1977				
	FEB 7	MSS	0888	10	82747152035O0
	MAR 15	MSS	8588	20	82783151905O0
	MAY 14	MSS	888	10	85756143215O0
2					
(21,30)	1972				
	SEP 28	MSS	8838	30	81067154635N0
	1973				
	MAR 27	MSS	8888	10	81247154745N0
	MAR 27	COL	7BGR	0	81247154745N2
	APR 14	MSS	8888	10	81265154745N0
	APR 14	COL	7BGR	0	81265154745N2

NOMINAL CENTER	IMAGE DATE	IMAGE TYPE	BAND QUALITY	CLOUD COVER	FRAME NUMBER
2					
(21,30)	1973				
	MAY 20	MSS	8888	10	8130115472 5N0
	JUN 7	MSS	2888	10	8131915471 5N0
	JUN 7	COL	5RGR	20	8131915471 5N2
	JUN 25	MSS	8888	10	8133715470 5N0
	JUN 25	COL	7RGR	10	8133715470 5N2
	1974				
	APR 27	MSS	2822	0	8164315411 5N0
	JUN 20	MSS	8888	0	8169715393 5N0
	JUL 8	MSS	8888	20	8171515385 5N0
	1975				
	FEB 1	MSS	8888	10	8201015340 5N0
	FEB 1	RBV	555	30	8201015340 2N0
	FEB 9	MSS	8858	20	8193115331 5N0
	APR 4	MSS	8558	20	8198515283 5N0
	APR 13	MSS	8888	30	8208115335 5N0
	MAY 10	MSS	8588	0	8502115265 5N0
	MAY 19	MSS	8888	30	8211715350 5N0
	MAY 28	MSS	5558	10	8503915255 5N0
	JUL 30	MSS	5555	10	8218915335 0500
	AUG 8	MSS	5555	0	8511115221 4500
	SEP 4	MSS	5888	20	8222515334 1500
	OCT 10	MSS	5558	20	8226115334 0500
	OCT 28	MSS	5555	20	8227915333 5500
	DEC 3	MSS	8888	20	8231515333 2500
	DEC 21	MSS	5888	30	8233315333 1500
	1976				
	JAN 8	MSS	8828	10	8235115333 0500
	JAN 17	MSS	8888	20	8527315114 5500
	APR 7	MSS	5888	10	8244115330 5500
	APR 16	MSS	8858	30	8536315054 5500
	MAY 4	MSS	5888	20	8538115043 5500
	MAY 13	RBV	885	20	8247715295 2500
	MAY 13	MSS	5085	30	8247715295 5500
	JUN 18	MSS	8888	10	8251315285 5500
	JUN 18	RBV	588	10	8251315290 2500
	JUN 27	MSS	8888	10	8543515004 5500
	JUL 6	MSS	8888	10	8253115282 5500
	JUL 15	MSS	8888	10	8545315591 6500
	JUL 24	MSS	0888	20	8254915275 5500
	AUG 11	MSS	8585	10	8256715272 5500
	AUG 20	MSS	8888	10	8564891456 1500
	SEP 25	MSS	8888	10	8555521453 1500
	OCT 4	MSS	5888	20	8262115255 5500
	OCT 22	MSS	8888	20	8263915251 5500
	DEC 15	MSS	8858	10	8269315230 5500
	1977				
	FEB 7	MSS	8888	10	8274715220 5500
	MAR 15	MSS	8888	10	8278315192 5500
	MAY 8	MSS	8888	10	8283715163 5500
	MAY 14	MSS	888	10	8575614324 5500
	MAY 26	MSS	8888	10	8285515154 5500
3					
(21,31)	1973				
	MAR 27	MSS	8888	10	8124715481 5N0
	MAR 27	COL	6RGR	0	8124715481 5N2
	APR 14	MSS	8888	10	8126515480 5N0
	APR 14	COL	7RGR	0	8126515480 5N2
	MAY 20	MSS	8888	20	8130115475 5N0
	JUN 7	MSS	8828	10	8131915474 5N0

NOMINAL CENTER	IMAGE DATE	IMAGE TYPE	BAND QUALITY	CLOUD COVER	FRAME NUMBER
3					
(21,31)	1973				
	JUN 25	MSS	8828	10	81337154725N0
	OCT 11	MSS	2888	20	81445154535N0
	1974				
	FEB 14	MSS	8888	20	81571154305N0
	APR 27	MSS	2888	0	81643154135N0
	JUN 2	MSS	8888	20	81679154035N0
	JUN 20	MSS	8888	10	81697153955N0
	JUL 8	RBV	8888	20	81715153922N0
	OCT 6	MSS	5888	20	81805153605N0
	1975				
	FEB 9	MSS	5885	10	81931153135N0
	APR 4	MSS	8858	0	81985152905N0
	APR 13	MSS	8888	20	82081153555N0
	MAY 10	MSS	5858	0	85021152715N0
	MAY 19	MSS	2858	10	82117153535N0
	MAY 28	MSS	5558	10	85039152615N0
	JUN 6	MSS	5588	10	82135153555N0
	JUL 21	MSS	8855	20	85093152305N0
	JUL 30	MSS	5558	10	82189153525N0
	AUG 8	MSS	5555	10	85111152205N0
	NOV 6	MSS	5550	30	85201151645N0
	NOV 15	MSS	5885	10	82297153405N0
	DEC 3	MSS	8858	20	82315153355N0
	1976				
	JAN 8	MSS	8858	10	82351153355N0
	JAN 17	MSS	8888	20	85273151205N0
	MAR 11	MSS	8888	10	85327150835N0
	APR 7	MSS	8888	10	82441153115N0
	MAY 4	MSS	8588	10	85381150455N0
	MAY 13	MSS	8858	10	82477153015N0
	MAY 13	RBV	558	10	82477153012N0
	MAY 22	MSS	8888	20	85399150345N0
	JUN 9	MSS	8888	20	85417150235N0
	JUN 18	MSS	8888	10	82513152925N0
	JUN 18	RBV	588	10	82513152922N0
	JUN 27	MSS	8888	10	85435150105N0
	JUL 6	MSS	5888	10	82531152855N0
	JUL 15	MSS	8888	10	85453145945N0
	JUL 24	MSS	5888	10	82549152825N0
	AUG 2	MSS	8888	30	85471145815N0
	AUG 11	MSS	5588	30	82567152755N0
	AUG 20	MSS	5888	0	85489145645N0
	AUG 29	MSS	5858	20	82585152715N0
	SEP 7	MSS	8588	10	85507145515N0
	OCT 4	MSS	2888	10	82621152615N0
	OCT 22	MSS	8888	20	82639152545N0
	NOV 9	MSS	5888	30	82657152455N0
	DEC 15	MSS	8888	10	82693152325N0
	1977				
	JAN 20	MSS	8888	20	82729152205N0
	FEB 7	MSS	5888	10	82747152125N0
	MAR 15	MSS	5888	0	82783151955N0
	MAY 8	MSS	8888	10	82837151705N0
	MAY 14	MSS	888	10	85756143305N0
	MAY 26	MSS	8888	10	82855151605N0
4					
(22,28)	1973				
	FEB 20	MSS	8888	30	81212155225N0
	MAR 28	MSS	8888	10	81248155245N0

NOMINAL CENTER	IMAGE DATE	IMAGE TYPE	BAND QUALITY	CLOUD COVER	FRAME NUMBER
4					
(22,28)	1973				
	SEP 6	MSS	8888	20	81410155055N0
	DEC 5	MSS	2828	20	81500154925N0
	1974				
	APR 28	MSS	2822	30	81644154605N0
	JUN 3	MSS	8888	20	81680154505N0
	JUL 27	MSS	5888	10	81734154315N0
	1975				
	FEB 2	MSS	8888	20	82011154105N0
	MAR 27	MSS	8558	20	82064154015N0
	APR 5	MSS	5855	0	81986153335N0
	APR 14	MSS	5888	0	82082154025N0
	MAY 11	MSS	5558	30	82022153145N0
	JUL 31	MSS	5588	10	82190153955O0
	1976				
	JAN 9	MSS	8858	10	82352153755O0
	JAN 27	MSS	8888	30	82370153745O0
	FEB 14	MSS	5588	10	82388153725O0
	APR 8	MSS	8888	20	82442153545O0
	MAY 23	MSS	8588	30	82540150805O0
	JUN 1	MSS	8888	0	82496153415O0
	JUN 10	MSS	5588	30	82541150655O0
	JUN 19	MSS	8888	30	82514153355O0
	JUL 25	MSS	8888	10	82550153255O0
	AUG 21	MSS	8888	10	82549150105O0
	AUG 30	MSS	8888	10	82586153145O0
	SEP 8	MSS	8888	0	82550145935O0
	SEP 17	MSS	5555	20	82604153115O0
	OCT 23	MSS	5588	30	82640153005O0
	1977				
	JAN 21	MSS	8888	20	82730152635O0
	APR 3	MSS	8888	0	82802152325O0
	APR 9	MSS	888	10	82572144055O0
	MAY 9	MSS	8888	10	82838152135O0
	MAY 15	MSS	888	10	82757143735O0
	MAY 27	MSS	8885	0	82856152035O0
	JUN 14	MSS	5888	10	82874151945O0
5					
(22,29)	1973				
	MAR 28	MSS	8888	20	81248155305N0
	MAY 21	MSS	8822	10	81302155245N0
	MAY 21	COL	6BGR	20	81302155245N2
	JUN 8	MSS	8888	20	81320155235N0
	AUG 19	MSS	8822	30	81392155135N0
	1974				
	FEB 15	MSS	8888	20	81572154755N0
	JUN 3	MSS	8888	10	81680154525N0
	JUN 3	COL	8BGR	10	81680154525N2
	JUN 21	MSS	8885	20	81698154455N0
	JUL 9	MSS	8888	10	81716154415N0
	JUL 27	MSS	5858	10	81734154335N0
	SEP 19	MSS	0800	30	81788154135N0
	1975				
	FEB 2	RBV	888	20	82011154132N0
	FEB 2	MSS	8888	20	82011154135N0
	MAR 9	MSS	5888	10	82046154055N0
	MAR 27	MSS	5588	20	82064154045N0
	APR 5	MSS	8558	20	81986153355N0

NOMINAL CENTER	IMAGE DATE	IMAGE TYPE	BAND QUALITY	CLOUD COVER	FRAME NUMBER
5					
(22,29)	1975				
	APR 14	MSS	2885	0	8208215404 5N0
	MAY 11	MSS	8558	30	8502215320 5N0
	MAY 20	MSS	5858	10	8211815402 5N0
	JUL 31	MSS	5558	10	8219015401500
	AUG 27	MSS	5558	30	8513015255500
	SEP 14	MSS	5558	10	8514815245500
	SEP 23	MSS	5588	30	8224415392500
	1976				
	JAN 9	MSS	8858	20	8235215382500
	JAN 27	MSS	8888	10	8237015381500
	FEB 14	MSS	5888	10	8238815374500
	APR 8	MSS	5888	30	8244215360500
	MAY 14	RBV	555	10	8247815351200
	MAY 14	MSS	8888	20	8247815351500
	JUN 1	MSS	5588	10	8249615344500
	JUN 10	MSS	5888	10	8541815072500
	JUN 19	MSS	8888	30	8251415341500
	JUN 19	MSS	8888	30	8547215030500
	AUG 3	MSS	8888	0	8547215030500
	AUG 21	MSS	8588	10	8549015013500
	AUG 30	MSS	8888	20	8258615321500
	SEP 8	MSS	8888	0	8550815000500
	OCT 23	MSS	5588	10	8264015303500
	1977				
	APR 3	MSS	8888	0	8280215235500
	APR 9	MSS	888	10	8572114411500
	MAY 9	MSS	8888	10	8283815215500
	MAY 15	MSS	888	10	8575714375500
	MAY 27	MSS	5588	0	8285615205500
	JUN 14	MSS	5888	10	8287415200500
6					
(22,30)	1973				
	MAR 28	MSS	8888	30	8124815533 5N0
	MAY 21	MSS	8888	20	8130215531 5N0
	JUN 8	COL	78GR	10	8132015525 5N2
	JUN 8	MSS	8888	0	8132015525 5N0
	SEP 6	MSS	8888	10	8141015514 5N0
	SEP 24	MSS	8888	30	8142815511 5N0
	DEC 5	MSS	2828	10	8150015501 5N0
	1974				
	MAR 5	MSS	8888	0	8159015480 5N0
	JUN 3	MSS	8888	30	8168015455 5N0
	JUL 9	MSS	8888	10	8171615444 5N0
	SEP 19	MSS	8585	10	8178815415 5N0
	1975				
	FEB 2	MSS	8888	10	8201115415 5N0
	MAR 9	MSS	8888	10	8204615412 5N0
	APR 5	MSS	8558	10	8198615342 5N0
	MAY 2	MSS	5888	30	8210015410 5N0
	MAY 11	MSS	8858	20	8502215323 5N0
	MAY 20	MSS	5888	10	8211815405 5N0
	JUL 31	MSS	5888	0	8219015404500
	AUG 27	MSS	5558	10	8513015261500
	SEP 14	MSS	5588	10	8514815251500
	SEP 23	MSS	5555	30	8224415395500
	NOV 16	MSS	8588	10	8229815392500
	1976				
	JAN 9	MSS	8858	30	8235215384500

NOMINAL CENTER	IMAGE DATE	IMAGE TYPE	BAND QUALITY	CLOUD COVER	FRAME NUMBER
6					
(22,30)	1976				
	JAN 18	MSS	5855	20	8527415172500
	JAN 27	MSS	8888	10	8237015383500
	FEB 14	MSS	5888	0	8238815381500
	MAY 5	MSS	8888	10	8538215101500
	MAY 23	MSS	8888	20	8540015085500
	JUN 10	MSS	5888	10	8541815074500
	AUG 3	MSS	8888	0	8547215032500
	AUG 21	MSS	8888	10	8549015015500
	AUG 30	MSS	8888	10	8258615323500
	SEP 8	MSS	8888	0	8550815002500
	OCT 14	MSS	8588	20	8554414572500
	1977				
	JAN 21	MSS	8888	20	8273015272500
	MAR 16	MSS	8888	20	8276415250500
	APR 3	MSS	8888	0	8280215241500
	APR 9	MSS	888	0	8572114414500
	MAY 9	MSS	8888	30	8283815222500
	MAY 15	MSS	888	10	8575714382500
	MAY 27	MSS	8888	0	8285615212500
	JUN 14	MSS	8888	10	8287415203500
7					
(22,31)	1973				
	MAY 21	MSS	8888	20	8130215533 5N0
	JUN 8	MSS	8888	10	8132015533 5N0
	JUN 8	COL	6BGR	10	8132015533 5N2
	SEP 6	MSS	8888	10	8141015520 5N0
	SEP 6	COL	7RGR	30	8141015520 5N2
	SEP 24	MSS	8888	20	8142815514 5N0
	NOV 17	MSS	8888	10	8148215505 5N0
	1974				
	MAR 5	MSS	8888	10	8159015432 5N0
	JUN 3	MSS	8888	10	8168015461 5N0
	JUN 3	COL	8BGR	10	8168015461 5N2
	JUL 9	MSS	8888	10	8171615450 5N0
	JUL 27	MSS	2888	30	8173415442 5N0
	SEP 19	MSS	5888	10	8178815422 5N0
	1975				
	FEB 2	RBV	880	0	8201115422 2N0
	FEB 2	MSS	8888	10	8201115422 5N0
	APR 5	MSS	8558	0	8198615344 5N0
	MAY 2	MSS	5855	20	8210015413 5N0
	MAY 11	MSS	8555	30	8502215325 5N0
	MAY 20	MSS	8888	30	8211815411 5N0
	MAY 29	MSS	5588	20	8504015315 5N0
	JUL 31	MSS	5885	10	8219015410 500
	NOV 16	MSS	5858	0	8229815394 500
	DEC 4	MSS	5555	0	8231615393 500
	1976				
	JAN 9	MSS	8858	20	8235215391 500
	JAN 18	MSS	8888	0	8527415174 500
	JAN 27	MSS	8888	10	8537015390 500
	FEB 14	MSS	8888	0	8238815383 500
	FEB 23	MSS	8888	10	8531015153 500
	MAY 5	MSS	8888	10	8538215103 500
	MAY 23	MSS	8888	20	8540015092 500
	JUN 10	MSS	5888	10	8541815081 500
	JUL 7	MSS	8888	10	8253215343 500
	JUL 25	MSS	8888	10	8255015340 500
	AUG 3	MSS	8888	0	8547215035 500

NOMINAL CENTER	IMAGE DATE	IMAGE TYPE	BAND QUALITY	CLOUD COVER	FRAME NUMBER
7					
(22,31)	1976				
	AUG 21	MSS	8888	10	8549015022500
	AUG 30	MSS	8888	10	8258615330500
	SEP 8	MSS	8888	0	8550815005500
	OCT 14	MSS	8885	10	8554414575500
	1977				
	JAN 21	MSS	5888	30	8273015274500
	FEB 8	MSS	8888	30	8274815270500
	MAR 16	MSS	8888	0	8278415253500
	APR 3	MSS	8888	10	8280215244500
	APR 9	MSS	888	10	8572114420500
	MAY 9	MSS	8888	30	8283815224500
	MAY 15	MSS	888	0	8575714384500
	MAY 27	MSS	8888	0	8285615214500
	JUN 14	MSS	5858	20	8287415205500
8					
(23,28)	1972				
	SEP 12	MSS	8828	30	81051155715N0
	1973				
	JAN 16	MSS	8888	20	81177155735N0
	MAR 29	MSS	8888	20	81249155825N0
	MAY 4	MSS	8888	0	81285155815N0
	MAY 22	MSS	8828	10	81303155805N0
	MAY 22	COL	7BGP	10	81303155805N2
	JUN 9	MSS	8882	20	81321155755N0
	SEP 7	MSS	8882	30	81411155635N0
	1974				
	JUL 10	MSS	8888	10	81717154935N0
	JUL 28	MSS	5888	30	81735154855N0
	AUG 15	MSS	8888	20	81753154815N0
	1975				
	FEB 3	RBV	555	10	82012154832N0
	FEB 3	MSS	8858	10	82012154835N0
	FEB 11	MSS	8888	20	81933154145N0
	APR 6	MSS	5888	0	81987153915N0
	APR 15	MSS	8855	30	82083154605N0
	MAY 12	MSS	5858	10	85023153725N0
	JUN 26	MSS	5555	10	82155154605O0
	JUL 5	MSS	5525	20	8507715342500
	AUG 1	MSS	5555	10	82191154535O0
	SEP 15	MSS	8588	30	85149153005O0
	SEP 24	MSS	5555	10	82245154445O0
	OCT 30	MSS	5558	20	82281154425O0
	NOV 17	MSS	5555	30	82299154415O0
	1976				
	JAN 1	MSS	5855	30	8525715232500
	MAR 22	MSS	8885	20	82425154205O0
	APR 9	MSS	8888	10	82443154125O0
	JUN 2	MSS	5888	0	82497154005O0
	JUN 11	MSS	8888	10	8541915123500
	JUN 20	MSS	8888	0	8251515393500
	JUL 8	MSS	8888	10	8253315390500
	AUG 22	MSS	8588	10	8549115064500
	SEP 18	MSS	8888	10	8260515365500
	NOV 29	MSS	8888	30	8267715342500
	1977				
	JAN 22	MSS	8888	10	8273115321500
	MAR 17	MSS	5888	10	8278515300500

NOMINAL CENTER	IMAGE DATE	IMAGE TYPE	BAND QUALITY	CLOUD COVER	FRAME NUMBER
A					
(23,28)	1977				
	APR 22	MSS	8888	30	8282115281500
	MAY 10	MSS	8888	10	8283915271500
	MAY 28	MSS	8888	10	8285715261500
	JUN 3	MSS	888	10	8577614413500
	JUN 15	MSS	8588	10	8287515252500
9					
(23,29)	1973				
	JAN 16	MSS	8888	10	81177155755N0
	MAR 29	MSS	8888	10	81249155845N0
	MAY 4	MSS	8888	10	81285155835N0
	MAY 22	MSS	8888	20	81303155835N0
	JUN 9	MSS	8888	0	81321155815N0
	JUN 9	COL	8BGR	0	81321155815N2
	SEP 7	MSS	8882	20	81411155705N0
	DEC 24	MSS	8888	30	81519155515N0
	1975				
	FEB 11	MSS	8888	0	81933154205N0
	APR 6	MSS	8885	0	81987153935N0
	APR 15	MSS	8888	30	82083154635N0
	MAY 12	MSS	5858	20	8502315374 5N0
	JUN 26	MSS	5555	10	82155154635 00
	JUL 5	MSS	5888	20	8507715344500
	AUG 1	MSS	5558	10	82191154605 00
	SEP 24	MSS	8888	30	82245154515 00
	OCT 30	MSS	2888	10	82281154455 00
	NOV 17	MSS	5555	10	82299154445 00
	1976				
	FEB 24	MSS	8885	10	85311152025 00
	MAR 22	MSS	8888	10	82425154225 00
	APR 9	MSS	8888	0	82443154155 00
	APR 18	MSS	5888	30	85365151645 00
	JUN 2	MSS	8888	0	82497154025 00
	JUN 11	MSS	9888	10	85419151305 00
	JUN 20	MSS	8888	0	82515153955 00
	JUL 8	MSS	8888	10	82533153925 00
	JUL 17	MSS	8888	30	85455151005 00
	JUL 26	MSS	8588	30	82551153855 00
	AUG 22	MSS	8888	10	85491150705 00
	SEP 18	MSS	8888	10	82605153725 00
	NOV 29	MSS	8888	20	82677153445 00
	1977				
	JAN 4	MSS	5888	20	82713153315 00
	JAN 22	MSS	8888	10	82731153235 00
	MAY 10	MSS	8888	10	82839152735 00
	MAY 28	MSS	8888	0	82857152645 00
	JUN 3	MSS	888	10	85776144155 00
	JUN 15	MSS	8888	10	82875152545 00
10					
(23,30)	1972				
	AUG 25	COL	5BGR	20	81033155805N2
	AUG 25	MSS	8888	30	81033155805N0
	1973				
	JAN 16	MSS	8888	10	81177155825N0
	MAY 4	MSS	8888	10	81285155905N0
	JUN 9	COL	98GR	0	81321155845N2
	JUN 9	MSS	8888	0	81321155845N0
	AUG 20	MSS	8888	30	81393155745N0

NOMINAL CENTER	IMAGE DATE	IMAGE TYPE	BAND QUALITY	CLOUD COVER	FRAME NUMBER
10					
(23,30)	1973				
	SEP 7	MSS	8882	20	81411155725N0
	1974				
	JAN 11	MSS	8888	30	81537155505N0
	MAR 6	COL	7BGR	10	81591155345N2
	MAR 6	MSS	8888	10	81591155345N0
	JUL 28	MSS	5888	10	81735154945N0
	OCT 26	MSS	5858	0	81825154655N0
	1975				
	FEB 3	MSS	8858	20	82012154925N0
	FEB 3	RBV	588	30	82012154922N0
	APR 6	MSS	8588	0	81987154005N0
	JUN 26	MSS	5585	20	82155154655 00
	JUL 5	MSS	5885	10	85077153515 00
	AUG 1	MSS	5558	10	82191154625 00
	SEP 24	MSS	5588	30	82245154535 00
	NOV 17	MSS	5588	0	82299154505 00
	1976				
	JAN 10	MSS	8888	30	82353154435 00
	MAR 22	MSS	8888	10	82425154255 00
	APR 9	MSS	8888	0	82443154215 00
	APR 18	MSS	8888	20	85365151705 00
	JUN 2	MSS	8888	10	82497154055 00
	JUN 11	MSS	5888	20	85419151325 00
	JUN 20	MSS	8888	10	82515154025 00
	JUL 8	MSS	8888	10	82533153955 00
	JUL 17	MSS	8588	10	85455151035 00
	JUL 26	MSS	5888	10	82551153925 00
	AUG 22	MSS	5888	0	85491150735 00
	AUG 31	MSS	8888	20	82587153815 00
	SEP 18	MSS	8888	10	82605153745 00
	1977				
	JAN 4	MSS	8858	10	82713153345 00
	JAN 22	MSS	8888	20	82731153305 00
	MAY 10	MSS	8888	10	82839152805 00
	MAY 16	MSS	888	10	85758144405 00
	MAY 28	MSS	8888	10	82857152705 00
	JUN 3	MSS	888	10	85776144225 00
	JUN 15	MSS	8888	0	82875152615 00
11					
(23,31)	1972				
	AUG 25	MSS	8888	30	81033155825N0
	DEC 11	MSS	8 8	30	81141155915N0
	1973				
	JAN 16	MSS	8888	10	81177155845N0
	JAN 16	COL	7BGR	10	81177155845N2
	MAR 11	MSS	8882	30	81231155935N0
	MAY 4	MSS	8888	10	81285155925N0
	MAY 4	COL	5BGR	10	81285155925N2
	JUN 9	COL	7BGR	0	81321155905N2
	JUL 15	MSS	5BGR	30	81357155845N0
	AUG 20	MSS	8888	30	81393155815N0
	SEP 7	MSS	8882	30	81411155755N0
	SEP 25	MSS	8888	20	81429155725N0
	1974				
	JAN 11	MSS	8822	30	81537155535N0
	JUL 28	MSS	5588	20	81735155015N0
	AUG 15	MSS	8888	10	81753154935N0

NOMINAL CENTER	IMAGE DATE	IMAGE TYPE	BAND QUALITY	CLOUD COVER	FRAME NUMBER
11					
(23,31)	1974 OCT 26	MSS	8888	10	81825154725N0
	1975 FEB 3	MSS	8888	20	82012134955N0
	FEB 20	MSS	5888	10	82029154735N0
	APR 6	MSS	8888	10	81987154025N0
	JUN 8	MSS	8888	20	82137154725N0
	JUL 5	MSS	5555	20	85077153535O0
	AUG 1	MSS	5555	20	82191154655O0
	NOV 17	MSS	5555	0	82299154535O0
	1976 JAN 1	MSS	5855	30	85257152435O0
	MAR 22	MSS	8888	20	82425154315O0
	APR 9	MSS	8888	0	82443154245O0
	APR 18	MSS	5888	10	85365151735O0
	JUN 2	MSS	5885	30	82497154115O0
	JUN 11	MSS	8588	10	85419151355O0
	JUN 20	MSS	8888	10	82515154045O0
	JUL 8	MSS	8888	10	82533154015O0
	JUL 17	MSS	8888	20	85455151055O0
	JUL 26	MSS	8888	10	82551153945O0
	AUG 4	MSS	8288	20	85473150925O0
	AUG 22	MSS	5888	10	85491150755O0
	AUG 31	MSS	8888	30	82587153845O0
	SEP 18	MSS	8888	20	82605153815O0
	OCT 15	MSS	8888	0	85545150335O0
	1977 JAN 4	MSS	8888	30	82713153405O0
	JAN 22	MSS	8888	30	82731153325O0
	MAY 10	MSS	8888	0	82839152825O0
	MAY 16	MSS	888	10	85758144425O0
	MAY 28	MSS	8888	10	82857152735O0
	JUN 3	MSS	888	10	85776144245O0
	JUN 15	MSS	8888	10	82875152635O0
12					
(24,27)	1973 MAY 5	MSS	8888	0	81286160335N0
	MAY 5	COL	7RGR	10	81286160335N2
	JUL 16	MSS	8888	0	81359160245N0
	JUL 16	COL	8RGR	0	81358160245N2
	AUG 3	MSS	8888	10	81376160235N0
	AUG 3	COL	7RGR	10	81376160235N2
	AUG 21	MSS	8888	10	81394160215N0
	NOV 19	MSS	8828	0	81484160035N0
	1974 MAY 18	MSS	8888	30	81664155635N0
	JUL 11	MSS	8888	0	81718155455N0
	OCT 27	MSS	5858	10	81826155125N0
	DEC 2	MSS	5858	0	81862154955N0
	1975 MAR 20	MSS	8858	30	81970154525N0
	APR 7	MSS	5858	0	81988154425N0
	APR 16	MSS	8855	20	82084155125N0
	APR 25	MSS	8858	30	85006154335N0
	MAY 13	MSS	0558	10	85024154235N0
	MAY 22	MSS	5855	10	82120155055N0
	AUG 20	MSS	5888	30	82210155015O0
	SEP 25	MSS	5888	10	82246155005O0
	OCT 13	MSS	5555	30	82264154955O0

NOMINAL CENTER	IMAGE DATE	IMAGE TYPE	BAND QUALITY	CLOUD COVER	FRAME NUMBER
12					
(24,27)	1975				
	DEC 6	MSS	5888	30	8231815492500
	1976				
	MAY 25	MSS	8888	30	8540215190500
	JUN 21	MSS	8588	0	8251615445500
	JUN 30	MSS	8888	10	8543815162500
	JUL 9	MSS	5588	30	8253415442500
	JUL 27	MSS	8888	30	8255215435500
	AUG 14	MSS	8888	20	8257015431500
	AUG 23	MSS	8888	20	8549215115500
	SEP 10	MSS	8888	30	8551015102500
	1977				
	JAN 5	MSS	8888	20	8271415381500
	FEB 16	MSS	5888	20	8566914563500
	MAY 11	MSS	8888	10	8284015322500
13					
(24,28)	1973				
	MAR 12	MSS	8888	30	81232160405N0
	APR 17	COL	5BGR	20	81268160405N2
	MAY 5	MSS	8888	0	81286160355N0
	MAY 5	COL	7BGR	0	81286160355N2
	JUL 16	MSS	8828	10	81358160315N0
	AUG 3	MSS	8828	10	81376160255N0
	AUG 21	MSS	8888	10	81394160245N0
	SEP 8	MSS	8888	20	81412160225N0
	NOV 19	MSS	8888	30	81484160105N0
	1974				
	FEB 17	MSS	8888	30	81574155855N0
	JUN 5	MSS	8888	20	81682155625N0
	JUL 11	MSS	8888	0	81718155515N0
	OCT 27	MSS	5558	10	81826155155N0
	DEC 2	MSS	8888	0	81862155025N0
	1975				
	FEB 3	RBV	555	20	82012154902N0
	FEB 3	MSS	8858	20	82012154905N0
	FEB 21	MSS	8885	20	82030155205N0
	APR 7	MSS	5858	10	81988154455N0
	APR 25	MSS	8555	30	85006154355N0
	MAY 13	MSS	2888	0	85024154305N0
	MAY 22	MSS	5555	30	82120155125N0
	AUG 11	MSS	5588	20	8511415375500
	OCT 13	MSS	5555	10	8226415502500
	1976				
	MAY 25	MSS	8888	30	8540215192500
	JUN 3	MSS	8888	10	8249815454500
	JUN 21	MSS	5858	10	8251615451500
	JUL 18	MSS	5888	30	8545615152500
	JUL 27	MSS	8888	10	8255215441500
	AUG 23	MSS	8588	10	8549215122500
	SEP 10	MSS	8858	20	8551015105500
	OCT 7	RBV	555	30	8252415421200
	1977				
	FEB 10	MSS	8888	30	8275015371500
	FEB 16	MSS	5588	10	8566914565500
	FEB 28	MSS	8888	30	8276815363500
	MAR 18	MSS	8888	30	8278615354500
	APR 23	MSS	8888	20	8282215335500
	MAY 11	MSS	8888	10	8284015325500

NOMINAL CENTER	IMAGE DATE	IMAGE TYPE	BAND QUALITY	CLOUD COVER	FRAME NUMBER
14					
(24, 29)	1973				
	MAY 5	MSS	8888	0	81286160425N0
	MAY 5	COL	78GR	0	81286160425N2
	JUN 10	MSS	8828	10	81322160405N0
	JUL 16	MSS	8828	10	81358160335N0
	AUG 3	MSS	8888	0	81376160325N0
	AUG 21	MSS	8888	10	81394160305N0
	OCT 14	MSS	8888	20	81448160145N0
	NOV 19	MSS	8888	20	81484160125N0
	1974				
	MAR 7	MSS	8888	30	81592155905N0
	JUL 11	MSS	8888	0	81718155545N0
	OCT 27	MSS	5558	20	81826155215N0
	DEC 2	MSS	8888	10	81862155045N0
	1975				
	FEB 21	MSS	5888	20	82030155235N0
	APR 7	MSS	5858	10	81988154515N0
	APR 16	MSS	8888	20	82084155215N0
	MAY 13	MSS	2588	0	85024154325N0
	AUG 11	MSS	5588	30	85114153815O0
	OCT 13	MSS	5555	10	82264155045O0
	1976				
	MAR 23	MSS	8888	30	82426154805O0
	MAY 25	MSS	8588	20	85402151955O0
	JUN 3	MSS	5888	0	82498154605O0
	JUN 12	MSS	5888	10	85420151845O0
	JUN 21	MSS	5858	20	82516154545O0
	JUL 18	MSS	5888	10	85456151545O0
	JUL 27	MSS	8888	10	82552154445O0
	AUG 23	MSS	8888	0	85492151245O0
	SEP 1	MSS	5588	30	82588154335O0
	SEP 10	MSS	5888	20	85510151115O0
	1977				
	FEB 16	MSS	8588	20	85669145725O0
	FEB 28	MSS	8888	20	82769153655O0
	APR 23	MSS	8888	10	82822153415O0
	MAY 11	MSS	8888	20	82840153315O0
	MAY 29	MSS	5888	30	82858153225O0
15					
(24,30)	1973				
	MAR 16	MSS	8828	10	81358160405N0
	AUG 21	MSS	8828	10	81394160335N0
	OCT 14	COL	78GR	0	81448160215N2
	OCT 14	MSS	2882	0	81448160215N0
	1974				
	JUL 11	MSS	8588	0	81718155605N0
	JUL 29	MSS	8885	30	81736155525N0
	SEP 21	MSS	8885	30	81790155325N0
	OCT 27	MSS	5558	20	81826155245N0
	DEC 2	MSS	8858	10	81862155115N0
	1975				
	MAR 20	MSS	5558	10	81970154635N0
	APR 7	MSS	8858	10	81988154545N0
	APR 16	MSS	8888	30	82084155235N0
	MAY 13	MSS	2888	0	85024154355N0
	AUG 11	MSS	5558	20	85114153845O0
	OCT 13	MSS	5558	10	82264155115O0
	NOV 18	MSS	5555	30	82300155045O0

NOMINAL CENTER	IMAGE DATE	IMAGE TYPE	BAND QUALITY	CLOUD COVER	FRAME NUMBER
15					
(24,30)	1976				
	MAR 23	MSS	8888	0	8242615483500
	APR 28	MSS	0588	10	8246215472500
	MAY 25	MSS	8588	10	8540215201500
	JUN 3	MSS	5888	0	8249815463500
	JUN 12	MSS	5588	10	8542015190500
	JUL 18	MSS	5588	0	8545615161500
	JUL 27	MSS	5888	30	8255215450500
	AUG 23	MSS	8588	20	8549215131500
	SEP 10	MSS	8858	20	8551015114500
	DEC 18	MSS	5588	20	8269615400500
	1977				
	FEB 10	MSS	8888	10	8275015380500
	FEB 16	MSS	8888	10	8566914574500
	FEB 28	MSS	8888	20	8276815372500
	APR 23	MSS	8888	30	8282215344500
16					
(25,27)	1972				
	SEP 14	MSS	2822	10	81053160815N0
	OCT 20	MSS	8888	0	81089160845N0
	1973				
	MAR 31	MSS	8888	10	81251160925N0
	APR 18	MSS	8888	10	81269160925N0
	AUG 4	MSS	8888	10	81377160815N0
	AUG 22	MSS	8882	20	81395160755N0
	SEP 9	MSS	8882	0	81413160735N0
	SEP 27	COL	5BGR	30	81431160715N2
	SEP 27	MSS	8888	10	81431160715N0
	OCT 15	MSS	8888	10	81449160645N0
	1974				
	MAR 26	MSS	2822	30	81611160335N0
	MAY 1	MSS	2888	20	81647160245N0
	MAY 19	MSS	2888	0	81665160215N0
	JUN 24	MSS	8888	10	81701160105N0
	JUL 12	MSS	8888	20	81719160035N0
	AUG 17	MSS	5588	10	81755155915N0
	SEP 4	MSS	0888	0	81773155835N0
	OCT 10	MSS	5888	10	81809155725N0
	1975				
	APR 8	MSS	8588	10	81989155005N0
	APR 26	MSS	2888	0	85007154915N0
	AUG 3	MSS	5555	30	82193155635O0
	AUG 12	MSS	5550	30	85115154305O0
	SEP 26	MSS	5588	10	82247155555O0
	1976				
	MAR 24	MSS	5555	30	82427155305O0
	APR 2	MSS	8888	10	85349152825O0
	APR 11	MSS	5888	10	82445155225O0
	MAY 26	MSS	8888	10	85403152445O0
	JUN 4	MSS	5885	0	82499155105O0
	JUN 22	MSS	8888	10	82517155035O0
	JUL 1	MSS	8888	10	85439152205O0
	AUG 6	MSS	8888	10	85475151905O0
	AUG 15	MSS	8588	10	82571154855O0
	AUG 24	MSS	8888	0	85493151735O0
	SEP 2	RBV	585	10	82589154832O0
	SEP 2	MSS	8885	10	82589154835O0
	SEP 11	MSS	8888	0	85511151605O0
	SEP 20	MSS	8558	10	82607154805O0

NOMINAL CENTER	IMAGE DATE	IMAGE TYPE	BAND QUALITY	CLOUD COVER	FRAME NUMBER
16					
(25,27)	1977				
	MAR 1	MSS	8858	10	8276915414500
	MAR 19	MSS	8888	10	8278715405500
	MAY 30	MSS	5558	10	8285915371500
17					
(25,28)	1972				
	SEP 14	MSS	2822	10	8105316084 5N0
	OCT 20	MSS	8888	0	8108916090 5N0
	OCT 20	COL	68GP	0	8108916090 5N2
	1973				
	MAR 31	MSS	8888	10	8125116095 5N0
	APR 18	MSS	8888	10	8126916095 5N0
	JUL 17	MSS	8888	30	8135916085 5N0
	AUG 4	MSS	8888	10	8133716084 5N0
	SEP 9	MSS	8888	0	8141316080 5N0
	SEP 9	COL	7PGP	10	8141316080 5N2
	SEP 27	MSS	8888	30	8143116073 5N0
	OCT 15	MSS	8888	10	8144916070 5N0
	1974				
	MAR 26	MSS	2822	10	8161116040 5N0
	MAY 1	MSS	8888	10	8164716031 5N0
	MAY 19	MSS	8888	0	8166516024 5N0
	JUL 12	MSS	8888	30	8171916005 5N0
	AUG 17	MSS	8888	10	8175515594 5N0
	SEP 4	MSS	0888	20	8177315585 5N0
	OCT 10	MSS	5858	10	8180915575 5N0
	1975				
	FEB 13	MSS	8858	30	8193515530 5N0
	APR 8	MSS	8888	0	8198915503 5N0
	APR 26	MSS	2888	10	8500715493 5N0
	MAY 23	MSS	8585	10	8212115571 5N0
	JUN 1	MSS	5558	30	8504315474 5N0
	JUL 7	MSS	8888	30	8507915454 500
	JUL 16	MSS	5858	10	8217515572 500
	AUG 3	MSS	5555	20	8219315570 500
	AUG 30	MSS	55 5	20	8513315423 500
	SEP 26	MSS	5558	10	8224715561 500
	NOV 1	MSS	5555	10	8228315555 00
	1976				
	FEB 26	MSS	8888	20	8531315311 500
	MAR 24	MSS	5555	30	8242715532 500
	APR 2	MSS	8588	0	8534915285 500
	APR 11	MSS	8888	10	8244515525 500
	APR 20	MSS	5555	30	8536715273 500
	MAY 8	MSS	8888	20	8538515262 500
	MAY 26	MSS	8888	10	8540315251 500
	JUN 4	MSS	8885	0	8249915512 500
	JUL 1	MSS	8888	20	8543915223 500
	AUG 6	MSS	5888	10	8547515193 500
	AUG 15	MSS	8888	30	8257115492 500
	AUG 24	MSS	8888	0	8549315180 500
	SEP 2	RBV	558	10	8258915485 200
	SEP 2	MSS	8888	10	8258915485 500
	SEP 11	MSS	5888	0	8551115163 500
	SEP 20	MSS	8888	20	8260715482 500
	SEP 29	MSS	8888	10	8552915150 500
	NOV 13	MSS	8588	10	8266115463 500
	DEC 1	MSS	5888	30	8267915454 500
	1977				
	MAR 1	MSS	5855	10	8276915421 500

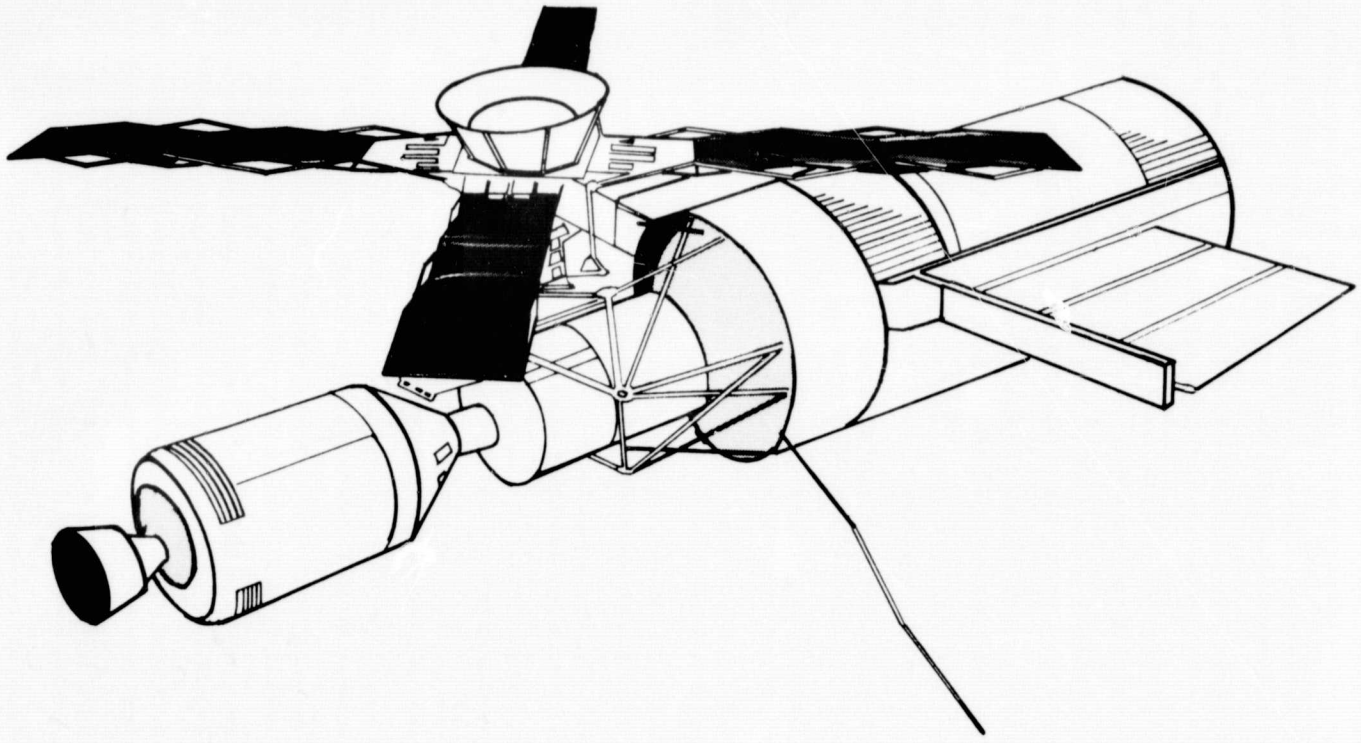
NOMINAL CENTER	IMAGE DATE	IMAGE TYPE	BAND QUALITY	CLOUD COVER	FRAME NUMBER
17					
(25,28)	1977				
	MAR 19	MSS	8888	10	8278715412500
	APR 6	MSS	8888	30	8280515402500
18					
(25,29)	1972				
	AUG 9	MSS	8888	20	8101716091560
	SEP 14	MSS	2822	10	8105316090560
	OCT 20	MSS	8888	20	8108916093560
	DEC 13	MSS	8828	30	8114316095560
	1973				
	FEB 23	MSS	8888	20	8121516100560
	MAR 13	MSS	8888	30	8123316101560
	APR 18	MSS	8888	10	8126916101560
	JUN 11	COL	6BGR	30	8132316094562
	JUN 11	MSS	8882	10	8132316094560
	JUL 17	COL	7BGR	0	8135916091562
	JUL 17	MSS	8888	0	8135916091560
	AUG 4	MSS	2888	20	8137716090560
	AUG 22	MSS	8882	20	8139516084560
	OCT 15	MSS	8888	20	8144916073560
	1974				
	JAN 31	MSS	8882	10	8155716052560
	MAR 26	MSS	2822	20	8161116042560
	MAY 1	MSS	8888	30	8164716033560
	AUG 17	MSS	8888	20	8175516000560
	OCT 10	MSS	8888	0	8180915581560
	1975				
	FEB 13	MSS	5888	10	8193515533560
	MAR 3	MSS	8888	30	8195315524560
	APR 8	MSS	5888	10	8198915505560
	APR 26	MSS	5888	20	8500715500560
	MAY 23	MSS	5588	20	8212115574560
	JUN 1	MSS	5555	20	8504315481560
	JUL 16	MSS	8558	10	8217515574500
	AUG 3	MSS	5555	20	8219315572500
	SEP 26	MSS	5888	10	8224715564500
	NOV 1	MSS	5555	0	8228315562500
	NOV 19	MSS	5555	30	8230115560500
	1976				
	FEB 26	MSS	8858	10	8531315314500
	MAR 15	MSS	8888	10	8533115303500
	APR 2	MSS	8888	0	8534915291500
	APR 11	MSS	8888	10	8244515531500
	MAY 8	MSS	8888	0	8533515264500
	MAY 17	MSS	8888	20	8248115521500
	MAY 26	MSS	8588	10	8540315253500
	JUN 4	MSS	8855	0	8249915515500
	JUN 13	MSS	8888	10	8542115242500
	JUL 1	MSS	8888	10	8543915225500
	AUG 6	MSS	5888	30	8547515195500
	AUG 15	MSS	8888	30	8257115494500
	AUG 24	MSS	8888	0	8549315182500
	SEP 2	RBV	588	30	8258915492200
	SEP 2	MSS	8888	20	8258915492500
	SEP 11	MSS	8888	0	8551115165500
	SEP 29	MSS	8888	10	8552915153500
	OCT 17	MSS	5888	20	8554715140500
	NOV 13	MSS	5889	0	8266115465500
	1977				
	MAR 1	MSS	8858	0	8276915423500

NOMINAL CENTER	IMAGE DATE	IMAGE TYPE	BAND QUALITY	CLOUD COVER	FRAME NUMBER
18					
(25,29)	1977				
	MAR 19	MSS	8888	10	8278715414500
	APR 6	MSS	8888	10	8280515405500
	MAY 12	MSS	8888	30	8284115385500
	MAY 30	MSS	8858	20	8285915380500
19					
(26,27)	1972				
	AUG 28	MSS	8828	10	8103616140 5N0
	DEC 14	MSS	8888	30	8114416145 5N0
	1973				
	JUN 12	MSS	8888	30	8132416143 5NC
	SEP 28	MSS	8882	0	8143216125 5NC
	SEP 28	COL	78GR	0	8143216125 5N2
	1974				
	MAR 27	MSS	8888	10	8161216091 5N0
	MAY 20	MSS	8888	30	8166616075 5N0
	JUN 25	MSS	5588	10	8170216065 5N0
	JUL 14	COL	58GR	10	8172116115 5N2
	AUG 19	MSS	2888	30	8175716104 5N0
	SEP 5	MSS	5805	0	8177416041 5N0
	1975				
	MAR 31	MSS	5585	30	8206816025 5N0
	MAY 6	MSS	5888	30	8210416025 5N0
	JUN 2	MSS	5585	10	8504415530 5N0
	JUL 8	MSS	5555	10	8508015505 500
	AUG 4	MSS	5555	20	8219416021 500
	SEP 9	MSS	5555	20	8223016014 500
	SEP 27	MSS	5558	0	8224816013 500
	1976				
	APR 12	MSS	8888	0	8244615580 500
	MAY 9	MSS	8888	0	8538615313 500
	MAY 18	MSS	8558	0	8248215571 500
	JUN 5	MSS	8558	10	8250015564 500
	JUN 14	MSS	5888	10	8542215291 500
	JUN 23	MSS	5558	10	8251815561 500
	JUL 29	MSS	8888	30	8255415551 500
	AUG 7	MSS	8888	0	8547615244 500
	AUG 16	MSS	8588	0	8257215544 500
	AUG 25	MSS	8888	30	8549415231 500
	SEP 3	MSS	5888	30	8259015541 500
	SEP 12	MSS	8588	20	8551215214 500
	SEP 30	MSS	8888	10	8553015201 500
	NOV 14	MSS	8585	10	8266215514 500
	1977				
	JAN 25	MSS	8888	30	8273415485 500
	MAR 2	MSS	8888	10	8277015473 500
	MAR 20	MSS	5888	20	8278815463 500
	APR 25	MSS	8888	0	8282415444 500
	MAY 13	MSS	8885	20	8284215434 500
20					
(26,28)	1972				
	AUG 28	MSS	8828	0	8103616143 5N0
	DEC 14	MSS	8888	0	8114416151 5N0
	1973				
	AUG 5	MSS	2888	30	8137816142 5N0
	SEP 28	MSS	8882	30	8143216132 5N0

NOMINAL CENTER	IMAGE DATE	IMAGE TYPE	BAND QUALITY	CLOUD COVER	FRAME NUMBER
20					
(26,28)	1974				
	FEB 19	MSS	8888	0	81576161025N0
	MAY 2	COL	7BGR	10	81648160855N2
	MAY 2	MSS	2888	0	81648160855N0
	MAY 20	MSS	8888	20	81666160825N0
	JUN 25	MSS	8588	20	81702160715N0
	JUL 13	MSS	8888	20	81720160645N0
	SEP 5	MSS	8808	10	81774160445N0
	SEP 23	MSS	5858	30	81792160355N0
	1975				
	MAR 4	MSS	8555	10	81954155755N0
	JUL 17	MSS	5558	0	82176160305O0
	AUG 4	MSS	5558	20	82194160245O0
	SEP 27	MSS	5588	0	82248160155O0
	1976				
	JAN 4	MSS	5888	10	85260154025O0
	FEB 9	MSS	8585	20	85296153805O0
	MAR 25	MSS	8888	10	82428155905O0
	APR 12	MSS	8888	0	82446155835O0
	MAY 9	MSS	8888	0	85386153205O0
	MAY 18	MSS	8888	0	82482155735O0
	MAY 27	MSS	8888	30	85404153055O0
	JUN 5	MSS	8888	10	82500155705O0
	JUN 14	MSS	5858	10	85422152935O0
	JUN 23	MSS	8888	30	82518155645O0
	JUL 29	MSS	8888	20	82554155535O0
	AUG 7	MSS	8888	0	85476152515O0
	AUG 16	MSS	8888	10	82572155505O0
	AUG 25	MSS	8888	10	85494152345O0
	SEP 12	MSS	8888	10	85512152215O0
	SEP 30	MSS	8888	0	85530152045O0
	OCT 27	MSS	8888	10	82644155255O0
	NOV 14	MSS	8888	0	82662155215O0
	DEC 20	MSS	8888	30	82698155045O0
	1977				
	JAN 7	MSS	8808	10	82716154955O0
	JAN 25	MSS	8888	30	82734154915O0
	MAR 2	MSS	8888	20	82770154755O0
	MAR 20	MSS	5588	10	82788154705O0
	APR 25	MSS	8888	10	82824154515O0
	MAY 13	MSS	8888	10	82842154415O0
21					
(27,27)	1972				
	AUG 29	COL	5BGR	20	81037161955N2
	AUG 29	MSS	8888	20	81037161955N0
	1973				
	FEB 7	MSS	8888	20	81199162035N0
	FEB 25	COL	8BGR	10	81217162045N2
	FEB 25	MSS	8888	0	81217162045N0
	JUN 13	COL	8BGR	10	81325162025N2
	JUN 13	MSS	8832	10	81325162025N0
	JUL 19	MSS	8888	20	81361161955N0
	AUG 24	MSS	2822	30	81397161925N0
	SEP 11	COL	68GR	20	81415161905N2
	SEP 11	MSS	8888	30	81415161905N0
	1974				
	MAR 10	MSS	8888	20	81595161525N0
	JUN 8	MSS	8888	30	81685161305N0
	JUN 26	COL	6BGR	10	81703161235N2

NOMINAL CENTER	IMAGE DATE	IMAGE TYPE	BAND QUALITY	CLOUD COVER	FRAME NUMBER
21					
(27,27)	1974				
	OCT 12	MSS	5855	30	81811160855N0
	NOV 17	MSS	8558	10	81847160745N0
	1975				
	APR 1	MSS	8885	30	82069160835N0
	MAY 7	MSS	8558	20	82105160825N0
	MAY 16	MSS	5888	0	85027155945N0
	MAY 25	MSS	5558	30	82123160825G0
	JUL 18	MSS	M555	20	82177160825G0
	AUG 5	MSS	5555	20	82195160805G0
	SEP 28	MSS	5555	10	82249160715G0
	NOV 3	MSS	5555	20	82285160655G0
	1976				
	MAR 17	MSS	8888	10	95333154105G0
	APR 13	MSS	5888	10	82447160355G0
	MAY 10	MSS	5888	10	85387155715G0
	JUN 6	MSS	5855	10	82501160225G0
	JUL 3	MSS	5558	10	85441155325G0
	JUL 21	MSS	5588	20	85459155315G0
	AUG 8	MSS	8888	0	85477155025G0
	AUG 17	MSS	5888	20	82573160025G0
	NOV 15	MSS	8888	30	82663155735G0
	1977				
	FEB 13	MSS	8888	30	82753155355G0
	MAR 21	MSS	M888	10	82789155225G0
	APR 8	MSS	8888	10	82807155125G0
	APR 26	MSS	5888	10	82825155025G0
	MAY 14	MSS	8888	20	82843154935G0
22					
(27,28)	1972				
	AUG 29	MSS	8888	30	81037162015N0
	1973				
	JAN 2	MSS	9888	10	81163162045N0
	FEB 7	COL	8BGR	10	81199162105N2
	FEB 7	MSS	8888	10	81199162105N0
	FEB 25	COL	7BGR	0	81217162115N2
	FEB 25	MSS	8888	0	81217162115N0
	JUN 13	MSS	8888	10	81325162045N0
	SEP 29	MSS	9828	30	81433161905N0
	1974				
	MAR 10	MSS	8888	10	81595161545N0
	APR 15	MSS	2888	0	81631161505N0
	JUN 26	MSS	5588	10	81703161255N0
	JUL 14	MSS	8588	30	81721161225N0
	AUG 19	COL	8BGR	10	81757161105N2
	AUG 19	MSS	2888	10	81757161105N0
	OCT 12	MSS	5858	20	81811160915N0
	NOV 17	MSS	8888	0	81847160815N0
	DEC 5	MSS	5858	0	81865160725N0
	1975				
	FEB 6	MSS	8888	20	82015160915N0
	FEB 6	RBV	555	10	82015160912N0
	MAR 14	MSS	8888	0	82051160905N0
	APR 1	MSS	8858	30	82069160855N0
	MAY 16	MSS	5888	0	85027160005N0
	JUL 18	MSS	M555	20	82177160855G0
	OCT 7	MSS	5555	0	85171155145G0
	1976				
	JAN 5	MSS	5888	10	85261154605G0

NOMINAL CENTER	IMAGE DATE	IMAGE TYPE	BAND QUALITY	CLOUD COVER	FRAME NUMBER
22					
(27,28)	1976				
	MAR 17	MSS	8888	10	853331541250 0
	MAY 10	MSS	8888	10	853871537450 0
	JUN 6	MSS	5858	0	825011602550 0
	JUL 3	MSS	5888	0	854411533450 0
	JUL 21	MSS	8888	20	854591532250 0
	AUG 8	MSS	8888	10	854771530550 0
	AUG 17	MSS	5888	10	825731600450 0
	OCT 1	MSS	5888	0	855311526250 0
	OCT 28	MSS	8888	10	826451558350 0
	NOV 15	MSS	0888	10	826631557550 0
	DEC 21	MSS	8888	10	826991556250 0
	1977				
	MAR 21	MSS	5888	10	827891552450 0
	APR 8	MSS	8888	0	828071551550 0
	APR 26	MSS	8888	10	828251550550 0
	MAY 14	MSS	8888	20	828431549550 0



SKYLAB
SPACECRAFT IMAGERY

SECTION 4
SKYLAB IMAGERY

GENERAL INFORMATION

On May 14, 1973, the first orbital workshop, Skylab, was launched into a near-earth orbit at a nominal altitude of 270 miles (435 km). The spacecraft was positioned so as to pass over any given point between latitudes 50 degrees north and 50 degrees south of the equator every five days. One of the objectives of this manned spacecraft mission was to provide a synoptic survey of selected areas on the earth using the Earth Resources Experiment Package (EREP) remote sensing system.

The Skylab program consisted of four missions, with Skylab 1 being the launch of the unmanned spacecraft. Skylabs 2 through 4 were manned missions during which the sensors were operated between May 24 and June 7, 1973; July 28 and September 25, 1973; and November 16, 1973 and February 8, 1974, respectively. The sensors were operated individually or simultaneously, depending on the Skylab investigator's research requirements and other factors, such as weather and vehicle capability. Unlike Landsat (described in Section 3), only selected areas of the earth's surface that were of particular interest to the investigators were photographed.

EREP contained six remote sensing systems operating in selected spectral bands throughout the visible, infrared, and into the microwave region of the electromagnetic spectrum. Only the photographic camera systems, i.e., the Multispectral Photographic Camera (S-190A) and the Earth Terrain Camera (S-190B), are discussed in this guide. In addition to the vehicle-mounted camera imagery, the guide also covers imagery from the hand-held Hasselblad and Nikon cameras. A brief description of each system follows.

The Multispectral Photographic Camera (S-190A): This system is a composite unit of six high precision 70 mm cameras with 6 inch (152 mm) focal length lenses which are boresighted to obtain the same scene when fired simultaneously. Through the use of a different film/filter combination in each camera, a specific portion of the electromagnetic spectrum is captured and, consequently, the resultant images highlight

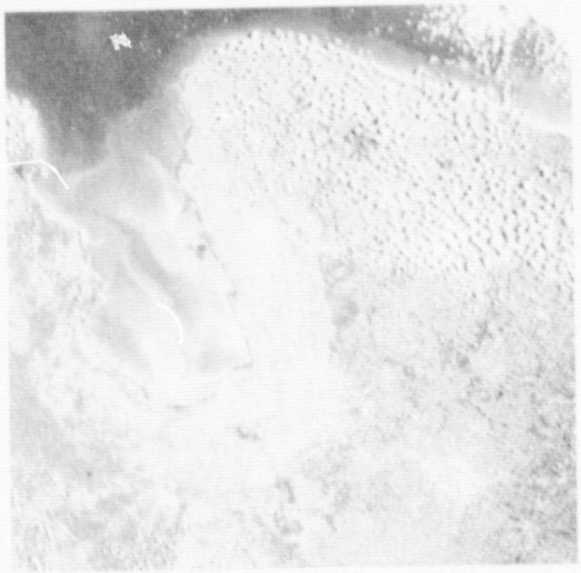
different features of the earth's surface (Fig. 4.1). Table 4.1 lists the spectral sensitivity, spectral range, film type and estimated ground resolution for each camera station.

Table 4.1.--S-190A Multispectral Camera Film Characteristics.

Camera	Sensitivity (nanometers)	Spectral Range	Film Type*	Estimated Ground Resolution** Meters	(Feet)
1	700-800	infrared	EK 2424 (B&W infrared)	76	(250)
2	800-900	infrared	EK 2424 (B&W infrared)	76	(250)
3	500-880	green, red infrared	EK 2443 (color infrared)	76	(250)
4	400-700	blue, green, red	SO-356 high resolution color	43	(140)
5	600-700	red	SO-022 (Panatomic-X B&W)	34	(112)
6	500-600	green	SO-022 (Panatomic-X B&W)	43	(140)

* Eastman Kodak Company
** At low contrast

SOURCE: Skylab Earth Resources Data Catalog (see Appendix A).



PAN (500-600nm)

PAN (600-700nm)

BWIR (700-800nm)

BWIR (800-900nm)

Figure 4.1.--Skylab S-190A Multiband Photos of the Saginaw Bay Area.

The exposed film was returned to the earth with the astronauts. The area covered by each processed 70 mm frame is 101 by 101 miles (163 by 163 km) at a scale of approximately 1:2,850,000. Michigan areas covered by the S-190A Multispectral Photographic Camera System are shown in Figure 4.2.

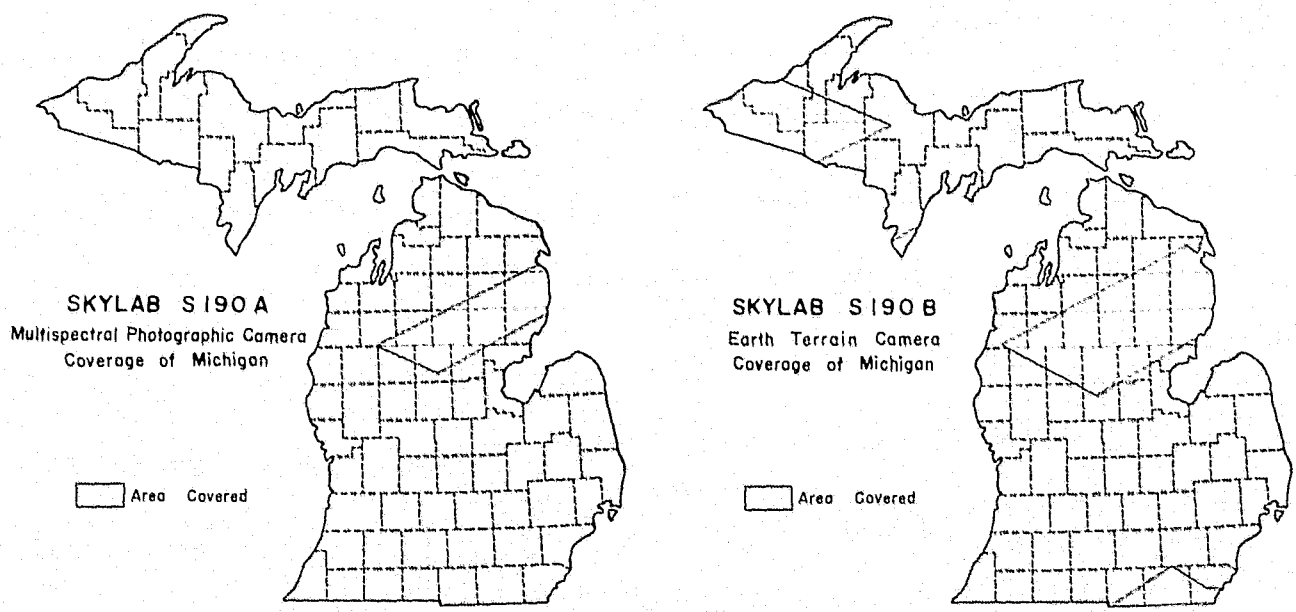


Figure 4.2.--Skylab Photographic Coverage of Michigan.

The S-190B Earth Terrain Camera: This sensor is a single-lens camera equipped with an 18 inch (460 mm) focal length lens which usually duplicates a portion of the imagery from the S-190A systems. The processed 4.5 inch (115 mm) format image (Fig. 4.3) is at a scale of approximately 1:950,000 and covers an area 68 by 68 miles (110 by 110 km). Michigan areas covered by the S-190B Earth Terrain Camera are also shown in Figure 4.2. The image characteristics of the film/filter combinations employed are presented in Table 4.2 (p. 4-8).

The Hasselblad 70 mm Format Camera: Unlike the S-190A and B cameras, this system was used by the Skylab crews to photograph individual scenes rather than continuous strips.

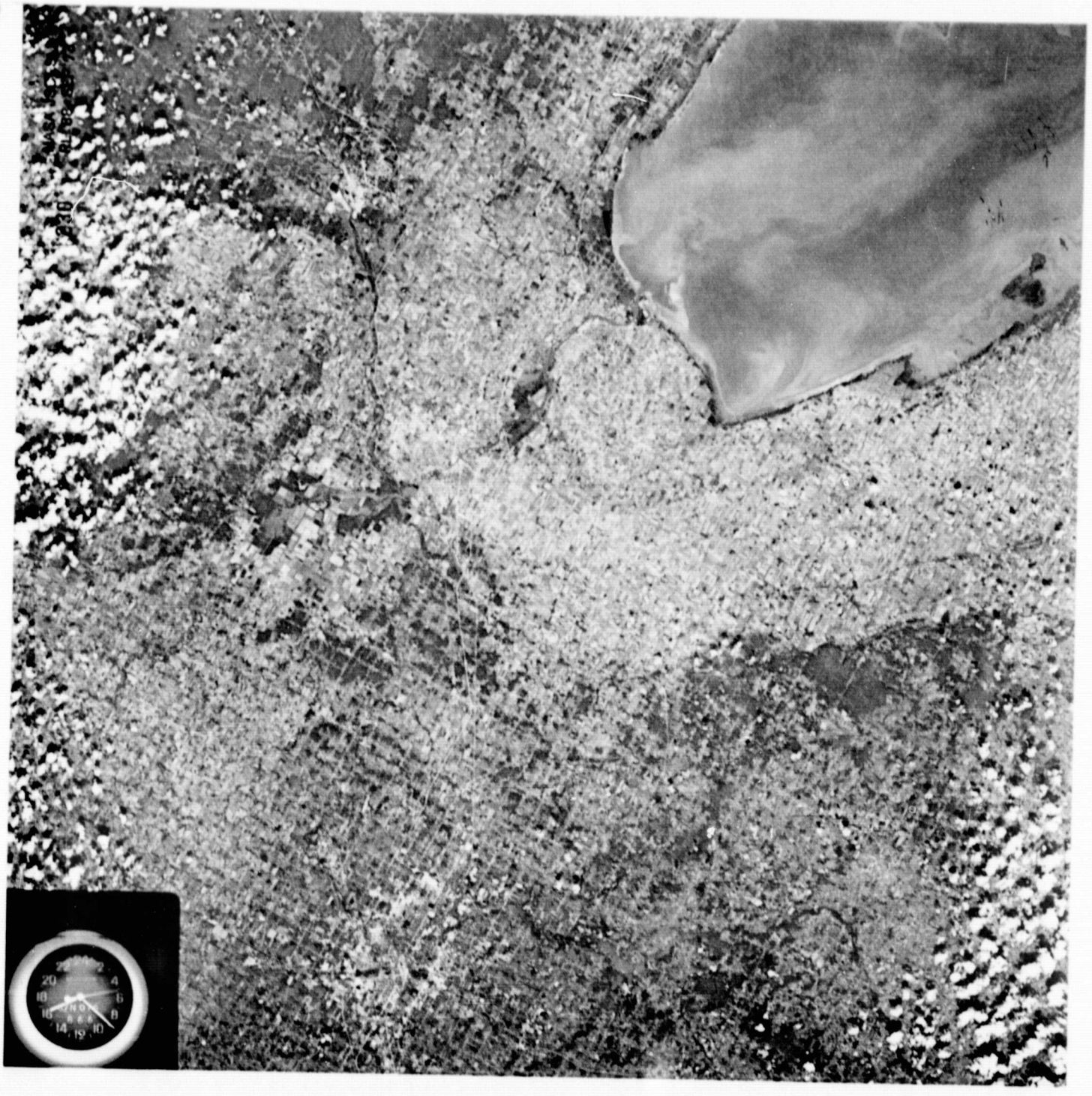


Figure 4.3.--Skylab S-190B Color Photo of the Saginaw Bay Area.

A 100 mm lens (80 mm for Skylab 2) and color film (Ektachrome SO-368) were used exclusively and imaged scenes varied from near vertical to high oblique. Variation in image quality is also present.

Table 4.2.--S-190B Earth Terrain Camera Film Characteristics.

Sensitivity (nanometers)	Spectral Range	Film Type*	Filter	Estimated Ground Resolution** Meters	(Feet)
400-700	blue, green red	SO-242 (high resolution color)	none	21	(70)
500-700	green, red	EK 3414 (high definition B&W)	W-12	17	(55)
500-880	green, red infrared	EK 3443 (SL2 & SL3 aerochrome color IR)	W-12	30	(100)
500-880	green, red infrared	SO-131 (SL4) (high resolution color IR)	W-12	23	(75)

* Eastman Kodak Company
** At low contrast

SOURCE: Skylab Earth Resources Data Catalog (see Appendix A).

The Nikon 35 mm Camera: This system, equipped with a 55/300 mm lens, was also used by the Skylab astronauts to photograph selected scenes of interest. As with the Hasselblad camera, color film was used and altitudinal variations occurred between individual frames. Image quality is highly variable and some photos are dark, hazy or blurred. This photography

may be of utility only when acceptable coverage from another camera system is not available.

HOW TO USE THE SKYLAB INDEXES

Three separate indexes have been compiled of Skylab photography. Image coverage from the Multispectral Photographic Camera (S-190A) and the Earth Terrain Camera (S-190B) is presented in the major map index while the coverage from the hand-held Hasselblad and Nikon cameras is listed in two subsequent indexes.

To select imagery from the major Skylab index, users should first refer to Table 4.3 which lists photo mission coverage by county. From this table a determination can be made as to which missions cover an area of interest. It is then possible to select the appropriate photo index maps for these missions. For ease of reference, a sequential number is assigned to each photo mission and appears at the top of Table 4.3 and in the upper right hand corner of the index maps.

The format of the index maps has been standardized to give information on photo mission identification, roll number, film type, film/filter sensitivity, frame number, date, scale and image format. Image centers and frame numbers of the color film rolls are shown, followed by the percentage of cloud cover in parentheses. Frame numbers for film types other than color film can be determined using the information supplied below the map. The frame coverage for every other photo in a flight sequence is also shown.

The indexes to the Hasselblad and Nikon photography list the photo identification number, the percentage of cloud and/or snow cover, quality evaluations and the general location of the photo coverage.

PRECEDING PAGE BLANK NOT FILMED

ORDER FORM

MANNED SPACECRAFT PHOTOGRAPHY

U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DATE _____

NAME MR / MS. _____ (FIRST) (INITIAL) (LAST) ACCOUNT NO. _____ (IF KNOWN)

COMPANY _____ (IF BUSINESS ASSOCIATED) PHONE (Bus.) _____

ADDRESS _____ PHONE (Home) _____

CITY _____ STATE _____ ZIP _____ Your Ref. No. _____ (P.O., GOVT ACCT OR OTHER)

PLEASE TYPE OR PRINT PLAINLY

PHOTO IDENTIFICATION NO.	PRODUCT CODE	QTY.	UNIT PRICE	TOTAL PRICE

TOTAL ABOVE — A
TOTAL FROM PREVIOUS SHEETS — B
TOTAL COST — C

STANDARD PRODUCTS

SKYLAB S190A-BLACK AND WHITE

IMAGE SIZE	SCALE	FORMAT	PRODUCT CODE
55.8mm (2.2 in.)	1:2,850,000	FILM POSITIVE	11
55.8mm (2.2 in.)	1:2,850,000	FILM NEGATIVE	01
16.3cm (6.4 in.)	1:1,000,000	PAPER	23
32.5cm (12.8 in.)	1:500,000	PAPER	24
65.0cm (25.6 in.)	1:250,000	PAPER	26

SKYLAB S190B-BLACK AND WHITE

IMAGE SIZE	SCALE	FORMAT	PRODUCT CODE
11.4cm (4.5 in.)	1:950,000	FILM POSITIVE	12
11.4cm (4.5 in.)	1:950,000	FILM NEGATIVE	02
11.4cm (4.5 in.)	1:950,000	PAPER	22
21.8cm (8.6 in.)	1:500,000	PAPER	23
43.4cm (17.1 in.)	1:250,000	PAPER	24
86.9cm (34.2 in.)	1:125,000	PAPER	26

APOLLO/GEMINI-BLACK AND WHITE

IMAGE SIZE	FORMAT	PRODUCT CODE
55.8mm (2.2 in.)	FILM POSITIVE	11
55.8mm (2.2 in.)	FILM NEGATIVE	01
22.6cm (8.9 in.)	PAPER	23
45.5cm (17.9 in.)	PAPER	24

SKYLAB S190A COLOR/INFRARED

55.8mm (2.2 in.)	1:2,850,000	FILM POSITIVE	51
16.3cm (6.4 in.)	1:1,000,000	PAPER	63
32.5cm (12.8 in.)	1:500,000	PAPER	64
65.0cm (25.6 in.)	1:250,000	PAPER	66

SKYLAB S190B-COLOR/INFRARED

11.4cm (4.5 in.)	1:950,000	FILM POSITIVE	52
11.4cm (4.5 in.)	1:950,000	PAPER	62
21.8cm (8.6 in.)	1:500,000	PAPER	63
43.4cm (17.1 in.)	1:250,000	PAPER	64
86.9cm (34.2 in.)	1:125,000	PAPER	66

APOLLO/GEMINI-COLOR

IMAGE SIZE	FORMAT	PRODUCT CODE
55.8mm (2.2 in.)	FILM POSITIVE	51
22.6cm (8.9 in.)	PAPER	63
45.5cm (17.9 in.)	PAPER	64

NOTE: Please refer to current price list for cost determination.

PAYMENT MADE BY:

CHECK, MONEY ORDER ☐
PURCHASE ORDER ☐
GOVT. ACCOUNT ☐

COMMENTS: _____

FORM: 9-1937 (Jan. 1977)

Return completed form to the facility nearest you.

NCIC HEADQUARTERS
U.S. Geological Survey
507 National Center
Reston, VA 22092
FTS: 928-6045
COMM: 703-860-6045

EROS APPLICATIONS FACILITY
NSTL
U.S. Geological Survey
Bay St. Louis, MS 39520
FTS: 494-3541
COMM: 688-3472

NCIC MID-CONTINENT
U.S. Geological Survey
1400 Independence Rd.
Rolla, MO 65401
FTS: 276-9107
COMM: 314-364-3680

EROS DATA CENTER
U.S. Geological Survey
Sioux Falls, SD 57198
FTS: 784-7151
COMM: 605-594-6511

NCIC ROCKY MOUNTAIN
U.S. Geological Survey
Stop 510, Box 25046
Denver Federal Ctr.
Denver, CO 80225
FTS: 234-2326
COMM: 303-234-2326

NCIC WESTERN
U.S. Geological Survey
345 Middlefield Rd.
Menlo Park, CA 94025
FTS: 467-2427
COMM: 415-323-2427

HOW TO ORDER MANNED SPACECRAFT PHOTOGRAPHY

This order form is used to order all SKYLAB and APPOLLO/GEMINI PHOTOGRAPHY. Necessary order information can normally be extracted from a computer listing of available photography or from other references.

Please provide the following information in the indicated areas of the order form:

A. List your complete NAME, ADDRESS, ZIP CODE, and name of your COMPANY if applicable.

B. List a PHONE NUMBER where you can be contacted during business hours.

C. If you have had previous business with that facility, please list your ACCOUNT NUMBER, if known.

D. Enter the complete PHOTO IDENTIFICATION NUMBER. This number can be transcribed directly from the COMPUTER LISTING. If the source of information is from another source, specify the MISSION, SKYLAB 2, 3, or 4; the SYSTEM, S190A or S190B; ROLL NUMBER; and FRAME NUMBER.

