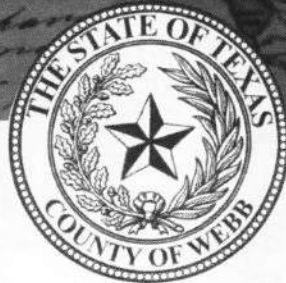


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PRESERVE | IMAGE | INDEX | MICROFILM | MANAGE

YOUR COMPLETE SOLUTION FOR RECORDS PRESERVATION & MANAGEMENT



HONORABLE MARGIE RAMIREZ IBARRA  
WEBB COUNTY CLERK  
LAREDO, TEXAS

## PRESERVATION OF THE RECORDS ARCHIVE

FEBRUARY 8, 2016—REVISED MAY 13, 2016

6300 CEDAR SPRINGS ROAD  
DALLAS, TX 75235

ONE ALLEN MARTIN DRIVE  
ESSEX, VT 05452

1558 FORREST WAY  
CARSON CITY, NV 89706

7903 THORNDIKE ROAD  
GREENSBORO, NC 27409

1003 BRUSSELS STREET  
SAN ANTONIO, TX 78219

WEBB COUNTY CLERK  
LAREDO, TEXAS



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PRESERVATION OF THE RECORDS ARCHIVE

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# EXECUTIVE SUMMARY

WEBB COUNTY CLERK  
PRESERVATION OF THE RECORDS ARCHIVE

## PROJECT OVERVIEW

The proposal addresses the preservation, archival digitization, security microfilm backups, and housing of permanent retention records in the Webb County Clerk's archive. Kofile Preservation, Inc. n/k/a Kofile Technologies, Inc. (Kofile), will address all of the necessary services for these assets. The project inventory includes:

- ▶ 6 boxes of shuck Commissioners' Court Minutes Case Files (approx. 24,900 pages)
- ▶ 37 drawers of shucked and loose Commissioners' Court Minutes Case Files (approx. 37,050 pages)

**Kofile proposes a unique solution that no other vendor can offer.** This project addresses the preservation, long-term management, and digital access of this collection. Preservation insures the survival of **source originals** for the application of future technologies.

Kofile has revolutionized the preservation industry with efficient archival products designed specifically for local governments. Kofile's services and products assist archives by providing superior solutions to common records management issues. Each exclusive

*Kofile's unique archival products and their exclusive U.S. Patent statuses are the results of years of research, testing, development, and expertise.*

*Following this combination of conservation science and physical preservation, the returned assets are chemically stable for 300—500 years.*

product is the result of our Made-in-America ingenuity — made possible by the sacrifices and vision of the immigrants and pioneers represented in the County's collection.

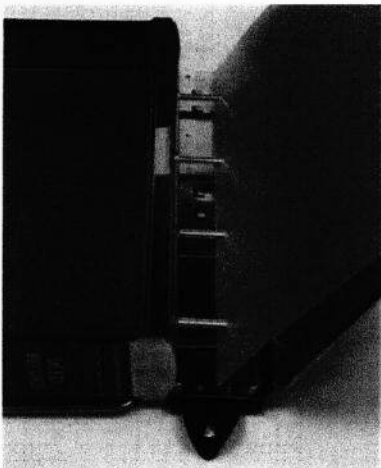
Kofile is the only developer and manufacturer of the *Lay-Flat Archival Polyester Pocket™* and *Disaster Safe County Binder™* (DSB). Kofile owns the patent on the *Lay-Flat Archival Polyester Pocket™* and possesses patent-pending status on the DSB. No other company can offer the DSB.

Treatments of the original source include cleaning, flattening, deacidification, and mending. Volumes are encapsulated and bound into DSBs. With encapsulation many volumes are split, which doubles the number of binders. This is resolved by custom archival shelving.

Archival digitization includes capture and processing (custom image enhancement and cleanup) and optimization for access. Many of Kofile's projects involve re-imaging collections that low-bid vendors had already imaged. Kofile's imaging standard operating procedures were designed and implemented with the input of professional paper conservators.

Kofile's professional services, proprietary technology, and patented materials provide the constituents of the Webb

*With the DSB, a polyester foam insert ensures physical support to the book block. Encapsulation allows documents to hang from the binder's posts.*



**KOFILE** TECHNOLOGIES

County with a true cost-savings. Kofile takes pride in "off-the-shelf and on-the-shelf" service. Kofile's headquarters and conservation lab is located in Dallas, Tex., and there is a lab in San Antonio, Tex. Catherine 'Cathy' Drolet and Scott Fausto, Account Managers, will handle all communication and ensure the project is completed on schedule. The County Clerk is assured of quality service above-and-beyond expectations.

## PROJECT GOALS

- ✓ Eliminate/reduce manual searches
- ✓ Expedite searches with more records available for electronic retrieval
- ✓ Protect originals by reducing daily use
- ✓ Introduce archival binders for the long-term storage of originals

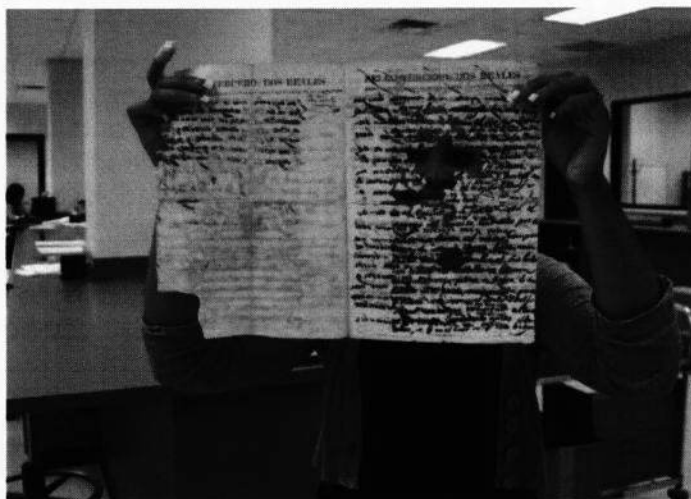
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## PROJECT UNDERSTANDING

*Records document and verify our existence—their survival is essential to protecting life, liberty, and property. No one wants to hear, "I'm sorry, but those pages were stolen, lost, destroyed, or are inaccessible." Historical records are lost without a proactive plan to maintain and preserve them.*

Book and paper preservation protects indispensable records for hundreds of years. Preservation minimizes the chemical and physical deterioration of the page and prevents text loss. Its goal is to prolong the existence and useful life of the original. Oftentimes, this includes preserving and removing the original from public access and creating a security copy.

Preservation can incorporate any combination of conservation, treatment, stabilization, preventative care, or digitization—or any maintenance or repair of the resource to stabilize it or protect it from further deterioration. Treatment of the original source includes cleaning, flattening, deacidification, and mending.



*This 1828-1829 Spanish document records a property exchange. It suffered from iron gall ink burn. Even with the greatest of care and handling, the risk of losing fragile pieces of text and further compromise integrity is high.*

Records stewards are faced with an insurmountable task—the responsibility to ensure the physical protection of collections and to maintain access to critical data. Even if the records are fragile, extremely brittle, and lack microfilm (analog) security copies, access is often necessary.

Many factors threaten the permanence of historical assets. Records are composed of organic materials, such as paper, cloth, leather, paste, and glue. These components are hygroscopic (readily absorbing and retaining moisture). Unmonitored environmental

conditions will compromise the life span of a permanent and/or historical record.

Records also deteriorate as a result of handling, which damages bindings and pages; acidic inks such as iron gall ink, which "eats through" paper; and improper storage methods, which threaten the structural integrity of the volumes. Another factor is the introduction of bleaching agents or acidic-sizing agents into the wood pulp paper-making process as a way to brighten paper. Now, years and decades later, acidic, dull yellows replace the bright white. These properties encase the assets in an acidic time bomb.

Kofile provides the professional conservation skills and resources. We form enduring relationships with our customers and remain loyal to each project.

### DEACIDIFICATION (ALKALIZATION)

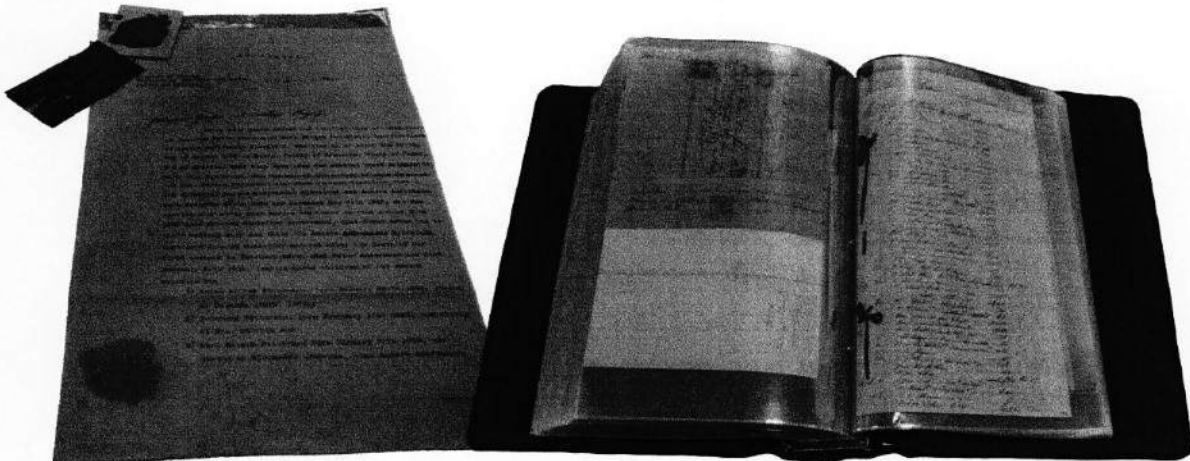
The addition of a finely divided alkaline material to paper fibers. The addition of an alkaline buffer is approved for use on papers that would otherwise deteriorate because of their tendency to produce acid, or for acidic papers that cannot be washed.

*AIC Definitions of Conservation Terminology, Directory of the American Institute for Conservation of Historic & Artistic Works (AIC).*

### WHAT THIS MEANS TO WEBB COUNTY

If the paper does not have acid-free components, the chemicals deteriorating within the paper fibers and materials cause deterioration of bindings and pages. Over time, these papers become increasingly acidic. This breakdown is evident in yellowing or browning paper. In addition, the paper becomes brittle and loses its resistance to folds. Deacidification will halt this process.

Most are familiar with the experience of handling of an old book—the binding is worn; the pages are brittle and yellowed; and it emits a slight odor. As the years pass, handling grows more difficult and the book visibly ages. The aging can be halted through conservation. While a fraction of damage to the books is due to handling, the major culprit is the acid in the paper fibers. This is accomplished through deacidification.



*Dating to the 1840s, these files document a Texas county's legal history. The document pictured left had a tintype and an official seal attached to it. It chronicles a series of correspondence between Brazoria County and the Kingdom of Sweden. Following conservation and imaging, the documents were encapsulated and bound for return.*





# RECORDS ASSESSMENT

WEBB COUNTY CLERK  
PRESERVATION OF THE RECORDS ARCHIVE

*This proposal addresses the repository of historical and permanent assets of the Webb County Clerk's Office. Many volumes, documents, and plats in this collection are historical and some date to the 1800s. Kofile inventoried all records on-site in three assessments: February 2014, December 2015, and January 2016. Supplementary photographs were taken April 2016. Assessors included Joe Marotti, Nan Marotti, Chris Marotti, Eugene Sisneros, and Scott Fausto.*

## RETENTION SCHEDULE

Historical and archival government records have permanent retention schedules. Due to the historical nature of this collection, it maintains a PERMANENT retention schedule according to *Local Schedule CC*, Texas State Library and Archives Commission, August 14, 2011. Although certain records are retained for fixed periods before destruction, the records designated for this project are of permanent value.

## PHOTOGRAPHIC DOCUMENTATION & AREAS OF CONCERN

Many factors threaten the permanence of these assets. These items are in poor condition. Documents are typescript and manuscript—or handwritten. Some sheets suffer from iron gall ink burn, and are very brittle and yellowed. Deterioration is the result of natural aging, a history of use, lack of environmental controls, and UV light exposure. *Other areas of concern are documented following.*

*Mechanical Damage and a History of Use*  
Everyday use greatly affects collections. Sheets bear signs of grime and the natural oils of human hands. Exposure leaves sheets susceptible to damage and loss even with careful use. Many sheets suffer from mechanical damage and are dirty, brittle, and torn. Index Books sustain the most use. Thus, they suffer greater risks of text loss and sheet deterioration. Paper strength is completely depleted from continuous use. Eventually, tabs and sheet fragments are lost. Immediate attention is often required.

