



*New York State  
Archives*

# Managing Imaging Projects

2022



The University of the State of New York  
The State Education Department  
New York State Archives  
Government Records Services  
Albany, New York 12230  
[www.archives.nysed.gov](http://www.archives.nysed.gov)

# THE UNIVERSITY OF THE STATE OF NEW YORK

## Regents of The University

LESTER W. YOUNG, JR., <i>Chancellor</i> , B.S., M.S., Ed.D. ....	Beechhurst
JOSEPHINE VICTORIA FINN, <i>Vice Chancellor</i> B.A., J.D. ....	Monticello
ROGER TILLES, B.A., J.D. ....	Manhasset
CHRISTINE D. CEA, B.A., M.A., Ph.D. ....	Staten Island
WADE S. NORWOOD, B.A. ....	Rochester
KATHLEEN M. CASHIN, B.S., M.S., Ed.D. ....	Brooklyn
JAMES E. COTTRELL, B.S., M.D. ....	New York
JUDITH CHIN, B.S., M.S. in Ed. ....	Little Neck
CATHERINE COLLINS, R.N., N.P., B.S., M.S. in Ed., Ed.D. ....	Buffalo
ELIZABETH S. HAKANSON, A.S., B.A., M.A., C.A.S. ....	Syracuse
LUIS O. REYES, B.A., M.A., Ph.D. ....	New York
SUSAN W. MITTLER, B.S., M.S. ....	Ithaca
FRANCES G. WILLS, B.A., M.A., M.Ed., C.A.S., Ph.D. ....	Ossining
RUTH B. TURNER, BSW, LCSW, M.Ed. ....	Rochester
ARAMINA VEGA FERRER, B.A., M.S. in Ed., Ph.D. ....	Bronx
SHINO TANIKAWA, B.A., M.S. ....	Manhattan
ROGER P. CATANIA, B.A., M.A., M.S., C.A.S., Ph.D. ....	Saranac Lake

### Commissioner of Education and President of The University

BETTY A. ROSA, B.A., M.S. in Ed., M.S. in Ed., M.Ed., Ed.D.

**[Click here and enter Title]**

[CLICK HERE AND ENTER NAME]

The State Education Department does not discriminate on the basis of race, creed, color, national origin, religion, age, sex, military, marital status, familial status, domestic violence victim status, carrier status, disability, genetic predisposition, sexual orientation and criminal record in its recruitment, educational programs, services, and activities. NYSED has adopted a web accessibility policy, and publications designed for distribution can be made available in an accessible format upon request. Inquiries regarding this policy of nondiscrimination should be directed to the Office of Human Resources Management, Room 528 EB, Education Building, Albany, New York 12234.

## Contents

Contents .....	1
Introduction .....	3
Steps to Completing an Imaging Project.....	4
Step 1: Determine if Microfilm or Digital Images are Appropriate .....	4
Complete the “Imaging Information Form” .....	5
Determine the Final Disposition of the Original Records .....	5
Step 2: Decide Whether to do the Project In-House or Use a Vendor .....	6
Reasons for Conducting Projects In-House .....	6
Reasons for Using a Vendor.....	6
Step 3: Write a Specification.....	7
Step 4: Develop a Request for Proposal.....	8
Compliance with specification.....	8
Contract resolution and cancellation requirements .....	8
Packing, pickup, and delivery .....	8
Step 5: Choose a Vendor .....	9
Invite vendors to inspect records .....	9
Check vendor references .....	9
Visit potential vendors’ facilities .....	9
Review bids and select a vendor .....	9
Step 6: Prepare the Records .....	10
File organization .....	11
Purging.....	11
Removing fasteners and straightening and repairing paper .....	11
Targeting and retrieval aids .....	11
Step 7: Maintain Regular Communication with Vendors .....	12
Step 8: Monitor the Project .....	12
Step 9: Reproduce and Index the Records .....	12
Reproduction.....	12
Indexing .....	12
Indexing digital images .....	13
Indexing microfilm .....	13
Step 10: Inspect the Product and Preserve the Information .....	14
Technical Inspection.....	14
Preserve the Information .....	15
Conclusion .....	16

For More Information and Assistance .....	16
Appendix A .....	17
“Imaging Information Form” and Instructions .....	17
Appendix B .....	27
Sample Imaging Specification and Explanation .....	27
Appendix C .....	32
Sample Contract .....	32
Appendix D .....	35
Sample Microfilm Specification and Explanation .....	35
Appendix E .....	40
Sample Microfilm (and Imaging) Targets .....	40

## Introduction

Electronic document imaging and micrographics were once two separate and distinct technologies. Today, digital imaging (also known as scanning) is used to create both formats. When microfilm is desired, a further electronic process is used to “write” a digital image onto film.

The steps to create images for either format are essentially the same. Records must be prepared for imaging, scanned to capture the images, and verified to ensure the quality of the images. Similar issues must be addressed with vendors: you must ensure that the chosen vendor is technologically proficient, follows your detailed technical specifications, and delivers the required product on time.

This publication explains the steps to plan and carry out an imaging project, whether the intent is to create digital images or microfilm or both. The publication addresses:

- Records management issues (deciding whether to microfilm, scan, or do both)
- Project management issues (writing contracts and working with vendors), and
- Technical issues (developing specifications and meeting quality-control guidelines).

The New York State Archives recommends that any local government or state agency conducting an imaging project follow these guidelines. Careful adherence to them will increase the chances of completing a successful project. For more information on running an imaging project, contact the State Archives.

Local governments and state agencies should also adhere to standards in the following State Archives’ publications whether imaging records in-house or using a vendor contracted to perform imaging services on their behalf:

- *Digital Imaging Guidelines* - the minimal standards for producing and inspecting digital images of records.
- *Producing High Quality Microfilm* - technical guidelines for producing high quality microfilm.
- *Quality Control and Content Verification of Digital Images* - processes to ensure all records have been scanned, are readable, and properly indexed.

# Steps to Completing an Imaging Project

## ***Step 1: Determine if Microfilm or Digital Images are Appropriate***

Before planning an imaging project, you should determine which of these formats is appropriate for the problems facing you. In general, microfilm can be a good solution for a storage or preservation problem when:

- Records with a long retention period are never or infrequently accessed.
- Implementing and maintaining an imaging system is too costly.
- There is no technical infrastructure to support appropriate digital storage and retrieval.

Microfilm provides a simple solution to storage problems, allowing you to reduce your storage needs by as much as 98% and providing you with master microfilm that should last for 500 years when stored under proper conditions. Modern microfilm readers take up no more space than a flatbed desk top scanner and can read film and create digital images. They can be expensive to purchase and must be maintained. These costs should be compared to those necessary to implement an imaging system to store, retrieve and maintain digital images.

Imaging, on the other hand, is particularly helpful in cases when you need to improve access to records dramatically. Consider digital images when:

- A high-volume record series is used frequently.
- Quick access is needed, and the paper format is time and labor intensive to use.
- Keyword searching is desired to find information in text-heavy documents.
- Shared access across locations and simultaneous use of the same document is needed.
- Permanent records exist without a preservation copy.
- Historical records are fragile or at risk from theft or damage by handling the original.

Lack of storage space could be another reason, but the cost of off-site storage for paper records must be compared to the overall cost and maintenance of digital images, which can involve implementing a scanner and software, a digital management system (plus the purchase of individual licenses for access), local or remote storage, as well as annual support or maintenance fees to keep the hardware, software, and digital files up to date.

A hybrid approach may offer advantages of both microfilm and digital images. You could, for instance, produce digital images to meet ongoing access needs but use microfilm as the preservation copy. Another hybrid approach might be to use microfilm as your storage and access medium, use a microfilm reader/scanner to access the microfilm and create individual digital images as needed. This might be a good approach when your access needs are modest, and you only occasionally require an electronic or paper copy of the microfilm. However, don't make decisions about either technology or approach until you examine your situation carefully, and consider your access needs, the condition of the records, and your ability to pay for a new recordkeeping system. Sometimes, maintaining the paper records is the cheapest and best solution.

## Complete the “Imaging Information Form”

After considering your access needs, gather information about each records series that you intend to image and analyze the data. Doing this will help you plan for a project, complete it on time, keep it within budget, and reduce surprises. One way to gather information is to fill out the “Imaging Information Form” in Appendix A. This form and its accompanying instructions will also help you compile information needed by a vendor to provide an accurate quote for converting paper to digital images or microfilm or both.

Completing the “Imaging Information Form” will also help you decide whether to reproduce a records series at all. For instance, the form might show that a records series is barely legible in its original paper form (there is only a slight possibility microfilming or scanning will enhance legibility) or reformatting permanently bound volumes is cost prohibitive.

## Determine the Final Disposition of the Original Records

One important decision to make before conducting an imaging project is whether to keep the original records afterwards. If you have no particular use or need for the originals, destruction may be appropriate. However, you must take future use and all legal requirements into account before making this decision. You must follow the laws and regulations that govern reformatting records in New York State, if you will be destroying the records after reproduction, for instance, Parts 185.7, 185.8, 188.18, 188.20, 8 NYCRR (Regulations of the Commissioner of Education), and Rule 4539 of the Civil Practice Law and Rules, permit reformatting records. However, the regulations also require that you follow procedures to ensure the accuracy and completeness of the images produced.

Governments and agencies must follow the *Digital Imaging Guidelines* whether imaging records in-house or using a vendor contracted to perform imaging services on their behalf.

Parts 185.8 and 188.20, 8 NYCRR outline the requirements local governments and state agencies must follow for electronic records (including scanned images of records):

- Incorporate records retention requirements into any plan for a new or redesigned electronic information system.
- Ensure that changing technology does not render electronic records unusable before the end of their retention period.
- Maintain up-to-date documentation about permanent electronic records.
- Store backups of electronic records in secure offsite facilities.
- Institute maintenance procedures for computer media that contain permanent electronic records.

Parts 185.7 and 188.18, 8 NYCRR outline the requirements local governments and state agencies must follow for microfilmed records:

- Produce silver gelatin master negatives for records with a retention period of ten years or more.
- Use master negatives only to produce duplicate rolls and store these masters offsite under environmentally controlled conditions.
- Microfilm must meet targeting, resolution, density, and other quality control standards set by the Commissioner of Education (outlined in *Producing High Quality Microfilm*).

In addition, if your local government is reproducing records that are under its control but that belong to a state agency or the courts, then you must follow that entity's regulations. For example, if you are copying court records, you must follow the relevant regulations of the Unified Court System for New York State.