E. Review the STANDARD PRODUCTS TABLE on the order form and determine the type of product desired. CARE must be exercised in insuring that the system reflected in column 4 of the PHOTO IDENTIFICATION NO. on the computer listing correlates with the respective portion of the tables, i.e. A=S190A; B=S190B.

F. Enter the PRODUCT CODE of the type product being ordered from the STANDARD PRODUCTS TABLE.

G. The COMMENTS portion is completed only when a CUSTOM PRODUCT is desired and you want to specify the parameters. Refer to the current price list for custom product cost determination.

H. Enter the number of COPIES being ordered of that product in the QUANTITY column.

I. Enter the UNIT PRICE of the product as reflected on the current PRICE LIST.

J. Multiply the QUANTITY being ordered by the UNIT PRICE. Enter the result in the TOTAL PRICE column.

K. REPEAT the above for each product ordered.

L. TOTAL the costs of all products ordered and enter the result in BLOCK A.

M. If more than one order form is required, enter the sum of the figures in BLOCKS A in BLOCK B of the last order form.

N. Enter the SUM of BLOCK A and BLOCK B in BLOCK C. TOTAL COSTS.

O. Indicate the TYPE of payment being made with a CHECK MARK. Make all drafts payable to U. S. GEOLOGICAL SURVEY. DO NOT SEND CASH.

P. Mail ORDER FORM(S) and PAYMENT to the FACILITY NEAREST YOU. If payment has been previously forwarded, the order form(s) must be mailed to the same facility.

Table 4.3.--Skylab S-190A/B Coverage By County.

INDEX NO. / COUNTY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Alcona							P												
Alger					T	T	T					P			T	T			
Allegan	T	P		P					T	T			T	T			P*	P	P
Alpena							T	P							P*	P			
Antrim							T	T											
Arenac										P*			P*						
Baraga					P							T			P*	P*			
Barry	T	P*	P						T	P*			T	T			T	P	
Bay		P								T			T	P*			P		
Benzie							T	T											
Berrien				T					T	P			T	P*			T	P*	T
Branch	P			P*							P						T	T	P*
Calhoun	T	P		P					P				P*	P			T	T	P
Cass				T					P*				P*	P			T	T	T
Charlevoix							T	P*							P				
Cheboygan							T	T							P*	P*			
Chippewa					P*	P*	P	P							T	P*			
Clare		P											P						
Clinton	T	T	T							T			T	T			T	P	
Crawford							P*	P											
Delta					T	T									P*	P			
Dickinson					T	T						P			P				
Eaton	T	T	P*						P	P			T	P*			T	P*	
Emmet							T	P*							T	P*			
Genesee	P*	T	P*							P			T	P*			T	T	
Gladwin										P			P*						
Gogebic												T							
Grand Traverse							T	T											
Gratiot	P*	T	T							T			T	T			P		
Hillsdale	P*	P		P*							P*						T	P*	P*
Houghton												T			P	P*			
Huron										T			T	T			P*	P	
Ingham	T	T	T							P			P*	P*			T	T	
Ionia	T	T	T						P	T			T	T			P*	P	
Iosco										P			P						
Iron					P*	P						P*			P*				
Isabella	P	T	P*							P*			P*	P					
Jackson	T	P*	P*								P		P				T	T	
Kalamazoo	P*			P*					P*	P			T	P*			T	T	P*
Kalkaska							T	P*											
Kent	T	T	P*						P*	T			T	P*			P		
Keweenaw												T			P*	T			

CODE: T - Total Coverage; P - Partial Coverage: 50% or less; P* - Partial Coverage: over 50%

Table 4.3.--Skylab S-190A/B Coverage By County (cont'd.).

INDEX NO. / COUNTY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Lake	P	T	P*				P												
Lapeer	P	P*	P							P			P*	P*			T	T	
Leelanau							T	T											
Lenawee	T	P	P								T						P*	P	P
Livingston	T	T	T										P*	P			T	T	
Luce					T	T									T	P*			
Mackinac					P*	P	P	P							T	T			
Macomb	P*	T	P*								P*						T	P*	
Manistee		P*	P				T	P*											
Marquette					P*	P						P*			T	P*			
Mason	P*	T	P*				P*												
Mecosta	P*	T	P*							P			P*						
Menominee					T	P*									P				
Midland		P*	P							T			T	P*					
Missaukee							P*												
Monroe	T	T	P*								T						P		
Montcalm	T	T	T						P	T			T	P*					
Montmorency							T	P*							P	P			
Muskegon	T	T	T						P*	P			P*						
Newaygo	T	T	T						P	P			P						
Oakland	P*	T	T								P		P				T	T	
Oceana	T	T	T																
Ogemaw													P						
Ontonogon												T				P			
Osceola		P*	P																
Oscoda							P*												
Otsego							T	T											
Ottawa	T	T	P						T	T			T	P*					
Presque Isle							T	T							T	P*			
Roscommon							P												
Saginaw	P	T	P							T			T	T			P*	P	
Sanilac		P								P*			T	P*			T	P*	
Schoolcraft					T	T									T	P*			
Shiawassee	P*	T	T							P*			T	T			T	P*	
St. Clair		P*									P		P				T	P*	
St. Joseph	P			T					P				P	P			T	T	T
Tuscola		P								T			T	T			T	P	
Van Buren	P			P*					T	P*			T	T			T	P*	P*
Washtenaw	T	T	P*								P*						T	P*	
Wayne	T	T	P								T						P*	P	
Wexford		P					P	P											

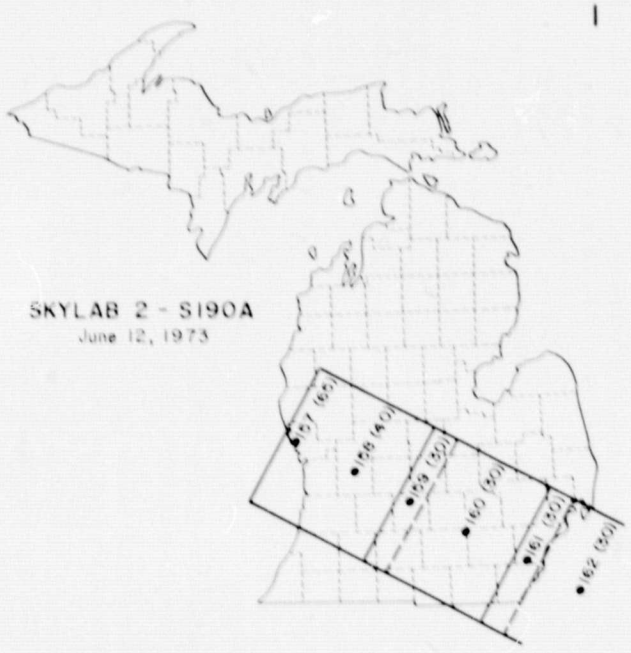
CODE: T - Total Coverage; P - Partial Coverage: 50% or less; P* - Partial Coverage: over 50%

ORIGINAL PAGE IS
OF POOR QUALITY

Figure 4.4.--Michigan County Reference Map.

INDEX TO SKYLAB S-190A/B PHOTOGRAPHY OF MICHIGAN

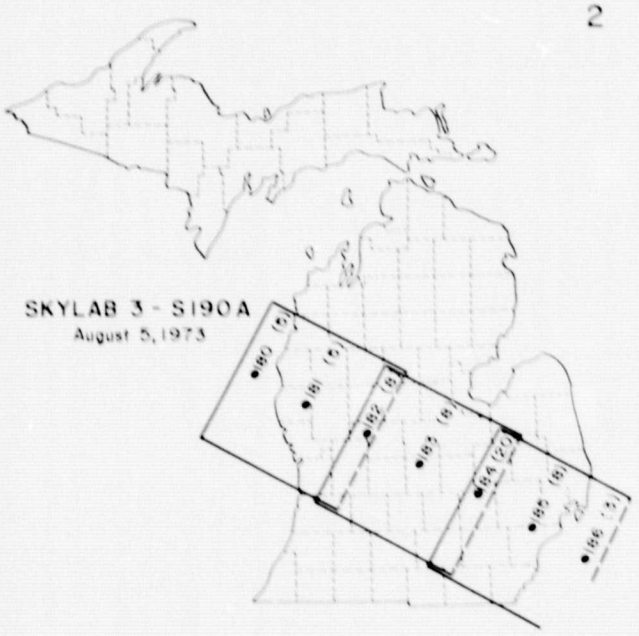
1



Roll #	Film Type	Sensitivity(nm)	Frames
13	BWIR	700-900	149-154
14	BWIR	500-900	149-154
15	CIR	500-880	157-162
•16	Color	400-700	157-162
17	Pan	600-700	149-154
18	Pan	500-600	149-154

Scale: 1:2,850,000
Format: 70 mm (2.76 inch)
Orbit: Pass 9 Track 61

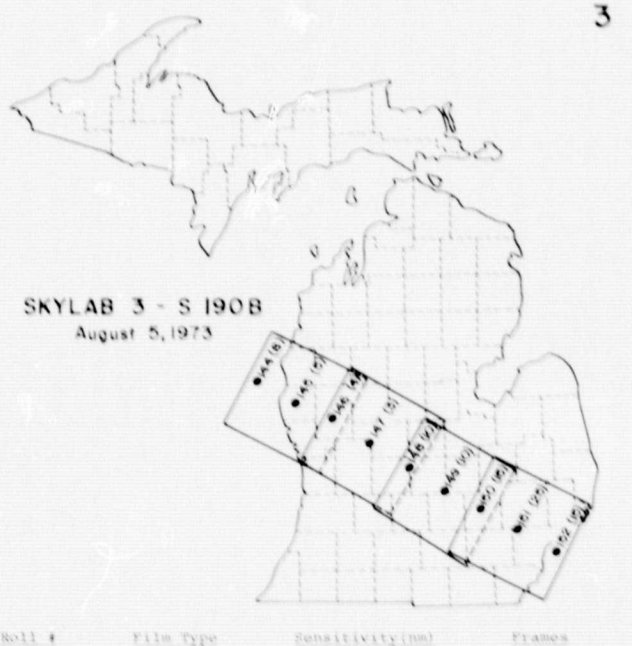
2



Roll #	Film Type	Sensitivity(nm)	Frames
19	BWIR	700-800	180-186
20	BWIR	800-900	180-186
21	CIR	800-880	180-186
•22	Color	400-700	180-186
23	Pan	600-700	180-186
24	Pan	500-600	180-186

Scale: 1:2,850,000
Format: 70 mm (2.76 inch)
Orbit: Pass 3 Track 61

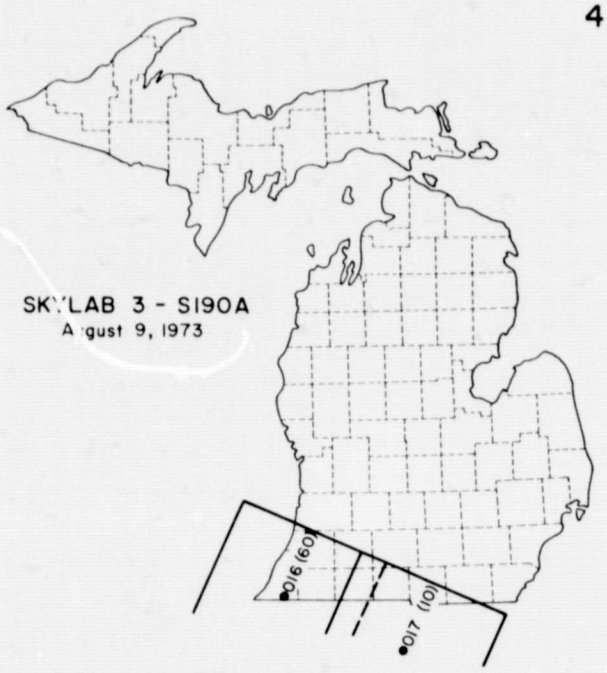
3



Roll #	Film Type	Sensitivity(nm)	Frames
•83	Color	400-700	144-152

Scale: 1:950,000
Format: 125 mm (5 inch)
Orbit: Pass 3 Track 61

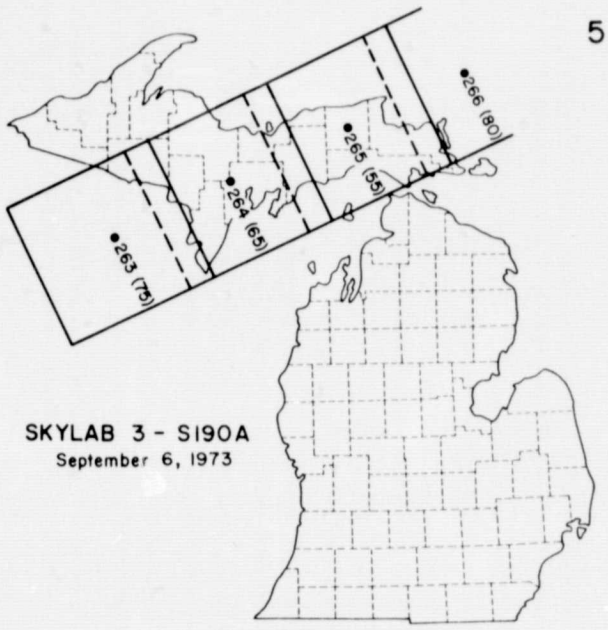
4



Roll #	Film Type	Sensitivity(nm)	Frames
25	BWIR	700-800	16-17
26	BWIR	800-900	16-17
27	CIR	500-880	16-17
●28	Color	400-700	16-17
29	Pan	600-700	16-17
30	Pan	500-600	16-17

Scale: 1:2,850,000
Format: 70 mm (2.76 inch)
Orbit: Pass 6 Track 47

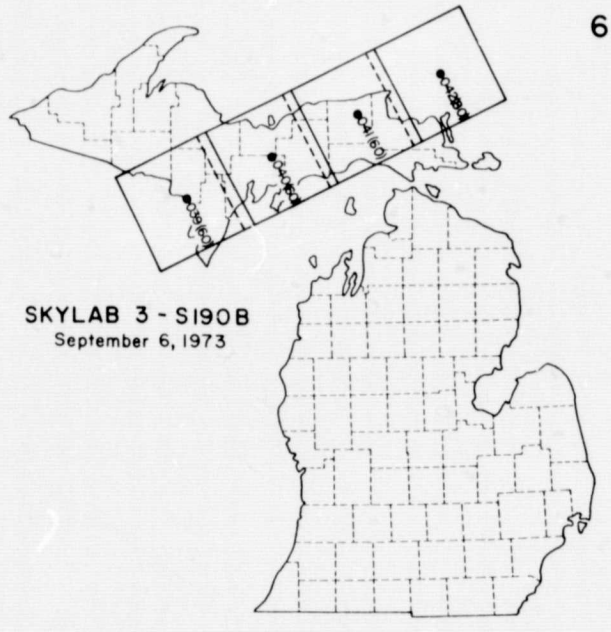
5



Roll #	Film Type	Sensitivity(nm)	Frames
●33	CIR	500-880	263-266

Scale: 1:2,850,000
Format: 70 mm (2.76 inch)
Orbit: Pass 16 Track 30

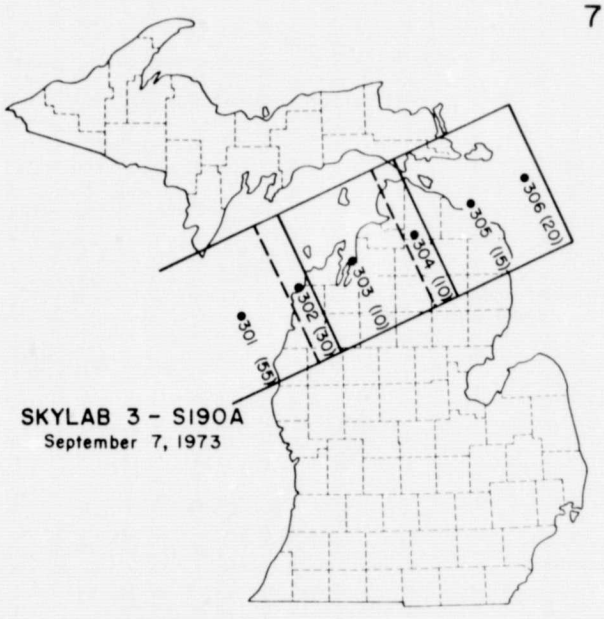
6



Roll #	Film Type	Sensitivity(nm)	Frames
●86	Color	400-700	39-42

Scale: 1:950,000
Format: 125 mm (5 inch)
Orbit: Pass 16 Track 30

7

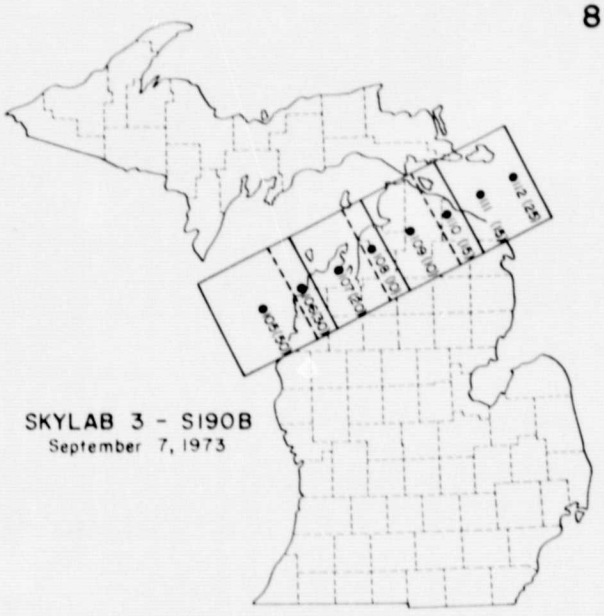


Roll # Film Type

Roll #	Film Type	Sensitivity(nm)	Frames
●34	CIR	500-880	301-306

Scale: 1:2,850,000
Format: 70 mm (2.76 inch)
Orbit: Pass 17 Track 44

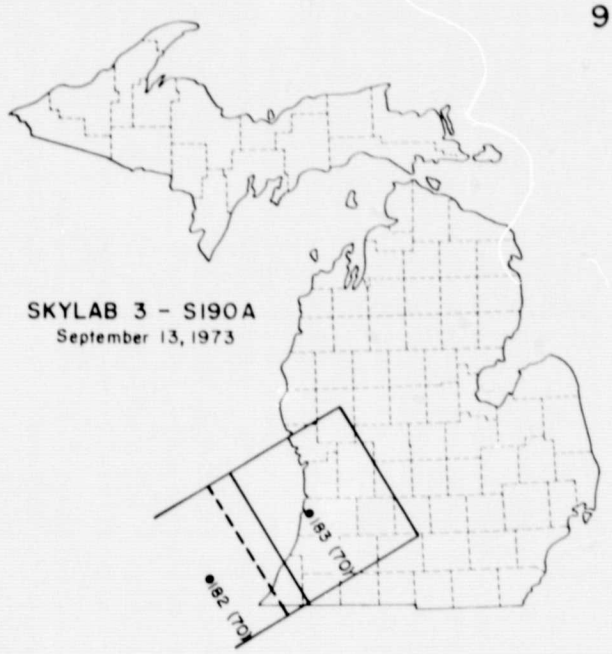
8



Roll #	Film Type	Sensitivity(nm)	Frames
●86	Color	400-700	105-112

Scale: 1:950,000
Format: 125 mm (5 inch)
Orbit: Pass 17 Track 44

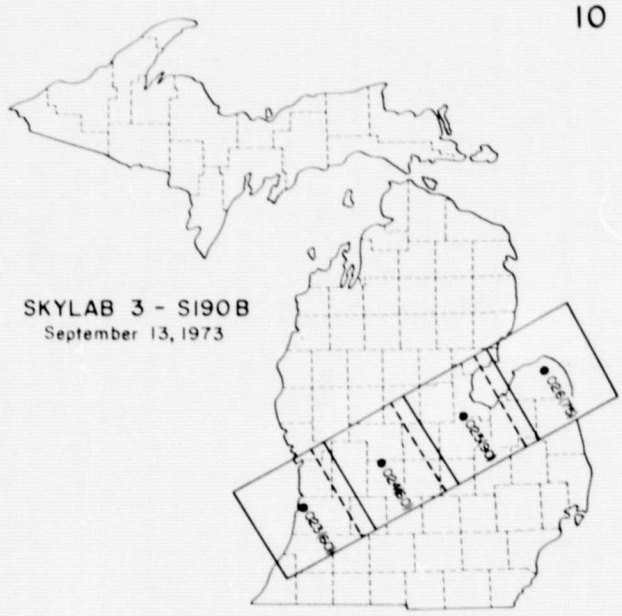
9



Roll #	Film Type	Sensitivity(nm)	Frames
37	BWIR	700-800	182-183
38	BWIR	800-900	182-183
39	CIR	500-880	182-183
●40	Color	400-700	182-183
41	Pan	600-700	182-183
42	Pan	500-600	182-183

Scale: 1:2,850,000
Format: 70 mm (2.76 inch)
Orbit: Pass 27 Track 58

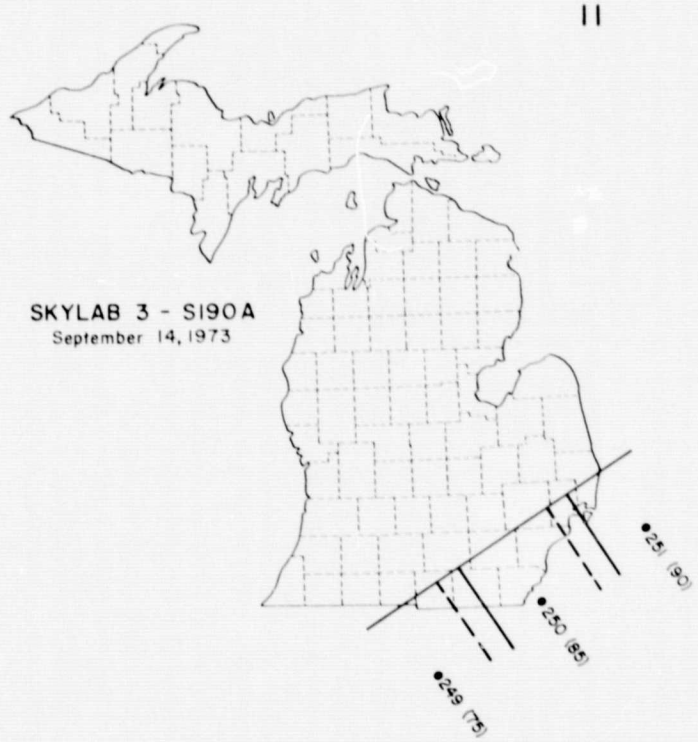
10



Roll #	Film Type	Sensitivity(nm)	Frames
●87	Color	400-700	23-26

Scale: 1:950,000
Format: 125 mm (5 inch)
Orbit: Pass 27 Track 58

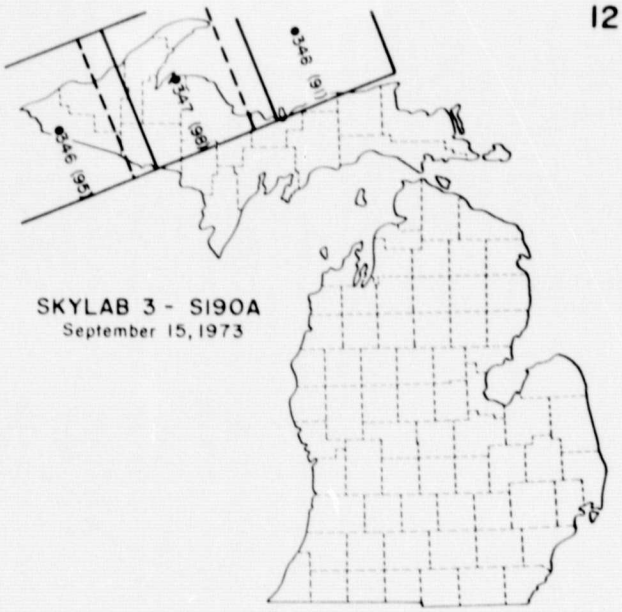
11



Roll #	Film Type	Sensitivity(nm)	Frames
37	BWIR	700-800	249-251
38	BWIR	800-900	249-251
39	CIR	500-880	249-251
●40	Color	400-700	249-251
41	Pan	600-700	249-251
42	Pan	500-600	249-251

Scale: 1:2,850,000
Format: 70 mm (2.76 inch)
Orbit: Pass 29 Track 1/2

12

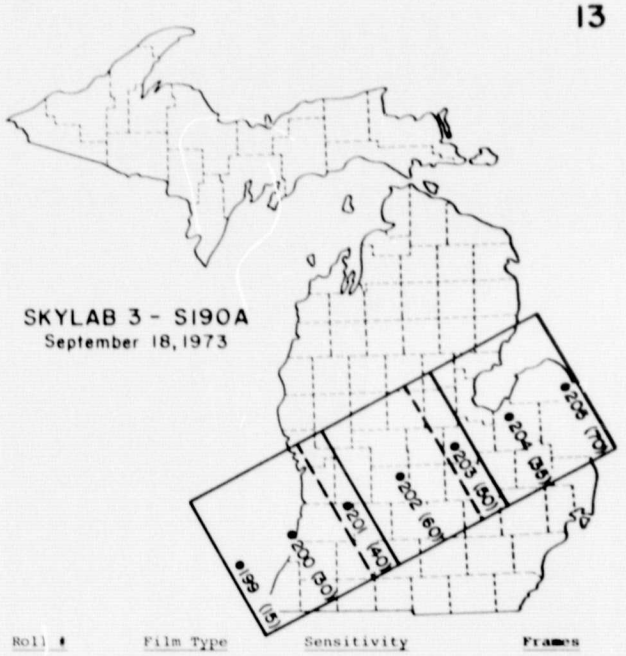


SKYLAB 3 - S190A
September 15, 1973

Roll #	Film Type	Sensitivity(nm)	Frames
37	BWIR	700-800	346-348
38	BWIR	800-900	346-348
39	CIR	500-880	346-348
●40	Color	400-700	346-348
41	Pan	600-700	346-348
42	Pan	500-600	346-348

Scale: 1:2,850,000
Format: 70 mm (2.76 inch)
Orbit: Pass 32 Track 16/17

13

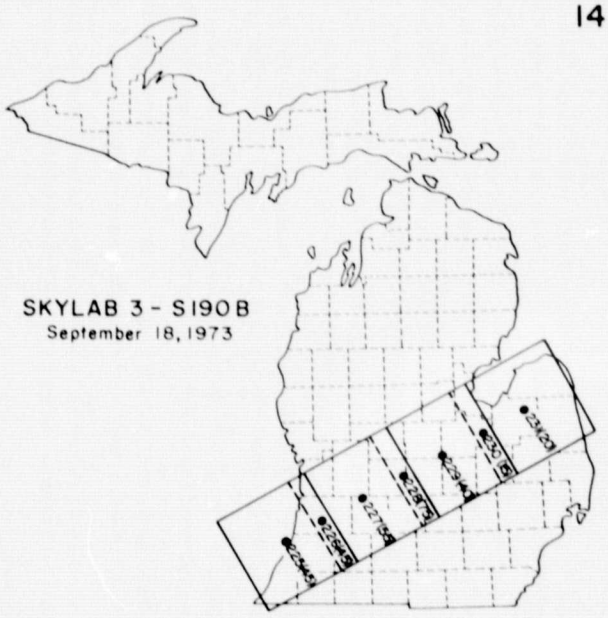


SKYLAB 3 - S190A
September 18, 1973

Roll #	Film Type	Sensitivity	Frames
43	BWIR	700-800	199-205
44	BWIR	800-900	199-205
45	CIR	500-880	199-205
●46	Color	400-700	199-205
47	Pan	600-700	199-205
48	Pan	500-600	199-205

Scale: 1:2,850,000
Format: 70 mm (2.76 inch)
Orbit: Pass 37 Track 58

14

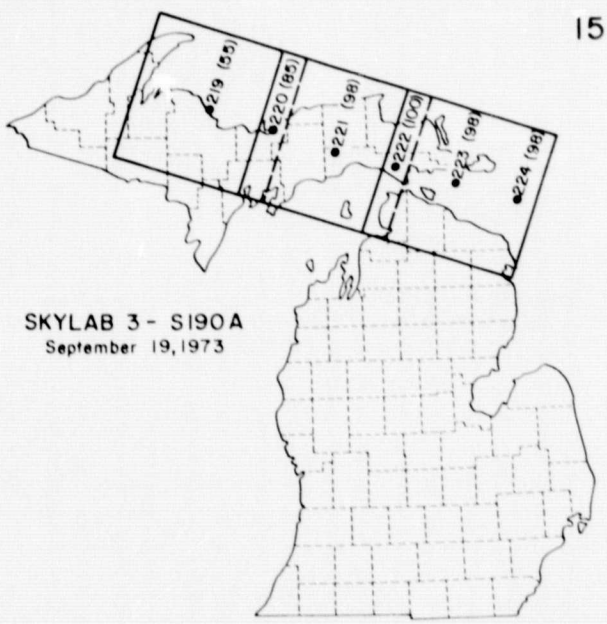


SKYLAB 3 - S190B
September 18, 1973

Roll #	Film Type	Sensitivity(nm)	Frames
●88	Color	400-700	225-231

Scale: 1:950,000
Format: 125 mm (5 inch)
Orbit: Pass 37 Track 58

15

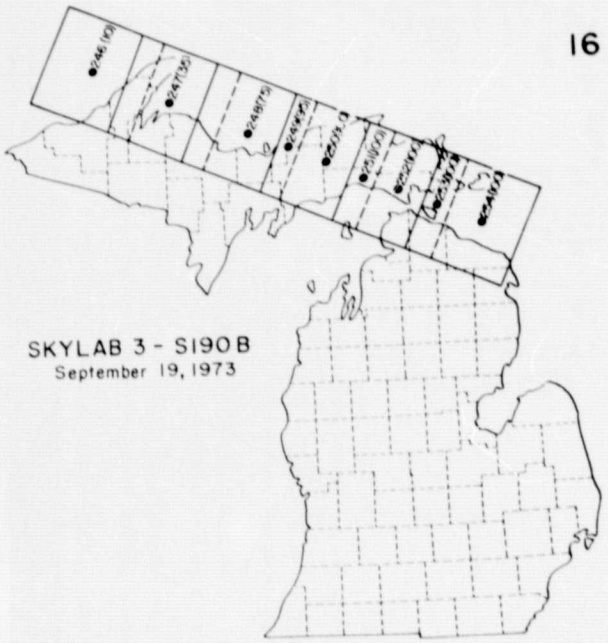


SKYLAB 3 - S190A
September 19, 1973

Roll #	Film Type	Sensitivity	Frames
43	BWIR	700-800	219-224
44	BWIR	800-900	219-224
45	CIR	500-880	219-224
●46	Color	400-700	219-224
47	Pan	600-700	219-224
48	Pan	500-600	219-224

Scale: 1:2,850,000
Format: 70 mm (2.76 inch)
Orbit: Pass 39 Track 4

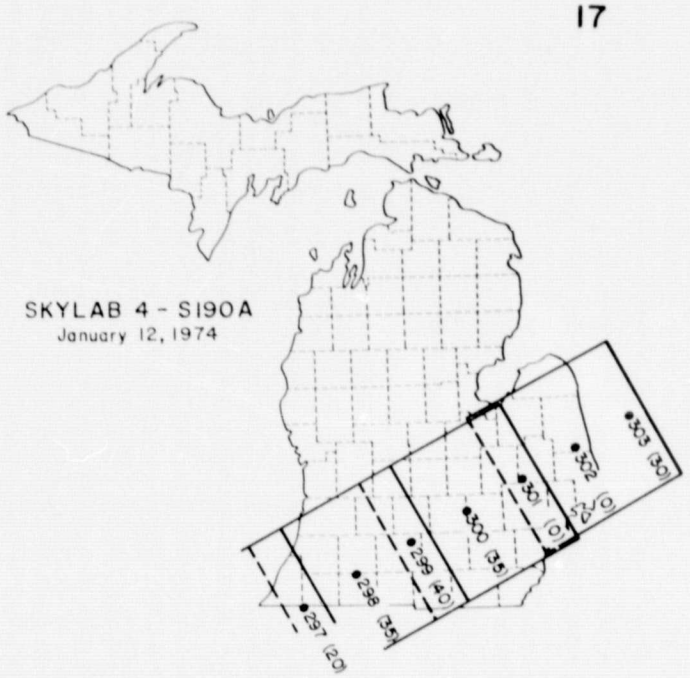
16



Roll #	Film Type	Sensitivity	Frames
●88	Color	400-700	246-254

Scale: 1:950,000
Format: 125 mm (5 inch)
Orbit: Pass 39 Track 4

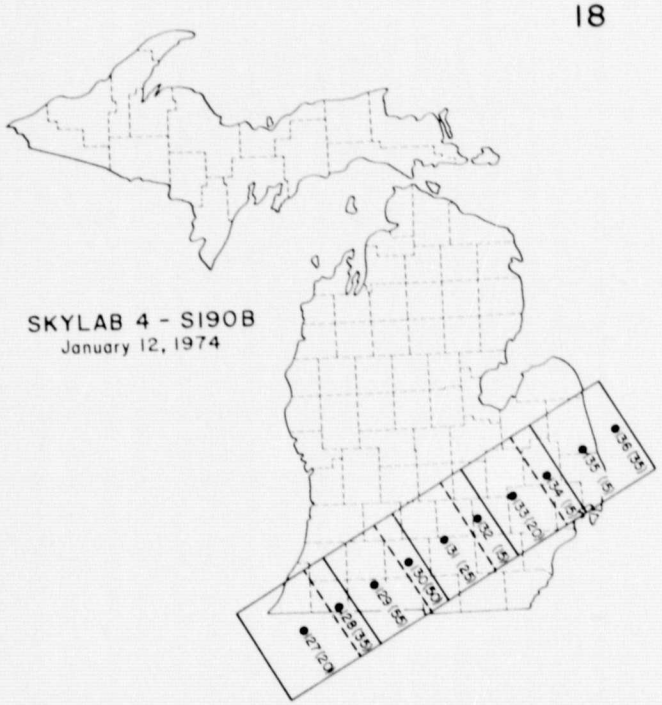
17



Roll #	Film Type	Sensitivity	Frames
61	BWIR	700-800	297-303
62	BWIR	800-900	297-303
63	CIR	500-880	297-303
●64	Color	400-700	297-303
65	Pan	600-700	297-303
66	Pan	500-600	297-303

Scale: 1:2,850,000
Format: 70 mm (2.76 inch)
Orbit: Pass 27 Track 1
Snow Cover: Frames 297-301(100%); 302(95%); 303(65%)

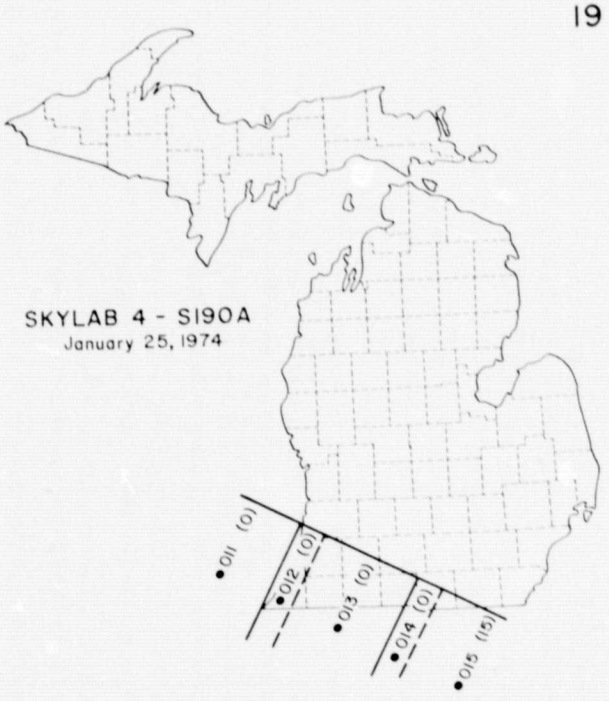
18



Roll #	Film Type	Sensitivity	Frames
●92	Color	400-700	127-136

Scale: 1:950,000
Format: 125 mm 5(inch)
Orbit: Pass 27 Track 1
Snow Cover: Frames 127-133(100%); 134(95%); 135(85%); 136(50%)

19



Roll #	Film Type	Sensitivity	Frames
73	BWIR	700-800	11-15
74	BWIR	800-900	11-15
75	CIR	500-880	11-15
●76	Color	400-700	11-15
77	Pan	600-700	11-15
78	Pan	500-600	11-15

Scale: 1:2,850,000
Format: 70 mm (2.76 inch)
Orbit: Pass 41 Track 47
Snow Cover: Frames 11 and 13(15%)

INDEX TO

SKYLAB 35 MM NIKON PHOTOGRAPHY

PHOTO ID NUMBER	% COVER CLOUD/SNOW	LOCATION AND DESCRIPTION
	SKYLAB 2 May 25-June 22, 1973	
SL2-100-844	10/0	Minn., Wis., Mich., L. Superior, Duluth, pollution
845	3/0	Wis., Mich., Green Bay, Keweenaw Pen.
846	0/0	Mich., Wis., L. Michigan, Green Bay
847	0/0	Mich., Wis., L. Michigan, Green Bay
848	0/0	L. Michigan, Chicago, Wis., Ill., Mich., Ind.
SL2-103-956	0/0	Antenna, L. Michigan, Wis., Mich., Ill.
957	25/0	Lakes Michigan & Huron, Mich., (underexposed)
958	5/0	Lakes Huron, Ontario & Erie, Buffalo, Detroit
SL2-104-1051	35/0	Detroit, L. Erie
1052	35/0	Detroit, L. Erie
	SKYLAB 3 July 28-September 25, 1973	
SL3-118-2183	50/0	Grand Rapids, Mich.
2184	10/0	Ann Arbor, Mich.
2185	5/0	Ann Arbor, Mich.
2187	0/0	Detroit (hazy)
SL3-119-2234	5/0	Grand Rapids, Mich.
2235	20/0	Mackinac Straits
2251	35/0	Mich., Sleeping Bear Point, Empire
2252	35/0	Mich., Big Sable Pt., Ludington, Little Sable Pt., (blurred)
SL3-124-2752	20/0	Sault Ste. Marie, USA, Canada
2753	20/0	L. Huron, North Channel, Drummond Island (out of focus, under-exposed)
SL3-127-2911	30/0	Straits of Mackinac
SL3-128-2995	5/0	St. Clair Lake, Mt. Clemens, Mich., Tecumseh-Ontario

PHOTO ID NUMBER	% COVER CLOUD/SNOW	LOCATION AND DESCRIPTION
SKYLAB 4 November 16, 1973-February 8, 1974		
SL4-192-7070	35/70	Ill., Ind., Mich., L. Michigan, Chicago
7071	40/70	Mich., Ontario, L. Huron, Georgian Bay, floating ice
SL4-193-7162	0/65	Great Lakes, ice in Green Bay, Menominee, Mich.

INDEX TO
SKYLAB 70 MM HASSELBLAD PHOTOGRAPHY

PHOTO ID NUMBER	% COVER CLOUD/SNOW	LOCATION AND DESCRIPTION
	SKYLAB 2 May 25-June 22, 1973	
SL2-5-385	40/0	Minn., Wis., Mich., Lake Superior
386	35/0	Wis., Mich., Green Bay, L. Mich.
387	40/0	Mich., L. Huron, L. Michigan
388	30/0	Mich., L. Huron, Detroit
389	25/0	Mich., Ontario, Detroit, Windsor, Sarnia
390	40/0	Mich., Ohio, Ontario, L. Erie, Detroit
455	45/0	Wis., Mich., clouds, (dark)
456	60/0	Mich., L. Mich., Grand Traverse Bay
457	70/0	Mich., clouds
SL2-6-513	25/0	Ill., Ind., Mich., Wis., L. Mich., Chicago
514	20/0	Mich., Saginaw Bay, L. Mich., Grand Rapids
515	10/0	Mich., L. Huron, Ontario, Detroit
516	5/0	Mich., Ohio, L. Huron, L. Erie, Detroit
552	5/0	Mich., Wis., Ontario, Sault Ste. Marie
553	10/0	Mich., Ontario, L. Huron, Detroit
559	55/0	Ohio, Ind., Mich., Ontario, L. Erie, Detroit, clouds
	SKYLAB 3 July 28-September 25, 1973	
SL3-114-1702	0/0	Michigan & Lakes Michigan, Huron, Superior
1703	0/0	Mich., Ontario, Detroit-Windsor, L. Huron
1704	0/0	Mich., Strait of Mackinac, Lakes Huron, Michigan
1705-1706	0/0	Mich., Saginaw Bay-L. Huron (underexposed)
1707	0/0	*Mich., Ill., Wis., Chicago, Lakes Michigan & Huron, Green Bay
1708-1709	0/0	*Ill., Mich., Wis., Lakes Michigan & Huron, Green Bay

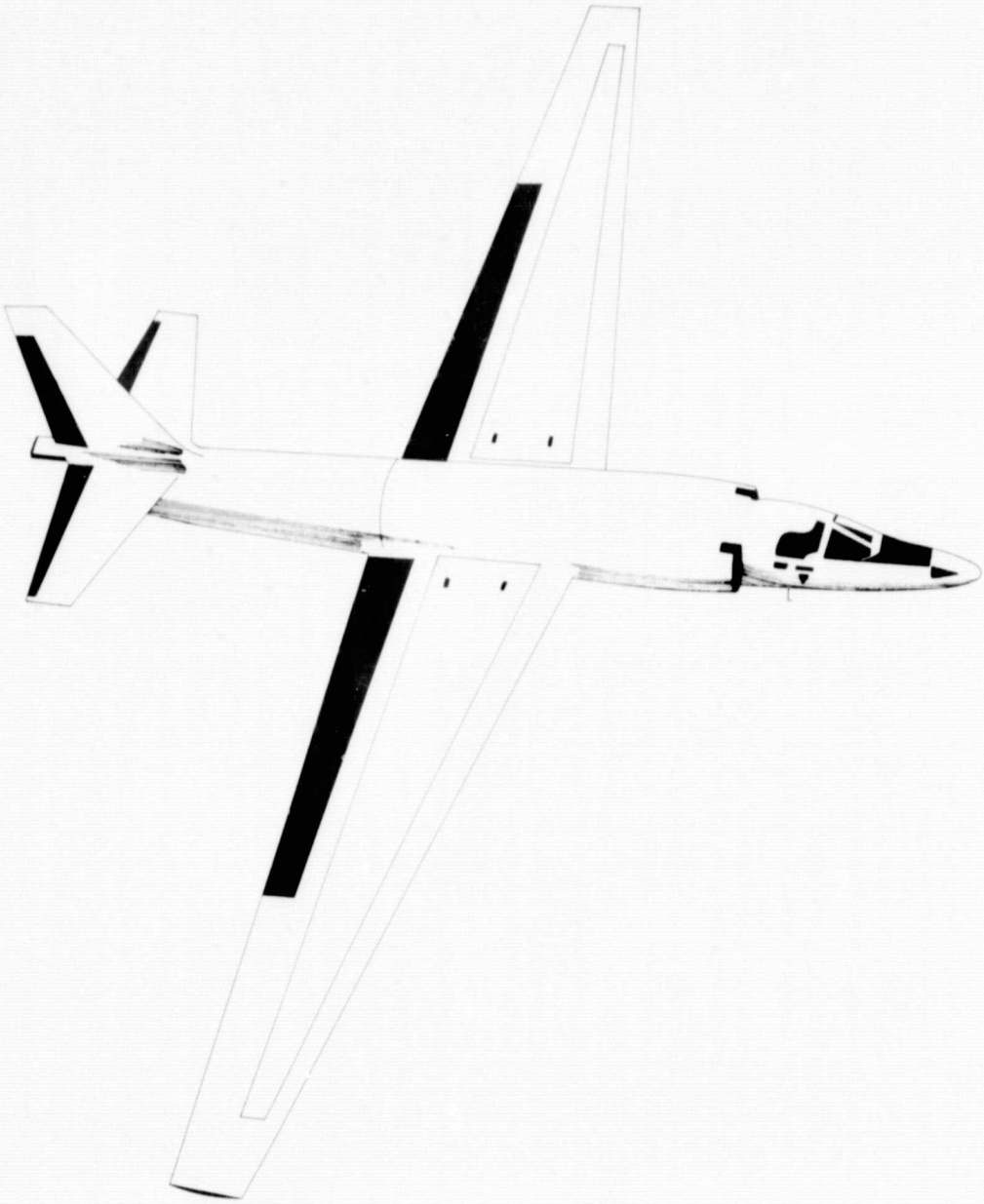
* high oblique

PHOTO ID NUMBER	% COVER CLOUD/SNOW	LOCATION AND DESCRIPTION
SKYLAB 3 July 28-September 25, 1973 (cont'd.)		
SL3-114-1710	0/0	*Ill., Wis., Mich., Ind., Lakes Michigan & Huron
1711-1712	0/0	*Ill., Mich., Ohio, Ind., Lakes Michigan & Huron
SL3-116-1943	15/0	Mich.-Ontario-Keweenaw Pen., L. Superior
1946	10/0	Chicago, L. Mich., Milwaukee, Grand Rapids
1947	5/0	Detroit, L. Erie, Toledo, Cleveland
1948	10/0	Detroit, L. Huron, Flint, Ontario-London
1949	10/0	L. Michigan., Chicago, Milwaukee, Grand Rapids
2016	20/0	Ill., Mich., Wis.-L. Michigan
2026	15/0	Ontario, Ohio, Mich.-Lakes Ontario & Michigan (hazy)
SL3-121-2335	10/0	Mich., Lakes Michigan & Huron (hazy)
2411	5/0	Canada, USA., L. Superior, Keweenaw Pen.
SL3-122-2520	30/0	L. Superior, Georgian Bay, L. Huron, Isle Royale
2521	35/0	E. end of L. Superior, Sault Ste. Marie, L. Huron, Georgian Bay
2553	35/0	L. Michigan, Muskegon, Grand Rapids
2586	40/0	Mich., L. Huron, Saginaw Bay
SKYLAB 4 November 16, 1973-February 8, 1974		
SL4-136-3405	20/0	Mich., Ohio, Ontario, Detroit, Cleveland, L. Erie, L. Huron
SL4-139-3932	40/50	Minn., Iowa, Wis., Mich., Snow-covered, Twin Cities, Miss. R.
3952	40/60	Mich., Ohio, Ind., Ontario, Lakes Huron, Michigan, Erie, Toledo, Saginaw
3953	25/60	Wis., Mich., Ontario, L. Superior, Duluth, Miss. R., Wis. R.
3956	50/60	*Ill., Wis., Ind., Mich., L. Michigan, Chicago, Milwaukee, Green Bay

* high oblique

PHOTO ID NUMBER	% COVER CLOUD/SNOW	LOCATION AND DESCRIPTION
SKYLAB 4 November 16, 1973-February 8, 1974 (cont'd.)		
SL4-139-3985	40/40	*Mich., Ontario, L. Huron, Saginaw Bay, Sarnia
3986	25/50	*Mich., Ohio, Ontario, Lakes Huron & Erie, Saginaw Bay, St. Clair R.
4005	50/50	*Mich., Wis., L. Michigan, Green Bay, L. Superior
4006	35/60	Mich., Ontario, L. Huron, Georgian Bay, L. Erie
4007	50/70	Mich., Ontario, Lakes Huron & Erie, Detroit
4014	40/20	Minn., Wis., Ontario, L. Superior, Duluth, Isle Royale
4041	50/20	Mich., Ontario, L. Superior, White Fish Point, Michipicoten I.
4042	50/20	Mich., Ontario, L. Superior, White Fish Point, Michipicoten I.
4069	80/--	*Mich., Lakes Michigan & Huron, looking N., clouds
4098	40/60	Mich., Ontario, Lakes Superior Michigan & Huron, Sault Ste. Marie
SL4-141-4261	98/--	Mich., L. Superior, ice plumes, cloudy, Geoeble Range
4270	40/50	*L. Ontario, L. Erie, view to W., Detroit
4271	30/20	*L. Ontario, L. Erie, view to W., Detroit

* high oblique



NASA HIGH ALTITUDE IMAGERY

SECTION 5

NASA HIGH ALTITUDE IMAGERY

GENERAL INFORMATION

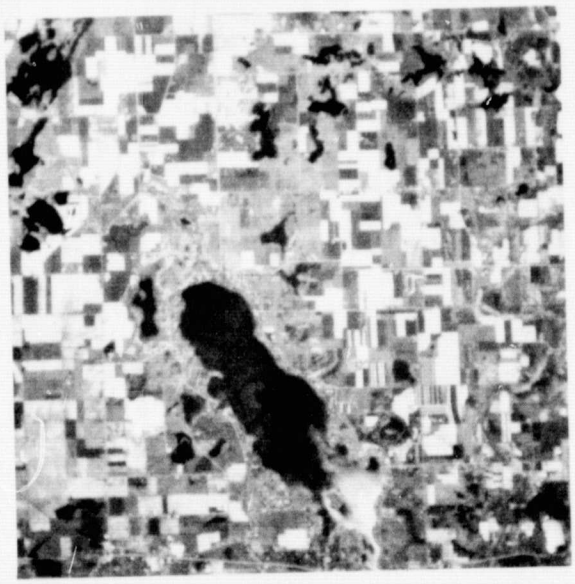
The NASA Airborne Instrumentation Research Program is directed primarily at testing a wide range of remote sensing instruments, techniques and applications. An integral part of the Program is the acquisition of high altitude multispectral photographic imagery of pre-selected test sites within the continental United States. Missions are requested for projects that are to be undertaken by NASA-sponsored programs, such as MSU's Remote Sensing Project, and specifications of photo coverage, scale and image type are decided accordingly. Nevertheless, the imagery obtained can provide a data source for numerous other research and application activities.

Two research aircraft (General Dynamics/Martin RB-57F and Lockheed U-2) are operated and scheduled by NASA field centers. A brief description of the remote sensors aboard both platforms and the typical image products generated, follows.

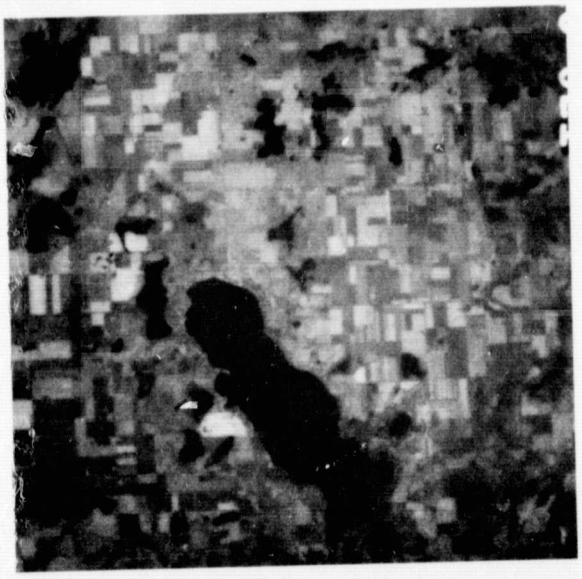
RB-57 Camera Systems: RB-57 missions are usually flown at an altitude of about 60,000 feet (18,000 meters) carrying a fairly standard array of sensors. Typically, the sensor package consists of two Wild RC-8 cameras with 6 inch (152 mm) lenses, a Zeiss camera with a 12 inch (305 mm) focal length lens, and a gang arrangement of six Hasselblad cameras equipped with either 1.57 inch (40 mm) or 3.15 inch (80 mm) lenses. This equipment provides, respectively, scales of 1:120,000, 1:60,000, 1:450,000 and 1:225,000 at the normal operating altitude. Various film/filter combinations are used depending upon the objectives of the mission. Normally, however, the Zeiss camera contains color infrared film, while both true color and color infrared film are used in the RC-8 cameras. Both camera systems produce a 9 inch (229 mm) square film transparency.

The Hasselblad cameras are operated with a broad spectrum of film/filter combinations in order to provide multiband photographic coverage on a 2.76 inch (70 mm) film base. Figures 5.1 and 5.2 are examples of NASA high altitude photography. In addition, thermal imagery is acquired using an RS-7 or RS-18 infrared scanner.

PAN (460-620nm)



PAN (590-725nm)



BWIR (680-925nm)

BWIR (790-925nm)

Figure 5.1.--NASA High Altitude Multiband Photos of the Gull Lake Area.

c-2

Figure 5.2.--NASA High Altitude Color Infrared Photo of the Gull Lake Area (reduced from 9 by 9 inches).

U-2 Camera Systems: The U-2 aircraft, usually operating at 65,000 feet (20,000 meters), carries a Wild RC-10 camera system with a 6 inch (152 mm) focal length lens providing an image scale of 1:130,000. This camera is normally loaded with color infrared film, and, like the RB-57 metric cameras, provides a 9 inch square film transparency. In addition, an array of four Vinten cameras obtain multiband coverage similar to the Hasselblad system on the RB-57, except 1.75 inch (44 mm) focal length lenses are used exclusively, providing a relatively standard scale of 1:445,000 on 70 mm format film.

The primary job of the U-2 aircraft is to complement the earth resources research space flights (Landsat and Skylab), therefore, most of the multiband photography collected is compatible with the spectral bands recorded by the Landsat sensors (i.e., 475-575 nm, 580-680 nm and 690-760 nm).

Image Coverage: Since September 1969, the high-resolution camera systems aboard RB-57 and U-2 aircraft have obtained imagery of numerous test sites in Michigan. NASA-sponsored research and application programs in Michigan have requested NASA aircraft photography for a wide variety of projects in different areas of the state and over 60% of the land area of the state has been covered (Fig. 5.3).

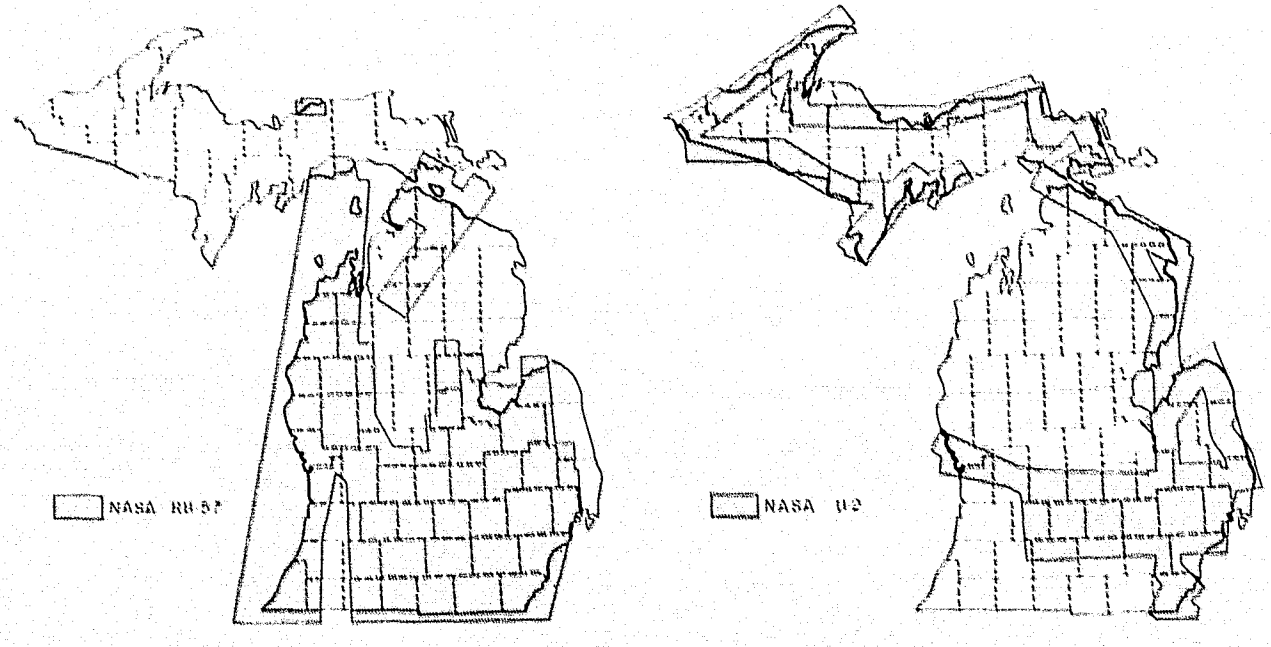


Figure 5.3.--NASA High Altitude Photographic Coverage of Michigan.

The coverage to date is concentrated in the lower peninsula where more than 70% of the area has been covered at least once and some areas have repetitive coverage. In addition, imagery from these flights is available for nearly 75% of the state's total length of shoreline. Thus, from the standpoint of developing an inventory of Michigan's resources and land use, an excellent base of imagery is available. These photographs, however, were gathered over a 7-year span during three seasons of the year, and thus differences in vegetation, water levels, and land use are evident and must be accommodated when used.

HOW TO USE THE RB-57/U-2 INDEXES

Users should first refer to Table 5.1 (p. 5-11) which lists photo mission coverage by county. Missions covering a particular area of interest can be determined from the table. It is then possible to select the appropriate photo index maps for those missions by referring to either the RB-57 or U-2 index. Specific descriptions of the imagery are given in these indexes, and the format for presentation of the specifications has been standardized to give information on location, image type, scale, quality and cloud cover as follows.

Mission Number and Date: Self-explanatory.

General Location: Locations are described in terms of flight lines and their respective orientation while image coverage is shown in approximate terms on accompanying maps. Photographic coverage by the Wild Cameras is usually planned for 60% endlap and 20 to 30% sidelap. Coverage by the Zeiss, Hasselblad and Vinten cameras usually has a 10% endlap and a 0 to 10% sidelap.

Image Type and Scale: The film/filter combinations employed and the spectral ranges recorded are indicated by an identifier code. Table 5.2 (p. 5-13) lists these combinations for the metric survey cameras and uses a Roman numeral code, while Table 5.3 (p. 5-14) lists the combinations for the multiband camera systems and uses an alphabetical capital letter code. The image scale is given as a representative fraction, based on lens focal length, and average flying altitude, and is rounded to the nearest thousandth in most cases.

Quality: The quality of the photography is expressed in general subjective terms such as fair, good and excellent. For some missions, additional information is given concerning camera or processing malfunctions (e.g. film underexposed, scratches, film transport malfunction) which may limit the usefulness of the imagery for certain applications.

Cloud Cover: The type, extent and location of cloud cover are indicated when appropriate.

Remarks: Any additional information pertaining to the mission, such as camera failures and variations in film coverage, is given.

ORDER FORM
NASA AIRCRAFT PHOTOGRAPHY
U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DATE _____

NAME MR / MS _____ ACCOUNT NO (IF KNOWN) _____
(FIRST) (INITIAL) (LAST)

COMPANY _____ PHONE (Bus.) _____
(IF BUSINESS ASSOCIATED)

ADDRESS _____ PHONE (Home) _____

CITY _____ STATE _____ ZIP _____ Your Ref. No. _____
(P.O. GOVT ACCT OR OTHER)

PLEASE TYPE OR PRINT PLAINLY

PHOTO IDENTIFICATION NO.	PRODUCT CODE	FRAMES FIRST	FRAMES LAST	NO. OF FRAMES	NO. OF COPIES	QTY.	UNIT PRICE		TOTAL PRICE	

STANDARD PRODUCTS

BLACK & WHITE PRODUCTS	FILM SOURCE: B & W 70mm	B & W 9 in.	B & W 5 in.	B & W 5 X 18 in.
55.8mm (2.2 in.) FILM POSITIVE	11			
55.8mm (2.2 in.) FILM NEGATIVE	01			
55.8mm (2.2 in.) PAPER				
11.4cm (4.5 in.) PAPER		22		
11.4cm (4.5 in.) FILM POSITIVE		12		
11.4cm (4.5 in.) FILM NEGATIVE		02		
22.9cm (9 in.) PAPER	33	33	33	
22.9cm (9 in.) FILM POSITIVE			13	
22.9cm (9 in.) FILM NEGATIVE			3	
22.9x45.7cm (9x18 in.) PAPER				55
22.9x45.7cm (9x18 in.) FILM POSITIVE				15
22.9x45.7cm (9x18 in.) FILM NEGATIVE				05
45.7cm (18 in.) PAPER	24	24	24	
68.6cm (27 in.) PAPER		25	25	
91.4cm (36 in.) PAPER		26	26	

COLOR PRODUCTS	FILM SOURCE: COL. 70mm	COL. 9 in.	COL. 5 in.	COL. 5 X 18 in.
55.8mm (2.2 in.) FILM POSITIVE	91			
55.8mm (2.2 in.) PAPER				
11.4cm (4.5 in.) PAPER		42		
11.4cm (4.5 in.) FILM POSITIVE		92		
22.9cm (9 in.) PAPER	83		83	
22.9cm (9 in.) FILM POSITIVE			93	
22.9x45.7cm (9x18 in.) PAPER				89
22.9x45.7cm (9x18 in.) FILM POSITIVE				29
45.7cm (18 in.) PAPER	84	84	84	
68.6cm (27 in.) PAPER		85	85	
91.4cm (36 in.) PAPER		86	86	

NOTE NUMBERS IN OPEN BLOCKS REFLECT PRODUCT CODES

TOTAL ABOVE TOTAL FROM PREVIOUS SHEETS	A
	B
TOTAL COST	C

Please refer to current price list for cost determination.

ORIGINAL PAGE IS OF POOR QUALITY

PAYMENT MADE BY:

CHECK, MONEY ORDER ☐

PURCHASE ORDER ☐

GOVT. ACCOUNT ☐

COMMENTS: _____

Return completed form to the facility nearest you.

NCIC HEADQUARTERS
U.S. Geological Survey
507 National Center
Reston, VA 22092
FTS: 928-6045
COMM: 703-860-6045

EROS APPLICATIONS FACILITY
NSTL
U.S. Geological Survey
Bay St. Louis, MS 39520
FTS: 494-3541
COMM: 688-3472

NCIC MID-CONTINENT
U.S. Geological Survey
1400 Independence Rd.
Rolla, MO 65401
FTS: 276-9107
COMM: 314-364-3680

EROS DATA CENTER
U.S. Geological Survey
Sioux Falls, SD 57198
FTS: 784-7151
COMM: 605-594-6511

NCIC ROCKY MOUNTAIN
U.S. Geological Survey
Stop 510, Box 25046
Denver Federal Ctr.
Denver, CO 80225
FTS: 234-2326
COMM: 303-234-2326

NCIC WESTERN
U.S. Geological Survey
345 Middlefield Rd.
Menlo Park, CA 94025
FTS: 467-2427
COMM: 415-323-2427

FORM: 9-1940 (Jan. 1977)

HOW TO ORDER NASA AIRCRAFT PHOTOGRAPHY

This order form is to be used for ordering all NASA AIRCRAFT PHOTOGRAPHY. Photo identification numbers can be transcribed directly from a computer listing. When ordering from other reference sources, be sure to specify the MISSION, ROLL, and FRAME NUMBER for the desired photograph(s).

Please provide the following information in the indicated areas of the order form:

A. List your complete NAME, ADDRESS, ZIP CODE, and name of your COMPANY if applicable.

B. List a PHONE NUMBER where you can be contacted during business hours.

C. If you have had previous business with THAT FACILITY, please list your ACCOUNT NUMBER, if known.

D. Enter the complete PHOTO IDENTIFICATION NUMBER. This can be transcribed directly from the COMPUTER LISTING. If the source of information is from another source, specify the MISSION, ROLL NUMBER and FRAME NUMBER.

E. Review the STANDARD PRODUCTS TABLE on the order form and determine the type of product desired. CARE must be exercised in insuring that the FILM SOURCE reflected in the tables correlates with the FILM SOURCE listed on the COMPUTER LISTING.

F. Enter the PRODUCT CODE of the type product being ordered from the STANDARD PRODUCTS TABLE.

G. Enter the FRAME NUMBER in the FIRST FRAME column. (See instructions for interpolation of a frame from a PHOTO STRIP) If two or more consecutive frames are being ordered, enter the FIRST FRAME of the series in the FIRST FRAME column and the LAST FRAME in the LAST FRAME column.

H. Enter the NUMBER OF UNIQUE FRAMES being ordered. Example: FIRST FRAME - 116; LAST FRAME - 119; NO. OF FRAMES is 4.

I. Enter the NO. OF COPIES being ordered of the FRAMES you have identified.

J. The COMMENTS portion is completed only when a CUSTOM PRODUCT is desired and you want to specify the parameters. Refer to the current price list for custom product cost determination.

K. Multiply the NO. OF FRAMES by the NO. OF COPIES and enter the result in the QUANTITY column.

L. Enter the UNIT PRICE of the product as reflected on the current PRICE LIST.

M. Multiply the figure in the QUANTITY column by the figure in UNIT PRICE column and ENTER the result in the TOTAL PRICE column.

N. REPEAT the above for each product ordered.

O. TOTAL the costs of all products ordered on that order form and enter the NET result in BLOCK A. TOTAL ABOVE.

P. If more than one order form is required, enter the sum of the figures in BLOCKS A in BLOCK B of the last order form.

Q. Enter the SUM of BLOCK A and BLOCK B in BLOCK C, TOTAL COST.

R. Indicate the TYPE of payment being made with a CHECK MARK. Make all drafts payable to U.S. GEOLOGICAL SURVEY. DO NOT SEND CASH.

S. MAIL ORDER FORM(S) and PAYMENT to the FACILITY NEAREST YOU. If payment has been previously forwarded, the order form(s) must be mailed to the same facility.

Table 5.1. NASA High Altitude Coverage (RB-57/U-2) By County.

COUNTY	103	111	128D	132	144	145	166	171	205	211	273	309	312	315	22 017	22 068	22 124	22 183	23 085A	23 136	24 123	25 008
Alcona													P								P*	P
Alger		P																			P	
Allegan	P				P						P											
Alpena																					P*	P
Antrim					P																	
Arenac												P*	P*	P*							P	P
Baraga																					P*	
Barry								P*	P*	P*	P*									P*		
Bay												P	P*	T								P
Benzie	T																					
Berrien	T				P*		P*															
Branch	P						P	P	T	T	P	P										
Calhoun	P							P	T	T	P	P								P*		
Cass	P				P		T															
Charlevoix	P																					
Cheboygan					P*																P	P
Chippewa																					P*	
Clare																						
Clinton	P*							P*	T	T		P*		P	P*					P*	P	
Crawford					P																	
Delta																				P	P	
Dickinson																				P		
Eaton	P*							P	T	P										P		
Emmet					P*																	P
Genesee	P*		P					P	P	P*		T	P	P	P		P	P		T	P	
Gladwin												P*		P*								
Gogebic																					P*	
Grand Traverse	P*																					
Gratiot								P*	P*	P		P*		P								
Hillsdale	T						P		T	P		P										
Houghton																					P*	
Huron								P				P*	P	P							P	P*
Ingham	T			P		P	P	P*	T	T		P								T	P*	
Ionia								T	P*	T	P				P*					P*	P*	
Iosco													P								P	P*
Iron																					P	
Isabella								P														
Jackson	T			P		P	P	P	T	P*		P								P		
Kalamazoo								P*		P	P*									P*		
Kalkaska					P																	
Kent								P*		P	P*				P					P	P	
Keweenaw																					P*	

CODE: T - Total Coverage; P - Partial Coverage 50% or less; P* - Partial Coverage over 50%

ORIGINAL PAGE IS
OF POOR QUALITY

Table 5.1.--NASA High Altitude Coverage (RB-57/U-2) By County (cont'd.).

COUNTY	103	111	128D	132	141	145	166	174	205	211	273	309	312	315	72-047	72-068	72-171	72-181	73-085A	73-136	74-123	75-055B
Lake	P*									T												
Lapeer	P*		P*					P*	P	P		T	P	P	P		P*	P*		P	P	
Leelanau	T				P																	
Lenawee	T			P*		P	P		T										P			
Livingston	T			P*		P*	P*		T	T		P*	P			P	P	P		T	P	
Luce																					P	
Mackinac	P				P																P	
Macomb	P*											P*	T				P	P		P*		
Manistee	T									P												
Marquette																					P	
Mason	T									P*												
Mecosta								P		P*												
Menominee																					P*	P
Midland								P				P*		P*								
Missaukee																						
Monroe	T			P		P		P	T				T		P				P		P	
Montcalm								P	P*	P*	P											
Montmorency					P																P	
Muskegon	P*				P						P				P						P*	
Newaygo	P							P		P*	P										P	
Oakland	T		P*	P		P		P*	P*	P		P*	T		P	P	T	T		P*	P	
Oceana	T				P					P*												
Ogemaw												P		P							P	
Ontonogon																					P	
Osceola										P*												
Oscoda																						
Otsego					P*																	
Ottawa	P*				P						P				P						P	
Presque Isle					P																P*	P*
Roscommon												P										
Saginaw								P	P*	P		T	P*	P*								P
Sanilac								P				P	P*									P*
Schoolcraft	P																				P	
Shiawassee	P*							P	T	T		T		P	P*					P*		
St. Clair	P											P	T				P	P		P		P*
St. Joseph								P*		P	P*											
Tuscola								P*				T	P	T							P*	P*
Van Buren	P				P		P*															
Washtenaw	T			P*		P*	P*		T	P*			P		P	P	P	P		P*	P	
Wayne	T		P					P*	P*				T		P	P	P*	P*		P	P	
Wexford	P									P*												

CODE: T - Total Coverage; P - Partial Coverage: 50% or less; P* - Partial Coverage: over 50%

Table 5.2.--Film/Filter Codes for NASA Research Aircraft Photography: Metric Camera Systems.

Identifier	Film/Filter Combination*	Sensitivity (nanometers)
I	Color (2448+HF3)	390-700
II	Color (SO 397+2A)	410-700
III	Color (SO 397+2E)	420-700
IV	Color (SO 397+510nm)	510-700
V	Color (SO 360+2A)	410-700
VI	Color (SO 397+22AV)	400-700
VII	Color Infrared (2443+2A)	410-900
VIII	Color Infrared (2443+12)	500-900
IX	Color Infrared (2443+15)	510-900
X	Color Infrared (2443+510nm)	510-900
XI	Color Infrared (2443+520nm)	520-900
XII	Color Infrared (SO 117+500nm)	500-900
XIII	Color Infrared (SO 117+14AV)	400-900
XIV	Color Infrared (2443+515nm)	515-900

* Eastman Kodak film and filter number, except in some cases the transmittance cut-off wavelength of the filter is given.

Table 5.2.--Film/Filter Codes for NASA Research Aircraft Photography: Metric Camera Systems.

Identifier	Film/Filter Combination*	Sensitivity (nanometers)
I	Color (2448+HF3)	390-700
II	Color (SO 397+2A)	410-700
III	Color (SO 397+2E)	420-700
IV	Color (SO 397+510nm)	510-700
V	Color (SO 360+2A)	410-700
VI	Color (SO 397+22AV)	400-700
VII	Color Infrared (2443+2A)	410-900
VIII	Color Infrared (2443+12)	500-900
IX	Color Infrared (2443+15)	510-900
X	Color Infrared (2443+510nm)	510-900
XI	Color Infrared (2443+520nm)	520-900
XII	Color Infrared (SO 117+500nm)	500-900
XIII	Color Infrared (SO 117+14AV)	400-900
XIV	Color Infrared (2443+515nm)	515-900

* Eastman Kodak film and filter number, except in some cases the transmittance cut-off wavelength of the filter is given.

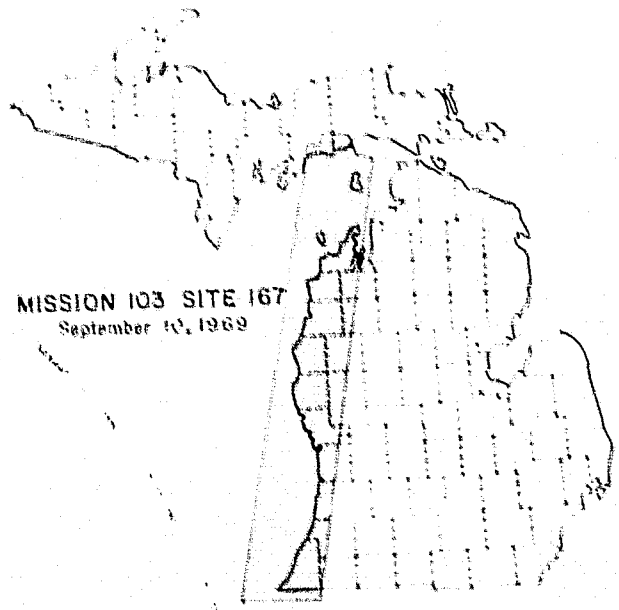
Table 5.3.--Film/Filter Codes for NASA Research Aircraft Photography: Multiband Camera Systems.

Identifier	Film/Filter Combination*	Sensitivity (nanometers)
A	Black & White (2402+25)	590-700
B	Black & White (2402+47)	360-520
C	Black & White (2402+57)	460-620
D	Black & White (2402+58)	470-610
E	Black & White (2402+GG475+BG18)**	475-575
F	Black & White (2402+OG570+BG38)**	580-680
G	Black & White (3400+OG570+BG38)**	580-680
H	Black & White (3401+58)	470-610
I	Black & White (3401+78A)	400-700
J	Black & White (3401+25A)	590-700
K	Black & White (3401+47)	360-520
L	Black & White (SO 278+W3)	440-700
M	Black & White Infrared (2424+89B)	680-900
N	Black & White Infrared (2424+87)	740-940
O	Black & White Infrared (2424+25)	590-900
P	Black & White Infrared (2424+RG645+9830)***	690-760
Q	Black & White Infrared (SO 246+87B)	680-900
R	Color (SO 121+2E)	420-700
S	Color (SO 242+none)	400-700
T	Color (SO 356+2E)	420-700
U	Color Infrared (2443+15)	510-900
V	Color Infrared (2443+12)	500-900
W	Color Infrared (SO 117+15)	510-900

* Eastman Kodak film and filter number.
** Schott Filter.
*** Schott plus a Corning filter.

Figure 5.4.--Michigan County Reference Map.

INDEX TO RB-57 IMAGERY OF MICHIGAN



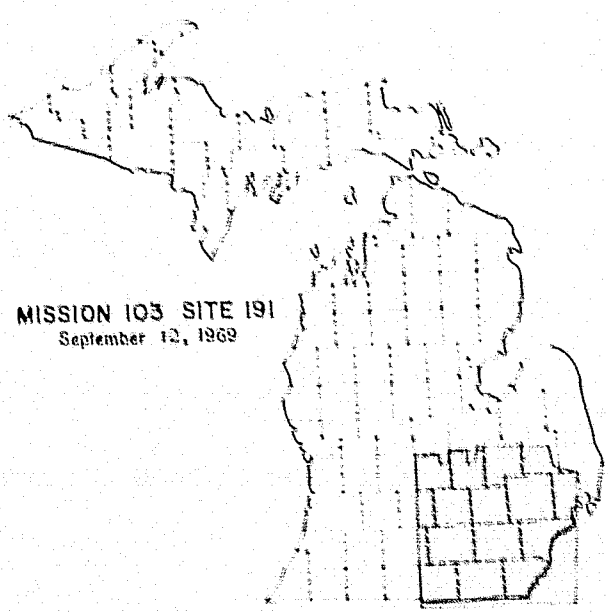
MISSION 103 SITE 167
September 12, 1969

General Location: Northwest of South Bend, Indiana, to Mackinaw City in the upper Peninsula of Michigan. Four north-south oriented flight lines.