Unsanitary conditions also affect paper. Any archive environment should allow no trash, food, drinks, plants, tobacco products, wooden furniture, or ink pens near the archives. Carefully monitor the surrounding environment for insect or rodent presence. Dirt and other pollutants can serve as ignition sources and weaken exposed paper.



#### *Acidic Paper*

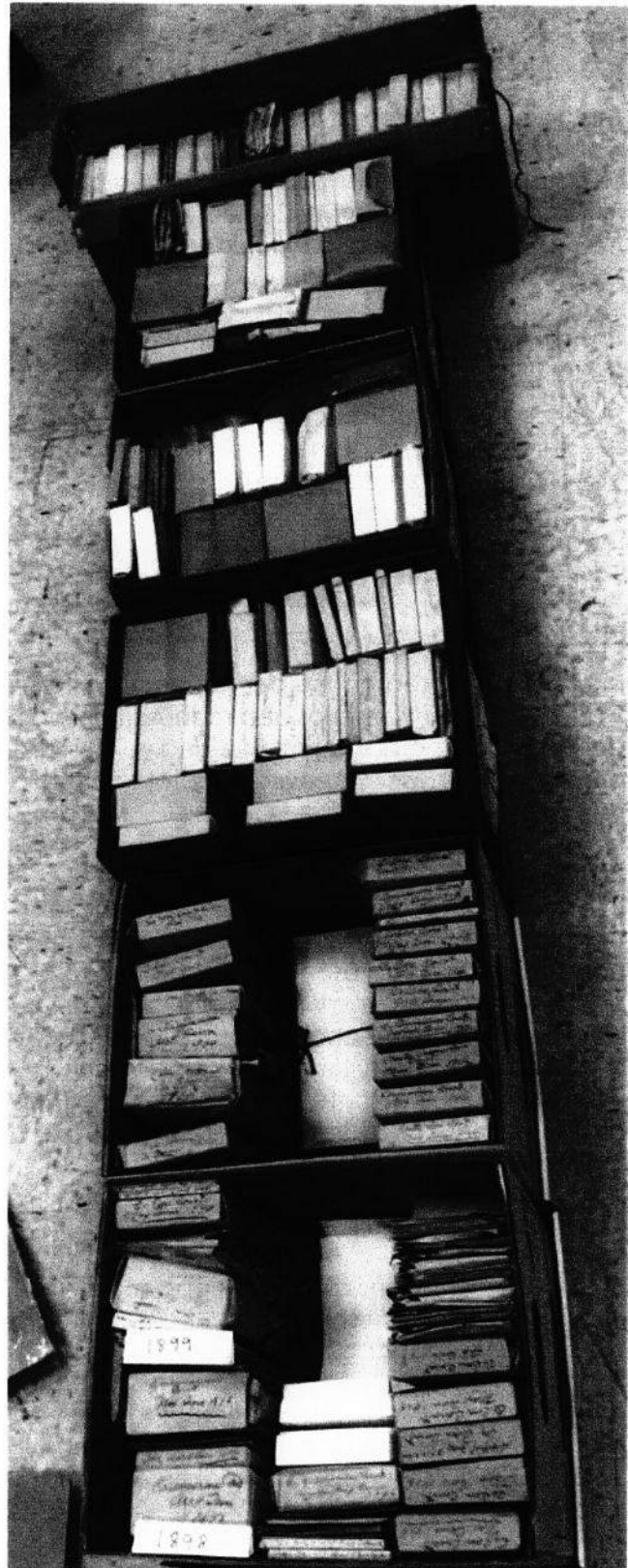
In the past, papermaking processes utilized bleach to whiten sheets. In time, this paper becomes acidic—evident by brittle and discolored paper (yellowing or browning). Paper also brittles when relative humidity (RH) drops too low or fluctuates.

#### *Acidic Ink*

Acidic inks can “eat” or “burn” through a sheet. Unmonitored temperature and relative humidity (RH) accelerate this process. Inks also fade with exposure to UV light. Historically, iron gall inks were standardly used by clerks. These inks contain sulfuric acid, which fades with time. With proper treatments, chemical breakdowns (e.g., acid hydrolysis) are remedied.

#### *Non-Archival Materials*

The off gasses of deteriorating metals contribute to paper's chemical breakdown. Major culprits include the metal content of book spines, the surrounding physical environment, and non-archival fasteners (e.g., binder clips, paper clips, and staples). Off gasses eventually destroy the volume's structural integrity. Another symptom of metal oxidation is *foxing* (foxlike, reddish and brown stains or blotches on the paper).





*Improper Storage Methods*  
With careful testing and observation, archivists have concluded that many formerly acceptable practices cause more damage than realized. Anyone stepping into a courthouse can see the effects of antiquated filing and storage methods.



Pigeon files or shuck cabinets (colloquial names) required records to be tri-folded. This storage method was judged destructive over 75 years ago. Pigeon file drawers or "cans" pull out for access to the housed instruments. This sliding function shreds fragile documents, while the tri-folded state weakens paper strength.

Even with careful handling, exposed fragments become fragile and worn.



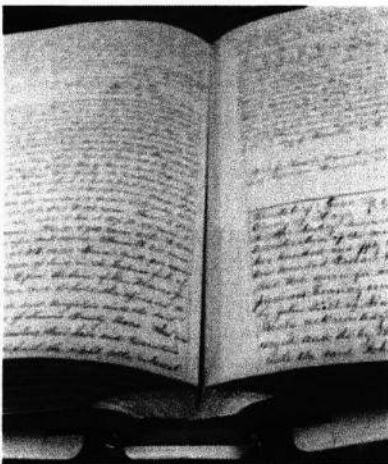
*Attachments and Inserts*  
Many volumes contain irreplaceable inserts and attachments. The information documented on these inserts is at great risk of loss and damage. Kofile preserves the attachments and encapsulates them in sequence for return with the volume.



*Tape & Non-Archival Adhesives*

The Library of Congress warns "pressure sensitive tapes, such as scotch, masking, 'invisible,' quick-release, cellophane, and even so-called 'archival' tapes" are all culprits. These tapes are unstable. All tapes and adhesives of these types will stain the paper and may cause inks and colors to 'bleed.' Many lose their adhesive properties and fall off with age, leaving behind a residue that is unsightly, damaging to the item, and difficult to remove."<sup>1</sup>

Adhesive stains may lead to imaging issues. Many counties have approved low-bid imaging and microfilm projects resulting in illegible images. To enhance image quality, conservation is essential. A conservator can remove water-based, synthetic, and pressure-sensitive adhesives.



A volume with sheet extenders (not a Webb County volume).

*Page/Sheet Extenders (Tape Strips)*

Page extenders are an inappropriate "quick fix" to a prevailing problem. Sheet extenders appear innocent. However, the acid used in the non-archival adhesive migrates into the paper's fibers, causing stains. Instead of solving the original binding problem, this chemical breakdown causes the paper's natural fibers to fatigue and ultimately deteriorate.

Removal is a long and arduous process. To remove the sheet extenders, each is carefully lifted from the page. The strength of the adhesive varies from page to page. In some cases, there is more than one sheet extender applied to the page. Particular care must be taken to not rip or tear the sheet during removal. This process demands physical labor, because the application of heat would lift the film, but not the adhesive residue.

<sup>1</sup>The Library of Congress. "Preservation FAQs." <[www.loc.gov/preservation/](http://www.loc.gov/preservation/)>.

*Temperature & Humidity Monitoring*

While temperature and limited air circulation are crucial to a document's longevity, humidity and water are the most destructive threats. After exposure to water, pages adhere to one another when compressed. Separation without loss of text and water soluble inks (such as signatures) is vital. Records with water damage are extremely fragile. Water damage can also lead to mold and binding failure. The necessary conservation treatments are time consuming and require a highly skilled conservator.

Relative Humidity (RH) refers to the amount of water vapor present in the air. Maintaining a set point of 40-45% RH is optimal, but costly. The maximum acceptable total RH variation, or operating range, is 5% on either side of this set point. RH should never exceed 55% or drop below 30%.

*Temperatures above 75° F and RH higher than 60% encourage mold and other bacteria growth within 48—72 hours.*

*The introduction of water in can result in unmitigated damage. First, red inks smear, then blue inks, and lastly, black inks.*

Even slight changes in temperature can double the natural aging rate of paper. In reality, temperature and RH are not consistent in a courthouse (especially on weekends). The mitigation of mold or micro-organics (which can result with the introduction of water or humidity fluctuations), should only be attempted by a trained professional.

The screenshot shows the 'DPCalc' software interface. At the top, it says 'Click to Solve for:' with radio buttons for 'Temperature', '% RH', and 'Dew Point'. Below this are three vertical sliders with numerical values: 60, 40, and 36. At the bottom left, there is a 'Temperature Scale:' with radio buttons for '°F' and '°C'. On the right side, there is a 'Preservation Evaluation' table with columns for 'Type of Decay', 'Environment Rating', and 'Preservation Metric'. Below the table is a 'Record and Compare Values' section with a table header and buttons for 'Save', 'Clear', and 'Export'.

Type of Decay	Environment Rating	Preservation Metric
Natural Aging	GOOD	PI 96
Mechanical Damage	OK	% EMC 7.8
Mold Risk	GOOD	Days to Mold No Risk
Metal Corrosion	OK	% EMC 7.8

T	RH	DP	PI	Days to Mold	EMC

Visit the Image Permanence Institute (IPI) at [www.dpcalc.org](http://www.dpcalc.org) to explore the correlation of temperature and RH on natural aging, mechanical damage, mold risk, and metal corrosion (as exemplified). The images are the property of IPI.



# PRESERVATION PROCEDURES

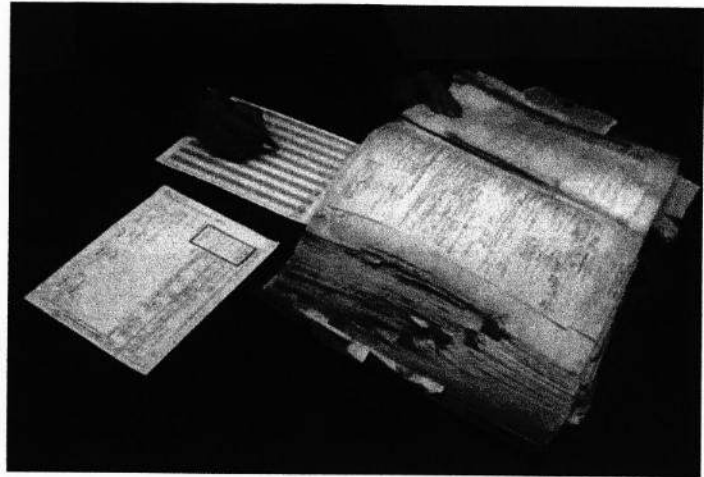
WEBB COUNTY CLERK  
PRESERVATION OF THE RECORDS ARCHIVE

The work order and individual documentation logs accompany the item throughout the entire process. Each batch of records is entered on a color-coded production control board. Storage areas are color-coded to correspond to each batch or group of records. Records are housed in the same location throughout the project so that any given record may be located quickly.

## DOCUMENTATION OF TREATMENT

Upon receipt, items are assessed to document condition prior to service. Each sheet is inspected to ensure that it receives the appropriate level of treatment. A written log is retained to record:

- Date(s) of treatment
- Name(s) of the conservator who worked on the item or held a supervisory position
- Name(s) of the technician who worked on the item
- Condition of document upon receipt
- Special characteristics
- Presence of acidic glues
- Presence of previous repairs
- Number of pages, proper pagination, and blank pages
- Presence of pressure sensitive material
- Presence of staples, paper clips, brads, etc.
- Identity of certificates/records (manuscript, Photostat, typed, etc.)
- Notation of original lettering on spine and covers
- Loose pages or attachments
- Any other information pertinent to the identification of the volume



Please note that this is not a conservation treatment report disclaimer—this is provided in every finalized re-bound volume.

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## CONSERVATION SPECIFICATIONS

Kofile regularly addresses historical and permanent documents, including manuscript, typescript, Photostat, micrographic, tri-folds, blueprints, re-creations, plats, and maps. Kofile never utilizes any treatment, repair, or maintenance that is not 100% reversible.