Sometimes you will decide to retain the original records after reproducing them. Although you may have no legal requirement to do this, it makes sense to keep records in their original form when you believe the records have value as physical artifacts. You might keep some of the records, especially older ones, to use in exhibits or you might decide to hold on to the paper records until you are satisfied that your new recordkeeping system is working dependably.

Every state agency or local government is responsible for ensuring that all their records are accessible until they meet their legal retention requirements, regardless of format.

Note: No local government may dispose of records predating 1910 without written approval from the State Archives, including those which have been reformatted to microfilm or digital, as required by Section 185.6 (c) of 8NYCRR, the Regulations of the Commissioner of Education.

## ***Step 2: Decide Whether to do the Project In-House or Use a Vendor***

The decision to image records in-house or work with a vendor depends on several issues. However, most organizations will contract with a vendor to complete portions of an imaging project. This is often a logical choice, particularly if you do not plan to image records regularly.

### **Reasons for Conducting Projects In-House**

- You need to image records regularly.
- You must keep valuable or fragile materials under your control.
- Your staff need a way to learn more about imaging technology.
- The project is small and easily accomplished in-house.
- You already have trained technical staff and the necessary equipment.

### **Reasons for Using a Vendor**

- You don't have the space for an imaging operation.
- You don't want to purchase and maintain the equipment.
- You don't have staff proficient in the technology.
- You have records that need special care (i.e., fragile, oversized, or bound).
- You want the security of a vendor's fixed price quote.

Keep in mind that you will almost always carry out part of the project in-house.

- Most organizations undertake some or all steps to prepare their records for reproduction.
- Content verification (checking to make sure the vendor has captured each image properly) is something you must not leave to the vendor. See State Archives' *Quality Control and Content Verification of Digital Images*.
- In some cases, you may decide to scan some of the records in-house but outsource a large or problematic records series.

- You may decide to have a vendor image your records but have your staff index them.

Make your decisions based on where your money will be best used and who is best prepared to carry out a particular function.

**Note:** New York State's Preferred Source program enables local governments and state agencies to acquire select commodities without going through the competitive bid process. An initial step in the document-imaging vendor selection process for both local governments and state agencies should be to ascertain whether a preferred source vendor is available and able to meet the "form, function, and utility" required for the document imaging project. For additional information please consult the Office of General Services Preferred Sources.

### ***Step 3: Write a Specification***

Whether you are imaging in-house or using a vendor, you should be sure to follow a specification, which is a set of technical requirements designed to help produce quality images. Local governments and state agencies must follow the technical requirements in the *Digital Imaging Guidelines* and *Producing High Quality Microfilm* when replacing original records with digital images or microfilm.

In addition to technical requirements, a specification should include details about your records. See Appendix B, "Sample Imaging Specification and Explanation," for examples of information to include. The more detailed the specification, the more accurate the vendor quotes will be and the better the digital images and microfilm should be. You will usually need to develop a separate specification for each unique records series to address its distinct characteristics and needs.

Most of the details needed to create project specifications can be found on your completed "Imaging Information Form," including:

- Name of local government or state agency
- Name of records series
- Total number of images
- Condition of records series (sizes, type, single- or double-sided)
- Color and age of paper, percent with fasteners
- Percentage of documents flat, rolled, or folded
- Type and color of imprint
- Preparation requirements
- Retrieval aids (indexing, file naming, etc.)
- Digital format (TIFF, PDF/A, PDF)
- Microfilm format (roll, jackets, etc.)
- Storage media labeling
- Number of duplicates required
- Transfer media required (External hard drive, USB drive, DVD-R, FTP transfer, etc.)
- Delivery information (date, destination, etc.)
- Technical enhancements that accommodate the needs of the records series

Providing vendors with a detailed specification that includes a complete description of the records and the final product serves two purposes. First, a good specification will help ensure that vendors know exactly what they are bidding on and, therefore, produce more accurate quotes. Second, a good specification increases the chances that the chosen vendor will produce high-quality images. While a specification usually does not indicate how the vendor must achieve the desired result of high-quality images, a thorough specification helps guide the vendor to that point.

#### ***Step 4: Develop a Request for Proposal***

If you have decided to use a vendor, or wish to solicit quotes before deciding, you should develop contract language to control the delivery of services. This contract, together with your specification and other details on bidding, usually serves as a request for proposal (RFP) for your imaging project. Draw up any service contract in consultation with your purchasing staff, Records Management Officer, and legal counsel. Appendix C, "Sample Contract," contains some typical contract language, but see below for major contract considerations.

If you are unsure how to proceed with your project or want more technical advice, contact the State Archives, or consider developing a request for information (RFI). With an RFI, you can explain your project to vendors and ask them for suggestions on how best to conduct the project. You can then use the information the vendors send you to develop a formal RFP, in which you ask for detailed bids on a specific project that has comprehensive technical requirements.

The imaging contract lays out the responsibilities of both you (the customer) and the vendor (the service provider). You should ensure that the contract leaves no question about what the vendor is supposed to accomplish. A good contract, provided as part of an RFP, will also clarify the amount of work the vendor must complete and will thus help the vendor decide on a reasonable bid.

When developing a contract, be sure to address the following issues:

#### **Compliance with specification**

Contract language should clearly state that if the product does not meet the standards outlined in the specification, the vendor must redo the project at its own expense.

#### **Contract resolution and cancellation requirements**

In case the vendor fails to resolve problems, your contract should clearly state the consequences, such as termination if corrections are not made within thirty days. This protects you from prolonged negotiations with an incompetent vendor.

#### **Packing, pickup, and delivery**

If not already covered in the specifications, state in your contract who will pick up and deliver the records and what condition the records should be in when returned. For instance, you will usually require the records be returned to you in the same order and in the same boxes. If your project involves reproducing records in batches, you should develop a schedule that includes

dates of imaging and the dates for return of each batch of records. This schedule is important to prevent misunderstanding and failure to meet deadlines.

## ***Step 5: Choose a Vendor***

### **Invite vendors to inspect records**

Once you have developed the specifications and a contract, encourage vendors to visit your facility and review the records. Share the information from the “Imaging Information Form” so they have an accurate picture of the records involved.

Vendors who review records usually give more realistic estimates of the project’s cost because they have a clearer idea of the document preparation required and the quality of the source documents.

### **Check vendor references**

Obtain recent references from vendors for similar types of projects. Call the references and ask about the quality of the vendor’s work and services. Note how long a vendor and its chief technical staff have been in business. Ideally, the vendor and technical staff should have at least five years of experience.

### **Visit potential vendors’ facilities**

It is important to visit facilities before signing a contract to see how the vendors treat records during the imaging process. You should visit the facility before signing a contract and ask questions. Some considerations include:

- What are the facilities like?
- Is there adequate security to ensure against theft?
- Is the facility orderly?
- Are staff helpful and knowledgeable?
- How do staff treat records during processing?
- Do they have any other services available, such as specialized indexing or microform creation?
- What quality controls are in place?
- Are visual and technical inspections conducted?
- What is the turn-around time?
- How are errors discovered after return of records handled?
- Are costs for making corrections covered?

### **Review bids and select a vendor**

Questions may arise when you review bids. For example, vendors might offer different approaches to reproducing the same records series. Vendors with limited experience imaging permanent records might provide a low bid based upon their experience imaging routine business records. But a vendor with extensive archival imaging experience might provide a

slightly higher quote. Keep in mind that a low bid does not always mean low cost. If you must invest countless hours of follow-up with an inexperienced vendor, you are wasting money.

Before selecting a vendor, you might ask the potential vendor to reproduce about 100 documents that you think will be difficult to reproduce. Then complete a technical inspection of the results to determine whether you can trust this vendor with your records. Some imaging RFPs even require vendors to deliver copies of sample records as part of their bid.

When reviewing bids, consider the following criteria:

- Total cost of the proposal
- Appropriateness of the vendor's technical approach
- Familiarity with relevant state guidelines and national standards
- References
- General appearance of the vendor facility
- Security provisions the vendor makes for your records
- Years of relevant experience
- Financial stability of the company
- Ability to complete the project on time

Having a list of criteria available when choosing a vendor can help you select the vendor that meets most, if not all your project requirements.

## ***Step 6: Prepare the Records***

Document preparation is necessary to make records ready for imaging and can be time-consuming and expensive. It may involve two different tasks:

- organizing the records and weeding any obsolete, duplicate, and non- records, and
- removal of paper clips and staples, flattening, or mending to enable scanning.

Organizing and weeding a record series requires a good knowledge of the records. Government or agency staff should conduct this work, unless the instructions for identifying obsolete records are completely objective and the ability of a third party to follow these instructions can be verified by staff prior to imaging.

Removal of paper clips, etc. to enable scanning is often work imaging vendors will do. The cost may be separate or part of the "per image cost" to convert records. Time and labor needed for this step should be considered to determine whether it is more cost effective for staff or a vendor to do this work.

To plan for your project, determine the type of preparation needed and estimate the time needed for preparing documents. The best way to do this is to conduct a test of a portion of the records (say, 1,000 sheets) and see how long it takes.

Alternatively, you can use the rough estimate that it will take one hour to prepare 1,000 sheets of modern office documents. This estimate might fall as low as 750 sheets per hour for older documents that have tears and folds and that are packed tightly together. Start document preparation early to help keep projects on schedule.

Successful document preparation requires deciding at the outset what procedures to follow, making them clear to those conducting the preparation, and ensuring that staff follow the procedures closely. Document preparation may include any of the following activities.

## **File organization**

If the records are out of order, you will need to organize them before imaging. This is especially important when creating microfilm, which requires records be arranged in a specific order or sequence for access. For digital images, which can allow for random access, perfect order may not be as important, yet it is still useful to make sure that records forming one document or file are stored together, so the imaging vendor can treat them as units for indexing and future retrieval. Careful consideration of the record type, condition, extent to which indexing can be successfully applied (as with Optical Character Recognition) and the level of indexing needed for access is recommended before choosing to scan unorganized records.

## **Purging**

If the records series you will be copying has many unnecessary documents (duplicates, obsolete records, etc.), then you may want to remove and discard these ahead of time. If there are only a few unnecessary documents in the series, it may be cheaper to copy them with the rest of the records.