Image Type and Scale: Color Infrared (CIR) 1:120,000 and 1:60,000. Color (C) 1:120,000 and Multiband (MB) 1:120,000.

Quality: Generally good.

Cloud Cover: Extreme southern end of each flight is obscured.



MISSION 103 SITE 191
September 12, 1969

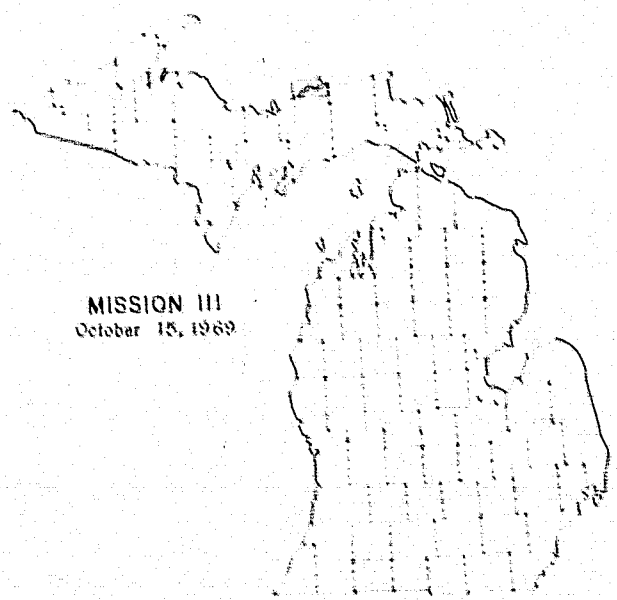
General Location: Southeast Michigan. Two north-south oriented flight lines.

Image Type and Scale: Color Infrared (CIR) 1:120,000 and 1:60,000. Color (C) 1:120,000 and Multiband (MB) 1:120,000.

Quality: First five flight lines (western half of the color imagery is under exposed and the color infrared (CIR) 1:120,000 has a dark spot in the center of each frame. Otherwise quality is generally good.

Cloud Cover: Scattered, minimal.

Remarks: Due to camera failure coverage is black and white, both panchromatic and infrared, is mixed and only available for four flight lines covering Washtenaw County.



MISSION 111
October 15, 1969

General Location: The flight lines of the Lake Superior shoreline west of Grand Marais state park.

Image Type and Scale: Color Infrared (CIR) 1:4 400. Color (C) 1:4,400 and Infrared (IR).

Quality: The color infrared imagery is dark but the remaining frames are of excellent quality.

Cloud Cover: Clear.

Remarks: Only a few frames of imagery were delineated from this flight because of problems with exposure due to surface tones over the sand dunes.

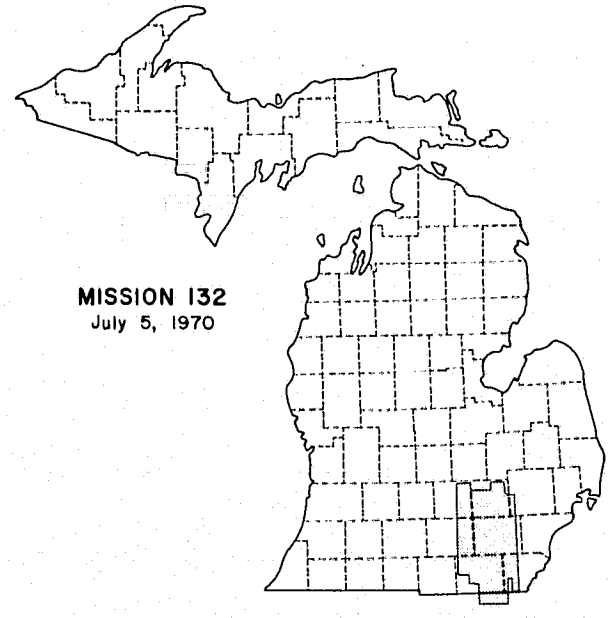
MISSION 128D
July 5, 1970

General Location: A single north-south line from Highland Park, Michigan to a few miles north of Lapeer, Michigan.

Image Type and Scale: Color Infrared (IX) 1:125,000 and 1:62,500, Color (III) 1:125,000, Multiband (A,D,M,W) 1:476,000.

Quality: Excellent.

Cloud Cover: Clear.



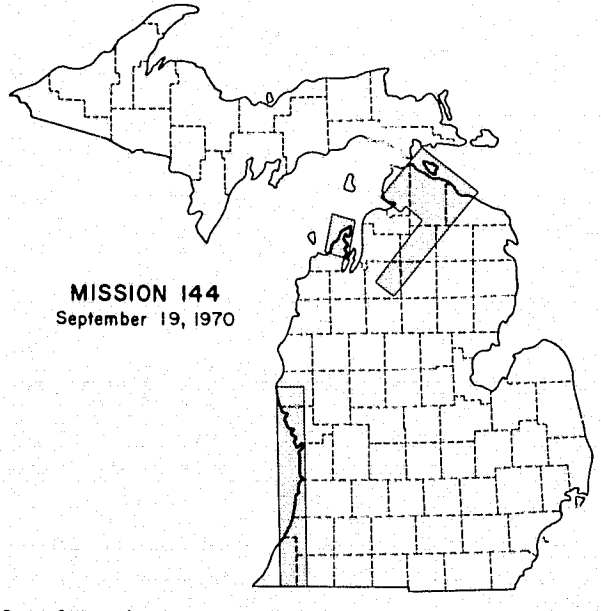
MISSION 132
July 5, 1970

General Location: Eight north-south flight lines running from the Ohio border to the northern boundary of Livingston County, Michigan.

Image Type and Scale: Color Infrared (IX) 1:82,000 and 1:41,000, Color (III) 1:82,000 and Multiband (A,D,L, M,O,W) 1:156,000. A shortened flight line over Ann Arbor obtained Color Infrared (IX) 1:125,000 and 1:62,000 and Color (III) 1:125,000.

Quality: Excellent.

Cloud Cover: Some scattered clouds.



MISSION 144
September 19, 1970

General Location: Three separate sites:

i) one flight line from the Indiana border to north of Whitehall in Mason County, Michigan;

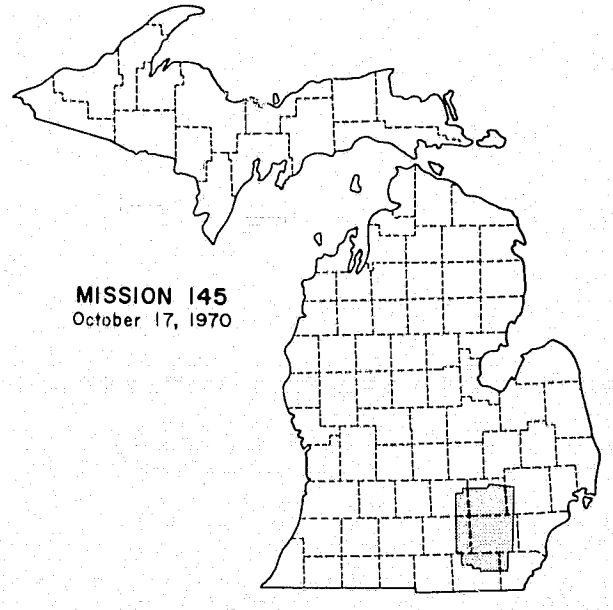
ii) one flight line over the northern half of Leelanau County, Michigan;

iii) three flight lines covering the Lake Huron shoreline from Rogers City to Mackinaw City extending inland as far as Cadillac.

Image Type and Scale: Color Infrared (IX) 1:120,000 and 1:60,000, Color (III) 1:120,000.

Quality: Excellent.

Cloud Cover: Scattered, minimal.



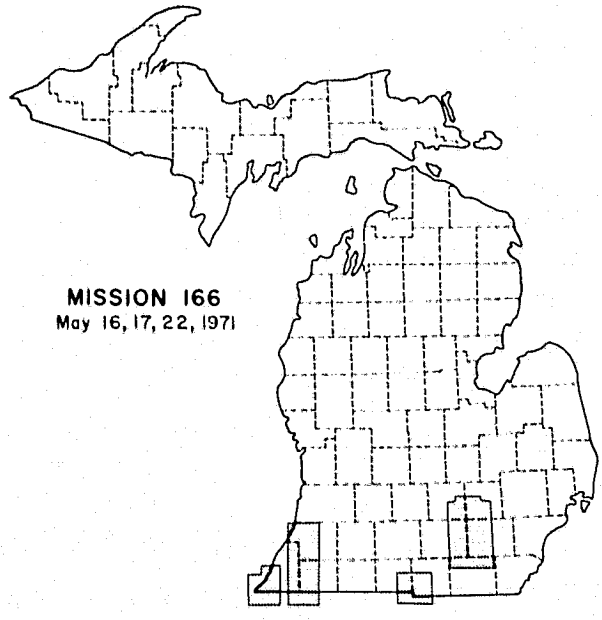
MISSION 145
October 17, 1970

General Location: Eight north-south flight lines covering an area from Tecumseh, Lenawee County in the south to Howell, Livingston County in the north.

Image Type and Scale: Color Infrared (IX) 1:118,000 and 1:59,000, Color (III) 1:118,000 and Multiband (A,D,L, M,O,W) 1:225,000.

Quality: Excellent.

Cloud Cover: Clear.



MISSION 166
May 16, 17, 22, 1971

General Location: Four sites in the southern Lower Peninsula:

i) six north-south flight lines covering an area bounded by Tecumseh on the south and by Howell on the north;

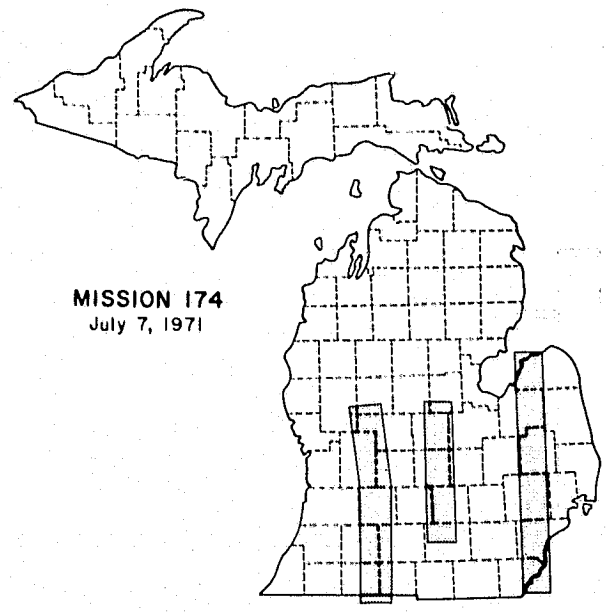
ii) three small areas along the southern border of Michigan.

Image Type and Scale: i) Color Infrared (XI) 1:80,000 and 1:40,000, Color (II) 1:80,000 and Multiband (A,D,M, T,U) 1:305,000.

ii) Color Infrared (XI) 1:120,000.

Quality: Fair. Usable.

Cloud Cover: Heavy clouds rendered the flight line running from Lakeside, Michigan (the most westerly site) unusable.



MISSION 174
July 7, 1971

General Location: Four flight strips:

i) one flight line north from Stony Point, Ohio on Lake Erie, to Port Austin, Michigan on Lake Huron;

ii) one flight line from Jackson to near Midland passing directly over Lansing;

iii) two flight lines extending north from the Indiana border to northern Montcalm County, passing between Kalamazoo and Battle Creek, and east of Grand Rapids.

Image Type and Scale: Color Infrared (X) 1:120,000.

Quality: Excellent.

Cloud Cover: Clear.

MISSION 205
June 10, 11, 1972

General Location: Six north-south flight lines extending from Detroit to west of Battle Creek and from the Ohio border north to the latitude of Saginaw.

Image Type and Scale: Color Infrared (VIII) 1:119,000 and 1:59,500, Color(II) 1:119,000 and Multiband (A,C,M,T,V) 1:453,000 and infrared scanner.

Quality: Excellent.

Cloud Cover: Clear, except for scattered cumulus clouds in the extreme southwestern section of Lenawee County and heavy haze over eastern Oakland County.

MISSION 211
September 15, 1972

General Location: Coverage is in two sections:

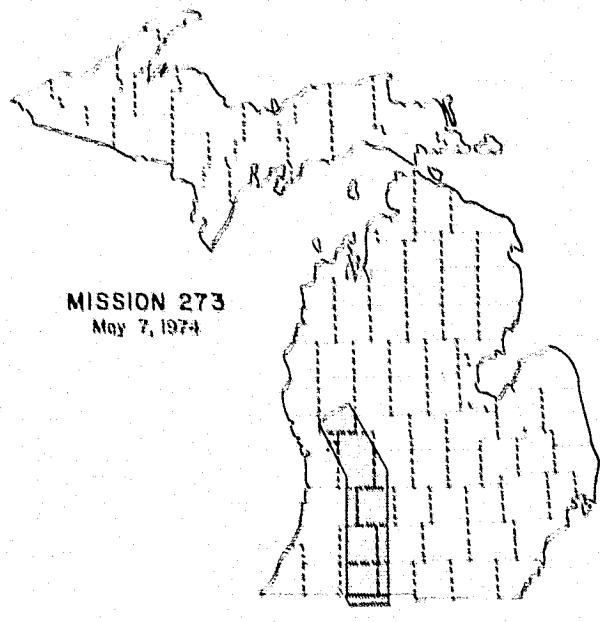
i) eight flight lines westward from the western edge of the Detroit metropolitan area to Battle Creek and north from the Ohio border to Flint;

ii) four flight lines from the Oceana County boundary north to central Manistee, and from just east of Lake Michigan to central Osceola County.

Image Type and Scale: Color Infrared (VIII) 1:118,000 and 1:59,000, Color (II) 1:118,000 and Multiband (A,C,M,T,V) 1:453,000.

Quality: Excellent.

Cloud Cover: Clear, except for scattered cumulus clouds in southeastern Branch County, and heavy cumulus in central Montcalm and southern Manistee Counties.



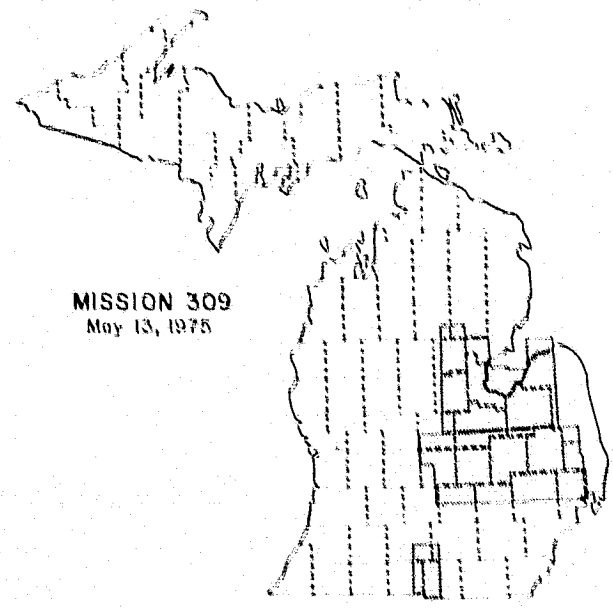
MISSION 273
May 7, 1974

General location: Two flight lines extending from the southern boundary of Michigan in St. Joseph County to the middle of Newaygo County covering portions of the Kalamazoo-Black Paw Paw River Basin, the city of Kalamazoo and the eastern suburbs of Grand Rapids.

Image Type and Scale: Color infrared (VIII) 1:114,000 and 1:54,000, Multiband (A,B,C,M,N,V) 1:21,000 and 1 fixed scanner.

Quality: Excellent.

Cloud cover: Clear.



MISSION 309
May 13, 1975

General location: Three sites:

i) one north-south flight line covering parts of Branch, Hillsdale, Jackson and Calhoun counties;

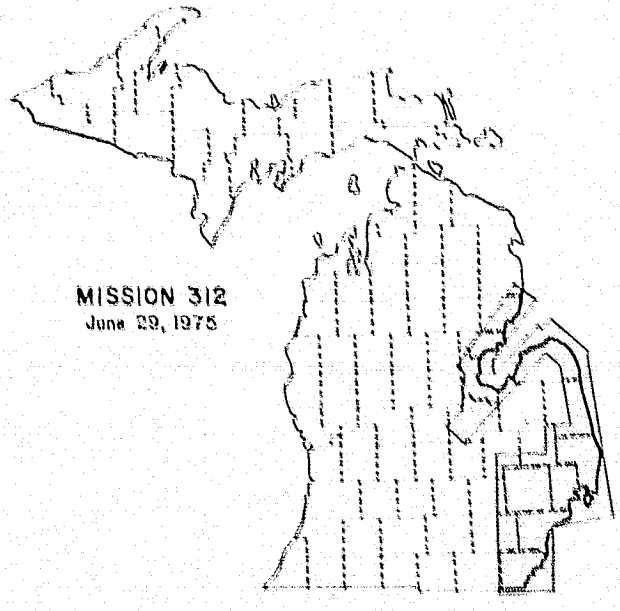
ii) three east-west flight lines covering Shiawassee, Genesee, and Tapper counties;

iii) five north-south lines covering several counties around Saginaw Bay.

Image Type and Scale: Color infrared (VIII) 1:120,000 and (IV) 1:60,000 and Multiband (A,C,M,T,V) 1:48,000.

Quality: Excellent.

Cloud cover: 20-30% cumulus over Hillsdale and Branch Counties.



MISSION 312
June 29, 1975

General location: Two sites:

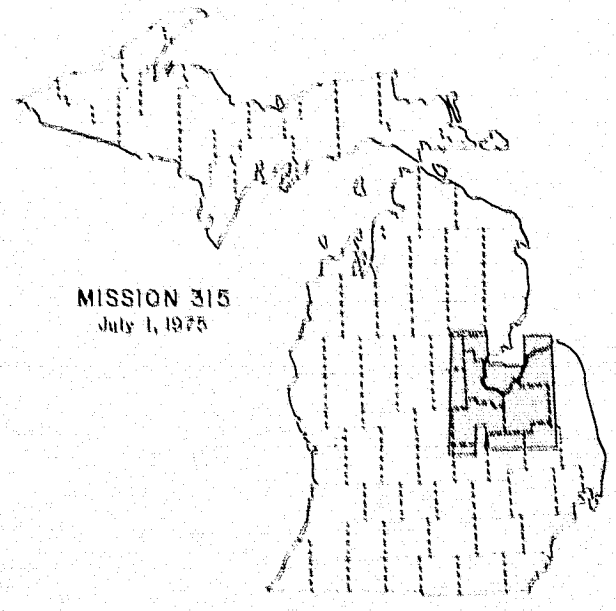
i) #18 flight lines covering the Detroit region;

ii) five flight lines along and inland from the southeast shore of Lake Huron from St. Clair County to Huron County and along and inland from the shore of Saginaw Bay from Huron to Iosco Counties.

Image Type and Scale: Color infrared (VIII) 1:120,000 and Multiband (B,M,T) 1:24,000.

Quality: Good.

Cloud cover: Scattered cumulus along the western part of the Thumb and heavy to moderate haze over the western edge of the Detroit Metropolitan Area.



MISSION 315
July 1, 1975

General location: Five north-south flight lines covering the Saginaw Bay area and the western portion of the Thumb.

Image Type and Scale: Color infrared (VIII) 1:122,000 and (XIV) 1:61,000, and Multiband (A,C,M,P,V) 1:48,000.

Quality: Good.

Cloud cover: Scattered.

INDEX TO U-2 IMAGERY OF MICHIGAN

MISSION 72-047
March 24, 1972

General Location: Three flight line segments:

i) west to east from Muskegon to north of Pontiac;

ii) south from Pontiac to Ypsilanti;

iii) south-southeast from Detroit's Metropolitan Airport to Cleveland, Ohio.

Image Type and Scale: Multiband (E,F,P,U) 1:445,000.

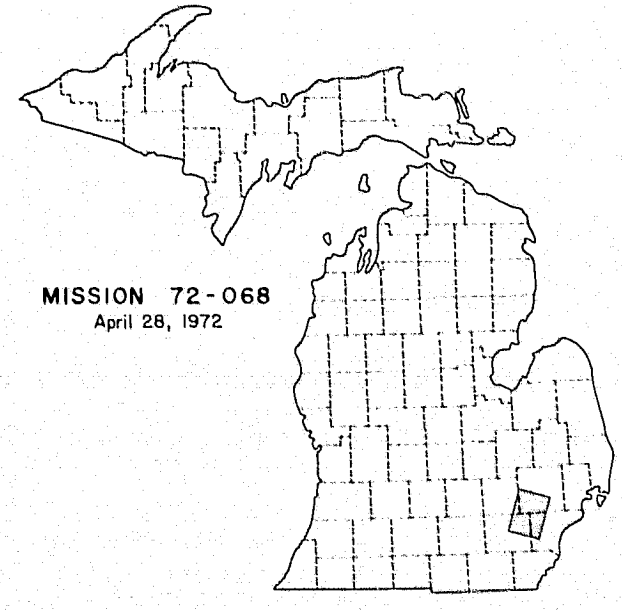
Quality: Good.

Cloud Cover: Varies with flight line segments:

i) clear, except for four frames near Flint, Michigan;

ii) 40% cloud cover--scattered cumulus throughout;

iii) 20-40% cloud cover, but concentrated in the Ohio end of the flight line.



MISSION 72-068
April 28, 1972

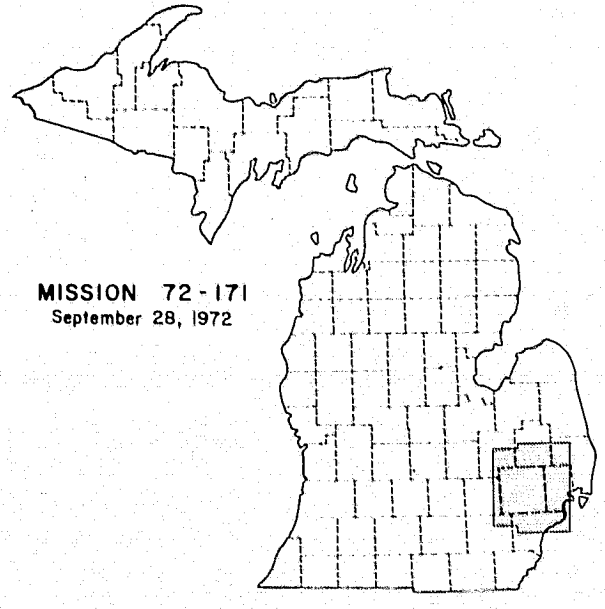
General Location: One short flight line from Ypsilanti to just south of Pontiac.

Image Type and Scale: Multiband (E,F,P,U) 1:445,000.

Quality: Good, except for some moderately heavy scratches on the "E" film and light scratches on the "F" film.

Cloud Cover: Fairly heavy cloud cover, 10-100% strato-cumulus.

Remarks: This mission produced very little usable imagery and will only be useful for isolated spotcheck purposes.



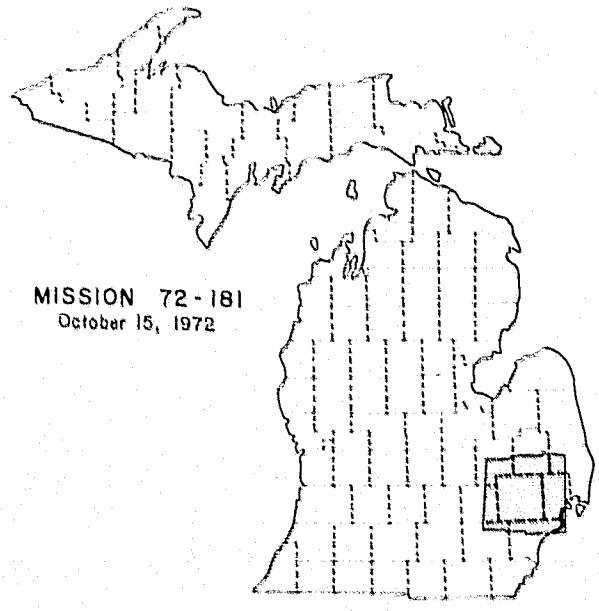
MISSION 72-171
September 28, 1972

General Location: Southeast Michigan, centered on Pontiac, four north-south flight lines.

Image Type and Scale: Color Infrared (X) 1:130,000 and Multiband (E,F,P,U) 1:445,000.

Quality: Good, except for a film transport malfunction during exposure of four frames of film "U".

Cloud Cover: Largely obscured by moderate to heavy cumulus cloud cover (20-80%).



MISSION 72-181
October 15, 1972

General Location: Southeast Michigan, centered on Pontiac, four north-south oriented flight lines.

Image Type and Scale: Color Infrared (X) 1:130,000 and Multiband (B,P,P) 1:445,000.

Quality: Good.

Cloud Cover: Light scattered cumulus.

Remarks: A multiband (P) film was lost due to camera malfunction. The color infrared (X) camera clock was incorrectly set on FP1 instead of GMP.

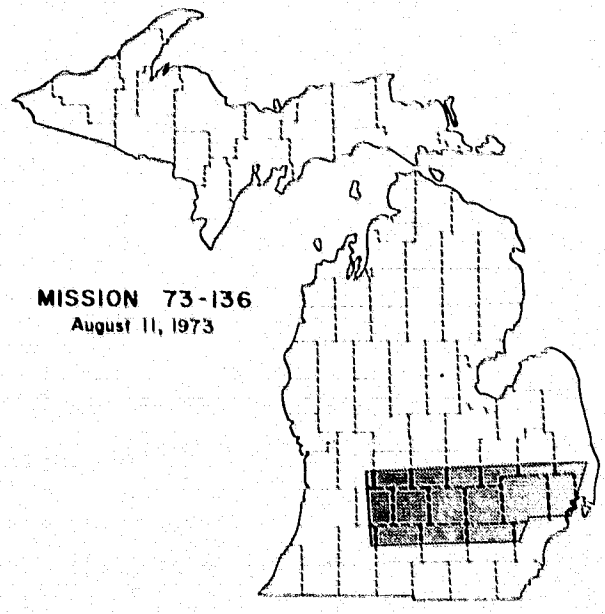
MISSION 73-085A
June 2, 1973

General Location: A short flight line covering southeast Monroe County.

Image Type and Scale: Color Infrared (X) 1:130,000 and Multiband (B,P,P,U) 1:445,000.

Quality: Generally good, except three frames of film "P" were partially fogged during camera loading and both film "P" and "X" are slightly under-exposed.

Cloud Cover: Scattered cumulus.



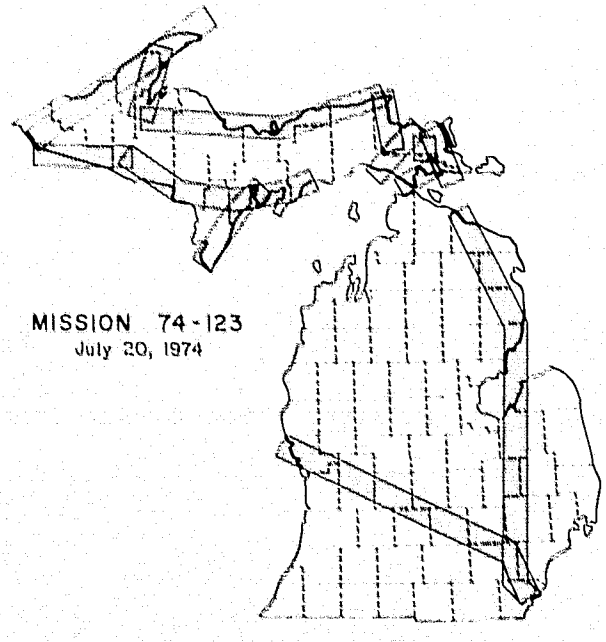
MISSION 73-136
August 11, 1973

General Location: A series of five east-west flight lines covering a large part of southeastern Michigan from western Wayne County to Battle Creek and north as far as Flint, but excluding the city of Detroit.

Image Type and Scale: Color Infrared (X) 1:130,000 and Multiband (B,P,P,U) 1:445,000.

Quality: Excellent.

Cloud Cover: Light scattered cumulus cloud cover was encountered on all flight lines, but it generally constitutes no more than 10-20% of the frame.



MISSION 74-123
July 20, 1974

General Location: Four sites:

i) a north-south flight line from north central Monroe County to northeast Isaco County;

ii) a flight line from southeast Alcona County to northwest Presque Isle County;

iii) a series of flight lines along most of the shoreline of the Upper Peninsula;

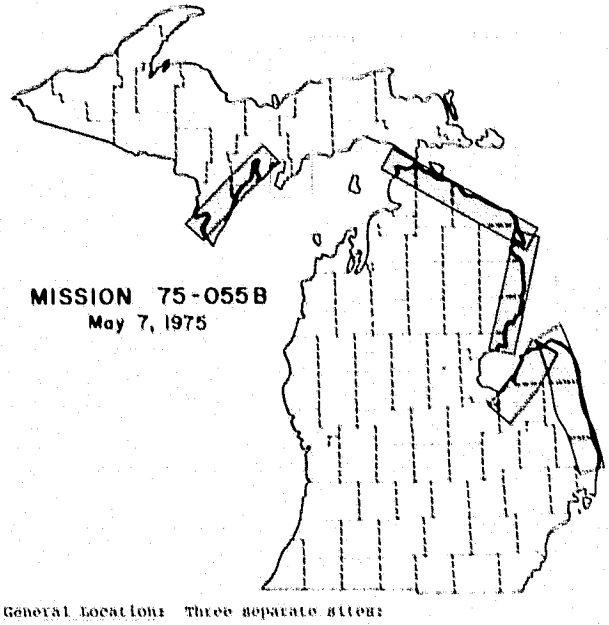
iv) a southeast oriented flight line from Muskegon to Ann Arbor.

Image Type And Scale: Color Infrared (X) 1:130,000 and Multiband (B,P,S,U) 1:445,000.

Quality: Good, except first ten frames of film "P".

Cloud Cover: Site i) 10 to 20% cumulus; site ii) clear; site iii) eastern Upper Peninsula clear to 10% with western Upper Peninsula 10-50% cumulus; site iv) 10% cumulus.

Remarks: Multiband photography was not gathered for site "1".



MISSION 75-055B
May 7, 1975

General Location: Three separate sites:

i) two flight lines along and inland from the southwest shore of Lake Huron and southeast shore of Saginaw Bay (St. Clair County to Tuscola County);

ii) two flight lines along and inland from the northwest shore of Lake Michigan (Arenac County to Emmet County);

iii) one flight line along and inland from the northwest shore of Lake Michigan (Menominee County and Delta County).

Image Type and Scale: Color Infrared (X) 1:130,000 and Multiband (R,G,P,S) 1:445,000.

Quality: Good to excellent except soft focus around the edge of film "S".

Cloud Cover: i) very light scattered cumulus along Lake Huron to 10-60% heavy cumulus along Saginaw Bay; ii) clear; and iii) first four frames 10-40% cumulus with subsequent frames having 10-60% cirrus cover.

Remarks: The interframe spacing on the "S" frame sequence is inconsistent.

REGIONAL / COUNTY IMAGERY

SECTION 6

REGIONAL/COUNTY IMAGERY

GENERAL INFORMATION

Aerial photography of Michigan providing regional or county-wide coverage is available from several federal agencies and from numerous public agencies within the state that have obtained regional coverage from aerial survey companies. This imagery is acquired for different purposes and consequently encompasses a variety of specifications. This section of the guide includes a short synopsis describing the characteristics of imagery available from each agency and a general discussion on how to obtain imagery, a comprehensive list of available imagery by county, and the latest map indexes showing the extent of regional coverage.

ASCS Aerial Photography: Since the 1930's the Agricultural Stabilization and Conservation Service (ASCS) has been routinely obtaining vertical aerial photography of the nation's major cropland areas. Most of the coverage is black-and-white panchromatic photography at a scale of 1:20,000 or at 1:40,000 since 1970. The photography is acquired using a 6 inch (152 mm), 8.25 inch (210 mm) or 12 inch (305 mm) focal length lens and is flown with a 65% endlap and 30% sidelap specification. Photo coverage is usually for entire counties, and is flown during the summer months for areas in the northern part of the United States such as Michigan. New photography is obtained about every six years because of changing land use patterns and is recommended by the state and local ASCS committees.

SCS Aerial Photography: The Soil Conservation Service (SCS) periodically acquires black-and-white panchromatic aerial photography of entire counties for its use in a variety of soil resource programs, most notably soil survey work. Available SCS imagery of Michigan is at a scale of 1:45,000 to 1:55,000 and is acquired using a 6 inch (152 mm) focal length lens.

FS Aerial Photography: The United States Forest Service (FS) acquires two major types of aerial photography over the four National Forest lands in Michigan for use in timber resource programs. High altitude "leaf-off" photography is acquired at scales of 1:60,000 or 1:72,000 on panchromatic or color

film. Lower altitude "leaf-on" photography of Michigan forests is available at a scale of 1:15,840. Most of this coverage is acquired using a 8.25 inch (210 mm) focal length lens and black-and-white infrared film during the summer months when the trees are in full foliage.

USGS Aerial Photography: The United States Geological Survey (USGS) obtains black-and-white panchromatic aerial photography prior to the preparation of topographic maps. Coverage is, therefore, acquired on a project basis and conforms to the topographic map areas under consideration without regard to county boundaries. Photography is usually obtained in the spring or fall at scales varying from 1:13,000 to 1:46,000 with a 6 inch (152 mm) or shorter focal length lens.

National Archives: All photographic coverage procured on nitrate film by ASCS from 1936 through 1941, and by SCS prior to 1942 has been transferred to the National Archives and Record Service (NARS). This photography is at a scale of 1:20,000 on panchromatic film.

Michigan Agency Photography: A variety of agencies within the state have acquired imagery, principally for tax and planning purposes. Since the 1950's, county agencies have increasingly contracted with private aerial survey firms (addresses in Appendix B) to obtain photographic coverage of their area. Most of the photography is black-and-white panchromatic at scales ranging from 1:6,000 to 1:36,000.

Regional planning agencies began to acquire aerial photography in the 1960's, e.g. the Southeast Michigan Council of Governments secured 1:36,000 panchromatic photography of its seven county region in 1966. More recently, color infrared photography (CIR) flown at medium altitudes (scales in the 1:30,000 range) has been procured for regional planning purposes. In 1973, the Michigan Department of State Highways and Transportation acquired 1:36,000 CIR photography in the northern Lower Peninsula, providing complete or partial coverage of twenty counties, and of a smaller area in the Upper Peninsula bordering the Lake Michigan shoreline of Delta, Schoolcraft and Mackinac Counties (see Fig. 6.1, p. 6-6).

The Soil Conservation Service and the MSU Remote Sensing Project acquired CIR photography at a scale of 1:31,680 for the Kalamazoo River Basin in 1974. More recently, the West Michigan Regional Planning Commission, the West Michigan Shoreline Regional Development Commission, and the

Southcentral Michigan Planning and Development Council have also acquired medium-scale color infrared photography in support of their planning programs.

The latest development in the acquisition of regional level imagery is an ambitious project coordinated by the Michigan Department of Natural Resources (DNR) to obtain 1:24,000 color infrared photography for all of the Upper Peninsula and the northern half of the Lower Peninsula. This flight is scheduled for the summer of 1977 and complete information on the photography to be acquired can be obtained from the Division of Land Resource Programs of the DNR.

Collection of imagery by public agencies in the state is difficult to monitor in a systematic manner. Acquisitions are recent, obtained on a piecemeal basis and are often locationally confined by planning jurisdictions. Inevitably, any attempt to provide a comprehensive reporting of imagery contracted by agencies in Michigan will be incomplete. Users of the guide can assist in revision of the document by supplying appropriate details on imagery unreported here to the Remote Sensing Project at Michigan State University.

HOW TO USE THE INDEX

To determine image availability, refer to the computer listing which indicates agency coverage by county. From this index a determination can be made as to which agencies or aerial survey firms have pertinent photographic coverage considering the date, scale and type of film indicated.

The most recent aerial photo coverage available for an area from federal sources is also shown on status maps included in this section (supplied by the appropriate agencies). Users can update this information themselves by securing subsequent maps from these agencies. More current imagery may be available upon a request detailing the exact location of interest.

The level of information included in this section does not enable one to directly order imagery because exact coverage, number of frames required, and frame identification numbers have to be known prior to placing an order. This information can be obtained by contacting the appropriate agency. For federal sources, photo index sheets are available for inspection and purchase at the county, district,

state or federal offices of the respective agency. A photo index is an assemblage of individual photographs copied at a reduced scale (usually 1:63,360 or 1 inch to the mile). Out-of-date imagery may be archived at various colleges and universities, e.g. the Department of Geography at Michigan State University and the School of Natural Resources at the University of Michigan.

Detailed information on ordering and cost of photo indexes or individual photographs is included after the index maps from federal sources so that users with clear requirements can determine costs and in some cases directly order imagery.

Figure 6.1.--Michigan Department of State Highways and Transportation Color Infrared Photo of the St. Ignace Area (part of original 9 by 9 inch frame).

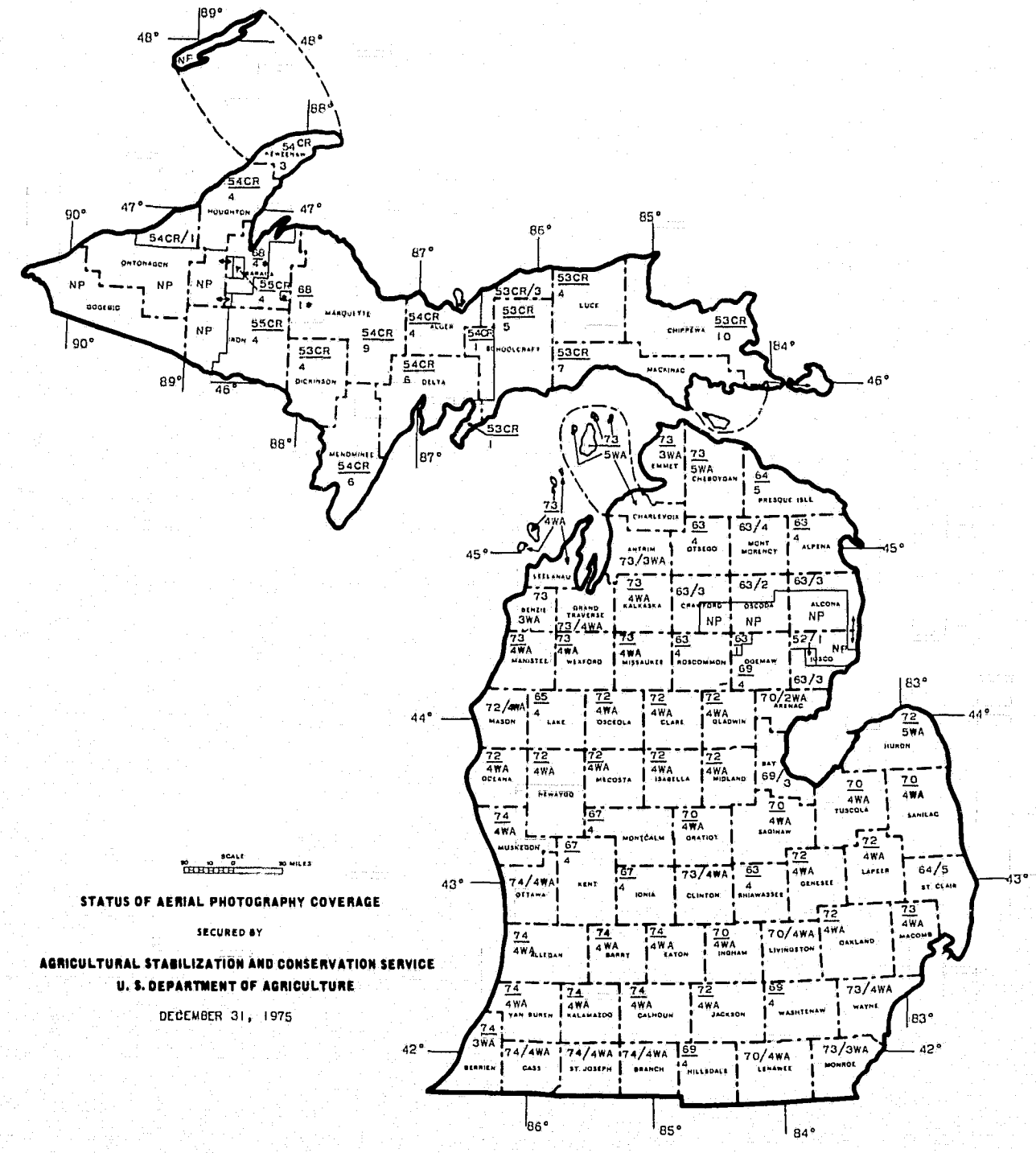
STATUS MAPS

OF

REGIONAL/COUNTY IMAGERY

OF MICHIGAN

MICHIGAN



STATUS OF AERIAL PHOTOGRAPHY COVERAGE

SECURED BY

AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE

U. S. DEPARTMENT OF AGRICULTURE

DECEMBER 31, 1975

PRECEDING PAGE BLANK NOT FILMED

LEGEND

AERIAL PHOTOGRAPHY COVERAGE SHOWN IS LATEST EXISTING COVERAGE SECURED BY ASCS (AND ITS PREDECESSOR AGENCIES, CSS, FMA, AND AAA).

OTHER ASCS PHOTOGRAPHY OLDER THAN THAT SHOWN IS AVAILABLE IN MANY INSTANCES. INQUIRIES ABOUT ITS AVAILABILITY MAY BE DIRECTED TO THE AERIAL PHOTOGRAPHY FIELD OFFICE.

[ ] OUTLINES PARTIAL COUNTY COVERAGE — IDENTIFIES AREAS UNDER CONTRACT

NP - NO ASCS COVERAGE

ALL ASCS PHOTOGRAPHY SECURED AT A SCALE OF 1:20,000 WITH 8 1/4-INCH LENS AND ON PANCHROMATIC FILM UNLESS OTHERWISE NOTED.

SYMBOLS USED TO IDENTIFY COVERAGE

INFRA-RED FILM — R
SCALE OF 1:10,000 — E
SCALE OF 1:12,000 — D
SCALE OF 1:15,840 — C
SCALE OF 1:40,000 — A
12-INCH LENS — Z
6-INCH LENS — W
NUMBER OF PHOTO-INDEX SHEETS — 4
YEAR MAJORITY COVERAGE FLOWN = (LAST TWO DIGITS OF YEAR)

EXAMPLE

75 — YEAR
AWA — 1:40,000 SCALE
W — 6-INCH LENS
4 — NUMBER PHOTO-INDEX SHEETS

* THIS SYMBOL, FOLLOWING NUMBER OF PHOTO-INDEX SHEETS, INDICATES AREA COVERED BY SAME INDEX OR INDEXES STARRED IN THE COUNTY. OLDER COVERAGE OF AREAS PARTIALLY REPHOTOGRAPHED, IS APPROXIMATE ONLY.

REQUESTS FOR INFORMATION REGARDING ASCS AERIAL PHOTOGRAPHY SHOULD BE ADDRESSED TO:

AERIAL PHOTOGRAPHY FIELD OFFICE
USDA-ASCS-ADMINISTRATIVE SERVICES DIVISION
2505 PARLEY'S WAY
SALT LAKE CITY, UTAH 84109

REQUESTS FOR INFORMATION RELATIVE TO FOREST SERVICE AND SOIL CONSERVATION SERVICE AERIAL PHOTOGRAPHY SHOULD BE ADDRESSED TO:

ENGINEERING STAFF UNIT
FOREST SERVICE - USDA
WASHINGTON, D. C. 20250

CARTOGRAPHIC DIVISION
SOIL CONSERVATION SERVICE, USDA
FEDERAL BUILDING
HYATTSVILLE, MARYLAND 20784

ALL PHOTOGRAPHIC COVERAGE SECURED ON NITRATE FILM DURING YEARS OF 1936 THROUGH 1941 HAS BEEN TRANSFERRED TO NATIONAL ARCHIVES. REQUESTS FOR INFORMATION RELATIVE TO THIS COVERAGE SHOULD BE ADDRESSED TO:

NATIONAL ARCHIVES AND RECORDS SERVICE
CARTOGRAPHIC ARCHIVES DIVISION
GENERAL SERVICES ADMINISTRATION
8TH & PENNSYLVANIA AVENUE, N. W.
WASHINGTON, D. C. 20408

U. S. DEPARTMENT OF AGRICULTURE
Agricultural Stabilization and Conservation Service

OFFICIAL BUSINESS
Penalty for Private Use, $300

POSTAGE & FEES PAID
U.S. DEPARTMENT OF AGRICULTURE
AGR-101

ASCS-441
(3-17-77)

U. S. DEPARTMENT OF AGRICULTURE
Agricultural Stabilization and Conservation Service

ORDER FOR AERIAL PHOTOGRAPHS

(1) _____
PURCHASE ORDER NUMBER

(2) _____
PRINT OR TYPE - (SHIP TO)

(3) _____
(STREET ADDRESS)

(4) _____
(CITY, STATE AND ZIP CODE)

PURCHASER'S CHECK LIST

1. Read instructions on back of form.
2. Be sure correct entries are made in columns 1 through 5. Do not make entries in columns 6 through 10.
3. Read notice at bottom on front of form.
4. **Be sure to enclose remittance.**

TOTAL REPRODUCTIONS	AMOUNT REMITTED	PHONE NUMBER
	$	

IDENTIFICATION OF PHOTOGRAPHY

STATE	COUNTY

IMPORTANT: List roll and exposure numbers consecutively.

FOR LABORATORY USE ONLY

ORDER NO.	DATE
AMOUNT OF ORDER	REFUND
$	$

	SIZE AND TYPE REPRODUCTIONS (1)	QUANTITY EACH (2)	CODE OR SYMBOL (3)	ROLL NO. (4)	EXPOSURE NO. (5)	PROJECTION SETTING (6)	E-W OR SWING (7)	N-S OR TILT (8)	CAN NO. (9)
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									

NOTICE: Normally orders will be made and shipped within 30 days after receipt.

PRINTED BY

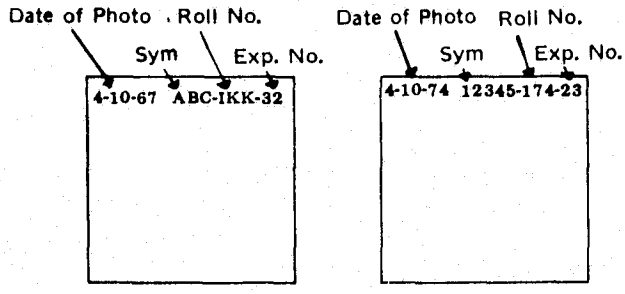
INSPECTED BY

PAGE _____ OF

PLEASE DO NOT REMOVE CARBON PAPERS
(Submit This Copy With Your Order)

GENERAL

ASCS aerial photography is generally available for about 80% of the nation, mainly in the agricultural areas. Exposures available are identified in either of the following ways:



If the photo identification is not known, you may make the coverage selection necessary to meet your requirements in any of the following ways:

a. Furnish a map outlining your exact area of interest. We will then make the selection for you.

b. Send a legal description of your area of interest for us to use in making the selection.

c. Visit the local County ASCS Office serving your area of interest, for assistance.

d. Purchase the photo index sheets covering your area and then select the individual prints best suited for your needs.

PRINT SIZES & TYPES OF REPRODUCTIONS

Contact Prints are the same size as aerial negatives, approximately 9 x 9 inches. ASCS aerial photography is flown at two different negative scales:

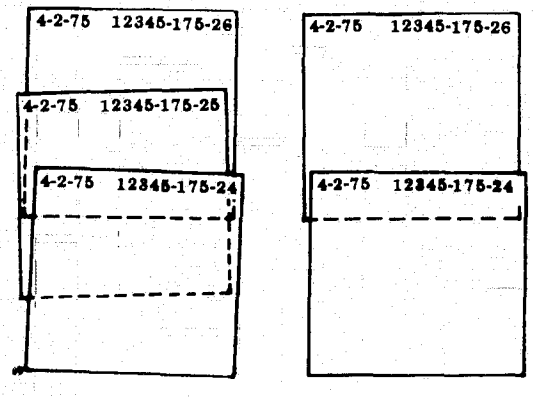
1:20,000 (1"=1667'), the area covered by a contact print is about 8 square miles.

1:40,000 (1"=3334'), the area covered by a contact print is about 32 square miles.

Prints are available with either stereoscopic or pictorial overlap.

Stereoscopic coverage requires each consecutively numbered print in the line of flight which gives an endlap of about 65% between adjacent prints.

Pictorial coverage requires alternate numbered prints in the line of flight resulting in an endlap between prints of about 30%.



Stereoscopic coverage (every photograph within line of flight).

Pictorial coverage (every other photograph within line of flight).

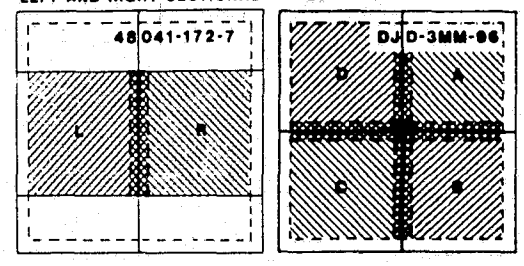
Contact prints are not available as sectionals or with scale accuracy

Enlargements from the aerial negative are available in the sizes and at the approximate scales shown in the following table:

SIZE	APPROX SCALE FROM 1 20 000 PHOTOGRAPHY	APPROX SCALE FROM 1 40 000 PHOTOGRAPHY
12" x 12"	1" = 1320'	1" = 2640'
12" x 12"	------	1" = 1320' Sectional
17" x 17"	1" = 1000'	1" = 2000'
17" x 17"	------	1" = 1000' Sectional
24" x 24"	1" = 660'	1" = 1320'
24" x 24"	1" = 330' Sectional	1" = 660' Sectional
38" x 38"	1" = 400'	1" = 800"
38" x 38"	1" = 200' Sectional	1" = 400' Sectional

Scales requiring "sectional" enlargements are made from approximately ¼ of the negative. Standard sectional enlargements are available at no extra cost for the following portion of the negative.

APPROXIMATE AREAS OF NEGATIVE AVAILABLE AS SECTIONAL ENLARGEMENTS



The enlarged areas are indicated with crosshatch marks. There is some loss of image on the outer edge of the print due to overlap between SECTIONALS.
If you do not know your area of interest as related to the negative, we suggest a visit to the County ASCS Office in your area for assistance.

Photo Indexes are available for all ASCS aerial photography. They show the assembly of prints covering each project area, generally a county or portion thereof. They are copied at a reduced scale, usually about 1" to the mile on 20 x 24 inch paper. If you are selecting a large quantity of prints or have a continuing need for this type of information, you may want to purchase the photo indexes which cover your area of interest.

Other Reproductions are available, transparencies, duplicate negatives, etc. **Remittance** is required before prints will be made. Make check or money order, payable to ASCS. Official purchase orders are accepted from tax supported Agencies.

IMPORTANT - On LABEL on face of order print or type items 1 thru 4 only

IDENTIFICATION OF PHOTOGRAPHY (EXAMPLE ONLY)

SIZE & TYPE OF REPRODUCTION	QUANTITY	CODE OR SYMBOL	ROLL NO	EXPOSURE NO
1	2	3	4	5
24" x 24" Enlargement	1	D J B	3 A	98
24" x 24" Transparency	1	48041	173	89

Column 1. Enter size 9½"x9½",24"x24" etc., 2nd Type of Reproduction. When ordering indexes enter "Photo Index" and list sheet numbers and year of photography.

Column 2. Enter number of prints wanted from each exposure number.

Column 3,4, and 5. Enter the code or symbol, roll number, and the exposure number of the negative. Exposure numbers may be listed in inclusive sequences. This information is in the upper right corner of each photograph and may be obtained from photo-index sheets or from the Agricultural Stabilization and Conservation Office in the county where the farm or area photographed is located.

ADDRESS ORDERS FOR PHOTOGRAPHS TO: Aerial Photography Field Office, ASCS-USDA, 2222 West 2300 South, P.O. Box 30010, Salt Lake City, Utah 84125

ASCS-441A
(3-10-77)

U. S. DEPARTMENT OF AGRICULTURE
Agricultural Stabilization and Conservation Service

BLACK AND WHITE AERIAL PHOTOGRAPHY
Prices Effective May 1, 1977

INSTRUCTIONS

IMPORTANT - On LABEL on face of order print or type items 1 thru 4 only.

IDENTIFICATION OF PHOTOGRAPHY (EXAMPLE ONLY)

PAPER SIZE	QUANTITY	CODE OR SYMBOL	ROLL NO	EXPOSURE NO
1	2	3	4	5
24" x 24"	1	D J D	3 A	96
24" x 24"	1	48041	173	89

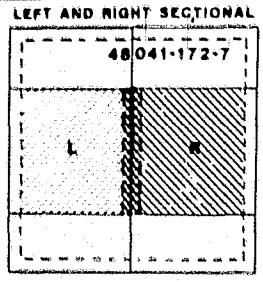
Column 1. Enter paper size $9\frac{1}{2}$" x $9\frac{1}{2}$", 24" x 24", etc. When ordering indexes enter "Photo Index" and list sheet numbers and year of photography.

Column 2. Enter number of prints wanted from each exposure number.

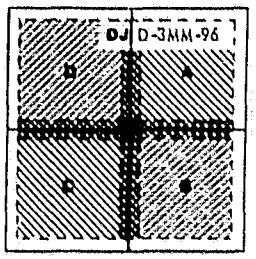
Columns 3, 4, and 5. Enter the code or symbol, roll number, and the exposure number of the negative. Exposure numbers may be listed in inclusive sequences. This information is in the upper right corner of each photograph and may be obtained from photo-index sheets or from the Agricultural Stabilization and Conservation Office in the county where the farm or area photographed is located.

APPROXIMATE AREAS OF NEGATIVE AVAILABLE AS SECTIONAL ENLARGEMENTS

LEFT AND RIGHT SECTIONAL



QUADRANT SECTIONAL



The enlarged areas are indicated with crosshatch marks. There is some loss of image on the outer edge of the print due to overlap between SECTIONALS.

If you do not know your area of interest as related to the negative, we suggest a visit to the ASCS office for assistance.

PRICES *(No Quantity Discount)*

Remittance is required before prints will be made, and must be by check, money order, or draft payable to ASCS. Stamps will not be accepted.

TYPE OF REPRODUCTION	SIZE	APPROX SCALE FROM 1:20 000 PHOTOGRAPHY	APPROX SCALE FROM 1:40 000 PHOTOGRAPHY	COST PER PAPER PRINT	1/ POLYESTER BASE POSITIVE TRANSPARENCIES
Contact Print *	9½" x 9½"	1" = 1667'	1" = 3334'	$ 2.00	$3.00
Contact Print * *	9½" x 9½"	1" = 1667'	1" = 3334'	3.00	
Enlargement	12" x 12"	1" = 1320'	1" = 2640'	4.00	5.00
Enlargement	12" x 12"	.....	1" = 1320' Sectional	4.00	5.00
Enlargement	17" x 17"	1" = 1000'	1" = 2000'	5.00	6.00
Enlargement	17" x 17"	.....	1" = 1000' Sectional	5.00	6.00
Enlargement	24" x 24"	1" = 660'	1" = 1320'	6.50	10.00
Enlargement	24" x 24"	1" = 330' Sectional	1" = 660' Sectional	6.50	10.00
Enlargement	38" x 38"	1" = 400'	1" = 800"	15.00	17.00
Enlargement	38" x 38"	1" = 200' Sectional	1" = 400' Sectional	15.00	17.00
Photo Index (No. of sheets per co. depends on size of co.)	20" x 24"	.....	.....	5.00	6.00

* Contact prints are not available as sectional, or with scale accuracy.

** Cronapaque or equal

1/ For screened transparencies, add $1.50 per print. When ordering this product, specify "Transparency" on the order.

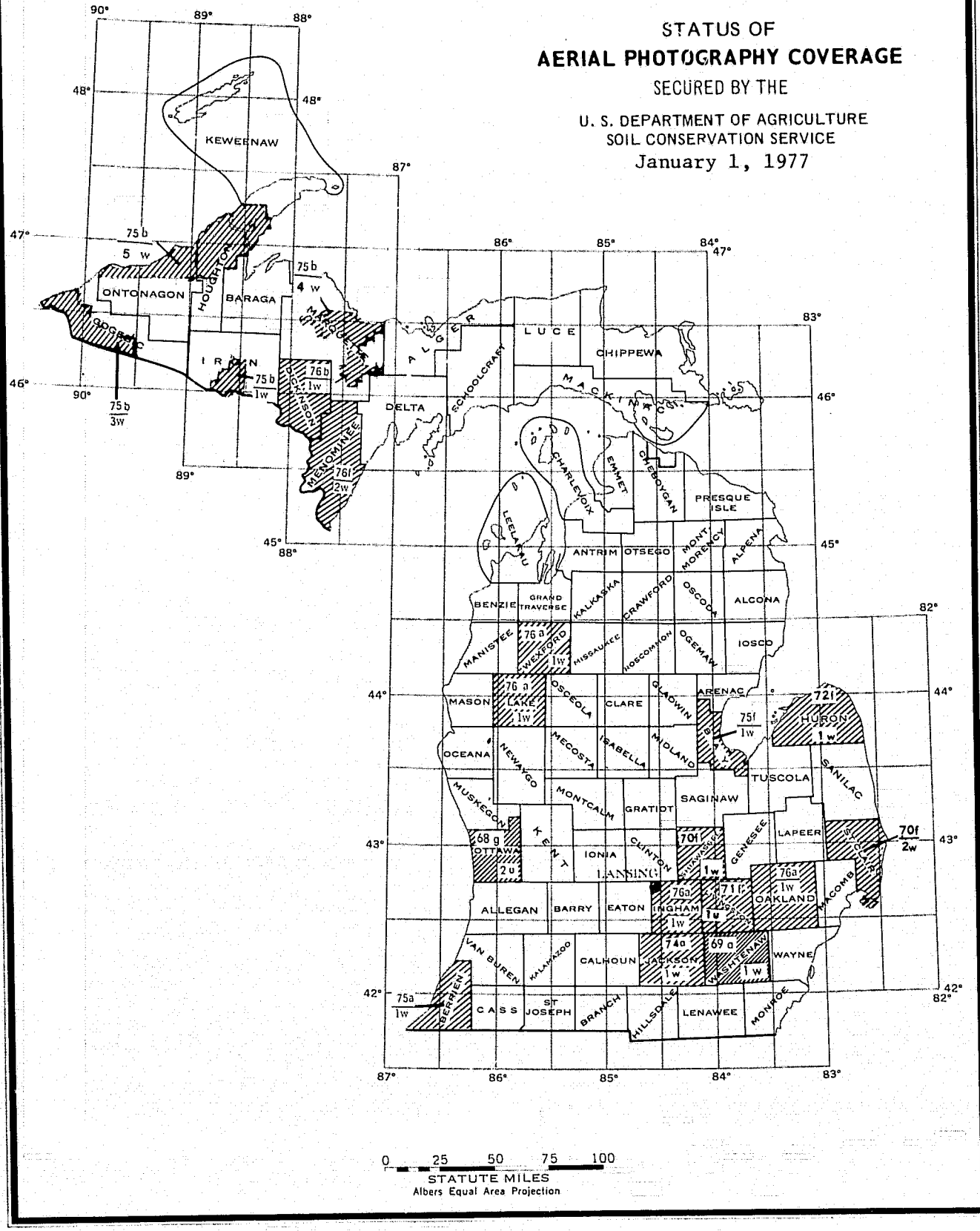
ADDRESS ORDERS FOR PHOTOGRAPHS TO:

Aerial Photography Field Office
USDA-ASCS
2222 West, 2300 South
P.O. Box 30010
Salt Lake City, UT 84125

Orders for photography not held by Agricultural Stabilization and Conservation Service should be forwarded to the holding agency; if address is not known, forward to the Chief, Aerial Photography Field Office.

GPO 914-884

MICHIGAN



PRECEDING PAGE BLANK NOT FILMED

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
STATUS OF AERIAL PHOTOGRAPHY

Areas for which aerial photography coverage has been secured by the Soil Conservation Service (SCS) are hatched or shaded on the map which appears on the reverse side. Where areas have been reflown, only the latest coverage is indicated.

Symbols used to identify the scales of surveys and the focal lengths of the camera lenses are:

Symbols	Scale*	Symbol	Focal Length*
a	1:31,680 to 1:44,000	u	3.4 to 4.0 inches
b	1:20,000	v	5.2 to 5.6 inches
c	1:15,840	w	6 inches
d	1:12,000	x	8-1/4 inches
e	1:10,000		
f	1:45,000 to 1:55,000		
g	1:56,000 to 1:65,000		
h	1:66,000 to 1:85,000		

*Where no symbol is shown for scale the scale is 1:20,000. Where no symbol is shown for focal length the focal length is 8-1/4 inches.

In addition to the above symbols, the year during which the majority of coverage was flown and the number of photo index sheets required to cover the survey project or county unit are indicated. For example, the symbols "65c" and "2w" indicate the survey was flown in 1965, the scale is 1:15,840, a 6-inch focal length lens was used, and two photo index sheets are required to cover the project or county. If a survey area does not have a year or index sheet indication, the survey is under contract but not completed.

Where two or more projects join together at boundaries other than county lines, the direction of hatch lines has been varied so that the extent of each project may be ascertained. Where only one set of symbols is shown within a hatch pattern that extends into more than one county, that set of symbols applies to the entire project, and the indicated number of index sheets will cover the entire project. But where a hatch pattern extends through two or more counties and a separate set of symbols is shown in each of the counties, the indicated number of index sheets will cover only the county in which the symbol appears.

In addition to the standard types of contact prints and enlargements projected to approximate scales, accurately scaled photographic reproductions in sheets of uniform dimension and with systematic layout are available for most of those areas flown at the smaller scales identified with symbols a, f, g and h. These reproductions are produced from negatives which have been rectified and scaled to a control network essential to obtain best average scale of imagery throughout each sheet. Sizes, scales, and cost of these reproductions are available upon request.

Address all inquiries concerning this coverage to Cartographic Division, Soil Conservation Service, Federal Building, Hyattsville, Maryland 20782.

All SCS photography flown prior to 1940, and several surveys flown through the period of 1940 to 1942, none of which appears on this status map, have been transferred to the National Archives and Records Service (NA), Cartographic Branch, General Services Administration, Washington, D. C. 20408. Inquiries and orders for reproductions from these earlier surveys should be directed to the NA.

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service

INSTRUCTIONS TO PURCHASERS OF AERIAL PHOTOGRAPHIC REPRODUCTIONS

The Soil Conservation Service has aerial photographic laboratories which may furnish reproductions under the following conditions:

1. Photographic reproductions will not be made until payment for them has been received. Please make check, money order, or draft payable to Soil Conservation Service, U.S.D.A. Orders or requests for information should be addressed to Cartographic Division, Soil Conservation Service, Federal Building, Hyattsville, Maryland 20782.

2. Only reproductions of aerial or other photographs, mosaics, and maps that have been obtained in connection with the authorized work of the Soil Conservation Service are available.

3. Since regular Service activities must be given precedence, there may be some delay in filling orders. Normally orders will be filled within 30 days after receipt.

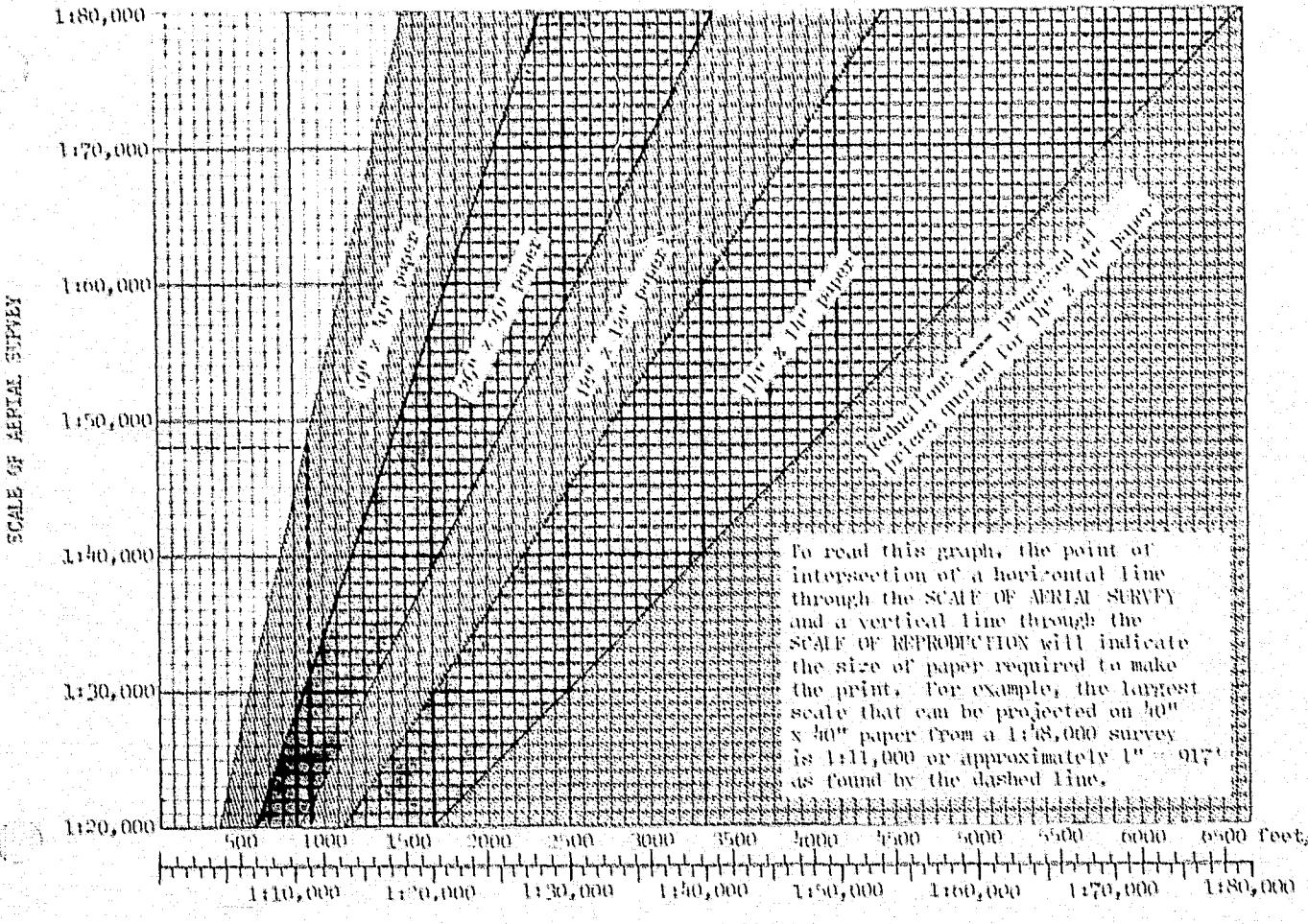
4. Photographic reproductions showing classified areas will not be sold without military or other necessary clearance.

5. Purchasers shall not use photographic reproductions obtained from the Soil Conservation Service to show, by implication or otherwise, that the Soil Conservation Service endorses any commercial product. The Soil Conservation Service will not furnish reproductions when it is believed that they may be used for such purposes.

6. This Service does not distribute or require the use of order forms.

7. Shipment by parcel post or railway express is prepaid. Special charges for shipment by air express or air mail and special delivery are paid by the purchaser.

SCALES OF REPRODUCTIONS ATTAINABLE
ON STOCK SIZES OF PHOTOGRAPHIC PAPERS



PRICES FOR AERIAL PHOTOGRAPHIC REPRODUCTIONS
Prices Effective May 1, 1977

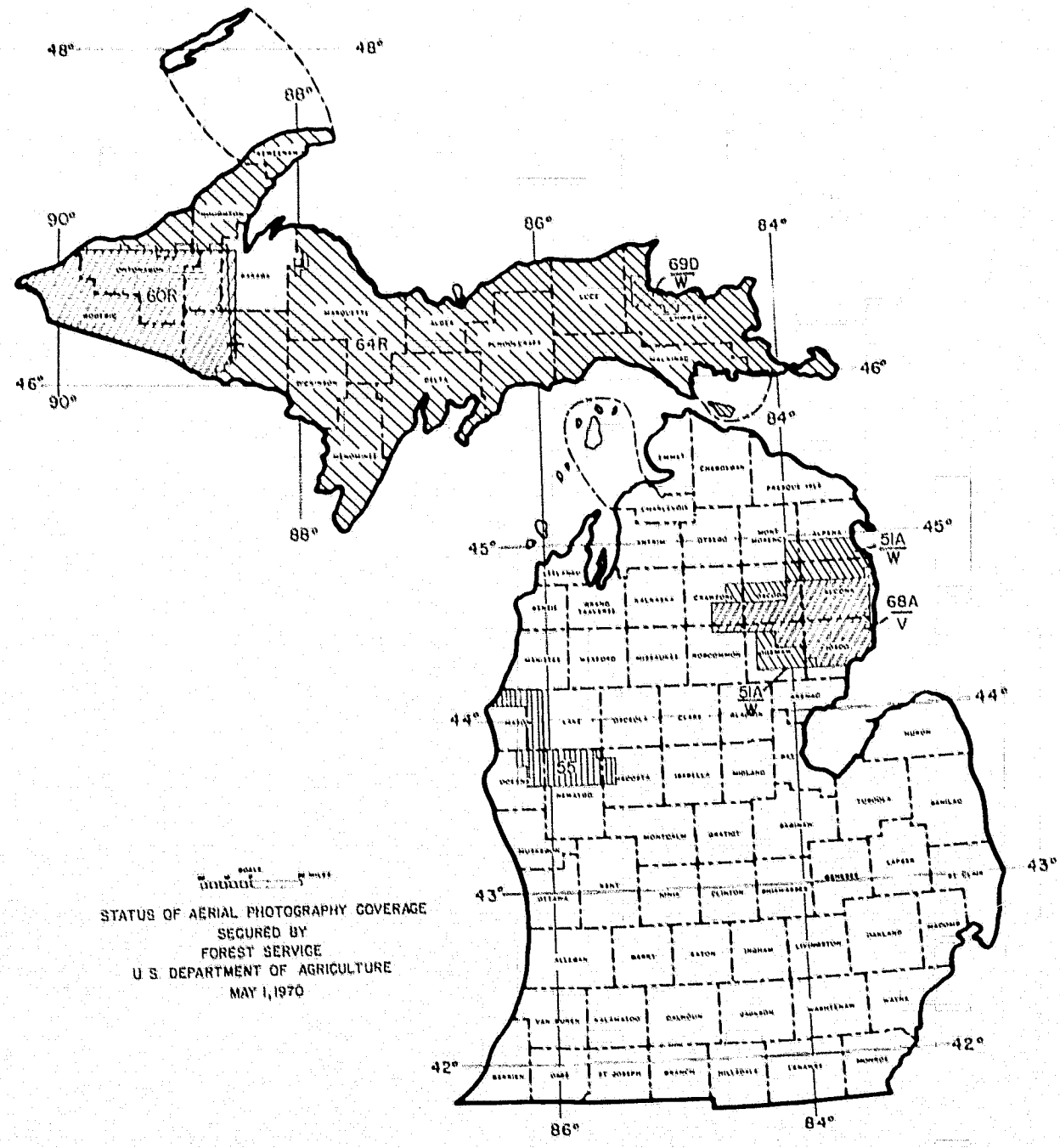
The prices listed below are effective until further notice. The prices given are for items most generally requested. Information regarding other available items will be furnished upon receipt of inquiry outlining needs.

All reproductions are furnished trimmed, and printed on double-weight semimatte paper unless otherwise specified.

In each case, the scale of reproduction set forth below refers to the largest scale generally reproduced on the size of paper indicated. The approximate scale at which enlargements are desired should be furnished with each order. See graphic portrayal of scales and sizes of prints.

Class and Size of Reproduction	Scale of Original Survey	Approximate Scale of Reproduction	Cost Each Regardless of Quantity
Photo indexes 20" x 24" 20" x 24"	1:20,000 1:38,000 and smaller	1" = 1 mile 1" = 2 miles	$5.00 5.00
Contact prints 10" x 10"			2.00
Enlargements 14" x 14"	1:20,000 1:38,000 1:48,000 1:58,000 1:75,000	1" = 1320' 1" = 2200' 1" = 2640' 1" = 3200' 1" = 4200'	4.00
Enlargements 18" x 18"	1:20,000 1:38,000 1:48,000 1:58,000 1:75,000	1" = 1000' 1" = 1800' 1" = 2200' 1" = 2640' 1" = 3200'	5.00
Enlargements 26" x 26"	1:20,000 1:38,000 1:48,000 1:58,000 1:75,000	1" = 660' 1" = 1320' 1" = 1500' 1" = 1800' 1" = 2200'	6.50
Enlargements 40" x 40"	1:20,000 1:38,000 1:48,000 1:58,000 1:75,000	1" = 400' 1" = 800' 1" = 1000' 1" = 1320' 1" = 1500'	15.00

MICHIGAN



STATUS OF AERIAL PHOTOGRAPHY COVERAGE
SECURED BY
FOREST SERVICE
U.S. DEPARTMENT OF AGRICULTURE
MAY 1, 1970

ORIGINAL PAGE IS
OF POOR QUALITY

15

AERIAL PHOTOGRAPHY INFORMATION

Older Forest Service photography than that shown is available for some areas. Inquiries about its availability may be directed to the Regional Office serving the State involved.

Photographic Coverage Areas Under Contract

All Forest Service photography is at a scale of 1:15,840 with 8-1/4 inch lens on panchromatic film unless otherwise noted. When an exception occurs, only the exception will be noted; thus, 1:15,840 scale taken in 1964 with 8-1/4 inch lens on infrared film will be shown as 64R.

Data about aerial projects shown on the face of the map are indicated by fractional figures. The numerator consists of two digits and a letter designating the year photography was completed and the scale of photography. An emulsion other than panchromatic is indicated by the use of an additional letter.

Key is as follows:

A - 1:31,680 or smaller scales
B - 1:20,000
D - 1:12,000
E - 1:10,000
R - Infrared photography
C - Color photography
CR - Color infrared photography

The denominator designates the focal length of the camera lens.

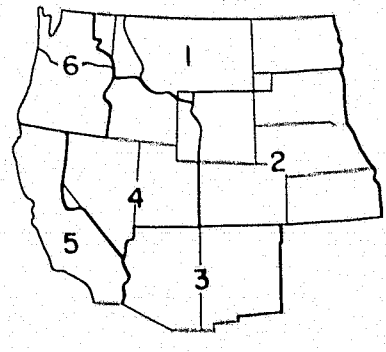
V - 3-1/2" lens
W - 6" lens
X - 8-1/4" lens
Z - 12" lens

Example: $\frac{65B}{X}$ = Photography completed 1965, scale 1:20,000 / 8-1/4" focal length lens

PHOTOGRAPHIC REPRODUCTIONS SHOWING CLASSIFIED AREAS WILL NOT BE SOLD WITHOUT MILITARY OR OTHER NECESSARY CLEARANCE

Inquiries and orders for Forest Service photography in the western United States within the respective numbered Regions as shown on the map to the right should be addressed to the Regional Forester, Forest Service, as follows:

1. Federal Building, Missoula, Montana 59801
2. Federal Center Bldg. No. 85, Denver, Colorado 80225
3. Federal Bldg., 324 - 25th St., Ogden, Utah 84401
4. Federal Bldg., 324 - 25th St., Ogden, Utah 84401
5. 630 Sansome Street, San Francisco, California 94111
6. Post Office Box 3623, Portland, Oregon 97208



For Alaska: Regional Forester, Forest Service, Box 1628, Juneau, Alaska 99801

For United States not shown on the map at right, address Division of Engineering, Forest Service, USDA, Washington, D. C. 20250.