### *Dismantle (volumes for rebinding only)*

Original binding materials, such as threads and adhesive residues, are carefully removed. Old manuscripts often have protein-based binding adhesives such as fish, bone, or rabbit skin glues. The application of steam with specialized equipment can soften the materials that are otherwise difficult to remove.



Guillotine cutters are never employed. If trimming is necessary, it is done with handheld scissors or Jacques Board shears (see *pictured right*), which are specifically designed for trimming fragile paper. These allow Kofile to trim paper carefully and accurately with greater precision. Only one document is cut at a time to ensure no text is lost.

### *Surface Dry Cleaning*

Surface cleaning is a generic term for the removal of materials deposited on pages. This includes dust, soot, airborne particulate, sediment from water damage, mold/mildew residue, active micro-organic growth, insect detritus, or even biological or mineral contaminants. All have serious consequences during long-term storage.

Methods vary in degree of simplicity. More elaborate systems require isolation, filtration, and personal protection. To improve appearance, superficial grime is removed with a soft dusting brush. A microspatula is used to coax insect deposits. Other tools include a latex sponge, powdered vinyl eraser, or soft block eraser.

### *Removal of Fasteners*

Kofile will remove fasteners, page markers, and other metal mechanisms. Fasteners such as binder clips, staples, paper clips, string ties, rubber bands, brads, straight pins, etc. cause damage in short periods. This includes physical damage (decreased paper strength due to punctures or distortion) and chemical damage (rust).

### *Mold Remediation*

Contamination results from flood, fire, or micro-organics, or proximity to toxic substances (asbestos or bacteria). The former requires treatment in an isolation booth. Fragile materials are vacuumed through a fine, mesh-screen overlay. Remediation such as freeze drying, desiccant drying, ozone treatment, etc. may also be necessary. While treatments kill mold or bacteria, elimination of stains is often impossible. Chemical treatments are only used when mold is embedded into the fiber—and only in extreme cases. Dead mold spores can be removed with an ozone treatment. This is accomplished with a dry wash by a specially treated chemical sponge.

*Removal of Tape, Adhesives, Varnish, or Old Repairs*

Varnish, pressure-sensitive tape, and adhesive residue are reduced as much as possible without further degrading the original Document.

When possible, peelers and tape are removed with two primary mechanical techniques: Heat Removal or Peeling. Heat removal is used when adhesive is loose, old, or brittle, and peeling is use when removal by heat is unnecessary. Solvents are a last resort and are used only after testing.

A *microspatula* (sometimes heated) coaxes tape threads, pressure-sensitive tape, and glue from the paper. A Hot Tools tape remover can soften adhesive for removal. Dial-Temp controls the transfer of heat and guards against scorching. Remaining adhesive is treated with a gum compound eraser.

If mechanical tape removal is unsuccessful, the next alternative is chemical. This is either a local or spot treatment or immersion in a solvent bath. Kofile ensures that its laboratories are equipped to process chemical treatments correctly and safely. Previous repairs that cannot be removed safely will remain.

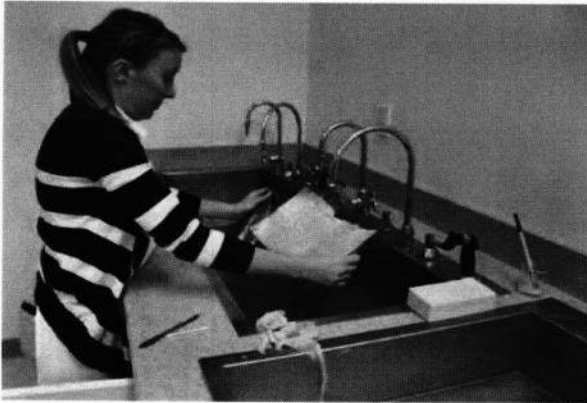


*Old mounting materials and adhesives often become acidic, stained, torn, and weak. They are often composed of Kraft paper or heavy board. Backings are removed through an aqueous process using water or steam, except for water-soluble images. Backing in good condition remains if it causes no harm or if removal would cause harm.*



*Kofile carefully coaxes adhesives and tape—a mechanical method is pictured left (by application of heat and pressure), and a chemical method is pictured right.*





A Kofile conservator removes water-soluble adhesives and tape from a Railroad Document from a Kansas County.



In the case of maps, the removal method of pressure sensitive tape depends on the type of tape, condition of the map, and presence of potentially soluble media. Adhesive reduction begins with the most benign process. Chemical removal is the last resort.

*Stain Reduction*

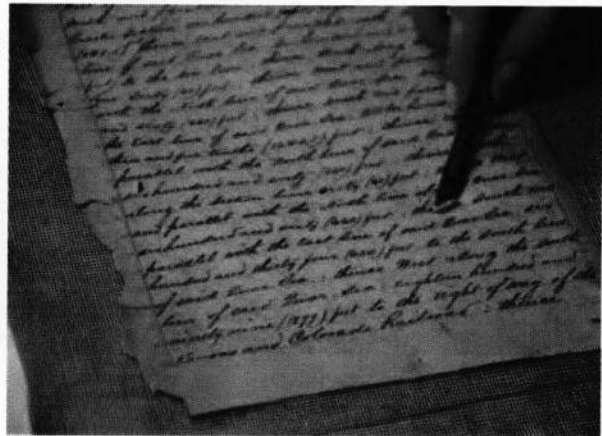
Stains are reduced to the greatest extent possible after careful testing. Tape stains are reduced, but most stains are likely permanent. Many stains, such as water stains, are not treated. Other stains are treated either chemically or aqueously depending on the paper and/or ink. Kofile understands that many stain-reducing agents are not safe for iron gall ink. Maximum testing is necessary. When testing determines that a proposed treatment will result in harmful or irreversible consequences, Kofile will contact the client to discuss alternatives or a course of non-action.



*Washing in Water*

If possible, water-soluble repairs are removed with water or steam. Previous repairs that cannot be removed safely will remain. Only fully-trained, experienced, and supervised staff attempt removal of water-soluble repairs.

While iron gall ink is safe for aqueous treatment, there are still many cases in which ink may fade and compromise legibility. Therefore, extensive testing is required before treatment.



Kofile frequently provides restoration for large-format maps in which the original artwork was compromised. Kofile can re-color Pastel inks and provide other restoration services.

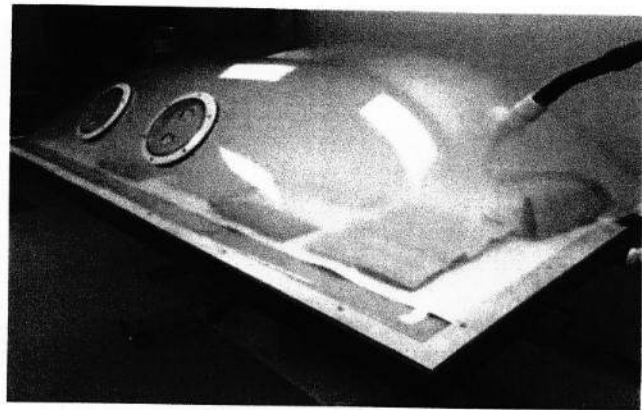
*Flattening and Humidification*  
Improperly stored, papers become inflexible and retain a memory of the storage position. Tools to 'flatten' documents include tacking irons, heat presses, and an Ultrasonic Humidification Chamber—see pictured right.

These practices reduce the likelihood of unnecessary fractures or breaks. Kofile's technicians are experienced using all three methods.

Flattening occurs in the Kofile conservation lab with the strictest archival environmental control standards. Kofile is equipped with several dry-mount presses, and each conservation workstation has a tacking iron. The tacking irons have adjustable temperature controls to alleviate damage to the documents.

Another flattening method uses moderate pressure drying between acid-free blotters. Careful monitoring eliminates bleeding ink and mold or fungus growth.

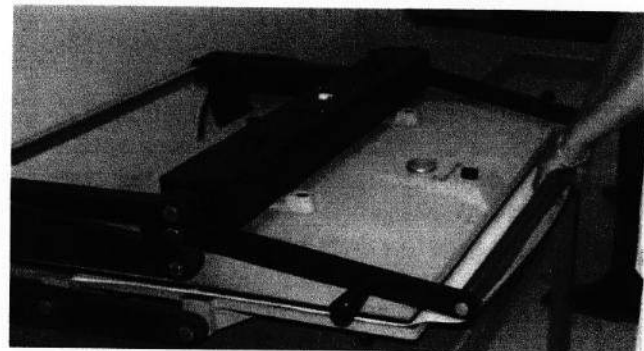
Items are humidified after testing the solubility of the image. The Ultrasonic Humidification Chamber can correct the most fragile document's folds and bends. This machine is enhanced with a cross flow and features a humidity dome and ultrasonic humidifier. Private labs are rarely equipped with this device, and this significant investment represents Kofile's foresight and commitment to offering the best available technology as a functioning and efficient vendor.



*Ultrasonic Humidification Treatment.*



*A tacking iron—a conservator's flattening tool.*

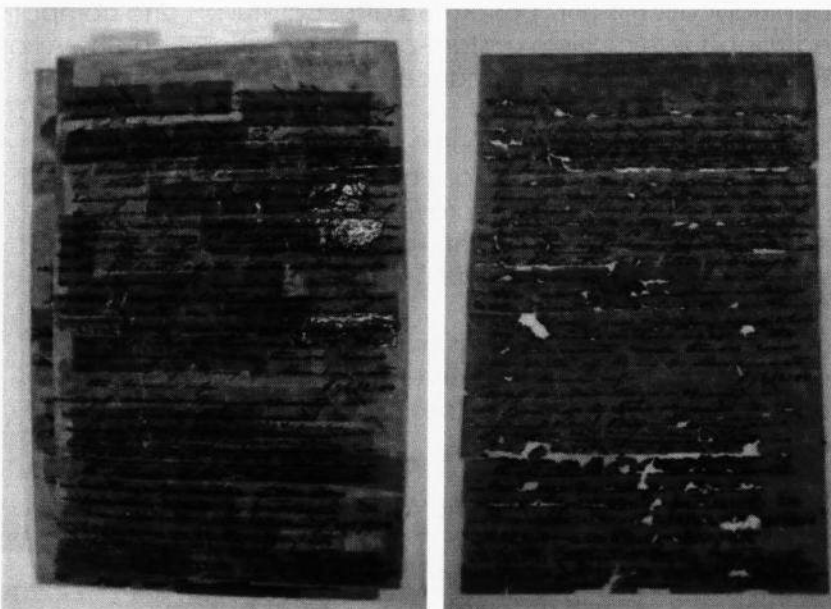


*A dry mount flattens documents in superior condition.*

*Repair and Restore Paper*  
Mending torn paper is an art form. Mending uses a variety of materials depending on the paper's color, tone, condition, and weight. The length of the tear(s) and the degree of embrittlement or fragmentation are also concerns. Kofile generally mends tears greater than 1/2" if the Document is going to be encapsulated.



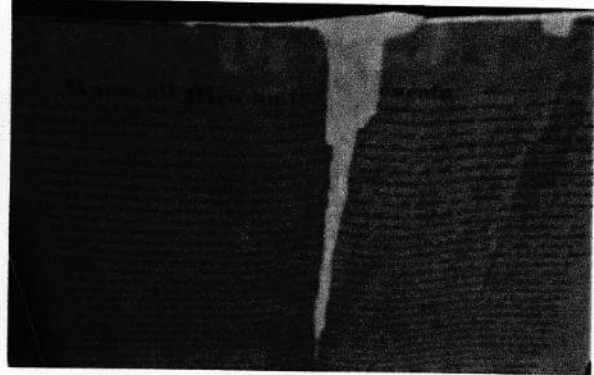
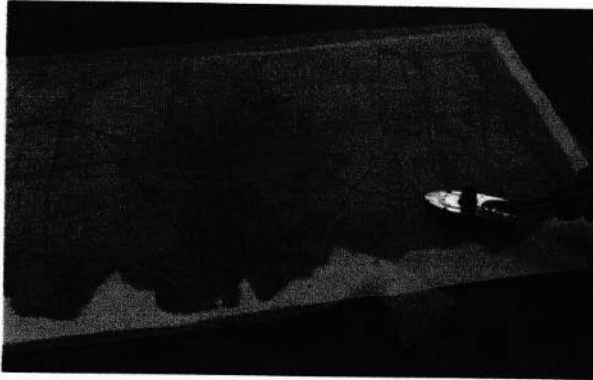
All of the materials utilized for mending are acid free and reversible. Japanese paper and ethyl cellulose paste or Crompton tissue are used most often. Mending strips are water cut so the edge of the Japanese paper visually integrates with the original document, without clashing aesthetically or historically. Fragmented edges, folds, tears, cracks, voids, and losses are all mended in this fashion.