## **Removing fasteners and straightening and repairing paper**

To prepare records for copying, you will usually need to remove staples, paper clips, and bindings and flatten folded or rolled documents. If any of the documents are torn, repair them before reproduction, usually by taping the document on its blank side. Do not, however, use tape on any historic document you expect to keep in paper form. You will probably also need to photocopy such documents in preparation for scanning, since a taped document might cause a jam in a sheet-fed scanner. Similarly, replace brittle or thin sheets of paper with good photocopies before scanning.

## **Targeting and retrieval aids**

The use of targets is essential for many reasons, including to:

- Certify images are accurate reproductions of government records.
- Verify the film has met minimum quality control standards.
- Provide information - content of the roll, roll number, start, title, defects, end, etc.
- Identify and correct errors in microfilm (poor copy, missing file, etc.).
- Separate case files (such as personnel files).

You should place appropriate targets in their proper sequence within the records. These can also include inventory worksheets, Imaging Information Forms, declarations of the records custodian, title targets, and printed indexes. For sample targets see Appendix E. For more information on microfilm targets see *Producing High Quality Microfilm* and *Introduction to Microfilm*.

## ***Step 7: Maintain Regular Communication with Vendors***

Regular communication with vendors is essential for increasing your chances of success and keeping projects on track. Good communication should begin before the signing of the contract and continue throughout the project. Anticipate problems and clarify issues in advance. Determine how the vendor will handle delays, what its normal turn-around time is, and if it will retrieve a record while it is being imaged, if necessary. A knowledgeable vendor will share valuable expertise with project staff, and you can inform vendors of any special considerations necessary for your records.

When communicating with vendors, you may phone or email, but take advantage of the time when vendors are onsite to ask them questions, discuss possible problems, and evaluate their ability to carry out the project. Whenever you make a change to the contract, including the specifications, be sure both of you agree to the change in writing. This ensures the least chance for miscommunication and protects both you and the vendor.

## ***Step 8: Monitor the Project***

To make sure your project does not fall behind schedule, set a timeline, and track your progress. If either you or the vendor fall behind, the entire project suffers.

Establish time frames for each segment of the project. This allows staff to monitor actual work accomplished as compared to the project plan. Document preparation often takes longer than anticipated and monitoring a project timeline allows for prompt readjustments. Always build 10% extra work time into the project and expect some delays.

Budget time for staff training. Each project will require some staff training, especially around document preparation and post-production content verification. You must develop, test, and refine procedures and practices to ensure smooth workflow during the project.

Ensure the vendor can track records throughout the project. Potential vendors must demonstrate how they track records from the time they receive the records until they return them to you.

## ***Step 9: Reproduce and Index the Records***

### **Reproduction**

Quality vendor reproduction will rely on providing them with detailed project specifications, a solid contract, and adhering to a schedule. In-house reproduction should also follow detailed project specifications, adhere to a schedule, and develop procedures that outline exactly how your staff will copy, index, perform technical and content inspection and refile the records.

### **Indexing**

Indexing enhances retrieval. It usually takes place right after imaging or during content inspection. Before starting to index, settle on the indexing requirements. Indexing typically consists of a structured format and controlled vocabulary that allows more precise description of

a record's content. Index data often includes information such as record type, creation date, record creator, disposition date, among other information. Talk to the users of the records to see what indexing will meet their needs. Be sure to include all the index terms you need, but none that you don't, since the cost of indexing can be high, especially if it must be done manually.

When planning an index, keep in mind that it is best to depend on objective index values (such as personal names) rather than subjective terms (such as topic of meeting). Consistency is very important in indexing, and it is easier to maintain consistency with objective indexing terms.

## **Indexing digital images**

Indexing is crucial with digital images because they are essentially irretrievable without an index. When indexing digital images, each document (including each multi-page document) must have a unique filename or other identifier, preferably sequential, which can be numeric, alphanumeric, or alphabetic as required by the government entity.

Indexing may involve one or more of the following methods:

- A computer operator will key data into the index database with the image displayed on the screen and then verify the entry, usually by proofreading.
- Optical character recognition (OCR) to enable text searching. With OCR, a software product converts a digital image of a printed document into electronic text (as in a word processing file) by comparing the known shapes of letters against shapes of characters in the image. These text files then become a full-text index to the images.
- The creation of a filing structure of consistent file and folder names for access to images on a local area network.
- A vendor may be able to automate indexing but only under certain conditions.

For more information on indexing digital images see the *Digital Imaging Guidelines*.

## **Indexing microfilm**

For microfilm, any existing indices should be filmed and "self-indexing" record series (for example, arranged by surname or by number) described in target information. When microfilm is indexed separately, indexing parameters must be chosen. These are the equivalent of a field in a database, such as name, file number, or roll and frame number. You will often index microfilm during content inspection. When reviewing the images of documents, staff can add personal names, identification numbers, roll and frame numbers, and any other necessary index terms into a database.

You can use this database alone or as part of a computer-assisted retrieval (CAR) system. A database index of microfilmed personnel records might index surname, social security number, and the department where each employee worked, along with roll and frame numbers of the first document in each case file. Once you look up a record in the index of a CAR system, you can write down the correct roll and frame numbers, retrieve the appropriate cartridge of microfilm, and load it into the reader/printer. After punching the frame number into a keypad attached to the reader/printer, the film automatically advances to the first requested image. For more information on indexing microfilm see *Producing High Quality Microfilm* and *Introduction to Microfilm*.

## ***Step 10: Inspect the Product and Preserve the Information***

Only about two thirds of the project is complete after imaging the records. You will still need to verify you have received quality images that you can quickly and easily access and use.

### **Technical Inspection**

#### ***Microfilm***

Technical inspection of microfilm involves reading density and resolution, ensuring all technical targets are in place (including the methylene blue test target), and checking the overall quality of the microfilm. For projects funded with a grant from the Local Government Records Management Improvement Fund, third-party inspection service is built into the microfilming process. For other projects, the Archives strongly recommends that you contract with a third party to conduct a technical inspection. The small cost of this inspection will ensure that the microfilm will withstand the test of time.

#### ***Digital images***

Technical inspection of digital images is often part of the responsibility of vendors, who must ensure that their scanners are operating properly. You also have the responsibility to ensure that the images produced by the vendor conform to your technical specifications, such as image type, resolution, and compression.

### **Content Verification**

If you will destroy the records after microfilming or scanning, it is particularly important to verify the images for completeness. Having a properly documented inspection procedure can prevent legal problems if those records are involved in litigation.

State agencies or local governments intending to destroy the original paper or microform record after scanning, must conduct a page-by-page verification of 100% of the records to ensure that each page has been imaged. If an agency or government maintains the original records after scanning, they may use one of two sampling methods outlined in *Quality Control and Content Verification of Digital Images*.

#### ***Microfilm***

Once a roll of microfilm passes a technical inspection, you can duplicate it. Afterwards, compare the duplicate copy of film (never the master negative, which is prone to scratching when used in a reader) with the paper records to determine if the vendor has imaged all documents and produced quality images for each. Some typical errors you might find include the following:

- Image not captured
- Improper exposure or uneven density
- Light streaks
- Scratches
- Incorrect, misplaced, or omitted finding aid targets
- Improper positioning of documents
- Folded documents

- Stretched or distorted documents
- Partial images
- Blank film
- Wrong side of document filmed
- Fogging
- Dirty film
- Torn or cracked film

### ***Digital images***

Once you receive the digital images from your imaging vendor, check the images for these common errors:

- Image not scanned
- Incorrect image format (such as JPEG where TIFF is required)
- Incorrect scanning resolution pixels per inch or dots per inch
- Incorrectly oriented document (presented on its side or upside down)
- Image too large or too small
- Skewing of image
- Image too light or too dark
- Image obscured (by a folded corner or another piece of paper)
- Appropriate indexing terms not associated with the scanned image

If you identify any of these defects, contact the vendor immediately, determine why these errors were not caught and corrected during inspection, and ensure that the vendor corrects the errors at its expense.

## **Preserve the Information**

### ***Microfilm***

The original camera microfilm is silver gelatin film, which has a life expectancy of 500 years if properly processed and stored. Despite its great potential for longevity, however, silver gelatin microfilm is highly susceptible to physical and environmental damage. A few passes through a microfilm reader can seriously scratch it. To comply with Parts 185.7 and 188.18, 8 NYCRR (Regulations of the Commissioner of Education), you must store your master silver gelatin negatives offsite in an environmentally controlled environment, with cooler temperatures, and use only your duplicate copies to access the images.

### ***Digital images***

Preserving digital images requires a commitment to maintain a system capable of providing access to your images for as long as required. This will involve budgeting funds for annual maintenance, support, and periodic hardware, software, and format upgrades. An archival backup of master images and indexing must be stored remotely to prevent loss in the event of a disaster. A plan to migrate images is required to prevent image loss when the current technology needs to be replaced.

Consult the *Digital Imaging Guidelines* for digital storage standards and Parts 185.8 and 188.20, 8 NYCRR which outline requirements for local governments and state agencies maintaining electronic records (including scanned images of records).

## **Conclusion**

If you are considering an imaging project intended to produce either digital images, microfilm, or both, be sure to take some time both to learn the relevant technology and to plan the project. Any project can fail, but a good understanding of the technical and procedural elements of the project, along with good planning, will increase your chances for success.

## ***For More Information and Assistance***

The State Archives provides direct advice to state agencies and local governments on planning for and conducting imaging projects. For more information, contact:

Government Records Services  
New York State Archives, State Education Department  
9A47 Cultural Education Center, Albany, New York 12230  
(518) 474 6926 | RECMGMT@nysed.gov | [www.archives.nysed.gov](http://www.archives.nysed.gov)

# Appendix A

## ***“Imaging Information Form” and Instructions***

The “Imaging Information Form” for imaging paper records has two objectives:

1. To develop specifications for an imaging project, which will help your government or agency plan for the creation of high-quality images at a reasonable cost.
2. To enable the collection of strong documentation when applying for an imaging grant from the Local Government Records Management Improvement Fund (LGRMIF)

The instructions are intended to make accurate completion of the “Imaging Information Form” as painless as possible. We invite comments and suggestions for improvement. Send comments to New York State Archives [recmgmt@nysed.gov](mailto:recmgmt@nysed.gov).

Complete one “Imaging Information Form” for **each** records series you propose to image. For example, if you want to scan board minutes and building permits, fill out one form for the minutes and one form for the permit records.

Use a technique called **sampling** to form conclusions about the entire records series.

- Sample several folders (or batches – as many papers as you can conveniently pick up at one time in one hand) from each file cabinet drawer or box.
- As a rule of thumb, examine three or four folders in a file cabinet drawer. Sample one or two folders in a one-cubic-foot storage box.
- Sample records from every drawer or storage box. Doing this pays off in the end by reducing costs and saving time when you find a whole new category of records in an unexpected location.