For information concerning ASCS aerial photography, address inquiries to Aerial Photography Division, Agricultural Stabilization and Conservation Service, U. S. Department of Agriculture, Washington, D. C. 20250.

For information concerning SCS aerial photography, address inquiries to Director, Cartographic Division, Soil Conservation Service, U. S. Department of Agriculture, Washington, D. C. 20250.

USDA · FOREST SERVICE

ORDER FOR PHOTOGRAPHIC REPRODUCTIONS

Instructions for ordering on reverse side

SHIP TO (NAME AND ADDRESS)		
TOTAL REPRODUCTIONS	AMOUNT REMITTED	PURCHASER'S ORDER NO.
DATE	SIGNATURE OF PURCHASER	

Kind of Reproduction, paper, size & Remarks (1)	QUANTITY (2)	YEAR FLOWN (3)	SYMBOL (If assigned) (4)	STATE & COUNTY CODES (5)	ROLL NUMBER (6)	EXPOSURE NUMBER (7)

TRIMMING .10 ADDITIONAL EACH PRINT
LAMINATING .25 ADDITIONAL EACH PRINT

REVISED PRICE SCHEDULE

EFFECTIVE DATE 10/75

	CONTACTS									ENLARGEMENTS					
	LAB STANDARD PRINT MATERIAL	NON STANDARD AS QUOTED	DUPLICATE FILM POSITIVE TRANSPARENCIES AND INTERNEGS					GLASS DIAPOSITIVES SPECIFY THICKNESS .060" .130" .250"	PHOTO INDEXES		LAB STANDARD PRINT MATERIAL				
BLACK AND WHITE PRINTS	9x9	9x9 ONLY	70MM 100'ROLL	35mm 100'ROLL	70 MM	5x5	9x9		10x12	20x24	9x9 FROM 70 MM	UP TO 15X	UP TO 20X	UP TO 30X	UP TO 40X
PRICE PER FRAME	$ 200	$	$ NA	$ NA	$ 300	$ 300	$ 300	$ 1000	$ 300	$ 500	$ 300 FILM 300	$ 400	$ 500	$ 650	$ 1300
FULL ROLL	NA		1500	2300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COLOR PRINTS															
PRICE PER FRAME	700		NA	NA	500	600	1200	NA	NA	NA	700 FILM 1200	1200	1500	2000	4000
FULL ROLL	NA		3500	4000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Advance payment is required before photographic reproductions will be made. Shipments will not be made C.O.D. Payment should be made by check, money order, or draft payable to the Forest Service, U.S.D.A. Stamps will not be accepted. Sales tax and mailing fees are not applicable to Government orders.

NOTICE: Forest Service will make reproductions from aerial photographic materials to the approximate size or scale requested and, because of shrinkage or expansion of paper caused by atmospheric or other conditions, will not be responsible for variations in scale. Prices for those materials not normally stocked in a laboratory may be adjusted upward to cover cost of minimum allowable base material order. Since regular Departmental activities must be given precedence, there may be some delay in making reproductions. Usually, reproductions will be made and shipped within 30 days after receipt of order.

7100-42 (10/75)

ORIGINAL PAGE IS

INSTRUCTIONS FOR COMPLETING ORDER FORM

NOTE BOTH BLACK & WHITE AND COLOR PRINTS ARE AVAILABLE FROM COLOR NEGATIVES.

Column 1. Enter the kind of reproductions such as black & white or color, whether contact or enlargement (state enlargement factor). Unless otherwise specified, reproductions will be on resin coated doubleweight paper.

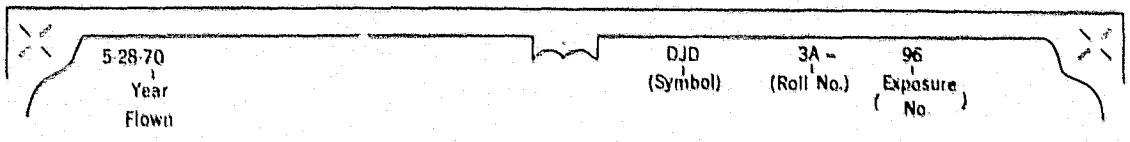
Column 2. Enter the quantity of reproductions desired from each negative on a line.

Column 3. Enter year flown (see examples below).

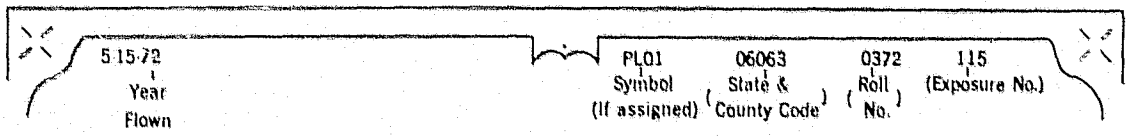
Column 4. Enter Symbol (i.e DJD, PL 01, etc.), if assigned, as shown in examples.

Columns 5, 6, and 7 (As applicable) Enter State and County Code, roll number and exposure number of the negative. Exposure numbers should be listed in inclusive sequences This information is in the upper right hand corner of each photograph as shown in examples, and may be obtained from Photo Indexes in the Regional Office Forest Supervisor's Office or Ranger District Office where the area photographed is located.

Identification of Aerial Photography, 1971 and prior years



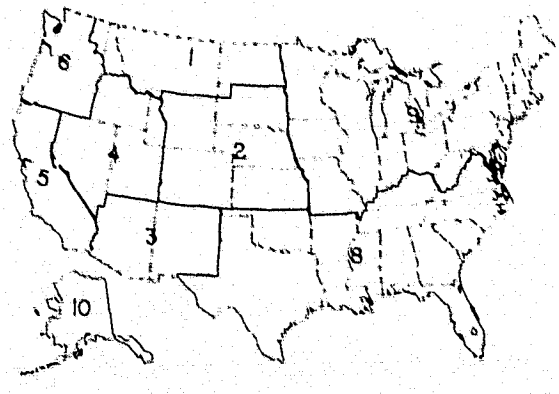
Identification of Aerial Photography, 1972 and later



PHOTOGRAPHIC REPRODUCTIONS SHOWING CLASSIFIED AREAS WILL NOT BE SOLD WITHOUT MILITARY OR OTHER NECESSARY CLEARANCE

Send Inquiries and orders for Forest Service Photography within the respective numbered regions as shown on the map at right to the following:

1. Regional Forester, U.S. Forest Service
   Federal Building, Missoula, Montana 59801
2. Regional Forester, U.S. Forest Service
   Federal Center, Bldg. 85, Denver, Colorado 80225
3. Regional Forester, U.S. Forest Service
   Federal Building, 324 25th St., Ogden, Utah 84401
4. Regional Forester, U.S. Forest Service
   Federal Building 324 25th St., Ogden, Utah 84401
5. Regional Forester, U.S. Forest Service
   Printing and Reproduction Section Room 548
   630 Sansome St., San Francisco, California 94111
6. Regional Forester, U.S. Forest Service
   P.O. Box 3623, Portland, Oregon 97208
8. Regional Forester, U.S. Forest Service
   1720 Peachtree Road N.W., Atlanta, Ga. 30309
9. Regional Forester, U.S. Forest Service
   633 W. Wisconsin Ave., Milwaukee, Wisconsin 53203
10. Regional Forester, U.S. Forest Service
    P.O. Box 1628, Juneau, Alaska 99801



General Information is also available from:

Division of Engineering Forest Service USDA, Washington D.C. 20250

PRICES FOR PHOTOGRAPHIC REPRODUCTIONS OTHER THAN AERIAL

MINIMUM CHARGE $1 PER ORDER

All sizes are approximate

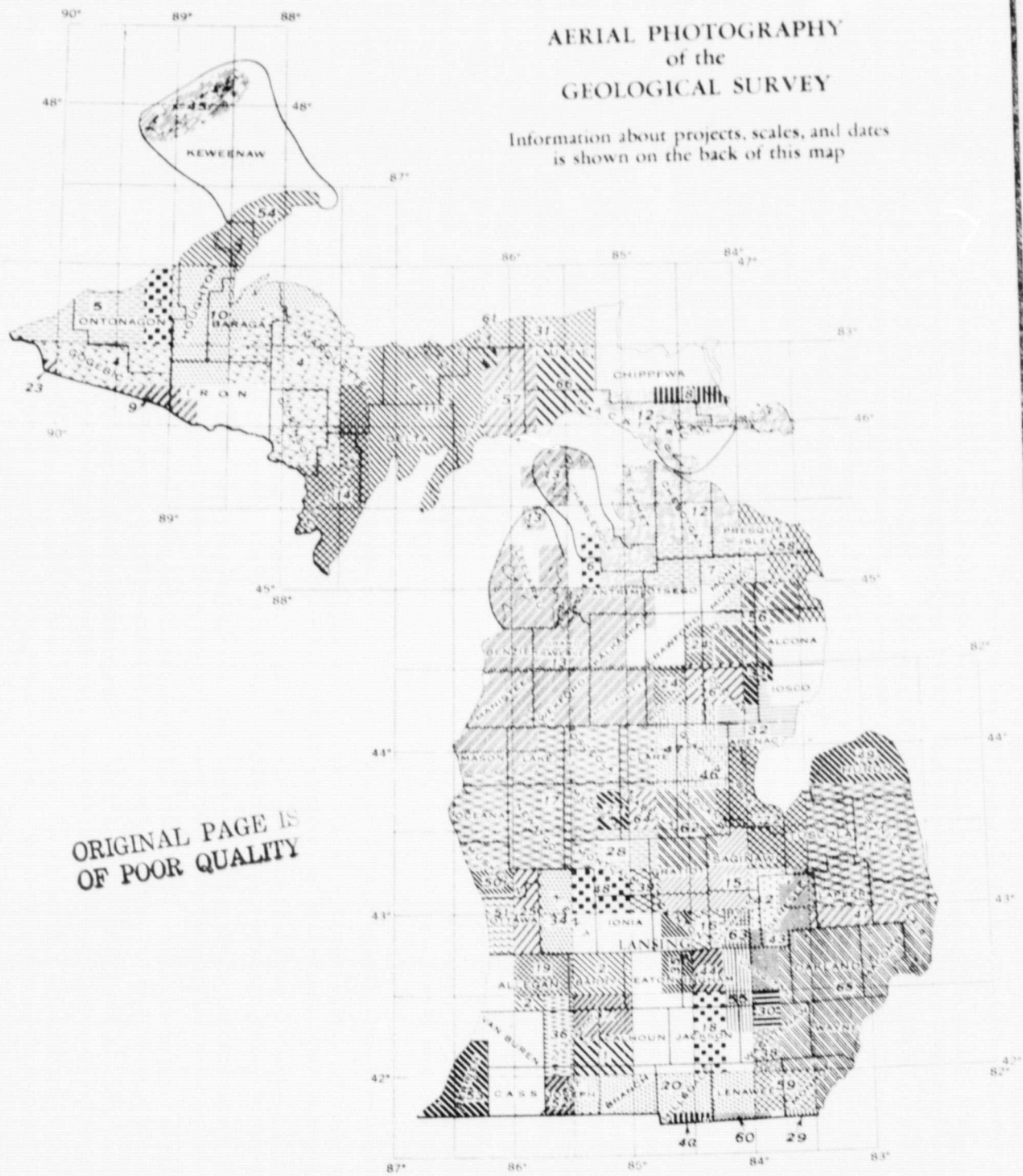
An extra charge may be necessary for excessive laboratory time caused by any extra instructions from the purchaser.

CLASS OF WORK AND SIZE	UNIT	PRICE
Contact and Projection Prints		
Up to 8x10	Ea.	2.70
11x14	Ea.	4.20
Larger Sizes	Sq. Ft.	3.60
Mounting	Sq. Ft.	2.20

CLASS OF WORK AND SIZE	UNIT	PRICE
Kodak Negatives and Film Positives		
4x5	Ea.	3.60
5x7	Ea.	3.90
8x10	Ea.	4.50
11x14	Ea.	7.00

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

MICHIGAN



MICHIGAN

MICHIGAN

Prints from negatives held by the Geological Survey, for the projects listed below may be obtained from the National Cartographic Information Center, U.S. Geological Survey National Center (507), Reston, Virginia 22092.
The date and scale of photography are shown as 65/24 = 1965 photography at 1:24,000 scale. The numbers listed below refer to project areas of the map on the reverse side of this sheet. The area designated by this number may contain numerous photo-indexes and also many individual prints.

(The lens focal length is 6", except as noted.)

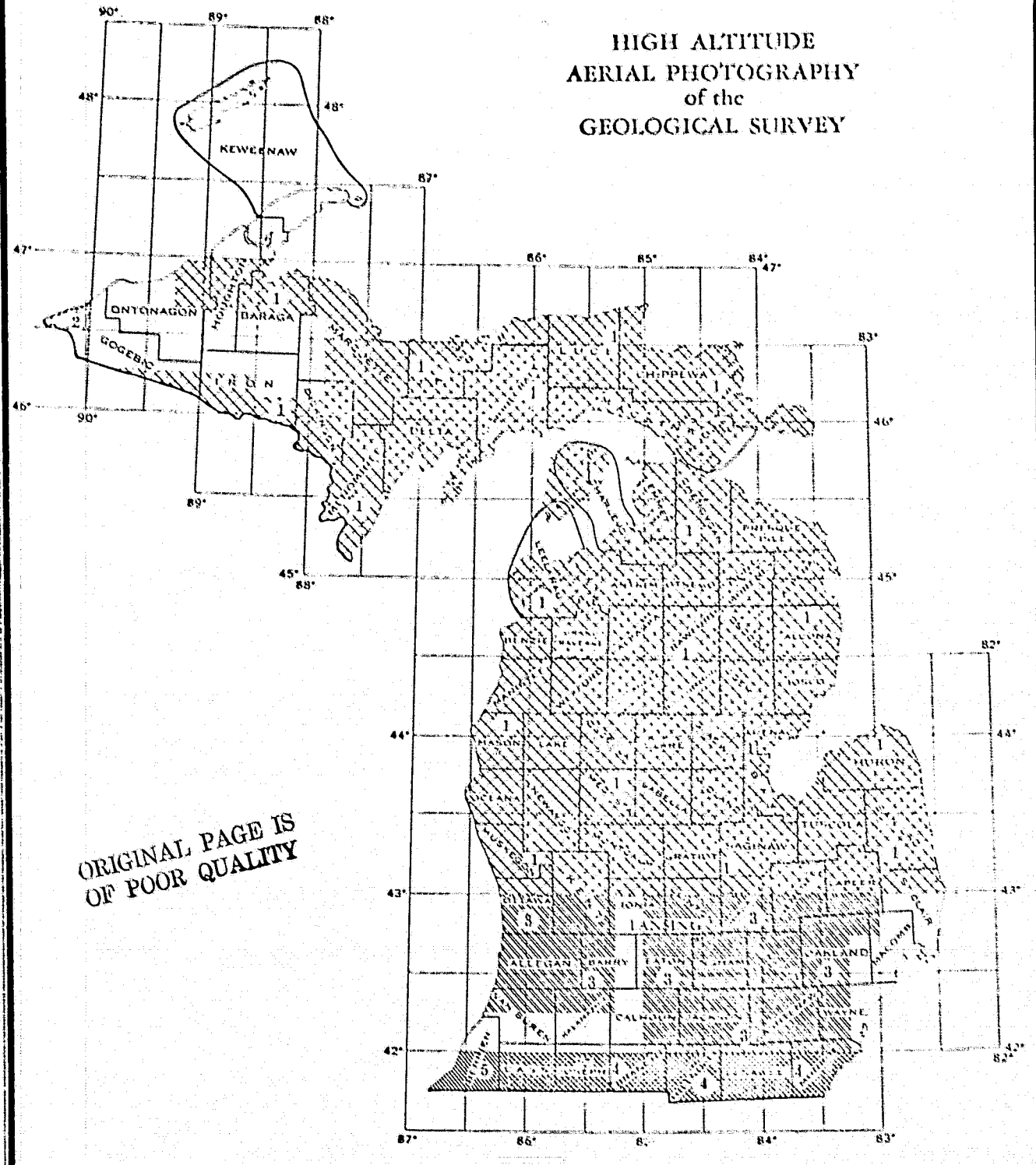
NO.	PROJ. SYMB.	DATE/SCALE	NO.	PROJ. SYMB.	DATE/SCALE	NO.	PROJ. SYMB.	DATE/SCALE	NO.	PROJ. SYMB.	DATE/SCALE
1	GY[2]	46/26	46	VBVP	68/13						
2	DE-A	47/37	47	VBVP	68/20						
3	HL[3]	48/27	48	VCBT-S	69/46						
4	OI	51/24	49	VCCD	69/34						
5	MJ	54/24	50	VCEO	69/14						
6	RY	52/24	51	VCEO	69/20						
7	RZ	52/24	52	VCEP	69/14						
8	UE	52/17	53	VCEV	69/21						
9	WA	52/17	54	55-AM-39	56/30						
10	ZI	53/40	55	VCHW	70/19						
11	VBL	53/17	56	VCSD	71/23						
12	WE	56/17	57	VCSC	71/15						
13	VBF	54/17	58	VCSE	71/20						
14	VDH	54/17	59	SWER	71/23						
15	VDI	54/24	60	VCRF	71/24						
16	VCLX	70/20	61	VCSC	72/15						
17	VBF	55/17	62	SWFX	72/25						
18	VCLW	70/20	63	VCZD	72/20						
19	VPW	57/18	64	SWFX	72/35						
20	VRS	58/17	65	VDTA	73/24						
21	VTV	59/17	66	VCNH	73/21						
22	VCZW	73/24									
23	VDCC	73/20									
24	VUU	60/17									
25	VDIK	73/20									
26	VAFP	61/18									
27	VAN2	63/18									
28	VAQL	63/18									
29	VARA	63/24									
30	VAUB	64/18									
31	VAUZ	64/18									
32	VAXN	65/12									
33	VAXN	65/18									
34	VCZC	72/32									
35	VDIF	73/30									
36	VDIE	73/30									
37	VDCT	73/32									
38	VBEC	66/18									
39	VBGT	66/21									
40	VDDG	73/24									
41	VBOW	67/24									
42	VBPC	67/13									
43	VBPC	67/19									
44	VBRD	67/20									
45	55-AM-37	57/36									

[1]Focal length 3.5" [2]Focal length 4" [3]Focal length 5.2"

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

MICHIGAN

HIGH ALTITUDE AERIAL PHOTOGRAPHY of the GEOLOGICAL SURVEY



Information about projects, scales, and dates is shown on the back of this map

Duplicate coverage, of earlier date, is not shown.

0 25 50 75 100
STATUTE MILES

MICHIGAN

Status: November 1973

MICHIGAN

Prints from the negatives held by the Geological Survey, for the projects listed below may be obtained from the Map Information Office, Washington, D.C. 20244. Instructions for ordering prints are given in the folder, AERIAL PHOTOGRAPHIC REPRODUCTIONS.

(Lens focal length 6 inches, except as noted)

NO.	PROJECT SYMBOL	DATE	SCALE	FLIGHT DIRECTION	PHOTO INDEX SIZE
1	108-M	1953	1:60,000	EW	Irregular
2	114-AB	1953	1:50,000	NS	Irregular
3	55-AM-36	1956	1:60,000	EW	Irregular
4	AF 59-35	1960	1:60,000	EW	1° X 2°
5	95A	1952	1:69,000	NS	Irregular

ORDER FORM
AERIAL MAPPING PHOTOGRAPHY
U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DATE _____

NAME MR / MS _____ ACCOUNT NO. _____
(FIRST) (INITIAL) (LAST) (IF KNOWN)

COMPANY _____ PHONE (Bus.) _____
(IF BUSINESS ASSOCIATED)

ADDRESS _____ PHONE (Home) _____

CITY _____ STATE _____ ZIP _____ Your Ref. No. _____
(P.O., GOVT ACCT OR OTHER)

PLEASE TYPE OR PRINT PLAINLY

PHOTO INDEXES

PHOTO INDEX NO.	PRODUCT CODE	QTY.	UNIT PRICE		TOTAL PRICE	

AERIAL MAPPING PHOTOGRAPHY

PHOTO IDENTIFICATION				PRODUCT CODE	NO. OF FRAMES	NO. OF COPIES	QTY.	UNIT PRICE		TOTAL PRICE	
PROJECT	ROLL	FIRST FRAME	LAST FRAME								

TOTAL ABOVE	A	
TOTAL FROM PREVIOUS SHEETS	B	
TOTAL COST	C	

STANDARD PRODUCTS

BLACK AND WHITE

IMAGE SIZE	FORMAT	PRODUCT CODE
22.9cm (9 in.)	FILM POSITIVE	13
22.9cm (9 in.)	FILM NEGATIVE	03
22.9cm (9 in.)	PAPER	23
45.7cm (18 in.)	PAPER	24
68.6cm (27 in.)	PAPER	25
91.4cm (36 in.)	PAPER	26

COLOR/INFRARED

IMAGE SIZE	FORMAT	PRODUCT CODE
22.9cm (9 in.)	FILM POSITIVE	63
22.9cm (9 in.)	PAPER	53
45.7cm (18 in.)	PAPER	64
68.6cm (27 in.)	PAPER	65
91.4cm (36 in.)	PAPER	66

BLACK AND WHITE PHOTO INDEXES

FILM SOURCE	FORMAT	PRODUCT CODE
B & W SIZE A	25.4x30.5cm (10x12 in.)	36
B & W SIZE B*	OTHER	37

* SEE ITEM D REVERSE SIDE

NOTE: Please refer to current price list for cost determination.

PAYMENT MADE BY:

CHECK, MONEY ORDER ☐

PURCHASE ORDER ☐

GOVT. ACCOUNT ☐

COMMENTS: _____

FORM: 9-1939 (Jan. 1977)

Return completed form to the facility nearest you.

NCIC HEADQUARTERS
U.S. Geological Survey
507 National Center
Reston, VA 22092
FTS: 928-6045
COMM: 703-860-6045

EROS APPLICATIONS FACILITY
NSTL
U.S. Geological Survey
Bay St. Louis, MS 39520
FTS: 494-3541
COMM: 688-3472

NCIC MID-CONTINENT
U.S. Geological Survey
1400 Independence Rd.
Rolla, MO 65401
FTS: 276-9107
COMM: 314-364-3680

EROS DATA CENTER
U.S. Geological Survey
Sioux Falls, SD 57198
FTS: 784-7151
COMM: 605-594-6511

NCIC ROCKY MOUNTAIN
U.S. Geological Survey
Stop 510, Box 25046
Denver Federal Ctr.
Denver, CO 80225
FTS: 234-2326
COMM: 303-234-2326

NCIC WESTERN
U.S. Geological Survey
345 Middlefield Rd.
Menlo Park, CA 94025
FTS: 467-2427
COMM: 415-323-2427

HOW TO ORDER AERIAL MAPPING PHOTOGRAPHY

This order form is used to order either PHOTO INDEXES or INDIVIDUAL PHOTOGRAPHS of AERIAL MAPPING PHOTOGRAPHY.

Please provide the following information in the indicated areas of the order form:

A. List your complete NAME, ADDRESS, ZIP CODE, and name of your COMPANY if applicable.

B. List a PHONE NUMBER where you can be contacted during business hours.

C. **If you have had previous business with THAT FACILITY, please list your ACCOUNT NUMBER, if known.**

D. Enter the complete PHOTO IDENTIFICATION NUMBER as follows:

PHOTO INDEX: This number can be transcribed directly from a computer listing. Format size must be ordered according to available FILM SOURCE. Size A is 10" x 12". Size B is all sizes larger than 10" x 12", with most 20" x 24".

INDIVIDUAL PHOTOGRAPHS: This number can be transcribed directly from a PHOTO INDEX, by selecting the PROJECT, ROLL and FRAME NO. from the respective photographs. If only one frame of photography is being ordered, the column identified as LAST FRAME can be ignored, however, if more than one consecutive frame is required, please complete both the FIRST and LAST FRAME columns.

E. REVIEW the STANDARD PRODUCTS TABLE on the order form and determine the type of PRODUCT desired.

F. Enter the PRODUCT CODE of the type product being ordered from the STANDARD PRODUCTS TABLE.

G. If you are ordering MORE than one photograph from a roll, enter the TOTAL in the NO. OF FRAMES column. Example: FIRST FRAME - 106; LAST FRAME - 112; NO. OF FRAMES = 7.

H. The COMMENTS portion is completed only when a CUSTOM PRODUCT is desired and you want to specify the parameters. Refer to the current price list for custom product cost determination.

I. Enter the NUMBER of copies being ordered of that product in the QUANTITY column. When the NO. OF FRAMES column reflects more than one, it will be necessary to MULTIPLY that figure times the number of copies to derive the QUANTITY figure.

J. Enter the UNIT PRICE of the product as reflected on the current PRICE LIST.

K. MULTIPLY the figure in the QUANTITY column by the UNIT PRICE, and enter the result in the TOTAL PRICE column.

L. REPEAT the above for each product ordered.

M. TOTAL the costs of all products ordered on that form and enter the result in BLOCK A. TOTAL ABOVE.

N. If more than one order form is required, enter the sum of the figures in BLOCKS A in BLOCK B of the last order form.

O. Enter the SUM of BLOCK A and BLOCK B in BLOCK C, TOTAL COST.

P. Indicate the TYPE of payment being made with a CHECK MARK. Make all drafts payable to U.S. GEOLOGICAL SURVEY. DO NOT SEND CASH.

Q. Mail ORDER FORM(S) and PAYMENT to the FACILITY NEAREST YOU. If payment has been previously forwarded, the order form(s) must be mailed to the same facility.

INDEX

TO

REGIONAL/COUNTY IMAGERY

OF MICHIGAN

REGIONAL/COUNTY IMAGERY

AGENCY CODES

CODE	AGENCY*
ABRAMS	Abrams Aerial Survey Corporation
ASCS	Agricultural Stabilization and Conservation Service
AERO	Aero Service Corporation
BENDIX	Bendix Aerospace Systems Division
CAPITOL	Capitol Air Survey
CHICAGO	Chicago Aerial Survey
DMA	Defense Mapping Agency
DNR	Michigan Department of Natural Resources
HURD	Mark Hurd Aerial Surveys, Inc.
MDSHT	Michigan Department of State Highways and Transportation
MSU/RSP	Michigan State University, Remote Sensing Project
NARS	National Archives and Record Service
SCMPDC	Southcentral Michigan Planning and Development Council
SCS	Soil Conservation Service
SEMCOG	Southeast Michigan Council of Governments
STEREO	StereoFoto, Inc.
TCRPC	Tri-County Regional Planning Commission
USFS	Forest Service, U.S. Department of Agriculture
USGS	U.S. Geological Survey
WMRPC	West Michigan Regional Planning Commission
WMSRDC	West Michigan Shoreline Regional Development Commission

* Addresses in Appendix B.

NOTE: "p" after date in the index indicates partial coverage of county.

INDEX TO REGIONAL/COUNTY IMAGERY

COMPILED JUNE, 1977

COUNTY	YEAR		SCALE	FILM	AGENCY
ALCONA	1938		1:20000	PAN	NARS
	1951	P	1:31680	PAN	USFS
	1952	P	1:15840	BWIR	ASCS
	1953		1:60000	PAN	USGS
	1960	P	1:15840	BWIR	USFS
	1963	P	1:20000	PAN	ASCS
	1968	P	1:72000	PAN	USFS
	1971	P	1:20000	PAN	USGS
	1971	P	1:23000	PAN	USGS
	1973		1:36000	CIR	MDSHT
	1974	P	1:15840	BWIR	USFS
ALGER	1939		1:20000	PAN	NARS
	1953	P	1:17000	PAN	USGS
	1953		1:60000	PAN	USGS
	1953	P	1:15840	BWIR	ASCS
	1954	P	1:15840	BWIR	ASCS
	1961		1: 9600	PAN	ABRAMS
	1964		1:15840	BWIR	USFS
	1970	P	1:60000	PAN	USFS
	1972		1:15840	COL	USFS
	1974	P	1:15840	BWIR	USFS
	1975	P	1:80000	PAN	USGS
	1976	P	1:15000	PAN	USGS
ALLEGAN	1938		1:20000	PAN	NARS
	1947	P	1:37000	PAN	USGS
	1950		1:20000	PAN	ASCS
	1955		1:20000	PAN	ASCS
	1956		1:60000	PAN	USGS
	1957	P	1:18000	PAN	USGS
	1960		1:20000	PAN	ASCS
	1967		1:20000	PAN	ASCS
	1973	P	1:30000	PAN	USGS
	1974		1:31680	CIR	MSU/RSP
	1974		1:40000	PAN	ASCS
	1975	P	1:15000	PAN	USGS
	1975		1:33000	CIR	WMRPC
	1975		1:80000	PAN	DMA
ALPENA	1938		1:20000	PAN	NARS
	1951	P	1:31680	PAN	USFS
	1952	P	1:24000	PAN	USGS
	1952		1:15840	BWIR	ASCS
	1953		1:60000	PAN	USGS
	1963		1:20000	PAN	ASCS
	1971	P	1:23000	PAN	USGS
	1971	P	1:20000	PAN	USGS
	1972		1:19200	PAN	CAPITOL
	1973	P	1:36000	CIR	MDSHT
	1975	P	1:80000	PAN	DMA
ANTRIM	1938		1:20000	PAN	NARS
	1952	P	1:24000	PAN	USGS
	1952		1:15840	BWIR	ASCS
	1953		1:60000	PAN	USGS
	1954	P	1:17000	PAN	USGS
	1956	P	1:17000	PAN	USGS
	1962		1:15840	PAN	ABRAMS
	1963		1:20000	PAN	ASCS
	1973		1:40000	PAN	ASCS
	1973		1:36000	CIR	MDSHT
	1975		1:80000	PAN	USGS
	1975	P	1:99999	PAN	DMA

COUNTY	YEAR		SCALE	FILM	AGENCY
ARENAC	1938		1:20000	PAN	NARS
	1952		1:15840	BWIR	ASCS
	1953		1:60000	PAN	USGS
	1958		1:20000	PAN	ASCS
	1965		1:20000	PAN	ASCS
	1965	P	1:12000	PAN	USGS
	1970		1:40000	PAN	ASCS
	1973		1:36000	CIR	MDSHT
	1973	P	1:24000	PAN	USGS
	1976	P	1:32000	PAN	USGS
BARAGA	1951	P	1:24000	PAN	USGS
	1953	P	1:40000	PAN	USGS
	1953	P	1:60000	PAN	USGS
	1954	P	1:15840	BWIR	ASCS
	1960	P	1:15840	BWIR	USFS
	1962		1:15840	BWIR	HURD
	1968	P	1:20000	PAN	ASCS
	1970	P	1:15840	COL	USFS
	1970	P	1:60000	PAN	USFS
	1974	P	1:15840	BWIR	USFS
	1975		1:80000	PAN	USGS
BARRY	1938		1:20000	PAN	NARS
	1947	P	1:37000	PAN	USGS
	1950		1:20000	PAN	ASCS
	1955		1:20000	PAN	ASCS
	1956	P	1:60000	PAN	USGS
	1957	P	1:18000	PAN	USGS
	1961		1:20000	PAN	ASCS
	1967		1:20000	PAN	ASCS
	1973	P	1:32000	PAN	USGS
	1973	P	1:30000	PAN	USGS
	1974		1:31680	CIR	SCMPDC
	1974		1:40000	PAN	ASCS
	1974	P	1:31680	CIR	MSU/RSP
	1975		1:80000	PAN	DMA
	1976	P	1:23000	PAN	USGS
BAY	1938		1:20000	PAN	NARS
	1950		1:20000	PAN	ASCS
	1953		1:60000	PAN	USGS
	1955		1:20000	PAN	ASCS
	1960	P	1: 9600	PAN	ABRAMS
	1963		1:20000	PAN	ASCS
	1969		1:20000	PAN	ASCS
	1973		1:24000	PAN	USGS
	1975		1:38000	PAN	SCS
BENZIE	1938		1:20000	PAN	NARS
	1952		1:15840	BWIR	ASCS
	1953		1:60000	PAN	USGS
	1954		1:17000	PAN	USGS
	1958		1:20000	PAN	ASCS
	1965		1:20000	PAN	ASCS
	1972		1:19200	PAN	CAPITOL
	1973		1:40000	PAN	ASCS
	1973		1:36000	CIR	MDSHT
	1975	P	1:80000	PAN	USGS
	1976	P	1:80000	PAN	USGS
BERRIEN	1935	P	1:20000	PAN	NARS
	1938		1:20000	PAN	NARS
	1950		1:20000	PAN	ASCS
	1952	P	1:69000	PAN	USGS
	1955		1:20000	PAN	ASCS
	1956	P	1: 9600	PAN	ABRAMS
	1960		1:20000	PAN	ASCS
	1960	P	1: 7200	PAN	ABRAMS
	1967		1:20000	PAN	ASCS

COUNTY	YEAR	SCALE	FILM	AGENCY
BERRIEN	1969	1:21000	PAN	USGS
	1973	1: 7920	PAN	ABRAMS
	1974 P	1:31680	CIR	MSU/RSP
	1974	1:40000	PAN	ASCS
	1975 P	1:80000	PAN	DMA
	1975	1:38000	PAN	SCS
BRANCH	1938	1:20000	PAN	NARS
	1946 P	1:26000	PAN	USGS
	1950	1:20000	PAN	ASCS
	1955	1:20000	PAN	ASCS
	1958 P	1:17000	PAN	USGS
	1960 P	1:60000	PAN	USGS
	1961	1:20000	PAN	ASCS
	1967	1:20000	PAN	ASCS
	1974	1:31680	CIR	SCMPDC
	1974	1:40000	PAN	ASCS
	1975 P	1:80000	PAN	DMA
CALHOUN	1938	1:20000	PAN	NARS
	1946 P	1:26000	PAN	USGS
	1950	1:20000	PAN	ASCS
	1955	1:20000	PAN	ASCS
	1956 P	1:60000	PAN	USGS
	1961	1:20000	PAN	ASCS
	1966	1: 36000	PAN	ABRAMS
	1966	1:15840	PAN	ABRAMS
	1967	1:20000	PAN	ASCS
	1973 P	1:32000	PAN	USGS
	1974	1:31680	CIR	SCMPDC
	1974	1:40000	PAN	ASCS
	1974 P	1:38000	PAN	SCS
	1975	1:80000	PAN	DMA
CASS	1938	1:20000	PAN	NARS
	1950	1:20000	PAN	ASCS
	1955	1:20000	PAN	ASCS
	1960	1:20000	PAN	ASCS
	1960 P	1:60000	PAN	USGS
	1967	1:20000	PAN	ASCS
	1974 P	1:31680	CIR	MSU/RSP
	1974	1:40000	PAN	ASCS
	1975	1:80000	PAN	DMA
	1975 P	1:38000	PAN	SCS
	1976	1:23000	PAN	USGS
CHARLEVOIX	1938	1:20000	PAN	NARS
	1952 P	1:24000	PAN	USGS
	1953	1:60000	PAN	USGS
	1955	1:15840	BWIR	ASCS
	1956	1:17000	PAN	USGS
	1962	1:15840	PAN	ABRAMS
	1965 P	1:20000	PAN	ASCS
	1973	1:36000	CIR	MDSHT
	1973	1:40000	PAN	ASCS
	1973 P	1:40000	PAN	SCS
	1975 P	1:99999	PAN	DMA
	1975	1:80000	PAN	USGS
CHEBOYGAN	1938	1:20000	PAN	NARS
	1952	1:15840	BWIR	ASCS
	1952 P	1:24000	PAN	USGS
	1953	1:60000	PAN	USGS
	1956 P	1:17000	PAN	USGS
	1963	1:20000	PAN	ASCS
	1973	1:40000	PAN	ASCS
	1975 P	1:40000	COL	BENDIX
	1975	1:80000	PAN	USGS
CHIPPEWA	1939	1:20000	PAN	NARS

COUNTY	YEAR	SCALE	FILM	AGENCY
CHIPPEWA	1952 P	1:17000	PAN	USGS
	1953 P	1:20000	PAN	ABRAMS
	1953	1:60000	PAN	USGS
	1953	1:15840	BWIR	ASCS
	1953 P	1:62000	PAN	USFS
	1956 P	1:17000	PAN	USGS
	1964	1:15840	BWIR	USFS
	1969 P	1:12000	PAN	USFS
	1970 P	1:60000	PAN	USFS
	1972 P	1:15840	COL	USFS
	1973 P	1:36000	CIR	MDSHT
	1974 P	1:15840	BWIR	USFS
CLARE	1938	1:20000	PAN	NARS
	1952	1:15840	BWIR	ASCS
	1953	1:60000	PAN	USGS
	1955 P	1:17000	PAN	USGS
	1958	1:20000	PAN	ASCS
	1965	1:20000	PAN	ASCS
	1968 P	1:20000	PAN	USGS
	1972	1:40000	PAN	ASCS
	1976 P	1:80000	PAN	USGS
CLINTON	1938	1:20000	PAN	NARS
	1950	1:20000	PAN	ASCS
	1953 P	1:60000	PAN	USGS
	1954 P	1:24000	PAN	USGS
	1956 P	1:60000	PAN	USGS
	1956	1:20000	PAN	ASCS
	1962	1:15840	PAN	ABRAMS
	1964	1:20000	PAN	ASCS
	1964	1:36000	PAN	TCRPC
	1966 P	1:21000	PAN	USGS
	1970 P	1:20000	PAN	USGS
	1973 P	1:30000	PAN	USGS
	1973	1:40000	PAN	ASCS
	1973 P	1:40000	PAN	SCS
	1975 P	1:80000	PAN	DMA
CRAWFORD	1938	1:20000	PAN	NARS
	1951 P	1:31680	PAN	USFS
	1952 P	1:15840	BWIR	ASCS
	1953	1:60000	PAN	USGS
	1954 P	1:17000	PAN	USGS
	1960 P	1:15840	BWIR	USFS
	1960 P	1:17000	PAN	USGS
	1961 P	1:18000	PAN	USGS
	1963 P	1:20000	PAN	ASCS
	1968 P	1:72000	PAN	USFS
	1972	1:19200	PAN	CAPITOL
	1973 P	1:36000	CIR	MDSHT
	1974 P	1:15840	BWIR	USFS
	1975 P	1:80000	PAN	USGS
	1976 P	1:80000	PAN	USGS
DELTA	1939	1:20000	PAN	NARS
	1953	1:60000	PAN	USGS
	1953 P	1:17000	PAN	USGS
	1953 P	1:15840	BWIR	ASCS
	1954 P	1:17000	PAN	USGS
	1954 P	1:15840	BWIR	ASCS
	1964	1:15840	BWIR	USFS
	1970 P	1:60000	PAN	USFS
	1972 P	1:15840	COL	USFS
	1973 P	1:36000	CIR	MDSHT
	1974 P	1:15840	BWIR	USFS
	1975 P	1:80000	PAN	USGS
DICKINSON	1939	1:20000	PAN	NARS
	1951 P	1:24000	PAN	USGS

COUNTY	YEAR		SCALE	FILM	AGENCY
DICKINSON	1953		1:[illegible]40	BWIR	ASCS
	1953	P	1:[illegible]000	PAN	USGS
	1954	P	1:17000	PAN	USGS
	1964		1:15840	BWIR	USFS
	1971	P	1:15840	CIR	AERO
	1975	P	1:80000	PAN	USGS
	1976		1:20000	PAN	SCS
EATON	1938		1:20000	PAN	NARS
	1947	P	1:37000	PAN	USGS
	1950		1:20000	PAN	ASCS
	1955		1:20000	PAN	ASCS
	1956	P	1:60000	PAN	USGS
	1960		1:20000	PAN	ASCS
	1964		1:36000	PAN	TCRPC
	1967		1:20000	PAN	ASCS
	1973	P	1:30000	PAN	USGS
	1973	P	1:32000	PAN	USGS
	1974		1:40000	PAN	ASCS
	1974	P	1:38000	PAN	SCS
	1975	P	1:80000	PAN	DMA
	1976	P	1:23000	PAN	USGS
EMMET	1938		1:20000	PAN	NARS
	1952		1:15840	BWIR	ASCS
	1953		1:60000	PAN	USGS
	1953	P	1:62000	PAN	USFS
	1956		1:17000	PAN	USGS
	1958		1:20000	PAN	ASCS
	1965		1:20000	PAN	ASCS
	1970	P	1:60000	PAN	USFS
	1973		1:40000	PAN	ASCS
	1973		1:36000	CIR	MOSHT
	1975	P	1:40000	COL	BENDIX
	1975		1:80000	PAN	USGS
	1975	P	1:99999	PAN	DMA
GENESEE	1937	P	1:20000	PAN	NARS
	1938	P	1:20000	PAN	NARS
	1941		1:20000	PAN	NARS
	1950		1:20000	PAN	ASCS
	1953	P	1:60000	PAN	USGS
	1956	P	1:60000	PAN	USGS
	1957		1:20000	PAN	ASCS
	1959	P	1:17000	PAN	USGS
	1960		1:[illegible]9600	PAN	ABRAMS
	1961		1:15840	PAN	ABRAMS
	1964		1:15840	PAN	ABRAMS
	1964		1:20000	PAN	ASCS
	1967	P	1:24000	PAN	USGS
	1967	P	1:19000	PAN	USGS
	1967	P	1:13000	PAN	USGS
	1972		1:40000	PAN	ASCS
GLADWIN	1938		1:20000	PAN	NARS
	1952		1:15840	BWIR	ASCS
	1953		1:60000	PAN	USGS
	1958		1:20000	PAN	ASCS
	1965		1:20000	PAN	ASCS
	1965	P	1:12000	PAN	USGS
	1968	P	1:13000	PAN	USGS
	1968	P	1:20000	PAN	USGS
	1972		1:40000	PAN	ASCS
GOGEBIC	1939		1:20000	PAN	NARS
	1951	P	1:24000	PAN	USGS
	1952	P	1:17000	PAN	USGS
	1953	P	1:60000	PAN	USGS
	1954	P	1:24000	PAN	USGS
	1960		1:15840	BWIR	USFS

COUNTY	YEAR	SCALE	FILM	AGENCY
GOGEBIC	1970 P	1:15840	COL	USFS
	1970 P	1:60000	PAN	USFS
	1973 P	1:20000	PAN	USGS
	1974 P	1:15840	BWIR	USFS
	1975 P	1:20000	PAN	SCS
	1975 P	1:80000	PAN	USGS
G TRAVERSE	1938	1:20000	PAN	NARS
	1953	1:60000	PAN	USGS
	1953	1:15840	BWIR	ASCS
	1954	1:17000	PAN	USGS
	1964	1:20000	PAN	ASCS
	1971	1: 7920	PAN	ABRAMS
	1972	1:19200	PAN	CAPITOL
	1973	1:36000	CIR	MOSHT
	1973	1:40000	PAN	ASCS
	1973 P	1:40000	PAN	SCS
	1975 P	1:80000	PAN	USGS
	1976 P	1:80000	PAN	USGS
GRATIOT	1938	1:20000	PAN	NARS
	1950	1:20000	PAN	ASCS
	1953	1:60000	PAN	USGS
	1954 P	1:24000	PAN	USGS
	1955	1:20000	PAN	ASCS
	1963 P	1:18000	PAN	USGS
	1963	1:20000	PAN	ASCS
	1966 P	1:21000	PAN	USGS
	1970	1:40000	PAN	ASCS
	1972	1:25000	PAN	USGS
	1973 P	1:40000	PAN	SCS
HILLSDALE	1938	1:20000	PAN	NARS
	1950	1:20000	PAN	ASCS
	1955	1:20000	PAN	ASCS
	1958 P	1:17000	PAN	USGS
	1960 P	1:60000	PAN	USGS
	1963	1:20000	PAN	ASCS
	1969	1:20000	PAN	ASCS
	1970 P	1:20000	PAN	USGS
	1973 P	1:24000	PAN	USGS
	1974 P	1:38000	PAN	SCS
	1975 P	1:80000	PAN	DMA
HOUGHTON	1951 P	1:24000	PAN	USGS
	1953 P	1:40000	PAN	USGS
	1953 P	1:60000	PAN	USGS
	1954 P	1:15840	BWIR	ASCS
	1960 P	1:15840	BWIR	USFS
	1964	1:15840	BWIR	USFS
	1970	1:15840	COL	USFS
	1970	1:60000	PAN	USFS
	1974 P	1:15840	BWIR	USFS
	1975 P	1:20000	PAN	SCS
	1975 P	1:80000	PAN	USGS
HURON	1938	1:20000	PAN	NARS
	1941	1:20000	PAN	NARS
	1949	1:20000	PAN	ASCS
	1953	1:60000	PAN	USGS
	1956	1:20000	PAN	ASCS
	1959 P	1:17000	PAN	USGS
	1964	1:20000	PAN	ASCS
	1969 P	1:34000	PAN	USGS
	1972	1:40000	PAN	ASCS
	1972	1:50000	PAN	SCS
	1976 P	1:36000	PAN	USGS
INGHAM	1938	1:20000	PAN	NARS
	1950	1:20000	PAN	ASCS

COUNTY	YEAR	SCALE	FILM	AGENCY
INGHAM	1955 P	1: 6000	PAN	ABRAMS
	1955	1:20000	PAN	ASCS
	1956	1:60000	PAN	USGS
	1962	1:19200	PAN	ABRAMS
	1963	1:20000	PAN	ASCS
	1964	1:36000	PAN	TCRPC
	1967 P	1:20000	PAN	USGS
	1970 P	1:20000	PAN	USGS
	1970	1:40000	PAN	ASCS
	1970 P	1:19200	PAN	USGS
	1973 P	1:30000	PAN	USGS
	1974 P	1:38000	PAN	SCS
	1975 P	1:80000	PAN	OMA
	1976 P	1:36000	PAN	USGS
	1976	1:40000	PAN	SCS
IONIA	1938	1:20000	PAN	NARS
	1950	1:20000	PAN	ASCS
	1953 P	1:60000	PAN	USGS
	1955	1:20000	PAN	ASCS
	1956 P	1:60000	PAN	USGS
	1960	1: 6000	PAN	ABRAMS
	1960	1:19200	PAN	ABRAMS
	1961	1:20000	PAN	ASCS
	1966 P	1:21000	PAN	USGS
	1967	1:20000	PAN	ASCS
	1969 P	1:46000	PAN	USGS
	1973 P	1:40000	PAN	SCS
	1975 P	1:80000	PAN	OMA
	1975	1:33000	CIR	WMRPC
IOSCO	1938	1:20000	PAN	NARS
	1951 P	1:31680	PAN	USFS
	1952 P	1:15840	BWIR	ASCS
	1953	1:60000	PAN	USGS
	1960 P	1:15840	BWIR	USFS
	1963 P	1:20000	PAN	ASCS
	1965 P	1:12000	PAN	USGS
	1965 P	1:18000	PAN	USGS
	1968 P	1:72000	PAN	USFS
	1973	1:36000	CIR	MDSHT
	1974 P	1:15840	BWIR	USFS
	1976 P	1:32000	PAN	USGS
IRON	1939	1:20000	PAN	NARS
	1943	1:27000	BWIR	ASCS
	1951 P	1:24000	PAN	USGS
	1951	1:24000	BWIR	ASCS
	1952 P	1:17000	PAN	USGS
	1953 P	1:40000	PAN	USGS
	1953 P	1:60000	PAN	USGS
	1955 P	1:15840	BWIR	ASCS
	1960 P	1:15840	BWIR	USFS
	1964 P	1:15840	BWIR	USFS
	1970 P	1:15840	COL	USFS
	1970 P	1:60000	PAN	USFS
	1974 P	1:15840	BWIR	USFS
	1975 P	1:20000	PAN	SCS
	1975 P	1:80000	PAN	USGS
ISABELLA	1938	1:20000	PAN	NARS
	1952	1:20000	PAN	ASCS
	1953	1:60000	PAN	USGS
	1955 P	1:17000	PAN	USGS
	1958	1:20000	PAN	ASCS
	1963 P	1:18000	PAN	USGS
	1965	1:20000	PAN	ASCS
	1968 P	1:20000	PAN	USGS
	1972 P	1:35000	PAN	USGS
	1972 P	1:25000	PAN	USGS

COUNTY	YEAR		SCALE	FILM	AGENCY
ISABELLA	1972		1:40000	PAN	ASCS
	1976	P	1:80000	PAN	USGS
JACKSON	1938		1:20000	PAN	NARS
	1950		1:20000	PAN	ASCS
	1956		1:60000	PAN	USGS
	1957		1:20000	PAN	ASCS
	1963		1:15840	PAN	ABRAMS
	1964		1:20000	PAN	ASCS
	1970	P	1:19200	PAN	USGS
	1970	PP	1:20000	PAN	USGS
	1972		1:40000	PAN	ASCS
	1974		1:38000	PAN	SCS
	1975	P	1:80000	PAN	DMA
KALAMAZOO	1938		1:20000	PAN	NARS
	1946	P	1:26000	PAN	USGS
	1950		1:20000	PAN	ASCS
	1955		1:20000	PAN	ASCS
	1956	P	1:60000	PAN	USGS
	1960		1:20000	PAN	ASCS
	1960		1:19200	PAN	ABRAMS
	1963		1:36000	PAN	ABRAMS
	1964		1:36000	PAN	ABRAMS
	1964		1:15840	PAN	ABRAMS
	1967		1:20000	PAN	ASCS
	1973	P	1:32000	PAN	USGS
	1973	PP	1:30000	PAN	USGS
	1974	PP	1:31680	CIR	MSU/RSP
	1974		1:31680	CIR	SCMPDC
	1974		1:40000	PAN	ASCS
	1975		1:80000	PAN	DMA
KALKASKA	1938		1:20000	PAN	NARS
	1952		1:15840	BWIR	DNR
	1953		1:15840	BWIR	ASCS
	1953		1:60000	PAN	USGS
	1954	P	1:17000	PAN	USGS
	1955		1:15840	BWIR	DNR
	1963		1:20000	PAN	ASCS
	1971		1:19200	PAN	CAPITOL
	1973		1:40000	PAN	ASCS
	1973		1:36000	CIR	MDSHT
	1973	P	1:40000	PAN	SCS
	1975	PP	1:80000	PAN	USGS
	1976	P	1:80000	PAN	USGS
KENT	1938		1:20000	PAN	NARS
	1950		1:20000	PAN	ASCS
	1953	P	1:60000	PAN	USGS
	1955		1:20000	PAN	ASCS
	1956	P	1:60000	PAN	USGS
	1960		1:20000	PAN	ASCS
	1963		1:15840	PAN	ABRAMS
	1963		1:12000	PAN	ABRAMS
	1966		1:36000	PAN	ABRAMS
	1967		1:20000	PAN	ASCS
	1975		1:33000	CIR	WMRPC
	1975	P	1:80000	PAN	DMA
	1975	PP	1:63360	BWIR	USFS
	1976	P	1:80000	PAN	USGS
KEWEENAW	1954	P	1:158[illegible]	BWIR	ASCS
	1956		1:30000	PAN	USGS
	1957		1:36000	PAN	USGS
	1964		1:15840	BWIR	USFS
LAKE	1938		1:20000	PAN	NARS
	1952		1:15840	BWIR	ASCS
	1953		1:60000	PAN	USGS

COUNTY	YEAR		SCALE	FILM	AGENCY
LAKE	1954	P	1:17000	PAN	USGS
	1955	P	1:17000	PAN	USGS
	1958		1:20000	PAN	ASCS
	1965		1:20000	PAN	ASCS
	1965	P	1:15840	PAN	USFS
	1971	P	1:60000	COL	USFS
	1974	P	1:15840	BWIF	USFS
	1975		1:33000	CIR	WMRPC
	1975		1:63360	BWIR	USFS
	1976		1:80000	PAN	USGS
	1976		1:40000	PAN	SCS
LAPEER	1938		1:20000	PAN	NARS
	1941		1:20000	PAN	NARS
	1950		1:20000	PAN	ASCS
	1953	P	1:60000	PAN	USGS
	1956	P	1:60000	PAN	USGS
	1957		1:20000	PAN	ASCS
	1959	P	1:17000	PAN	USGS
	1964		1:20000	PAN	ASCS
	1967	P	1:24000	PAN	USGS
	1972		1:40000	PAN	ASCS
LEELANAU	1938		1:20000	PAN	NARS
	1952		1:15840	BWIR	ASCS
	1953		1:60000	PAN	USGS
	1954		1:17000	PAN	USGS
	1963	P	1:20000	PAN	ASCS
	1973		1:40000	PAN	ASCS
	1973		1:36000	CIR	MOSHT
	1975		1:80000	PAN	USGS
LENAWEE	1938		1:20000	PAN	NARS
	1940		1:20000	PAN	NARS
	1949		1:20000	PAN	ASCS
	1955		1:20000	PAN	ASCS
	1958	P	1:17000	PAN	USGS
	1960	P	1:60000	PAN	USGS
	1963		1:20000	PAN	ASCS
	1970		1:40000	PAN	ASCS
	1971	P	1:23000	PAN	USGS
	1971	P	1:24000	PAN	USGS
	1974	P	1:38000	PAN	SCS
	1975	P	1:80000	PAN	DMA
	1975	P	1:23000	PAN	USGS
	1976	P	1:36000	PAN	USGS
LIVINGSTON	1937	P	1:20000	PAN	NARS
	1938		1:20000	PAN	NARS
	1940		1:20000	PAN	NARS
	1949		1:20000	PAN	ASCS
	1955		1:20000	PAN	ASCS
	1956		1:60000	PAN	USGS
	1963		1:20000	PAN	ASCS
	1964	P	1:18000	PAN	USGS
	1965		1:15840	PAN	ABRAMS
	1966		1:36000	PAN	SEMCOG
	1967		1:19000	PAN	USGS
	1970		1:20000	PAN	SEMCOG
	1970		1:19200	PAN	CAPITOL
	1970		1:40000	PAN	ASCS
	1970		1:19000	PAN	USGS
	1971		1:50000	PAN	SCS
	1973	P	1:24000	PAN	USGS
	1975		1:24000	PAN	SEMCOG
	1976		1:36000	PAN	USGS
LUCE	1939		1:20000	PAN	NARS
	1953		1:15840	BWIR	ASCS
	1953		1:60000	PAN	USGS

COUNTY	YEAR		SCALE	FILM	AGENCY
LUCE	1964		1:15840	BWIR	USFS
	1964	P	1:18000	PAN	USGS
	1971	P	1:15000	PAN	USGS
	1973	P	1:36000	CIR	MDSHT
	1973	P	1:21000	PAN	USGS
MACKINAC	1939		1:20000	PAN	NARS
	1953		1:15840	PAN	ASCS
	1953		1:60000	PAN	USGS
	1953	P	1:62000	PAN	USFS
	1956	P	1:17000	PAN	USGS
	1964		1:15840	PAN	USFS
	1970	P	1:60000	PAN	USFS
	1971	P	1:15000	PAN	USGS
	1973	P	1:36000	CIR	MDSHT
	1973	P	1:21000	PAN	USGS
	1974	P	1:15840	BWIR	USFS
	1975	P	1:99999	PAN	DMA
MACOMB	1938		1:20000	PAN	NARS
	1940		1:20000	PAN	NARS
	1955		1:20000	PAN	ASCS
	1956	P	1:60000	PAN	USGS
	1961		1: 6000	PAN	ABRAMS
	1964		1: 7920	PAN	ABRAMS
	1964	P	1:20000	PAN	ASCS
	1964		1:12000	PAN	ABRAMS
	1966		1:36000	PAN	SEMCOG
	1970		1:20000	PAN	SEMCOG
	1973		1:40000	PAN	ASCS
	1973		1:24000	PAN	USGS
	1975		1:24000	PAN	SEMCOG
MANISTEE	1938		1:20000	PAN	NARS
	1953		1:60000	PAN	USGS
	1953		1:15840	BWIR	ASCS
	1954		1:17000	PAN	USGS
	1958		1:20000	PAN	ASCS
	1965	P	1:15840	PAN	USFS
	1965		1:20000	PAN	ASCS
	1970		1:12000	PAN	ABRAMS
	1971		1:60000	COL	USFS
	1972		1:19200	PAN	CAPITOL
	1973		1:36000	CIR	MDSHT
	1973		1:40000	PAN	ASCS
	1974	P	1:15840	BWIR	USFS
	1975		1:63360	BWIR	USFS
	1976		1:80000	PAN	USGS
MARQUETTE	1939		1:20000	PAN	NARS
	1949	P	1: 6960	PAN	ABRAMS
	1951	P	1:24000	PAN	USGS
	1953	P	1:17000	PAN	USGS
	1953	P	1:40000	PAN	USGS
	1954		1:15840	BWIR	ASCS
	1954	P	1:17000	PAN	USGS
	1961		1: 9600	PAN	ABRAMS
	1964		1:15840	BWIR	USFS
	1970	P	1:60000	PAN	USFS
	1972	P	1:15840	COL	USFS
	1975	P	1:20000	PAN	SCS
	1975	P	1:80000	PAN	USGS
MASON	1938		1:20000	PAN	NARS
	1952		1:20000	PAN	ASCS
	1953		1:60000	PAN	USGS
	1954	P	1:17000	PAN	USGS
	1955	P	1:17000	PAN	USGS
	1955	P	1:15840	BWIR	USFS
	1958		1:20000	PAN	ASCS

COUNTY	YEAR		SCALE	FILM	AGENCY
MASON	1965		1:20000	PAN	ASCS
	1972		1:40000	PAN	ASCS
	1973	P	1:36000	CIR	MDSHT
	1974		1:12000	PAN	STEREO
	1974	P	1:15840	BWIR	USFS
	1975		1:33000	CIR	WMRPC
	1975		1:63360	BWIR	USFS
	1976		1:80000	PAN	USGS
MECOSTA	1938		1:20000	PAN	NARS
	1952		1:20000	PAN	ASCS
	1953		1:60000	PAN	USGS
	1955	P	1:17000	PAN	USGS
	1955	P	1:15840	BWIR	USFS
	1958		1:20000	PAN	ASCS
	1963	P	1:18000	PAN	USGS
	1963		1:12000	PAN	ABRAMS
	1965		1:20000	PAN	ASCS
	1965	P	1:15840	PAN	USFS
	1971	P	1:60000	COL	USFS
	1972		1:40000	PAN	ASCS
	1974	P	1:15840	BWIR	USFS
	1975		1:33000	CIR	WMRPC
	1975	P	1:63360	BWIR	USFS
	1976	P	1:80000	PAN	USGS
MENOMINEE	1939		1:20000	PAN	NARS
	1951	P	1:24000	BWIR	AERO
	1951	P	1:15840	IR	AERO
	1953		1:60000	PAN	USGS
	1954		1:15840	BWIR	ASCS
	1954	P	1:17000	PAN	USGS
	1964		1:15840	PAN	ABRAMS
	1964		1:15840	BWIR	USFS
	1975	P	1:80000	PAN	USGS
	1976		1:50000	PAN	SCS
MIDLAND	1938		1:20000	PAN	NARS
	1952		1:15840	BWIR	DNR
	1953		1:60000	PAN	USGS
	1954		1:15840	BWIR	ASCS
	1954	P	1:24000	PAN	USGS
	1958		1:20000	PAN	ASCS
	1965		1:20000	PAN	ASCS
	1967		1:36000	PAN	ABRAMS
	1967		1:15840	PAN	ABRAMS
	1968	P	1:13000	PAN	USGS
	1969		1:15840	PAN	ABRAMS
	1969		1:36000	PAN	ABRAMS
	1972	P	1:25000	PAN	USGS
	1972		1:40000	PAN	ASCS
	1973	P	1:24000	PAN	USGS
	1975	P	1:38000	PAN	SCS
MISSAUKEE	1938		1:20000	PAN	NARS
	1952		1:15840	BWIR	ASCS
	1953		1:60000	PAN	USGS
	1954		1:17000	PAN	USGS
	1963		1:20000	PAN	ASCS
	1973	P	1:36000	CIR	MDSHT
	1973		1:40000	PAN	ASCS
	1975	P	1:63360	BWIR	USFS
	1976		1:80000	PAN	USGS
MONROE	1938		1:20000	PAN	NARS
	1940		1:20000	PAN	NARS
	1950		1:20000	PAN	ASCS
	1955		1:20000	PAN	ASCS
	1960	P	1:60000	PAN	USGS
	1961		1: 6000	PAN	ABRAMS

COUNTY	YEAR		SCALE	FILM	AGENCY
MONROE	1963	P	1:24000	PAN	USGS
	1964		1:20000	PAN	ASCS
	1966		1:36000	PAN	SEMCOG
	1970		1:20000	PAN	SEMCOG
	1971		1:31680	PAN	CHICAGO
	1971	P	1:23000	PAN	USGS
	1973	P	1:24000	PAN	USGS
	1973		1:40000	PAN	ASCS
	1975		1:24000	PAN	SEMCOG
	1976	P	1:36000	PAN	USGS
MONTCALM	1938		1:20000	PAN	NARS
	1950		1:20000	PAN	ASCS
	1953		1:60000	PAN	USGS
	1955	P	1:17000	PAN	USGS
	1955		1:20000	PAN	ASCS
	1961		1:20000	PAN	ASCS
	1963		1:12000	PAN	ABRAMS
	1963	P	1:18000	PAN	USGS
	1966	P	1:21000	PAN	USGS
	1967		1:20000	PAN	ASCS
	1969	P	1:46000	PAN	USGS
	1973	P	1:40000	PAN	SCS
	1974	P	1:15840	BWIR	USFS
	1975	P	1:63360	BWIR	USFS
	1975		1:33000	CIR	WMRPC
	1976	P	1:80000	PAN	USGS
MONTMORNCY	1938		1:20000	PAN	NARS
	1951	P	1:31680	PAN	USFS
	1952		1:15840	BWIR	ASCS
	1952	P	1:24000	PAN	USGS
	1953		1:60000	PAN	USGS
	1963		1:20000	PAN	ASCS
	1971	P	1:23000	PAN	USGS
	1973	P	1:36000	CIR	MDSHT
	1975	P	1:80000	PAN	USGS
MUSKEGON	1938		1:20000	PAN	NARS
	1950		1:20000	PAN	ASCS
	1953		1:60000	PAN	USGS
	1955		1:20000	PAN	ASCS
	1955	P	1: 6000	PAN	ABRAMS
	1961		1: 6000	PAN	ABRAMS
	1962		1:20000	PAN	ASCS
	1965	P	1:15840	PAN	USFS
	1968		1:15840	PAN	ABRAMS
	1968		1:20000	PAN	ASCS
	1968		1:36000	PAN	ABRAMS
	1969	P	1:14000	PAN	USGS
	1971	P	1:60000	COL	USFS
	1973		1: 3960	PAN	ABRAMS
	1973	P	1:20000	PAN	USGS
	1974	P	1:15840	BWIR	USFS
	1974		1:40000	PAN	ASCS
	1975	P	1:63360	BWIR	USFS
	1975		1:33000	CIR	WMSFOC
	1976	P	1:80000	PAN	USGS
NEWAYGO	1938		1:20000	PAN	NARS
	1952		1:20000	PAN	ASCS
	1953		1:60000	PAN	USGS
	1955		1:17000	PAN	USGS
	1955	P	1:15840	BWIR	USFS
	1958		1:20000	PAN	ASCS
	1965	P	1:15840	PAN	USFS
	1965		1:20000	PAN	ASCS
	1971	P	1:60000	COL	USFS
	1972		1:40000	PAN	ASCS
	1974	P	1:15840	BWIR	USFS

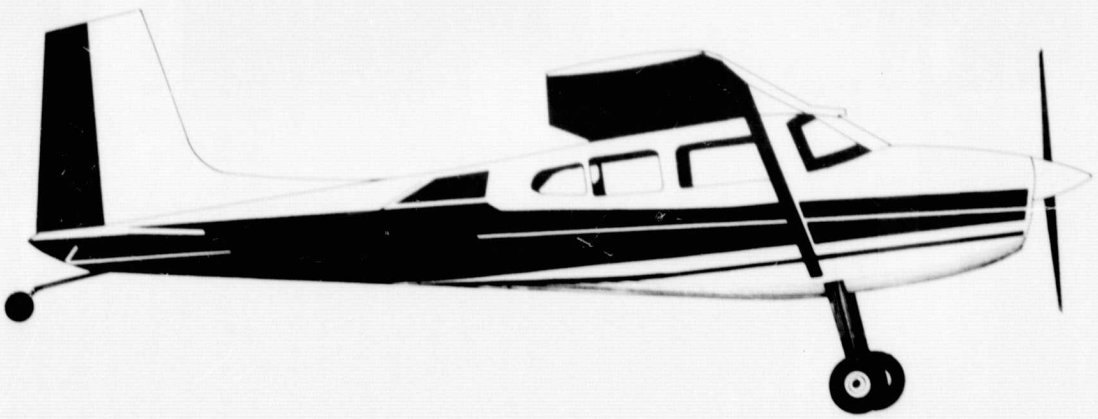
COUNTY	YEAR	SCALE	FILM	AGENCY
NEWAYGO	1975	1:33000	CIR	WMRPC
	1975	1:63360	BWIR	USFS
	1976	1:80000	PAN	USGS
OAKLAND	1937 P	1:20000	PAN	NARS
	1938	1:20000	PAN	NARS
	1940	1:20000	PAN	NARS
	1956 P	1:60000	PAN	USGS
	1957	1:20000	PAN	ASCS
	1963	1:12000	PAN	ABRAMS
	1963	1:36000	PAN	ABRAMS
	1964 P	1:20000	PAN	ASCS
	1966	1:36000	PAN	SEMCOG
	1970	1:20000	PAN	SEMCOG
	1972	1:40000	PAN	ASCS
	1973	1:24000	PAN	USGS
	1975	1:24000	PAN	SEMCOG
	1976 P	1:36000	PAN	USGS
	1976 P	1:24000	CIR	MDSHT
	1976	1:40000	PAN	SCS
OCEANA	1938	1:20000	PAN	NARS
	1951	1:20000	PAN	ASCS
	1952	1:20000	BWIR	DNR
	1953	1:60000	PAN	USGS
	1955 P	1:15840	BWIR	USFS
	1955	1:17000	PAN	USGS
	1958	1:20000	PAN	ASCS
	1965 P	1:15840	PAN	USFS
	1965	1:20000	PAN	ASCS
	1971 P	1:60000	COL	USFS
	1972	1:40000	PAN	ASCS
	1974 P	1:15840	BWIR	USFS
	1975	1:33000	CIR	WMSRDC
	1975	1:63360	BWIR	USFS
	1976	1:40000	PAN	ASCS
	1976	1:80000	PAN	USGS
OGEMAW	1938	1:20000	PAN	NARS
	1951 P	1:31680	PAN	USFS
	1953	1:60000	PAN	USGS
	1953 P	1:15840	BWIR	ASCS
	1961 P	1:18000	PAN	USGS
	1963 P	1:20000	PAN	ASCS
	1965 P	1:18000	PAN	USGS
	1965 P	1:15840	PAN	USFS
	1965 P	1:12000	PAN	USGS
	1968	1: 7920	PAN	ABRAMS
	1968 P	1:13000	PAN	USGS
	1969 P	1:20000	PAN	ASCS
	1973 P	1:36000	CIR	MDSHT
	1976 P	1:32000	PAN	USGS
ONTONAGON	1939 P	1:20000	PAN	NARS
	1948 P	1:27000	PAN	USGS
	1951 P	1:24000	PAN	USGS
	1953 P	1:40000	PAN	USGS
	1953 P	1:60000	PAN	USGS
	1954 P	1: 9600	PAN	ABRAMS
	1954 P	1:24000	PAN	USGS
	1954 P	1:15840	BWIR	ASCS
	1955 P	1:15840	PAN	AERO
	1958 P	1:14400	PAN	AERO
	1960 P	1:15840	BWIR	USFS
	1961	1: 9600	PAN	ABRAMS
	1964 P	1:15840	BWIR	USFS
	1970 P	1:15840	COL	USFS
	1970 P	1:60000	PAN	USFS
	1974 P	1:15840	BWIR	USFS
	1975 P	1:20000	PAN	SCS

COUNTY	YEAR		SCALE	FILM	AGENCY
ONTONAGON	1975	P	1:80000	PAN	USGS
OSCEOLA	1938		1:20000	PAN	NARS
	1952		1:15840	BWIR	ASCS
	1953		1:60000	PAN	USGS
	1955		1:17000	PAN	USGS
	1958		1:20000	PAN	ASCS
	1965		1:20000	PAN	ASCS
	1972		1:40000	PAN	ASCS
	1975		1:33000	CIR	WMRPC
	1975	P	1:63360	BWIR	USFS
	1976		1:80000	PAN	USGS
OSCODA	1938		1:20000	PAN	NARS
	1951	P	1:31680	PAN	USFS
	1952	P	1:15840	BWIR	ASCS
	1952	P	1:24000	PAN	USGS
	1953		1:60000	PAN	USGS
	1960	P	1:15840	BWIR	USFS
	1960	P	1:17000	PAN	USGS
	1961	P	1:18000	PAN	USGS
	1963	P	1:20000	PAN	ASCS
	1965	P	1:18000	PAN	USGS
	1968	P	1:72000	PAN	USFS
	1971	P	1:23000	PAN	USGS
	1973	P	1:36000	CIR	MDSHT
	1974	P	1:15840	BWIR	USFS
	1975	P	1:80000	PAN	DMA
OTSEGO	1938		1:20000	PAN	NARS
	1952	P	1:24000	PAN	USGS
	1952		1:15840	BWIR	ASCS
	1953		1:60000	PAN	USGS
	1954	P	1:17000	PAN	USGS
	1956	P	1:17000	PAN	USGS
	1963		1:20000	PAN	ASCS
	1972		1:19200	PAN	CAPITOL
	1973	P	1:36000	CIR	MDSHT
	1973	P	1:40000	PAN	SCS
	1975	P	1:80000	PAN	USGS
OTTAWA	1938		1:20000	PAN	NARS
	1950		1:20000	PAN	ASCS
	1953	P	1:60000	PAN	USGS
	1954	P	1: 6000	PAN	ABRAMS
	1955		1:20000	PAN	ASCS
	1956	P	1:60000	PAN	USGS
	1961		1:20000	PAN	ASCS
	1968		1:20000	PAN	ASCS
	1968		1:60000	PAN	SCS
	1969	P	1:20000	PAN	USGS
	1973	P	1:20000	PAN	USGS
	1974		1:40000	PAN	ASCS
	1974	P	1:31680	CIR	MSU/RSP
	1975		1:33000	CIR	WMSRDC
PRESQ ISLE	1938		1:20000	PAN	NARS
	1952	P	1:24000	PAN	USGS
	1952		1:15840	BWIR	ASCS
	1953		1:60000	PAN	USGS
	1956	P	1:17000	PAN	USGS
	1964		1:20000	PAN	ASCS
	1971	P	1:20000	PAN	USGS
	1972		1:19200	PAN	CAPITOL
	1975	P	1:80000	PAN	USGS
ROSCOMMON	1938		1:20000	PAN	NARS
	1952		1:15840	BWIR	ASCS
	1953		1:60000	PAN	USGS
	1954	P	1:17000	PAN	USGS

COUNTY	YEAR		SCALE	FILM	AGENCY
ROSCOMMON	1960	P	1:17000	PAN	USGS
	1961	P	1:18000	PAN	USGS
	1963		1:20000	PAN	ASCS
	1968	P	1:20000	PAN	USGS
	1968		1: 7920	PAN	ABRAMS
	1968	P	1:72000	PAN	USFS
	1968	P	1:13000	PAN	USGS
	1971		1:19200	PAN	CAPITOL
	1974		1:15840	PAN	ABRAMS
	1976	P	1:80000	PAN	USGS
SAGINAW	1937		1:20000	PAN	NARS
	1941		1:20000	PAN	NARS
	1950		1:20000	PAN	ASCS
	1953		1:60000	PAN	USGS
	1954	P	1:24000	PAN	USGS
	1955		1:20000	PAN	ASCS
	1957		1:12000	PAN	ABRAMS
	1963		1:20000	PAN	ASCS
	1967	P	1:13000	PAN	USGS
	1970		1:40000	PAN	ASCS
	1972	P	1:25000	PAN	USGS
	1973	P	1:24000	PAN	USGS
	1975	P	1:38000	PAN	SCS
ST. CLAIR	1938		1:20000	PAN	NARS
	1941		1:20000	PAN	NARS
	1950		1:20000	PAN	ASCS
	1953	P	1:60000	PAN	USGS
	1957		1:20000	PAN	ASCS
	1959	P	1:17000	PAN	USGS
	1964		1:20000	PAN	ASCS
	1966		1:36000	PAN	SEMCOG
	1967	P	1:24000	PAN	USGS
	1969		1:30000	PAN	ABRAMS
	1970		1:50000	PAN	SCS
	1970		1:20000	PAN	SEMCOG
	1973		1:30000	PAN	ABRAMS
	1973	P	1:24000	PAN	USGS
	1975		1:24000	PAN	SEMCOG
	1976	P	1:36000	PAN	USGS
ST. JOSEPH	1938		1:20000	PAN	NARS
	1946	P	1:26000	PAN	USGS
	1950		1:20000	PAN	ASCS
	1955		1:20000	PAN	ASCS
	1958	P	1:17000	PAN	USGS
	1960	P	1:60000	PAN	USGS
	1960		1:20000	PAN	ASCS
	1967		1:20000	PAN	ASCS
	1968		1:36000	PAN	ABRAMS
	1968		1:30000	PAN	ABRAMS
	1968		1:15840	PAN	ABRAMS
	1969	P	1:14000	PAN	USGS
	1973	P	1:30000	PAN	USGS
	1974		1:31680	CIR	SCMPDC
	1974		1:40000	PAN	ASCS
	1975	P	1:80000	PAN	DMA
SANILAC	1938		1:20000	PAN	NARS
	1941		1:20000	PAN	NARS
	1949		1:20000	PAN	ASCS
	1953		1:60000	PAN	USGS
	1955		1:20000	PAN	ASCS
	1959		1:17000	PAN	USGS
	1963		1:20000	PAN	ASCS
	1970		1:40000	PAN	ASCS
	1976	P	1:36000	PAN	USGS
SCHOOLCRFT	1939		1:20000	PAN	NARS

COUNTY	YEAR		SCALE	FILM	AGENCY
SCHOOLCRFT	1953	P	1:15840	BWIR	ASCS
	1953	P	1:17000	PAN	USGS
	1953		1:60000	PAN	USGS
	1954	P	1:15840	BWIR	ASCS
	1964		1:15840	BWIR	USFS
	1970	P	1:60000	PAN	USFS
	1971	P	1:15000	PAN	USGS
	1972	P	1:15840	COL	USFS
	1972	P	1:15000	PAN	USGS
	1973	P	1:36000	CIR	MDSHT
	1974	P	1:15840	BWIR	USFS
	1975	P	1:80000	PAN	USGS
	1976	P	1:15000	PAN	USGS
	1976	P	1:63360	CIR	HURD
SHIAWASSEE	1937		1:20000	PAN	NARS
	1940		1:20000	PAN	NARS
	1950		1:20000	PAN	ASCS
	1953	P	1:60000	PAN	USGS
	1954	P	1:24000	PAN	USGS
	1955		1:20000	PAN	ASCS
	1956	P	1:60000	PAN	USGS
	1963		1:20000	PAN	ASCS
	1967	P	1:19000	PAN	USGS
	1967	P	1:13000	PAN	USGS
	1970		1:50000	PAN	SCS
	1970	P	1:20000	PAN	USGS
	1972	P	1:20000	PAN	USGS
TUSCOLA	1938		1:20000	PAN	NARS
	1941		1:20000	PAN	NARS
	1949		1:20000	PAN	ASCS
	1953		1:60000	PAN	USGS
	1955		1:20000	PAN	ASCS
	1959	P	1:17000	PAN	USGS
	1963		1:20000	PAN	ASCS
	1967	P	1:19000	PAN	USGS
	1967	P	1:13000	PAN	USGS
	1970		1:40000	PAN	ASCS
	1973	P	1:24000	PAN	USGS
	1975	P	1:38000	PAN	SCS
VAN BUREN	1938		1:20000	PAN	NARS
	1950		1:20000	PAN	ASCS
	1955		1:20000	PAN	ASCS
	1956	P	1:60000	PAN	USGS
	1960		1:20000	PAN	ASCS
	1967		1:20000	PAN	ASCS
	1974		1:40000	PAN	ASCS
	1974		1:31680	CIR	MSU/RSP
	1975		1:80000	PAN	DMA
	1975	P	1:38000	PAN	SCS
	1976	P	1:23000	PAN	USGS
WASHTENAW	1938		1:20000	PAN	NARS
	1940		1:20000	PAN	NARS
	1949		1:20000	PAN	ASCS
	1955		1:20000	PAN	ASCS
	1956		1:60000	PAN	USGS
	1960		1:19200	PAN	CHICAGO
	1963		1:20000	PAN	ASCS
	1964	P	1:18000	PAN	USGS
	1966		1:36000	PAN	SEMCOG
	1966	P	1:18000	PAN	USGS
	1969		1:20000	PAN	ASCS
	1969		1:40000	PAN	SCS
	1970		1:20000	PAN	SEMCOG
	1970	P	1:19000	PAN	USGS
	1971		1:19200	PAN	CAPITOL
	1971		1:24000	PAN	CAPITOL

COUNTY	YEAR		SCALE	FILM	AGENCY
WASHTENAW	1971		1: 6000	PAN	CAPITOL
	1973	P	1:24000	PAN	USGS
	1975	P	1:23000	PAN	USGS
	1975		1:24000	PAN	SEMCOG
	1975	P	1:80000	PAN	DMA
	1976		1:36000	PAN	USGS
WAYNE	1937		1:20000	PAN	NARS
	1940	P	1:20000	PAN	NARS
	1956		1:60000	PAN	USGS
	1957		1:20000	PAN	ASCS
	1964	P	1:20000	PAN	ASCS
	1966		1:36000	PAN	SEMCOG
	1970		1:20000	PAN	SEMCOG
	1973		1:24000	PAN	USGS
	1973		1:40000	PAN	ASCS
	1975		1:24000	PAN	SEMCOG
WEXFORD	1938		1:20000	PAN	NARS
	1952		1:15840	BWIR	ASCS
	1953		1:60000	PAN	USGS
	1954	P	1:17000	PAN	USGS
	1955	P	1:17000	PAN	USGS
	1958		1:20000	PAN	ASCS
	1965		1:20000	PAN	ASCS
	1965	P	1:15840	PAN	USFS
	1971	P	1:60000	COL	USFS
	1972		1:19200	PAN	CAPITOL
	1973		1:36000	CIR	MDSHT
	1973		1:40000	PAN	ASCS
	1974	P	1:15840	BWIR	USFS
	1975		1:63360	BWIR	USFS
	1976		1:80000	PAN	USGS
	1976		1:40000	PAN	SCS



LOCAL IMAGERY

SECTION 7
LOCAL IMAGERY

GENERAL INFORMATION

Local imagery consists mainly of site and corridor aerial photography that was obtained for a wide variety of uses. These include: city planning, large-scale photographic mapping, engineering studies, and site and corridor assessment for particular facilities, such as highways, parks, power plants, transmission lines, pipelines, and other installations. A host of public agencies and private firms have acquired large-scale photographic coverage of specific project areas in Michigan. Photographic acquisitions have been numerous and cover small areas that are frequently irregular in shape. The major sources of local imagery are described below.