Kozo paper, in natural and white finish, is commonly used because of its strength and transparent nature after application. While visible to the trained eye, it does not distract from the Document. Other types of Japanese paper used frequently include Zangetsu, Gampi, Tosa Tengujo, Seikushu, and Thin Uda.

*An 1848 Probate Record before and after treatment. The image to the right shows the page after deacidification, tape removal, and mending with archival Japanese tissue. The image above shows a Kofile conservator piecing the document together after the adhesive was reduced.*

Filmoplast® may also be used for reinforcement of damaged sheets. Filmoplast® is a low-temperature, acrylic adhesive that bonds to Japanese Kozo paper. Kofile also constructs its own version of this material with acid-free tissue paper and Rhoplex liquid acrylic adhesive.



Compensation for loss is accomplished by acid-free and reversible materials. The most commonly utilized method is to reinforce the loss with Japanese paper.

#### *Deacidification*

Deacidification is only performed after careful pH and compatibility testing. Kofile is equipped with multiple custom-built spray exhaust booths. All are routed through an HVAC system for optimum performance.

A commercially-prepared buffer solution is applied to both sides of the sheet with compressed air sprayer equipment, see *pictured right*. The solution is non-flammable and non-toxic. The active ingredient, magnesium oxide, neutralizes acid and provides an alkaline reserve. This chemical is inert, safe, and does not degrade the sheet.



Once the buffer is applied, the paper's pH alters slowly. After deacidification, random testing ensures an 8 pH with a deviation of no more than 2-4%.

Aqueous Treatment (immersion) is used when inks are highly stable. This method is generally reserved only for 17th- and 18th-Century manuscripts.



## ARCHIVAL SOLUTIONS FOR NEGATIVE PHOTOSTATS

### *The Problem*

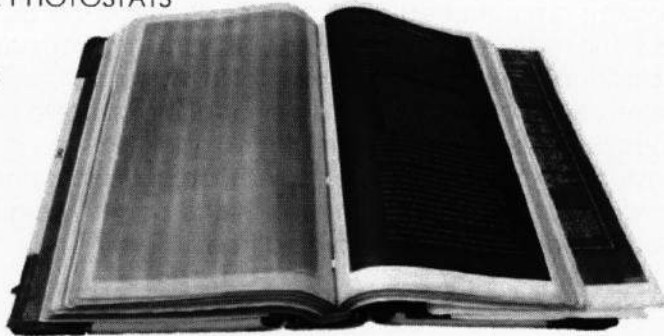
Time deteriorates Photostat emulsion (*sulfiding*). Exhausted or dirty 'fixing baths' during the silver print processing exacerbate damage, as seen through fading images or browning sheets. Eventually, text becomes illegible.

### *The Solution*

Our Archival Polyester Stabilizer preserves Photostats for long-term use and storage. A thin application stabilizes both sides of the sheet.

### *The Result*

This protective coating will not oxidize or cause the sheets to yellow. It contains ultraviolet (UV) absorbers that block 99% of ultraviolet light and Hindered Amine Light Stabilizers (HALS). It also contains waterproof properties. After application, negative Photostats better resist abrasion and humidity. These properties are vital to protecting archival negative Photostat records during public use.



*This is the only existing version of a volume recording Texas history. It is now the original source. It is fading due to poor quality control during the Photostat's original development.*

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## ENCAPSULATION

In archival encapsulation, the document floats freely. It is not adhered or heat set.

Kofile uses SKC SH725 PET polyester. Polyester or Polyethylene Terephthalate (PET) is the most inert, rigid, dimensionally stable (*dimstab*), and strongest plastic film. Otherwise known as Mylar® Type D or Melinex® 516, it is crystal clear, smooth, and odorless. It will not distort or melt in case of fire.



Each sheet is encapsulated in a 2 mil or 3 mil patented polyester pocket: *Lay Flat Archival Polyester Pocket™*, US Patent #7,943,220 B1, 5/17/2011. This pocket is welded closed on three sides, and the binding process statically seals the fourth side. With this feature, the Pocket would not need to be cut to access the original sheet. A Reemay® strip or spunbond polyester at the binding edge offsets the document's thickness and seals out atmospheric pollutants while allowing off-gassing.

These developments allow for a flat book block. The inherent static cling of polyester provides physical support and protection during use. The binding is reinforced for added strength and usability. Available in custom sizes, the Pocket dimensions will match the 'book block' dimensions with a 1½" or 1¼" binding margin.

## ARCHIVAL RECORDER BINDERS

Pockets are punched and volumes are hand-cased in books of 250 sheets (500 pages) or less. This may result in *splitting books with large capacities into two volumes due to the additional weight of the Mylar*. Kofile manufactures binder components at 1/4" incremental capacities on a per-book basis. Kofile punches sheets to any hole specifications and repairs/replaces index tabs as necessary. Kofile can manufacture custom binder sizes, shapes, spines, colors, and lettering. Each binder features durable cover boards and spine to support the pages' weight. All materials, including the cover boards and adhesives, are acid free.

### *Title Stamping*

Title stamping is reviewed and approved in advance. It will follow the same format/style of the originals or incorporate a custom dedications or seals. Tooling is 23-karat gold foil. If errors are identified, The client is notified to determine the correction. The client approves any changes.

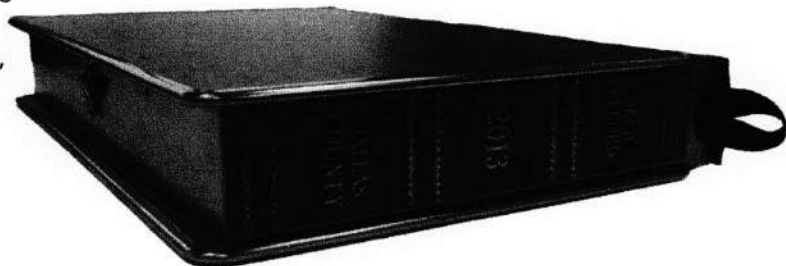
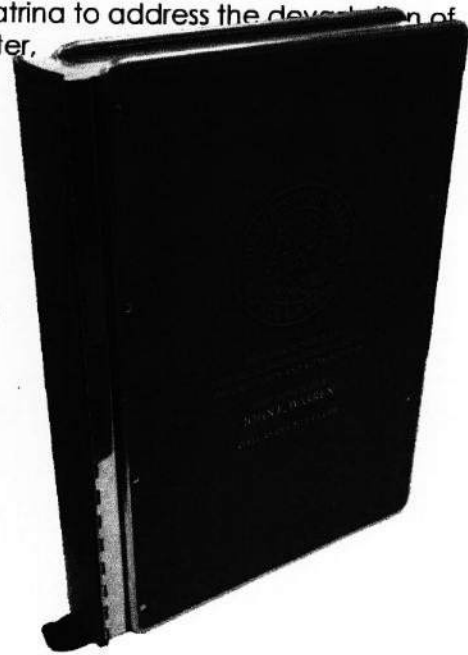
### *Proprietary Features—Disaster Safe County Binder*

Kofile proposes its proprietary *Disaster Safe County Binder™* (DSB) for these volumes (see *exampled to the immediate right and below*). The DSB provides unparalleled protection and storage. Developed after Hurricane Katrina to address the devastation of the Orleans Parish archives, it protects sheets from water, fire, and physical disruption. The primary problem in 2005 was 100% relative humidity. With weeks of no power, mold was rampant. The result of a hard lesson, the DSB addresses what went wrong in that disaster.

The DSB enables the encapsulated sheets to hang from the binder's posts—much like a hanging vertical plat cabinet. This feature allows collections to return in a smaller storage footprint with 4Post™ Shelving.

Any product that fails to operate properly or maintain its original integrity is replaced at no cost to Webb County. This is our commitment of value and service to our customers.

The DSB provides functionality and access ease while offering the highest rate of return on the client's investment. It is a portable vault for housing records of enduring value. It provides progressive protection from exposure to fire, water, Relative Humidity (RH), atmospheric pollutants, ultraviolet (UV) light, impact, and drops. The DSB also features a lifetime warranty against rust.



*Other DSB Features Include:*

*Stainless Steel*—The metal mechanism and book block apron are constructed of stable, corrosion-proof 316 stainless steel, which does not emit harmful gaseous pollutants like cold roll steel.

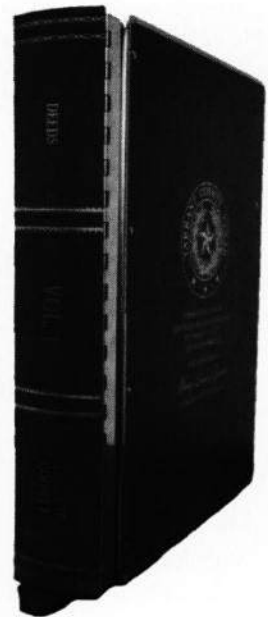
*Support to the Book Block*—The DSB is equipped with a Polyester Foam Insert, which ensures physical support to the book block and allows library style storage.

*Microclimate*—The DSB creates a *Microclimate*, an independent, stable environment separating sheets from the external atmosphere.

*Security Lock*—A security lock hinge protects from theft.

*Nonflammable & Self-Extinguishing*—With nonflammable cover boards and materials, the DSB is self-extinguishing. These proprietary features protect the contained pages in extreme temperatures.

The DSB exceeds NFPA Fire Codes 1 and I, and Classification codes FMVSS 302, UL94 FLAME, and UL 746A IGNITION. NFPA 232, ~6.12.2, states "All records shall be stored in fully enclosed non-combustible containers" (Standard for the Protection of Records, 2007 Edition J).



*A cut-away of the DSB cover components. The layers include:*

- 1. Imitation Leather*
- 2. Fire Resistant Material*
- 3. Self Extinguishing Board*

*The Use of Non-Archival Binders*

New binders stabilize documents and impede deterioration. *This will save Webb County valuable storage space and will require little maintenance for decades.* Most existing binders are composed of non-archival materials with non-archival adhesives. These binders deteriorate and emit acidic elements, which damage documents.

Kofile does not recommend the use of polystyrene (PS) binders. In the presence of heat they are highly flammable and outgas toxic Hydrochloric acid fumes. PS binders also have poor chemical resistance, especially to organics, and are photodegradable (susceptible to UV degradation).

Polystyrene "**emits toxic fumes under fire conditions.** Under fire conditions, material may decompose to form flammable and/or explosive mixture in air."

*Material Safety Data Sheet. Sigma-Aldrich Co.*

"...**cannot be considered archival** because the core is polystyrene, or some variant of polystyrene, and this material naturally **decomposes** over a long period of time and is said to **give off acid vapors.**"

*Illustrator Draftsman-DM, Equipment Addendum. NETPDTC AEDC.*

"Plastics vary greatly in chemical stability and should be used with caution. Chemically unstable **plastics produce by-products that accelerate the breakdown of paper** as they deteriorate. Others contain volatile plasticizers that can cause items in contact with them to stick to their surface and **media to bleed.**"

Dianne van der Reyden. "Paper Documents." *Storage of Natural History Collections: A Preventive Conservation Approach.* Rose, Hawks, & Genoways, eds. Iowa City. SPNHC. 1995, 333.

"Plastics should be inert, chemically stable, and free of chlorinated plasticizers. Use plastic items such as polyester, polyethylene, and triacetate...Records shall be stored in fully enclosed noncombustible containers."

*Standard for the Protection of Records.* National Fire Protection Association (NFPA) 232. 2007.

"Three types of plastic meet preservation standards: polypropylene, polyester, and polyethylene."

Nancy C. Schrock & Gisela Noak. *Archival Storage of Paper.* Syracuse, NY: Gaylord Bros. 1997, 2.

"A year's exposure to desert sunshine is sufficient to halve [polystyrene's] molecular weight, with an attendant **loss of strength...**"

Jeremy Burgess, Michael Marten, & Rosemary Taylor. *Under the Microscope: a Hidden World Revealed.* Edition: reprint, illustrated. CUP Archive. 1990.