Invite vendors to review and comment on your records as you complete the “Imaging Information Form.” The perspectives of potential vendors will give you additional insights into your imaging project. You may also want State Archives staff to review the “Imaging Information Form.”

# Imaging Information Form

Use this form with:  
 Digital Imaging Guidelines, 2019  
 Producing High Quality Microfilm, 2005

**SCOPE:** The information on this form creates a technical specification for producing high quality images. Governments/agencies contracting with an imaging vendor should attach whatever additional contracting documents your government requires. A typical bid offering will consist of at least these items:

- this Imaging Information Form
- the Digital Imaging Guidelines and/or Microfilm Production Guidelines
- internal contracting materials

Instructions for completing this form follow, see *Instructions for Completing Imaging Information Form*.

## 1. NAME OF GOVERNMENT

## 2. PREPARED BY *(Print)*

TELEPHONE NUMBER *(Include Area Code)*

## 3. NAME OF RECORDSERIES

## 4. Datespan:

## 5. Retention schedule and item number:

## 6. Arrangement: The records in this series will be imaged in this existing order:

A. **Alphabetically**  by personal name *(last name first)*

by corporate name *(business name)*

by another alphabetical order, *(describe)* \_\_\_\_\_

B. **Numerically**  by parcel number

by case number

by personal identification number

by another numerical order, *(describe)* \_\_\_\_\_

C. **Chronologically**  by year/month/day (yyyy/mm/dd)

by month/day/year (mm/dd/yy)

by another chronological order, *(describe)* \_\_\_\_\_

D.  by a **COMBINATION** of the above, or other factors. Describe the hierarchy of the records:

---

---

---

E.  in **RANDOM** order, requiring a separate index for document retrieval. Describe the indexing system:

---

---

7. \_\_\_\_\_ Total number of DOCUMENTS  
\_\_\_\_\_ % ◀ PERCENTAGE of documents that have information on both sides of the sheet
8. \_\_\_\_\_ ◀ Total number of IMAGES
- 8a. \_\_\_\_\_ ◀ Total number of ROLLS
- 16mm microfilm -- office documents (divide total images by 2500)
  - 35mm microfilm -- bound documents (divide total images by 1000)
  - 35mm microfilm -- drawings (divide total images by 500)
9. \_\_\_\_\_ ◀ Number of images by which this record series INCREASES by each year

10. Condition of Documents:

A. Size

\_\_\_\_\_ Length      \_\_\_\_\_ Width      ◀ LARGEST Document

\_\_\_\_\_ Length      \_\_\_\_\_ Width      ◀ SMALLEST Document

B. Age/Brittleness/Fasteners

\_\_\_\_\_ Years      ◀ AGE of paper (oldest)

Yes     No      ◀ Edges of paper are FLAKING

\_\_\_\_\_ %      ◀ Percentage of the documents which have FASTENERS (staples, paper clips, etc.)

C. Enclosure

Yes     No      ◀ Are documents in folders?

Yes     No      ◀ Are documents bound? *If yes,*

Yes     No      ◀ Can the books be disbound?

Type of binding:

sewn (only)     sewn and glued     drill post     comb (green bar printout)

glued (only)     ring     clamp

other \_\_\_\_\_

**D. Lay of the paper**

- \_\_\_\_\_ % ◀ Percentage of the documents which are FLAT
- \_\_\_\_\_ % ◀ Percentage of the documents which are ROLLED
- \_\_\_\_\_ % ◀ Percentage of the documents which are FOLDED

**E. Color of the paper**

- \_\_\_\_\_ % ◀ Percentage of documents on WHITE PAPER
- \_\_\_\_\_ % ◀ Percentage of the documents on \_\_\_\_\_ paper  
(Indicate color)
- \_\_\_\_\_ % ◀ Percentage of the documents on \_\_\_\_\_ paper  
(Indicate color)
- \_\_\_\_\_ % ◀ Percentage of the documents on \_\_\_\_\_ paper  
(Indicate color)
- \_\_\_\_\_ % ◀ Percentage of documents that are BLUEPRINT or PHOTOSTAT

**F. Imprint** *(More than one entry may be checked)*

- handwritten only       printed/typed only       handwritten and printed
- ink       pencil       carbon paper

**G. Color of imprint** \_\_\_\_\_

**11. Document Preparation for Imaging**

- A.  the Government/Agency  
 the imaging vendor      ◀ FILE ORGANIZATION shall be performed by *(check one)*

---

- B.  the Government/Agency  
 the imaging vendor      ◀ PURGING shall be performed by *(check one)*

---

- C.  the Government/Agency  
 the imaging vendor      ◀ PREPPING the documents shall be performed by *(check one)*

**12. Records Usage**

- A. \_\_\_\_\_ ◀ Estimated ANNUAL number of people who use this record series
- B. \_\_\_\_\_ ◀ Monthly number of "look-ups" (reference or retrieval)
- C. From the date of document creation, most retrievals occur within
  - one week     one month     one year
  - 2 - 6 years     continued steady usage
- D. The persons who **handle these documents** are
  - employees only
    - this department only     several departments
  - public
  - other *(describe)* \_\_\_\_\_

E. The persons who **use these documents** are:

- employees only
- this department only     several departments
- public
- other (*describe*) \_\_\_\_\_

F. \_\_\_\_\_ minutes    ◀ How much time is normally necessary to retrieve a document?

G. \_\_\_\_\_ minutes    ◀ no more than

H. Does retrieving documents entail any special problems? (*If yes, describe*) \_\_\_\_\_

\_\_\_\_\_

I.  Yes     No    ◀ Does one document have to be compared to another?

*If yes, are the two documents*

- from the SAME record series?
- from DIFFERENT record series?

J.  Yes     No    ◀ Are the documents COPIED?

K. \_\_\_\_\_    ◀ Approximately how many copies are produced monthly?

**13. Digital Format**

Use State Archives Digital Imaging Guidelines, 2019 for digital format creation.

A. \_\_\_\_\_ TIFF

B. \_\_\_\_\_ PDF/A

C. \_\_\_\_\_ PDF

Use ONLY used for records with less than 10-year retention period.

**14. Microfilm Format**

Use State Archives Producing High Quality Microfilm, 2005 for film creation.

A. The first-generation silver-gelatin (camera) film shall be (*check one*):

- 16mm roll microfilm
- 35mm roll microfilm

**Warning: First generation silver-gelatin microfilm (camera film) shall not be jacketed**

B.  Yes     No    ◀ Is a second-generation silver gelatin negative required?

C.  Yes     No    ◀ Is a second-generation diazo (duplicate) required?

*If yes, the duplicate shall be:*

- 16mm or 35mm roll microfilm - (Number of duplicates required\_\_\_\_)
- loaded into 105mm x 148mm microfiche jackets - (Number of duplicates required\_\_\_\_)
- loaded into 105mm x 148mm microfiche jackets AND duplicated to unitized microfiche - (Number of duplicates required\_\_\_\_)

**15. Delivery Date:** All paper records and completed images shall be returned to the contracting government/agency not later than \_\_\_\_\_

**Additional Information:**

\_\_\_\_\_

**DATE THIS FORM COMPLETED:**

\_\_\_\_\_

## ***Imaging Information Form Instructions***

### **1. Name of Government or Agency**

Use the full legal name of your government or agency. If the records belong to a department or a sub-unit of the government, include that as well. For example: County of Essex, County Clerk's Office, tax assessment rolls.

### **2. Prepared By**

If anyone needs more information about the records series, or the Imaging Information Form, this is the person to contact.

### **3. Name of Records Series**

A records series is a group of records that shares a common set of functions and characteristics, such as School Board Meeting Minutes, Deeds, Mortgages, Tax Assessment Rolls, Cumulative Student Academic Records, Birth Certificates, etc. The full legal name of the records series should be written on the form, for example, as it appears in your State Archives' retention and disposition schedule.

### **4. Date span**

Indicate the year or span of years for the record series.

### **5. Retention schedule and item number**

Indicate the State Archives' retention schedule and item number for the record series. For court records under the jurisdiction of the Office of Court Administration (OCA), refer to OCA's records retention and disposition schedules.

### **6. Arrangement**

This is an important issue in imaging, particularly if the images created will also be stored on microfilm where a logical filing order is essential for access.

Ideally, paper records should be in good order and the arrangement understood by you and the vendor, many reasons:

- A known arrangement can ensure the record series is complete before it reaches the vendor.
- Informs the vendor (who will know nothing about your records) that a fixed order exists and needs to be maintained during imaging and when the records are returned.
  - Also, whether the indexing changes at any point in the series, for example, personnel files arranged by surname for a period, then after a certain year, filed by ID number.
  - Or, unwritten indexing rules, for example, in a personnel file with two Jane Smiths, a secondary filing order might include filing by employee number.
- Upon return, during the verification process, a fixed arrangement can help check that the records have not been re-arranged, damaged, lost, destroyed, or stolen.

For digital images:

- Arrangement is essential in an electronic file directory or folder system.
  - Image files will be organized in a file directory or folder system that will link to metadata stored elsewhere in a database. Directories may have their own organization independent of the image files, such as folders

arranged by date or records series number, or they may replicate the physical or logical organization of the originals being digitized.

- Arrangement information can help determine the most useful indexing terms, such as name, date, or unique identification number.

For records on microfilm:

- It is essential that the records are in good order so that users can easily find records by following a meaningful arrangement.
- Records imaged in disorder will make locating a record on the microfilm even more difficult than the paper version.
- Records can be imaged for microfilm in random order if a computer-based index system is created during or following the imaging, although this is expensive and the least preferable way of creating microfilm.
- Original order of the records should be retained when established by the office of origin since the office may have a particular filing system that should be retained. In addition, the order of the records may reveal institutional organization, functions, and history.
- If you do not understand the records series' file order, **GO NO FURTHER!** Ask other staff or State Archives advisory staff for help. If you continue, you are likely to waste time and money, create new problems, and create frustration among the users of the records series. A file reorganization project should be undertaken only after **careful** analysis of the records. Usually, the original order of the records needs to be preserved for administrative and research purposes.

#### **7. Total Number of Documents:**

#### **8. Total Number Images:**

#### **9. Total Number of Rolls:**

You must estimate the number of images anticipated for each records series. An image consists of one side of one sheet of paper. During your image count you should also consider what percentage of the documents has information on both sides of a sheet. Since some documents have information on both sides, the total number of images (and thus the scale and cost of the project) may increase or double.