Abrams Aerial Survey Corp. (ABRAMS): Abrams has acquired most of the local aerial photography of Michigan. Their voluminous holdings consist of mainly 9 by 9 inch black-and-white panchromatic photography of townships, cities, highways, rivers, shorelines, and other site or corridor areas.

Bendix Aerospace Systems Division (BENDIX): Bendix has acquired 1:40,000 color infrared photography of many inland lakes in Michigan. The firm also has multispectral scanner imagery of selected sites in the State.

Environmental Research Institute of Michigan (ERIM): Mission X252m, conducted by ERIM in 1974, provides color photography of 3,000 km of the Great Lakes shoreline of Michigan at scales of 1:10,000 or 1:16,000. ERIM has also collected aerial photography and multispectral imagery of specific study sites in Michigan.

Mark Hurd Aerial Surveys, Inc. (HURD): Numerous project areas in the Upper Peninsula of Michigan have been photographed by Mark Hurd Aerial Surveys, Inc. Most of the photography is panchromatic; however, some black-and-white infrared photography of forest areas is also available.

Michigan Department of Natural Resources (DNR): Several divisions of DNR have obtained aerial photography for their own use. The Engineering Division has the largest collection

which includes aerial photographs of shorelines, highways, and forest areas. Most of the photography was taken in the 1930's and 1940's. Aerial photography of state parks has been flown for the Parks Division. The Wildlife Division has acquired low altitude, 35 mm oblique photos of selected natural areas in the state. The Water Development Services Division holds photographic coverage of Michigan shoreline areas.

Michigan Department of State Highways and Transportation (MDSHT): Large-scale black-and-white panchromatic photography (1:10,000 or larger) of proposed or existing highway corridors is acquired periodically by the MDSHT. Current holdings date from 1960 and mission coverage is typically a single flight line. The MDSHT occasionally acquires coverage for larger areas and this photography is recorded in the Regional/County Index.

Michigan State University, Remote Sensing Project (MSU/RSP): The Project has acquired low-altitude oblique or near-vertical photography of several study areas in the state. These missions produced either 35 mm color or color infrared photography, or 70 mm color photography. Coverage includes Lansing, East Lansing, MSU Campus and the Detroit Riverfront (see Fig. 7.1).

Soil Conservation Service (SCS): Large-scale black-and-white panchromatic photography is available for several watershed areas in the lower peninsula of Michigan.

U.S. Army Corps of Engineers (CORPS): Michigan is divided among three Corps of Engineers Districts. The Detroit region covers all of the Lower Peninsula (with the exception of Berrien County in the extreme southwest) and the eastern half of the Upper Peninsula. The western half of the Upper Peninsula falls in the Minneapolis region and Berrien County is in the Chicago region.

Local aerial photography is acquired for reconnaissance and engineering purposes related to the Corps' responsibility for surface water and erosion control. Mission coverage is typically large-scale black-and-white panchromatic photography of lake shores, reservoirs, rivers and streams. Some color and color infrared photography is acquired in certain specific cases.

A comprehensive index of Corps photography has not been compiled, and therefore only a few photo missions available from this agency are listed in the guide.

For the addresses of these and other major agencies and firms which obtain or hold aerial imagery, see Appendix B. This list is not complete as many small commercial firms, public utilities and government agencies have coverage of specific sites and may warrant investigation in some circumstances.

HOW TO USE THE INDEX

The index lists, by county, the aerial imagery of local areas acquired by aerial survey firms and other sources which have provided information on their photographic holdings. It includes year of acquisition, photo scale, film type, description of area, and comments (e.g. project symbol). The index usually identifies the aerial survey firm and not the contracting agency, although permission to use the imagery may be required from the contracting agency. The survey firm or agency listed in the index should be contacted directly for information on purchase of the imagery.

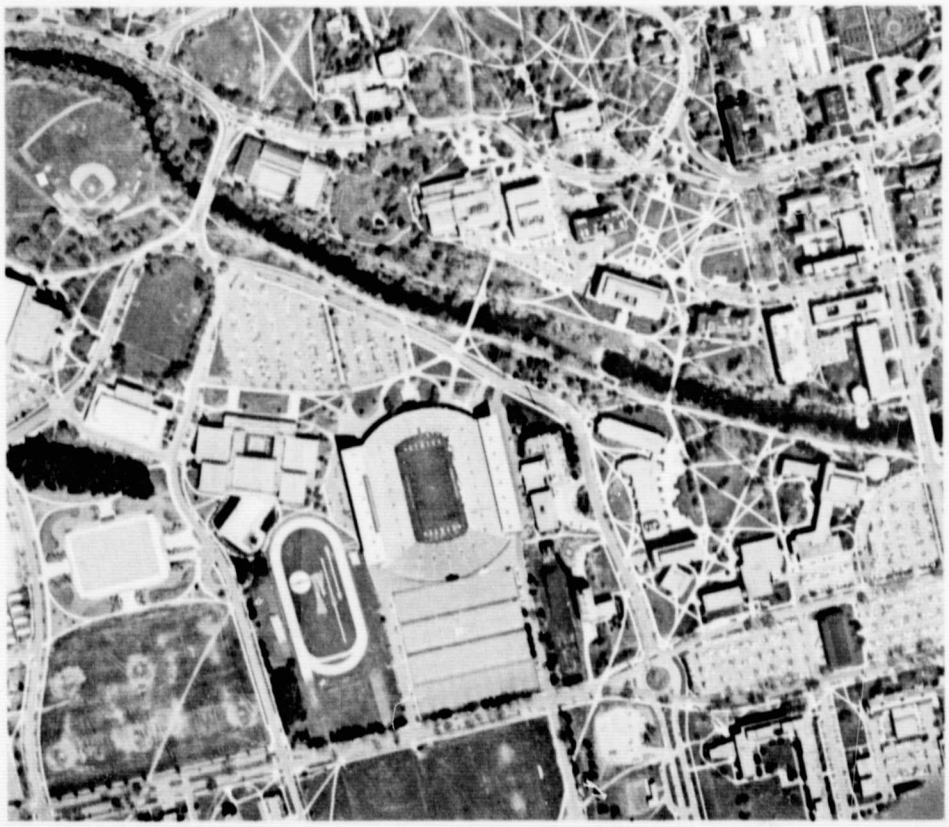


Figure 7.1.--MSU Remote Sensing Project Color Photo of the MSU Campus (enlarged from a 70mm transparency).

INDEX

TO

LOCAL IMAGERY

OF MICHIGAN

LOCAL IMAGERY

AGENCY CODES

CODE	AGENCY*
ABRAMS	Abrams Aerial Survey Corporation
BENDIX	Bendix Aerospace Systems Division
CHICAGO	Chicago Aerial Survey
CORPS	U.S. Army Corps of Engineers
DNR	Michigan Department of Natural Resources
ERIM	Environmental Research Institute of Michigan
HURD	Mark Hurd Aerial Surveys, Inc.
MDSHT	Michigan Department of State Highways and Transportation
MSU/RSP	Michigan State University, Remote Sensing Project
PAS	Park Aerial Survey, Inc.
SCS	Soil Conservation Service
STEREO	StereoFoto, Inc.

* Addresses in Appendix B.

INDEX TO LOCAL IMAGERY

COMPILED JUNE, 1977

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
ALCONA	1960	1:20004	PAN	ERIM	M-65, RELOCATION IN ALCONA AND IOSCO COS. (NO. 33-403)
	1963	1: 9600	PAN	ABRAMS	HUBBARD LAKE (SYMBOL AZH)
	1965	1: 3000	PAN	ERIM	M-65, HALE TO GLENINE (FILE NUMBER 1-521)
	1965	1: 9600	PAN	ERIM	M-65, HALE TO GLENINE (FILE NUMBER 33-408)
	1968	1:15840	PAN	ABRAMS	FOREST COVER (DNR-ENG)
	1971	1:15840	PAN	ABRAMS	PARTS OF COUNTY (SYMBOL DIP, ALSO SCALE 1:7920)
	1974	1:10000	COL	ERIM	LAKE HURON SHORELINE (MSN. X252M, ALSO PAN,CIR,MSS)
	1974	1:15840	PAN	ABRAMS	AREA NEAR HUBBARD LAKE (SYMBOL EPJ)
ALGER	1957	1:24000	PAN	ABRAMS	CITY OF GRAND MARAIS (PHOTO INDEX NO. 1414)
	1960	1: 4800	PAN	ABRAMS	CITY OF MUNISING (SYMBOL ALG)
	1964	1:15840	PAN	ABRAMS	FOREST COVER (DNR-ENG)
	1967	1:24000	PAN	ABRAMS	PICTURED ROCKS (SYMBOL BZS)
	1968	1: 9600	PAN	ERIM	M-28, M-94, ACESS ROAD TO PICTURED ROCKS AT MUNISING
	1968	1: 9600	PAN	ABRAMS	PICTURED ROCKS (SYMBOL CID)
	1969	1: 4800	COL	MDSHT	ACESS ROAD TO PICTURED ROCKS, MUNISING (FILE NO 2-603)
	1969	1: 4800	PAN	ABRAMS	PICTURED ROCKS (SYMBOL CSF)
	1969	1: 9600	PAN	ABRAMS	AREA IN COUNTY (SYMBOL CSN)
	1969	1: 9600	PAN	MDSHT	SCENIC ACESS ROAD AT GRAND MARAIS (FILE NO. 2-602)
	1969	1:12000	PAN	ERIM	M-28, M-94, PICTURED ROCKS AT MUNISING
	1969	1:12000	PAN	ABRAMS	PICTURED ROCKS (SYMBOL CRS)
	1972	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DWH)
	1974	1: 6000	PAN	ABRAMS	PICTURED ROCKS (SYMBOL EON)
	1974	1:16000	COL	ERIM	LAKE SUPERIOR SHORELINE (MSN. X252M, ALSO PAN,CIR,MSS)
ALLEGAN	1954	1: 6000	PAN	ABRAMS	CITY OF ALLEGAN (PHOTO INDEX NO. 991)
	1961	1: 7920	PAN	ABRAMS	LAKETOWN TWP. (SYMBOL ASH)
	1962	1: 7920	PAN	ABRAMS	LEIGHTON TWP. (SYMBOL AUH)
	1962	1: 7920	PAN	ABRAMS	CITY OF WAYLAND (SYMBOL AUI)
	1963	1: 7920	PAN	ABRAMS	LEIGHTON TWP. (SYMBOL AZF)
	1964	1: 9600	PAN	MDSHT	PAW PAW TO ALLEGAN CO LINE (FILE NO 3-409)
	1965	1: 9000	PAN	MDSHT	I-196, HOLLAND TO GRANDVILLE (FILE NO 3-439)
	1965	1: 9600	PAN	MDSHT	M-40, M-89, ALLEGAN TO DUNNINGVILLE (FILE NO 03-469)
	1965	1: 9600	PAN	MDSHT	HAMILTON NORTH TO HOLLAND (FILE NO 03-471)
	1969	1: 7920	PAN	ABRAMS	S. 1/2 SEC. 31 T2N, R16W GANGES TWP. (SYMBOL CUW)
	1969	1:15840	PAN	ABRAMS	ALLEGAN LAKE (SYMBOL CSP)
	1970	1: 3000	PAN	MDSHT	M-89, PLAINWELL EAST TO RICHLAND (FILE NO 03-639)
	1970	1: 4800	PAN	ABRAMS	AREAS IN SAUGATUCK (SYMBOL CYU)
	1970	1: 6000	PAN	ABRAMS	CITY OF ALLEGAN (SYMBOL DCX)
	1970	1: 7920	PAN	ABRAMS	PARTS OF COUNTY (SYMBOL DES)
	1970	1: 7920	PAN	ABRAMS	SALEM AND MONTEREY TWP. (SYMBOL DEU)
	1971	1: 7920	PAN	ABRAMS	PART OF SALEM TWP. (SYMBOL DOX)
	1972	UNKNOWN	PAN	ERIM	KALAMAZOO RIVER PLUME (MULTIBAND, SCANNER, ALT 5000FT)
	1973	UNKNOWN	PAN	ERIM	KALAMAZOO RIVER (MULTIBAND, SCANNERS ALT: 5000FT)
	1973	1: 3960	PAN	ABRAMS	PARTS OF COUNTY (SYMBOL ECZ)
	1973	1: 7920	PAN	ABRAMS	PARTS OF COUNTY (SYMBOL DZH)
	1974	1: 3960	PAN	ABRAMS	AREA IN COUNTY (SYMBOL FLA)
	1974	1:10000	COL	ERIM	LAKE MICHIGAN SHORELINE (MSN. X252M, ALSO PAN,CIR,MSS)
	1975	1: 6000	PAN	MDSHT	US-31-75 FROM SOUTH OF HOLLAND TO NORTH OF GRAND HAVEN)
	1976	1: 3000	PAN	MDSHT	STRIP ALONG BUSINESS US-131, HOLLAND (SYMBOL FAI)
	1976	1: 3000	PAN	MDSHT	STRIP ALONG M-89 NEAR OTSEGO (SYMBOL FBL)
	1976	1: 4800	PAN	ABRAMS	ALLEGAN TWP. (SYMBOL FCH)
	1976	1: 7920	PAN	ABRAMS	STRIP FROM GRAND HAVEN TO SAUGATUCK (SYMBOL FCS)
	1976	1:12000	PAN	ABRAMS	STRIP FROM GRAND HAVEN TO SAUGATUCK (SYMBOL FCS)
	1976	1:15840	PAN	ABRAMS	N.E. PART (SYMBOL FBQ, ALSO SCALE:1:7920)
	1976	1:15840	PAN	ABRAMS	STRIP FROM GRAND HAVEN TO SAUGATUCK (SYMBOL FCS)
ALPENA	1954	1: 6000	PAN	ABRAMS	CITY OF ALPENA (PHOTO INDEX NO. 1013)
	1957	1: 4400	PAN	SCS	SANBORN CREEK W/S (SYMBOL: MN-SC)
	1961	UNKNOWN	PAN	DNR	THUNDER BAY, LOW LEVEL OBLIQUE (DNR-WILDLIFE)
	1964	1:19200	PAN	ABRAMS	PIPELINE FROM ALPENA TO POGERS CITY (SYMBOL BGE)
	1968	1:15840	PAN	ABRAMS	FOREST COVER (DNR-ENG)
	1970	1: 3000	PAN	MDSHT	US-23, ALPENA SOUTH (FILE NO 4-659)
	1974	1:10000	COL	ERIM	LAKE HURON SHORELINE (MSN. X252M, ALSO PAN,CIR,MSS)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
ALPENA	1976	1: 3000	PAN	MDSHT	THREE STRIPS ALONG US-23 NEAR ALPENA (SYMBOL FBP)
ANTRIM	1963	1:12000	PAN	ABRAMS	CUSTER TWP. (SYMBOL BCN)
	1967	1: 7920	PAN	ABRAMS	SECTIONS IN BANK TWP. (SYMBOL CCN)
	1967	1: 7920	PAN	ABRAMS	TORCH LAKE
	1967	1:12000	PAN	MDSHT	M-32, FROM M-66 EAST TO GAYLORD (FILE NO 5-553)
	1969	1: 7920	PAN	ABRAMS	PARTS OF CHESTONIA TWP. (SYMBOL CPF)
	1969	1:12000	PAN	ABRAMS	SCHUSS MOUNTAIN AREA (SYMBOL CPB, ALSO SCALE: 1:3960)
	1970	UNKNOWN	PAN	ERIM	UPPER AND LOWER TRAVERSE BAY (MULTIBAND, ALT: 6000FT)
	1970	UNKNOWN	PAN	ERIM	EAST ARM, EAST SIDE OF GRAND TRAVERSE BAY (MULTIBAND)
	1971	1: 7920	PAN	ABRAMS	AREA IN TORCH LAKE TWP. (SYMBOL BPW)
	1972	1:14400	PAN	MDSHT	M-32, COPRIDOR FROM I-75 TO WEST OF M-66 (FILE NO 693)
	1973	1: 7920	PAN	ABRAMS	AREA IN TORCH LAKE TWP. (SYMBOL EEG)
	1974	1: 3960	PAN	ABRAMS	CENTRAL LAKE TWP. (SYMBOL EQF, ALSO SCALE: 1: 7920)
	1974	1: 9600	PAN	ABRAMS	CENTRAL LAKE TWP. (SYMBOL EQF)
	1974	1:16000	COL	ERIM	LAKE MICHIGAN SHORELINE (MSN. X252M, ALSO PAN,CIR)
	1975	1: 7920	PAN	ABRAMS	BANKS TWP. (SYMBOL EVB)
	1976	1:12000	PAN	ERIM	FOUR FLIGHT LINES BETWEEN CENTRAL LAKE AND ELMIRA
ARENAC	1952	1:12672	PAN	DNR	SHORELINE (DNR-ENG)
	1964	UNKNOWN	COL	DNR	SAGINAW BAY SHORELINE, 35 MM, OBLIQUES (DNR-WILDLIFE)
	1964	1: 3000	PAN	MDSHT	US-23, CONNETOR TO I-75 SOUTH OF STANDISH (NO 6-399)
	1964	1: 3000	PAN	ABRAMS	STRIP ALONG I-75 FROM M-61 TO M-33 (SYMBOL BGP)
	1964	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL BGU)
	1965	1: 6000	PAN	MDSHT	I-75, ALGER NORTHWEST TO COUNTY LINE (FILE NO 6-452)
	1965	1: 7920	PAN	ABRAMS	ADAM TWP. (SYMBOL CAJ)
	1965	1: 7920	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL BLE)
	1968	1:15840	PAN	PAS	CHARITY ISLANDS (DNR-ENG)
	1969	1: 7920	PAN	ABRAMS	SECTIONS IN MOFFITT TWP. (SYMBOL COM)
	1970	1: 3960	PAN	ABRAMS	VILLAGE OF STANDISH (SYMBOL CZF)
	1971	1: 3960	PAN	ABRAMS	POINT LOOKOUT AREA (SYMBOL DNH)
	1973	1: 3960	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL EIR)
	1973	1:12000	PAN	ABRAMS	SITES IN COUNTY (SYMBOL EHE, ALSO SCALE: 1:14400)
	1974	1:10000	COL	ERIM	LAKE HURON SHORELINE (MSN. X252M, ALSO PAN,CIR,MSS)
BARAGA	1939	1:250000	PAN	DNR	SHORELINE (DNR-ENG)
	1964	1:15840	PAN	ABRAMS	FOREST COVER (DNR-ENG)
	1969	1:20000	PAN	ABRAMS	FOREST COVER (DNR-ENG)
	1971	1: 7920	PAN	ABRAMS	VILLAGE OF ALBERTA AND BARAGA (SYMBOL CZI)
	1973	1: 6000	PAN	MDSHT	US-41, L'ANSE AREA (FILE NO 758)
	1973	1: 7920	PAN	ABRAMS	PART OF BARAGA TWP. (SYMBOL EFN)
	1974	1:10000	COL	ERIM	LAKE SUPERIOR SHORELINE (MSN. X252M, ALSO PAN,CIR,MSS)
	1976	1: 4800	PAN	ABRAMS	PART OF L'ANSE TWP. (SYMBOL FDE)
BARRY	1958	1: 6000	PAN	ABRAMS	CITY OF MIDDLEVILLE (PHOTO INDEX NO. 1508)
	1958	1:12000	PAN	ABRAMS	CITY OF MIDDLEVILLE (PHOTO INDEX NO. 1509)
	1965	1: 7920	PAN	ABRAMS	GRANGEVILLE TWP. (SYMBOL BNY)
	1965	1: 9600	PAN	MDSHT	M-37, M-43, BATTLE CREEK TO HASTINGS (FILE NO 8-432)
	1966	1: 6000	PAN	ABRAMS	YANKEE SPRINGS TWP. (SYMBOL BUP)
	1968	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL CEU)
	1968	1: 7920	PAN	ABRAMS	AREA NEAR HASTINGS (SYMBOL CES)
	1970	1: 3000	PAN	MDSHT	M-89, PLAINWELL EAST TO RICHLAND (FILE NO 8-639)
	1970	1: 7920	PAN	ABRAMS	SECTIONS OF RUTLAND AND HASTINGS TWPS. (SYMBOL CWY)
	1970	1:15840	PAN	ABRAMS	SECTIONS OF RUTLAND AND HASTINGS TWPS. (SYMBOL CWY)
	1971	1: 3960	PAN	ABRAMS	BARRY TWP. (SYMBOL DFY)
	1971	1: 4800	PAN	ABRAMS	SECTIONS IN COUNTY (SYMBOL DND)
	1973	1: 3960	PAN	ABRAMS	GULL LAKE AREA (SYMBOL EAD)
	1973	1: 7920	PAN	ABRAMS	PART OF SECTION 16, HOPE TWP. (SYMBOL EAE)
BAY	1955	1: 4800	PAN	DNR	HIGHWAYS (DNR-ENG)
	1960	1: 4800	PAN	ABRAMS	CITY OF BAY CITY (SYMBOL ANG)
	1963	1:12000	PAN	ABRAMS	HAMPTON TWP. (NO SYMBOL GIVEN, ALSO SCALE: 1:3000)
	1964	UNKNOWN	COL	DNR	SAGINAW BAY, 35 MM, LOW OBLIQUES (DNR-WILDLIFE)
	1964	1: 7920	PAN	ABRAMS	FRANKENLUST TWP. (SYMBOL BHY)
	1965	1: 3000	PAN	MDSHT	I-75, M-15, BAY CITY AREA (FILE NO 9-459)
	1966	1:19200	PAN	ABRAMS	PIPELINE STRIP FROM ALMA TO BAY CITY (SYMBOL BQK)
	1967	1: 3000	PAN	MDSHT	M-25, FROM BAY-TUSCOLA CO LINE TO UNIONVILLE)
	1967	1: 4800	PAN	MDSHT	I-75, SOUTH OF FLINT TO KAWKAWLIN (FILE NO 9-561)
	1969	1: 3960	PAN	ABRAMS	BANGOR TWP. (SYMBOL CRF, ALSO SCALE: 1:7920)
	1969	1: 3960	PAN	ABRAMS	PARTS OF CITY OF BAY CITY (SYMBOL COH)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
BAY	1969	1: 6000	PAN	ABRAMS	CITY OF BAY CITY (SYMBOL CPI)
	1970	UNKNOWN	PAN	ERIM	BAY CITY POWER PLANT (SCANNERS, ALT: 3000FT)
	1971	1: 4800	PAN	MDSHT	US-10, MIDLAND BYPASS IN BAY CO (FILE NO 9-669)
	1971	1: 6000	PAN	ABRAMS	SECTION 2, FRANKENLUST TWP. (SYMBOL DFV)
	1971	1: 7920	PAN	ABRAMS	PART OF SECTION 6, BAY TWP. (SYMBOL DPV)
	1971	1: 7920	PAN	ABRAMS	SECTION 2, FRANKENLUST TWP. (SYMBOL DNS)
	1972	UNKNOWN	PAN	ERIM	SAGINAW RIVER (MULTIBAND, SCANNERS ALT: 1500FT)
	1973	UNKNOWN	PAN	ERIM	SHORELINE FROM LINWOOD TO BAY CO LINE (MULTIBAND)
	1973	UNKNOWN	PAN	ERIM	BAY CITY POWER PLANT (MULTIBAND, SCANNERS ALT: 5000FT)
	1973	1: 3960	PAN	ABRAMS	AREA IN BANGOR TWP. (SYMBOL EJM)
	1973	1: 7920	PAN	ABRAMS	AREA AROUND BAY CITY (SYMBOL EDG)
	1973	1:15200	PAN	ABRAMS	FRANKENLUST TWP. (SYMBOL EDN, ALSO SCALE: 1:3960)
	1974	1: 3960	PAN	ABRAMS	BANGOR TWP. (SYMBOL EQW)
	1974	1: 3960	PAN	ABRAMS	CITY OF BAY CITY (SYMBOL FLY)
	1974	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL EQJ)
	1974	1:16000	COL	ERIM	LAKE HURON SHORELINE (MSN. X252M, ALSO PAN,CIR,MSS)
	1975	1: 6000	PAN	ABRAMS	BANGOR TWP. (SYMBOL EVS, ALSO SCALE: 1:15840)
	1975	1: 6000	PAN	ABRAMS	BANGOR TWP. (SYMBOL EVJ, ALSO SCALE: 1:3000)
	1976	1:12000	PAN	ABRAMS	AREA IN COUNTY (SYMBOL FBF, ALSO SCALE: 1:24000)
BENZIE	1962	1: 6000	PAN	ABRAMS	CRYSTAL LAKE AREA (SYMBOL AXG)
	1970	1: 7920	PAN	ABRAMS	CRYSTAL LAKE AREA (SYMBOL CVP)
	1971	1: 7920	PAN	ABRAMS	VILLAGE OF BENZIE (SYMBOL DHR, ALSO SCALE: 1:3960)
	1971	1: 7920	PAN	ABRAMS	CRYSTAL LAKE (SYMBOL DJZ)
	1971	1: 7920	PAN	ABRAMS	CRYSTAL LAKE AND CHANDLER LAKE (SYMBOL DEG)
	1971	1: 7920	PAN	ABRAMS	PART OF BENZONIA TWP. (SYMBOL DLM)
	1974	1:16000	COL	ERIM	LAKE MICHIGAN SHORELINE (MSN. X252M, ALSO PAN,CIR,MSS)
	1975	1: 3960	PAN	ABRAMS	VILLAGE OF THOMPSONVILLE (SYMBOL EXO)
	1975	1: 7920	PAN	ABRAMS	PART OF GILMORE TWP. (SYMBOL EXB)
BERRIEN	1954	1: 5000	PAN	ABRAMS	CITY OF ST. JOSEPH (PHOTO INDEX NO. 947)
	1954	1: 4600	PAN	CHICAGO	CITY OF ST. JOSEPH
	1960	1: 3000	PAN	ABRAMS	BENTON HARBOR STRIP (SYMBOL AKF)
	1960	1: 7920	PAN	ABRAMS	PART OF COUNTY (SYMBOL AKL)
	1960	1:12000	PAN	ABRAMS	CITY OF ST. JOSEPH (SYMBOL AMZ, PHOTO INDEX NO. 1729)
	1960	1:12000	PAN	ABRAMS	CITY OF BENTON HARBOR (PHOTO INDEX NO. 1729)
	1960	1:79200	PAN	ABRAMS	WIGHTMAN TWP. (SYMBOL AKA)
	1961	1: 3960	PAN	ABRAMS	CITY OF BERRIEN SPRINGS (SYMBOL AOK, ALSO 1:6000)
	1961	1: 6000	PAN	ABRAMS	CITY OF NILES (SYMBOL AOK, ALSO SCALE: 1:3960)
	1962	1: 3960	PAN	ABRAMS	CITY OF BENTON HARBOR (SYMBOL ATS)
	1962	1: 6000	PAN	ABRAMS	CITY OF ST. JOSEPH (SYMBOL ATR)
	1963	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL BAL)
	1963	1:15840	PAN	ABRAMS	CITY OF NILES (SYMBOL BAG, ALSO SCALE: 1:7920)
	1964	UNKNOWN	PAN	ABRAMS	CITY OF ST. JOSEPH (SYMBOL BGS)
	1964	1: 9600	PAN	MDSHT	M-62, FROM M-140 EAST TO M-40 AT DOWAGIAC (NO 11-406)
	1965	1: 3000	PAN	MDSHT	M-139, FROM I-94 NORTH TO MAIN ST (FILE NO 11-491)
	1965	1: 6000	PAN	STEREO	WARREN DUNES STATE PARK, 2 SQ. MILES (DNR-PARKS)
	1965	1: 9600	PAN	MDSHT	M-60, EAST OF NILES TO NORTHEAST OF CASSOPOLIS
	1966	1: 3000	PAN	MDSHT	US-31 TO 33, FROM M-60 BYPASS NORTH TO MAIN ST IN NILES
	1966	1: 3000	PAN	MDSHT	I-94 AND LAKESHORE DRIVE INTERCHANGE (FILE NO 11-513)
	1966	1: 3000	PAN	MDSHT	M-40, FROM US-31,33 TO NORTH OF NILES (FILE NO 11-491)
	1966	1:12000	PAN	MDSHT	US-31 RELOCATION, FROM US-12 NORTH TO I-196 AND I-94)
	1967	1: 3000	PAN	MDSHT	US-12, US-31,33, M-60, INDIANA STATE LINE TO M-60
	1967	1: 4800	PAN	MDSHT	US-31, BUCHANAN TO NILE (FILE NO 11-563)
	1967	1: 7920	PAN	ABRAMS	AREA NEAR ST. JOSEPH (SYMBOL CBN)
	1967	1: 9600	PAN	MDSHT	M-60, NILES TO VANDALIA (FILE NO 11-560)
	1968	UNKNOWN	CIR	ERIM	ST JOSEPH HARBOR, SOUTH HAVEN HARBOR (ALSO COLOR)
	1968	1: 2400	PAN	ABRAMS	SECTION IN NILES TWP. (SYMBOL CGU)
	1968	1: 4800	PAN	ABRAMS	NILES TWP. (SYMBOL CEW)
	1968	1: 4800	PAN	MDSHT	M-62, M-140 EAST TO M-40 IN CASS CO (FILE NO 11-574)
	1968	1: 7920	PAN	ABRAMS	PART OF OPONOKO TWP. (SYMBOL CGX)
	1968	1: 7920	PAN	ABRAMS	PART OF COLOMA TWP. (SYMBOL CIE, ALSO SCALE: 1:3960)
	1968	1: 9600	PAN	MDSHT	US-31, NILES TO BERRIEN SPRINGS (FILE NO 11-573)
	1969	UNKNOWN	PAN	ERIM	SOUTH HAVEN TO STEVENSVILLE (MULTIBAND, SCANNERS)
	1969	UNKNOWN	PAN	ERIM	MICHIGAN CITY TO SOUTH HAVEN (MULTIBAND, SCANNERS)
	1969	1: 3000	COL	ABRAMS	SHORELINE NEAR ST. JOSEPH (SYMBOL CSV, OBLIQUES)
	1969	1: 3000	PAN	ABRAMS	SHORELINE NEAR ST. JOSEPH (SYMBOL CSU)
	1969	1: 3000	COL	MDSHT	SHORELINE STRIP AT ST JOSEPH (OBLIQUES, NO 11-613)
	1969	1: 3000	COL	MDSHT	SHORELINE STRIP AT ST JOSEPH (FILE NO 11-617)
	1969	1: 3000	PAN	MDSHT	I-94 BL CROSSING ST JOSEPH RIVER (FILE NO 11-604)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
BERRIEN	1969	1: 4800	PAN	ASPAMS	AREA IN COUNTY (SYMBOL CPA)
	1969	1: 9600	PAN	MDSHT	US-31, FROM NILES NORTH TO I-196 AND I-94)
	1969	1: 9600	PAN	MDSHT	M-139 CROSSING ST JOSEPH RIVER(FILE NO 11-594)
	1969	1:12000	PAN	MDSHT	US-31, SOUTHEAST AND WEST OF BERRIEN SPRINGS (NO 632)
	1970	UNKNOWN	PAN	EPIM	SHORELINE NEAR COOK POWER PLANT (SCANNERS, MULTIBAND)
	1970	1: 3000	COL	MDSHT	SHORELINE STRIP AT ST JOSEPH (OBLIQUES, NO 11-613)
	1970	1: 3000	PAN	ASPAMS	STRIP ALONG I-94 IN ST JOSEPH AREA (SYMBOL CZN)
	1970	1: 3600	PAN	MDSHT	M-62, FROM M-140 EAST TO M-40 AT DOWAGIAC (NO 646)
	1970	1: 3960	PAN	ASPAMS	PART OF BAINBRIDGE TWP. (SYMBOL DCU)
	1970	1: 4800	PAN	ASPAMS	CITY OF BRIDGEMAN (SYMBOL CXT)
	1970	1: 4800	PAN	ASPAMS	CITY OF NEW BUFFALOE (SYMBOL CEI)
	1971	1: 3000	COL	MDSHT	I-94, SHORELINE STRIP AT ST JOSEPH (FILE NO 613)
	1971	1: 3000	COL	MDSHT	SHORELINE STRIP AT ST JOSEPH (OBLIQUES, NO 11-613)
	1971	1: 3000	PAN	MDSHT	I-94, LAKESHORE DRIVE INTERCHANGE (FILE NO 665)
	1971	1: 3000	PAN	MDSHT	M-139, SCOTTDALE NORTH TO I-94 (FILE NO 668)
	1971	1: 3000	PAN	ASPAMS	STRIP ALONG I-94 IN ST JOSEPH AREA (SYMBOL DIZ)
	1971	1: 3600	PAN	ASPAMS	PART OF COUNTY (SYMBOL DKW)
	1971	1: 4800	PAN	ASPAMS	ST. JOSEPH TWP. (SYMBOL DPO)
	1971	1: 6000	PAN	ASPAMS	PART OF ORONOKO AND BERRIEN TWP. (SYMBOL DDD)
	1971	1: 7920	PAN	ASPAMS	PARTS OF BUCHANAN AND NILES TWP. (SYMBOL DDY)
	1971	1: 7920	PAN	ASPAMS	PART OF BERTRAND TWP. (SYMBOL DLO)
	1971	1:12000	PAN	ASPAMS	STRIP ALONG I-94 IN ST JOSEPH AREA (SYMBOL DIZ)
	1971	1:12000	PAN	ASPAMS	AREA NEAR BRIDGEMAN (SYMBOL DLY)
	1972	UNKNOWN	PAN	EPIM	COOK POWER PLANT, ST JOE RIVER PLUME (MULTIBAND, SCAN)
	1972	1: 3000	PAN	ASPAMS	STRIP ALONG I-94 IN ST JOSEPH AREA (SYMBOL DVL)
	1972	1: 3000	COL	MDSHT	SHORELINE STRIP AT ST JOSEPH (OBLIQUES, NO 11-613)
	1972	1: 4800	PAN	ASPAMS	LINCOLN TWP. (SYMBOL DZE)
	1972	1: 6000	PAN	ASPAMS	PART OF BUCHANAN TWP. (SYMBOL DUK)
	1972	1: 6000	PAN	MDSHT	US-31, RELOCATION FROM STATE LINE TO MATTHEW ROAD
	1972	1:15840	PAN	ASPAMS	AREA NEAR BRIDGEMAN (SYMBOL DIO)
	1973	UNKNOWN	PAN	EPIM	ST JOSEPH RIVER (MULTIBAND, SCANNERS ALT: 5000FT)
	1973	UNKNOWN	PAN	EPIM	PALISADES POWER PLANT (MULTIBAND, SCANNERS ALT: 5000)
	1973	1: 3000	COL	MDSHT	SHORELINE STRIP AT ST JOSEPH (OBLIQUES, NO 11-613)
	1973	1: 3000	COL	ASPAMS	STRIP ALONG I-94 IN ST JOSEPH AREA (SYMBOL EGI)
	1973	1: 3600	PAN	ASPAMS	PART OF COUNTY (SYMBOL ECY)
	1973	1: 3600	PAN	ASPAMS	SHORELINE MICH. ELECTRIC CO. (ONP-ENG)
	1973	1: 4800	PAN	ASPAMS	PART OF COLOMA TWP. (SYMBOL EAF)
	1973	1: 7920	PAN	ASPAMS	PART OF BENTON TWP. (SYMBOL EGZ)
	1974	UNKNOWN	PAN	EPIM	ALONG LAKE MICHIGAN SHORELINE (SCANNERS ALT: 5000)
	1974	1:10000	COL	EPIM	LAKE MICHIGAN SHORELINE (MSN, Y252M, ALSO PAN,CIP,MSS)
	1975	1: 7920	PAN	ASPAMS	CITY OF ST. JOSEPH (SYMBOL AMZ)
	1975	1: 9600	PAN	MDSHT	US-31, NILES TO BENTON HARBOR (FILE NO 729)
	1976	1: 6000	PAN	MDSHT	M-51, CITY OF NILES (FILE NO 772)
	1976	1: 6000	PAN	EPIM	TWO STRIPS ALONG M-51, NILES AREA (SYMBOL FCT)
	1976	1:20000	PAN	ASPAMS	BENTON TWP. (SYMBOL FBF)
BRANCH	1954	1: 6000	PAN	ASPAMS	CITY OF COLDWATER (PHOTO INDEX NO. 983)
	1962	1: 6000	PAN	MDSHT	I-69, NEAR MARSHALL SOUTH TO INDIANA (FILE NO 12-307)
	1965	1: 9600	PAN	MDSHT	M-86, FROM COLON EAST TO QUINCY (FILE NO 12-468)
	1966	1: 3000	PAN	MDSHT	US-12, FROM I-69 TO QUINCY (FILE NO 12-494)
	1965	1: 3000	PAN	MDSHT	M-86, FROM COLON EAST TO US-12 (FILE NO 12-517)
	1968	1: 6000	PAN	ASPAMS	CITY OF COLDWATER (SYMBOL CIA)
	1969	1: 7920	PAN	ASPAMS	AREA NEAR COLDWATER (SYMBOL CPC, ALSO SCALE: 1:15840)
	1970	1: 3000	PAN	MDSHT	US-12 AT I-69, EAST TO QUINCY (FILE NO 12-837)
	1970	1: 4800	PAN	ASPAMS	AREAS IN COUNTY (SYMBOL CCC)
	1973	1:24000	PAN	ASPAMS	STRIP FROM MARSHALL TO COLDWATER (SYMBOL EFJ)
	1975	1: 6000	PAN	MDSHT	US-12 AT I-69, EAST TO QUINCY (FILE NO 753)
CALHOUN	1953	1: 6000	PAN	ASPAMS	CITY OF ALBION (PHOTO INDEX NO. 881)
	1955	1: 3600	PAN	ASPAMS	HIGHWAYS (ONP-ENG)
	1957	1: 6000	PAN	ASPAMS	HIGHWAYS (ONP-ENG)
	1958	1:12000	PAN	ASPAMS	CITY OF TEKONSHA (PHOTO INDEX NO. 1520)
	1960	1: 7920	PAN	ASPAMS	CITY OF BATTLE CREEK (SYMBOL AKG, ALSO SCALE: 1:15840)
	1961	1: 6000	PAN	ASPAMS	CITY OF BATTLE CREEK (SYMBOLS AQQ,AQS,AQL)
	1962	1: 6000	PAN	ASPAMS	STRIP ALONG I-69 SOUTH OF I-94 (SYMBOL AUE)
	1963	1: 6000	PAN	ASPAMS	STRIP ALONG I-96 WEST OF MARSHALL (SYMBOL BAY)
	1963	1: 6000	PAN	ASPAMS	CITY OF MARSHALL (SYMBOL BBI)
	1963	1: 7920	PAN	ASPAMS	BATTLE CREEK TWP. (SYMBOL AZL, ALSO SCALE: 1:15840)
	1963	1: 7920	PAN	ASPAMS	CITY OF BATTLE CREEK (SYMBOL AZP)
	1963	1:12000	PAN	ASPAMS	VILLAGE OF TEKONSHA (SYMBOL BAE)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
CALHOUN	1963	1:15840	PAN	ABRAMS	CITY OF BATTLE CREEK (SYMBOL AZP, ALSO SCALE: 1:36000)
	1964	1: 30000	PAN	MDSHT	US-27, FROM I-94, MARSHALL TO CHARLOTTE (NO 13-425)
	1965	1: 96000	PAN	MDSHT	I-69, MARSHALL TO CHARLOTTE (FILE NO 13-440)
	1965	1: 96000	PAN	MDSHT	M-37, M-43, BATTLE CREEK TO HASTINGS (FILE NO 13-432)
	1966	1: 30000	PAN	MDSHT	US-27 RELOCATION, I-94 TO CHARLOTTE (FILE NO 13-519)
	1966	1: 30000	PAN	MDSHT	M-99, FROM M-60 TO ALBION (FILE NO 13-509)
	1967	1: 7920	PAN	ABRAMS	ECKFORD TWP. (SYMBOL CBI)
	1968	1: 6000	PAN	ABRAMS	SECTION IN BEDFORD TWP. (SYMBOL CKY)
	1968	1: 7920	PAN	ABRAMS	ECKFORD TWP. (SYMBOL CEQ)
	1969	1: 30000	PAN	ABRAMS	PART OF BATTLE CREEK TWP. (SYMBOL CVA)
	1969	1: 48000	PAN	ABRAMS	STRIP ALONG I-94 (SYMBOL CNO)
	1969	1: 48000	PAN	MDSHT	I-94, TAPOUGH COUNTY (FILE NO 13-593)
	1970	1: 39600	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL DFA)
	1970	1: 7920	PAN	ABRAMS	VICINITY OF MARSHALL (SYMBOL CWN)
	1971	1: 30000	PAN	ABRAMS	BATTLE CREEK TWP. (SYMBOL EPV)
	1971	1: 7920	PAN	ABRAMS	STRIP ALONG I-94 IN BATTLE CREEK AREA (SYMBOL DFM)
	1972	1: 7920	PAN	ABRAMS	PARTS OF SECS. 7, 8, 17, 18, ECKFORD TWP. (SYMBOL DSE)
	1972	1:15840	PAN	ABRAMS	PARTS OF SECS. 7, 8, 17, 18, ECKFORD TWP. (SYMBOL DSE)
	1973	1: 96000	PAN	ABRAMS	VILLAGE OF TEKONSHA (SYMBOL EFH)
	1973	1:21120	PAN	ABRAMS	VICINITY OF MARSHALL AND BATTLE CREEK (SYMBOLS EIE,EHU)
	1973	1:24000	PAN	ABRAMS	STRIP FROM MARSHALL TO COLDWATER (SYMBOL EFJ)
	1974	1: 39600	PAN	ABRAMS	BATTLE CREEK TWP. (SYMBOLS EOT,EOE)
	1974	1: 7920	PAN	ABRAMS	CEREAL CITY LANDFILL (SYMBOL EOP)
	1974	1: 7920	PAN	ABRAMS	CITY OF BATTLE CREEK (SYMBOL EPA)
	1974	1:12000	PAN	ABRAMS	VILLAGE OF TEKONSHA (SYMBOL EOR)
	1975	1: 39600	PAN	ABRAMS	AREA AROUND BATTLE CREEK (SYMBOL EXL)
	1976	1: 60000	PAN	MDSHT	STRIPS ALONG I-94 BUS. LOOP, BATTLE CREEK (SYMBOL FBT)
	1976	1:12000	COL	EPIC	FIVE FLIGHT LINES IN BATTLE CREEK AREA (SYMBOL FCH)
CASS	1964	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL BCX)
	1964	1: 96000	PAN	MDSHT	M-62, FROM M-140 EAST TO M-43 AT DOWAGIAC (NO 406)
	1964	1: 96000	PAN	MDSHT	M-119, FROM MARCELLUS NORTH TO LAWTON (FILE NO 405)
	1965	1: 36000	PAN	MDSHT	M-60, EAST OF NILES NORTHEAST TO CASSOPOLIS NO 14-480)
	1966	1: 60000	PAN	MDSHT	US-12 AT MOTTVILLE (FILE NO 529)
	1966	1: 96000	PAN	MDSHT	US-131, WALLON LAKE TO STATE LINE (FILE NO 14-527)
	1967	1: 30000	PAN	MDSHT	M-119, MARCELLUS TO LAWTON (FILE NO 14-542)
	1967	1: 7920	PAN	ABRAMS	CITY OF DOWAGIAC (SYMBOL BXG)
	1967	1: 96000	PAN	MDSHT	M-60 RELOCATION, NILES TO VANDALIA (FILE NO 14-560)
	1968	1: 30000	PAN	MDSHT	M-60, NILES TO CASSOPOLIS (FILE NO 14-583)
	1968	1: 48000	PAN	MDSHT	M-62, M-140 EAST TO M-40 (FILE NO 574)
	1970	1: 36000	PAN	MDSHT	M-60, FROM BARRON LAKE ROAD TO CASSOPOLIS (NO 14-661)
	1972	1: 30000	PAN	MDSHT	M-62, FROM M-140 EAST TO M-40 AT DOWAGIAC (NO 14-646)
	1972	1: 60000	PAN	MDSHT	US-12 RELOCATION, EAST AND WEST OF MOTTVILLE (NO 686)
CHARLEVOIX	1957	1: 6000	PAN	ABRAMS	CITY OF CHARLEVOIX (PHOTO INDEX NO. 1471)
	1958	1:12000	PAN	CHICAGO	CITY OF CHARLEVOIX
	1964	1: 60000	PAN	STEREO	YOUNG STATE PARK, 1 SQ. MILE (DNR-PARKS)
	1965	1: 96000	PAN	MDSHT	M-32, CHARLEVOIX TO EAST JORDAN (FILE NO 15-470)
	1965	1:15840	PAN	ABRAMS	BOYNE MOUNTAIN AREA (SYMBOL BMP)
	1966	1: 7920	PAN	ABRAMS	LAKE CHARLEVOIX (SYMBOL BRT, ALSO SCALE: 1:3960)
	1966	1: 96000	PAN	MDSHT	US-131, WALLOON LAKE TO PETOSKY (FILE NO -527)
	1966	1: 96000	PAN	ABRAMS	VICINITY OF PETOSKY (SYMBOL BVS)
	1966	1:12000	PAN	ABRAMS	SECTION 23 OF CHARLEVOIX (SYMBOL BSF)
	1967	1: 7920	PAN	ABRAMS	AREA NEAR WALLOON LAKE (SYMBOL CBZ)
	1967	1: 7920	PAN	ABRAMS	BOYNE CITY AREA (SYMBOL CSB)
	1967	1: 7920	PAN	ABRAMS	BEAVER ISLAND (SYMBOL BZT, ALSO SCALE: 1:15840)
	1967	1: 7920	PAN	ABRAMS	BAY TWP.
	1967	1: 7920	PAN	ABRAMS	PART OF EVALINE TWP. (SYMBOL CBH)
	1968	1: 36000	PAN	MDSHT	US-131, FROM M-75 NORTH TO STATE POLICE POST
	1968	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL CHB)
	1968	1:15840	PAN	ABRAMS	BEAVER, GARDEN, HOG, AND HIGH ISLANDS (SYMBOL CJI)
	1969	1: 7920	PAN	ABRAMS	BOYNE CITY AREA (SYMBOL CSB)
	1973	UNKNOWN	PAN	EPIC	CHARLEVOIX POWER PLANT (SCANNERS, ALT 5000FT)
	1970	1: 39600	PAN	ABRAMS	PART OF CHARLEVOIX TWP. (SYMBOL CYG)
	1970	1: 7920	PAN	ABRAMS	PART OF WILSON TWP. (SYMBOL DDO)
	1971	1: 7920	PAN	ABRAMS	PART OF BAY TWP. (SYMBOL CKT)
	1971	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL CLH)
	1973	1: 39600	PAN	ABRAMS	CITY OF CHARLEVOIX (SYMBOL EIA)
	1973	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOLS EFM,EEC)
	1974	1: 39600	PAN	ABRAMS	BAY TWP. (SYMBOL EOF, ALSO SCALES: 1:7920, 1:96000)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
CHARLEVOIX	1974	1: 7920	PAN	ABRAMS	VICINITY OF PETOSKY (SYMBOL ENU)
	1974	1:12000	PAN	ABRAMS	PART OF EVALINE TWP. (SYMBOL EMH)
	1974	1:16000	COL	ERIM	LAKE MICHIGAN SHORELINE (MSN. X252M, ALSO PAN,CIR,MSS)
	1974	1:24000	PAN	ABRAMS	AREA NEAR CHARLEVOIX (SYMBOL EOW)
	1976	1:12000	PAN	ERIM	FOUR FLIGHT LINES IN THE EAST JORDAN AREA (SYMBOL FCK)
CHEBOYGAN	1956	1: 8000	PAN	SCS	CHEBOYGAN AREA (SYMBOL: BBH-A)
	1962	UNKNOWN	COL	DNR	DINGMAN MARSH, 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1962	UNKNOWN	COL	DNR	STONEY CREEK, 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1962	UNKNOWN	COL	DNR	DOG LAKE FLOODING, 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1962	1: 6000	PAN	ABRAMS	CHEBOYGAN STATE PARK, 3 SQ. MILES (DNR-PARKS)
	1966	1: 4800	PAN	MDSHT	M-68, COLLINS ROAD TO ONAWAY (FILE NO 528)
	1968	1:15840	PAN	ABRAMS	FOREST COVER (DNP-ENG)
	1969	1:15840	PAN	ABRAMS	SECTIONS IN NUNDA TWP. (SYMBOL CUA)
	1970	1: 3960	PAN	ABRAMS	AREA IN TUSCARONA TWP. (SYMBOL CYH)
	1974	1: 3000	PAN	MDSHT	BURT LAKE REST AREA ALONG I-75 (FILE NO 711)
	1974	1: 3000	PAN	MDSHT	I-75, LEVERING ROAD REST AREA (FILE NO 712)
	1974	1: 3960	PAN	ABRAMS	CHEBOYGAN AREA (SYMBOL EQN)
	1975	1: 6000	PAN	ABRAMS	AREA NEAR CHEBOYGAN (SYMBOL EXJ)
	1975	1:40001	COL	BENDIX	BURT,MULLET,BLACK,DOUGLAS LAKES (LANDSAT PROJ. E2325)
CHIPPEWA	1939	1:20000	PAN	ABRAMS	HIGHWAYS (DNP-ENG)
	1954	1: 6000	PAN	ABRAMS	CITY OF SAULT ST. MARIE (PHOTO INDEX NO. 1021)
	1954	1: 6000	PAN	ABRAMS	HIGHWAYS (DNP-ENG)
	1960	1:12000	PAN	ABRAMS	ST. MARYS RIVER SHORELINE (SYMBOL ALI)
	1961	UNKNOWN	PAN	DNR	ST. MARYS RIVER, LOW OBLIQUE (DNR-WILDLIFE)
	1962	UNKNOWN	COL	DNR	POTAGANNISSING BAY, 35 MM. OBLIQUES (DNR-WILDLIFE)
	1965	1: 6000	PAN	STEREO	DETOUR STATE PARK, 1 SQ. MILE (DNR-PARKS)
	1968	1:15840	PAN	ABRAMS	FOREST COVER (DNR-ENG)
	1969	1: 3960	PAN	ABRAMS	AREA NEAR SAULT STE MARIE (SYMBOL CSH)
	1969	1: 4800	PAN	MDSHT	SAULT SAINT MARIE AREA (FILE NO 17-600)
	1969	1: 4800	PAN	ABRAMS	CITY OF SAULT STE MARIE (SYMBOLS CQY,CQX)
	1969	1: 9600	PAN	ABRAMS	CITY OF BRIMLEY (SYMBOL CRB)
	1969	1: 9600	PAN	MDSHT	SAULT SAINT MARIE AREA (FILE NO 17-601)
	1969	1: 9600	PAN	MDSHT	M-221, BRIMLEY, LAKE SHORE DRIVE (FILE NO 17-596)
	1970	1: 3960	PAN	ABRAMS	VILLAGE OF DETOUR (SYMBOL DDP)
	1971	1: 9600	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DKB)
	1973	UNKNOWN	COL	DNR	ST. MARYS RIVER, 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1974	UNKNOWN	COL	DNR	ST. MARYS RIVER, 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1974	1: 7920	PAN	ABRAMS	SAULT STE MARIE AND VICINITY (SYMBOL EQA)
	1974	1: 7920	PAN	ABRAMS	VILLAGE OF DETOUR (SYMBOL ERD)
	1974	1:16000	COL	ERIM	SHORELINE (MSN. X252M, ALSO PAN,CIR,MSS)
	1975	1: 3960	PAN	ABRAMS	SAULT STE MARIE (SYMBOL EXA, ALSO 1:7920, 1:15840)
	1975	1:24000	PAN	ABRAMS	CENTRAL PART OF BIRCH CREEK (SYMBOL EWZ)
	1976	1: 4800	PAN	ABRAMS	VILLAGE OF DETOUR (SYMBOL FDK)
	1976	1: 7920	PAN	ABRAMS	TOWN OF DAFTER (SYMBOL FDI, ALSO SCALE: 1:3960)
CLARE	1962	UNKNOWN	COL	DNR	OLD FUR FARM, 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1962	1: 3000	PAN	ABRAMS	CITY OF CLARE (SYMBOL AWP)
	1962	1: 7920	PAN	ABRAMS	FREEMAN TWP. (SYMBOL AXW)
	1964	1: 9600	PAN	MDSHT	US-10, RELOCATION AROUND CLARE (FILE NO 18-397)
	1964	1: 9600	PAN	ABRAMS	AREA IN COUNTY (SYMBOLS BHD,BGR)
	1965	1: 3000	PAN	MDSHT	US-10, RELOCATION FROM M-115 TO US-27 (FILE NO 18-453)
	1965	1: 9600	PAN	MDSHT	M-61, FROM M-66 EAST TO HARRISON (FILE NO 18-463)
	1965	1:15840	PAN	ABRAMS	CITY OF HARRISON (SYMBOL BOL)
	1966	1: 3000	PAN	MDSHT	M-61, FROM M-115 EAST TO HARRISON (FILE NO 18-512)
	1966	1: 7920	PAN	ABRAMS	PART OF HAYES TWP. (SYMBOL BSH)
	1967	UNKNOWN	COL	DNR	TOWNLINE CREEK, 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1969	1: 7920	PAN	ABRAMS	SECTIONS IN HAMILTON TWP. (SYMBOL CUG)
	1969	1: 7920	PAN	ABRAMS	PARTS OF SECS. IN HAYES AND HAMILTON TWP. (SYMBOL CUE)
	1970	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DDX)
	1970	1: 7920	PAN	ABRAMS	CITY OF CLARE (SYMBOL DAP)
	1971	1: 7920	PAN	ABRAMS	PART OF FREEMAN AND REDDING TWPS. (SYMBOL DOR)
	1973	1: 3960	PAN	ABRAMS	AREA IN COUNTY (SYMBOL EDS)
	1975	1:40001	COL	BENDIX	BUDD LAKE (HARRISON) AREA (LANDSAT PROJ. E2325)
	1976	1: 4800	PAN	ABRAMS	HAYES TWP. (SYMBOL FCR)
	1976	1: 7920	PAN	ABRAMS	CITY OF CLARE (SYMBOL FDV, ALSO SCALES 1:3960 1:20004)
CLINTON	1955	1: 4800	PAN	ABRAMS	HIGHWAYS (DNR-ENG)
	1961	1: 7920	PAN	ABRAMS	VILLAGE OF DEWITT AND OVID (SYMBOL ANT)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
CLINTON	1961	1: 9600	PAN	ABRAMS	STRIP COVERAGE (SYMBOL AQU)
	1962	1: 7920	PAN	ABRAMS	SECTION 36, WATERTOWN TWP. (SYMBOL AWI)
	1963	1:12000	PAN	ABRAMS	STRIP FROM LANSING TO ITHACA (SYMBOL AZS)
	1964	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL BDI)
	1964	1: 7920	PAN	ABRAMS	DEWITT TWP. (SYMBOL BIM)
	1964	1: 9600	PAN	MDSHT	US-27, M-78, RELOCATION IN EATON AND INGHAM COS
	1965	1: 3000	PAN	MDSHT	US-27, FROM SHIAWASSEE ST IN LANSING TO WEBB ROAD
	1965	1: 3000	PAN	MDSHT	US-127, FROM KALAMAZOO ST IN LANSING TO US-27 AND CLARK
	1965	1: 3000	PAN	MDSHT	US-127, FROM TROWBRIDGE INTERCHANGE NORTH TO US-27
	1965	1: 4800	PAN	MDSHT	US-27, NEAR CO LINE BETWEEN STATE AND HERBISON ROADS
	1965	1: 7920	PAN	ABRAMS	BATH TWP. (SYMBOL BOB)
	1965	1: 7920	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL BKP)
	1966	1: 3000	PAN	MDSHT	M-21 FROM IONIA TO PEWAMO (FILE NO 19-499)
	1966	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL BPU)
	1966	1: 7920	PAN	ABRAMS	BEAR CREEK (DNR-PARKS)
	1966	1: 7920	PAN	ABRAMS	SLEEPY HOLLOW STATE PARK, 7 SQ. MILES (DNR-PARKS)
	1967	1: 4800	PAN	ABRAMS	VILLAGE OF OVID (SYMBOL BXL)
	1967	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL BZL)
	1967	1: 7920	PAN	ABRAMS	BATH TWP. (SYMBOL BXF)
	1967	1: 7920	PAN	ABRAMS	DEWITT TWP. (SYMBOL BXG)
	1967	1: 9600	PAN	MDSHT	US-27 LANSING TO ST JOHNS (FILE NO 19-558)
	1968	1: 7920	PAN	ABRAMS	AREA IN WATERTOWN TWP. (SYMBOL CKD)
	1968	1: 7920	PAN	ABRAMS	DEWITT TWP. (SYMBOL CEI)
	1969	1: 9600	PAN	MDSHT	I-69 CHARLOTTE TO GRAND LEDGE (FILE NO 19-608)
	1970	1: 3960	PAN	ABRAMS	AREA IN COUNTY (SYMBOL CWM)
	1970	1: 4800	PAN	MDSHT	M-99, WAVERLY ROAD TO DEWITT (FILE NO 19-636)
	1970	1: 7920	PAN	ABRAMS	CITY OF ST. JOHNS (SYMBOL CXG)
	1970	1:12000	PAN	ABRAMS	I-69 EXTENSION FROM I-96 EAST TO PERRY (SYMBOL DEP)
	1970	1:12000	PAN	MDSHT	I-69 EXTENSION, FROM I-96 TO M-78 AT PERRY (NO 19-660)
	1971	1: 3000	PAN	MDSHT	I-96 FOREST HILL ROAD TO NORTH LOGAN (FILE NO 19-662)
	1971	1: 3960	PAN	ABRAMS	PART OF DEWITT TWP. (SYMBOL DLW)
	1971	1: 5400	PAN	SCS	UPPER MAPLE RIVER W/S (SYMBOL: MN-UM)
	1971	1:12000	PAN	MDSHT	I-69 EXTENSION, CLINTON AND SHIAWASSEE COS
	1972	VARIES	BWIP	EPIM	S.W. PART (MSN. 63M,ALSO 70 MM CIR/COL,3 FLT. LINES)
	1972	VARIES	PAN	EPIM	S.E. PART (MSN. 65M,ALSO 70 MM CIR/COL,3 FLT. LINES)
	1973	1: 3960	PAN	ABRAMS	AREA IN EAGLE TWP. (SYMBOL EJO)
	1973	1: 4800	PAN	ABRAMS	CITY OF ST. JOHNS (SYMBOL EJC)
	1973	1:10000	BWIP	EPIM	S.E. PART (MSN. 82M,ALSO 70 MM CIR/COL,1 FLT. LINE)
	1974	1: 7920	PAN	ABRAMS	AREA NEAR EAGLE (SYMBOL ENG)
	1974	1: 7920	PAN	ABRAMS	AREAS IN DEWITT TWP. (SYMBOL EMK)
	1974	1: 9600	PAN	ABRAMS	SLEEPY HOLLOW STATE PARK (SYMBOL EPS)
	1974	1:15840	PAN	ONP	TOPO MAPS (DNR-ENG)
	1975	1: 3000	PAN	MDSHT	I-69, I-96 WEST OF LANSING TO PERRY (FILE NO
	1975	1: 3960	PAN	ABRAMS	VILLAGE OF DEWITT AND VICINITY (SYMBOL EVO)
	1975	1: 7920	PAN	MDSHT	M-99, LOGAN ST IN LANSING FROM GRAND RIVER TO DEWITT
	1975	1:12000	PAN	ABRAMS	DEWITT TWP. (SYMBOL EWO, ALSO SCALE: 1:20004)
	1975	1:12000	PAN	MDSHT	US-27, LANSING TO ITHACA (FILE NO 739)
	1976	1: 6000	PAN	MDSHT	STRIPS ALONG I-69 NEAR EAST LANSING (SYMBOL FCB)
	1976	1: 6000	PAN	EPIM	STRIP ALONG US-27, ST JOHNS TO LANSING (SYMBOL FCS)
	1976	1: 6000	PAN	MDSHT	CAPITAL CITY AIRPORT, TERMINAL AREA
	1976	1: 7920	PAN	EPIM	ST JOHNS MARSHLAND (SYMBOL FCW)
CRAWFORD	1963	1: 3000	PAN	ABRAMS	CAMP GRAYLING (SYMBOL BCL)
	1964	1: 7920	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL BIP)
	1964	1:12000	PAN	MDSHT	I-75, ALGER NORTHWEST TO SOUTH OF GRAYLING
	1964	1:15840	PAN	ABRAMS	GRAYLING TWP. (SYMBOL BGJ)
	1965	1: 6000	PAN	MDSHT	I-75, ALGER NORTHWEST TO US-27 (FILE NO 20-452)
	1968	1:15840	PAN	ABRAMS	FOREST COVER (DNR-ENG)
	1971	1: 7920	PAN	ABRAMS	GRAYLING TWP. (SYMBOL DJU)
	1975	1:40000	COL	BENDIX	LAKE MARGRETHE AREA (LANDSAT PROJ. E2325)
	1976	1: 3000	PAN	MDSHT	TWO SHORT STRIPS ALONG M-72 AND I-75 NEAR GRAYLING
DELTA	1960	1: 6000	PAN	ABRAMS	CITY OF ESCANABA (SYMBOL ALM, PHOTO INDEX NO. 1706)
	1962	UNKNOWN	COL	DNR	FRENCH FARM LAKE, 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1962	UNKNOWN	COL	DNR	ONEAL LAKE FLOODING, 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1963	1: 6000	PAN	ABRAMS	FAYETTE STATE PARK (SYMBOL BAH, ALSO 1:7920 DNR PARKS)
	1964	1:15840	PAN	ABRAMS	FOREST COVER (DNR-ENG)
	1966	1: 7920	PAN	ABRAMS	VICINITY OF ESCANABA (SYMBOL EJF)
	1966	1:12000	PAN	ABRAMS	CITY OF ESCANABA (SYMBOL BUB, ALSO SCALE: 1:7920)
	1969	1: 7920	PAN	ABRAMS	CITY OF ESCANABA (SYMBOL CPX)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
DELTA	1971	1: 3000	PAN	MDSHT	US-2, ESCANABA TO MILES (FILE NO 674)
	1972	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DWH)
	1972	1: 7920	PAN	ABRAMS	GLADSTONE AREA (SYMBOL DZG)
	1972	1:12000	PAN	ABRAMS	AREA NEAR GLADSTONE (SYMBOL DUC)
	1972	1:12000	PAN	ABRAMS	WEST OF GLADSTONE (SYMBOL DWE)
	1974	1:10000	COL	ERIM	LAKE MICHIGAN SHORELINE (MSN. X252M, ALSO PAN,CIR,MSS)
	1975	1: 3000	PAN	MDSHT	US-2, ESCANABA TO ST IGNACE (FILE NO 742)
	1975	1: 4800	PAN	ABRAMS	MASONVILLE TWP. (SYMBOL EWH)
	1975	1: 7920	PAN	ABRAMS	WELLS TWP. (SYMBOL EVC)
	1975	1: 7920	PAN	ABRAMS	SHORELINE AND STREAMS IN COUNTY (SYMBOL EVG)
	1976	1: 6000	PAN	MDSHT	STRIP ALONG US-2 (SYMBOL FAQ)
DICKINSON	1962	UNKNOWN	COL	DNR	HANCOCK CREEK, 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1962	1:14400	PAN	ABRAMS	CITY OF IRON MOUNTAIN (SYMBOL AWH)
	1964	1:15840	PAN	ABRAMS	FOREST COVER (DNR-ENG)
	1970	1:15840	PAN	ABRAMS	BREITUNG TWP. (SYMBOL CZJ)
	1971	1: 7920	PAN	ABRAMS	CITY OF KINGSFORD (SYMBOL DKH)
	1971	1:15840	PAN	ABRAMS	CITY OF KINGSFORD (SYMBOL DKL, ALSO SCALE: 1:7920)
	1972	1:15300	PAN	HURF	N.W. CORNER STURGEON R. STATE FOREST (SYMBOL: CSD)
	1975	1: 7920	PAN	ABRAMS	VILLAGE OF NORWAY (SYMBOL EZE)
	1976	1: 6000	PAN	MDSHT	STRIP ALONG US-2 (SYMBOL FAQ)
	1976	1:12000	PAN	ABRAMS	AREA IN COUNTY (SYMBOL FDS)
EATON	1960	1: 3000	PAN	ABRAMS	SECS 6 AND 7 S OF NASHVILLE (SYMBOL AMC, ALSO 1:6000)
	1960	1: 6000	PAN	ABRAMS	CITY OF DIMONDALE
	1961	1: 4800	PAN	ABRAMS	CITY OF CHARLOTTE (SYMBOL ASQ)
	1961	1: 6000	PAN	ABRAMS	CITY OF CHARLOTTE (SYMBOL AOR)
	1962	1: 7920	PAN	ABRAMS	CITY OF GRAND LEDGE (SYMBOL AYI)
	1963	1: 3960	PAN	MDSHT	I-496, LANSING FROM I-96 TO CLARE ST (FILE NO 23-422)
	1964	1: 3000	PAN	MDSHT	US-27, FROM I-94 MARSHALL TO CHARLOTTE (NO 23-425)
	1964	1: 9600	PAN	MDSHT	US-27, M-78, RELOCATION IN EATON CO (FILE NO 23-413)
	1965	1: 6000	PAN	ABRAMS	AREA NEAR CHARLOTTE (SYMBOL BKJ)
	1965	1: 7920	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL BKP)
	1965	1: 9600	PAN	MDSHT	M-50, CHARLOTTE TO EATON RAPIDS (FILE NO 23-472)
	1965	1: 9600	PAN	MDSHT	US-27, MARSHALL TO CHARLOTTE (FILE NO 23-440)
	1966	1: 3000	PAN	MDSHT	M-78, FROM BELLEVUE TO US-27 RELOCATION (NO 23-500)
	1966	1: 3000	PAN	MDSHT	US-27 RELOCATION, I-94 TO CHARLOTTE (FILE NO 23-519)
	1965	1: 6000	PAN	MDSHT	I-496, FROM WAVERLY ROAD TO SNOW ROAD (FILE NO 23-503)
	1966	1: 7920	PAN	ABRAMS	SECTIONS IN WINDSOR TWP. (SYMBOL BFW)
	1966	1: 7920	PAN	ABRAMS	PART OF EATON TWP. (SYMBOL BWR)
	1967	1: 3000	PAN	MDSHT	M-50, CHAPLOTTE TO EATON RAPIDS (FILE NO 23-538)
	1967	1: 7920	PAN	ABRAMS	BENTON TWP. (SYMBOL BXE)
	1968	1: 3960	PAN	ABRAMS	SECTION 34, DELTA TWP. (SYMBOL CEL)
	1968	1: 3960	PAN	ABRAMS	STRIP FROM MOORES PARK TO DIAMONDALE (SYMBOL CKR)
	1968	1: 7920	PAN	ABRAMS	DELTA TWP. (SYMBOL CEH)
	1968	1: 7920	PAN	ABRAMS	WINDSOR TWP. (SYMBOL CDU)
	1968	1: 7920	PAN	ABRAMS	CITY OF CHARLOTTE (SYMBOL CKY)
	1968	1: 7920	PAN	ABRAMS	EATON RAPIDS TWP. (SYMBOL CGU)
	1969	1: 3000	PAN	MDSHT	M-43, FROM BROADBENT TO BELTLINE ROAD (FILE NO 23-611)
	1969	1: 7920	PAN	ABRAMS	CITY OF EATON RAPIDS (SYMBOL CV8)
	1969	1: 9600	PAN	MDSHT	I-69 (PROPOSED), CHAPLOTTE TO GRAND LEDGE (NO 23-608)
	1970	1: 4800	PAN	MDSHT	M-99, WAVERLY ROAD TO DEWITT (FILE NO 23-636)
	1970	1:12000	PAN	MDSHT	M-99, EATON RAPIDS TO WAVERLY ROAD (FILE NO 23-635)
	1971	1: 7920	PAN	ABRAMS	AREA IN WINDSOR TWP. (SYMBOLS DPU,DKA)
	1972	VARIES	BWIR	ERIM	N.C. PART (MSN. 63M,ALSO 70 MM CIR/COL,6 FLT. LINES)
	1972	1: 7920	PAN	ABRAMS	WINDSOR TWP. (SYMBOL DRY)
	1973	1: 7920	PAN	ABRAMS	SECTION 4, EATON TWP. (SYMBOL ECA)
	1973	1: 7920	PAN	ABRAMS	AREA IN DELTA TWP. (SYMBOL EGO)
	1973	1:12000	PAN	MDSHT	I-69, FROM CHARLOTTE TO I-496 (FILE NO 23-703)
	1973	1:12000	PAN	ABRAMS	STRIP ALONG I-69 (SYMBOL EGC)
	1973	1:25200	BWIR	ERIM	N.C. PART (MSN. 82M,ALSO 70 MM CIR/COL,1 FLT. LINE)
	1975	1: 6000	PAN	MDSHT	I-69, LANSING TO CHARLOTTE (FILE NO 737)
	1975	1: 7920	PAN	ABRAMS	CITY OF CHARLOTTE (SYMBOL EYP)
	1975	1:12000	PAN	ABRAMS	DELTA TWP (SYMBOL EWO, ALSO SCALE: 1:20004)
	1975	1:12000	PAN	ABRAMS	CITY OF CHARLOTTE (SYMBOL EWO, ALSO SCALE: 1:20004)
	1976	1: 6000	PAN	MDSHT	STRIP ALONG PROPOSED I-69 (SYMBOL FAT)
EMMET	1953	1: 9600	PAN	ABRAMS	HIGHWAYS (DNR-ENG)
	1957	1: 6000	PAN	ABRAMS	CITY OF PETOSKEY (PHOTO INDEX NO. 1470)
	1962	1: 6000	PAN	ABRAMS	PETOSKEY STATE PARK, 480 ACRES (DNR-PARKS)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
EMMET	1964	1:15840	PAN	ABRAMS	NEAR BOYNE HIGHLANDS (SYMBOL BGW)
	1965	1: 3000	PAN	MDSHT	US-31, FROM CHARLEVOIX CO LINE TO US-131 PETOSKY
	1966	1: 9600	PAN	MDSHT	US-131, WALLOON LAKE TO PETOSKY (FILE NO 527)
	1968	1: 3000	PAN	MDSHT	US-131, FROM I-75 NORTH TO STATE POLICE FORCE
	1969	1: 6000	PAN	ABRAMS	MAPLE RIVER TWP. (SYMBOL CHW)
	1969	1: 7920	PAN	ABRAMS	PART OF PLEASANT VIEW TWP. (SYMBOL CPU)
	1969	1:12000	PAN	ABRAMS	SECTIONS IN THE COUNTY (SYMBOL CSJ)
	1970	1: 6000	PAN	ABRAMS	PART OF PLEASANT VIEW TWP. (SYMBOL DDP)
	1970	1: 7920	PAN	ABRAMS	PART OF WEST TRAVERSE AND FRIENDSHIP TWP. (SYMBOL DAA)
	1970	1:12000	PAN	ABRAMS	PLEASANT VIEW TWP. (SYMBOL CXQ)
	1970	1:12000	PAN	ABRAMS	PART OF PLEASANT VIEW TWP. (SYMBOL DDP)
	1971	1: 3000	PAN	MDSHT	US-31, PETOSKY (FILE NO 671)
	1971	1: 7920	PAN	ABRAMS	PART OF LITTLE TRAVERSE TWP. (SYMBOLS DIQ,DKX)
	1972	1: 3960	PAN	ABRAMS	PART OF LITTLE TRAVERSE TWP. (SYMBOL DWB)
	1972	1: 4800	PAN	ABRAMS	PARTS OF COUNTY (SYMBOL DUP)
	1973	1:12000	PAN	ABRAMS	AREA IN COUNTY (SYMBOL EHG)
	1974	1:16000	COL	EPIM	LAKE MICHIGAN SHORELINE (MSN, X252M, ALSO PAN,CIR,MSS)
	1975	1:12000	PAN	ABRAMS	VILLAGE OF HARBOR SPRINGS (SYMBOL EXK, ALSO 1:24000)
	1975	1:40000	COL	BENDIX	INLAND LAKES (LANDSAT PROJ. E2325)
	1976	1: 3000	PAN	MDSHT	STRIPS ALONG US-31, PETOSKY (SYMBOL FAL)
	1976	1:12000	PAN	EPIM	FIVE FLIGHT LINES IN PETOSKY AREA (SYMBOL FCI)
GENESEE	1955	1: 6000	PAN	ABRAMS	CITY OF DAVISON
	1955	1: 9600	PAN	ABRAMS	HIGHWAYS (DNP-ENG)
	1957	1: 8000	PAN	SCS	MISTEQUAY CREEK AREA (SYMBOL: MN-MC)
	1957	1: 9600	PAN	ABRAMS	HIGHWAYS (DNP-ENG)
	1960	1: 3000	PAN	ABRAMS	CITY OF FLINT (SYMBOL AME)
	1960	1: 9600	PAN	ABRAMS	CITY OF FLINT (SYMBOL ALW, ALSO SCALE OF 1:3000)
	1961	UNKNOWN	PAN	ABRAMS	CITY OF FLINT (SYMBOL ARG)
	1961	1: 3960	PAN	ABRAMS	CITY OF FLINT (SYMBOL ARL)
	1961	1: 4800	PAN	ABRAMS	CITY OF FLINT (SYMBOL ASR)
	1961	1: 9600	PAN	ABRAMS	CITY OF FLINT (SYMBOL ASS)
	1962	1: 7800	PAN	ABRAMS	CITY OF FENTON (SYMBOLS AUT, AUU, ALSO SCALE: 1:15840)
	1962	1: 7920	PAN	ABRAMS	CITY OF GRAND BLANC (SYMBOL ATX)
	1962	1:36000	PAN	ABRAMS	CITY OF FLINT (SYMBOL AWW)
	1963	1: 3000	PAN	ABRAMS	VICINITY OF FLINT (SYMBOL BCD)
	1963	1: 7920	PAN	ABRAMS	VICINITY OF FENTON (SYMBOL BCF)
	1963	1:12000	PAN	ABRAMS	AREA IN FLINT (SYMBOL BCW)
	1963	1:15840	PAN	ABRAMS	CITY OF SWARTZ CREEK (SYMBOL AZO, ALSO SCALE: 1:7920)
	1963	1:15840	PAN	ABRAMS	DAVISON TWP. (SYMBOL BAF, ALSO SCALE: 1:7920)
	1964	1: 3000	PAN	ABRAMS	STRIP ALONG I-75 SOUTH OF FLINT (SYMBOL BGQ)
	1964	1: 7920	PAN	ABRAMS	CITY OF FENTON (SYMBOL BIU)
	1964	1: 9600	PAN	MDSHT	M-57, FROM M-15 TO M-24, (FILE NO 25-414)
	1965	1: 3000	PAN	MDSHT	I-75, NORTHWEST OF FLINT (FILE NO 25-431)
	1965	1: 3000	PAN	ABRAMS	BURTON TWP. (SYMBOL BOG)
	1965	1: 6000	PAN	ABRAMS	MT. MORRIS TWP. (SYMBOL BJP)
	1965	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL BNH)
	1965	1: 9600	PAN	MDSHT	NORTHWESTN HWY EXT, ORCHARD LAKE ROAD TO US-23, I-275
	1965	1:12000	PAN	ABRAMS	CITY OF FENTON (SYMBOL BMS)
	1966	1: 3000	PAN	MDSHT	M-57, M-15 TO M-24 (FILE NO 25-536)
	1966	1: 3000	PAN	MDSHT	M-54, EXTEND SOUTH TO I-75, (FILE NO 25-501)
	1966	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL BRB)
	1967	1: 3960	PAN	MDSHT	M-54, FROM GIBSON ROAD TO M-83 (FILE NO 25-554)
	1967	1: 3960	PAN	ABRAMS	AREA EAST OF FLINT (SYMBOL CBS)
	1967	1: 4800	PAN	ABRAMS	VICINITY OF SWARTZ CREEK (SYMBOL CAN)
	1967	1: 4800	PAN	MDSHT	I-75, FLINT TO SAGINAW (FILE NO 25-561)
	1968	1: 3960	PAN	ABRAMS	PART OF GENESSEE TWP. (SYMBOL CDF)
	1968	1: 6000	PAN	ABRAMS	PART OF MUNOY TWP. (SYMBOL CGY, ALSO SCALE: 1:3960)
	1968	1: 7920	PAN	ABRAMS	CITY OF FLUSHING (SYMBOL CGJ)
	1968	1: 7920	PAN	ABRAMS	RICHFIELD TWP. (SYMBOL CEZ)
	1968	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL CEC)
	1968	1: 7920	PAN	ABRAMS	CITY OF FLUSHING (SYMBOL CGS)
	1969	1: 3000	PAN	MDSHT	M-121, FROM OYE ROAD TO M-54 (FILE NO 25-609)
	1969	1: 4800	PAN	MDSHT	M-78, IN FLINT (FILE NO 25-622)
	1969	1: 7920	PAN	ABRAMS	N.E. OF FLINT IN RICHFIELD, GENESSEE TWP. (SYMBOL COD)
	1970	1: 3000	PAN	MDSHT	M-57, FROM BELSAY ROAD TO M-15 (FILE NO 25-656)
	1970	1: 7920	PAN	ABRAMS	WEST 1/2, SECTION 16, FLINT TWP. (SYMBOL DAS)
	1970	1: 9600	PAN	MDSHT	M-57, FROM BELSAY ROAD TO M-24 IN LAPEER (NO 25-654)
	1971	1: 6000	PAN	ABRAMS	PART OF SECTION 31, THETFORD TWP. (SYMBOL DMS)
	1971	1: 6000	PAN	MDSHT	I-96, FROM PERRY TO SCHWARTZ CREEK (FILE NO 25-683)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
GENESEE	1971	1: 7920	PAN	ABRAMS	C.S. MOTT LAKE (SYMBOL DMJ)
	1971	1: 7920	PAN	ABRAMS	SECTION 23, MUNDY TWP. (SYMBOL DMD)
	1971	1: 7920	PAN	ABRAMS	PART OF VIENNA TWP. (SYMBOL DNV)
	1973	1: 3000	PAN	MDSHT	M-54, SAGINAW HIGHWAY, GRAND BLANC (FILE NO 25-708)
	1975	1: 3000	PAN	ABRAMS	STRIP ALONG I-475 AT FLINT (SYMBOL BIS)
	1975	1: 3960	PAN	ABRAMS	CITY OF FLINT (SYMBOL EVS)
	1975	1: 7920	PAN	ABRAMS	MUNDY TWP. (SYMBOL EVS)
	1975	1:24000	PAN	ABRAMS	GRAND BLANC TWP. (SYMBOL ESM)
	1975	1:40000	COL	BENDIX	LAKE PONEMAH AREA (LANDSAT PROJ. E2325)
	1976	1: 3000	PAN	MDSHT	STRIP ALONG BRISTOL ROAD, FLINT (SYMBOL FBX)
	1976	1: 3000	PAN	MDSHT	STRIP ALONG M-121 (SYMBOL FAF)
	1976	1:12000	PAN	ABRAMS	CITY OF FLINT (SYMBOL FBZ, ALSO SCALES: 1:3960, 1:6000)
	1976	1:36000	PAN	ABRAMS	AREA IN COUNTY (SYMBOL FFE)
GLADWIN	1961	1: 6000	COL	MDSHT	PROPOSED I-75, M-30 TO M-18 (FILE NO 26-337)
	1962	UNKNOWN	COL	DNR	MOLASSES RIVER NO. 1, 35 MM. LOW OBLIQUE (DNR-WILDLIFE)
	1964	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL BGU)
	1968	1: 7920	PAN	ABRAMS	PUTMAN TWP. (SYMBOL CFE)
	1971	1: 3000	PAN	MDSHT	M-30, TWO MILES NORTH AND SOUTH OF WINEGARS
	1972	1: 7920	PAN	ABRAMS	AREA IN BILLINGS TWP. (SYMBOL DUI)
	1975	1: 7920	PAN	ABRAMS	PART OF CLEMENT TWP. (SYMBOL EZO)
GOGEBIC	1962	UNKNOWN	COL	DNR	PRESQUE ISLE FLOOD., 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1963	1: 7920	PAN	ABRAMS	CITY OF WAKEFIELD (SYMBOL BAQ)
	1963	1: 7920	PAN	ABRAMS	CITY OF IRONWOOD (SYMBOL BAR)
	1963	1:15840	PAN	ABRAMS	CITY OF IRONWOOD (SYMBOL BAT)
	1966	1: 8000	PAN	HURD	CHIPPEWA HILL-BLACK RIVER AREA, ALSO 1:24000(SYMB. ASU)
	1966	1:12000	PAN	HURD	WHITE CITY AREA (SYMBOL: AST)
	1966	1:12000	PAN	HURD	AREA E. OF CENTRAL LAKE GOGEBIC (SYMBOL: AST)
	1971	1: 7920	PAN	ABRAMS	CITY OF WAKEFIELD (SYMBOL DLC)
	1972	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DWH)
	1972	1:30000	PAN	HURD	BIG BATEAU LAKE AREA (SYMBOL: CPJ)
	1973	1: 6000	PAN	HURD	THOUSAND ISLAND LAKE AREA (SYMBOL: DAK)
	1973	1: 6000	PAN	HURD	L. SUPERIOR SHORE LITTLE GIRLS PT. WEST (SYMBOL: DFZ)
	1973	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL EGL)
	1973	1: 9600	PAN	HURD	HIGHWAY NORTH FROM BESSENER (SYMBOL: DAF)
	1973	1: 9600	PAN	HURD	MILL LAKE-HWY. 45 AREA (SYMBOL: DAJ)
	1973	1: 9600	PAN	HURD	THOUSAND I.-CISCO-LANGFORD LAKES AREA (SYMBOL: DAJ)
	1973	1:12000	PAN	HURD	IRONWOOD-WAKEFIELD AREA (SYMBOL: DGA)
	1974	1: 9600	PAN	HURD	SUNDAY LAKE-WAKEFIELD AREA (SYMBOL: DKE)
	1974	1:10000	COL	EPIM	LAKE SUPERIOR SHORELINE (MSN. X252M, ALSO PAN,CIR)
	1974	1:18000	PAN	HURD	IRONWOOD AREA (SYMBOL: DJY)
	1975	1: 6000	PAN	HURD	AREA NORTH OF IRONWOOD CITY (SYMBOL: DUY)
	1975	1:24000	PAN	HURD	IRONWOOD AREA (SYMBOL: DWK)
G TRAVERSE	1961	1: 6000	PAN	ABRAMS	CITY OF TRAVERSE CITY (SYMBOL APZ, ALSO 1:15840)
	1962	UNKNOWN	COL	DNR	HEADQUARTERS LAKE, 35 MM. LOW OBLIQUE (DNR-WILDLIFE)
	1962	UNKNOWN	COL	DNR	BIG MUD LAKE, 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1965	1: 6000	PAN	ABRAMS	CITY OF TRAVERSE CITY (SYMBOL BOO)
	1966	1:19200	PAN	ABRAMS	GREEN LAKE TWP. (SYMBOL BSI, ALSO SCALE: 1:7920)
	1967	1: 3960	PAN	ABRAMS	CITY OF TRAVERSE CITY (SYMBOL BYT)
	1967	1: 7920	PAN	ABRAMS	PENINSULA TWP. (SYMBOL CBY)
	1967	1: 7920	PAN	ABRAMS	EAST TRAVERSE BAY
	1968	1: 3000	PAN	MDSHT	M-186, FROM M-37 TO US-131 (FILE NO 28-577)
	1969	1: 7920	PAN	ABRAMS	TWO SECTIONS IN THE COUNTY (SYMBOL CVI)
	1969	1: 7920	PAN	ABRAMS	AREA NEAR TRAVERSE CITY (SYMBOL CPV)
	1969	1: 7920	PAN	ABRAMS	PARTS OF SECTIONS IN GARFIELD TWP. (SYMBOL CUJ)
	1970	UNKNOWN	PAN	ERIM	UPPER AND LOWER TRAVERSE BAY (MULTIBAND, ALT: 6000FT)
	1970	UNKNOWN	PAN	ERIM	EAST APM, EAST SIDE OF GRAND TRAVERSE BAY (MULTIBAND)
	1970	UNKNOWN	PAN	ERIM	SOUTH END, WEST ARM OF GRAND TRAVERSE BAY (MULTIBAND)
	1970	UNKNOWN	PAN	ERIM	POWER STATION AND BOARDMAN LAKE, TRAVERSE BAY
	1970	UNKNOWN	PAN	ERIM	EAST END, WEST ARM OF GRAND TRAVERSE BAY (MULTIBAND)
	1970	1: 3960	PAN	ABRAMS	CITY OF TRAVERSE CITY (SYMPOL DDO)
	1970	1: 7920	PAN	ABRAMS	AREA IN GARFIELD TWP. (SYMBOL CVO)
	1970	1: 7920	PAN	ABRAMS	PART OF WHITEWATER TWP. (SYMBOL CXB)
	1970	1:12000	PAN	ABRAMS	AREA IN EAST BAY AND WHITEWATER TWPS. (SYMBOL CZV)
	1971	1: 7920	PAN	ABRAMS	ELMWOOD TWP. (SYMBOL DJA)
	1971	1:12000	PAN	MDSHT	M-72, FROM PLOWMAN RD IN LEELANAU CO TO US-31
	1971	1:19200	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DIP)
	1973	1: 6000	PAN	CORPS	COMPLETE SHORELINE