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## 4POST™ SHELVING

4Post™ Shelving is proposed to house the new binders. This archival shelving is proprietary to Kofile. Kofile can work with the client to design a custom schematic to achieve the best footprint.

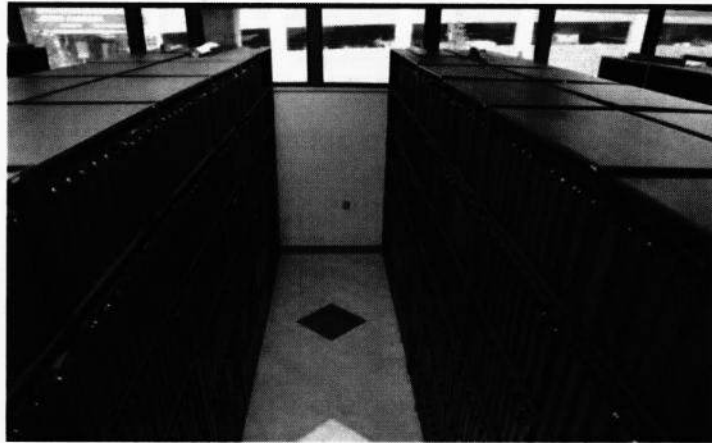
The DSB's polyester foam insert ensures that the book block is physically supported. Encapsulation allows sheets to hang from the posts. These functions enable library-style storage and save invaluable square footage that other systems engulf.

4Post™ Shelving is archive-approved and is available in a textured powder-coated finish in a variety of colors. Also, book ends are not needed because the DSB sits upright independently.

### *High Density Solution*

Kofile considered many factors when designing its shelving solution. These included the effects that the shelving materials and surrounding environment that would have on the archival materials. This shelving has a custom finish with an archival-quality, environmentally-friendly paint that will not off-gas and damage documents.

The DSB is heavier than other binders due to its disaster-safe components. Other systems may buckle or break when tasked with housing DSBs, but the Webb County Clerk can rest assured that this shelving will not buckle and deteriorate. These units are also beneficial because they allow for easy expansion should the County Clerk wish to re-arrange the units or add more units in the future.



*Pictured above are red imitation leather DSBs housed at the Oklahoma County Clerk's Office, Okla. The two photographs included below portray Coroplast™ boxes housing case files for the Bexar County District Clerk, Tex. Both projects incorporated 4Post™ Shelving Systems.*

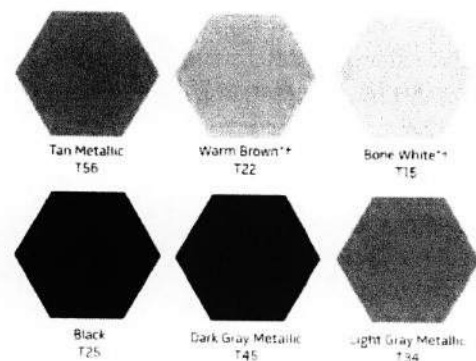
### *Shelving Schematics*

Custom schematics can include steel back panels, 20"D case-style uprights, kick plates, un-slotted shelving, shelf reinforcements, and shelf supports. All 4Post™ Shelving Systems come with a lifetime warranty.

4Post™ Shelving is archive-approved, and each unit features interlocking keyhold uprights and double rivet shelf supports to maximize the durability and versatility of the units. The units can hold volumes up to 20"D, and they are assembled without the use of bolts, nuts, or clips. This system allows for single-entry units for placement against a wall and double-entry units for placement of units back-to-back. Units are also designed "mobile ready" to allow for storage expansion and conversion to a TrakSlider System, if needed.

### *Paint Finish*

4Post™ Shelving is available in a textured powder-coated finish with a variety of colors—see pictured right. All steel parts are thoroughly cleaned using a three-stage iron phosphate washer and are then coated with an Epoxy-Hybrid powder finish using an electrostatic paint system. Powder coating provides a superior, attractive, uniform finish that is more durable, scratch and corrosion resistant, and environmentally friendly than liquid paint. Kofile only uses the most advanced painting technologies that are EPA tested and approved. The powder coat is solvent free and environmentally safe.



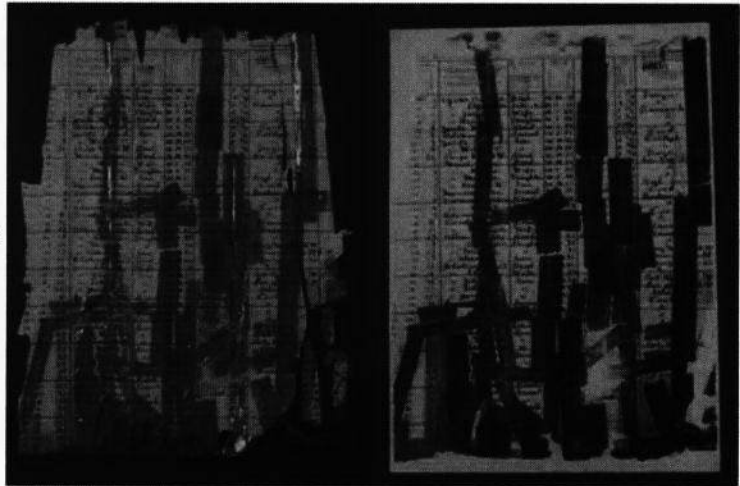
### *Quality Assurance Plan*

Pricing for shelving includes labor, materials, rigging services, and transportation services required to pack, load, unload, and install shelving. Before installation, Kofile personnel check the delivery inventory for errors and damage. Each component is then inspected and assembled. After assembly, each shelf is cleaned and volumes are installed. Kofile staff take the volumes off the shelves and return the volumes to the shelves at the project conclusion. We do not leave behind volumes and debris for the County staff to address. Kofile guarantees to exceed the County's expectations for quality and excellence.

## ARCHIVAL DIGITIZATION

Imaging a document and digitizing a collection creates an electronic representation of the original archival record. This process is not meant to replace the archival record, but to aid in its preservation. The image serves as a reference tool and is a back-up if the original is damaged or destroyed.

Kofile does not subscribe to the "scan it and forget it" philosophy. Materials are addressed according to condition and fold endurance without blind, automatic scanner feeds. Technicians are trained to handle fragile and historical documents. Many projects involve re-imaging what low-bid vendors have already imaged. Kofile invests in the best hardware and software. With Kofile, images are the highest quality and are free of distortion and loss of information due to image capture.



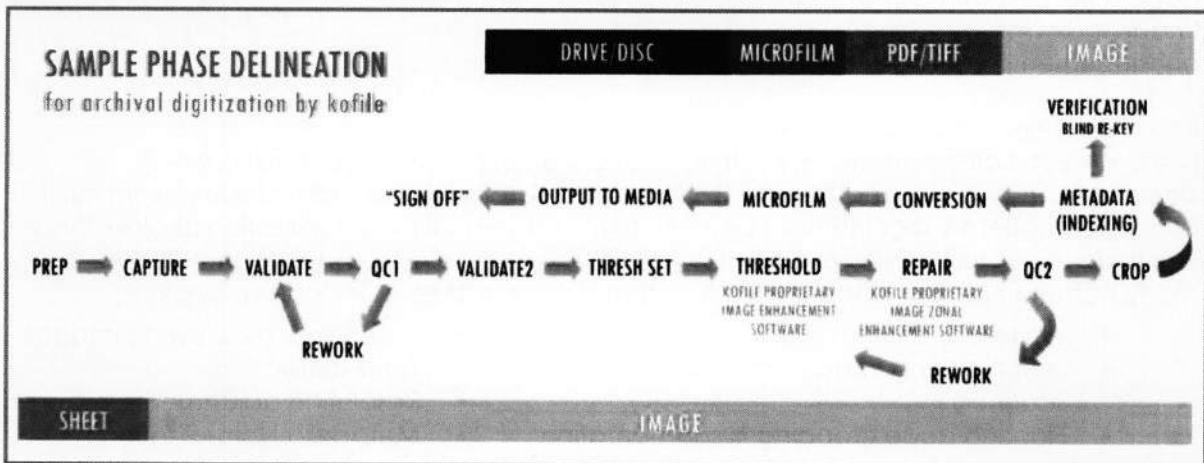
What would this image look like if imaged "AS IS?"

The tape compromises image legibility.

Kofile always defaults to U.S. National Archives and Records Administration (NARA) technical guidelines for digitization. Upon request, Kofile stores an electronic security back up of all images in case of loss, damage, or destruction by fire or natural disaster.

### Imaging Overview

Images are captured at a minimum of 300 dpi at 256 bi-tonal or gray levels. This ensures the optimum resolution and highest image quality for documents with poor contrast and illegibility. Images accumulate as Group IV bi-tonal images in a standard TIFF or PDF format. Single-page images are stored in .001-.Onn (Page Numbers) extensions. Images are optimized and scaled for system output. Gray-scale scanning techniques ensure the optimum resolution of each page. Effectiveness and minimum legibility of the scanning process is verified through rigorous and systematic quality control.





The article implies that partial document destruction is normal. This is unacceptable and contrary to any preservation standard. Kofile has the experience and expertise to handle fragile documents and address the physical preservation of the source document.

Source: Higgins, Jessie. "Recorder's Office Preserving Oldest County Records by Digitizing Them: Some Century-Old Pages Crumble When Touched." Courier Press, August 21, 2013 <[www.courierpress.com/news/local-news/digitizing-historical-records](http://www.courierpress.com/news/local-news/digitizing-historical-records)> and <[www.courierpress.com/news/local-news/county-digitizes-century-old-records](http://www.courierpress.com/news/local-news/county-digitizes-century-old-records)>.

#### Image Capture

Domain specific knowledge is necessary. A vendor that does not understand permanent asset collections may address Webb County's files as disposable. Operators observe each page during capture. For faint or illegible pages, the operator marks the page, readjusts the scanner, and employs contrast tools. If unsuccessful, the operator inserts a review form for the quality assurance team to assess. The page is treated with a "Best Possible Image Indicator" or further enhancements.



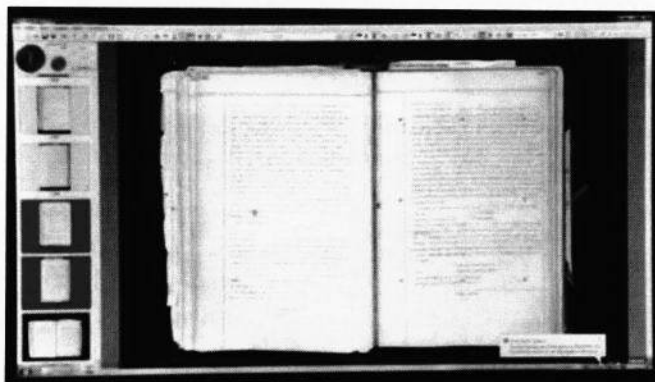
#### Image Processing and Enhancement

*IMAGE PERFECT*, Kofile's proprietary software, ensures optimum image quality. When documents vary in size and density, this custom programming ensures image uniformity. It provides proprietary algorithms to achieve high image quality. The utilization of algorithms is critical for capturing different densities and quality levels in a collection. Among the many common problems the software automatically addresses include at capture:

- White-on-white images
- Synchronizing images from different scanners
- Floating page cropping & segmentation
- Rotating & de-skewing images
- Tone correction
- Resolution adjustments
- Metadata Normalization

This proprietary software is a digital SLR-based system. Kofile utilizes the Microsoft SQL database as the underpinning for the production systems. The software also allows operators to build and edit image processing scripts interactively. The image processing scripts can be saved for batch processing. It also has progress tracking capabilities and can identify exceptions. Supervisors manage and correct problems quickly and efficiently.

*IMAGE PERFECT* uses custom image clean up and enhancements such as deskew, despeckle, character repair, and zonal processing. Kofile maintains 100% document integrity and image control with exclusive Image Locking capabilities. The processing procedures will not allow for information from rescanned pages to cut and paste accidentally into the incorrect page.



During the image repair process, *IMAGE PERFECT* allows repair of the currently displayed image without rescanning additional images, which could compromise image integrity. Images are zonal enhanced to improve readability.

*Quality Targets* permit operators to view image quality at the time of the scan. Images, even with scanning on different devices, are "normalized" as if they were from the same scanner. Rather than using ad-hoc algorithms and tricks, this software measures image quality and propagates this data through the imaging chain. The *Quality Targets* establish the baseline digital capture quality of the scanner at the time of scanning.