There are several ways to establish this estimate. The method you choose depends on the type of document (office documents in folders, bound documents, or maps and drawings) and on how much reliable information you already have about the records series.

Here are three methods of measuring the volume of a records series:

- linear filing inch
- cubic footage
- existing inventory by sequential number

The **Linear Filing Inch method** is based on the average thickness of a sheet of document paper. If you measured the depth (front to back) of a file cabinet drawer with a ruler or tape measure marked in inches, you would find that, on the average:

- there are 200 sheets of paper per inch
- there are 150 sheets of paper in a full (3/4-inch-thick) file folder
- there are 4,000 sheets of paper in a full, active 27-inch file drawer
- there are 5,000 sheets of paper in a full, inactive 27-inch file drawer

Multiply this average by the total number of inches or file drawers, and you will have a reasonable estimate of the number of documents.

You can refine this method for bound materials by sampling the actual sheet count: take six inches' worth of books off the shelf, count the number of sheets in each book, and use this figure, divided by six, to estimate the number of bound documents. This corrects for the thickness of the book covers.

Estimating drawings and maps is trickier because they are not always kept flat in special file cabinets. You can adapt this method by counting the number of drawings in a typical storage unit (bin or drawer) and then multiplying the number of drawings by the number of storage units.

**Cubic Footage** estimating is adequate, providing the documents are in ledger, letter, legal, or computer printout sizes, and are in file folders. Multiply the number of cubic feet of records by 2,500 (the approximate number of documents in one cubic foot). This method is useful with bound documents, although you should refine by sampling (as described under "Linear Filing Inch" method above). This method is not valid with drawings and maps because of the extreme variations in thickness and size which are typical of long-established, and/or large collections of maps.

**Inventory by Sequential Number** may be acceptable, providing you are satisfied that the inventory is accurate. It is not unusual for a records series to have different numbering systems at different times, so the inventory numbers and the actual number of documents may not correspond. For instance, a group of "recorded maps" or of "plan drawings" may be assigned a single number because they are tied to the same parcel or building. On the other hand, certain records series, such as birth certificates, have an intrinsically accurate numbering system and are therefore good candidates for this inventory method.

**To calculate the total number of documents and the total number of images:**

1. Multiply the number of "storage units" (boxes, file cabinet drawers, etc.) by the average number of documents per unit. This gives you the total number of documents in the records series.
2. Multiply the total number of documents by the percentage of documents in the records series that have information on both sides, then add the product to the total number of documents calculated in Step 1. This gives you the total number of images.
3. Since these figures are derived by sampling, you must add in an error factor, based on the confidence you have in the accuracy of these numbers. If you are quite confident, add 10%; if you are not, add 15%.
4. For the sake of simplicity, round off the numbers upward (which increases the error factor).

**LINEAR FILING INCH example**, based on 20 file cabinet drawers:

**Step 1.** How many documents are there?

17 full drawers x 5,000 documents/drawer = 85,000 documents  
3 half-full drawers x 2,500 documents/drawer = 7,500 documents  
85,000 documents + 7,500 documents = 92,500 documents

**Step 2.** You estimate that about 50% of the documents are double-sided:

92,500 documents x 50% double-sided documents = 46,250 more documents  
92,500 documents + 46,250 more documents = 138,750 images

**Step 3.** You are confident of your figures, so you add an error factor of 10%:

138,750 images x 10% error factor = 13,875 more images  
138,750 images + 13,875 more images = 152,625 images

**Step 4.** Round up to an estimated total number of 153,000 images

**CUBIC FOOTAGE example** based on 50 cubic feet of records.

**Step 1.** How many documents are there?

50 cubic feet x 2,500 documents/cubic foot = 125,000 documents

**Step 2.** You estimate that about 50% of the documents are double-sided:

125,000 documents x 50% double-sided documents = 62,500 more documents  
125,000 documents + 62,500 more documents = 187,500 images

**Step 3.** You are not confident of your figures, so you add an error factor of 15%:

187,500 images x 15% error factor = 28,125 more images  
187,500 images + 28,125 more images = 215,625 images

**Step 4.** Round up to an estimated total number of **216,000 images**

**INVENTORY SEQUENTIAL NUMBER example** based on 1,132 drawing (maps and plans) inventory numbers. You have sampled the drawing collection and find that, on the average, there are four drawings for each inventory number. Furthermore, the first drawing in each number always has recording stamps on the back, and these stamps must be visible on the microfilm.

**Step 1.** How many documents are there?

1,132 sequential map/plan numbers x 4 drawings/number = 4,528 documents

**Step 2.** You know that the first drawing in each number has recording stamps on the back and averages one document in four, or 25%, double-sided documents:

4,528 documents x 25% double-sided documents = 1,132 more documents  
4,528 documents + 1,132 more documents = 5,660 images

**Step 3.** You are not confident of your figures, so you add an error factor of 15%:

5,660 images x 15% error factor = 850 more images  
5,660 images + 850 more images = 6,510 images

**Step 4.** Round up to an estimated total number of 6,600 images. If the record series is a small one, you can count all the maps, etc.

Calculating the total number of images is necessary to determine project needs, such as:

- Time and cost needed to create each image
  - Vendors charge per image for creation and indexing. A vendor or in-house project will need an estimate to determine time needed for the work.
- Time and cost needed for indexing
  - Filenames, assigned index term(s), or Optical Character Recognition (OCR)
  - A vendor or in-house project will need this estimate to determine time needed for the work.
- Storage costs for digital images - server space, microfilm storage or both.
- Microfilm rolls needed, if applicable.
  - A rough rule of thumb is that a 16mm roll of office documents contains 2,500 images, a 35mm roll of microfilm contains 1,000 images, and a 35mm roll of drawings or large-size documents contains 500 images. You may want to allow about thirty frames from each roll for technical targets.

Note: When making these calculations and when writing your contract, you should accept billing only for images created. Thus, figuring in a reasonable error factor has few penalties.

#### **10. Record Series Increases**

If a record series is still active and new documents will be added periodically. This will help you plan future imaging needs.

#### **11. Condition of Documents**

This is one of the determining factors in deciding what formats are needed for digital and microfilmed images, as well as what costs will be involved in reformatting. "Condition" refers to several factors.

For microfilm:

- a) **Size.** Use a ruler or measuring tape; be sure you have measured the largest document in the record series. The size of the largest document determines the film format. Large documents (larger than 11" x 14" (in any direction) and particularly those with details, are put on 35mm film to capture the maximum

amount of detail. If there are multiple document sizes found within a records series, this can add to the complexity and cost of the project. Discuss this issue thoroughly with your imaging vendor and State Archives staff.

- b) **Age/brittleness/fasteners.** The age and brittleness of the paper determine the difficulty of handling the documents, both for preparation and for imaging. The type and number of fasteners (i.e., staples, paper clips, etc.) determine the difficulty (and cost) of preparing the documents imaging.
- c) **Enclosure.** Most office documents are either loose (frequently in folders) or bound. The quality and cost differences between imaging unbound and bound documents are considerable. Bindings should be removed, if possible, this will improve the quality of the image and keep costs down.
- d) **Lay of the paper.** Folded or rolled documents must be flattened before imaging; the cost of this preparation should be factored into vendor estimates.
- e) **Color of the paper.** The color of the paper affects how well it will reproduce, particularly when the color of the imprint (a collective term for handwriting, typing, printing, or drawing) is factored in. If all the paper is white, skip to the **IMPRINT** box. Use common terms to describe the colors, such as yellow, blue, pink, etc. Blueprints are drawings, usually with white lines and text on a blue background. Photostats may be any kind of document where the text is white or lightly shaded on a dark gray or black background. The paper is usually extra-thick; this should be considered when calculating your number of images.
- f) **Imprint.** The type and color of the writing or drawing are major considerations. The best results will come from very dense black ink on pure white paper. The worst results come from faded colored inks or light pencil on paper of the same color (i.e., faded red ink on pink paper, or third layer down carbon paper). Large, printed letters reproduce better than fine handwriting. In rare instances, documents may be so illegible that reformatting will not improve readability, in these cases, testing a sample is recommended before committing time and money to imaging an entire series in that condition.

## 12. Document preparation

Careful preparation of records for microfilming is critical to ensure good images. Document preparation can be the largest project expense when records are in poor condition, have many fasteners or when files need reorganization.

Document preparation may consist of the following steps:

- a. File organization: placing the records in the order required to locate them (such as alphabetical - by last name; numeric - by case number; date; or any arrangement that combines these systems).
- b. Determining indexing: filename conventions, applied index terms, text searchability (Optical Character Recognition (OCR)).
  - If the records will be stored on microfilm, records should be imaged in a specific order. Indices and/or descriptions of the records should be prepared for the beginning of the appropriate rolls.

- c. Purging: removing any documents (duplicates, obsolete records, non-records) that should not be imaged.
- d. Prepping for imaging: removing staples and paper clips, repairing torn sheets, flattening folded or rolled documents.
  - For microfilm: producing required information targets. If possible, identify roll breaks and note any missing documents on an informational target. Required technical and informational targets found at the beginning and end of each roll of microfilm are listed in Appendix E.

**File organization or purging** should be performed by the employees who understand the records. The vendor might erroneously purge documents that should have been retained. This could leave the government or agency in a precarious legal position.

- **If the number of documents to be removed is small** and if retaining them is not likely to cause legal problems, then film all the records. It is usually less expensive to image these records than to pay staff to purge documents.
- **If there are large volumes of duplicate records and blank forms**, it will be economical to purge those items before imaging.

**Prepping for imaging** is usually done by the vendor. The cost of this work is usually included in the imaging cost.

- Special problems such as mending a quantity of torn paper, flattening many folded or rolled documents, etc., may make it worthwhile to separate the pricing of this work from the pricing of the microfilming.
  - Purpose of separating out the pricing is to establish a more accurate estimate.
  - A government or agency that feels it can do this work as well as the vendor, and at substantially lower cost, may wish to exclude the cost from the imaging bid, with two reservations:
    - The quality of the work must be acceptable to the vendor (failing this the work will have to be done all over again, which eliminates any savings).
    - Special care must be taken, when transporting loose documents, to avoid any shuffling of the documents that could result in misfiles.

### 13. Usage

Records usage will help determine the best format, retrieval and storage systems needed for the records. Base this decision on internal statistics of how many users request what kind of information and how often, as well as feedback on the retrieval system in place, for example, is it excessively time-consuming, difficult to use, and/or has a high rate of complaints.