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
G TRAVERSE	1974	1: 3960	PAN	ABRAMS	APEA NEAR TRAVERSE CITY (SYMBOL EIU, ALSO 1:7920)
	1974	1:16000	COL	EPIM	LAKE MICHIGAN SHORELINE (MSN. X252M, ALSO PAN,CIR,MSS)
	1975	1: 7920	PAN	ABRAMS	PART OF WHITEWATER TWP. (SYMBOL EXB)
	1975	1: 7920	PAN	ABRAMS	PART OF MAYFIELD TWP. (SYMBOL EXC)
	1975	1: 7920	PAN	ABRAMS	TRAVERSE CITY AND VICINITY (SYMBOL EXJ)
GRATIOT	1959	1: 6000	PAN	ABRAMS	CITY OF ALMA (PHOTO INDEX NO. 1726)
	1960	1:24000	PAN	ABRAMS	CITY OF ALMA (SYMBOL AML)
	1961	1: 6000	PAN	ABRAMS	CITY OF ALMA (SYMBOL AOT)
	1963	1:12000	PAN	ABRAMS	STRIP FROM LANSING TO ITHACA (SYMBOL AZS)
	1965	1: 6000	PAN	ABRAMS	PART OF ARCADA TWP. (SYMBOL BLL)
	1965	1: 6000	PAN	ABRAMS	AREA NEAR CITY OF ALMA (SYMBOL BLH)
	1966	1:19200	PAN	ABRAMS	PIPELINE STRIP FROM ALMA TO BAY CITY (SYMBOL BOK)
	1970	UNKNOWN	COL	DNR	MAPLE RIVE GAME AREA, 35 MM. LOW OBLICUE (DNR-WILDLIFE)
	1970	1: 6000	PAN	ABRAMS	CITY OF ALMA (SYMBOL CZP)
	1971	1: 5400	PAN	SCS	UPPER MAPLE RIVER W/S (SYMBOL: MN-UM)
	1972	1: 7920	PAN	ABRAMS	PART OF SECTION 22, NORTH STAR TWP. (SYMBOL DUG)
	1973	1: 3960	PAN	ABRAMS	VILLAGE OF MIDDLETON (SYMBOL EFF)
	1974	1:14700	PAN	DNR	TOPO MAPS (DNP-ENG)
	1975	UNKNOWN	PAN	ABRAMS	CITY OF ST. LOUIS (SYMBOL A-ESO)
	1975	1: 6000	PAN	ABRAMS	CITY OF ALMA (SYMBOL ESO)
	1975	1:12000	PAN	MOSHT	US-27, COUNTY LINE TO ITHACA (FILE NO 739)
HILLSDALE	1960	1: 7920	PAN	ABRAMS	VILLAGE OF SOMERSET CENTER (SYMBOL ALB)
	1961	1: 3960	PAN	ABRAMS	CITY OF HILLSDALE (SYMBOL ATT)
	1961	1: 6000	PAN	ABRAMS	CITY OF HILLSDALE (SYMBOL AOK, ALSO SCALE: 1:3960)
	1961	1: 6000	PAN	ABRAMS	CITY OF JONESVILLE (SYMBOL AOK, ALSO SCALE: 1:3960)
	1961	1: 7920	PAN	ABRAMS	VILLAGE OF SOMERSET (SYMBOL ANP)
	1962	1: 7920	PAN	ABRAMS	SECTIONS IN SOMERSET TWP. (SYMBOL AWK)
	1964	1:15840	PAN	ABRAMS	CITY OF HILLSDALE (SYMBOL BOW)
	1965	1:14400	PAN	ABRAMS	STRIP FROM CAMDEN TO FRONTIER (SYMBOL BNO)
	1966	1: 7920	PAN	ABRAMS	PART OF AMBOY TWP. (SYMBOL BTP)
	1966	1: 7920	PAN	ABRAMS	CAMBRIA TWP. (SYMBOL BUC)
	1967	1: 3000	PAN	MOSHT	M-99, HILLSDALE TO JONESVILLE (FILE NO 30-548)
	1969	1: 7920	PAN	ABRAMS	ALLEN TWP. (SYMBOL CMD)
	1969	1: 7920	PAN	ABRAMS	MOSCOW AREA (SYMBOL CPT)
	1970	1: 3960	PAN	ABRAMS	AREA IN SOMERSET TWP. (SYMBOL CZU)
	1970	1: 6000	PAN	MOSHT	US-12, SOMERSET ROAD TO BROOKLYN RD (FILE NO 30-65*)
	1971	1: 7920	PAN	ABRAMS	AREA IN SECTION 13, WRIGHT TWP. (SYMBOL DFW)
	1972	1: 3960	PAN	ABRAMS	SECTION 17, ALLEN TWP. (SYMBOL DSA)
	1973	1:12000	PAN	MOSHT	US-127, ADDISON NORTH TO CO LINE (FILE NO 702)
	1976	1: 6000	PAN	MOSHT	STRIPS ALONG US-127, JACKSON TO HUDSON (SYMBOL FAO)
	1976	1: 7920	PAN	ABRAMS	PART OF SECTION 4, AMBOY TWP. (SYMBOL FCD)
	1976	1:20004	PAN	ABRAMS	AREA IN COUNTY (SYMBOL FEH)
HOUGHTON	1964	1: 9600	PAN	MOSHT	M-26, HANCOCK TO DOLLAR BAY (FILE NO 31-407)
	1964	1:15840	PAN	ABRAMS	FOREST COVER (DNP-ENG)
	1965	1: 9600	PAN	MOSHT	M-26, DOLLAR BAY TO LAKE LINDEN (FILE NO 31-445)
	1965	1: 9600	PAN	MOSHT	M-26, US-41 EAST TO DOLLAR BAY (FILE NO 31-455)
	1966	1: 7920	PAN	ABRAMS	CITY OF HANCOCK (SYMBOL BUG)
	1966	1: 9600	PAN	MOSHT	M-26, GREENLAND NORTHEAST TO RGLAND (FILE NO 31-522)
	1969	1: 3960	PAN	ABRAMS	AREA NEAR HOUGHTON (SYMBOL CSH)
	1969	1: 4800	PAN	ABRAMS	CITY OF CALUMET (SYMBOL CPY)
	1969	1: 9600	PAN	MOSHT	M-203, CALUMET (FILE NO 31-598)
	1970	1: 2400	PAN	HURD	LOWER ELM RIVER AREA (SYMBOL: CAY)
	1971	1:12000	PAN	MOSHT	M-26, HANCOCK TO DOLLAR BAY (FILE NO 31-673)
	1972	1: 6000	PAN	ABRAMS	VILLAGE OF CALUMET (SYMBOL DXC, ALSO SCALE: 1:24000)
	1972	1: 6000	PAN	MOSHT	M-26, PAINESDALE TO HOUGHTON (FILE NO 692)
	1972	1: 6600	PAN	HURD	HIGHWAY FROM HANCOCK TO DODGEVILLE (SYMBOL: CRK)
	1973	1: 3960	PAN	ABRAMS	AREA IN COUNTY (SYMBOL EGK)
	1973	1: 6000	PAN	MOSHT	M-26, PAINESDALE TO HOUGHTON (FILE NO 692)
	1973	1:12000	PAN	ABRAMS	CITY OF HANCOCK (SYMBOL EGO, ALSO SCALE: 1:7920)
	1973	1:15840	PAN	ABRAMS	AREAS IN CALUMET TWP. (SYMBOL EFX, ALSO SCALE: 1:7920)
	1974	1:16000	COL	EPIM	LAKE SUPERIOR SHORELINE (MSN. X252M, ALSO PAN,CIR,MSS)
	1976	1: 6000	PAN	MOSHT	STRIP ALONG M-26, HANCOCK TO DOLLAR BAY (SYMBOL FAN)
HURON	1959	1: 8000	PAN	ABRAMS	CITY OF PAD AXE (PHOTO INDEX NO. 1589)
	1961	UNKNOWN	PAN	DNP	SEBAWAING R. MOUTH, 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1964	UNKNOWN	COL	DNP	MIDDLE GROUND, 35 MM. LOW OBLIQUE (DNR-WILDLIFE)
	1964	1: 6000	PAN	STEREO	PORT CRESCENT STATE PARK, 3 SQ. MILES (DNR-PARKS)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
HURON	1968	1:12700	PAN	PAS	TOPO MAPS USGS (DNR-ENG)
	1969	UNKNOWN	COL	DNP	MIDDLE GROUNS, 35 MM. LOW OBLIQUE (DNR-WILDLIFE)
	1970	1: 3960	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DUU)
	1973	1: 6000	PAN	CORPS	PARTIAL SHORELINE (DNR-WDS)
	1974	1:18000	COL	EPIC	LAKE HURON SHORELINE (MSN. X252M, ALSO PAN,CIR,MSS)
INGHAM	1954	1: 6000	PAN	ABRAMS	CITY OF OKEMOS
	1954	1: 6000	PAN	ABRAMS	CITY OF MASON (PHOTO INDEX NO. 980)
	1958	1: 6000	PAN	ABRAMS	CITY OF EAST LANSING (PHOTO INDEX NO. 1570)
	1960	1: 6000	PAN	ABRAMS	CITY OF LANSING (SYMBOL AMP)
	1960	1: 6000	PAN	ABRAMS	STRIP COVERAGE IN OKEMOS (SYMBOL ALZ)
	1961	1: 6000	PAN	ABRAMS	STRIP FROM LANSING TO MASON (SYMBOL AOG)
	1961	1: 6000	PAN	ABRAMS	CITIES OF LANSING AND EAST LANSING (SYMBOL AQK)
	1961	1: 7920	PAN	ABRAMS	CITY OF WILLIAMSTON (SYMBOL ASL)
	1961	1: 7920	PAN	ABRAMS	TACOMA HILLS SUBDIVISION (SYMBOL ARB)
	1961	1: 9600	PAN	ABRAMS	STRIP COVERAGE (SYMBOL AQU)
	1962	UNKNOWN	PAN	ABRAMS	OBLIQUES OF LANSING AREA (SYMBOL BBH)
	1963	1: 3000	PAN	ABRAMS	VICINITY OF HOLT (SYMBOL BCB)
	1963	1: 3960	PAN	MDSHT	I-496, IN LANSING, I-96 TO CLARE ST (FILE NO 33-422)
	1963	1: 4800	PAN	MDSHT	US-27, GRAND RIVER NORTH TO CLARK ROAD (FILE 33-482)
	1963	1: 6000	PAN	MDSHT	M-43, TROWBRIDGE TO GRAND RIVER (FILE NO 33-401)
	1963	1:12000	PAN	ABRAMS	STRIP FROM LANSING TO ITHACA (SYMBOL AZS)
	1963	1:12000	PAN	DNR	ROADS (DNR-ENG)
	1964	1: 7920	PAN	ABRAMS	VICINITY OF OKEMOS (SYMBOL BHF)
	1964	1: 7920	PAN	ABRAMS	VILLAGE OF OKEMOS (SYMBOL BOF)
	1964	1: 9600	PAN	MDSHT	US-27, M-78, RELOCATION IN COUNTY (FILE NO 33-413)
	1964	1:15840	PAN	ABRAMS	MSU CAMPUS (SYMBOL BFV)
	1965	1: 3000	PAN	MDSHT	US-27, SHIAWASSEE ST TO WEBB ROAD IN CLINTON CO
	1965	1: 3000	PAN	ABRAMS	STRIP ALONG I-496 (SYMBOL BOJ)
	1965	1: 3000	PAN	MDSHT	M-43, MICHIGAN STATE UNIVERSITY (FILE NO 33-488)
	1965	1: 3000	PAN	MDSHT	US-127, TROWBRIDGE ROAD TO US-27 (FILE NO 33-435)
	1965	1: 3000	PAN	MDSHT	M-99, CITY OF LANSING (FILE NO 33-457)
	1965	1: 3000	PAN	MDSHT	US-127, RELOCATION, KALAMAZOO ST TO US-27 (NO 33-462)
	1965	1: 3001	PAN	MDSHT	M-43, VAN ATTA ROAD (FILE NO 33-487)
	1965	1: 4800	PAN	MDSHT	GRAND RIVER AND SHERIDAN ST IN LANSING (FILE 33-478)
	1965	1: 6000	PAN	ABRAMS	THREE AREAS IN CITY OF LANSING (SYMBOL BJC)
	1965	1: 6000	PAN	ABRAMS	STRIPS ALONG WAVERLY AND JOLLY ROADS (SYMBOL BKS)
	1965	1: 6000	PAN	ABRAMS	AREA IN LANSING (SYMBOL BNJ)
	1965	1: 6000	PAN	ABRAMS	AREAS IN LANSING (SYMBOL BJL)
	1965	1: 7920	PAN	ABRAMS	PORTION OF COUNTY (SYMBOL BLO)
	1965	1: 7920	PAN	ABRAMS	SECTION 20, IN WILLIAMSTON TWP. (SYMBOL BNZ)
	1965	1:15840	PAN	ABRAMS	MSU CAMPUS (SYMBOL BMD)
	1965	1:19201	PAN	ABRAMS	CITY OF LANSING (SYMBOL BNK)
	1966	1: 3000	PAN	MDSHT	M-43, US-27 TO WOOD ST, LANSING (FILE NO 533)
	1966	1: 3960	PAN	ABRAMS	DELHI TWP. (SYMBOL BQJ)
	1966	1: 6000	PAN	MDSHT	I-496, WAVERLY TO SNOW ROAD (FILE NO 33-503)
	1966	1: 6000	PAN	ABRAMS	LANSING AND SURROUNDING AREAS (SYMBOL BTJ)
	1966	1: 7920	PAN	ABRAMS	DOBIE ROAD AREA (SYMBOL BRC)
	1966	1: 7920	PAN	ABRAMS	SECTIONS IN DELHI TWP. (SYMBOL BRW)
	1966	1: 7920	PAN	ABRAMS	SECTION IN MERIDIAN TWP. (SYMBOL BTN)
	1967	1: 3000	PAN	MDSHT	M-43, M-143, CHARLES ST TO BOGUE ST (FILE NO 33-564)
	1967	1: 4800	PAN	ABRAMS	SECTIONS IN DELHI TWP. (SYMBOL CCT)
	1967	1: 6000	PAN	ABRAMS	MSU CAMPUS (SYMBOL BXY, ALSO SCALE: 1:15840)
	1967	1: 7920	PAN	ABRAMS	APEA NEAR LAKE LANSING (SYMBOL CBO)
	1967	1: 9600	PAN	ABRAMS	VICINITY OF LANSING (SYMBOL BZZ)
	1967	1:12000	PAN	ABRAMS	VILLAGE OF MASON (SYMBOL CCV)
	1967	1:15840	PAN	ABRAMS	MSU CAMPUS (SYMBOL BZD)
	1968	1: 7920	PAN	ABRAMS	MERIDIAN TWP. (SYMBOL CEJ)
	1969	1: 3000	PAN	MDSHT	M-43, BROADBENT ROAD TO BELTLINE (FILE NO 33-611)
	1969	1: 3000	PAN	ABRAMS	CITY OF LANSING (SYMBOL CSO)
	1969	1: 3000	PAN	MDSHT	M-43, PARK LAKE ROAD TO VANATTA ROAD (FILE NO 33-619)
	1969	1: 4800	PAN	ABRAMS	MERIDIAN TWP. (SYMBOL CNH)
	1969	1: 6000	PAN	ABRAMS	CITY OF EAST LANSING (SYMBOL CRO)
	1969	1:15840	PAN	ABRAMS	MSU CAMPUS (SYMBOL CSG, OBLIQUES)
	1970	UNKNOWN	PAN	ABRAMS	OBLIQUES OF I-96 AND I-496 (SYMBOL DAZ)
	1970	1: 4800	PAN	MDSHT	M-99, WAVERLY ROAD TO DEWITT (FILE NO 33-636)
	1970	1:12000	PAN	ABRAMS	I-69 EXTENSION FROM I-96 EAST TO PERRY (SYMBOL DEB)
	1971	1: 3000	PAN	MDSHT	I-96, FOREST HILL ROAD TO NORTH LOGAN ST (NO 33-662)
	1971	1: 7920	PAN	ABRAMS	CITY OF WILLIAMSTON (SYMBOL DHJ)
	1971	1: 7920	PAN	ABRAMS	PART OF VEVAY TWP. (SYMBOL DOC)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
INGHAM	1972	VARIES	BWIR	ERIM	N.W. PART (MSN. 63M,ALSO 70 MM CIR/COL,3 FLT. LINES)
	1972	VARIES	PAN	ERIM	N.W. PART (MSN. 65M,ALSO 70 MM CIR/COL,3 FLT. LINES)
	1972	1: 3960	PAN	ABRAMS	TWO SECTIONS IN COUNTY (SYMBOL DYN)
	1972	1: 7200	PAN	ABRAMS	CITY OF LANSING (SYMBOL DZA)
	1972	1: 7920	PAN	ABRAMS	PART OF SECTION 3, LANSING TWP. (SYMBOL DYM)
	1972	1: 7920	PAN	ABRAMS	AREA NORTH OF DANSVILLE (SYMBOL DVO)
	1972	1: 7920	PAN	ABRAMS	DELHI TWP. (SYMBOL DTJ)
	1972	1: 7920	PAN	ABRAMS	BEAR LAKE BOG AREA (SYMBOL DYG)
	1972	1:13200	PAN	ABRAMS	CITY OF LANSING (SYMBOL DYA)
	1973	1: 3960	PAN	ABRAMS	THE GRAND RIVER (SYMBOL EJD)
	1973	1: 4000	PAN	ERIM	EAST PART (MSN. 85M,ALSO 70 MM CIR/COL,5 FLT. LINES)
	1973	1: 4800	PAN	ABRAMS	MERIDIAN TWP. (SYMBOL ECC)
	1973	1: 7920	PAN	ABRAMS	CITY OF HERBERVILLE (SYMBOL EIG, ALSO SCALE: 1:12000)
	1973	1: 7920	PAN	ABRAMS	AREA IN LANSING TWP. (SYMBOL EGP)
	1973	1: 7920	PAN	ABRAMS	WEST 1/2 OF SECTION 19, ALAIEDON TWP. (SYMBOL DZY)
	1973	1: 7920	PAN	ABRAMS	CITY OF HOLT (SYMBOL DVE)
	1973	1:10000	BWIR	ERIM	N.C. PART (MSN. 82M,ALSO 70 MM CIR/COL,1 FLT. LINE)
	1974	1:15840	PAN	ABRAMS	MSU CAMPUS (SYMBOL EOK, ALSO SCALE: 1:6000)
	1975	1: 4800	PAN	MDSHT	M-43-75, MSU CAMPUS (FILE NO 33-743)
	1975	1: 7920	PAN	MDSHT	M-99-75, LOGAN ST. FROM GRAND RIVER TO DEWITT
	1975	1:12000	PAN	ABRAMS	CITY OF LANSING (SYMBOL EWO, ALSO SCALE: 1:20004)
	1975	1:12000	PAN	ABRAMS	LANSING TWP. (SYMBOL EOH, ALSO SCALE: 1:20004)
	1975	1:12000	PAN	ABRAMS	VILLAGE OF MASON (SYMBOL EUB, ALSO SCALE: 1:7920)
	1975	1:12000	PAN	ABRAMS	MERIDIAN TWP. (SYMBOL EOH, ALSO SCALE: 1:20004)
	1975	1:18000	COL	MSU/RSP	CITY OF LANSING,EAST LANSING,MSU (70 MM NEAR VERTICAL)
	1975	1:40000	COL	BENDIX	LAKE LANSING AREA (LANDSAT PROJ. E2325)
	1976	1: 3000	PAN	ERIM	STRIPS ALONG I-69, LANSING AREA (SYMBOL FCP)
	1976	1: 3000	PAN	MDSHT	STRIP ALONG GRAND RIVER (SYMBOL FAA)
	1976	1: 3960	PAN	ABRAMS	DELHI TWP (SYMBOL FCL)
	1976	1: 3960	PAN	ABRAMS	LANSING AREA (SYMBOL FEE)
	1976	1: 6000	PAN	ERIM	STRIP ALONG OAKLAND AVE., LANSING (SYMBOL FCQ)
	1976	1: 6000	PAN	MDSHT	STRIPS ALONG I-69 NEAR EAST LANSING (SYMBOL FCB)
	1976	1: 6000	PAN	ABRAMS	LANSING AREA (SYMBOL FAK)
	1976	1: 7920	PAN	ABRAMS	MSU CAMPUS (SYMBOL FAX)
	1976	1:15840	PAN	ABRAMS	DELHI TWP (SYMBOL EOJ)
	1976	1:24000	PAN	ERIM	STRIPS ALONG I-69, LANSING (SYMBOL FCN)
IONIA	1960	1: 6000	PAN	ABRAMS	CITY OF PORTLAND (SYMBOL AKP)
	1960	1: 6000	PAN	ABRAMS	CITY OF PORTLAND (PHOTO INDEX NO. 1673)
	1960	1: 6000	PAN	ABRAMS	CITY OF IONIA (PHOTO INDEX NO. 1680)
	1964	1: 3000	PAN	ABRAMS	CITY OF BELDING (SYMBOL BEP)
	1964	1:15840	PAN	ABRAMS	CITY OF BELDING (SYMBOL BEP, ALSO SCALE: 1:7920)
	1965	1: 3000	PAN	MDSHT	M-44, BOSTWICK LAKE TO IONIA (FILE NO 34-443)
	1965	1: 3000	PAN	MDSHT	M-66, GRAND RIVER TO PARMETER ROAD (FILE NO 34-436)
	1965	1: 7920	PAN	ABRAMS	AREA IN OTISCO TWP. (SYMBOL BMV)
	1966	1: 3000	PAN	MDSHT	M-21, IONIA TO PEWAMO (FILE NO 34-499)
	1966	1: 3000	PAN	MDSHT	M-44, KENT-IONIA LINE TO M-66 (FILE NO 34-505)
	1966	1: 7920	PAN	ABRAMS	IONIA RECREATION AREA, 6 SQ. MILES (DNR-PARKS)
	1967	1: 7920	PAN	ABRAMS	CITY OF PORTLAND (SYMBOL BYV)
	1969	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL CMV)
	1970	1: 4800	PAN	ABRAMS	VILLAGE OF LYONS (SYMBOL ODC)
	1970	1: 7920	PAN	ABRAMS	PART OF SECTIONS IN IONIA AND EASTON TWP. (SYMBOL CZO)
	1970	1:15840	PAN	ABRAMS	PART OF SECTIONS IN IONIA AND EASTON TWP. (SYMBOL CZO)
	1972	VARIES	BWIR	ERIM	S.E. PART (MSN. 63M,ALSO 70 MM CIR/COL,3 FLT. LINES)
	1972	1: 3960	PAN	ABRAMS	VICINITY OF IONIA (SYMBOL DTH)
	1973	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL EFG)
	1974	1: 3960	PAN	ABRAMS	IONIA AND VICINITY (SYMBOL ENO)
	1975	1: 7920	PAN	ABRAMS	BOSTON TWP. (SYMBOL EUS)
	1975	1:40000	COL	BENDIX	LONG LAKE AREA (LANDSAT PROJ. E2325)
	1975	1:40000	COL	BENDIX	LAKE OCESSA AREA (LANDSAT PROJ. E2325)
IOSCO	1960	1:15840	PAN	MDSHT	M-65, RELOCATION IN IOSCO CO (FILE NO 35-403)
	1962	1: 6000	PAN	ABRAMS	TAWAS STATE PARK (SYMBOL AUZ, ALSO CNP PARKS)
	1964	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL BGU)
	1964	1: 9600	PAN	MDSHT	M-65, HALE TO GLENNIE (FILE NO 35-408)
	1966	1: 3000	PAN	MDSHT	M-65, HALE TO GLENNIE (FILE NO 35-521)
	1966	1: 4800	PAN	ABRAMS	OSCODA TWP. (SYMBOL BUP)
	1966	1: 4800	PAN	ABRAMS	OSCODA TWP. (SYMBOL BVA)
	1966	1:12000	PAN	ABRAMS	AREA WEST OF TAWAS CITY (SYMBOL BTZ)
	1968	1:15840	PAN	ABRAMS	FOREST COVER (DNR-ENG)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
IOSCO	1969	1: 6000	PAN	ABRAMS	SECTIONS IN ALABASTER TWP. (SYMBOL CPG)
	1971	1:15840	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DIY, ALSO SCALE: 1:7920)
	1972	UNKNOWN	PAN	EPIM	PINE RIVER PLUME (MULTIBAND, SCANNERS ALT: 1000FT)
	1973	1: 6000	PAN	CORPS	PARTIAL SHORELINE
	1973	1:12000	PAN	ABRAMS	SITES IN COUNTY (SYMBOL EHE, ALSO SCALE: 1:14400)
	1974	1: 7920	PAN	ABRAMS	PART OF PLAINFIELD TWP. (SYMBOL EKV)
	1974	1:10000	COL	EPIM	LAKE HURON SHORELINE (MSN, X252M, ALSO PAN,CIR,MSS)
	1975	1: 7920	PAN	ABRAMS	TAWAS CITY AREA (SYMBOL EVA)
	1976	1: 3000	PAN	MDSHT	SHORT STRIP NEAR OSCODA (SYMBOL FBN)
IRON	1963	1: 9600	PAN	ABRAMS	STRIP IN COUNTY (SYMBOL B9W)
	1964	1: 6000	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL BHG)
	1964	1:15840	PAN	ABRAMS	FOREST COVER (DNR-ENG)
	1965	1: 9600	PAN	MDSHT	US-141, CRYSTAL FALLS NORTHWEST TO AMASA (NO 36-450)
	1966	1: 7920	PAN	ABRAMS	BEWABIC STATE PARK, 1 SQ. MILE (DNR-PARKS)
	1966	1:15840	BWIR	HURC	IRON RANGE STATE FOREST (SYMBOL: ATI)
	1968	1: 4800	PAN	ABRAMS	TOWN OF CRYSTAL FALLS (SYMBOL CJJ)
	1968	1: 7920	PAN	ABRAMS	TOWN OF IRON RIVER (SYMBOL CIC)
	1969	1:19920	PAN	ABRAMS	PIPELINE FROM CRYSTAL FALLS TO STATE LINE (SYMBOL CTL)
	1973	1: 9600	PAN	HURC	SMOKY LAKE AREA (SYMBOL: DAJ)
	1976	1: 6000	PAN	MDSHT	STRIP ALONG US-2 (SYMBOL FAO)
ISABELLA	1957	1: 4800	PAN	ABRAMS	CITY OF MOUNT PLEASANT (PHOTO INDEX NO. 1413)
	1960	1: 3960	PAN	ABRAMS	CITY OF MOUNT PLEASANT (ALSO SCALE OF 1:12000)
	1960	1: 3960	PAN	ABRAMS	CENTRAL MICHIGAN UNIVERSITY (SYMBOL ALV)
	1960	1:12000	PAN	ABRAMS	CENTRAL MICHIGAN UNIVERSITY (SYMBOL ALV)
	1965	1: 7920	PAN	ABRAMS	CENTRAL MICHIGAN UNIVERSITY (SYMBOL BOS, ALSO 1:14400)
	1965	1: 9600	PAN	MDSHT	M-20, M-66 TO DEERFIELD CENTER (FILE NO 37-479)
	1966	1: 6000	PAN	ABRAMS	CITY OF MT. PLEASANT (SYMBOL BUL)
	1966	1:14400	PAN	MDSHT	M-20, WHITE CLOUD TO REMUS (FILE NO 534)
	1967	1: 3000	PAN	MDSHT	M-20, M-66 ALMOST TO MECOSTA CO LINE (FILE NO 37-540)
	1967	1: 7920	PAN	ABRAMS	BROOMFIELD AND SHERMAN TWP. (SYMBOL BYZ)
	1970	1:12000	PAN	ABRAMS	CENTRAL MICHIGAN UNIVERSITY (SYMBOL DEL)
	1971	1: 7920	PAN	ABRAMS	PART OF SECTIONS 8 AND 17, VERNON TWP. (SYMBOL DMR)
	1971	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DJP)
	1971	1: 7920	PAN	ABRAMS	PART OF GILMORE TWP. (SYMBOL DMO)
	1971	1: 7920	PAN	ABRAMS	AREAS IN BROOMFIELD TWP. (SYMBOL DIM)
	1972	1: 3960	PAN	ABRAMS	CENTRAL MICHIGAN UNIVERSITY (SYMBOL DTT, ALSO 1:7920)
	1972	1: 3960	PAN	ABRAMS	UNION TWP. (SYMBOL DVJ)
	1972	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DUO)
	1973	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL EFU)
	1973	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL EDA)
	1974	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL EOY)
	1974	1: 7920	PAN	ABRAMS	CITY OF MT. PLEASANT (SYMBOL EK7)
	1974	1: 7920	PAN	ABRAMS	DEERFIELD TWP. (SYMBOL EPY)
JACKSON	1957	1: 6000	PAN	ABRAMS	CITY OF MICHIGAN CENTER
	1960	1: 6000	PAN	ABRAMS	SECTION 5, SUMMITT TWP. (SYMBOL AKO)
	1961	1: 9600	PAN	ABRAMS	CITY OF JACKSON (SYMBOL ANV)
	1961	1:19200	PAN	ABRAMS	CITY OF JACKSON (SYMBOL APB, ALSO SCALE 1:6000)
	1962	1: 6000	PAN	ABRAMS	WATERLOO RECREATION AREA, 850 ACRES (DNR-PARKS)
	1962	1: 6000	PAN	ABRAMS	RECREATION AREAS (SYMBOL AYJ)
	1963	1:12000	PAN	MDSHT	US-127, JACKSON SOUTH TO STATE LINE (FILE NO 38-352)
	1963	1:15840	PAN	ABRAMS	CITY OF JACKSON (SYMBOL BCY)
	1964	1: 6000	PAN	ABRAMS	CITY OF JACKSON (SYMBOL BDS)
	1966	1: 3000	PAN	MDSHT	I-94, AT M-106 AND ELM ROAD (FILE NO 38-504)
	1966	1: 7920	PAN	ABRAMS	WATERLOO RECREATION AREA, 300 ACRES (DNR-PARKS)
	1966	1: 9600	PAN	MDSHT	M-106, PARNELL ROAD TO COUNTY LINE (FILE NO 530)
	1968	1: 3960	PAN	MDSHT	US-127, FROM US-12 TO M-50 (FILE NO 38-581)
	1968	1: 4800	PAN	MDSHT	I-94, JACKSON AREA, ALSO SCALE 1:9600 (FILE NO 38-588)
	1968	1: 4800	PAN	ABRAMS	STRIP ALONG I-94 IN JACKSON AREA (SYMBOL CJZ)
	1968	1: 3600	PAN	ABRAMS	STRIP ALONG I-94 IN JACKSON AREA (SYMBOL CJ7)
	1968	1:15840	PAN	ABRAMS	CONCORD TWP. (SYMBOL CFG)
	1968	1:24000	PAN	ABRAMS	CITY OF JACKSON (SYMBOL CII)
	1969	1: 3000	PAN	MDSHT	I-94 AND US-127, AT JACKSON (FILE NO 38-624)
	1970	1: 4800	PAN	ABRAMS	CITY OF JACKSON (SYMBOL CY?)
	1970	1: 4800	PAN	ABRAMS	PARTS OF COUNTY (SYMBOL CZB)
	1971	1: 3000	PAN	MDSHT	M-106, FROM FRANKLIN ST IN JACKSON TO PARNELL ROAD
	1971	1: 4800	PAN	ABRAMS	PARTS OF LEONI AND NAPOLEON TWPS. (SYMBOL DPO)
	1972	1: 3960	PAN	ABRAMS	PART OF SECTIONS 26 AND 35, NAPOLEON TWP. (SYMBOL DSS)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
JACKSON	1972	1:15840	PAN	ABRAMS	STATE PRISON (SYMBOL DTR, ALSO SCALE: 1:7920)
	1973	1: 6000	PAN	ABRAMS	CITY OF JACKSON (SYMBOL EDI)
	1973	1: 7920	PAN	ABRAMS	PART OF GRASS LAKE TWP. (SYMBOL EFB)
	1973	1:12000	PAN	MDSHT	US-127, FROM ADDISON NORTH TO JACKSON (FILE NO 702)
	1973	1:15840	PAN	ABRAMS	PART OF GRASS LAKE TWP. (SYMBOL EFB)
	1974	1: 3960	PAN	ABRAMS	PART OF SUMMIT TWP. (SYMBOL EKR)
	1974	1: 3960	PAN	ABRAMS	PART OF SPRING ARBOR, AND NAPOLEON TWPS. (SYMBOL EKR)
	1975	1:40000	COL	BENDIX	PLEASANT LAKE AREA (LANDSAT PROJ. E2325)
	1976	1: 3000	PAN	MDSHT	BUSINESS LOOP 94, JACKSON (SYMBOL FCD)
	1976	1: 6000	PAN	MDSHT	STRIPS ALONG US-127, JACKSON TO HUDSON (SYMBOL FAO)
	1976	1: 7920	PAN	MDSHT	STRIP ALONG I-94 NEAR JACKSON (SYMBOL FAH)
	1976	1:12000	PAN	MDSHT	STRIP ALONG US-127 TO US-12 (SYMBOL FAG)
	1976	1:12000	PAN	ABRAMS	CITY OF JACKSON (SYMBOL FBO, ALSO SCALE: 1:24000)
	1976	1:20004	PAN	ABRAMS	SOUTHERN PART OF COUNTY (SYMBOL FEH)
KALAMAZOO	1955	1: 4800	PAN	ABRAMS	CITY OF KALAMAZOO
	1955	1: 9600	PAN	ABRAMS	HIGHWAYS (DNR-ENG)
	1960	1: 6000	PAN	ABRAMS	KALAMAZOO AREA (SYMBOL AMS)
	1961	1: 9600	PAN	ABRAMS	CITY OF KALAMAZOO (SYMBOL ANN)
	1963	1: 3960	PAN	ABRAMS	CITY OF KALAMAZOO (SYMBOL BAA)
	1963	1: 7920	PAN	ABRAMS	CITY OF KALAMAZOO (SYMBOL BDC)
	1964	1: 6000	PAN	MDSHT	I-94, KALAMAZOO AREA (FILE NO 39-409)
	1964	1: 7920	PAN	ABRAMS	KALAMAZOO TWP. (SYMBOL BEG, ALSO SCALE: 1:3960)
	1964	1: 9600	PAN	MDSHT	M-43, FROM M-40 TO M-131 (FILE NO 39-424)
	1965	1: 3000	PAN	MDSHT	I-94, PORTAGE-KILGORE ROAD INTERCHANGE (NO 39-454)
	1965	1: 9600	PAN	MDSHT	M-37 AND M-43, BATTLE CREEK TO HASTINGS (NO 39-432)
	1965	1:15840	PAN	ABRAMS	CITY OF SPRINGFIELD (SYMBOL BLM, ALSO SCALE: 1:7920)
	1966	1: 3000	PAN	MDSHT	M-43, FROM M-40 TO US-131 RELOCATION (FILE NO 39-495)
	1966	1: 4800	PAN	MDSHT	I-94, AT I-94 BL (FILE NO 532)
	1966	1: 7920	PAN	ABRAMS	SECTIONS 33 AND 34, CHARLESTON TWP. (SYMBOL BRD)
	1967	1: 3960	PAN	ABRAMS	SECTIONS IN COUNTY (SYMBOL BXM)
	1967	1: 3960	PAN	ABRAMS	AREA IN COUNTY (SYMBOL CBP)
	1967	1: 3960	PAN	ABRAMS	CENTRAL PARKWAY AREA OF KALAMAZOO (SYMBOL CBG)
	1967	1: 3960	PAN	ABRAMS	CITY OF KALAMAZOO (SYMBOL CBQ)
	1967	1: 7920	PAN	ABRAMS	PART OF SECTION 13, KALAMAZOO TWP. (SYMBOL BZW)
	1967	1: 7920	PAN	ABRAMS	AREA IN KALAMAZOO (SYMBOL BZQ)
	1968	1: 6000	PAN	ABRAMS	CITY OF KALAMAZOO (SYMBOL CFI)
	1968	1: 6000	PAN	ABRAMS	PORTAGE TWP. (SYMBOL CDA)
	1969	1: 3960	PAN	ABRAMS	CITY OF KALAMAZOO (SYMBOL COP)
	1970	UNKNOWN	PAN	ERIM	KALAMAZOO POWER PLANT (SCANNERS, ALT: 5000FT)
	1970	1: 3000	PAN	MDSHT	M-89, PLAINWELL TO RICHLAND (FILE NO 639)
	1970	1: 3000	PAN	MDSHT	M-89 AND M-43, RELOCATION AT RICHMOND (FILE NO 653)
	1970	1: 3960	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL CUK)
	1970	1: 7920	PAN	ABRAMS	AREAS IN KALAMAZOO AND OSHTEMO TWPS. (SYMBOL CXS)
	1970	1: 7920	PAN	DNR	FORT CUSTER RECREATION AREA, 4,000 ACRES (DNR-PARKS)
	1970	1: 7920	PAN	ABRAMS	PART OF BLUE LAKE TWP. (SYMBOL DDY)
	1970	1: 9600	PAN	ABRAMS	CITY OF KALAMAZOO (SYMBOL DBE)
	1970	1: 9600	PAN	MDSHT	CITY OF KALAMAZOO (FILE NO 650)
	1971	1: 3960	PAN	ABRAMS	AREA IN OSHTEMO TWP. (SYMBOL DGA)
	1971	1: 7920	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL DGJ, ALSO SCALE: 1:3960)
	1972	1: 2400	PAN	ABRAMS	PORTAGE, RICHLAND, ROSS, COMSTOCK TWPS. (SYMBOL DTN)
	1972	1: 6000	PAN	ABRAMS	PORTAGE, RICHLAND, ROSS, COMSTOCK TWPS. (SYMBOL DTN)
	1972	1: 6000	PAN	ABRAMS	PART OF ALAMO TWP. (SYMBOL DVQ)
	1972	1:21600	PAN	ABRAMS	PORTAGE, RICHLAND, ROSS, COMSTOCK TWPS. (SYMBOL DTN)
	1973	1: 2400	PAN	ABRAMS	AREA IN PORTAGE TWP. (SYMBOL ECN, ALSO SCALE: 1:14400)
	1973	1: 3960	PAN	ABRAMS	PART OF KALAMAZOO (SYMBOL EDX)
	1973	1: 3960	PAN	ABRAMS	PART OF KALAMAZOO (SYMBOL ECO)
	1973	1: 3960	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL EGE)
	1973	1: 3960	PAN	ABRAMS	AREA IN ROSS TWP. (SYMBOL EBP)
	1973	1: 3960	PAN	ABRAMS	KALAMAZOO TWP. (SYMBOL EDY)
	1973	1: 7920	PAN	ABRAMS	AREAS IN TEXAS TWP. (SYMBOL EBZ)
	1973	1:24000	PAN	ABRAMS	CITY OF KALAMAZOO (SYMBOL EEW)
	1974	1: 3960	PAN	ABRAMS	AREA IN COUNTY (SYMBOL ELA)
	1975	1: 3000	PAN	MDSHT	M-43, KALAMAZOO NORTHEAST TO RICHLAND (FILE NO 730)
	1975	1: 3960	PAN	ABRAMS	AREAS IN COOPER AND KALAMAZOO TWPS. (SYMBOL EXP)
	1975	1: 3960	PAN	ABRAMS	STRIP FROM CLIMAX TO FULTON (SYMBOL EXS)
	1975	1: 3960	PAN	ABRAMS	PORTAGE TWP. (SYMBOL EYO)
	1975	1: 6000	PAN	MDSHT	BIKE TRAIL, SOUTH HAVEN TO KALAMAZOO (FILE NO 732)
	1975	1: 9600	PAN	MDSHT	M-89, FOUR MILES EAST AND WEST OF RICHLAND (NO 756)
	1976	1: 7200	PAN	MDSHT	STRIP ALONG M-43 NEAR KALAMAZOO (SYMBOL FBK)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
KALAMAZOO	1976	1:12000	COL	ERIM	FIVE FLIGHT LINES IN BATTLE CREEK AREA (SYMBOL FCH)
	1976	1:58500	PAN	ABRAMS	KALAMAZOO AREA (SYMBOL FAQ)
KALKASKA	1954	1: 9600	PAN	ABRAMS	CITY OF KALKASKA (PHOTO INDEX NO. 1004)
	1968	1:15840	PAN	ABRAMS	FOREST COVER (DNR-ENG)
	1969	1: 7920	PAN	ABRAMS	AREAS IN BEAR LAKE TWP. (SYMBOL CVH)
	1971	1:19200	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DIR)
	1971	1:24000	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL DLS)
	1972	1:20004	PAN	ABRAMS	STRIP FROM KALKASKA TO MECOSTA COUNTY (SYMBOL DVY)
	1973	1: 6000	PAN	ABRAMS	AREA IN COUNTY (SYMBOL ECU, ALSO SCALE: 1:7920)
	1973	1: 6000	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL EBN, ALSO SCALE: 1:7920)
	1973	1:10320	PAN	ABRAMS	AREA IN COUNTY (SYMBOL ECU)
	1973	1:15840	PAN	ABRAMS	VILLAGE OF KALKASKA (SYMBOL EBX, ALSO SCALE: 1:4800)
	1974	1: 3960	PAN	ABRAMS	KALKASKA TWP. (SYMBOL EQF, ALSO SCALES: 1:7920,1:9600)
KENT	1954	1: 6000	PAN	ABRAMS	CITY OF GRAND RAPIDS
	1957	1: 9600	PAN	ABRAMS	HIGHWAYS (DNR-ENG)
	1959	1:14400	PAN	ABRAMS	CITY OF WYOMING
	1960	1:12000	PAN	ABRAMS	AREA IN COUNTY (SYMBOL ALQ)
	1961	1: 7920	PAN	ABRAMS	PARIS TWP. (SYMBOL ARM)
	1962	1:12000	PAN	ABRAMS	PLAINFIELD TWP. (SYMBOL AWG)
	1962	1:15840	PAN	ABRAMS	ADA TWP. (SYMBOL AYF)
	1963	1: 3960	PAN	ABRAMS	CITY OF WYOMING (SYMBOL BAY, ALSO SCALE: 1:7920)
	1963	1: 3960	PAN	ABRAMS	CITY OF WYOMING (SYMBOL BBX)
	1963	1: 7920	PAN	ABRAMS	CITY OF GRANDVILLE (SYMBOL BCE)
	1964	1: 3000	PAN	MDSHT	US-131 AND I-196, NORTH TO FOURTEEN MILE ROAD
	1964	1: 6000	PAN	ABRAMS	CITY OF EAST GRAND RAPIDS (SYMBOL BFU)
	1965	1: 3000	PAN	MDSHT	I-196, HOLLAND TO GRANDVILLE (FILE NO 41-439)
	1965	1: 3000	PAN	MDSHT	M-44, BOSTWICK LAKE TO IONIA CO LINE (FILE NO 41-443)
	1965	1: 3000	PAN	MDSHT	US-131, I-96 NORTH TO FIVE MILE ROAD (FILE NO 41-438)
	1965	1: 6000	PAN	MDSHT	US-131 FRONTAGE ROADS FROM 11 MILE TO 13 MILE ROAD
	1966	1: 3000	PAN	MDSHT	M-44, FROM 28TH ST TO I-96 (FILE NO 41-514)
	1968	1: 3960	PAN	ABRAMS	GAINES TWP. (SYMBOL COC)
	1968	1: 7920	PAN	ABRAMS	CITY OF GRANDVILLE (SYMBOL CLP)
	1968	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL CLP)
	1969	1: 3960	PAN	ABRAMS	SECTIONS IN COUNTY (SYMBOL CUT)
	1969	1: 6000	PAN	MDSHT	M-21, I-96 TO ADA (FILE NO 41-605)
	1969	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL COS)
	1970	1: 3000	PAN	MDSHT	US-131 AND M-45, GRAND RAPIDS (FILE NO 41-638)
	1970	1: 3960	PAN	ABRAMS	PLAINFIELD TWP. (SYMBOL CZT)
	1970	1: 3960	PAN	ABRAMS	SECTIONS IN LOWELL AND BOWNE TWPS. (SYMBOL DDI)
	1970	1: 6000	PAN	ABRAMS	NW 1/4, SECTION 35, VERGENNES TWP. (SYMBOL CWH)
	1970	1: 7920	PAN	ABRAMS	AREA IN GRAND RAPIDS (SYMBOL DEV)
	1971	1: 3000	PAN	ABRAMS	PART OF SECTION 2, GRAND RAPIDS TWP. (SYMBOL DMO)
	1971	1: 3000	PAN	ABRAMS	AREA NORTH OF GRAND RAPIDS (SYMBOL DHZ)
	1971	1: 3600	PAN	ABRAMS	AREA IN GRAND RAPIDS (SYMBOL DLP)
	1971	1: 3960	PAN	ABRAMS	CASCADE TWP. (SYMBOL DHO)
	1971	1: 3960	PAN	ABRAMS	PART OF SECTION 7, PLAINFIELD TWP. (SYMBOL DMP)
	1971	1: 4800	PAN	MDSHT	M-91, LOWELL (FILE NO 41-675)
	1971	1: 7920	PAN	ABRAMS	NEAR ZIEGENFUSS LAKE (SYMBOL DOO)
	1971	1:12000	PAN	ABRAMS	AREA IN GRAND RAPIDS (SYMBOL DPK, ALSO SCALE: 1:3960)
	1972	1: 3960	PAN	ABRAMS	SE 1/4, SECTION 33, WYOMING TWP. (SYMBOL DZD)
	1972	1: 6000	PAN	ABRAMS	PART OF CALEDONIA TWP. (SYMBOL DZF)
	1972	1: 6000	PAN	ABRAMS	AREAS IN PLAINFIELD AND CANNON TWPS. (SYMBOL DYJ)
	1972	1: 7920	PAN	ABRAMS	PART OF CALEDONIA TWP. (SYMBOL DZF)
	1972	1:14400	PAN	ABRAMS	PART OF CASCADE TWP. (SYMBOL DSV)
	1973	1: 3960	PAN	ABRAMS	CITY OF KENTWOOD (SYMBOL EIL)
	1973	1: 6000	PAN	ABRAMS	AREA IN CASCADE TWP. (SYMBOL EGB)
	1973	1: 7920	PAN	ABRAMS	CITY OF GRANDVILLE (SYMBOL EET)
	1974	1: 4800	PAN	ABRAMS	SECTION 28, CANNON TWP. (SYMBOL EKY)
	1974	1: 7920	PAN	ABRAMS	WEST 1/2, SECTION 24, PLAINFIELD TWP. (SYMBOL ENH)
	1974	1: 7920	PAN	ABRAMS	PART OF BYRON TWP. (SYMBOL EQV)
	1974	1: 9600	PAN	MDSHT	M-37, FROM LEONARD ST IN GRAND RAPIDS TO 11 MILE ROAD
	1974	1:15840	PAN	ABRAMS	CITY OF GRAND RAPIDS (SYMBOL ENN, ALSO SCALE: 1:7920)
	1974	1:20004	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL EPE)
	1974	1:24000	PAN	ABRAMS	AREA IN GRAND RAPIDS AND ADA (SYMBOL ELC)
	1975	1:40000	COL	BENDIX	REEDS LAKE AREA (LANDSAT PROJ. E2325)
	1976	1: 3960	PAN	ABRAMS	CITY OF ROCKFORD (SYMBOL FOA)
	1976	1: 4800	PAN	ABRAMS	PART OF COUNTY (SYMBOL FDU)
	1976	1: 6000	PAN	MDSHT	STRIPS ALONG M-37, GRAND RAPIDS AREA (SYMBOL FAP)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
KENT	1976	1:15840	PAN	ABPAMS	GRAND RAPIDS AREA (SYMBOL FRD, ALSO SCALE: 1:7920)
KEWEENAW	1938	1:20000	PAN	DNR	SHORELINE (DNR-ENG)
	1947	1:25000	PAN	DNR	SHORELINE (DNR-ENG)
	1964	1:15840	PAN	ABPAMS	FOREST COVER (DNR-ENG)
	1966	1: 96000	PAN	MDSHT	M-26, US-41 TO EAGLE RIVER (FILE NO 42-446)
	1966	1: 48000	PAN	ABPAMS	VILLAGE OF EAGLE HARBOR (SYMBOL CPU)
	1966	1: 96000	PAN	MDSHT	M-26, EAGLE HARBOR (FILE NO 42-587)
	1968	1: 96000	PAN	ABPAMS	AREAS IN ALLOUEZ TWP. (SYMBOL EFY, ALSO SCALE: 1:7920)
	1973	1:15840	PAN	EPIK	WISCONSIN TO MARQUETTE ALONG SHORELINE OF LAKE SUPERIOR
	1974	UNKNOWN	PAN	EPIK	LAKE SUPERIOR SHORELINE (MSN, Y252M, ALSO PAN,CIR)
	1974	1:10000	COL	EPIK	STRIPS FROM EAGLE RIVER TO PHOENIX (SYMBOL FAX)
	1976	1: 6000	PAN	MDSPT	
LAKE	1967	1: 7920	PAN	ABPAMS	SECTIONS IN ELLSWORTH TWP. (SYMBOL CAB)
	1968	1:19200	PAN	ABPAMS	STRIP FROM LUDINGTON TO REED CITY (SYMBOL CCZ)
	1970	1: 7920	PAN	ABPAMS	AREA IN COUNTY (SYMBOL DEF)
	1971	1: 7920	PAN	ABPAMS	AREAS IN NEWKIRK AND LAKE TWPS. (SYMBOL DHY)
	1972	1: 7920	PAN	ABPAMS	AREA IN COUNTY (SYMBOL DRO)
	1973	1: 7920	PAN	ABPAMS	AREA IN ELK TWP. (SYMBOL EBE)
LAPEER	1957	1: 9700	PAN	ABPAMS	HIGHWAYS (DNR-ENG) (DNR-PARKS)
	1964	1: 6000	PAN	STEREO	METAMORA-HADLEY
	1965	1: 7920	PAN	ABPAMS	AREA IN COUNTY (SYMBOL AXV)
	1965	1:12000	PAN	ABPAMS	CITY OF LAPEER (SYMBOL AXT)
	1965	1: 96000	PAN	MDSPT	M-57, FROM M-15 TO M-24 (FILE NO 44-414)
	1966	1: 96000	PAN	MDSHT	M-57, FROM M-15 TO M-24 (FILE NO 44-536)
	1966	1: 48000	PAN	ABPAMS	CITY OF LAPEER (SYMBOL BUS)
	1966	1: 96000	PAN	MDSHT	M-21, LAPEER TO COUNTY LINE (FILE NO 44-498)
	1966	1: 96000	PAN	ABPAMS	SECTIONS IN COUNTY (SYMBOL BIO)
	1966	1:12000	PAN	MDSHT	M-21, IMLAY CITY EAST TO CO LINE (FILE NO 44-535)
	1966	1:14400	PAN	MDSHT	M-21, LAPEER TO IMLAY CITY (FILE NO 44-580)
	1966	1: 7920	PAN	ABPAMS	OPYDEN TWP. (SYMBOL CEM, ALSO SCALE: 1:6000)
	1968	1: 7920	PAN	MDSHT	M-53, RELOCATION FROM MACOMB CO LINE TO IMLAY CITY
	1968	1:14400	PAN	MDSHT	M-57, GENESEE CO LINE TO M-24 (FILE NO 44-654)
	1969	1: 36000	PAN	ABPAMS	AREA IN COUNTY (SYMBOL DBU)
	1970	1:19200	PAN	ABPAMS	MAYFIELD TWP. (SYMBOL DKH, ALSO SCALE: 1:7920)
	1970	1:15840	PAN	ABPAMS	PARTS OF SECTION 9, ATTICA TWP. (SYMBOL EBG)
	1971	1:15840	PAN	ABPAMS	SITES IN COUNTY (SYMBOL FOH, ALSO SCALE: 1:7920)
	1973	1: 36000	PAN	MDSHT	M-21, FROM M-24 IN LAPEER TO M-21 FREEWAY IN PORT HURON
	1974	1:12000	PAN	MDSHT	M-53, WASHINGTON TOWN NORTH TO IMLAY CITY (NO 735)
	1975	1: 36000	PAN	MDSHT	M-21, BRISTON ROAD AREA, LAPEER (SYMBOL FCF)
	1975	1: 96000	PAN	EPIK	STRIP ALONG M-21 CORRIDOR, LAPEER (SYMBOL FBU)
	1976	1: 36000	PAN	MDSHT	STRIP ALONG M-21 CORRIDOR, LAPEER (SYMBOL FBS)
	1976	1: 36000	PAN	MDSHT	STRIP ALONG M-21, LAPEER (ALSO SCALE: 1:14400)
	1976	1: 7920	PAN	MDSHT	
LEELANAU	1960	1:12000	PAN	ABPAMS	FOX ISLAND (SYMBOL ALC)
	1963	1: 7920	PAN	ABPAMS	LELAND TWP. (SYMBOL BCO)
	1964	1: 36000	PAN	MDSHT	M-204, FROM M-22 TO LAKE LEELANAU (FILE NO 45-393)
	1964	1: 6000	PAN	STEREO	LEELANAU STATE PARK, 1 SQ. MILES (DNR-PARKS)
	1964	1: 7920	PAN	ABPAMS	NORTH SHORE OF LAKE LEELANAU (SYMBOL BGH)
	1965	1: 7920	PAN	ABPAMS	NORTH SHORE OF LAKE LEELANAU (SYMBOL BLP)
	1966	1:12000	PAN	ABPAMS	DAY FOREST AT GLEN ARBOR (SYMBOL BOP)
	1966	1: 7920	PAN	ABPAMS	AREA IN COUNTY (SYMBOL BMN)
	1966	1: 7920	PAN	ABPAMS	VILLAGE OF GLEN LAKE (SYMBOL CFK)
	1966	1:12000	PAN	ABPAMS	ELMWOOD TWP. (SYMBOL CHA)
	1966	1: 7920	PAN	ABPAMS	GLEN LAKE (SYMBOL CIM, ALSO SCALE: 1:1?000)
	1966	1: 7920	PAN	ABPAMS	VILLAGE OF EMPIRE (SYMBOL CLZ)
	1967	1:12000	PAN	ABPAMS	AREA IN COUNTY (SYMBOL CPH)
	1968	1: 7920	PAN	ABPAMS	SOUTH 1/2, SECTION 13, GLEN ARBOR TWP. (SYMBOL CON)
	1968	1: 7920	PAN	ABPAMS	UPPER AND LOWER TRAVERSE BAY (MULTIBAND, ALT: 5000FT)
	1968	1:12000	PAN	ABPAMS	WEST SHORE OF THE WEST ARM OF GRAND TRAVERSE BAY
	1970	UNKNOWN	PAN	EPIK	PART OF LEELANAU TWP. (SYMBOL DRP)
	1970	UNKNOWN	PAN	EPIK	PART OF GLEN ARBOR TWP. (SYMBOL CVD)
	1971	1: 36000	PAN	ABPAMS	GLEN LAKE AREA (SYMBOL CVR, ALSO SCALE: 1:8400)
	1971	1: 7920	PAN	ABPAMS	PART OF GLEN ARBOR TWP. (SYMBOL DEH)
	1971	1: 7920	PAN	ABPAMS	AREA NORTHEAST OF LAKE LEELANAU (SYMBOL DAQ)
	1971	1: 7920	PAN	ABPAMS	PART OF LEELANAU TWP. (SYMBOL DOS)
	1971	1: 7920	PAN	ABPAMS	PART OF BINGHAM AND LEELANAU TWPS. (SYMBOL DOT)
	1971	1: 7920	PAN	ABPAMS	M-72, FROM PLOWMAN ROAD EAST TO CO LINE (NO 572)
	1971	1:12000	PAN	MDSHT	COMPLETE SHORELINE
	1973	1: 6000	PAN	COFPS	