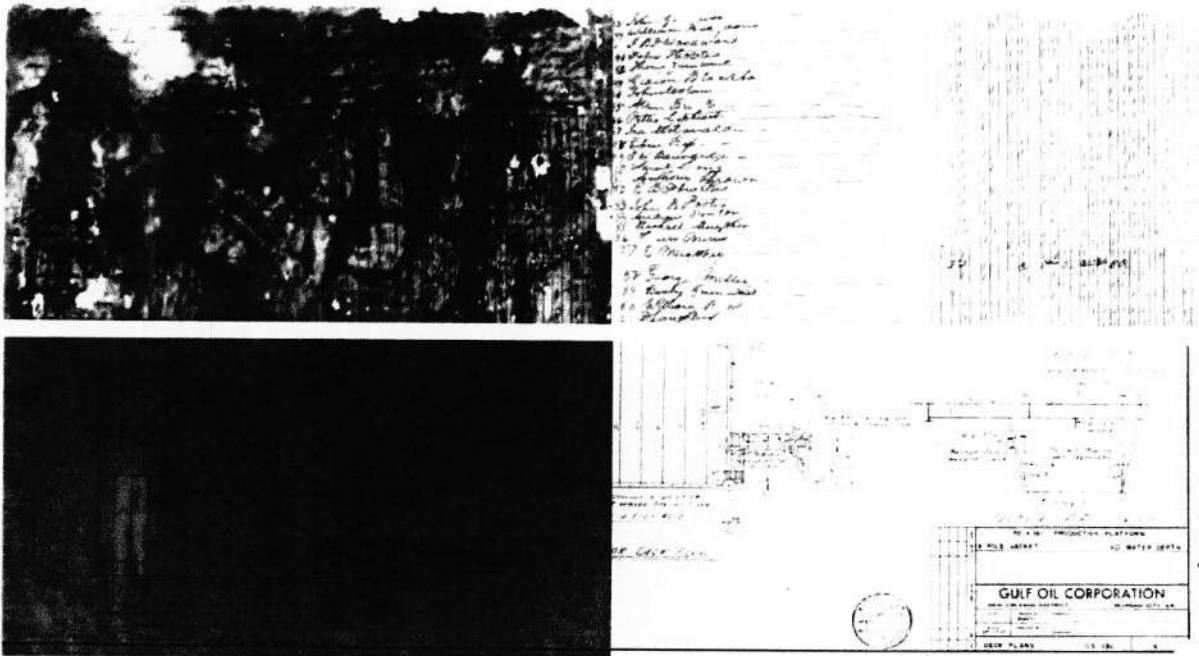
*Quality Targets* (see pictured) establish the baseline digital capture quality of the scanner during scanning. Therefore, Kofile can measure the digitization physics at the time of capture. The *Quality Target* serves as the foundation for our quality assurance analysis. *IMAGE PERFECT* measures each image at a minimum for the following attributes:

- Target dpi
- Target Tone scale and correction
- Color Management
- Brightness/Contrast Correction
- Gamma Adjustment
- White Balancing
- Page Orientation
- Exposure uniformity
- Color reproduction data

Annotations are supported to allow the addition of Book, Name, Volume, and Page on the image. Image quality metadata is captured as part of the image header along with a secured digital signature that certifies the fidelity and integrity of every image scanned.

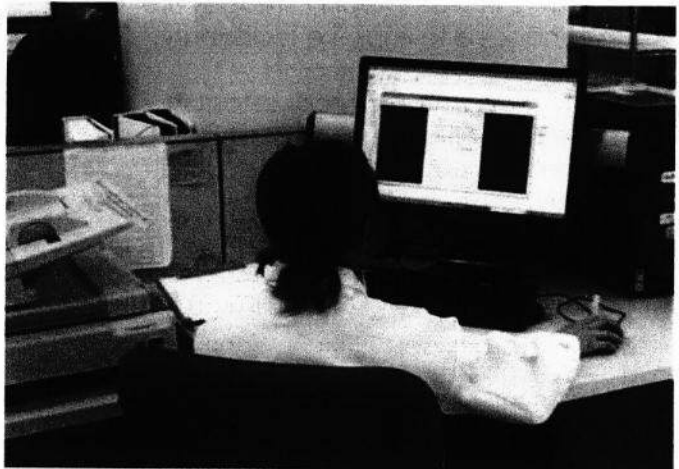
#### *Quality Control (QC)*

Our Quality Control (QC) process ensures that all images are certified. **Each and every image is sight checked during QC.** Each page is checked to ensure there are no missing pages, double feeds, or "A" pages, which may have been added to the original book. Every image is inspected before delivery to the customer. The County Clerk can receive an image log noting the steps employed.



Examples of imaging before (L) and after (R) image cleanup and enhancements.

Kofile's quality assurance involves three major thresholds for 100% review inspection: during preparation, scanning, and a post-scanning review. Then, work undergoes a statistical, random, batch-based review of 8% of the inventory before delivery. The three checkpoints for 100% review and the batch-based 8% review establish the control levels for inspection of the finished product.



#### Advanced Equipment

Kofile is able to scan mixed-sized and large-format documents. We employ a range of scanners to tailor imaging services to the document that requires imaging. Equipment includes technical scanning equipment by Fujitsu, Kodak, WideTEK, Zeutschel, Scan Optics, and Contex. If applicable, documents are imaged by hand and not fed through an automated Document feeder.

Kofile's technicians are trained to handle fragile documents. The scanning device is employed based on document fragility and stability. All scanners employ page detection to adjust for varying sizes of paper and, more importantly, thicknesses to reduce "pull-throughs" on thin papers following thick bond. This tailored selection process enables Webb County's documents to also be addressed based by their varying densities. Fragile documents are identified and flagged for exception handling and placement in Mylar, as necessary.

### *Zeutschel*

This is an overhead tabletop scanner for books, newspapers, and Large Format Documents (i.e. certificates, drawings, maps). It is a High End Scanner for maximum performance and perfect images.

The Zeutschel provides correction and automatic document detection with integrated color management, contrast improvement, image rotation, de-speckle, de-skewing, cropping, masking, and scanning with dynamic threshold, etc. Advantages include:

- High scan speed
- ROI-scan feature (limitation of scan area)
- high productivity
- best results with automatic color management
- Perfect Book – 3D scan technology for perfect book curve
- no UV/IR radiation
- low exposure to light (illumination will only be activated when scanning)
- no reflections with high-gloss originals
- excellent cost-performance ratio



### *WideTEK*

These wide-format duplex scanners digitize two-sided printed documents up to 36" in width. At a resolution of 300 dpi the scanner needs only 2.5 seconds to scan the front and back sides of a page in a single pass through the scanner.

The document no longer needs to be flipped over and scanned again on the other side. This scanner ensures the best possible gentle document transport and digitizes historical and fragile documents without damage to the source document.

## ARCHIVAL MICROFILM

In March 2011, Kofile's parent company acquired the Micrographics Division of Eastman KODAK (now Eastman Park Micrographics or EPM). With Kofile, Webb County has access to the world's foremost microfilm experts, leaders, technologies, and machines. All microfilming procedures are archival quality and produced according to ANSI Standards. Books (typescript, manuscript, and Photostat) are captured on 16 mm microfilm. Plats are captured on either 16 mm or 35 mm microfilm, depending on plat size.

Kofile operates numerous high production/quality microform roll scanners: Wicks and Wilson aperture card, nextScan Eclipse™ and nextScan FlexScan™. All software is up to date, and the machines are regularly maintained. The systems use image density compensation to adjust quality settings for contrast, document sizes and varying densities. The scanners scan any size microform (film or fiche) image.



### *Quality Control*

Configuration files are created during the initial pilot sampling. All scanners are set up and tested for the ongoing project. Technicians determine the proper scanner settings, focus, and print and inspect images. The quality control team approves the images before scanning continues. Images are scanned with correct compression and proper scaling and without proprietary headers. Kofile verifies that the frames are properly detected and examines image quality, image resolution, proper compression, aspect ratio, and focus.

### *Applying Retakes to Proper Image Location*

Operators inventory microfilm prior to the scanning. Rolls with retakes are identified and flagged for an additional retake process flow. In the retake process flow, the images associated with the retakes are placed into a designated retake folder. Kofile operators use proprietary software to tag the images by classification, book, volume, page, and quality level. Next, tagged images are visually compared to the corresponding page from the original roll. Parameters and rules created through extensive experience in imaging and agreed upon with the County will dictate the decision process concerning the replacement of the original image in the image set. Images that do not fall with the agreed upon rules are documented and discussed with the County prior to integration into the image set. Images that fall within the established rule set are replaced and the original image destroyed or disposed of in the agreed upon manner.





## PERFORMANCE STANDARDS

As Benjamin Franklin commented on the fire-fighting practices of his day, "An ounce of prevention is worth a pound of cure." At Kofile, our conservators fight figurative fires daily. Our practices prevent recurrences of the many fires throughout history that have devastated communities and wiped out all trace of local and state government.

To ensure the longevity of these records, Kofile performs all restoration and conservation services in accordance with the *Code of Ethics & Guidelines for Practice* of the American Institute for Conservation of Historic & Artistic Works (AIC).

The Kofile team provides realistic solutions, professional analysis, and innovative archival products to equip government and corporate records stewards with the information and resources needed to preserve their collections.



Kofile never utilizes any method of treatment, repair, or maintenance that is not 100% reversible. All work is designed to allow, insofar as possible, the subsequent removal of the additions. We do not attempt any treatment in which we lack experience. Records are carefully tested to measure compatibility before proceeding. Document integrity is essential.

*Our legacy is built on decades of experience with conservation, restoration, deacidification, encapsulation, binding, digitization, and microfilming.*

Certain substrates, adhesives, and laminates are reversible, while many others are not. Upon encountering irreversible materials, staff promote the Document's welfare and may decide in favor of "non-intervention." This adheres to the AIC's *Code of Ethics & Guidelines of Practice*. "Non-intervention" may also apply to adhesives that require harsh chemicals to remove, or when adhesives or housing materials have absorbed or transferred ink. Some chemicals used to treat these issues leave residual chemicals. Over time, these chemicals could damage the Document. Other performance standards include:

- Kofile does not mass diagnose collections, instead we address each separate volume or Document. One at a time.
- Kofile never loses text or data. At Kofile, Documents and media are priceless and are treated as such.
- Kofile provides continuous security, fire suppression, and environmental controls that manage temperature, Relative Humidity (RH), and ultraviolet (UV) light.
- All materials commonly used in treatments are itemized on a Treatment Report.
- Inscriptions and important attachments are preserved.

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## SERVICE DELIVERY

At Kofile, trained personnel handle documents with the utmost care. Kofile will not disclose Webb County records to third parties. Our team is experienced working with public records. Kofile personnel pick up records from Webb County. Kofile's personnel will pack and prepare volumes for transportation, as well as inventory and receipt records at the time of pickup and delivery.

Kofile provides an 'off the shelf and on the shelf' service. At Kofile, trained personnel handle documents with the utmost care. Kofile personnel transport all records personally. The vehicle will leave Webb County and travel directly to the Kofile facility for unloading in a direct point-to-point transit.

Records are transported in our secure 18-foot truck. The cargo is transferred in a climate-controlled environment. This vehicle boasts a 4000 lb. lift gate, air suspension, and air brakes. This truck is also equipped with several extra security features, which include back-up cameras and an anti-lock braking system.



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## PRODUCTION TRACKING SYSTEM (PTS)

An integral part of project management relates to the cataloguing of incoming files and tracking through each stage. Kofile uses Production Tracking System (PTS) capability to enhance project management by producing unique IDs (bar codes) for each control unit. PTS provides the tools necessary to control the project positively and manage the inventory of images, boxes, and books on an ongoing basis. Kofile can track the individual status of each document in our system, which is used further for audit tracking purposes for each employee.

Within each step, Kofile can track the exact person, assigned batch, date, time, number of documents, image counts per document, stage of performance, and status of the batch. This log allows Kofile to track every event encountered in the document lifecycle and "push" every record to our permanent logs for storage and retrieval at future dates.