#### **Consider digital when you:**

have a high volume of actively retrieved records.

need quick access, greater flexibility in finding information in the records, and shared access across departments/locations.

records are being damaged from handling.

#### **Consider microfilm when you:**

never or infrequently access the records.

cannot afford to maintain a software system to manage digital images.

do not have technical infrastructure to support a software system to manage digital images.

#### **Hybrid approach:**

Image records and use digital images for access. Make a microfilm copy of the digital images for preservation. If anything happens to the digital records you can rescan the microfilm at a lower cost than rescanning the paper records.

#### 14. Digital Format

Governments and agencies should follow State Archives' *Digital Imaging Guidelines* whether imaging their records in house or using a vendor. The publication provides details on industry standards for digital formats, including for records with retention periods of 10 years or more, including those designated as archival or permanent, only two image file formats are allowed Tagged Image File Format (TIFF), which is preferred for photographic records, and PDF/A, which is preferred for textual documents or hybrid documents with text and images. For records with retention periods of less than 10 years, there are three acceptable image formats for imaging: TIFF, PDF/A, and basic PDF. In addition to formats, the guidelines provide information about appropriate resolutions, and other production criteria to ensure good quality images.

#### 15. Microfilm Format

Governments and agencies should follow State Archives' *Producing High Quality Microfilm*.

On the first part (A) of the **Microfilm Format** section:

- Common office documents in letter, legal, or computer printout sizes are best microfilmed on 16mm microfilm. Should these records be bound, you will almost always get a better microfilm image at a lower cost by having records disbound for microfilming and later having them treated and boxed or re-bound, if they have sufficient intrinsic value to warrant the expense.
- In rare cases and only as a last resort, bound documents, the bindings of which are intrinsically so valuable that they cannot be disassembled, should be microfilmed in a book cradle, on 35mm film.
- Finally, large maps and drawings (usually larger than 11" x 14") must be microfilmed on 35mm film (using a special "engineering" camera).

On the second part (B) of the **Microfilm Format** section:

- On rare occasions, a government or agency may require the addition of a duplicate silver negative for extremely valuable records.

On the third part (C) of the **Microfilm Format** section:

- Use only duplicates ("diaz duplicates") of the camera film for retrieval; one of the benefits of microfilm is the relatively low cost of producing and distributing multiple copies. You might, for instance, need to retrieve the same records at different locations.
- Certain microfilm systems use sheet microfilm, known collectively as microfiche, to group together all the documents relating to one file. One of several methods of producing microfiche is to cut a roll of microfilm into segments of documents, insert the segments into a clear plastic sandwich called a "jacket," then print a microfiche from this jacket.

## Appendix B

### ***Sample Imaging Specification and Explanation***

Most of this sample specification for employee record cards duplicates language found in the State Archives' Digital Imaging Guidelines. This sample includes unique information provided by the customer to illustrate what information you must add to the basic guidelines to transform them into a complete specification. **Be sure to change unique customer information to reflect your organization and the record series proposed for imaging.**

Date: July 14, 2021

#### IMAGING SPECIFICATION FOR SPRINGFIELD CENTRAL SCHOOL DISTRICT, STATE OF NEW YORK

##### **NOTICE**

This specification is only valid for the records named below and the organization above. Contractors that accept programs other than herein specified using this specification are subject to nonpayment and penalties. This specification is automatically voided, for bidding purposes, two years after the above date.

##### **SCOPE**

- A. **RECORDS SERIES NAME:** Employee Record Cards, 1935–2000
- B. **DOCUMENT SIZE:** 8 ½" x 11"
- C. **CONDITION:** Approximately 96-pound, double-sided cards with some typewritten but mostly handwritten data, including a limited number of penciled notes. Estimated number of images is 10,000.
- D. **PREPARATION:** The Springfield School District will be responsible for file preparation prior to imaging.
- E. **CONTRACTOR:** The prime contractor will have complete in-house capability to perform all the operations (scanning, indexing, quality control, duplicating, etc.), as specified herein. The contractor shall not subcontract any operation or portion of an operation without the written permission of the customer or unless specified herein.

## REQUIREMENTS

1. **IMAGE FORMAT:** Master Images: Record copies of images shall meet the following guidelines:

Format: 8-bit TIFF (latest version)  
Tonal depth: Grayscale Compression: Uncompressed  
Spatial Resolution: 300 ppi (unenhanced true scan)

Access Images: User copies of images, if different from the master copy, shall meet the following guidelines:

Format: 8-bit multi-page PDF (latest version)  
Tonal depth: Grayscale  
Compression: Lossless Spatial Resolution: 300 ppi

2. **COMPRESSION:** Maintain master images uncompressed to ensure easy accessibility to the image over time. Access copies or use copies may be compressed using non-proprietary, lossless compression algorithms.
3. **SCALING:** Scale access images so most documents fit within the typical computer screen or window for the given application.
4. **IMAGE HEADERS:** Master images cannot have proprietary headers, including PDF headers that make the images inaccessible except in particular software environments. Access images cannot have proprietary headers, except PDF headers where necessary.
5. **IMAGE ORIENTATION:** Upright (portrait or landscape as appropriate).
6. **STORAGE MEDIA:** Storage media shall depend on its intended use.
  - Media used to transfer images and index data from imaging source to customer.
  - Transfer Media (from imaging source to customer): For the purposes of transferring images, CD-Rs, DVD-Rs, external hard drives, or USB-drive media are preferred.
  - Media used to transfer images of archival records from the state agency to the State Archives.
  - Contact the State Archives' Electronic Records Unit to determine the best method of transfer.
  - The digital repository (preferably, an ECMS) used by the state agency or local government to store the images.
  - Final images and their associated metadata are best stored on server-class hard drives utilizing a RAID (Redundant Array of Inexpensive Discs) configuration.
7. **MULTIPLE FRAME IDENTIFICATION:** All images in a single document shall be accessible and presentable in their original order and be clearly associated with each other as parts of a single document.
8. **QUALITY CONTROL AFTER SCANNING:**

- Inspection of the images by the vendor for quality shall verify the following:
- Correct image file naming convention, as agreed upon
- Correct file format (including verification of compliance with the PDF/A format for purported PDF/A files)
- Quality of image is the same as in the original
- Correct size and resolution
- Image digitized at appropriate ppi for each image type
- Proper reading orientation (landscape or portrait)
- Image is not skewed
- Image is neither too light nor too dark
- Curvature of the page does not obscure or distort the text
- Appropriate contrast within the image
- No distortion of the image
- No extraneous materials (sticky notes, fasteners, etc.) obscure the image
- No additional information added to the image that is not part of the original document
- Appropriate indexing terms associated with the digitized image

**Correction of unacceptable images shall consist of the following:**

- Correcting image file name
- Deskewing, rotating, or flipping the image to correct its orientation
- Adjusting brightness, contrast, or tone through redigitizing only
- Curvature correction that does not obscure or distort the original image and that captures all data in the record
- Reversing polarity for photographic negatives or negative microfilm
- Redigitizing, followed by a re-inspection of the new image
- Updating index database to correct errors

**Unacceptable modifications to the images include the following:**

- Sharpening the images
- Retouching or despeckling
- Removing information from the images
- Adding information to the images, except clearly marked and necessary sticky notes

**9. RESOLUTION:** Image sharpness should be equivalent to the pixels per inch (ppi) required for the original image type in 1.1–1.2 above. Use commercially produced resolution targets, such as those outlined in ANSI/AIIM TR38-1996, “Identification of Test Images for Document Imaging Applications,” and following techniques in ANSI/AIIM MS44-1988 (R1993), “Recommended Practice for Quality Control of Image Scanners,” to verify scanner performance.

**10. DOCUMENTATION TO SCAN WITH THE RECORDS:** Scan the following documentation with the records, ensuring that this documentation appears in each separate location where the records are stored (LAN drive, removable media, backup tapes, etc.):

- State Archives’ Records Inventory Data Worksheet
- Imaging Information Form

- Local government or state agency name and address
- Contractor's name and address, and dates of scanning
- Certification Target signed by the scanner operator
- Declaration by records custodian
- Resolution Target that complies with ANSI/AIIM TR38-1996
- Identification of Test Images for Document Imaging Applications," or other industry-standard resolution target
- Indices, finding aids, and other metadata associated with the documents, if supplied by the customer (if separate from the index database for the images)
- Sticky notes, if necessary, to indicate defects to records, including "DAMAGED DOCUMENT," "POOR-QUALITY DOCUMENT," etc.

**11. RETRIEVAL AIDS:** Indexing shall comply with specific requirements of the customer, but shall at the minimum include the following:

- **Unique Identifier for Images:** Each image shall have a unique identifier, preferably sequential, which could be numeric, alphanumeric, or alphabetic as required by the customer. Each filename shall be unique across all separate external media, not merely within a single disk or tape.
- **Indexing Data Fields:** The index of images shall consist of the following fields:  
Surname and first name of employee Social Security number Date of hiring  
Separation date
- **Indexing Database:** The indexing data must be stored in a non-proprietary format to allow its transfer to other systems and databases as needed through the conversion project and for the entire retention period of the records. Each record within the database must be associated with the respective digital image or document via its unique filename.
- **Index Accuracy:** The index data, not including OCR'd text used to search against, must be verified with the goal of achieving 100% accuracy. Acceptable methods include verification of data by another individual other than the person performing the initial data entry; dual data entry where two operators independently index the same document and the results are compared to find any discrepancies (this is also known as double-blind indexing); or any other means as appropriate to ensure 100% index accuracy.

**12. PACKAGING:** The customer may accept or require alternate appropriate packaging as is suitable. The vendor shall deliver separated sets of master and duplicate copies of media to the customer in boxes, with the media fitting firmly but not tightly. Any removable media used to transfer images between the vendor and the customer must be properly labeled. At a minimum, the following information must be included on a label on each piece of storage media used to transfer images and index data:

- Customer Name
- Records Series Title and Date
- Range of Records (if appropriate)
- Package or Media Number
- Security Level (Low, Medium, High)

The Vendor must always maintain control over the physical and electronic public records provided to them or created as a result of the work performed under the scope of the project.