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
LEELANAU	1973	1:19200	PAN	ABRAMS	AREA IN COUNTY (SYMBOL EBK, ALSO SCALE: 1:7920)
	1974	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL ERH)
	1974	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL EOO)
	1974	1:16000	COL	ERIM	LAKE MICHIGAN SHORELINE (MSN, X252M, ALSO PAN,CIR,MSS)
	1976	1: 6000	PAN	MDSHT	STRIPS ALONG M-72, TRAVERSE CITY TO EMPIRE (SYMBOL FAM)
	1976	1: 7920	PAN	ABRAMS	VILLAGE OF NORTHPORT (SYMBOL FDV, ALSO SCALE: 1:3960)
	1976	1:15840	PAN	ABRAMS	NORTH MANITOU ISLAND (SYMBOL FEI)
	1976	1:20004	PAN	ABRAMS	VILLAGE OF NORTHPORT (SYMBOL FDV)
LENAWEE	1959	1: 6000	PAN	ABRAMS	CITY OF ADRIAN (PHOTO INDEX NO. 1388)
	1960	1: 7920	PAN	ABRAMS	VILLAGE OF TECUMSEH (SYMBOL AKQ, ALSO SCALE: 1:15840)
	1961	1: 7920	PAN	ABRAMS	VILLAGE OF CEMENT CITY (SYMBOL ANS)
	1965	1: 9600	PAN	MDSHT	US-12, FROM HILLSDALE CO LINE TO M-52 (FILE NO 46-475)
	1966	1: 3960	PAN	ABRAMS	VILLAGE OF MANITOU BEACH (SYMBOL BRT, ALSO 1:7920)
	1966	1: 9600	PAN	ABRAMS	SECTION 6, PALMYRA TWP. (SYMBOL BSN)
	1967	1: 7920	PAN	ABRAMS	CAMBRIDGE TWP. (SYMBOL BYD)
	1968	1: 3960	PAN	ABRAMS	AREA IN COUNTY (SYMBOL CDX)
	1968	1: 3960	PAN	MDSHT	US-127, FROM US-12 TO JACKSON CO LINE (FILE NO 46-581)
	1969	1: 3960	PAN	ABRAMS	SECTIONS IN CAMBRIDGE TWP. (SYMBOL CUM)
	1969	1: 6000	PAN	MDSHT	US-12, FROM BROOKLYN HIGHWAY TO M-52 (FILE NO 46-626)
	1969	1: 7920	PAN	ABRAMS	SECTION 6, FRANKLIN TWP. (SYMBOL COB)
	1969	1: 7920	PAN	ABRAMS	HUDSON TWP. (SYMBOL CRJ)
	1970	1: 3000	PAN	MDSHT	M-52, FROM ALBERT ST IN ADRIAN TO MOORE ROAD NO 657)
	1970	1: 6000	PAN	ABRAMS	CITY OF ADRIAN (SYMBOL AAY)
	1970	1: 6000	PAN	MDSHT	US-12, FROM SOMERSET ROAD TO BROOKLYN ROAD (NO 46-658)
	1970	1:20000	PAN	DNR	TOPO MAPS (DNR-ENG)
	1971	1:15840	PAN	ABRAMS	AREA IN SOUTHERN PART OF COUNTY (SYMBOL DOD)
	1973	1: 3960	PAN	ABRAMS	CITY OF ADRIAN (SYMBOL EEA)
	1973	1: 4000	PAN	ERIM	TEST SITE (MSN, 85M,ALSO 70 MM CIR/COL)
	1973	1:12000	PAN	MDSHT	US-127, FROM ADDISON TO JACKSON CO LINE (NO 702)
	1974	1: 3960	PAN	ABRAMS	HUDSON TWP. (SYMBOL EQF, ALSO SCALES: 1:7920, 1:96000)
	1974	1: 6000	PAN	MDSHT	M-156, FROM MORENCI TO M-54 (FILE NO 717)
	1974	1: 7920	PAN	ABRAMS	AREA IN CAMBRIDGE TWP. (SYMBOL EOT)
	1974	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL EOI, ALSO SCALE: 1:15840)
	1975	1: 3960	PAN	ABRAMS	VILLAGES OF WESTON, JASPER AND FAIRFIELD (SYMBOL ESI)
	1975	1: 9600	PAN	MDSHT	US-12, FROM US-127 TO M-52 (FILE NO 746)
	1975	1: 9600	PAN	MDSHT	M-52-75, FROM ADRIAN NORTH (FILE NO 745)
	1975	1:12000	PAN	ABRAMS	VILLAGE OF HARBOR SPRINGS (SYMBOL EXK, ALSO 1:24000)
	1976	1: 3000	PAN	MDSHT	STRIPS ALONG M-52 NEAR ADRIAN (SYMBOL FAF)
	1976	1: 6000	PAN	MDSHT	STRIPS ALONG US-127, JACKSON TO HUDSON (SYMBOL FAO)
	1976	1:20004	PAN	ABRAMS	AREA IN COUNTY (SYMBOL FEH)
LIVINGSTON	1954	1: 6000	PAN	ABRAMS	CITY OF HOWELL
	1955	1: 9600	PAN	ABRAMS	HIGHWAYS (DNR-ENG)
	1960	1: 6000	PAN	ABRAMS	CITY OF HOWELL (SYMBOL AMK)
	1960	1: 9600	PAN	ABRAMS	STRIP FROM BRIGHTON TO PONTIAC (SYMBOL ANC)
	1964	1: 6000	PAN	STEREO	ISLAND LAKE RECREATION AREA, 7 SQ. MILES (DNR-PARKS)
	1964	1: 6000	PAN	STEREO	PINCKNEY RECREATION AREA (DNR-PARKS)
	1964	1: 7920	PAN	ABRAMS	PORTIONS OF COUNTY (SYMBOL BGA)
	1965	1: 9600	PAN	MDSHT	NORTHWESTERN HGWY EXT FROM ORCHARD LK RD TO US-23
	1966	1:12000	PAN	ABRAMS	SECTIONS IN COUNTY (SYMBOL BTO)
	1967	1:12000	PAN	ABRAMS	GREEN OAK TWP. (SYMBOL CCI, ALSO SCALE: 1:30000)
	1969	1: 7920	PAN	ABRAMS	TYRONE TWP. (SYMBOL CMS)
	1969	1: 7920	PAN	ABRAMS	PART OF GENOA TWP. (SYMBOL CNJ)
	1969	1: 9600	PAN	MDSHT	I-96, FROM KENSINGTON ROAD TO OAKLAND CO LINE
	1970	1: 7920	PAN	ABRAMS	NW 1/4, SECTION 8, TYRONE TWP. (SYMBOL CWE)
	1970	1:12000	PAN	ABRAMS	PART OF GREEN OAK TWP. (SYMBOL DBT)
	1971	1: 3960	PAN	ABRAMS	PART OF OSCEOLA TWP. (SYMBOL DNF)
	1971	1: 7920	PAN	ABRAMS	PART OF BRIGHTON TWP. (SYMBOL DNE)
	1972	VARIES	BWIR	ERIM	E. BORDER (MSN, 63M,ALSO 70 MM CIR/COL,1 FLT. LINES)
	1972	VARIES	PAN	ERIM	E. BORDER (MSN, 65M,ALSO 70 MM CIR/COL,1 FLT. LINE)
	1972	1: 3960	PAN	ABRAMS	CITY OF BRIGHTON (SYMBOL EQT)
	1972	1: 7920	PAN	ABRAMS	PART OF BRIGHTON TWP. (SYMBOL DYV)
	1972	1: 7920	PAN	ABRAMS	PART OF HOWELL TWP. (SYMBOL DRF)
	1972	1: 7920	PAN	ABRAMS	PARTS OF SECS. 26 AND 27, HARTLAND TWP. (SYMBOL DYU)
	1972	1:12000	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DYW)
	1972	1:12000	PAN	ABRAMS	PART OF BRIGHTON TWP. (SYMBOL DQV)
	1973	1: 3000	PAN	MDSHT	M-59, FROM US-23 TO WILLIAMS LAKE ROAD (NO 47-704)
	1973	1: 3960	PAN	ABRAMS	CITY OF FOWLERVILLE (SYMBOL DZZ)
	1973	1: 3960	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL ECM)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
LIVINGSTON	1973	1: 7920	PAN	ABRAMS	PART OF BRIGHTON TWP. (SYMBOL EDU)
	1973	1:10000	BWIR	ERIM	E. BORDER (MSN. 82M,ALSO 70 MM CIR/COL,1 FLT. LINE)
	1973	1:18000	PAN	ABRAMS	PART OF GREEN OAK TWP. (SYMBOL EID)
	1974	1: 3960	PAN	ABRAMS	CITY OF BRIGHTON (SYMBOL DQT)
	1974	1: 4800	PAN	ABRAMS	VILLAGE OF HAMBURG (SYMBOL EQD)
	1974	1:12000	PAN	ABRAMS	SITES IN COUNTY (SYMBOL EQH, ALSO SCALE: 1:7920)
	1975	1:12000	PAN	ABRAMS	PART OF GREEN OAK TWP. (SYMBOL EYB)
	1976	1: 3000	PAN	MDSHT	STRIPS ALONG M-59 FROM PONTIAC TO US-23 (SYMBOL FBP)
	1976	1: 7920	PAN	ABRAMS	AREA NEAR HOWELL (SYMBOL FCQ)
	1976	1:12000	PAN	ABRAMS	SECTIONS IN COUNTY (SYMBOL FBY)
LUCE	1962	UNKNOWN	COL	DNR	BLIND SUCKER FLOOD., 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1964	1:15840	PAN	ABRAMS	FOREST COVER (DNR-ENG)
	1969	1:12000	PAN	ABRAMS	PIPELINE FROM ENGADINE TO NEWBERRY (SYMBOL CQU)
	1974	UNKNOWN	PAN	ERIM	FROM SAULT STE MARIE TO GRAND MARAIS (SCANNERS)
	1974	1: 7920	PAN	ABRAMS	LAKEFIELD TWP. (SYMBOL EQL, ALSO SCALE: 1:3960)
	1974	1:10000	COL	ERIM	LAKE SUPERIOR SHORELINE (MSN. X252M, ALSO PAN,CIR)
	1976	1:12000	PAN	MDSHT	TWO STRIPS IN NEWBERRY AREA (SYMBOL FBG)
MACKINAC	1953	1: 4800	PAN	ABRAMS	CITY OF CEDARVILLE (PHOTO INDEX NO. 907)
	1962	UNKNOWN	COL	DNR	BLACK CR. FLOODING, 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1964	1: 3960	PAN	ABRAMS	VILLAGE OF CEDARVILLE (SYMBOL BDJ)
	1964	1:15840	PAN	ABRAMS	FOREST COVER (DNR-ENG)
	1966	1: 7920	PAN	ABRAMS	STRAITS STATE (DNR-PARKS)
	1967	1: 7920	PAN	ABRAMS	MACKINAC ISLAND (SYMBOL BYX)
	1967	1:12000	PAN	ABRAMS	MACKINAC ISLAND (SYMBOL BYX, ALSO SCALE: 1:15840)
	1969	1:12000	PAN	ABRAMS	PIPELINE FROM ENGADINE TO NEWBERRY (SYMBOL CQU)
	1971	1: 3960	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DKU)
	1971	1:12000	PAN	ABRAMS	PART OF MARQUETTE TWP. (SYMBOL DNX)
	1972	1: 7920	PAN	ABRAMS	PART OF NEWTON TWP. (SYMBOL DVV)
	1972	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DWG)
	1974	1: 3960	PAN	ABRAMS	PART OF MARQUETTE TWP. (SYMBOL ENP)
	1974	1:16000	COL	ERIM	LAKE MICHIGAN SHORELINE (MSN. X252M, ALSO PAN,CIR)
	1975	1: 3000	PAN	MDSHT	US-2 FROM SCHOOLCRAFT CO LINE TO ST IGNACE (NO 742)
	1976	1: 3000	PAN	MDSHT	STRIP FROM EPOUFETTE TO POINTE AUX CHENES (SYMBOL FAS)
	1976	1: 7920	PAN	ABRAMS	CITY OF ST. IGNACE (SYMBOL FDV, ALSO SCALE 1:3960)
	1976	1:20004	PAN	ABRAMS	CITY OF ST. IGNACE (SYMBOL FDV)
MACOMB	1941	UNKNOWN	PAN	DNR	SHORELINE (DNR-ENG) DETROIT EDISON
	1952	UNKNOWN	PAN	DNR	SHORELINE (DNR-ENG) DETROIT EDISON
	1954	1: 6000	PAN	ABRAMS	CITY OF ROMEO
	1954	1: 9600	PAN	DNR	HIGHWAYS (DNR-ENG)
	1955	1: 9600	PAN	DNR	HIGHWAYS (DNR-ENG)
	1957	1: 9600	PAN	ABRAMS	HIGHWAYS (DNR-ENG)
	1961	1: 3000	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL AOF)
	1961	1: 6000	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL AOF, ALSO SCALE: 1:3960)
	1961	1:15840	PAN	ABRAMS	CITY OF ST. CLAIR SHORES (SYMBOL ASO)
	1962	1:12000	PAN	ABRAMS	CITY OF CENTERLINE (SYMBOL AST)
	1963	1: 6000	PAN	ABRAMS	CITY OF UTICA (SYMBOL AZQ)
	1963	1:15840	PAN	ABRAMS	CITY OF WARREN (SYMBOL BCK)
	1963	1:19200	PAN	ABRAMS	AREA AROUND RICHMOND (SYMBOL AZM)
	1964	1: 3000	PAN	MDSHT	I-696, I-75 TO I-94 (FILE NO 50-420)
	1965	1: 3000	PAN	MDSHT	M-29, I-94 INTERCHANGE (FILE NO 50-490)
	1965	1: 4800	PAN	MDSHT	M-97, FROM 8 MILE TO 2 MILE ROAD (FILE NO 50-473)
	1965	1: 4800	PAN	MDSHT	MOUND ROAD, CANIFF ST TO M-53 (FILE NO 50-476)
	1965	1: 9600	PAN	MDSHT	M-29, NEW BALTIMORE BYPASS (FILE NO 50-451)
	1966	1: 3000	PAN	MDSHT	M-53, DAVISON HWY TO 18 MILE ROAD (FILE NO 50-508)
	1966	1:12000	PAN	ABRAMS	SECTIONS IN COUNTY (SYMBOL BTO)
	1967	UNKNOWN	PAN	ERIM	TOLEDO TO PORT HURON SHORELINE (BWIR, SCANNERS)
	1967	1: 3000	PAN	MDSHT	M-97, 8 MILE ROAD TO 15 MILE ROAD (FILE NO 50-550)
	1967	1: 4800	PAN	MDSHT	US-25, MT CLEMENS BRIDGE (FILE NO 50-565)
	1967	1: 4800	PAN	MDSHT	M-53, 16 MILE ROAD TO M-59 (FILE NO 50-545)
	1968	1: 3000	PAN	MDSHT	I-696, I-94 AND 11 MILE ROAD (FILE NO 50-571)
	1968	1: 3000	PAN	MDSHT	M-102, 8 MILE ROAD, GRATIOT TO KELLEY (FILE NO 50-579)
	1968	1: 3000	PAN	MDSHT	M-29, AT ST CLAIR SHORES (FILE NO 50-572)
	1968	1: 6000	PAN	ABRAMS	AREA IN WARREN (SYMBOL CJQ)
	1968	1: 7920	PAN	ABRAMS	IN CLINTON TWP. SOUTHWEST OF MT. CLEMENS (SYMBOL CFL)
	1969	1: 3000	PAN	MDSHT	M-29, BAKER ROAD EAST TO COUNTY LINE (FILE NO 50-595)
	1969	1: 3000	PAN	ABRAMS	CITY OF NEW BALTIMORE (SYMBOL CSI)
	1969	1: 3960	PAN	ABRAMS	AREA IN COUNTY (SYMBOL CRK)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
MACOMB	1969	1: 7920	PAN	ABRAMS	NORTH 1/2, SECTION 1, STERLING TWP. (SYMBOL CVL)
	1969	1: 7920	PAN	ABRAMS	CITY OF STERLING HEIGHTS (SYMBOL CPY)
	1969	1: 9600	PAN	MDSHT	M-59, RELOCATION IN COUNTY (FILE NO 50-621)
	1969	1:12000	PAN	ABRAMS	SHELBY AND CLINTON TWPS. (SYMBOL COL)
	1969	1:12000	PAN	ABRAMS	NORTH 1/2, SECTION 1, STERLING TWP. (SYMBOL CVL)
	1969	1:14400	PAN	MDSHT	M-53, RELOCATION FROM 24 MILE ROAD TO LAPEER CO LINE
	1969	1:15840	PAN	ABRAMS	CITY OF STERLING HEIGHTS (SYMBOL CPY)
	1970	1: 3000	PAN	MDSHT	US-25, MT CLEMENS (FILE NO 50-641)
	1970	1: 4800	PAN	ABRAMS	WASHINGTON TWP. (SYMBOL CWL, ALSO 1:3960)
	1970	1: 4800	PAN	ABRAMS	WASHINGTON TWP. (SYMBOL CWU)
	1970	1:12000	PAN	ABRAMS	AREA IN COUNTY (SYMBOL BBU)
	1971	1: 7920	PAN	ABRAMS	SITE IN MACOMB BASIN (SYMBOL DIG)
	1971	1: 7920	PAN	ABRAMS	SITES ON CLINTON RIVER, COON CREEK (SYMBOL DIG)
	1972	1: 3000	PAN	MDSHT	US-25, FROM 11 MILE TO 15 MILE ROAD (FILE NO 687)
	1972	1: 3960	PAN	ABRAMS	SHELBY TWP. (SYMBOL DTZ)
	1972	1: 3960	PAN	ABRAMS	CITY OF STERLING HEIGHTS (SYMBOL DZK)
	1972	1: 7920	PAN	ABRAMS	EAST 1/2, SECTION 7, BRUCE TWP. (SYMBOL DYX)
	1972	1: 7920	PAN	ABRAMS	BRIGHTON TWP. (SYMBOL DUA)
	1972	1: 7920	PAN	ABRAMS	PART OF SECTION 19, WASHINGTON TWP. (SYMBOL DYY)
	1972	1:12000	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DYW)
	1972	1:14400	PAN	MDSHT	M-59, RELOCATION FROM MOUND ROAD EAST TO I-94 (NO 691)
	1973	1: 3960	PAN	ABRAMS	CITY OF ST. CLAIR SHORES (SYMBOL EDD)
	1973	1: 3960	PAN	ABRAMS	CITY OF STERLING HEIGHTS (SYMBOL EBV)
	1973	1: 4800	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL EEC)
	1973	1: 7920	PAN	ABRAMS	CITY OF STERLING HEIGHTS (SYMBOL EBA, ALSO 1:15840)
	1973	1: 9600	PAN	MDSHT	I-94, AT SHOOK ROAD AND METROPOLITAN PARKWAY (NO 707)
	1973	1:24000	PAN	ABRAMS	PART OF CLINTON TWP. (SYMBOL EHA)
	1974	1: 3000	PAN	MDSHT	I-696, I-75 TO I-94 (FILE NO 719)
	1974	1: 7920	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL EMU)
	1974	1:10000	COL	EPIM	LAKE ST. CLAIR SHORELINE (MSN. X252M, ALSO PAN,CIR)
	1974	1:12000	PAN	ABRAMS	SITES IN COUNTY (SYMBOL EQH, ALSO SCALE: 1:7920)
	1975	1: 3000	PAN	MDSHT	M-102-75, FROM WEST OF GROESBECK TO EAST OF GRATIOT
	1975	1: 3000	PAN	MDSHT	M-53-75, 6 MILE ROAD TO M-59 (FILE NO 750)
	1975	1: 3000	PAN	MDSHT	M-53, RELOCATION FROM MOUND ROAD TO M-53 (FILE NO 724)
	1975	1: 4800	PAN	ABRAMS	STRIP ALONG I-96 (SYMBOL ESN)
	1975	1: 9600	PAN	MDSHT	M-53, WASHINGTON TOWN NORTH TO CO LINE (NO 738)
	1975	1:12000	PAN	ABRAMS	PART OF WASHINGTON TWP. (SYMBOL EYB)
	1976	1: 7920	PAN	ABRAMS	CLINTON RIVER PROJECT (SYMBOL FDZ)
	1976	1:12000	PAN	ABRAMS	CITY OF MADISON HEIGHTS (SYMBOL FBC, ALSO 1:24000)
	1976	1:12000	PAN	ABRAMS	CITIES OF WARREN AND ROYAL OAK (SYMBOL FBC)
	1976	1:24000	PAN	ABRAMS	CITIES OF WARREN AND ROYAL OAK (SYMBOL FBC)
MANISTEE	1968	1:12000	PAN	ABRAMS	SECTION IN FILER TWP. (SYMBOL CFC)
	1969	1: 7920	PAN	ABRAMS	BEAR CREEK AREA (SYMBOL CU8)
	1970	1: 7920	PAN	ABRAMS	PART OF SPRINGDALE TWP. (SYMBOL CZV)
	1973	VARIES	PAN	EPIM	TEST SITE (MSN. 85M,ALSO 70 MM CIR/COL)
	1973	1: 6000	PAN	COPES	PARTIAL SHORELINE
	1974	1: 3960	PAN	ABRAMS	AREA NEAR MANISTEE (SYMBOL ENJ)
	1974	1:16000	COL	EPIM	LAKE MICHIGAN SHORELINE (MSN. X252M, ALSO PAN,CIR, MSS)
	1975	1: 3960	PAN	ABRAMS	VILLAGE OF COPEMISH (SYMBOL EXD)
	1976	1: 7920	PAN	ABRAMS	PORTAGE LAKE HARBOR (SYMBOL FEJ)
MARQUETTE	1953	1: 6000	PAN	ABRAMS	HIGHWAYS (ONE-ENG)
	1954	1: 6000	PAN	ABRAMS	CITY OF NEGAUNEE (PHOTO INDEX NO. 1023)
	1960	1: 6000	PAN	ABRAMS	CITY OF ISHPEMING (SYMBOL ALP, PHOTO INDEX NO. 1699)
	1960	1: 7200	PAN	ABRAMS	CITY OF MARQUETTE
	1960	1: 7920	PAN	ABRAMS	VILLAGE OF REPUBLIC (SYMBOL AMN)
	1960	1:12000	PAN	ABRAMS	AREA IN COUNTY (SYMBOL AMY)
	1960	1:14400	PAN	ABRAMS	VILLAGE OF REPUBLIC (SYMBOL AMX)
	1963	1: 6000	PAN	ABRAMS	VAN RIPER STATE PARK (SYMBOL BAW, ALSO DNR PARKS)
	1963	1: 6000	PAN	ABRAMS	CITY OF MARQUETTE (SYMBOL BBO)
	1964	1:15840	PAN	ABRAMS	FOREST COVER (ONE-ENG)
	1966	1: 3000	PAN	MDSHT	PORTION OF NORTHERN MICHIGAN UNIVERSITY (FILE NO 524)
	1967	1: 4800	PAN	MDSHT	US-41 BYPASS, MARQUETTE (FILE NO 52-628)
	1968	1:12000	PAN	HURF	AREA BETWEEN ISHPEMING AND MARQUETTE (SYMBOL: BJM)
	1969	1:15840	PAN	ABRAMS	CITY OF ISHPEMING (SYMBOL CI8, ALSO SCALE: 1:7920)
	1969	1: 4800	PAN	MDSHT	US-41, FROM M-28 TO MARQUETTE BYPASS (FILE NO 52-614)
	1969	1: 6000	PAN	MDSHT	M-35, WEST OF PRINCETON TO EAST OF LITTLE LAKE
	1969	1: 6000	PAN	MDSHT	US-41, M-28 TO MARQUETTE BYPASS (FILE NO 52-629)
	1970	1:12000	PAN	HURF	HWYS. 95,41 REPUBLIC-CHAMPION-ISHPEMING (SYMBOL: CAH)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
MARQUETTE	1970	1:12000	PAN	HURC	PALMER CITY AREA (SYMBOL: CCP)
	1970	1:13200	PAN	HURC	PALMER-CASCADE MT. AREA (SYMBOL: CCO)
	1970	1:13200	PAN	HURC	MICHIGAMME STATE FOREST (SYMBOL: CCO)
	1970	1:15840	PAN	ABRAMS	SECTIONS IN COUNTY (SYMBOL DAL, ALSO SCALE: 1:7920)
	1970	1:15840	PAN	MDSHT	M-35, GWINN TO PALMER (FILE NO 52-651)
	1971	UNKNOWN	COL	DNR	S.E. CYPRESS SWAMP, 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1971	1: 3000	PAN	MDSHT	M-28 BR, ISHPEMING AND NEGAUNEE (FILE NO 52-677)
	1972	1: 3960	PAN	ABRAMS	AREA IN WEST BRANCH TWP. (SYMBOL DZJ)
	1972	1: 3960	PAN	ABRAMS	AREA SOUTH OF MARQUETTE (SYMBOL DZH)
	1972	1: 7920	PAN	ABRAMS	PART OF POWELL TWP. (SYMBOL DVW)
	1974	1: 3000	PAN	MDSHT	US-41, ONE MILE STRIP NEAR TEAL LAKE (FILE NO 52-722)
	1974	1:10000	COL	EPIM	LAKE SUPERIOR SHORELINE (MSN. X252M, ALSO PAN,CIR,MSS)
	1975	1: 3960	PAN	ABRAMS	MARQUETTE TWP. (SYMBOL EVL)
	1975	1: 7920	PAN	ABRAMS	PART OF MARQUETTE TWP. (SYMBOL EWX)
	1975	1:12000	PAN	ABRAMS	PART OF CHOCLAY TWP. (SYMBOL EWV)
	1976	1: 3000	PAN	MDSHT	STRIPS ALONG US-41 AND 28, MARQUETTE TO NEGAUNEE
	1976	1:12000	PAN	ABRAMS	AREA IN COUNTY (SYMBOL FDS)
MASON	1961	1: 7920	PAN	ABRAMS	CITY OF LUDINGTON (SYMBOL APY)
	1964	1: 6000	PAN	STEREO	LUDINGTON STATE PARK, 6 SQ. MILES (DNR-PARKS)
	1965	1:14400	PAN	MDSHT	US-31, WHITEHALL TO LUDINGTON (FILE NO 467)
	1967	1:12000	PAN	MDSHT	US-31, LUDINGTON (FILE NO 53-547)
	1968	1: 3600	PAN	MDSHT	US-31, THROUGH COUNTY (FILE NO 53-585)
	1968	1:19200	PAN	ABRAMS	STRIP FROM LUDINGTON TO REED CITY (SYMBOL CCZ)
	1969	1: 7920	PAN	ABRAMS	CITY OF LUDINGTON (SYMBOL CNL)
	1969	1: 7920	PAN	ABRAMS	PART OF SECTION 10, T.19N., R.18W. (SYMBOL CU7)
	1970	1: 3960	PAN	ABRAMS	LUDINGTON SHORELINE (SYMBOL CZX)
	1970	1: 6000	PAN	ABRAMS	LUDINGTON SHORELINE (SYMBOL DBB, ALSO SCALE: 1:3960)
	1970	1: 6000	PAN	ABRAMS	PART OF PERRY MARQUETTE TWP. (SYMBOL DAY)
	1970	1: 7920	PAN	ABRAMS	PART OF VICTORY TWP. (SYMBOL CZW)
	1970	1:12000	PAN	ABRAMS	LUDINGTON SHORELINE (SYMBOL DBR, ALSO SCALE: 1:7920)
	1971	1: 3960	PAN	ABRAMS	LUDINGTON SHORELINE (SYMBOL DIT)
	1971	1: 3960	PAN	ABRAMS	CITY OF LUDINGTON (SYMBOL DNC)
	1972	1: 7920	PAN	ABRAMS	PART OF CUSTER TWP. (SYMBOL DUD, ALSO SCALE: 1:12000)
	1972	1:15840	PAN	ABRAMS	EDEN TWP. (SYMBOL DUB)
	1973	1: 4800	PAN	ABRAMS	VICINITY OF SCOTTSVILLE (SYMBOL EBI)
	1973	1: 6000	PAN	CORPS	PARTIAL SHORELINE
	1973	1:24000	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL EFV)
	1974	1:10000	COL	EPIM	LAKE MICHIGAN SHORELINE (MSN. X252M, ALSO PAN,CIR,MSS)
	1975	1: 3000	PAN	MDSHT	US-31, OCEANA COUNTY LINE TO LUDINGTON (NO 53-726)
	1975	1: 7920	PAN	ABRAMS	PART OF SECTION 4, VEVAY TWP. (SYMBOL EUC)
	1976	1: 6000	PAN	MDSHT	SHORT STRIP ALONG M-35 NEAR GWINN (SYMBOL FBB)
MECOSTA	1954	1: 6000	PAN	ABRAMS	CITY OF BIG RAPIDS (PHOTO INDEX NO. 1001)
	1954	1: 6000	PAN	ABRAMS	HIGHWAYS (DNP-ENG)
	1962	UNKNOWN	COL	DNR	FEATHER BED FLOODING, 35 MM. LOW OBLIQUE (DNR-WILDLIFE)
	1962	UNKNOWN	COL	DNR	PICKEREL CR. FLOOD., 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1962	UNKNOWN	COL	DNR	HAYMARSH LAKE, 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1962	UNKNOWN	COL	DNR	LITTLEJOHN FLOODING, 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1962	UNKNOWN	COL	DNR	MARTINY LAKES, 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1965	1: 6000	PAN	MDSHT	M-66, SIX LAKES TO REMUS (FILE NO 54-485)
	1965	1: 9600	PAN	MDSHT	M-20, M-66 TO DEERFIELD CENTER (FILE NO 54-479)
	1966	1:14400	PAN	MDSHT	M-20, WHITE CLOUD TO REMUS (FILE NO 534)
	1966	1:14400	PAN	ABRAMS	STRIP FROM WHITE CLOUD TO REMUS (SYMBOL BVR)
	1967	1: 3000	PAN	MDSHT	M-20, M-66 EAST TO COUNTY LINE (FILE NO 54-540)
	1968	1: 9600	PAN	MDSHT	M-20, AT BIG RAPIDS (FILE NO 54-586)
	1968	1: 9600	PAN	MDSHT	US-131, RELOCATION AT BIG RAPIDS (FILE NO 54-589)
	1969	1: 7920	PAN	ABRAMS	AREAS IN MORTON TWP. (SYMBOL CVW)
	1969	1: 7920	PAN	ABRAMS	PART OF GRANT TWP. (SYMBOL CUY)
	1970	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DCX)
	1970	1:14400	PAN	ABRAMS	MUSKEGON RIVER FROM NEWAYGO TO BIG RAPIDS (SYMBOL CSY)
	1970	1:15840	PAN	ABRAMS	MUSKEGON RIVER FROM NEWAYGO TO BIG RAPIDS (SYMBOL CSY)
	1971	1: 7920	PAN	ABRAMS	AREA IN GRAND TWP. (SYMBOL DIL)
	1971	1: 7920	PAN	ABRAMS	PART OF MORTON AND AUSTIN TWPS. (SYMBOL DKC)
	1971	1: 9600	PAN	MDSHT	US-131, 5 MILE ROAD NORTH TO STATE LINE (FILE NO 676)
	1971	1:12000	PAN	MDSHT	US-131, RELOCATION, MORLEY NORTH TO ASHTON (NO 684)
	1972	1: 6000	PAN	MDSHT	US-131, EDGAR ROAD NORTH TO 19 MILE ROAD (NO 685)
	1972	1: 7920	PAN	ABRAMS	PART OF COUNTY (SYMBOL DYB)
	1972	1:14400	PAN	ABRAMS	PART OF AUSTIN TWP. (SYMBOL DPC)
	1973	1: 6000	PAN	MDSHT	US-131, CROSS FLIGHTS, EDGAR ROAD TO 19 MILE ROAD

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
MECOSTA	1974	1: 3960	PAN	ABRAMS	CITY OF BIG RAPIDS (SYMBOL EOG)
	1974	1: 7920	PAN	ABRAMS	LOST CANYON NUMBER TWO, MECOSTA (SYMBOL EMP)
	1975	1: 3000	PAN	MDSHT	M-20, BRIDGE SITE IN BIG RAPIDS (FILE NO 728)
	1975	1: 6000	PAN	MDSHT	US-131, 11 MILE ROAD TO 19 MILE ROAD (FILE NO 727)
	1975	1: 6000	PAN	MDSHT	M-66, SIX LAKES TO REMUS (FILE NO 741)
	1976	1: 6000	PAN	MDSHT	STRIP ALONG US-131, NORTH OF REED CITY TO BIG RAPIDS
	1976	1: 7920	PAN	ABRAMS	CITY OF BIG RAPIDS (SYMBOL FCZ)
MENOMINEE	1962	UNKNOWN	COL	DNR	HAYWARD LAKES, 35 MM, LOW OBLIQUES (DNR-WILDLIFE)
	1968	UNKNOWN	COL	DNR	HAYWARD LAKE AREA, 35 MM, LOW OBLIQUES (DNR-WILDLIFE)
	1969	1: 7920	PAN	ABRAMS	NORTH 1/2, SECTION 19, LAKE TWP. (SYMBOL CQT)
	1970	1: 6000	PAN	HURD	MENOMINEE CITY AREA, ALSO 1:12000(SYMBOL: BZX)
	1971	1: 3960	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DNB)
	1973	1:15840	BWIP	HURD	MENOMINEE RIVER AREA (SYMBOL: DCC)
	1974	1:10000	COL	ERIM	LAKE MICHIGAN SHORELINE (MSN, X252M, ALSO PAN,CIR,MSS)
	1976	1: 6000	PAN	MDSHT	STRIP ALONG US-2 (SYMBOL FAO)
MIDLAND	1962	UNKNOWN	COL	DNR	KAWKAWLIN FLOODING, 35 MM, LOW OBLIQUES (DNR-WILDLIFE)
	1962	1: 9600	PAN	ABRAMS	MIDLAND TWP. (SYMBOL AUB)
	1966	1:19200	PAN	ABRAMS	MIDLAND TWP. (SYMBOL BTE, ALSO SCALE: 1:9600)
	1967	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL BYB)
	1968	1: 7920	PAN	ABRAMS	CITY OF MIDLAND (SYMBOL CKF, ALSO SCALE: 1:3960)
	1970	1: 3000	PAN	MDSHT	M-20, FROM MERIDIAN ROAD TO US-10 (FILE NO 56-655)
	1971	1: 4800	PAN	MDSHT	US-10, MIDLAND BYPASS AREA (FILE NO 56-669)
	1972	1: 2400	PAN	ABRAMS	CITY OF MIDLAND (SYMBOL DVK)
	1972	1: 3960	PAN	ABRAMS	ROAD SITES IN COUNTY (SYMBOL DVS)
	1972	1: 7920	PAN	ABRAMS	PARK SITES IN COUNTY (SYMBOL DYP)
	1972	1: 7920	PAN	ABRAMS	CITY OF MIDLAND (SYMBOL DVK, ALSO SCALE: 1:3960)
	1974	1: 2400	PAN	ABRAMS	CITY OF MIDLAND (SYMBOL ECO)
	1974	1:15840	PAN	DNR	TOPO MAPS
	1975	UNKNOWN	PAN	ABRAMS	CITY OF MIDLAND (SYMBOL ETF)
	1975	1: 7920	PAN	ABRAMS	INGERSOLL TWP. (SYMBOL ESE)
MISSAUKEE	1962	UNKNOWN	COL	DNR	CANNON CR. FLOODING, 35 MM, LOW OBLIQUES (DNR-WILDLIFE)
	1966	1: 3000	PAN	MDSHT	M-55, CADILLAC TO M-66 (FILE NO 57-492)
	1968	1:15840	PAN	ABRAMS	FOREST COVER (DNR-ENG)
	1969	1: 7920	PAN	ABRAMS	SECTION 20, CLAM UNION TWP. (SYMBOL CYC)
	1970	1: 7920	PAN	ABRAMS	LAKE MISSAULKE AND VICINITY (SYMBOL DDZ, ALSO 1:36000)
	1970	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DDX)
	1972	1: 2496	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DXN)
	1972	1:20004	PAN	ABRAMS	STRIP FROM KALKASKA TO MECOSTA COUNTY (SYMBOL DVY)
	1974	1: 6000	PAN	ABRAMS	SECTION 34, LAKE TWP. (SYMBOL EOP)
	1976	1: 4800	PAN	ABRAMS	VILLAGE OF MCBAIN (SYMBOL FDU)
MONROE	1961	UNKNOWN	PAN	DNR	SWAN CREEK MARSH, 35 MM, LOW OBLIQUES (DNR-WILDLIFE)
	1961	UNKNOWN	PAN	DNR	MONROE MARSH, 35 MM, LOW OBLIQUES (DNR-WILDLIFE)
	1961	UNKNOWN	COL	DNR	PTE. MOUILLEE AREA, 35 MM, LOW OBLIQUE (DNR-WILDLIFE)
	1961	1:14400	PAN	MDSHT	WHITEFORD, BEDFORD AND ERIE TWPS (FILE NO 58-404)
	1963	1: 7920	PAN	ABRAMS	CITY OF TEMPERANCE (SYMBOL AZD)
	1964	UNKNOWN	COL	DNR	PTE. MOUILLEE AREA, 35 MM, LOW OBLIQUE (DNR-WILDLIFE)
	1964	1: 3000	PAN	MDSHT	I-275, I-94 TO I-96 (FILE NO 58-419)
	1964	1: 9600	PAN	MDSHT	US-223 AND M-151, IN COUNTY (FILE NO 58-415)
	1964	1: 9600	PAN	MDSHT	I-75, FROM STATE LINE TO I-275 (FILE NO 58-394)
	1964	1: 9600	PAN	MDSHT	I-75, IN COUNTY (FILE NO 58-421)
	1965	1: 3000	PAN	MDSHT	US-23 AND M-151, INTERCHANGE (FILE NO 58-466)
	1965	1: 3000	PAN	MDSHT	I-75, OHIO LINE TO SIBLEY ROAD (FILE NO 58-449)
	1966	UNKNOWN	PAN	ERIM	PEACH ISLAND TO MONROE (MULTIBAND, SCANNERS ALT: 2000)
	1966	UNKNOWN	PAN	ERIM	PEACH ISLAND TO LUNAR PIER (MULTIBAND SCANNERS)
	1966	UNKNOWN	PAN	ERIM	GIBRALTER TO OHIO (MULTIBAND, SCANNERS ALT: 2000FT)
	1966	1: 7920	PAN	ABRAMS	CITY OF MONROE (SYMBOL BRA)
	1967	UNKNOWN	PAN	ERIM	TOLEDO TO PORT HURON SHORELINE (BWIP, SCANNERS)
	1967	1: 3960	PAN	ABRAMS	BLAKELY AND BROWNSTOWN DRAINS (SYMBOL CCU)
	1968	1: 7920	PAN	ABRAMS	MONROE AREA (SYMBOL CIL, ALSO SCALES: 1:3960, 1:6000)
	1969	UNKNOWN	PAN	ERIM	SIX MILES ALONG THE RAISIN RIVER (MULTIBAND, SCANNERS)
	1969	1:12000	PAN	ABRAMS	ASH AND BEPLIN TWPS. (SYMBOL COL)
	1969	1:15840	PAN	ABRAMS	AREA NEAR DUNDEE (SYMBOL CPR, ALSO SCALE: 1:7920)
	1970	UNKNOWN	PAN	ERIM	MONROE POWER PLANT (SCANNERS, ALT: 5000FT)
	1971	1: 7920	PAN	ABRAMS	PART OF ERIE TWP. (SYMBOL DLR)
	1971	1:15840	PAN	ABRAMS	AREA IN SOUTHERN PART OF COUNTY (SYMBOL DOD)
	1972	UNKNOWN	PAN	ERIM	ENRICO FERMI PLANT (MULTIBAND, SCANNERS ALT: 5000FT)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
MONROE	1972	UNKNOWN	PAN	ERIM	DETROIT EDISON PLANT ON RAISIN RIVER (ALT: 5000FT)
	1972	UNKNOWN	PAN	ERIM	PLUME OF RAISIN RIVER (MULTIBAND, SCANNERS ALT: 5000)
	1972	UNKNOWN	PAN	ERIM	POINTE MOUILLEE (SCANNERS, MULTIBAND, ALT: 2000FT)
	1972	1: 4000	CIR	ERIM	PTE. MOUILLEE (MSN. 63M, ALSO SCALE: 1:4000, 70MM BW)
	1972	1: 7920	PAN	ABRAMS	NEAR MONROE (SYMBOL DXE)
	1972	1: 8000	CIR	MSU/RSP	PTE. MOUILLEE AREA (ALSO SCALE OF 1:4000)
	1973	UNKNOWN	PAN	ERIM	POINTE MOUILLEE, MONROE (MULTIBAND, SCANNERS)
	1973	UNKNOWN	PAN	ERIM	MONROE CO FLOODING (MULTIBAND, SCANNERS ALT: 10000FT)
	1973	1: 6000	PAN	MDSHT	M-151, US-223 TO US-23, FILE NO 58-699)
	1973	1: 7920	PAN	ABRAMS	AREA SOUTH OF MONROE (SYMBOL EAW, ALSO SCALE: 1:3960)
	1974	1: 3000	PAN	MDSHT	M-50, TELEGRAPH TO I-75, MONROE AREA (FILE NO 714)
	1974	1:10000	COL	ERIM	LAKE ERIE SHORELINE (MSN. 252M, ALSO PAN,CIR)
	1974	1:12000	PAN	ABRAMS	PART OF ERIE TWP. (SYMBOL EPT, ALSO SCALE: 1:7920)
	1975	1: 4800	PAN	ABRAMS	MILAN TWP. (SYMBOL ESH)
	1975	1:24000	PAN	ABRAMS	CITY OF MONROE (SYMBOL ERC, ALSO SCALE: 1:7920)
	1976	1: 7920	PAN	ABRAMS	CITY OF MONROE (SYMBOL FCM, ALSO SCALE: 1:3960)
	1976	1: 7920	PAN	ABRAMS	MONROE HARBOR (SYMBOL FEJ)
	1976	1:12000	PAN	ERIM	ONE STRIP IN DETROIT EDISON PLANT AREA (SYMBOL FCX)
MONTCALM	1961	1: 9600	PAN	ABRAMS	CITY OF GREENVILLE (SYMBOL ARF)
	1965	1: 6000	PAN	MDSHT	US-131, 14 MILE ROAD TO M-46 (FILE NO 59-486)
	1965	1: 6000	PAN	MDSHT	M-66, SIX LAKES TO REMUS (FILE NO 59-485)
	1966	1: 7920	PAN	ABRAMS	PART OF WINFIELD AND REYNOLDS TWPS. (SYMBOL BPT)
	1966	1: 7920	PAN	ABRAMS	STRIPS ALONG RAILROADS IN GREENVILLE (SYMBOL BSK)
	1969	1: 7920	PAN	ABRAMS	PART OF PIERSON TWP. (SYMBOL CNX)
	1971	1: 3960	PAN	ABRAMS	PART OF CRYSTAL AND EVERGREEN TWPS. (SYMBOL DGT)
	1971	1: 7920	PAN	ABRAMS	PART OF EUREKA TWP. (SYMBOL DMT)
	1971	1: 7920	PAN	ABRAMS	PART OF CATO TWP. (SYMBOL DG8)
	1971	1:12000	PAN	ABRAMS	SHERIDAN AND LAKE THIRTEEN AREA (SYMBOL DJP)
	1971	1:12000	PAN	MDSHT	US-131 RELOCATION, GATES ROAD TO MORELY AND ASHTON
	1971	1:15840	PAN	ABRAMS	SHERIDAN AND LAKE THIRTEEN AREA (SYMBOL DJP)
	1972	1: 6000	PAN	MDSHT	US-131, EDGAR ROAD TO 19 MILE ROAD (FILE NO 59-698)
	1973	1: 6000	PAN	MDSHT	US-131, CROSS FLIGHTS, EDGAR ROAD TO 19 MILE ROAD
	1975	1: 6000	PAN	MDSHT	M-66, SIX LAKES TO REMUS (FILE NO 741)
	1975	1:40000	COL	BENDIX	TOWNLINE LAKE AREA (LANDSAT PROJ. E2325)
	1976	1: 4800	PAN	ABRAMS	VILLAGE OF MCBRIDE (SYMBOL FDU)
MONTMORNCY	1962	UNKNOWN	COL	DNR	RAINEY RIVER FLOOD., 35 MM, LOW OBLIQUE (DNR-WILDLIFE)
	1964	1: 3000	PAN	MDSHT	M-32, ATLANTA TO HILLMAN (FILE NO 60-395)
	1966	1: 6000	PAN	MDSHT	M-32, GAYLORD TO ATLANTA (FILE NO 60-502)
	1966	1: 7920	PAN	ABRAMS	CLEAR LAKE STATE PARK, 1 SQ. MILE (DNR-PARKS)
	1968	1:15840	PAN	ABRAMS	FOREST COVER (DNR-ENG)
	1971	1: 7920	PAN	ABRAMS	PART OF ALBERT TWP. (SYMBOL DPS)
	1975	1:40000	COL	BENDIX	VALENTINE LAKE AREA (LANDSAT PROJ. E2325)
	1976	1:14400	CIR	MDSHT	FOUR FLIGHT LINES BETWEEN GAYLORD AND ATLANTA
MUSKEGON	1959	1: 6000	PAN	ABRAMS	CITY OF MUSKEGON
	1961	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL ASI)
	1961	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL AOZ, ALSO 1:15840)
	1962	1: 6000	PAN	ABRAMS	HOFFMASTER STATE PARK, 2 SQ. MILES (DNR-PARKS)
	1964	1:15840	PAN	ABRAMS	CITY OF MUSKEGON (SYMBOL BJM)
	1965	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL BLJ)
	1965	1:15840	PAN	ABRAMS	CITY OF MONTAGUE (SYMBOL BLI, ALSO SCALE: 1:7920)
	1965	1:15840	PAN	ABRAMS	SOUTH SHORE OF LAKE MUSKEGON (SYMBOL BKW)
	1966	1: 4800	PAN	ABRAMS	NORTON TWP. (SYMBOL BSJ)
	1966	1: 4800	PAN	MDSHT	I-96 BL, GETTY ST TO M-46 IN MUSKEGON (FILE NO 531)
	1966	1: 6000	PAN	STEREO	MUSKEGON STATE PARK, 2 SQ. MILES (DNR-PARKS)
	1966	1: 7920	PAN	ABRAMS	CITY OF MUSKEGON, BUSINESS DISTRICT (SYMBOL BRM)
	1966	1: 9600	PAN	MDSHT	M-46, MAPLE ISLAND ROAD TO RAVENNA ROAD (FILE NO 515)
	1966	1:14400	PAN	MDSHT	US-31, IN MUSKEGON COUNTY (FILE NO 496)
	1967	1: 7920	PAN	ABRAMS	SECTION IN COUNTY (SYMBOL CBT)
	1968	1: 3000	PAN	MDSHT	US-31 RELOCATION, IN NORTHERN PART OF COUNTY (NO 585)
	1968	1: 4800	PAN	ABRAMS	VILLAGE OF RAVENNA (SYMBOL CFQ)
	1969	1: 3000	PAN	MDSHT	US-31 BUSINESS ROUTE FROM WHITEHALL TO MONTAGUE
	1969	1:15840	PAN	ABRAMS	AREA IN MUSKEGON (SYMBOL CTM)
	1970	UNKNOWN	PAN	ERIM	MUSKEGON POWER PLANT AND PAPER MILL, MONTAGUE
	1970	1: 3960	PAN	ABRAMS	CITY OF WHITEHALL (SYMBOL DEQ)
	1970	1: 3960	PAN	ABRAMS	MUSKEGON AND VICINITY (SYMBOL DBS)
	1971	1:15840	PAN	ABRAMS	WETLAND AND GAME AREA (SYMBOL DPJ, ALSO SCALE: 1:7920)
	1972	UNKNOWN	PAN	ERIM	MUSKEGON RIVER PLUME (MULTIBAND, SCANNERS ALT: 5000FT)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
MUSKEGON	1972	1: 3000	PAN	MDSHT	M-120, CAUSEWAY TO RIVER ROAD IN MUSKEGON (NO 685)
	1972	1: 3000	PAN	MDSHT	M-37, STRUCTURE OVER C O RR SOUTH OF BAILEY
	1972	1: 9600	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DTM)
	1973	UNKNOWN	PAN	ERIM	MUSKEGON RIVER (MULTIBAND, SCANNERS ALT: 5000FT)
	1973	1: 6000	PAN	ABRAMS	AREA IN COUNTY (SYMBOL EGN)
	1973	1: 6000	PAN	CORPS	PARTIAL SHORELINE
	1973	1: 7920	PAN	ABRAMS	PART OF FRUITPORT TWP. (SYMBOL EEF)
	1973	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL EGN)
	1974	1: 6000	PAN	ABRAMS	CITY OF MUSKEGON HEIGHTS (SYMBOL EOQ)
	1974	1: 7920	PAN	STEREO	DUCK LAKE STATE PARK, (DNR-PARKS)
	1974	1: 7920	PAN	ABRAMS	PART OF MONTAGUE TWP. (SYMBOL ENS)
	1974	1:10000	COL	ERIM	LAKE MICHIGAN SHORELINE (MSN. X252M, ALSO PAN,CIR,MSS)
	1974	1:12000	PAN	ABRAMS	CITY OF MUSKEGON HEIGHTS (SYMBOL EOQ, ALSO 1:18000)
	1974	1:12000	PAN	ABRAMS	CITY OF MUSKEGON (SYMBOL EQF)
	1975	1:12000	PAN	ABRAMS	CITY OF MUSKEGON (SYMBOL EQE)
NEWAYGO	1955	1: 6000	PAN	ABRAMS	CITY OF FREMONT (PHOTO INDEX NO. 1110)
	1963	1: 7920	PAN	ABRAMS	VICINITY OF WHITE CLOUD (SYMBOL BAK)
	1964	1: 6000	PAN	STEREO	NEWAYGO STATE PARK, 6 SQ. MILES (DNR-PARKS)
	1964	1: 7920	PAN	ABRAMS	PART OF GOODWELL TWP. (SYMBOL BGI)
	1965	1: 7920	PAN	ABRAMS	CITY OF FREMONT (SYMBOL BOA)
	1966	1:14400	PAN	ABRAMS	STRIP FROM WHITE CLOUD TO REMUS (SYMBOL BVR)
	1966	1:14400	PAN	MDSHT	M-20, WHITE CLOUD TO REMUS (FILE NO 534)
	1968	1: 7920	PAN	ABRAMS	DENVER TWP. (SYMBOL CFU)
	1969	1: 7920	PAN	ABRAMS	BRIDGETON TWP. (SYMBOL CNY)
	1969	1: 9600	PAN	MDSHT	M-37, M-46 TO M-82 (FILE NC 610)
	1969	1: 9600	PAN	ABRAMS	CITY OF NEWAYGO (SYMBOL CSR)
	1970	1: 4800	PAN	ABRAMS	VILLAGE OF HESPERIA (SYMBOL DDC)
	1970	1: 7920	PAN	ABRAMS	PART OF CROTON TWP. (SYMBOL DCR)
	1970	1:14400	PAN	ABRAMS	MUSKEGON RIVER FROM NEWAYGO TO BIG RAPIDS (SYMBOL CSY)
	1970	1:15840	PAN	ABRAMS	MUSKEGON RIVER FROM NEWAYGO TO BIG RAPIDS (SYMBOL CSY)
	1975	1:40000	COL	BENDIX	FREMONT LAKE AREA (LANDSAT PROJ. E2325)
	1975	1: 3000	PAN	MDSHT	STRIPS NEAR M-37 BRIDGE SITE, NEWAYGO (SYMBOL FAJ)
OAKLAND	1953	1:12000	PAN	ABRAMS	CITY OF LAKE ORION
	1955	1: 9601	PAN	ABRAMS	HIGHWAYS (DNP-ENG)
	1957	1: 4801	PAN	ABRAMS	CITY OF PONTIAC (PHOTO INDEX NO. 1511)
	1957	1: 9900	PAN	ABRAMS	HIGHWAYS (DNP-ENG)
	1960	1: 9600	PAN	ABRAMS	STRIP FROM BRIGHTON TO PONTIAC (SYMBOL ANC)
	1961	1: 6000	PAN	STEREO	HOLLY RECREATION AREA, 6 SQ. MILES (DNR-PARKS)
	1961	1: 6000	PAN	STEREO	PROUD LAKE RECREATION AREA (DNR-PARKS)
	1961	1: 7920	PAN	ABRAMS	CITY OF PONTIAC (SYMBOL APC)
	1961	1:12000	PAN	ABRAMS	CITY OF BIRMINGHAM (SYMBOL ARS)
	1961	1:12000	PAN	ABRAMS	CITY OF SOUTHFIELD (SYMBOL ART)
	1961	1:15840	PAN	ABRAMS	CITY OF OXFORD (SYMBOL APU, ALSO SCALE: 1:7920)
	1961	1:15840	PAN	ABRAMS	CITY OF SOUTHFIELD (SYMBOL ASN)
	1962	1: 3960	PAN	ABRAMS	CITY OF PONTIAC (SYMBOL AUC)
	1962	1: 4800	PAN	ABRAMS	CITY OF FARMINGTON (SYMBOL ATO)
	1962	1: 6000	PAN	ABRAMS	RECREATION AREAS (SYMBOL AYJ)
	1962	1: 6000	PAN	STEREO	PROUD LAKE RECREATION AREA (DNR-PARKS)
	1962	1: 7920	PAN	ABRAMS	VILLAGE OF KEEGO HARBOR (SYMBOL AUR)
	1962	1: 7920	PAN	ABRAMS	CITY OF BLOOMFIELD HILLS (SYMBOL AUS)
	1962	1: 7920	PAN	ABRAMS	CITY OF TROY (SYMBOL AXF)
	1963	1: 6000	PAN	STEREO	PROUD LAKE RECREATION AREA (DNR-PARKS)
	1963	1: 6000	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL BBD)
	1963	1: 6000	PAN	ABRAMS	PROUD LAKE (SYMBOL AZT)
	1963	1: 7920	PAN	ABRAMS	PART OF COUNTY (SYMBOL BBE)
	1963	1:19200	PAN	ABRAMS	AREA AROUND CLAWSON (SYMBOL AZM)
	1964	1: 3000	PAN	MDSHT	I-696, I-75 TO I-94 (FILE NO 63-420)
	1964	1: 3960	PAN	ABRAMS	CLINTON RIVER IN PONTIAC (SYMBOL BFW)
	1964	1: 4200	PAN	MDSHT	I-96, AT KENT LAKE (FILE NO 63-411)
	1964	1: 6000	PAN	MDSHT	M-24 AND I-75, INTERCHANGE AREA (FILE NO 63-428)
	1964	1: 6000	PAN	STEREO	ORTONVILLE RECREATION AREA, 2 SQ MILES (DNR-PARKS)
	1964	1: 6000	PAN	MDSHT	RACKHAM MUNICIPAL GOLF COURSE (FILE 63-416)
	1964	1:24000	PAN	ABRAMS	AREA IN COUNTY (SYMBOL BHI)
	1965	1: 3000	PAN	MDSHT	TELEGRAPH ROAD, US-10 TO I-75 INTERCHANGE (NO 63-447)
	1965	1: 3000	PAN	MDSHT	I-96, 5 MILE ROAD TO I-696 (FILE NO 63-464)
	1965	1: 3600	PAN	MDSHT	US-24 IN COUNTY (FILE NO 63-489)
	1965	1: 3600	PAN	MDSHT	TELEGRAPH ROAD, 11 MILE ROAD TO US-10 (FILE NO 63-483)
	1965	1: 6000	PAN	ABRAMS	VILLAGE OF WIXOM (SYMBOL BKU)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
OAKLAND	1965	1: 6000	PAN	MDSHT	I-96, BETWEEN 10 AND 12 MILE ROADS (FILE NO 63-429)
	1965	1: 9600	PAN	ABRAMS	VICINITY OF ROCHESTER (SYMBOL BPN)
	1965	1: 9600	PAN	MDSHT	I-696, FROM LASHER ROAD TO COOLIDGE ROAD (NO 63-444)
	1965	1:19200	PAN	ABRAMS	CITY OF SOUTHFIELD (SYMBOL BPA)
	1966	UNKNOWN	PAN	ABRAMS	CITY OF PONTIAC (SYMBOL BUJ)
	1966	1: 3000	PAN	MDSHT	I-696, NEAR FARMINGTON (FILE NO 63-493)
	1966	1: 3000	PAN	MDSHT	I-96 11 MILE ROAD TO 12 1/2 MILE ROAD (FILE NO 63-523)
	1966	1: 3000	PAN	MDSHT	I-696, LASHER ROAD TO I-75 INTERCHANGE (FILE NO 516)
	1966	1: 4800	PAN	MDSHT	WOODWARD AVE, M-102 TO 10 MILE ROAD (FILE NO 63-506)
	1966	1: 4800	PAN	MDSHT	US-10, M-102 TO SOUTH BLVD (FILE NO 63-506)
	1966	1: 6000	PAN	ABRAMS	AVON TWP. (SYMBOL BSC)
	1966	1: 7920	PAN	ABRAMS	SECTIONS 17 AND 20, SPRINGFIELD TWP. (SYMBOL BSY)
	1966	1: 7920	PAN	ABRAMS	SECTION IN PONTIAC TWP. (SYMBOL BSZ)
	1966	1: 7920	PAN	ABRAMS	SECTIONS IN LYONS TWP. (SYMBOL BVZ)
	1966	1: 7920	PAN	ABRAMS	BALD MT. RECREATION AREA, 4 SQ. MILES (ONR-PARKS)
	1966	1: 9600	PAN	MDSHT	I-96, SCHOOLCRAFT ROAD TO MEADOWBROOK AND NEWBERG ROAD
	1966	1:12000	PAN	ABRAMS	SECTIONS IN COUNTY (SYMBOL BTO)
	1966	1:19200	PAN	ABRAMS	CITY OF SOUTHFIELD (SYMBOL BTA)
	1967	1: 3000	PAN	MDSHT	NORTHWESTERN HIGHWAY (FILE NO 63-556)
	1967	1: 3000	PAN	MDSHT	I-275 EXT, 12 MILE ROAD TO OAKLEY PARK ROAD (NO 555)
	1967	1: 7920	PAN	ABRAMS	CITY OF TROY (SYMBOL CBR)
	1967	1: 7920	PAN	ABRAMS	PONTIAC TWP. (SYMBOL CAE)
	1967	1: 7920	PAN	ABRAMS	NEAR SOUTH LYONS (SYMBOL CAC)
	1967	1: 9600	PAN	MDSHT	I-96, WIXOM ROAD TO I-696 (FILE NO 63-556)
	1968	1: 3000	PAN	MDSHT	I-96 AND 10 MILE ROAD (FILE NO 63-570)
	1968	1: 3000	PAN	MDSHT	I-696, LASHER TO COOLIDGE ROAD (FILE NO 63-590)
	1968	1: 3000	PAN	MDSHT	I-75, ROCHESTER ROAD AND I-75 (FILE NO 63-567)
	1968	1: 3000	PAN	MDSHT	I-96 AND FARMINGTON ROAD (FILE NO 63-569)
	1968	1: 3000	PAN	MDSHT	I-96 AND MILFORD ROAD (FILE NO 63-568)
	1968	1: 3960	PAN	ABRAMS	CITY OF PONTIAC (SYMBOL CFJ)
	1968	1: 7920	PAN	ABRAMS	SECTIONS IN MILFORD TWP. (SYMBOL CEX)
	1968	1: 7920	PAN	ABRAMS	NOVI TWP. (SYMBOL CHF)
	1968	1: 7920	PAN	ABRAMS	FARMINGTON TWP. (SYMBOL CFM)
	1968	1: 7920	PAN	ABRAMS	BLOOMFIELD TWP. (SYMBOL CEE, ALSO SCALE: 1:15840)
	1968	1: 7920	PAN	ABRAMS	SECTION IN NOVI TWP. (SYMBOL CGH)
	1968	1: 7920	PAN	ABRAMS	BLOOMFIELD TWP. (SYMBOL CHE, ALSO SCALE: 1:12000)
	1969	1: 3000	PAN	MDSHT	M-59, FORD ROAD TO WILLIAMS LAKE ROAD (FILE NO 63-615)
	1969	1: 3960	PAN	ABRAMS	NE 1/4, SECTION 21, NOVI TWP. (SYMBOL CNP)
	1969	1: 7920	PAN	ABRAMS	SOUTH 1/2, SECTION 6, FARMINGTON TWP. (SYMBOL CTU)
	1969	1: 7920	PAN	ABRAMS	WEST BLOOMFIELD TWP. (SYMBOL CUJ)
	1969	1: 9600	PAN	MDSHT	I-96, FROM WEST CO LINE TO SOUTH HILL ROAD (NO 620)
	1969	1: 9600	PAN	ABRAMS	STRIP ALONG I-96 (SYMBOL CTO)
	1969	1:12000	PAN	ABRAMS	SOUTH 1/2, SECTION 6, FARMINGTON TWP. (SYMBOL CTU)
	1969	1:12000	PAN	ABRAMS	CITY OF PONTIAC (SYMBOL CGR, ALSO SCALE: 1:19200)
	1970	1: 3000	PAN	MDSHT	M-275, M-59 TO I-75 AT CLARKSTON (FILE NO 63-649)
	1970	1: 3000	PAN	MDSHT	I-96 AND NOVI ROAD INTERCHANGE (FILE NO 63-640)
	1970	1:12000	PAN	ABRAMS	PART OF OXFORD TWP. (SYMBOL DBT)
	1970	1:15840	PAN	ABRAMS	NOVI TWP. (SYMBOL CZZ, ALSO SCALE: 1:7920)
	1970	1:19920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DBU)
	1971	1: 3960	PAN	ABRAMS	SECTION 25, FARMINGTON TWP. (SYMBOL DGK)
	1971	1: 6000	PAN	ABRAMS	WEST BLOOMFIELD TWP. (SYMBOL DMI)
	1971	1: 6000	PAN	MDSHT	I-696, NORTHWESTERN AND TELEGRAPH ROAD INTERCHANGE
	1971	1: 7920	PAN	ABRAMS	PART OF PONTIAC TWP. (SYMBOL DKQ)
	1971	1: 7920	PAN	ABRAMS	PART OF OXFORD TWP. (SYMBOL DNG)
	1972	VARIES	CIR	MSU/RSP	PTE. MOUILLEE (35 MM OBLIQUE, ALSO 70 MM BW)
	1972	1: 3000	PAN	MDSHT	M-59, CASS LAKE ROAD TO US-10 (FILE NO 63-694)
	1972	1: 3960	PAN	ABRAMS	PARTS OF CITY OF SOUTHFIELD (SYMBOL DSU)
	1972	1: 3960	PAN	ABRAMS	PART OF SECTION 24, AVON TWP. (SYMBOL DSB)
	1972	1: 3960	PAN	ABRAMS	PARTS OF AVON, BRANDON, AND OXFORD TWPS. (SYMBOL DUN)
	1972	1: 3960	PAN	ABRAMS	PART OF NOVI TWP. (SYMBOL DRA)
	1972	1: 3960	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL DST)
	1972	1: 4800	PAN	ABRAMS	PART OF SECTION 21, ROSE TWP. (SYMBOL DYT)
	1972	1: 7920	PAN	ABRAMS	WEST BLOOMFIELD TWP. (SYMBOL DTA)
	1972	1: 7920	PAN	ABRAMS	PART OF BLOOMFIELD TWP. (SYMBOL DXA)
	1972	1: 8000	CIR	ERIM	PONTIAC AREA (MSN. 63M, ALSO SCALE: 1:4000, 70 MM BW)
	1972	1:12000	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DYW)
	1972	1:15840	PAN	ABRAMS	WEST BLOOMFIELD TWP. (SYMBOL DTA, ALSO SCALE: 1:3960)
	1972	1:24000	PAN	ABRAMS	PART OF COUNTY (SYMBOL DXB)
	1973	1: 3000	PAN	MDSHT	M-59, US-23 TO WILLIAMS LAKE ROAD (FILE NO 63-704)
	1973	1: 3960	PAN	ABRAMS	CITY OF PONTIAC (SYMBOL EAD)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
OAKLAND	1973	1: 6000	PAN	ABRAMS	GUN LAKE VICINITY (SYMBOL EGF)
	1973	1: 7920	PAN	ABRAMS	PART OF SECTION 29, AVON TWP. (SYMBOL EAA)
	1973	1: 7920	PAN	ABRAMS	AREA IN FARMINGTON (SYMBOL FAX, ALSO SCALE: 1:3960)
	1973	1: 7920	PAN	ABRAMS	PART OF COUNTY (SYMBOL EGB, ALSO SCALE: 1:3960)
	1973	1:12000	PAN	ABRAMS	OXFORD AREA (SYMBOL EII, ALSO SCALE: 1:7920)
	1974	1: 3000	PAN	MDSHT	I-696, GREENFIELD ROAD TO GRAND TRUNK RR (NO 63-709)
	1974	1: 3960	PAN	ABRAMS	PART OF COUNTY (SYMBOL EOU)
	1974	1: 7920	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL EMU)
	1974	1: 7920	PAN	ABRAMS	VICINITY OF OXFORD LAKE (SYMBOL EL7)
	1974	1:12000	PAN	ABRAMS	SITES IN COUNTY (SYMBOL EQH, ALSO SCALE: 1:7920)
	1974	1:12000	PAN	ABRAMS	PART OF OXFORD TWP. (SYMBOL EPK, ALSO SCALE: 1:6000)
	1974	1:12000	PAN	ABRAMS	AREA IN MILFORD TWP. (SYMBOL EMO)
	1974	1:15840	PAN	ABRAMS	CITY OF FARMINGTON (SYMBOL EQZ, ALSO SCALE: 1:7920)
	1974	1:24000	PAN	ABRAMS	PARTS OF AVON AND OAKLAND TWPS. (SYMBOL EMN)
	1975	1: 3000	PAN	MDSHT	I-75-M-275, DAVISBURG ROAD (FILE NO 754)
	1975	1: 3000	PAN	MDSHT	I-275, MICHIGAN AVE TO I-696 (FILE NO 733)
	1975	1: 3000	PAN	MDSHT	M-39, I-75 TO 12 MILE ROAD (FILE NO 757)
	1975	1: 3000	PAN	MDSHT	I-75, BIG BEAVER TO 16 MILE ROAD (FILE NO 747)
	1975	1: 3960	PAN	ABRAMS	PART OF A SECTION IN COUNTY (SYMBOL EVZ)
	1975	1: 3960	PAN	ABRAMS	VILLAGE OF NOVI (SYMBOL EVZ)
	1975	1: 7920	PAN	ABRAMS	CITY OF TROY (SYMBOL EUI, ALSO SCALE: 1:12000)
	1975	1: 9600	PAN	MDSHT	M-275 AND NORTHWESTERN HWY, I-96 TO M-59 (NO 731)
	1975	1:12000	PAN	ABRAMS	PONTIAC AND VICINITY (SYMBOL FXZ, ALSO SCALE: 1:24000)
	1975	1:12000	PAN	ABRAMS	PART OF OXFORD TWP. (SYMBOL EYB)
	1975	1:12000	PAN	ABRAMS	PART OF MILFORD TWP. (SYMBOL EYB)
	1975	1:15840	PAN	ABRAMS	CITY OF TROY (SYMBOL EUI)
	1975	1:20004	PAN	ABRAMS	CITY OF FARMINGTON (SYMBOL ESG)
	1976	1: 3000	PAN	ERIM	STRIPS ALONG US-24, SOUTHFIELD TO PONTIAC (SYMBOL FCL)
	1976	1: 3000	PAN	ERIM	STRIPS ALONG I-696, SOUTHFIELD TO HAZEL PARK
	1976	1: 3000	PAN	MDSHT	STRIPS ALONG M-59 FROM PONTIAC TO US-23 (SYMBOL FBP)
	1976	1: 3000	PAN	MDSHT	FARMINGTON AREA (SYMBOL FAB)
	1976	1: 6000	PAN	ERIM	STRIP ALONG ROCHESTER ROAD (SYMBOL FCR)
	1976	1: 7920	PAN	ABRAMS	NEAR HOLLY (SYMBOL FCP)
	1976	1: 9600	PAN	MDSHT	STRIP ALONG NOVI ROAD (SYMBOL FBF)
	1976	1:12000	PAN	ABRAMS	CITY OF BEVERLY (SYMBOL FCY, ALSO SCALE: 1:24000)
	1976	1:12000	PAN	ABRAMS	CITY OF FARMINGTON (SYMBOL FCY, ALSO SCALE: 1:24000)
	1976	1:15840	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL FON, ALSO SCALE: 1:7920)
	1976	1:36000	CIR	MDSHT	STRIP ALONG PROPOSED I-275
OCEANA	1961	1: 7200	PAN	ABRAMS	SILVER LAKE (SYMBOL AP7)
	1962	1: 6000	PAN	ABRAMS	MEARS STATE PARK, 150 ACRES (DNR-PARKS)
	1964	UNKNOWN	PAN	STEREO	SILVER LAKE STATE PARK, 7 SQ. MILES (DNR-PARKS)
	1965	1:14400	PAN	MDSHT	US-31, WHITEHALL TO LUDINGTON (FILE NO 467)
	1966	UNKNOWN	PAN	STEREO	SILVER LAKE STATE PARK, 7 SQ. MILES (DNR-PARKS)
	1966	1: 7920	PAN	ABRAMS	SECTIONS IN GOLDEN TWP. (SYMBOL BSU)
	1966	1:14400	PAN	MDSHT	US-31, IN COUNTY (FILE NO 496)
	1968	1: 3000	PAN	MDSHT	US-31, THROUGH COUNTY (FILE NO 585)
	1969	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DGP)
	1970	1: 7920	PAN	ABRAMS	PART OF SECTION 34, FERRY TWP. (SYMBOL DAX)
	1972	1: 6000	PAN	MDSHT	US-31, RELOCATION FROM BUCHANAN ROAD TO POLK ROAD
	1973	1: 6000	PAN	COPPS	PARTIAL SHORELINE
	1973	1: 7920	PAN	ABRAMS	PART OF SECTION 27, FERRY TWP. (SYMBOL EBB)
	1974	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL FOC)
	1974	1:10000	COL	ERIM	LAKE MICHIGAN SHORELINE (MSN. X252M, ALSO PAN,CIR,MSS)
	1975	1: 7920	PAN	ABRAMS	AREA IN COLFAX TWP. (SYMBOL EXH)
	1976	1: 7920	PAN	ABRAMS	PENTWATER HARBOR (SYMBOL FEJ)
OGEMAW	1963	1: 7920	PAN	ABRAMS	CHURCH AND MILLS TWP. (SYMBOL BBC)
	1964	1: 6000	PAN	STEREO	PIFLE RIVER RECREATION AREA, 7 SQ. MILES (DNR-PARKS)
	1964	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL BGU)
	1965	1: 6000	PAN	MDSHT	I-75, ALGER TO US-27 (FILE NO 65-452)
	1968	1:15840	PAN	ABRAMS	FOREST COVER (DNR-ENG)
	1971	1: 7920	PAN	ABRAMS	PART OF OGEMAW TWP. (SYMBOL DNT)
	1971	1:15840	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DIY, ALSO SCALE: 1:7920)
	1972	1: 6000	PAN	ABRAMS	WEST BRANCH AND OGEMAW TWP. (SYMBOL DTS)
	1972	1: 7920	PAN	ABRAMS	AREA IN HORTON AND MILLS TWP. (SYMBOL DWF)
	1973	1: 3960	PAN	ABRAMS	AREA IN CUMMING TWP. (SYMBOL EGV)
ONTONAGON	1946	1:12000	PAN	ABRAMS	HIGHWAYS (DNR-ENG)
	1954	1: 9600	PAN	ABRAMS	HIGHWAYS (DNR-ENG)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
ONTONAGON	1962	1: 7920	PAN	ABRAMS	VILLAGE OF ONTONAGON (SYMBOL AWL)
	1963	1: 7920	PAN	ABRAMS	VILLAGE OF ONTONAGON (SYMBOL BAS)
	1963	1: 9600	PAN	ABRAMS	STRIP COVERAGE IN COUNTY (SYMBOL BBV)
	1964	1: 7920	PAN	ABRAMS	VILLAGE OF ROCKLAND (SYMBOL BGF)
	1964	1:15840	PAN	ABRAMS	FOREST COVER (DNR-ENG)
	1965	1: 7920	PAN	ABRAMS	VICINITY OF ROCKLAND (SYMBOL BMJ)
	1966	1: 9600	PAN	MDSHT	M-26, GREENLAND TO ROLAND (FILE NO 66-522)
	1966	1:12000	PAN	HURD	N.E. BERGLAND,S.E. CARP L.,N.W. MATCHWOOD TWPS.(AST)
	1969	1:12000	PAN	HURD	N.E. CARP L.,W. ONTONAGON TWPS. (SYMBOL: BNV)
	1969	1: 9600	PAN	MDSHT	M-107, SILVER CITY (FILE NO 66-606)
	1969	1: 9600	PAN	ABRAMS	SILVER CITY (SYMBOL CPV)
	1969	1:12000	PAN	HURD	E. 1/3 CARP LAKE TOWNSHIP (SYMBOL: BUZ)
	1970	1:12000	PAN	HURD	S.E. CARP L.,W. ONTONAGON TWPS. (SYMBOL: CCN)
	1970	1:24000	PAN	HURD	LAKE SUPERIOR SHORELINE (SYMBOL: CAY)
	1971	UNKNOWN	COL	DNR	NW WHITE PINE AREA, 35 MM. LOW OBLIQUE (DNR-WILDLIFE)
	1971	1:12000	PAN	HURD	WHITE PINE-SILVER CITY AREA (SYMBOL: CLS)
	1972	1:12000	PAN	HURD	PINE RIVER AREA (SYMBOL: CVD)
	1973	UNKNOWN	COL	DNR	NW WHITE PINE AREA, 35 MM. LOW OBLIQUE (DNR-WILDLIFE)
	1973	1: 7920	PAN	STEREO	PORCUPINE MTS. STATE PARK (DNR-PARKS)
	1973	1:24000	PAN	HURD	WHITE PINE-SILVER CITY AREA (SYMBOL: DED)
	1974	1:10000	COL	ERIM	LAKE SUPERIOR SHORELINE (MSN. X252M, ALSO PAN,CIR,MSS)
OSCEOLA	1965	1: 7920	PAN	ABRAMS	CITY OF EVART (SYMBOL BOM)
	1966	1: 3000	PAN	MDSHT	M-61, M-115 TO HARRISON (FILE NO 18-512)
	1967	1: 7920	PAN	ABRAMS	MARION TWP. (SYMBOL BXK)
	1968	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL CGT)
	1968	1:19200	PAN	ABRAMS	STRIP FROM LUDINGTON TO REED CITY (SYMBOL CCZ)
	1969	1: 7920	PAN	ABRAMS	RIVER STRIP IN MIDDLE BRANCH TWP. (SYMBOL CSA)
	1969	1: 7920	PAN	ABRAMS	PART OF HERSHEY TWP. (SYMBOL CUV)
	1969	1: 7920	PAN	ABRAMS	CITY OF EVART (SYMBOL COM)
	1969	1: 7920	PAN	ABRAMS	AREA IN CEDAR TWP. (SYMBOL CVO)
	1970	1: 4800	PAN	ABRAMS	VILLAGE OF MARION (SYMBOL DDC)
	1970	1: 7920	PAN	ABRAMS	PART OF SHERMAN TWP. (SYMBOL DDB)
	1970	1: 7920	PAN	ABRAMS	NEAR HICKS LAKE, HARTWICK TWP. (SYMBOL BEE)
	1971	1: 7920	PAN	ABRAMS	AREAS IN HARTWICK TWP. (SYMBOL DHG)
	1971	1: 7920	PAN	ABRAMS	PART OF HARTWICK TWP. (SYMBOL DJG)
	1971	1: 7920	PAN	ABRAMS	AREA IN HERSHEY TWP. (SYMBOL DIL)
	1971	1: 9600	PAN	MDSHT	US-131, FROM MECOSTA CO LINE TO 4 MILE ROAD (NO 676)
	1971	1:12000	PAN	MDSHT	US-131, RELOCATION, MORLEY TO ASHTON (FILE NO 684)
	1972	1:20004	PAN	ABRAMS	STRIP FROM KALKASKA TO MECOSTA COUNTY (SYMBOL DVY)
	1973	1: 6000	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL EBN, ALSO SCALE: 1:7920)
	1973	1: 7920	PAN	ABRAMS	PART OF SECTION 12, RICHMOND TWP. (SYMBOL EBC)
	1973	1:12000	PAN	MDSHT	US-131, REFLIGHT FROM 20 MILE ROAD TO ASHTON (NO 694)
	1976	1: 6000	PAN	MDSHT	STRIP ALONG US-131, NORTH OF REED CITY TO BIG RAPIDS
	1976	1: 7200	PAN	MDSHT	STRIP ALONG US-131 NEAR TUSTIN (SYMBOL FBJ)
OSCODA	1963	1:19200	PAN	ABRAMS	AREA IN COUNTY (SYMBOL AZG)
	1968	1:15840	PAN	ABRAMS	FOREST COVER (DNR-ENG)
	1969	1: 4800	PAN	MDSHT	M-33, CROSSING AU SAUBLE RIVER AT MIO (FILE NO 68-687)
	1970	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL CZE)
	1974	1: 6000	PAN	ABRAMS	OSCODA TWP. (SYMBOL EQB, ALSO SCALE: 1:12000)
	1976	1: 3000	PAN	MDSHT	STRIP ALONG M-33 MIO BRIDGE SITE (SYMBOL FAK)
OTSEGO	1963	1:12000	PAN	ABRAMS	HAYES TWP. (SYMBOL BBB)
	1966	1: 6000	PAN	MDSHT	M-32, GAYLORD TO ATLANTA (FILE NO 69-502)
	1967	1:12000	PAN	MDSHT	M-32, M-66 TO GAYLORD (FILE NO 69-553)
	1967	1:14400	PAN	ABRAMS	GAYLORD AREA (SYMBOL CCM)
	1968	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL CHC)
	1968	1:15840	PAN	ABRAMS	FOREST COVER (DNR-ENG)
	1969	1: 7920	PAN	ABRAMS	OTSEGO LAKE AND GREENWOOD TWPS. (SYMBOL CTY)
	1969	1: 7920	PAN	ABRAMS	SE 1/4, SECTION 34, DOVER TWP, SYMBOL (CTZ)
	1971	1: 7920	PAN	ABRAMS	PART OF LIVINGSTON TWP. (SYMBOL DPT)
	1971	1:19200	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DIR)
	1972	1: 7920	PAN	ABRAMS	PART OF COPWITH AND LIVINGSTON TWPS. (SYMBOL DVR)
	1972	1: 7920	PAN	ABRAMS	PART OF HAYES TWP. (SYMBOL DVP)
	1972	1:14400	PAN	MDSHT	M-32, I-75 TO M-66 IN ANTRIM CO (FILE NO 693)
	1973	1: 3960	COL	ABRAMS	OTSEGO LAKE AREA (SYMBOL EGS)
	1973	1: 6000	PAN	ABRAMS	AREA IN COUNTY (SYMBOL ECU, ALSO SCALE: 1:7920)
	1973	1: 6000	PAN	ABRAMS	PART OF COPWITH TWP. (SYMBOL EBH)
	1973	1: 7920	PAN	ABRAMS	PARTS OF SECTIONS 30 AND 31, BAGELY TWP. (SYMBOL EBD)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
OTSEGO	1973	1: 7920	PAN	ABRAMS	PART OF BAGLY TWP. (SYMBOL EEE)
	1973	1:10320	PAN	ABRAMS	AREA IN COUNTY (SYMBOL FCU)
	1974	1: 3000	PAN	MDSHT	I-75, PEST AREA, WINTERS ROAD (FILE NO 710)
	1974	1: 3960	PAN	ABRAMS	BAGLEY TWP. (SYMBOL EQF, ALSO SCALES: 1:7920, 1:96000)
	1976	1: 6000	PAN	ABRAMS	OTSEGO LAKE AREA (SYMBOL FCN)
	1976	1:14400	CIR	MDSHT	FOUR FLIGHT LINES BETWEEN GAYLORD AND ATLANTA
OTTAWA	1955	1: 6000	PAN	ABRAMS	CITY OF GRAND HAVEN (PHOTO INDEX NO. 1997)
	1957	1: 9700	PAN	ABRAMS	HIGHWAYS (DNR-ENG)
	1959	1: 6000	PAN	ABRAMS	CITY OF HOLLAND (PHOTO INDEX NO. 1629)
	1959	1: 6000	PAN	ABRAMS	CITY OF GRANDVILLE (PHOTO INDEX NO. 1632)
	1961	1: 6000	PAN	ABRAMS	STRIP FROM GRANDVILLE TO HOLLAND (SYMBOL APU)
	1961	1: 9600	PAN	ABRAMS	CITY OF HOLLAND (SYMBOL AQO)
	1962	1: 6000	PAN	ABRAMS	CITY OF GRAND HAVEN (SYMBOL ATO)
	1962	1: 7920	PAN	ABRAMS	CITY OF GRAND HAVEN (SYMBOL AUA)
	1963	1:14400	PAN	ABRAMS	STRIP FROM GRAND RAPIDS TO HOLLAND (SYMBOL AZX)
	1964	1:24000	PAN	ABRAMS	AREA IN COUNTY (SYMBOL BHI)
	1965	1: 3000	PAN	MDSHT	I-96, HOLLAND TO GRANDVILLE (FILE NO 70-439)
	1965	1: 6000	PAN	MDSHT	US-31, HOLLAND (FILE NO 70-437)
	1965	1: 7920	PAN	ABRAMS	HOLLAND STATE PARK, 2 SQ. MILES (DNR-PARKS)
	1965	1: 7920	PAN	ABRAMS	GEORGETOWN TWP. (SYMBOL BKY)
	1965	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL BKK)
	1965	1:19200	PAN	ABRAMS	HOLLAND STATE PARK (SYMBOL BOZ)
	1966	1: 3000	PAN	MDSHT	US-31, BRIDGE IN HOLLAND (FILE NO 70-511)
	1966	1: 7920	PAN	ABRAMS	SPRING LAKE TWP. (SYMBOL BRR)
	1966	1: 7920	PAN	ABRAMS	HOLLAND STATE PARK (SYMBOL BOT)
	1967	1: 3960	PAN	ABRAMS	AREA IN HOLLAND (SYMBOL BYH)
	1967	1: 4800	PAN	ABRAMS	GEORGETOWN TWP. (SYMBOL CCP)
	1967	1:15840	PAN	ABRAMS	VILLAGE OF COOPERSVILLE (SYMBOL BXY, ALSO SCALE 1:7920
	1968	UNKNOWN	BWIR	ERIM	GRAND HAVEN HARBOR (COLOR, SCANNERS ALT: 2700FT)
	1968	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL CLP)
	1969	UNKNOWN	PAN	ERIM	SHORELINE NEAR GRAND HAVEN (MULTIBAND, SCANNERS)
	1969	1: 7920	PAN	ABRAMS	GRAND HAVEN AREA (SYMBOL CNI)
	1970	1: 4800	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL DEC)
	1970	1: 7920	PAN	ABRAMS	SITES IN HOLLAND AND GEORGETOWN TWPS. (SYMBOL DCV)
	1971	1: 3960	PAN	ABRAMS	SECTION 23, GRAND HAVEN TWP. (SYMBOL DGD)
	1971	1: 3960	PAN	ABRAMS	PART OF HOLLAND TWP. (SYMBOL DPO)
	1971	1: 3960	PAN	ABRAMS	PART OF HOLLAND TWP. (SYMBOL DGL)
	1971	1: 3960	PAN	ABRAMS	FERRYSBURG, GRAND HAVEN AREA (SYMBOL DIX)
	1971	1: 3960	PAN	ABRAMS	PART OF CROCKERY TWP. (SYMBOL DON)
	1971	1: 3960	PAN	ABRAMS	AREA NEAR GRAND HAVEN (SYMBOL DOW)
	1971	1: 7920	PAN	ABRAMS	TUNNEL PARK (SYMBOL DIU)
	1971	1: 7920	PAN	ABRAMS	PART OF GEORGETOWN TWP. (SYMBOL DOP)
	1972	1: 3960	PAN	ABRAMS	PART OF PARK TWP. (SYMBOL DVN)
	1972	1:15840	PAN	ABRAMS	CITY OF ZEELAND (SYMBOL DTI)
	1973	UNKNOWN	PAN	ERIM	GRAND RIVER (MULTIBAND, SCANNERS ALT: 5000FT)
	1973	1: 6000	PAN	CORPS	PARTIAL SHORELINE
	1973	1: 7920	PAN	ABRAMS	PART OF SPRING LAKE TWP. (SYMBOL EEF)
	1973	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL EGN)
	1974	1: 3960	PAN	ABRAMS	PART OF PARK TWP. (SYMBOL EML)
	1974	1: 7920	PAN	ABRAMS	PART OF WRIGHT TWP. (SYMBOL EMG)
	1974	1:10000	COL	ERIM	LAKE MICHIGAN SHORELINE (MSN. X252M, ALSO PAN,CIR,MSS)
	1975	1: 4800	PAN	ABRAMS	ALLENDALE AND PART OF TALLMADGE TWP. (SYMBOL FYG)
	1975	1: 6000	PAN	MDSHT	US-31-75, FROM HOLLAND TO GRAND HAVEN (FILE NO 752)
	1976	1: 3000	PAN	MDSHT	STRIP ALONG BUSINESS US-131, HOLLAND (SYMBOL FAI)
	1976	1: 7920	PAN	ABRAMS	HOLLAND HARBOR (SYMBOL FEJ)
	1976	1: 7920	PAN	ABRAMS	STRIP FROM GRAND HAVEN TO SAUGATUCK (SYMBOL FCS)
	1976	1:12000	PAN	ABRAMS	STRIP FROM GRAND HAVEN TO SAUGATUCK (SYMBOL FCS)
	1976	1:15840	PAN	ABRAMS	STRIP FROM GRAND HAVEN TO SAUGATUCK (SYMBOL FCS)
	1976	1:15840	PAN	ABRAMS	ZEELAND AREA (SYMBOL FBQ, ALSO SCALE: 1:7920)
PRESQ ISLE	1958	1:12000	PAN	ABRAMS	ROGERS CITY (PHOTO INDEX NO. 1515)
	1962	UNKNOWN	COL	DNR	TOMAHAWK CR. FLOOD., 35 MM. LOW OBLIQUE (DNR-WILDLIFE)
	1963	1:15840	PAN	ABRAMS	ROGERS CITY (SYMBOL BAV)
	1964	1: 3960	PAN	ABRAMS	ROGERS CITY (SYMBOL BOJ)
	1964	1:15840	PAN	ABRAMS	ROGERS CITY (SYMBOL BEX)
	1964	1:19200	PAN	ABRAMS	PIPELINE FROM ALPENA TO ROGERS CITY (SYMBOL BGE)
	1965	1: 9600	PAN	ABRAMS	ROGERS CITY (SYMBOL BLA)
	1965	1:12000	PAN	ABRAMS	ROGERS CITY (SYMBOL BJO, ALSO SCALE 1:3960)
	1965	1:15840	PAN	ABRAMS	QUARRY AREA, ROGERS CITY (SYMBOL BLD)