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## ACCESSIBILITY OF RECORDS

Records held at Kofile are viewed as private and confidential and treated as such. The County is guaranteed access to records via toll-free fax or email at our expense. Upon receipt of a 'Hot Shot' (a records request), Kofile will flag the requested record and verify inventory control, pull supporting paperwork, and email/fax a response to the approved Webb County requester or alternate. The turnaround time for a Hot Shot will meet or exceed Webb County's requirements. Requests received during regular working hours (8:00 A.M. CST – 5:00 P.M. CST, Monday – Friday) are processed the same day—often within an hour or less of receipt.

## LOCATION OF WORK

Kofile's corporate facility is located at 6300 Cedar Springs Road, Dallas, TX 75235. Kofile possesses a history of responsibility, and has invested in a facility with superior security to mitigate loss and destruction before it occurs. Kofile's investment in security is apparent in facility construction and location, expert staff, transport services, climate control, insurance coverage, and strong financial backing.



### *Disaster Resistant Building*

The Kofile facility is a fire-resistant brick and concrete building with structural steel support members, fire-rated walls, ceiling, and flooring. The facility is located above flood plains and in an area unlikely to suffer cataclysmic natural disaster. The Kofile facility is also F5 Tornado Resistant according to an architectural assessment performed by Tanner Consulting, 2010.

### *Facility Security Measures*

Kofile is the only preservation company that combines a 24/7 on-site security person with electronic surveillance. A state-of-the-art security system protects the entire building. In addition to the Motion Detector Security System, Kofile follows rigorous end-of-day closing and lock-down inspection protocol.

### *Regulated Facility Environment*

Kofile has 24-hour temperature and Relative Humidity (RH) controls. All work areas for original Documents meet the archival climate control standards that the Texas State Library and Archives Commission recommends. Kofile has four independent HVAC systems with programmable thermostats. Each vault has a separate and independent HVAC system. The HVAC for the work and storage areas are constantly set at 70°F. The level of relative humidity (RH) is maintained at a percentage in the mid-fifties.

The laboratories are windowless and centrally located to eliminate exposure to ultraviolet (UV) light. Kofile does not have any issues with pest control. The building is regularly maintained. Food and drinks are not permitted in the conservation areas by anyone, for any reason. Records being treated for mold or pests are quarantined in a standard polyethylene bags, separate from other records, until remedial treatment is complete.

### *Vaults*

The Dallas facility has three vaults. Each vault is secured with Level 5 vault doors with a 4-Hour UL Rating of at least 350 (fire resistance). Each vault has its own independent HVAC system, monitors for humidity and temperature, and controls for airborne particulates

(monitored by analog methods). Kofile actively monitors for micro-organic growth. One vault serves as a Media Vault.

Daily protocol requires that records removed from the vault for work be in the custody of a technician at all times. When records are not undergoing treatment, they are immediately returned to the vault. Likewise, if documents require pressing or other mechanical processes beyond normal working hours, work continues in the vault.

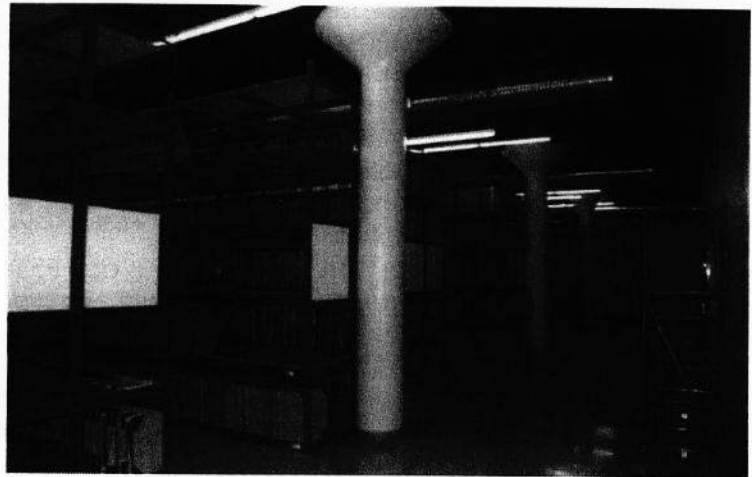
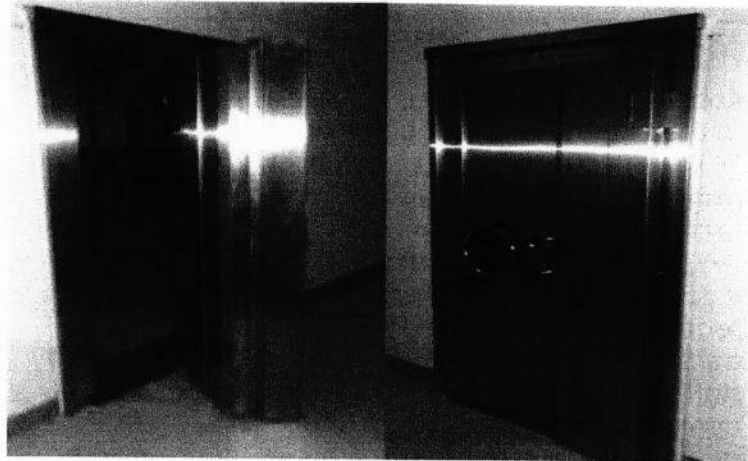
#### *Technological Security Measures*

Our operator terminals are configured to ensure that no data can leave the facility. Any employee who works on a project is issued a username and password to access images. Rights are assigned to individual images as "read only." Only approved employees have the passwords to change image permissions. Therefore, no one can delete or modify images without authorization. All activity of this nature is logged.

Kofile establishes positive control over each item. Inventory control is continuously maintained throughout each step of the conversion process. Our SQL imaging database maintains a complete audit trail throughout each step. We have managed a large number of projects and have not lost any media or source files. Irreplaceable roll film, aperture cards, cartridges, paper files, charts, maps, and microfiche are all handled in this manner, without loss.

Kofile's server architectures allow redundancy of data operations across multiple locations. Data is regularly backed up to allow services to resume without interruption. Double redundancy is accomplished with further backups.

Scanned information is captured on local workstations and processed in batches. After capture, the batches are stored on centralized servers. Index servers are also backed up. After indexing, data is batch processed on central servers. These are backed up nightly, and the entire group of information is stored on archive servers. These data sets are moved to tape with multiple copies maintained offsite and within the vault noted above. A backup implementation and rotation schedule is provided upon request.



## PROJECT TIMELINE

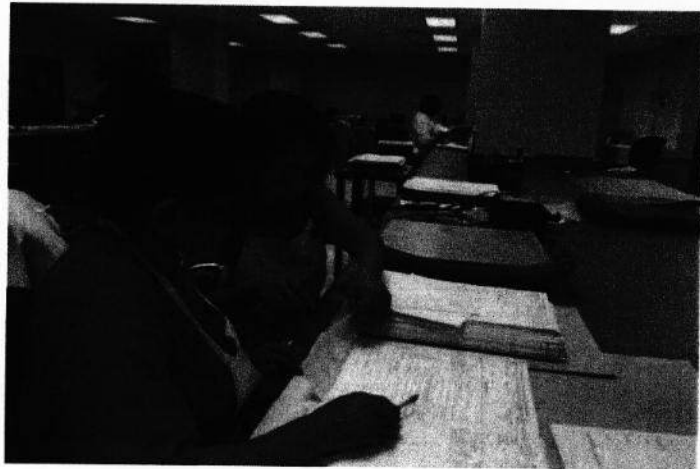
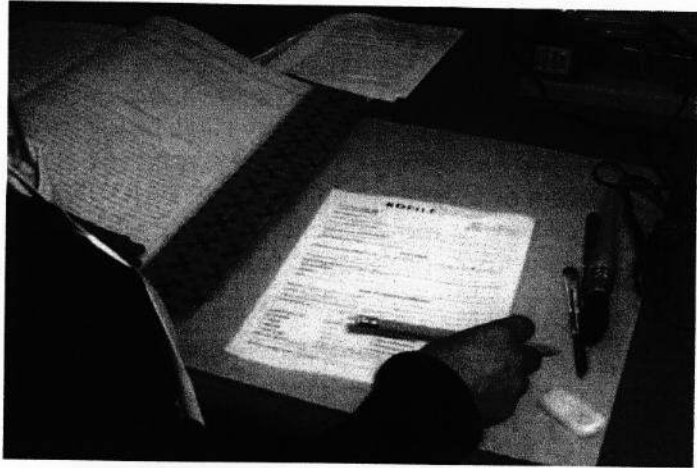
Preservation projects are unique in that the work determines the schedule, response times, and completion date. Each job is individual and unique. Kofile will meet whatever reasonable timeline Webb County Clerk requires and start the project upon execution of contract. The condition of the record determines how quickly it moves through the preservation process. Usually, older records suffer from extreme deterioration and require more attention. As the collection is processed in controlled batches and the age of the records decreases, production rate increases.

### SAMPLE PROJECT TIMETABLE

WEEK	PROJECT PHASE	COMMENTS
1	COMMENCEMENT & RECORDS TRANSPORT	Project Manager meets with Webb County Clerk's staff. Records are inventoried. Records are delivered to the Kofile facility in Dallas, TX.
1	ARRIVAL	Items are unpacked and inventoried against the previous inventory. Before any treatments are undertaken, each item is evaluated. An information log is generated for each item. Titles are verified; items are identified with job numbers; and a stamping sheet is produced. The stamping sheet is faxed to the County Clerk for verification, if required.
1—2	PREP	Write & distribute job instructions. Order custom materials such as binders upon approval of stamping sheet. Each stage of conservation is documented. The treatment log always accompanies each item.
2—4	CLEANING & DEACIDIFICATION	Folio surface cleaning. Removal of adhesives and repairs. All solvents and adhesives are acid free and easily reversible. Individual sheets are deacidified, as appropriate.
4—7	REPAIR & RESTORE	Mending with appropriate methods, such as the application of Japanese tissues. Encapsulate sheets, if required.
8—10	IMAGING & MICROFILMING	Document preparation, batching, and scanning, while adhering to strict quality control policies.
8—12	BINDER ASSEMBLY	Depending on the chosen housing, the designated books are bound. Binding may include rounding, backing, cover assembly, gold stamping and tooling, cutting of boards and leather, lining, and casing-in and pressing.
12—14	QUALITY CONTROL	Collection undergoes final quality check. Treatment reports are finalized and returned with the collection.
14—16	RETURN	The collection is boxed and delivered to Webb County. Other project requirements are addressed as appropriate.

## QUALITY ASSURANCE PLAN

1. Work is accompanied by a receipt identifying the items, quantity, titles, date, other pertinent information. This receipt is signed by Webb County Clerk's representatives.
2. Upon receipt, items are inspected and a Treatment Report/Log Sheet is prepared. Administrative staff will also complete a Work Order.
3. The Treatment Report and Work Order accompany the materials during the course of treatment, from inception to completion. The Treatment Report is updated and notated at each phase or as appropriate. A final Treatment Report is prepared upon completion, and included with the materials as a permanent record.
4. At each phase of treatment, the Lab Manager reviews the proposed work with the technician assigned to the current task. The Lab Manager ensures that the technician understands the scope, and is fully trained and experienced in the assigned task. The Lab Manager also ensures that the required materials and equipment are available, and properly functioning for the use of the assigned technician.
5. Also at each phase of treatment, the Lab Manager reviews the completed work. This includes physical inspection of the completed work, as well as review of Work Order instructions and Treatment Report entries. Additional work or correction is completed prior to the materials being processed for the next phase of treatment.
6. Periodically, staff review performance standards and Contract compliance. The Lab Manager will review each lot of work during treatment and after completion and quality assurance review.
7. After all preservation treatments have been carried out in compliance with the Work Order, a Quality Assurance Officer of Laboratory Manager grade or higher subjects the preserved materials to a comprehensive quality assurance review.



## CONSERVATION EQUIPMENT & TOOLS

Each of Kofile's conservation laboratories is equipped with some of the most advanced and highest quality equipment in the industry. Due to the enduring nature of the bindery trade, many pieces of Kofile's equipment originated in the 19<sup>th</sup> and 20<sup>th</sup> centuries and still operate as originally intended—these machines were built to last. Still, each machine is carefully maintained and upgraded to a modern UL-Rating before use.