13. **PACKAGE MARKING:** The following data, must be included on a label on each piece of storage media used to transfer images and index data:

Springfield Central School  
District Employee Record Cards, 1935–2000  
Package or Media Number

14. **QUALITY OF WORK:** Scanning shall capture each digital image of a document page so that every line and character on the document appears in the image. Removable media shall be free of scratches, cracks, finger marks, or any other defect that might adversely affect quality or usability.
15. **CONTRACTOR INSPECTION:** The vendor shall inspect each storage medium for compliance with the requirements herein, including resolution, image quality, accuracy of the index, and general workmanship. The vendor shall include an inspection report or certification for each storage medium included in each shipment.
16. **QUALITY CONTROL:** Images that, upon inspection by the customer, do not meet the requirements of these guidelines will be defined as defective, and must be rescanned at the contractor's expense. If the number of defective images does not exceed one image in 500, the contractor may scan the defective images and store these on a separate disk, tape, or other storage medium. If the number of defective images exceeds one image in 500, the contractor must replace the entire disk, tape, or other storage medium.
17. **REJECTION OF BACKUP MEDIA:** When the customer rejects an entire storage medium, the customer may retain rejected media at its discretion.
18. **VENDOR FACILITY INSPECTION:** The customer reserves the right to inspect and approve the vendor's work site before and at any time during the performance of a contract to ensure the vendor's production and quality control capabilities.
19. **FILE INTEGRITY:** Unless otherwise specified elsewhere in the contract, the vendor shall maintain the original documents in their existing file order before, during, and after scanning. The vendor shall return file material to the original storage containers in the same order that existed before scanning. However, the vendor shall maintain any corrections to file order made during the preparation for scanning. The vendor shall not restore any fasteners (staples, clips, tape, etc.) removed during document preparation.

# Appendix C

## **Sample Contract**

This sample contract includes general contract language, including compliance with specifications, communications, and pickup and delivery that you should incorporate in any imaging or microfilming contract. **Modify this contract to comply with your standard contract language and add or delete any information as necessary.** Also make sure that your legal counsel and purchasing unit review any contract for imaging or microfilm services. Append your completed imaging or microfilming specification to your contract to produce a complete contract document. With a few more details on bidding rules, these documents could then form an official request for proposal (RFP).

### **IMAGING CONTRACT**

#### **A. Scope**

This contract between the Springfield Central School District (hereafter referred to as Springfield CSD) and the Generic Imaging Corporation (hereafter referred to as the Vendor) applies to records reproduced in digital images for Springfield CSD and to the services listed on the attached specification for a period from June 30 through December 31, 2021.

#### **B. Prices**

1. The Vendor will quote prices for all aspects of the project in cost per image to include document preparation (where applicable), scanning, indexing, duplication, pickup, delivery, and shipping. Prices will also indicate cost for media to transfer images.
2. All prices will remain in effect for the duration of the project.

#### **C. Copyright**

All digital images produced by the Vendor are the property of Springfield CSD. No part of the images may be sold, distributed, or duplicated without the written permission of Springfield CSD.

#### **D. Compliance with Specifications**

1. The Vendor will conduct work for Springfield CSD according to the attached specification. Springfield CSD will provide any deviations from these specifications to the Vendor in writing.
2. Springfield CSD reserves the right to specify additional imaging methods and instructions for any and all items should this become necessary. The Vendor will not change the imaging methods and instructions without prior consent from Springfield CSD. If the Vendor cannot scan any item in the manner specified, then after consultation with Springfield CSD the Vendor will return the item to Springfield CSD with justification for its rejection. Springfield CSD can, at that time, contract with

another vendor to complete the portion of the project that the Vendor cannot complete.

3. Failure of the Vendor to meet the requirements of the contract and the attached specification will constitute default. Springfield CSD will notify the Vendor in writing of unsatisfactory service, poor production quality, or poor delivery. Failure of the Vendor to correct the problems at its own expense or to come to an amicable solution with Springfield CSD within thirty (30) days will constitute default.

#### **E. Subcontracting**

The Vendor will conduct all services (document preparation, imaging, indexing, duplicating, and quality control) on its premises or those of Springfield CSD unless Springfield CSD grants the Vendor written permission to do otherwise.

#### **F. Insurance and Security**

The Vendor will insure, at no charge to Springfield CSD, all materials against loss or damage from any cause, from the time they leave Springfield CSD until they are returned. The Vendor must insure each shipment while in transit and while at the Vendor's facility. The limit of liability for an item lost or destroyed will be a sum equal to the cost of processing an acceptable replacement item.

#### **G. Communication**

The Vendor will appoint a representative to coordinate the project with Springfield CSD. The representative will be thoroughly familiar with the terms of this contract, will have in-depth knowledge of technical issues.

#### **H. Access to Records During Filming**

If Springfield CSD requires access to any of its records while they are in the possession of the Vendor, the Vendor will fax or e-mail a copy of the documents within one business day of the request. The Vendor shall provide this service at no additional cost, so long as Springfield CSD requests no more than an average of five pages per week. In the case of an imaging delay on the Vendor's part or requests from Springfield CSD exceeding five pages per week, both parties will discuss the issue and agree to any solutions in writing.

#### **I. Preparation and Imaging**

1. Springfield CSD will provide any series descriptions, arrangement, and index information along with the records for imaging.
2. The Vendor will follow all technical requirements as outlined in the attached specification.

#### **J. Packing, Pickup and Delivery**

1. The Vendor will adhere to the “Packaging” and “Package Marking” sections of the attached specification.
2. The Vendor will maintain a log acknowledging receipt of each shipment of records and will make this log available upon request to Springfield CSD.
3. The Vendor will return to Springfield CSD in a single delivery all targets and records packed by the Springfield CSD in one shipment. The Vendor will ship original documents, master images, duplicates, and use copies on the same date.
4. All shipments of film will comply with the attached specification sections, “Packaging”, “Packaging Marking”, and “File Integrity”.
5. The Vendor will arrange all shipments to and from Springfield CSD via an agreed-upon commercial carrier. A schedule for pickup and delivery of records and images is outlined below:

#### **K. Quality Control Inspection, Errors and Delays**

1. The Vendor will inspect all images for compliance with this contract and with the attached specification sections titled “Quality Control after Scanning” and “Rejection of Backup Media.”
2. The Vendor, within thirty (30) days of the Vendor’s receipt of items for correction, will correct without additional charge any errors made by the Vendor that Springfield CSD identifies during the inspection process. The Vendor will pay any extra transportation or mailing cost resulting from such errors.
3. The Vendor will correct additional errors it makes at no expense to Springfield CSD if identified within one year of the last date of imaging of the project.

#### **L. Invoices**

The Vendor will provide detailed invoices for each completed shipment within fourteen (14) days of delivery of the shipment to Springfield CSD. Invoices will reflect the price structure delineated in this contract. They will indicate the master image numbers, the charge per image, the number of transfer media produced, the number of duplicate images and or use copies, and any other itemized charges, and total charges for shipping.

## Appendix D

### ***Sample Microfilm Specification and Explanation***

This sample specification involving tax assessment rolls includes unique information provided by the state agency or local government to illustrate what information you must add to the basic guidelines to transform them into a complete specification. **Be sure to change unique customer information to reflect your organization and the record series proposed for imaging.** Changes to the guidelines may include specific information on your organization and the records series, additional handling requirements, and technical modifications to ensure the vendor captures the best quality image for this set of records.

Date: July 14, 2021

#### **MICROFILM SPECIFICATIONS FOR THE COUNTY OF SPRINGFIELD, STATE OF NEW YORK NOTICE**

This specification is only valid for the records named below and the organization above. Contractors that accept programs other than herein specified using this specification are subject to nonpayment and penalties. This specification is automatically voided, for bidding purposes, two years after the above date.

#### **SCOPE**

1. RECORDS SERIES NAME: Tax Assessment Rolls, 1849–1935
2. DOCUMENT SIZE: 8" x 12 <sup>3</sup>/<sub>4</sub>"
3. CONDITION: Bound books with flaking edges; colors vary and include white, beige, blue, and gray, about 25% for each color. The books may be disbound for filming purposes. Handwritten multi-colored ink and pencil. There are 175 volumes, 900 pages per volume, and approximately 160,000 document images.
4. PREPARATION: The County of Springfield will be responsible for file preparation for camera-ready status.
5. CONTRACTOR: The prime contractor will have complete in-house capability to perform all the operations (camera, processing, quality control, duplicating, etc.), as specified herein. The contractor shall not subcontract any operation or portion of an operation without the written permission of the customer or unless specified herein.

#### **REQUIREMENTS**

1. REDUCTION RATIO: 24X
2. BACKGROUND DENSITY RANGE, CAMERA FILM: 0.80 to 1.00 measured as visual diffuse transmission density. Background density applies to all images. The density target is intended for control and guidance purposes only.

3. **BASE PLUS FOG (D min):** Base plus fog shall not exceed 0.10 measured as visual diffuse transmission density.
4. **RESOLUTION:** The 5.0 pattern, or better, will be resolved in all charts in both directions.
5. **CAMERA FILM:** 16mm x 100', 5mil thick, unperforated polyester, high contrast (gamma 3.0 to 4.0), panchromatic, safety film (ANSI IT9.1).
6. **IMAGE ORIENTATION:** Comic mode.
7. **FILM PROCESSING AND HANDLING:** The vendor will ensure that all silver halide film processing meets archival quality standards in accordance with the latest revision of ANSI IT9.1 (polyester base film). An independent test laboratory shall subject a sample of clear film to the methylene blue test for detecting residual thiosulfate as outlined in the latest revision of ANSI PH4.8. The vendor shall test the microfilm processors used for this program weekly and forward copies of the archival certificate to the user. The vendor may rewash and retest film that fails to meet archival standards within seven calendar days after processing. Since testing is based on a sample of the film, a test failure will require the rewashing and testing of all rolls of film in the untested batch that preceded and followed the failed sample.
8. **TARGETING AND SEQUENCE:**
  - a. Blank Leader, 24" minimum
  - b. Start Target (eye-readable)
  - c. Roll Number (eye-readable)
  - d. State Archives' Records Inventory Data Worksheet
  - e. State Archives' "Imaging Information Form"
  - f. Local government or state agency name and address
  - g. Contractor's name and address, date filmed, reduction ratio, film manufacturer, type, expiration date, and batch number
  - h. Certification Target signed by camera operator (f through h may be combined into one target)
  - i. Declaration by records custodian
  - j. Density Target: The optimal density target is a full-frame image, using blank paper that matches the data base in color and reflectance density. Every effort should be made to utilize a blank sheet from the actual data base. In the event this is not available, the microfilmer may substitute a clean, blank, twenty-pound sheet in a matching color.
  - k. Resolution Target: ANSI/AIIM MS 51 ("Micrographics—ISO Resolution Test Chart No. 2—Description and Use") or equivalent.
  - l. Residual Thiosulfate Test Certificate: A copy of the certificate that precedes the filming date by a maximum of two weeks (one week preferred).
  - m. Start File Target: If applicable to a folder-oriented file, use a "START FILE" target to separate individual existing folders
  - n. Defect Targets: Target all defects or irregularities, positioning targets before pages exhibiting the defect; typical targets include "MISSING PAGE," "TEXT OBLITERATED," "TORN PAGES," and "ILLEGIBLE COPY."
  - o. After filming the last file on a roll, film the following:
    - Certification Target signed by the camera operator (same as h)

- Density Target (same as j)
- Resolution Target (same as k)
- Residual Thiosulfate Test Certificate (same as l)
- Roll Number (eye-readable)
- END Target (eye-readable)
- Blank Trailer, 24" minimum

The complete microfilm specifications for this project, including these guidelines, will be filmed at the beginning of the first roll of this records series. In the case of an ongoing filming program, the specifications will be microfilmed at the beginning of the first roll of the year, whether calendar or fiscal. When filmed, the specifications will be placed after the State Archives' "Imaging Information Form" (item 8e).