C-3

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
PPESQ ISLE	1966	1: 4800	PAN	MDSHT	M-68, COLLINS ROAD TO ONAWAY (FILE NO 528)
	1966	1: 7920	PAN	ABRAMS	ROGERS CITY (SYMBOL BPP)
	1966	1:15840	PAN	ABRAMS	QUARRY AREA, ROGERS CITY (SYMBOL BRQ)
	1967	1: 7920	PAN	ABRAMS	ROGERS CITY (SYMBOL CCO, ALSO SCALE: 1:3960)
	1967	1: 7920	PAN	ABRAMS	QUARRY AREA, ROGERS CITY (SYMBOL BYU, ALSO 1:15840)
	1969	1: 3960	PAN	ABRAMS	QUARRY AREA, ROGERS CITY (SYMBOL CEY, ALSO 1:7920)
	1968	1:15840	PAN	ABRAMS	FOREST COVER (DNR-ENG)
	1968	1:15840	PAN	ABRAMS	QUARRY AREA, ROGERS CITY (SYMBOL CEY)
	1971	1: 7920	PAN	ABRAMS	ALLIS AND CASE TWP. (SYMBOL DKY)
	1973	1: 6000	PAN	CORPS	PARTIAL SHORELINE
	1974	1:10000	COL	ERIM	LAKE HURON SHORELINE (MSN. X252M, ALSO PAN,CIR,MSS)
	1976	1: 3000	PAN	ERIM	STRIP IN ROGERS CITY BUSINESS LOOP (SYMBOL FCW)
POSCOMMON	1961	1: 4800	PAN	ABRAMS	STRIP ALONG I-75 NEAR HIGGINS LAKE (SYMBOL ARV)
	1961	1: 6000	COL	MDSHT	PROPOSED I-75, M-32 TO M-18 (FILE NO 72-337)
	1962	UNKNOWN	COL	DNR	DENTON CREEK, 35 MM. LOW OBLIQUE (DNR-WILDLIFE)
	1962	UNKNOWN	COL	DNR	MARSH CREEK, 35 MM. LOW OBLIQUE (DNR-WILDLIFE)
	1962	UNKNOWN	COL	DNR	BEAR CREEK, 35 MM. LOW OBLIQUE (DNR-WILDLIFE)
	1962	UNKNOWN	COL	DNR	LITTLE MUD LAKE, 35 MM. LOW OBLIQUE (DNR-WILDLIFE)
	1962	UNKNOWN	COL	DNR	BACKUS CREEK, 35 MM. LOW OBLIQUE (DNR-WILDLIFE)
	1962	UNKNOWN	COL	DNR	ROBINSON CREEK, 35 MM. LOW OBLIQUE (DNR-WILDLIFE)
	1962	UNKNOWN	COL	DNR	DEAD STREAM FLOODING, 35 MM. LOW OBLIQUE (DNR-WILDLIFE)
	1964	1: 6000	PAN	STEREO	N. HIGGINS LAKE STATE PARK, 2 SQ. MILES (DNR-PARKS)
	1964	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL BGU)
	1964	1: 7920	PAN	ABRAMS	PART OF ROSCOMMON (SYMBOL BFQ)
	1964	1:12000	PAN	MDSHT	I-75, ALGER TO SOUTH OF GRAYLING (FILE NO 72-387)
	1965	1: 6000	PAN	MDSHT	I-75, ALGER TO US-27 (FILE NO 72-452)
	1967	UNKNOWN	COL	DNR	PIKE MARSH, 35 MM. LOW OBLIQUE (DNR-WILDLIFE)
	1968	1: 6000	PAN	ABRAMS	N 1/2, SECTION 11, ROSCOMMON TWP. (SYMBOL CLO)
	1968	1: 7920	PAN	ABRAMS	AREA NEAR GLADWIN CO. (SYMBOL CFE)
	1968	1:15840	PAN	ABRAMS	FOREST COVER (DNR-ENG)
	1969	1: 3960	PAN	ABRAMS	AREA IN COUNTY (SYMBOL CPN)
	1969	1: 7920	PAN	ABRAMS	SECTION 33, DENTON TWP. (SYMBOL CQQ)
	1970	1: 4800	PAN	ABRAMS	AREA AROUND HOUGHTON LAKE (SYMBOL DAC)
	1972	1: 2495	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DXN)
	1973	1: 7920	PAN	ABRAMS	AREA AROUND HOUGHTON LAKE (SYMBOL EFR)
	1974	1: 3960	PAN	ABRAMS	AREA AROUND HOUGHTON LAKE (SYMBOL ENY)
	1974	1: 7920	PAN	ABRAMS	PART OF GERRISH TWP. (SYMBOL EMF)
	1975	1: 7920	PAN	MDSHT	HLSA-75, HOUGHTON LAKE STATE AIRPORT (FILE NO 755)
	1975	1:40000	COL	BENDIX	HOUGHTON-HIGGINS LAKES AREA (LANDSAT PROJ. E23325)
	1976	1: 4800	PAN	ABRAMS	VILLAGE OF HIGGINS LAKE (SYMBOL FDU)
SAGINAW	1956	1: 9600	PAN	ABRAMS	HIGHWAYS (DNR-ENG)
	1957	1: 8000	PAN	SCS	MISTEQUAY CREEK AREA (SYMBOL: MN-MC)
	1957	1: 9600	PAN	ABRAMS	HIGHWAYS (DNR-ENG)
	1958	1: 6000	PAN	ABRAMS	CITY OF FRANKENMUTH (PHOTO INDEX NO. 1513)
	1961	1: 7920	PAN	ABRAMS	VILLAGE OF FRANKENMUTH (SYMBOL ARR, ALSO 1:15840)
	1962	1: 3960	PAN	ABRAMS	CITY OF SAGINAW (SYMBOL AUD)
	1962	1: 9600	PAN	ABRAMS	STRIP ALONG I-675 AT SAGINAW (SYMBOL AUG)
	1962	1: 9600	PAN	ABRAMS	STRIP ALONG I-675 AT SAGINAW (SYMBOL ATC)
	1962	1: 9600	PAN	ABRAMS	CITY OF SAGINAW (SYMBOL ATU)
	1964	1: 3000	PAN	ABRAMS	SAGINAW BUSINESS LOOP (SYMBOL BGO)
	1965	1: 4800	PAN	MDSHT	M-13, M-81 TO I-75 (FILE NO 73-456)
	1965	1: 9600	PAN	MDSHT	M-83, M-54 TO FRANKENMUTH (FILE NO 73-474)
	1966	1:19200	PAN	ABRAMS	PIPELINE STRIP FROM ALMA TO BAY CITY (SYMBOL BQK)
	1967	1: 3960	PAN	MDSHT	M-54, GENESEE LINE TO M-83 (FILE NO 73-554)
	1967	1: 4800	PAN	MDSHT	I-75, GENESEE LINE TO SAGINAW AND KAWKAWLIN (NO 561)
	1970	UNKNOWN	PAN	DNR	SHIAWASSEE R. GAME AREA, 35 MM. OBLIQUES (DNR-WILDLIFE)
	1970	1: 3000	PAN	MDSHT	I-75, ZILWAUKEE BRIDGE (FILE NO 73-647)
	1971	1: 3960	PAN	ABRAMS	SAGINAW AREA (SYMBOL DNW)
	1971	1: 3960	PAN	ABRAMS	PART OF SECTION 6, SAGINAW TWP. (SYMBOL DMK)
	1971	1: 5400	PAN	SCS	UPPER MAPLE RIVER W/S (SYMBOL: MN-UM)
	1972	UNKNOWN	PAN	ERIM	SAGINAW RIVER (MULTIBAND, SCANNERS ALT: 1500FT)
	1972	1: 3960	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DZB)
	1972	1: 3960	PAN	ABRAMS	CITY OF ZILWAUKEE (SYMBOL DUJ, ALSO SCALE: 1:7920)
	1973	1: 6000	PAN	ABRAMS	CITY OF SAGINAW (SYMBOL EBI)
	1974	1: 3000	PAN	ABRAMS	CITY OF SAGINAW (SYMBOL ERI)
	1974	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL EQJ)
	1974	1:15840	PAN	DNR	TOPO MAPS (DNR-ENG)
	1975	1: 3000	PAN	MDSHT	I-75 AND HIGH LEVEL BRIDGE (FILE NO 735)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
ST. CLAIR	1957	1: 9600	PAN	ABRAMS	HIGHWAYS (DNR-ENG)
	1961	UNKNOWN	PAN	DNP	LAKE ST. CLAIR, 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1961	UNKNOWN	PAN	DNP	ST. CLAIR RIVER, 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1962	1: 3960	PAN	ABRAMS	CITY OF PORT HURON (SYMBOL ATY)
	1963	1: 9600	PAN	ABRAMS	VICINITY OF MARYSVILLE (SYMBOL BCH)
	1964	UNKNOWN	COL	DNP	ST. CLAIR FLATS AREA, 35 MM. LOW OBLIQUE (DNR-WILDLIFE)
	1964	1: 6000	PAN	STEREO	LAKEPORT STATE PARK, 1 SQ. MILE (DNR-PARKS)
	1964	1:12000	PAN	ABRAMS	CITY OF PORT HURON (SYMBOL BEZ)
	1968	1: 7920	PAN	ABRAMS	SECTIONS IN COUNTY (SYMBOL CDE)
	1970	1: 7920	PAN	ABRAMS	PORT HURON AND VICINITY (SYMBOL DDW)
	1972	1: 3000	PAN	MDSHT	US-25, SOUTH OF PORT SANILAC SHORE PROTECTION STUDY
	1972	1: 6000	PAN	MDSHT	M-53, SHABONA ROAD TO PRINGLE ROAD (FILE NO 590)
	1972	1: 7920	PAN	ABRAMS	COLUMBUS TWP. (SYMBOL DWA)
	1973	1: 6000	PAN	COPPS	PARTIAL SHORELINE
	1973	1: 7920	PAN	ABRAMS	PORT HURON AND VICINITY (SYMBOL EEO)
	1973	1:12000	PAN	ABRAMS	PART OF SECTION 32, KIMBALL TWP. (SYMBOL EHF)
	1973	1:15840	PAN	ABRAMS	PORT HURON AND VICINITY (SYMBOL EEO)
	1974	1:10000	COL	ERIM	ST. CLAIR RIVER, L HURON (MSN. X252M, ALSO PAN,CIR,MSS)
	1975	UNKNOWN	COL	DNP	ST. CLAIR MARSH, 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1975	UNKNOWN	COL	DNP	ST. JOHNS MARSH, 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1975	1: 7920	PAN	ABRAMS	CITY OF ALGONAC AND VICINITY (SYMBOL EXW)
	1976	1: 6000	PAN	ABRAMS	PART OF KIMBALL AND CLYDE TWPS. (SYMBOL FCJ)
	1976	1: 6000	PAN	ABRAMS	ST. JOHNS MARSH (SYMBOL FCO, ALSO 1:7920, 1:12000)
ST. JOSEPH	1961	1: 6000	PAN	ABRAMS	CITY OF STURGIS (SYMBOL AOK, ALSO SCALE: 1:3960)
	1964	1: 7920	PAN	ABRAMS	SHERMAN TWP. (SYMBOL BIC)
	1966	1: 6000	PAN	ABRAMS	VICINITY OF STURGIS (SYMBOL BVV)
	1971	1: 3000	PAN	MDSHT	US-2, PART OF MANISTIQUE (FILE NO 678 AND 679)
	1971	1: 9600	PAN	MDSHT	M-94, MANISTIQUE TO HIAWATHA (FILE NO 681)
	1971	1: 9600	PAN	MDSHT	US-2, CITY OF MANISTIQUE (FILE NO 680)
	1975	1: 3000	PAN	MDSHT	US-2, THROUGH THE COUNTY (FILE NO 742)
	1976	1: 3000	PAN	MDSHT	TWO SHORT STRIPS ALONG M-28 (SYMBOLS FAZ, FAB)
SANILAC	1964	1: 6000	PAN	STEREO	SANILAC STATE PARK, 2 SQ. MILES (DNR-PARKS)
	1964	1: 9600	PAN	MDSHT	US-27 AND M-78, RELOCATION IN COUNTY (FILE NO 76-413)
	1970	1:12000	PAN	MDSHT	I-69 EXTENSION, I-96 TO PERRY (FILE NO 76-660)
	1971	1: 6000	PAN	MDSHT	I-69 EXTENSION, PERRY TO SCHWARTZ CREEK (FILE NO 693)
	1971	1: 7920	PAN	ABRAMS	VILLAGE OF FORESTER (SYMBOL DHS)
	1971	1:12000	PAN	MDSHT	I-69 EXTENSION, IN COUNTY (FILE NO 76-663)
	1973	1: 3960	PAN	ABRAMS	PART OF SECTION 29, WORTH TWP. (SYMBOL EJK)
	1973	1:24000	PAN	ABRAMS	TOWN OF CROSWELL (SYMBOL EDH, ALSO SCALE: 1:7920)
	1974	1:10000	COL	ERIM	LAKE HURON SHORELINE (MSN. X252M, ALSO PAN,CIR)
	1975	1: 3000	PAN	MDSHT	I-69 EXTENSION, LANSING TO PERRY (FILE NO 736)
	1976	1: 6000	PAN	MDSHT	STRIP ALONG I-69, PERRY TO COUNTY LINE (SYMBOL FBI)
SCHOOLCRFT	1961	1:12000	PAN	ABRAMS	AREA IN COUNTY (SYMBOL AOR)
	1962	UNKNOWN	COL	DNP	LITTLE FOX R. FLOODING, 35 MM. OBLIQUES (DNR-WILDLIFE)
	1963	1: 6000	PAN	ABRAMS	INDIAN LAKE STATE PARK (SYMBOL BAH, ALSO DNR PARKS)
	1963	1: 9600	PAN	MDSHT	M-29, MACOMB LINE TO MARYSVILLE (FILE NO 77-368)
	1963	1:19200	PAN	ABRAMS	SENEY WILDLIFE REFUGE (SYMBOL BAN)
	1964	1:12000	PAN	ABRAMS	CITY OF MANISTIQUE (SYMBOL BGG)
	1964	1:15840	PAN	ABRAMS	FOREST COVER (DNR-ENG)
	1965	1: 3000	PAN	MDSHT	M-29, NEW BALTIMORE TO MARYSVILLE (FILE NO 77-441)
	1965	1: 4800	PAN	ABRAMS	CITY OF ALGONAC (SYMBOL BKX)
	1965	1: 9600	PAN	MDSHT	M-29, NEW BALTIMORE BYPASS (FILE NO 77-451)
	1965	1: 9600	PAN	MDSHT	M-19, M-136 TO YALE (FILE NO 77-477)
	1966	1:14400	PAN	MDSHT	M-21, LAPEER LINE TO PORT HURON (FILE NO 77-535)
	1966	1:19200	PAN	ABRAMS	BELLE RIVER MILLS PROJECT (SYMBOL BYI)
	1967	UNKNOWN	PAN	ERIM	TOLEDO TO PORT HURON SHORELINE (BWIR, SCANNERS)
	1967	1: 3000	PAN	MDSHT	M-19, YALE (FILE NO 77-544)
	1969	1: 3000	PAN	MDSHT	M-29, MACOMB LINE TO PERCH ROAD (FILE NO 77-595)
	1970	1: 3000	PAN	MDSHT	M-29, ALGONAC TO COX CREEK (FILE NO 77-642)
	1970	1:63000	PAN	ABRAMS	IRA TWP. (SYMBOL CCW)
	1972	UNKNOWN	PAN	ERIM	BLACK RIVER FROM MOUTH OF ST CLAIR RIVER TO I-94)
	1972	UNKNOWN	PAN	ERIM	BELLE RIVER PLUME (MULTIBAND, SCANNERS ALT: 1000)
	1972	UNKNOWN	PAN	ERIM	DETROIT EDISON PLANT ON ST CLAIR RIVER (MULTIBAND)
	1972	UNKNOWN	PAN	ERIM	ST CLAIR RIVER, MARYSVILLE TO PORT HURON (MULTIBAND)
	1972	1: 7920	PAN	ABRAMS	AREA IN THOMPSON TWP. (SYMBOL DZI)
	1973	UNKNOWN	PAN	ERIM	MARYSVILLE ALONG RIVER (MULTIBAND, SCANNERS ALT: 1000)
	1974	UNKNOWN	PAN	ERIM	ST CLAIR RIVER TO PORT HURON (SCANNERS ALT: 5000FT)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
SCHOOLCRFT	1974	UNKNOWN	PAN	ERIM	ALONG SHORELINE OF LAKE HURON (SCANNERS ALT: 5000FT)
	1974	1: 3960	PAN	ABRAMS	AREA IN HIAWATHA TWP. (SYMBOL ENW, ALSO SCALE: 1:7920)
	1974	1:15840	PAN	ABRAMS	IRA TWP. (SYMBOL EQZ, ALSO SCALE: 1:7920)
	1975	1: 3000	PAN	MDSHT	M-21, LAPEER LINE TO PORT HURON (FILE NO 740)
	1975	1: 9600	PAN	ABRAMS	ALGONAC AREA (SYMBOL EXV)
	1976	1: 6000	PAN	ERIM	TWO STRIPS IN ALGONAC (SYMBOL FCU)
	1976	1:15996	PAN	ABRAMS	SENEY NATIONAL WILDLIFE REFUGE (SYMBOL FFP)
SHIAWASSEE	1956	1: 6000	PAN	ABRAMS	CITY OF OWOSSO (PHOTO INDEX NO. 1243)
	1957	1: 8000	PAN	SCS	MISTEQUAY CREEK AREA (SYMBOL: MN-MC)
	1961	1: 6000	PAN	ABRAMS	CITY OF DURAND (SYMBOL ARK)
	1962	1: 7920	PAN	ABRAMS	CITY OF COPUNNA (SYMBOL AXO)
	1965	1: 9600	PAN	MDSHT	M-86, COLON TO BRANCH CO LINE (FILE NO 468)
	1965	1:15840	PAN	ABRAMS	OWOSSO AND CALEDONIA TWPS. (SYMBOL BOH)
	1966	1: 3000	PAN	MDSHT	M-86, COLON TO US-12 (FILE NO 78-517)
	1966	1: 6000	PAN	MDSHT	US-12, MOTTVILLE (FILE NO 529)
	1966	1: 7920	PAN	ABRAMS	CITY OF DURAND (SYMBOL BWG)
	1967	1: 3000	PAN	MDSHT	US-12, MOTTVILLE (FILE NO 78-551)
	1967	1: 7920	PAN	ABRAMS	PERRY TWP. (SYMBOL BYJ)
	1968	1: 7920	PAN	ABRAMS	SECTION IN PERRY TWP. (SYMBOL CIO)
	1969	1: 4800	PAN	MDSHT	M-86, CENTERLINE TO NOTTAWA (FILE NO 78-627)
	1969	1:19200	PAN	ABRAMS	VERNON TWP. (SYMBOL CSZ, OBLIQUES)
	1969	1:30000	PAN	ABRAMS	AREA IN COUNTY (SYMBOL CRZ)
	1970	1: 7920	PAN	ABRAMS	SECTION 22, WOODHULL TWP. (SYMBOL DBY)
	1970	1:12000	PAN	ABRAMS	I-69 EXTENSION FROM I-96 EAST TO PERRY (SYMBOL DEB)
	1971	1: 3960	PAN	ABRAMS	PART OF CALEDONIA TWP. (SYMBOL DPC)
	1971	1: 3960	PAN	ABRAMS	CITY OF OWOSSO (SYMBOL DPY)
	1971	1: 3960	PAN	ABRAMS	PARTS OF OWOSSO (SYMBOL DJB)
	1971	1: 5400	PAN	SCS	UPPER MAPLE RIVER W/S (SYMBOL: MN-UM)
	1972	1: 3960	PAN	ABRAMS	CITY OF OWOSSO (SYMBOL DRX)
	1972	1: 6000	PAN	MDSHT	US-12, RELOCATION EAST AND WEST OF MOTTVILLE (NO 688)
	1973	1: 6000	PAN	ABRAMS	AREAS IN OWOSSO AND CALEDONIA TWPS. (SYMBOL EBU)
	1973	1: 7920	PAN	ABRAMS	AREAS IN OWOSSO AND CALEDONIA TWPS. (SYMBOL EBU)
	1973	1: 7920	PAN	ABRAMS	AREA IN HAZELTON TWP. (SYMBOL EFP)
	1973	1:15840	PAN	ABRAMS	AREAS IN OWOSSO AND CALEDONIA TWPS. (SYMBOL EBU)
	1974	1:15840	PAN	DNR	TOPO MAPS (DNP-ENG)
	1976	1: 6000	PAN	MDSHT	STRIP ALONG US-12 NEAR MOTTVILLE (SYMBOL FBY)
TUSCOLA	1955	1: 6000	PAN	ABRAMS	CITY OF CARO (PHOTO INDEX NO. 1111)
	1962	1: 9600	PAN	ABRAMS	GARNER ROAD EAST OF UNIONVILLE (SYMBOL AXO)
	1964	UNKNOWN	COL	DNR	FISH POINT, 35 MM. LOW OBLIQUES (DNP-WILDLIFE)
	1964	UNKNOWN	COL	DNR	SAGINAW BAY SHORELINE, 35 MM. OBLIQUES (DNR-WILDLIFE)
	1967	1: 3000	PAN	MDSHT	M-25, FROM BAY CO LINE TO UNIONVILLE (FILE NO 79-539)
	1968	1: 7920	PAN	ABRAMS	THETFORD TWP. (SYMBOL CEZ)
	1969	1: 3960	PAN	ABRAMS	PART OF SECTION 7, VASSAR TWP. (SYMBOL CVF)
	1971	1: 7920	PAN	ABRAMS	VILLAGE OF CARO (SYMBOL DHM)
	1973	UNKNOWN	PAN	ERIM	SHORELINE FROM BAY CO TO SEBEWAING (MULTIBAND, SCAN)
	1973	1: 6000	PAN	CORPS	PARTIAL SHORELINE
	1974	1:10000	COL	EPIM	LAKE HURON SHORELINE (MSN, X252M, ALSO PAN,CIR,MSS)
	1975	1: 7920	PAN	ABRAMS	SOUTH OF VASSAR (SYMBOL EXT, ALSO SCALE: 1:24000)
	1976	1: 6000	PAN	MDSHT	STRIP FROM UNIONVILLE TO CARO (SYMBOL FAR)
VAN BUREN	1954	1: 9600	PAN	ABRAMS	CITY OF WATERVLIET (PHOTO INDEX NO. 1054)
	1956	1: 9600	PAN	ABRAMS	HIGHWAYS (DNP-ENG)
	1963	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL BAL)
	1964	1: 9600	PAN	MDSHT	M-119, MARCELLUS TO LAWTON (FILE NO 80-405)
	1964	1: 9600	PAN	MDSHT	M-40, PAW PAW TO ALLEGAN CO LINE (FILE NO 80-409)
	1964	1: 9600	PAN	MDSHT	M-43, M-40 TO US-131 (FILE NO 80-424)
	1965	1: 6000	PAN	MDSHT	I-196 BR, M-43 TO SOUTH HAVEN (FILE NO 80-484)
	1965	1: 7920	PAN	ABRAMS	SOUTH HAVEN TWP. (SYMBOL BPF)
	1965	1: 9600	PAN	MDSHT	PHOENIX ST IN SOUTH HAVEN (FILE NO 80-442)
	1966	1: 3000	PAN	MDSHT	M-43, M-40 TO US-131 RELOCATION (FILE NO 80-495)
	1966	1: 4800	PAN	ABRAMS	PART OF COUNTY (SYMBOL BVE)
	1967	1: 3000	PAN	MDSHT	I-196, BL, BROADWAY ST NORTH (FILE NO 80-541)
	1967	1: 3000	PAN	MDSHT	M-119, MARCELLUS TO LAWTON (FILE NO 80-542)
	1968	UNKNOWN	CIR	EPIM	ST JOSEPH HARBOR, SOUTH HAVEN HARBOR (ALSO COLOR)
	1968	1: 3000	PAN	MDSHT	M-40, PAW PAW NORTH TO CO LINE (FILE NO 80-578)
	1969	UNKNOWN	PAN	ERIM	MICHIGAN CITY TO SOUTH HAVEN (MULTIBAND, SCANNERS)
	1969	UNKNOWN	PAN	EPIM	SOUTH HAVEN TO STEVENSVILLE (MULTIBAND, SCANNERS)
	1969	1:14400	PAN	MDSHT	M-40, PAW PAW NORTH TO CO LINE (FILE NO 80-630)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
VAN BUREN	1970	UNKNOWN	PAN	ERIM	SHORELINE ALONG PALISADES (MULTIBAND, SCANNERS)
	1971	UNKNOWN	PAN	ERIM	PALISADES POWER PLANT (SCANNERS, MULTIBAND, ALT: 5000)
	1971	1: 7920	PAN	ABRAMS	CITY OF SOUTH HAVEN (SYMBOL DPN, ALSO SCALE: 1:15840)
	1972	UNKNOWN	PAN	ERIM	PALISADES POWER PLANT (MULTIBAND, SCANNER, ALT 5000FT)
	1973	UNKNOWN	PAN	ERIM	PALISADES POWER PLANT (MULTIBAND, SCANNERS ALT: 5000)
	1973	UNKNOWN	PAN	ERIM	COOK POWER PLANT (MULTIBAND, SCANNERS ALT: 5000FT)
	1973	1: 6000	PAN	CORPS	PARTIAL SHORELINE
	1974	1:10000	COL	ERIM	LAKE MICHIGAN SHORELINE (MSN, X252M, ALSO PAN,CIR,MSS)
	1975	1: 6000	PAN	MDSHT	BIKE TRAIL, SOUTH HAVEN TO KALAMAZOO CO LINE (NO 732)
	1975	1: 7920	PAN	ABRAMS	CITY OF SOUTH HAVEN (SYMBOL EYM)
	1976	1:12000	PAN	ABRAMS	VILLAGE OF COVERT (SYMBOL FBO, ALSO SCALE: 1:24000)
WASHTENAW	1954	1: 3000	PAN	ABRAMS	HIGHWAYS (DNR-ENG)
	1960	1: 6000	PAN	CHICAGO	CITY OF ANN ARBOR
	1961	1: 4800	PAN	ABRAMS	CITY OF ANN ARBOR (SYMBOL AQY, ALSO SCALE: 1:9600)
	1961	1: 6000	PAN	ABRAMS	CITY OF SALINE (SYMBOL AOK, ALSO SCALE: 1:3960)
	1961	1: 7920	PAN	ABRAMS	PART OF CITY OF ANN ARBOR (SYMBOL AOP)
	1963	1: 2400	PAN	ABRAMS	STRIP ALONG M-14 (SYMBOL AYZ)
	1963	1: 6000	PAN	ABRAMS	CITY OF YPSILANTI (SYMBOL BBO)
	1964	1: 3000	PAN	MDSHT	US-23, ANN ARBOR (FILE NO 81-418)
	1964	1: 6000	PAN	ABRAMS	STRIP ALONG I-94 IN ANN ARBOR AREA (SYMBOL BIP)
	1964	1: 6000	PAN	MDSHT	I-94, SALINE ROAD, ANN ARBOR (FILE NO 81-426)
	1964	1: 6000	PAN	MDSHT	I-94, STATE ROAD, ANN ARBOR (FILE NO 81-427)
	1964	1: 7920	PAN	ABRAMS	FOUR LOCATIONS IN DEXTER TWP. (SYMBOL BFT)
	1964	1:15840	PAN	ABRAMS	CITY OF YPSILANTI (SYMBOL BIE)
	1965	1: 3000	PAN	MDSHT	M-17, YPSILANTI AREA (FILE NO 81-461)
	1965	1: 3000	PAN	MDSHT	M-17, US-23 TO YPSILANTI (FILE NO 81-433)
	1965	1: 7920	PAN	ABRAMS	CITY OF ANN ARBOR (SYMBOL BKT)
	1965	1:15840	PAN	ABRAMS	YPSILANTI TWP. (SYMBOL BPB)
	1966	1: 9600	PAN	MDSHT	AREA NEAR ANN ARBOR (FILE NO 497)
	1966	1: 9600	PAN	ABRAMS	AREA NEAR CITY OF ANN ARBOR (SYMBOL BQX)
	1967	1: 3960	PAN	ABRAMS	BLAKELY AND BROWNSTOWN DRAINS (SYMBOL CCU)
	1967	1: 7920	PAN	ABRAMS	AUGUSTA TWP. (SYMBOL BZE)
	1967	1:12000	PAN	ABRAMS	THREE AREAS IN COUNTY (SYMBOL CAQ)
	1967	1:12000	PAN	ABRAMS	VILLAGE OF MANCHESTER (SYMBOL BXI)
	1967	1:14400	PAN	MDSHT	M-14, IN COUNTY (FILE NO 81-457)
	1968	1: 3000	PAN	MDSHT	M-14, M-153 TO I-96 (FILE NO 81-582)
	1968	1: 3000	PAN	MDSHT	M-17, US-23 TO WHITTAKER ROAD (FILE NO 81-591)
	1968	1: 3000	PAN	ABRAMS	PART OF M-14 (SYMBOL CHJ)
	1968	1: 3960	PAN	ABRAMS	POND AREA, HURON RIVER NEAR ANN ARBOR (SYMBOL CJG)
	1968	1: 7920	PAN	ABRAMS	AREA AROUND CITY OF ANN ARBOR (SYMBOL CFO)
	1968	1: 7920	PAN	ABRAMS	POND AREA, HURON RIVER NEAR ANN ARBOR (SYMBOL CJG)
	1968	1:24000	PAN	ABRAMS	CITY OF ANN ARBOR (SYMBOL CII)
	1969	1: 3000	PAN	MDSHT	M-14, M-153 TO HAGGERTY ROAD (FILE NO 81-616)
	1969	1: 3960	PAN	ABRAMS	HURON RIVER NEAR ANN ARBOR (SYMBOL CON)
	1969	1: 6000	PAN	ABRAMS	FREEDOM TWP. (SYMBOL CMC)
	1969	1: 6000	PAN	MDSHT	US-12, BROOKLYN HWY TO M-52 (FILE NO 626)
	1969	1: 6000	PAN	MDSHT	M-17, US-23 TO I-94 AT YPSILANTI (FILE NO 81-618)
	1969	1: 7920	PAN	ABRAMS	SECTIONS 18 AND 19, YORK TWP. (SYMBOL CUL)
	1969	1: 7920	PAN	ABRAMS	CITY OF ANN ARBOR (SYMBOL CMB)
	1969	1: 7920	PAN	ABRAMS	SOUTH ANN ARBOR (SYMBOL CNT)
	1969	1: 7920	PAN	ABRAMS	HURON RIVER NEAR ANN ARBOR (SYMBOL CON)
	1969	1: 7920	PAN	ABRAMS	SECTION 31, MANCHESTER TWP. (SYMBOL COB)
	1970	1: 2400	PAN	ABRAMS	AUGUSTA TWP. (SYMBOL CWO)
	1970	1: 3960	PAN	ABRAMS	CITY OF YPSILANTI (SYMBOL CZC)
	1970	1: 3960	PAN	ABRAMS	AREA NEAR CHELSEA (SYMBOL DDA)
	1970	1: 7920	PAN	ABRAMS	PART OF YPSILANTI TWP. (SYMBOL CXM)
	1970	1:24000	PAN	ABRAMS	GREATER ANN ARBOR AREA (SYMBOL CZK)
	1971	UNKNOWN	PAN	ABRAMS	PART OF SEC. 18, ANN ARBOR TWP. (SYMBOL DHP, OBLIQUES)
	1971	1: 3000	PAN	MDSHT	I-94 AND US-12 INTERCHANGE AREA (FILE NO 81-664)
	1971	1: 3960	PAN	ABRAMS	AREA IN ANN ARBOR TWP. (SYMBOL DJA)
	1971	1: 4800	PAN	ABRAMS	CITY OF ANN ARBOR (SYMBOL DFN)
	1972	1: 3000	PAN	MDSHT	I-94 AND PLATT ROAD INTERCHANGE AREA (FILE NO 697)
	1972	1: 3960	PAN	ABRAMS	GEDDES POND AREA, ANN ARBOR (SYMBOL DXZ, ALSO 1:6000)
	1972	1: 7920	PAN	ABRAMS	PART OF SECTION 14, SYLVAN TWP. (SYMBOL DSQ)
	1972	1: 7920	PAN	ABRAMS	AREA IN COUNTY (SYMBOL DQZ)
	1972	1: 7920	PAN	ABRAMS	PART OF SECTIONS 25 AND 36, LYNDON TWP. (SYMBOL DSQ)
	1972	1: 7920	PAN	ABRAMS	LYNDON TWP. (SYMBOL DHQ)
	1973	1: 3960	PAN	ABRAMS	PART OF PITTSFIELD TWP. (SYMBOL EGH)
	1973	1: 6000	PAN	ABRAMS	CITY OF ANN ARBOR (SYMBOL EDI)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
WASHTENAW	1974	1: 3960	PAN	ABRAMS	PART OF SECTION 33, SUPERIOR TWP. (SYMBOL EMO)
	1974	1:12000	PAN	ABRAMS	SITES IN COUNTY (SYMBOL EQH, ALSO SCALE: 1:7920)
	1975	1: 3000	PAN	MDSHT	I-94 AND M-17 INTERCHANGE AREA (FILE NO 723)
	1975	1: 3000	PAN	ABRAMS	WEBSTER TWP. (SYMBOL EYJ)
	1975	1: 3960	PAN	ABRAMS	CITY OF SALINE (SYMBOL EVP)
	1975	1: 7920	PAN	ABRAMS	CITY OF SALINE (SYMBOL EUG)
	1976	1: 6000	PAN	ABRAMS	NEAR CITY OF ANN ARBOR (SYMBOL FFF)
	1976	1: 7920	PAN	ABRAMS	PART OF PITTSFIELD TWP. (SYMBOL EYU)
	1976	1: 7920	PAN	ABRAMS	PART OF NORTHFIELD TWP. (SYMBOL FEM)
	1976	1:12000	PAN	ABRAMS	SECTIONS IN COUNTY (SYMBOL FBY)
	1976	1:12000	PAN	ABRAMS	AREA NEAR CITY OF ANN ARBOR (SYMBOL FEX)
WAYNE	1954	1: 6336	PAN	DNR	HIGHWAYS (DNR-ENG)
	1955	1: 4800	PAN	ABRAMS	CITY OF ECORSE (PHOTO INDEX NO. 1164)
	1955	1: 9600	PAN	ABRAMS	HIGHWAYS (DNR-ENG)
	1957	1: 4800	PAN	ABRAMS	HIGHWAYS (DNR-ENG)
	1958	1: 4800	PAN	ABRAMS	HIGHWAYS (DNR-ENG)
	1959	1:10560	PAN	DNR	HIGHWAYS (DNR-ENG)
	1960	1: 6000	PAN	ABRAMS	TELEGRAPH ROAD NEAR DETROIT (SYMBOL ALY)
	1960	1: 6000	PAN	ABRAMS	CITY OF DEARBORN (SYMBOL ANA, PHOTO INDEX NO. 1733)
	1960	1: 9600	PAN	ABRAMS	VICINITY OF PLYMOUTH (SYMBOL ANB)
	1961	UNKNOWN	PAN	DNR	DETROIT RIVER, LOW OBLIQUES (DNR-WILDLIFE)
	1961	1: 3000	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL AOF)
	1961	1: 4800	PAN	ABRAMS	STRIP ALONG I-96 (SYMBOL ARX)
	1961	1: 4800	PAN	ABRAMS	CITY OF DEARBORN (SYMBOL ARH)
	1961	1: 6000	PAN	ABRAMS	AREAS IN COUNTY (SYMBOL AOF, ALSO SCALE: 1:3960)
	1961	1: 7920	PAN	ABRAMS	CANTON TWP. (SYMBOL AOC)
	1961	1:15840	PAN	ABRAMS	CITY OF INKSTER (SYMBOL AOP, ALSO SCALE: 1:6000)
	1962	UNKNOWN	COL	DNR	DETROIT RIVER, 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1962	1: 2400	PAN	ABRAMS	COUNTY HIGHWAYS (SYMBOL AWR)
	1962	1: 6000	PAN	ABRAMS	STRIP ALONG I-696 (SYMBOL ATA)
	1962	1: 7920	PAN	ABRAMS	VILLAGE OF WOODHAVEN (SYMBOL AUY)
	1962	1: 7920	PAN	ABRAMS	CITY OF SOUTHGATE (SYMBOL AUW)
	1962	1: 7920	PAN	ABRAMS	CITY OF HARPER WOODS (SYMBOL AUX)
	1962	1: 9600	PAN	ABRAMS	STRIP FROM FARMINGTON TO BELLEVILLE (SYMBOL ATE)
	1962	1:12000	PAN	ABRAMS	CITY OF SOUTHGATE (SYMBOL AUW)
	1963	1: 7920	PAN	ABRAMS	TAYLOR TWP. (SYMBOL BDB)
	1963	1: 7920	PAN	ABRAMS	CITY OF LIVONIA (SYMBOL BBM)
	1964	UNKNOWN	COL	DNR	DETROIT RIVER, 35 MM. LOW OBLIQUES (DNR-WILDLIFE)
	1964	1: 3000	PAN	MDSHT	M-39, I-94 TO M-85 (FILE NO 82-417)
	1964	1: 3000	PAN	MDSHT	I-275, I-94 TO I-96 (FILE NO 82-419)
	1964	1: 3000	PAN	ABRAMS	STRIP ALONG I-96 (SYMBOL BEO)
	1964	1: 3960	PAN	ABRAMS	CITY OF DETROIT (SYMBOL BFC)
	1964	1: 4800	PAN	MDSHT	8 MILE ROAD, US-25 TO I-94 (FILE NO 82-140)
	1964	1: 4800	PAN	ABRAMS	TAYLOR TWP. (SYMBOL BEJ)
	1964	1: 4800	PAN	MDSHT	M-39, I-94 TO M-85 (FILE NO 82-412)
	1964	1: 9600	PAN	MDSHT	I-75, MONROE CO LINE TO PENNSYLVANIA ROAD (NO 421)
	1964	1:24000	PAN	ABRAMS	AREA IN COUNTY (SYMBOL BHI)
	1965	1: 3000	PAN	ABRAMS	PART OF I-96 NEAR NOVIE (SYMBOL BNF)
	1965	1: 3000	PAN	MDSHT	M-102, US-25 TO I-94 (FILE NO 82-434)
	1965	1: 3000	PAN	MDSHT	I-75, MONROE CO LINE TO SIBLEY ROAD (FILE NO 82-449)
	1965	1: 3000	PAN	MDSHT	I-94, WASHTENAW CO LINE TO HANNAN ROAD (FILE NO 458)
	1965	1: 3000	PAN	MDSHT	I-96, 5 MILE ROAD TO I-696 (FILE NO 82-448)
	1965	1: 3000	PAN	MDSHT	I-96, I-696 TO AMBASSADOR BRIDGE (FILE NO 82-438)
	1965	1: 3960	PAN	ABRAMS	AREAS IN DETROIT (SYMBOL BMH)
	1965	1: 4800	PAN	MDSHT	MOUND ROAD, CANIFF ST TO M-53 (FILE NO 82-476)
	1965	1: 6000	PAN	ABRAMS	STRIP ALONG I-696 (SYMBOLS BJJ, BMF)
	1965	1: 6000	PAN	ABRAMS	AREA WEST OF DETROIT (SYMBOL BPG)
	1965	1:36000	PAN	ABRAMS	AREA IN DETROIT (SYMBOL BMY)
	1966	UNKNOWN	PAN	ERIM	GIBRALTER TO OHIO (MULTIBAND, SCANNERS ALT: 2000FT)
	1966	UNKNOWN	PAN	ERIM	PEACH ISLAND TO MONROE (MULTIBAND, SCANNERS ALT: 2000)
	1966	1: 3000	PAN	MDSHT	M-53, DAVISON HWY TO 18 MILE ROAD (FILE NO 82-508)
	1966	1: 3000	PAN	MDSHT	I-94, WIARD ROAD TO HANNAN ROAD (FILE NO 82-520)
	1966	1: 3000	PAN	MDSHT	I-96, 5 MILE TO 8 MILE ROAD (FILE NO 82-507)
	1966	1: 3960	PAN	ABRAMS	DETROIT AREA (SYMBOL BWH)
	1966	1: 3960	PAN	MDSHT	I-94, TELEGRAPH ROAD TO WYOMING (FILE NO 82-526)
	1966	1: 3960	PAN	ABRAMS	AREAS IN DETROIT (SYMBOL BTU)
	1966	1: 3960	PAN	MDSHT	I-94 AND SOUTHFIELD ROAD NEAR ECORSE (FILE NO 82-525)
	1966	1: 6000	PAN	ABRAMS	AREA IN COUNTY SOUTH OF METRO AIRPORT (SYMBOL BUA)
	1966	1: 9600	PAN	MDSHT	I-96, SCHOOLCRAFT RD TO MEADOWBROOK AND NEWBURG ROAD

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
WAYNE	1966	1: 9600	PAN	MDSHT	ANN ARBOR TO PLYMOUTH (FILE NO 82-497)
	1967	UNKNOWN	PAN	EPIM	TOLEDO TO PORT HURON SHORELINE (BWIP, SCANNERS)
	1967	1: 2400	PAN	MDSHT	US-24 AND M-85, TRENTON TO M-102 (FILE NO 82-576)
	1967	1: 3000	PAN	MDSHT	M-39, ECORSE RIVER TO I-94 (FILE NO 82-549)
	1967	1: 3960	PAN	MDSHT	M-85, DETROIT, SIBLEY RD TO SCHAEFFER (FILE NO 546)
	1967	1: 3960	PAN	ABRAMS	BLAKELY AND BROWNSTOWN DRAINS (SYMBOL CCU)
	1967	1: 3960	PAN	ABRAMS	VAN BUREN TWP. (SYMBOL CAA)
	1967	1: 3960	PAN	ABRAMS	DETROIT AREA (SYMBOL BXX)
	1967	1: 3960	PAN	ABRAMS	CELERON ISLAND (SYMBOL BXH)
	1967	1: 4800	PAN	MDSHT	US-24, ECORSE ROAD TO M-102 (FILE NO 82-562)
	1967	1: 6000	PAN	MDSHT	DAVISON-NICHOLS INTERCHANGE AREA (FILE NO 559)
	1967	1: 7920	PAN	ABRAMS	CITY OF WESTLAND (SYMBOL BYW)
	1967	1:12000	PAN	ABRAMS	SECTION 2, NORTHVILLE TWP. (SYMBOL BZX)
	1967	1:14400	PAN	MDSHT	M-14, RELOCATION IN COUNTY (FILE NO 82-557)
	1967	1:15840	PAN	ABRAMS	DETROIT RICT AREA (SYMBOL CAW)
	1968	1: 2400	PAN	MDSHT	I-75, SCHAEFR TO FORT ST (FILE NO 82-587)
	1968	1: 2400	PAN	MDSHT	US-24, WEST ROAD TO ECORSE ROAD (FILE NO 82-575)
	1968	1: 3000	PAN	MDSHT	M-14, M-153 TO I-96 (FILE NO 82-582)
	1968	1: 3000	PAN	MDSHT	M-102, GRATIOT TO KELLEY (FILE NO 82-579)
	1968	1: 3960	PAN	ABRAMS	AREAS IN DETROIT (SYMBOL CCH)
	1968	1: 3960	PAN	ABRAMS	ROMULUS TWP. (SYMBOL CHD)
	1968	1: 3960	PAN	ABRAMS	PART OF TWELVE MILE ROAD IN DETROIT (SYMBOL CKH)
	1968	1: 6000	PAN	ABRAMS	AREA IN ROMULUS AND WOODHAVEN TWPS. (SYMBOL CHX)
	1968	1: 6000	PAN	ABRAMS	PART OF BROWNSTOWN TWP. (SYMBOL CGI)
	1968	1: 7920	PAN	ABRAMS	PART OF VAN BUREN TWP. (SYMBOL CIP)
	1968	1: 7920	PAN	ABRAMS	AREA IN SOUTHERN PART OF COUNTY (SYMBOL CFN)
	1969	UNKNOWN	PAN	EPIM	SEGMENTS OF ROUGE AND DETROIT RIVERS (MULTIBAND)
	1969	UNKNOWN	PAN	ERIM	ZUG ISLAND TO GIBRALTER AND OUT INTO LAKE ERIE
	1969	1: 3000	PAN	ABRAMS	DAVIDSON HYWAY (SYMBOL CUN)
	1969	1: 3000	PAN	MDSHT	DAVISON AVE, PROPOSED I-94 TO OAKLAND AVE (NO 612)
	1969	1: 3000	PAN	MDSHT	M-14, M-153 TO HAGGERTY ROAD (FILE NO 82-616)
	1969	1: 3000	PAN	MDSHT	DAVISON HWY, LIVERNOIS TO OAKLAND (FILE NO 82-633)
	1969	1: 3000	PAN	ABRAMS	CITY OF HIGHLAND PARK (SYMBOL CSS)
	1969	1: 3960	PAN	ABRAMS	CITY OF WAYNE (SYMBOL CTG)
	1969	1: 3960	PAN	ABRAMS	AREAS IN DETROIT (SYMBOL CMW)
	1969	1: 3960	PAN	ABRAMS	AREA IN COUNTY (SYMBOL CSE)
	1969	1: 6000	PAN	ABRAMS	AREA NEAR FLAT ROCK (SYMBOL CTH)
	1969	1: 7920	PAN	ABRAMS	SECTION IN CANTON TWP. (SYMBOL CMA)
	1969	1: 9600	PAN	ABRAMS	STRIP ALONG I-96 (SYMBOL CTO)
	1970	UNKNOWN	PAN	EPIM	DETROIT RIVER AND INLAND (SCANNERS ALT: 2000FT)
	1970	1: 3000	PAN	MDSHT	I-94, VAN DYKE INTERCHANGE (FILE NO 82-645)
	1970	1: 3000	PAN	MDSHT	M-39, I-94 TO M-85 (FILE NO 82-644)
	1970	1: 3000	PAN	MDSHT	I-94, MT ELLIOT INTERCHANGE (FILE NO 82-648)
	1970	1: 3000	PAN	MDSHT	I-94, AT LIVERNOIS INTERCHANGE (FILE NO 82-643)
	1970	1: 3000	COL	MDSHT	I-96, SOUTHFIELD INTERCHANGE (FILE NO 652)
	1970	1: 3960	PAN	ABRAMS	AREA IN DEARBORN (SYMBOL DBL)
	1970	1: 3960	PAN	ABRAMS	DETROIT AREA (SYMBOL DBZ)
	1970	1: 4800	PAN	MDSHT	I-75, AT WEST ROAD (FILE NO 82-634)
	1970	1: 6000	PAN	ABRAMS	FRANK AND POET DRAIN (SYMBOL CXN)
	1970	1: 6000	PAN	ABRAMS	PLYMOUTH TWP. (SYMBOL CYM)
	1970	1: 7920	PAN	ABRAMS	MAYBURY STATE PARK, 1225 ACRES (DNR-PARKS)
	1971	1: 3960	PAN	ABRAMS	VICINITY OF RIVERVIEW (SYMBOL DLI)
	1971	1: 3960	PAN	ABRAMS	PART OF ROMULUS (SYMBOL DIC)
	1971	1: 3960	PAN	ABRAMS	AREA IN CANTON TWP. (SYMBOL DHI)
	1971	1: 3960	PAN	ABRAMS	DETROIT AREA (SYMBOL DLF)
	1971	1: 3960	PAN	ABRAMS	AREAS IN DETROIT (SYMBOL BKE)
	1971	1: 6000	PAN	MDSHT	US-12, HAGGERTY ROAD TO MERRIMAN ROAD (FILE NO 670)
	1971	1: 6000	PAN	ABRAMS	CANTON TWP. (SYMBOL DIV)
	1971	1: 7920	PAN	ABRAMS	PART OF FIGHTING ISLAND (SYMBOL DHU)
	1971	1:12000	PAN	ABRAMS	GROSSE ISLE AREA (SYMBOL DMB)
	1971	1:12000	PAN	ABRAMS	PART OF SUMPTER TWP. (SYMBOL DMC)
	1971	1:19200	PAN	ABRAMS	PART OF FIGHTING ISLAND (SYMBOL DHU)
	1972	UNKNOWN	PAN	EPIM	DETROIT RIVER FROM MONSANTO TO END OF BELLE ISLE
	1972	1: 3960	PAN	ABRAMS	PART OF SUMPTER TWP. (SYMBOL DVM)
	1972	1: 3960	PAN	ABRAMS	DETROIT AREA (SYMBOL DWS, ALSO SCALE OF 1:24000)
	1972	1: 3960	PAN	ABRAMS	CITY OF DETROIT (SYMBOL DVG)
	1972	1: 3960	PAN	ABRAMS	PART OF COUNTY (SYMBOL DUL)
	1972	1: 6000	PAN	MDSHT	M-39, ROTUNDA DRIVE TO FORD ROAD (FILE NO 700)
	1973	UNKNOWN	PAN	EPIM	DETROIT RIVER (MULTIBAND, SCANNERS ALT: 1000FT)
	1973	UNKNOWN	PAN	EPIM	CONSUMERS POWER AND DETROIT EDISON PLANTS ON DETROIT R)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
WAYNE	1973	UNKNOWN	PAN	EPIM	DETROIT (MULTIBAND, SCANNERS ALT: 12000FT)
	1973	1: 3000	PAN	MDSHT	M-39, ROTUNDA DRIVE TO FORD ROAD (FILE NO 706)
	1973	1: 3000	PAN	MDSHT	I-94 AND US-10 IN DETROIT (FILE NO 701)
	1973	1: 3960	PAN	ABRAMS	VILLAGE OF WOODHAVEN (SYMBOL EHY, ALSO SCALE: 1:12000)
	1973	1: 3960	PAN	ABRAMS	CITY OF TAYLOR (SYMBOL EES, ALSO SCALE: 1:7920)
	1973	1: 3960	PAN	ABRAMS	PART OF SECTION 11 AND 12, RIVERVIEW TWP. (SYMBOL EGG)
	1973	1: 6000	PAN	MDSHT	I-275, WEST ALONG TOQUISH CREEK AND RIVER ROUGE
	1973	1: 6000	PAN	CORPS	PARTIAL SHORELINE
	1973	1: 7920	PAN	ABRAMS	PART OF SECTION 11 AND 12, RIVERVIEW TWP. (SYMBOL EGG)
	1973	1: 7920	PAN	ABRAMS	CITY OF INKSTER (SYMBOL ECK)
	1973	1:15840	PAN	ABRAMS	CITY OF TAYLOR (SYMBOL EES)
	1973	1:24000	PAN	ABRAMS	PART OF COUNTY (SYMBOL EFV)
	1974	1: 3000	PAN	MDSHT	I-96, EVERGREEN TO SOUTHFIELD (FILE NO 715)
	1974	1: 3000	PAN	MDSHT	I-94, MERRIMAN TO MIDDLEBELT (FILE NO 721)
	1974	1: 3960	PAN	ABRAMS	HURON TWP. (SYMBOL ENE)
	1974	1: 3960	PAN	ABRAMS	CITY OF RIVERVIEW (SYMBOL EPR)
	1974	1: 3960	PAN	ABRAMS	AREAS IN WESTLAND AND WAYNE (SYMBOL ENB)
	1974	1:10000	COL	EPIM	DETROIT RIVERFRONT (MSN, X252M, ALSO PAN,CIR,MSS)
	1975	VARIES	COL	MSU/RSP	WAYNE CO. RIVERFRONT (35 MM OBLIQUE, ALSO PAN,CIR)
	1975	1: 3000	PAN	MDSHT	M-39, I-75 TO 12 MILE ROAD (FILE NO 757)
	1975	1: 3000	PAN	MDSHT	I-275, MICHIGAN AVE TO I-696 (FILE NO 733)
	1975	1: 3000	PAN	MDSHT	M-153-75, I-275 TO TELEGRAPH ROAD (FILE NO 744)
	1975	1: 3000	PAN	MDSHT	M-53-75, 6 MILE ROAD TO M-59 (FILE NO 750)
	1975	1: 3000	PAN	MDSHT	M-102-75, GROESBECK TO GRATIOT (FILE NO 751)
	1975	1: 3000	PAN	MDSHT	US-12, WYOMING TO LIVERNOIS (FILE NO 734)
	1975	1: 3960	PAN	ABRAMS	CITY OF NORTHVILLE (SYMBOL ETV)
	1975	1: 3960	PAN	ABRAMS	VICINITY OF DETROIT (SYMBOL EWT)
	1975	1: 4800	PAN	MDSHT	MOUND AND DAVISON STUDY IN COUNTY (FILE NO 725)
	1975	1: 4800	PAN	ABRAMS	STRIP ALONG I-96 (SYMBOL ESN)
	1975	1: 6000	PAN	ABRAMS	AREA IN COUNTY (SYMBOL EYL)
	1975	1: 7920	PAN	ABRAMS	CANTON TWP. (SYMBOL EVY)
	1975	1:10320	PAN	ABRAMS	CITY OF FLAT ROCK (SYMBOL EYA, ALSO SCALE: 1:48000)
	1976	1: 3000	PAN	EPIM	TELEGRAPH ROAD, FLAT ROCK TO SOUTHFIELD (SYMBOL FCE)
	1976	1: 3000	PAN	EPIM	FIVE SHORT STRIPS NEAR ROTUNDRA DR., DEARBORN
	1976	1: 3960	PAN	ABRAMS	NEAR CITY OF WAYNE (SYMBOL EES)
	1976	1: 3960	PAN	ABRAMS	PART OF WOODHAVEN (SYMBOL EFA)
	1976	1: 4800	PAN	ABRAMS	DETROIT AREA (SYMBOL FAZ)
	1976	1: 4800	PAN	ABRAMS	DETROIT AREA (SYMBOL FAY)
	1976	1: 6000	PAN	EPIM	AMBASSADOR BRIDGE AREA (SYMBOL FCJ)
WEXFORD	1961	1: 6000	PAN	ABRAMS	CITY OF CADILLAC (SYMBOL ARY)
	1965	1: 7920	PAN	ABRAMS	ANTIOC TWP. (SYMBOL BOK)
	1966	1: 3000	PAN	MDSHT	M-55, CADILLAC TO M-66 (FILE NO 83-492)
	1969	1: 7920	PAN	ABRAMS	AREAS IN CHERRY GROVE TWP. (SYMBOL CVW)
	1970	1: 3960	PAN	ABRAMS	CITY OF MANTON (SYMBOL DEC)
	1970	1: 4800	PAN	ABRAMS	CADILLAC AREA (SYMBOL DER)
	1970	1: 7920	PAN	ABRAMS	AREAS IN MANTON (SYMBOL CXC)
	1971	1: 7920	PAN	ABRAMS	AREA IN CLAM LAKE TWP. (SYMBOL DOU)
	1972	1:18000	PAN	ABRAMS	AREA IN ANTIOC TWP. (SYMBOL DUF)
	1973	1: 6000	PAN	ABRAMS	CADILLAC AREA (SYMBOL EBJ)
	1973	1: 6000	PAN	ABRAMS	AREA IN COUNTY (SYMBOL FCC, ALSO SCALE: 1:7920)
	1973	1:10320	PAN	ABRAMS	AREA IN COUNTY (SYMBOL FCU)
	1974	1: 6000	PAN	ABRAMS	SECTION 16, HARRING TWP. (SYMBOL EOP)
	1975	1: 3960	PAN	ABRAMS	VILLAGE OF MESICK (SYMBOL EXD)
	1975	1:19200	PAN	ABRAMS	CITY OF CADILLAC (SYMBOL EYC)
	1976	1: 6000	PAN	EPIM	ONE STRIP OVER MARIETTA FISH HATCHERY (SYMBOL FCV)
OTHER	1960	1:12000	PAN	ABRAMS	HIDDEN LAKE AREA (SYMBOL AMV)
	1965	1:15840	PAN	ABRAMS	LAKE MICHIGAN SHORELINE (SYMBOL BKE)
	1966	1: 7920	PAN	ABRAMS	LAKE LOUISE (SYMBOL BRT, ALSO SCALE: 1:3960)
	1968	1:12000	PAN	ABRAMS	LAKE MICHIGAN SHORELINE (SYMBOL BKE)
	1968	1:12000	PAN	ABRAMS	LAKE MICHIGAN SHORELINE (SYMBOL CHZ)
	1968	1:19200	PAN	ABRAMS	LAKE MICHIGAN SHORELINE (SYMBOL CHZ)
	1968	1:19200	PAN	ABRAMS	LAKE MICHIGAN SHORELINE (SYMBOL BKE)
	1970	1: 4800	PAN	ABRAMS	MORRISON LAKE (SYMBOL DDC)
	1970	1: 7920	PAN	ABRAMS	AREA IN LEROY AND FRANKLIN TWPS. (SYMBOL DEM)
	1971	1: 3000	PAN	ABRAMS	I-94 AND LAKESHORE DRIVE (SYMBOL BJL)
	1971	1: 7920	PAN	ABRAMS	MYSTIC ISLAND (SYMBOL DOI)
	1971	1: 7920	PAN	ABRAMS	BRIELY AND MITCHELL TWPS. (SYMBOL DOK)
	1973	1: 3960	PAN	ABRAMS	BOLLES HARBOR (SYMBOL EPP)

COUNTY	DATE	SCALE	FILM	AGENCY	AREA/COMMENTS
OTHER	1973	1: 7920	PAN	ABRAMS	AREAS IN HIGHLAND TWP. (SYMBOL FJB)
	1974	1: 4800	PAN	ABRAMS	VAN ETTAN LAKE (SYMBOL- EQC)
	1974	1:12000	PAN	ABRAMS	BLUE LAKE AND CHESTER TWP. (SYMBOL EQX)
	1974	1:15840	PAN	ABRAMS	HARRISON TWP. (SYMBOL FAZ, ALSO SCALE: 1:7920)
	1975	1:40000	COL	BENDIX	SAGINAW BAY (LANDSAT PROJ. F2325)
	1976	1: 7920	PAN	ABRAMS	BOLLES HARBOR (SYMBOL FEJ)

APPENDICES

APPENDIX A

SELECTED REFERENCES: AERIAL IMAGERY CATALOGS

Apollo Synoptic Photography Catalog (2nd ed.). October 1971: Technology Application Center, University of New Mexico, Albuquerque, New Mexico 87106.

ASCS Aerial Photography Status Maps. December 1975: Agricultural Stabilization and Conservation Service, USDA, 2511 Parley's Way, Salt Lake City, Utah 84109.

ASCS Aerial Photography Coverage. 1973: Aerial Photography Field Office, Administrative Services Division, ASCS-USDA, 2511 Parley's Way, Salt Lake City, Utah 84109.

Catalog of Operational Satellite Products. Eugene R. Hoppe and Abraham L. Ruiz (eds.). March 1974: NOAA Technical Memorandum NESS 53, U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Environmental Satellite Service, Washington, D.C. 20235.

Color Aerial Stereograms of Selected Coastal Areas of the United States. Harland R. Cravat and Raymond Glaser. 1971: U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Survey; (Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402).

Data Catalog of Satellite Experiments. October 1973: Supplement No. 1 to NSSCD 71-20, National Space Science Data Center, NASA Goddard Space Flight Center, Greenbelt, Maryland 20771.

LANDSAT Cumulative U.S. Standard Catalog. 1972-1976: NASA Goddard Space Flight Center; (Available from the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161).

LANDSAT Cumulative Non-U.S. Standard Catalog. 1972-1976: NASA Goddard Space Flight Center; (Available from the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161).

Everyone's Space Handbook. Dick Kroeck. 1976: Pilot Rock, Inc., P.O. Box 470 Arcata, California 95521.

Forest Service Aerial Photography Status Maps. May 1970: Technical Report ETR-7100-4a; Engineering Technical Information System, Forest Service, USDA, Washington, D.C. 20250.

Gemini Synoptic Photography Catalog (3rd ed.). May 1975: Technology Application Center, University of New Mexico, Albuquerque, New Mexico 87106.

Landsat Data Users Handbook. September 1976: Document No. 765D54258. NASA Goddard Space Flight Center, Greenbelt, Maryland 20771.

Landsat Index of the Developing Countries of the World. February 1976: The World Bank, Washington, D.C. 20433.

SCS Status of Aerial Photography. January 1977: Soil Conservation Service, USDA, Hyattsville, Maryland 20782.

Skylab Earth Resources Data Catalog. 1974: National Aeronautics and Space Administration, Lyndon B. Johnson Space Center, Houston, Texas; (Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, Stock No. 3300-00586).

Skylab-2 Photography Catalogs. June 1974: Technology Application Center (TAC), University of New Mexico, Albuquerque, New Mexico 87131.

Skylab-3 Photography Catalog. August 1974: TAC, New Mexico.

Skylab-4 Photography Catalog. March 1975: TAC, New Mexico.

State Indexes

The MSU Remote Sensing Project presently has information on availability of aerial imagery of the following states: California, Colorado, Florida, Idaho, Iowa, Kansas, Missouri, Montana, New Mexico, New York, Oregon, Utah, Washington, West Virginia, Wisconsin and Wyoming. The Project also retains copies of imagery catalogs listed in Appendix A.

APPENDIX B
MAILING ADDRESSES

GOVERNMENT AND UNIVERSITY

Agricultural Stabilization and Conservation Service
Michigan State ASCS Office
1405 South Harrison Road
East Lansing, Michigan 48823
Phone: (517) 372-1910, ext. 224

Western Aerial Photography Laboratory
ASCS-USDA
2505 Parley's Way
Salt Lake City, Utah 84109
Phone: (801) 524-5856

Canada Centre for Remote Sensing
2464 Sheffield Road
Ottawa, Ontario
Canada K1A 0Y7
Phone: (613) 993-0121

Defense Mapping Agency
Bldg. 56, U.S. Naval Observatory
Washington, D.C. 20305
Phone: (202) 254-4406

EROS Data Center
Sioux Falls, South Dakota 57198
Phone: (605) 594-6511, ext. 151

Environmental Protection Agency
Remote Sensing Branch
EPA National Environmental Research Center
P.O. Box 15027
Las Vegas, Nevada 89114
Phone: (702) 736-2969

Forest Service
Division of Engineering
Forest Service, USDA
Washington, D.C. 20250
Phone: (703) 235-8638

Forest Service, Eastern Region
633 West Wisconsin Avenue
Milwaukee, Wisconsin 53203
Phone: (414) 224-3693, ext. 3193

Laboratory for Applications of Remote Sensing (LARS)
Continuing Education Administration
116 Stewart Center
Purdue University
West Lafayette, Indiana 47907
Phone: (317) 749-2052

Michigan Department of Natural Resources
Division of Land Resource Programs
Stevens T. Mason Building
P.O. Box 30028
Lansing, Michigan 48909
Phone: (517) 373-3328

Michigan Department of State Highways and Transportation
Environmental Liaison Section
State Highways Building
Lansing, Michigan 48904
Phone: (517) 373-0146

National Aeronautics & Space Administration
NASA-Ames Research Center
AIRP Data Facility
Mail Stop 211-8
Moffett Field, California 94035
Phone: (415) 965-6252

NASA-Audio Visual Facility
918 North Rengstorff Avenue
Mountain View, California 94040
Phone: (415) 965-6270

NASA-Goddard Space Flight Center
INTRALAB
Greenbelt, Maryland 20771
Phone: (301) 982-2658

NASA-Johnson Space Center
REDAF, Code TF 121
Houston, Texas 77058
Phone: (713) 483-6323

NASA-Office of Applications
State & Local User Affairs Office
400 Maryland Avenue, S.W.
Washington, D.C. 20546
Phone: (202) 755-8613

National Archives and Records Service
Cartographic Branch
General Services Administration
Washington, D.C. 20408
Phone: (202) 523-3006

National Cartographic Information Center
NCIC-Reston (Headquarters)
U.S. Geological Survey
National Center
Reston, Virginia 22092
Phone: (703) 860-6059

NCIC-Mid-Continent
U.S. Geological Survey
1400 Independence Road
Rolla, Missouri 65401
Phone: (314) 364-3680, ext. 107

National Oceanic and Atmospheric Administration
National Climatic Center, NOAA
Federal Building
Asheville, North Carolina 28801
Phone: (704) 258-2850, ext. 620

National Ocean Survey, NOAA
6001 Executive Blvd.
Rockville, Maryland 20852
ATTN: Coastal Mapping Division
Phone: (301) 655-4000

National Technical Information Service (NTIS)
U.S. Department of Commerce
Springfield, Virginia 22161
Phone: (703) 557-4630

Photographic Services
University of Illinois at Urbana-Champaign
713 S. Wright Street
Champaign, Illinois 61820
Phone: (217) 333-1000

Remote Sensing Project
201 UPLA Building
Michigan State University
East Lansing, Michigan 48824
Phone: (517) 353-7195

Soil Conservation Service
Cartographic Division
Soil Conservation Service, USDA
Hyattsville, Maryland 20782
Phone: (301) 436-8187

Soil Conservation Service, USDA
1405 South Harrison Road
East Lansing, Michigan 48823
Phone (517) 372-1910

Southcentral Michigan Planning and Development Council of Region III
Connors Hall
Nazareth College at Kalamazoo
Nazareth, Michigan 49074
Phone: (616) 343-1678

Southeast Michigan Council of Governments
8th Floor, Book Building
1249 Washington Blvd.
Detroit, Michigan 48226
Phone: (313) 961-4266

Technology Application Center (TAC)
University of New Mexico, Code 10
Albuquerque, New Mexico 87131
Phone: (505) 277-3622

Tri-County Regional Planning Commission
2722 E. Michigan Avenue
Lansing, Michigan 48912
Phone: (517) 487-9424

U.S. Army Corps of Engineers
U.S. Army Engineer District, Detroit
P.O. Box 1027
Detroit, Michigan 48231
Phone: (313) 226-6816

U.S. Army Corps of Engineers

U.S. Army Engineer District, Chicago
219 S. Dearborn Street
Chicago, Illinois 60604
Phone: (312) 353-6460

U.S. Army Engineer District, St. Paul
1210 USPO & Custom House
St. Paul, Minnesota 55101
Phone: (612) 725-7233

U.S. Geological Survey
Branch of Distribution
1200 South Eads Street
Arlington, Virginia 22202
Phone: (703) 357-2751

West Michigan Regional Planning Commission
1204 People's Building
Monroe at Ionia
Grand Rapids, Michigan 49502
Phone: (616) 454-9375

West Michigan Shoreline Regional Development Commission
Torrent House
315 West Webster Avenue
Muskegon, Michigan 49440
Phone: (616) 722-7878

PRIVATE

Abrams Aerial Survey Corporation
124 North Larch Street
Lansing, Michigan 48901
Phone: (517) 372-8100

Aerial Photo and Survey
780 South Ridge Street
Lake Forest, Illinois 60045
Phone: (312) 234-3205

Aero Service Corporation
4219 Van Kirk Street
Philadelphia, Pennsylvania 19135
Phone: (215) 533-3900

Bendix Aerospace Systems Division
3621 South State Road
Ann Arbor, Michigan 48107
Phone: (313) 665-7766

Capitol Air Survey
215 East Twelve Mile Road
Madison Heights, Michigan 48071
Phone: (313) 564-4820

Chicago Aerial Survey
2150 South Wolf Road
Des Plaines, Illinois 60131
Phone: (312) 298-1480

Daedalus Enterprises, Inc.
P.O. Box 1869
Ann Arbor, Michigan 48106
Phone: (313) 769-5649

Environmental Research Institute of Michigan
P.O. Box 618
Ann Arbor, Michigan 48107
Phone: (313) 994-1200

Geospectra Corporation
202 East Washington, Suite 504
Ann Arbor, Michigan 48108
Phone: (313) 994-3450

General Electric Engineering Laboratory
5030 Herzel Place
Beltsville, Maryland 20705
Phone: (301) 345-6000

Goodyear Aerospace Corporation
Department 408A Building 13-2S
Litchfield Park, Arizona 85340
Phone: (602) 932-3232, ext. 406

Mark Hurd Aerial Surveys, Inc.
345 Pennsylvania Avenue, South
Minneapolis, Minnesota 55426
Phone: (612) 545-2583

Park Aerial Surveys, Inc.
606 Harding Avenue
P.O. Box 21379
Louisville, Kentucky 40221
Phone: (502) 366-4571

Photo Science, Inc.
7840 Airpark Road
Gaithersburg, Maryland 20760
Phone: (301) 948-8550

Pilot Rock, Inc.
P.O. Box 470
Arcata, California 95521
Phone: (707) 822-4851

Space Photos
2608 Sunset Boulevard
Houston, Texas 77005

StereoFoto, Inc.
6071 South Logan
Lansing, Michigan 48910
Phone: (517) 882-2868