**9. IMAGE SPACING:** 10 mm

**10. RETRIEVAL AIDS:** Include image marks (blips) in accordance with ANSI/AIIM MS 8, "Image Mark (Blip) Used in Image Mark Retrieval Systems." Provide sequential frame numbers for all roll film applications, and position numbers between each frame without obscuring any significant detail. Assign numbers sequentially starting with 1 (or 0001) at the beginning of each roll (including the identification target) and continue these sequentially through the roll without variation. The last frame number must be equal to the number of frames on the roll.

10.1. **RETRIEVAL ORDER:** Following the resolution target (item 8k), film the files in chronological order by year. At the change of a town name within a year, place a target with the name of the town.

**11. SPLICING:**

- Splices will comply with ANSI/AIIM MS 18, "Micrographics – Splices for Imaged Microfilm—Dimensions and Operational Constraints."
- Use only ultrasonic splices that weld pieces of film together.
- There will be no more than two splices per 100' roll.
- Place splices only in the clear leader at the beginning of a roll.
- Splice retakes before the technical targets with a target at the beginning of the retakes reading "START RETAKE" and a target at the end of the retakes reading "END RETAKE."
- Splicing in technical targets is strictly forbidden.

**12. FILM DUPLICATES:**

Diazo: 1 copy Bar-gamma range: 1.10 to 1.49  
 D max range: 1.50 to 1.80  
 D min range: Burn-out density plus 0.05 to 0.09

**13. EMULSION ORIENTATION:** Emulsion will be oriented as specified in ANSI/AIIM MS 14, "Standard Recommended Practice—Specifications for 16mm and 35mm Roll Microfilm."

**14. PACKAGING:**

Silver gelatin camera film will be on spools as per ANSI PH1.33. Package film in closed plastic boxes suitable for permanent storage as per ANSI IT9.2. Spools must fit into boxes loosely, without binding or pressure.

Duplicate film copies will be packaged as follows: Reels: ANSI-PH5.6, latest revision in boxes. Secure duplicate film trailers on ANSI reels to the reel hub with Kodak-Recordak trailer holder or equal.

- 15. PACKAGE MARKING:** The following data, machine-printed on plain white labels, shall appear on each roll (box, cartridge, etc.):

County of Springfield  
Tax Assessment Rolls, 1849–1935  
Film Type (Master Silver or Diazo Duplicate) Roll #

- 16. QUALITY OF CAMERA MICROFILM AND DUPLICATES:** Expose and process each frame of microfilm so that every line and character on the document appears on the microfilm. Film will be free of scratches, holes in the emulsion or base, tears, finger marks, or any other defect that might adversely affect quality.

- 17. DOCUMENT FLATNESS:** Image folded and rolled documents flat and shadow-free.

- 18. CONTRACTOR INSPECTION:** Contractor will inspect each roll of first-generation silver gelatin microfilm for compliance with the requirements herein. At a minimum, inspect each roll of film for resolution, density, processing, and general production quality. Supply a contractor inspection report for each roll of film included in each shipment.

- 19. QUALITY CONTROL:** Images that, upon inspection by the customer, do not meet these guidelines, will be defined as defective, and must be redone at the contractor's expense. If the number of defective images does not exceed one image in 500 (five images per roll of 2,500 images), the contractor may do defective image retakes in accordance with the guidelines for splicing. If the number of defective images exceeds one image in 500, the contractor must redo the entire roll. 19.1 Deliver first-generation silver gelatin microfilm (camera film) for inspection, prior to duplication, to the customer's inspection agent.

Note that certain requirements, such as "Reduction Ratio," "Resolution," "Splicing," etc., apply to the entire roll of microfilm. Should a roll of microfilm fail to meet the requirements described in these and similar paragraphs, the contractor must redo the entire roll of microfilm despite the number of defective images.

- 20. VENDOR FACILITY INSPECTION:** The customer reserves the right to inspect and approve the vendor's work site before and at any time during the performance of a contract, to ensure the vendor's production and quality-control capabilities.

- 21. REJECTION OF MICROFILM BY THE CUSTOMER:** When the customer rejects individual frames or rolls of microfilm, the customer or the vendor may deface the rejects by punching a clearly defined hole approximately ¼" in diameter through the microfilm image or leader without defacing the image or roll identification. The customer may retain all rejected film at its discretion.

**22. SHIPMENT OF FILM FOR INSPECTION:** Film will be shipped in reusable fiber cases. Cases remain the property of the contractor.

**Recommended case construction:**

Size (large box); 15" x 12.5" x 4", nominal inside dimension, and a capacity of forty-two 16mm rolls

Size (small box); 15" x 8.5" x 4", nominal inside dimensions, and a capacity of twenty-eight 16mm rolls

Mail card holder with reversible mailing card for convenient return shipment

Metal reinforced corners

Adjustable cross-straps, two minimum

- The contractor must pack the film so that all edge labels are visible and facing the same direction.
- Each film shipment will include the following:
  - Detailed packing slip, in duplicate
  - Photocopy of the most recent methylene blue test results
  - Contractors' film inspection report
- Shipment will be by express service only. Insure the shipment for replacement costs, payable to the contractor, in both directions.

**23. FILE INTEGRITY:** Unless otherwise specified in this contract, maintain the original documents in the existing file order before, during, and after the filming. Return file material to the original storage containers in the same manner that existed before filming. In subsequent refiling, maintain corrections to the file order resulting from preparation for filming. Do not restore fasteners (staples, clips, tape, etc.) removed in preparation. Carefully check file integrity before filming retakes to ensure proper document order.

## Appendix E

### ***Sample Microfilm (and Imaging) Targets***

The following pages contain a selection of sample targets. You can produce your own targets based on these, or photocopy and use these targets. Simple targets (such as the microfilming “START” target) are not included, since are easy to make by printing words of a point size of about 100.

### ***Sequence of Targets***

- Microfilm is a sequential medium, targets and records on the microfilm should follow the order prescribed below.
- Imaging does not require a formal order to targeting, but the items below marked with an asterisk (\*) must appear in each separate location where the images are stored (LAN drive, removable media, backup tapes, etc.).

Clear leader, 24” minimum

Retake Start Target (when applicable)

**RECORDS RE-MICROFILMED** (when applicable)

Retake End Target (when applicable)

Start Target

Roll Number Target

Inventory Data Worksheet\*

Imaging Information Form\*

Certification by Imaging Operator\*

Declaration by Records Custodian\*

Density Target

Resolution Target\*

Residual Thiosulfate Test

Certificate Title Target

Restrictions Target (when applicable)

## **RECORDS FILMED**

Defect or Informational Targets (inserted where necessary), including

POOR QUALITY DOCUMENT

FADED DOCUMENT

DAMAGED DOCUMENT

ILLEGIBLE DOCUMENT

INTENTIONAL LOW-DENSITY

MISSING DOCUMENT

BLANK PAGES: Page \_\_\_\_\_ to Page \_\_\_\_\_

Density Target

Resolution Target

Residual Thiosulfate Test Certificate

Roll Number Target

End Target

Clear trailer, 24" minimum

# **START OF RETAKE**

## **ROLL NUMBER**

The images appearing between this target and the “END OF RETAKE” target are copies of records, the microphotographs of which were missing or proved unsatisfactory upon inspection of the original microfilm. To preserve the integrity of the file, the records have been re- microfilmed as an addition to the original microfilm. For a description of the re- microfilmed material, see the “END OF RETAKE” target.

# END OF RETAKE

# RETAKE CERTIFICATE

I hereby certify that the microphotographs appearing between the START OF RETAKE target and this RETAKE CERTIFICATE are copies of the records described below.

Date: \_\_\_\_\_

Name of Filming Contractor: \_\_\_\_\_

Camera Operator's Name: \_\_\_\_\_

Camera Operator's Signature: \_\_\_\_\_

# Certification by Camera/Scanner Operator

**Records Filmed/Scanned for (Organization Name and Address)**

**Records Filmed/Scanned by (Contractor's Name and Address)**

Records Series Title: \_\_\_\_\_

Series Begins With: \_\_\_\_\_

Series Ends With: \_\_\_\_\_

Date Filmed/Scanned: \_\_\_\_\_ Reduction Ratio: \_\_\_\_\_

Film Manufacturer: \_\_\_\_\_ Film Type: \_\_\_\_\_

Expiration Date: \_\_\_\_\_ Batch Number: \_\_\_\_\_

This is to certify that the images appearing on this roll of microfilm or this electronic medium are reproductions of the above-named records made in the course of regular operations. The reproduction of these records followed guidelines established by the New York State Archives.

Printed Name of Camera: \_\_\_\_\_

Operator Signature of Camera Operator: \_\_\_\_\_

# Declaration by Records Custodian

Organization: \_\_\_\_\_

Records Series Title: \_\_\_\_\_

Beginning Document: \_\_\_\_\_

This is to certify that the images on this roll of microfilm or the digital images are reproductions of the above-named records series, reproduced from the best available documents during regular operations and following established New York State Archives' microfilming and/or imaging guidelines.

Signature of Records Custodian: \_\_\_\_\_

Date: \_\_\_\_\_

Typed Name: \_\_\_\_\_

Records Custodian Title: \_\_\_\_\_