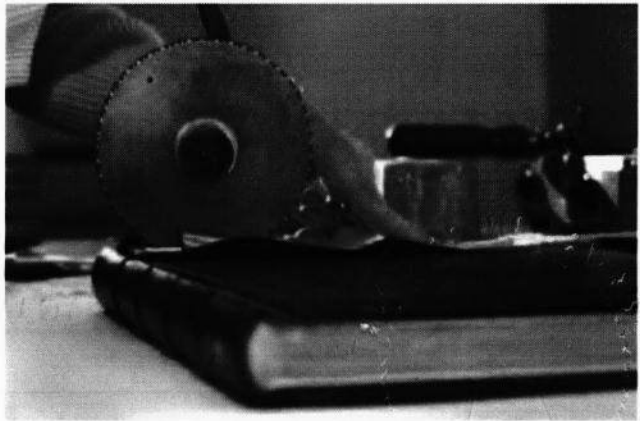
Each location has oversized soaking sinks and exhausted fume hoods. The multiple custom-built and hooded spray exhaust booths are used for deacidification. All are routed through an HVAC system for optimum performance.

Each location also has a humidification chamber featuring an advanced paper suction table, humidity dome, and ultrasonic humidifier. This intricate and complex piece of equipment has limited distribution among conservators.

Kofile ensures that each laboratory is equipped to process chemical treatments correctly and safely. All solvents and necessary chemicals are handled in modern chemical fume hoods and HVAC systems. These systems offer the maximum protection and safely exhaust fumes and gases. Kofile's HVAC systems meet or exceed OSHA and other regulations. Chemical-resistant gloves, safety glasses, aprons, and explosion-proof face shields protect conservators and Documents from toxins.

The large treatment sink at the Dallas facility is 8' by 5'. To our knowledge, it is the only one in existence. Custom made with polypropylene, the sink provides a large, flat, seamless surface for treating Documents.

Some of the other main tools and equipment include: board and bookbinding shears, copying presses, floor presses, gold tooling wheels, sewing presses, hand trimmers, heat welders, dry mount presses, and scalpels.





# PROJECT INVENTORY & PRICING



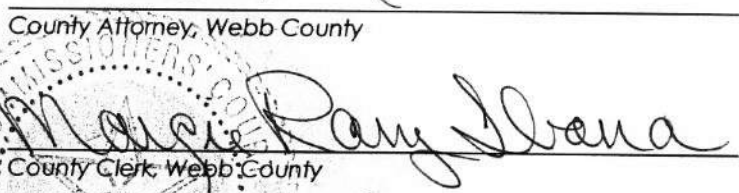
WEBB COUNTY CLERK  
PRESERVATION OF THE RECORDS ARCHIVE

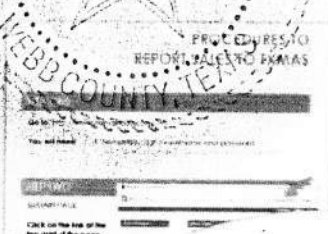
## PRICING OVERVIEW

Please reference TXMAS Contract number **TXMAS-13-36010**, Kofile Technologies, Inc., when processing your order. Prices are good for 90 days from the date of the quote.

WEBB COUNTY CLERK PROJECT OVERVIEW					
RECORDS SERIES TITLE	DATE	QTY.	PAGE COUNT	LEVEL OF SERVICE	PRICE QUOTE
Commissioners Court Minutes	Misc.	6 boxes shuck case files	24,900	PRV/IM/MM	\$560,314.55
	1891-1941	37 shuck drawers/loose documents	37,050		
TOTAL					\$560,314.55

Without a signed contract, prices are good for 90 days. Kofile, at its discretion, will complete work ahead of payment schedule as needed to maintain workflow efficiency. Contract total is to be paid in one year from the date of County Acceptance or as soon as work is performed.

COUNTY ACCEPTANCE	
 County Judge, Webb County	_____ Date
 County Attorney, Webb County	_____ Date
 County Clerk, Webb County	_____ Date



Per the Texas Comptroller of Public Accounts (CPA), upon purchase, Webb County reports the order online on the TxSmartBuy System at <[www.txsmartbuy.com/](http://www.txsmartbuy.com/)>. Attached are instructions for this reporting process (see excerpted to the right). **Please reference Kofile's TXMAS Contract No. TXMAS-13-36010 on Webb County's internal Purchase Order.** Webb County's TXMAS CO-OP Listing:

CO-OP #	C2400
Contact	Raul Salazar, rsalazar@webbcountytx.gov
Expiration	1-APR-2016—PLEASE RENEW

KOFILE TECHNOLOGIES



TXMAS billing line items include (please see the following pages for itemized pricing). Please note that TXMAS line items are calculated on average costs and are not indicative of the cost of any one item. Itemized pricing is detailed on the following pages.

PART NO.	NIGP	DESCRIPTION	UNIT PRICE	QTY.	PRICE
PRV201	96272	Preservation of Historical Tri-Fold Case File	\$2,933.58403/ Book	191*	\$560,314.55

\*Book quantity is determined based on page counts of 325 pages/volume.

*Records will receive the following services as identified. A permanent log is created for each volume to record condition, page order, and services/treatments performed. A final quality check references this original log sheet. Kofile can hold a security copy of all digital images for safekeeping. Kofile does not sell, distribute, or grant unauthorized access to County records.*

*(PRV) Preservation (Conservation Treatments, Encapsulation, Rebinding, and Archival Storage Solution)*

- Surface clean sheets to remove deposits—including dust, soot, airborne particulate, sedimentation, insect detritus, or even biological/mineral contaminants.
- Remove non-archival repairs or fasteners, such as residual glues, to the furthest extent possible without causing damage to paper and inks.
- Mend tears with acid free and reversible materials, such as Japanese tissue or archival acrylic based and reversible heat set tissue such as Filmoplast®.
- Deacidify sheets after careful testing with magnesium oxide to neutralize acidic inks and paper by providing an alkaline reserve. Random testing ensures an 8.5 pH with a deviation of no more than ± .5.
- Encapsulate each sheet in a Lay Flat Archival Polyester Pocket™ composed of SKC Films, Skyroll SH72S® Mylar.
- Rebind in a custom-fitted and stamped Disaster Safe County Binder™ (DSB). A dedication and treatment report is included in the binder. Any index tabs are repaired or replaced, as necessary.
- **Rehouse in five 4Post™ Shelving Units (85¼"H x 20"D x 36"W with five shelves each).**

*(IM) Archival Imaging (Image Capture, Clean Up, and Zonal Enhancements)*

- Capture images at a minimum of 300 dpi at 256 gray levels, ensuring the highest quality for poor contrast and readability. Gray-scale ensures optimum resolution.
- Images accumulate as Group IV bi-tonal images in a standard TIFF or PDF format.
- Kofile's IMAGE PERFECT application software uses custom image clean up and enhancements such as deskew, despeckle, character repair, and zonal processing.
- Annotations are electronically added on the re-created image.
- Images are indexed by term and grouped (stapled) together to form documents. Case images may be indexed by case number and grouped together by case.
- When multiple documents exist on a single page, images are split so that each document is viewable individually.
- Each image is certified and sight checked. Effectiveness and minimum legibility are verified through rigorous and systematic quality control.
- The County receives one MASTER COPY DVD or CD, and one COPY.

(MM) Microfilm

- Create archival 16 mm microfilm as a security backup.
- Microfilm produced from this project will be stored at the Kofile Dallas facility. Microfilm storage is included at no additional cost as long as the County is engaged in a contract or not more than two years has passed since the County has been engaged in contract work. After two years, Kofile reserves the option to propose cost for continued storage or the County has the option to take possession of microfilm.

## PROJECT INVENTORY & ITEMIZED PRICING

**KEY** (Sheet) Format  
TF Tri-Fold

WEBB COUNTY CLERK PROJECT INVENTORY & ITEMIZED PRICING					
RECORDS SERIES TITLE	DATE	PAGE COUNT	FORMAT	LEVEL OF SERVICE	PRICE QUOTE
Commissioners Court Minutes	various (5 boxes)	22,500	TF/Box	PRV/IM/MM	\$203,527.83
Commissioners Court Minutes	various (1 long box)	2,400	TF/Box	PRV/IM/MM	\$21,709.64
Commissioners Court Minutes	1891	300	TF/Loose	PRV/IM/MM	\$2,713.70
Commissioners Court Minutes	1891-1892	1,000	TF/Drawer	PRV/IM/MM	\$9,045.68
Commissioners Court Minutes	1893-1894	1,200	TF/Drawer	PRV/IM/MM	\$10,854.82
Commissioners Court Minutes	1899	200	TF/Loose	PRV/IM/MM	\$1,809.14
Commissioners Court Minutes	1900	200	TF/Loose	PRV/IM/MM	\$1,809.14
Commissioners Court Minutes	1901	100	TF/Loose	PRV/IM/MM	\$904.57
Commissioners Court Minutes	1902	250	TF/Loose	PRV/IM/MM	\$2,260.91
Commissioners Court Minutes	1903	100	TF/Loose	PRV/IM/MM	\$904.57
Commissioners Court Minutes	1904-1905	1,200	TF/Drawer	PRV/IM/MM	\$10,854.82
Commissioners Court Minutes	1906-1907	1,200	TF/Drawer	PRV/IM/MM	\$10,854.82
Commissioners Court Minutes	1908-1909	1,200	TF/Drawer	PRV/IM/MM	\$10,854.82
Commissioners Court Minutes	1910	1,200	TF/Drawer	PRV/IM/MM	\$10,854.82
Commissioners Court Minutes	1911-1912	1,200	TF/Drawer	PRV/IM/MM	\$10,854.82
Commissioners Court Minutes	1912-1913	1,200	TF/Drawer	PRV/IM/MM	\$10,854.82
Commissioners Court Minutes	1913-1914	1,200	TF/Drawer	PRV/IM/MM	\$10,854.82
Commissioners Court Minutes	1915-1916	1,200	TF/Drawer	PRV/IM/MM	\$10,854.82
Commissioners Court Minutes	1916-1917	1,200	TF/Drawer	PRV/IM/MM	\$10,854.82
Commissioners Court Minutes	1917	400	TF/Drawer	PRV/IM/MM	\$3,618.27

PROJECT INVENTORY & ITEMIZED PRICING, *cont'd.*

RECORDS SERIES TITLE	DATE	PAGE COUNT	FORMAT	LEVEL OF SERVICE	PRICE QUOTE
Commissioners Court Minutes	1918-1919	1,200	TF/Drawer	PRV/IM/MM	\$10,854.82
Commissioners Court Minutes	1919-1921	1,200	TF/Drawer	PRV/IM/MM	\$10,854.82
Commissioners Court Minutes	1920	1,300	TF/Drawer	PRV/IM/MM	\$11,759.39
Commissioners Court Minutes	1920-1921	1,300	TF/Drawer	PRV/IM/MM	\$11,759.39
Commissioners Court Minutes	1921,1937	500	TF/Loose	PRV/IM/MM	\$4,522.84
Commissioners Court Minutes	1922	1,300	TF/Drawer	PRV/IM/MM	\$11,759.39
Commissioners Court Minutes	1922	1,200	TF/Drawer	PRV/IM/MM	\$10,854.82
Commissioners Court Minutes	1923	1,200	TF/Drawer	PRV/IM/MM	\$10,854.82
Commissioners Court Minutes	1923-1927	1,100	TF/Drawer	PRV/IM/MM	\$9,950.25
Commissioners Court Minutes	1926-1927	1,300	TF/Drawer	PRV/IM/MM	\$11,759.39
Commissioners Court Minutes	1923-1928	1,100	TF/Drawer	PRV/IM/MM	\$9,950.25
Commissioners Court Minutes	1928	1,200	TF/Drawer	PRV/IM/MM	\$10,854.82
Commissioners Court Minutes	1929	1,300	TF/Drawer	PRV/IM/MM	\$11,756.34
Commissioners Court Minutes	1937	1,200	TF	PRV/IM/MM	\$10,854.82
Commissioners Court Minutes	1937-1938	1,100	TF	PRV/IM/MM	\$9,939.08
Commissioners Court Minutes	1938-1939	1,300	TF	PRV/IM/MM	\$11,746.19
Commissioners Court Minutes	1940-1941	1,200	TF	PRV/IM/MM	\$10,842.64
Commissioners Court Minutes	1940	1,300	TF	PRV/IM/MM	\$11,746.19
Commissioners Court Minutes	1941	1,200	TF	PRV/IM/MM	\$10,842.64

# PROCEDURES TO REPORT SALES TO TXMAS

The quote is entered into TxSmartBuy upon purchase.

## STEP ONE

**Go to:** <http://www.txsmartbuy.com/>

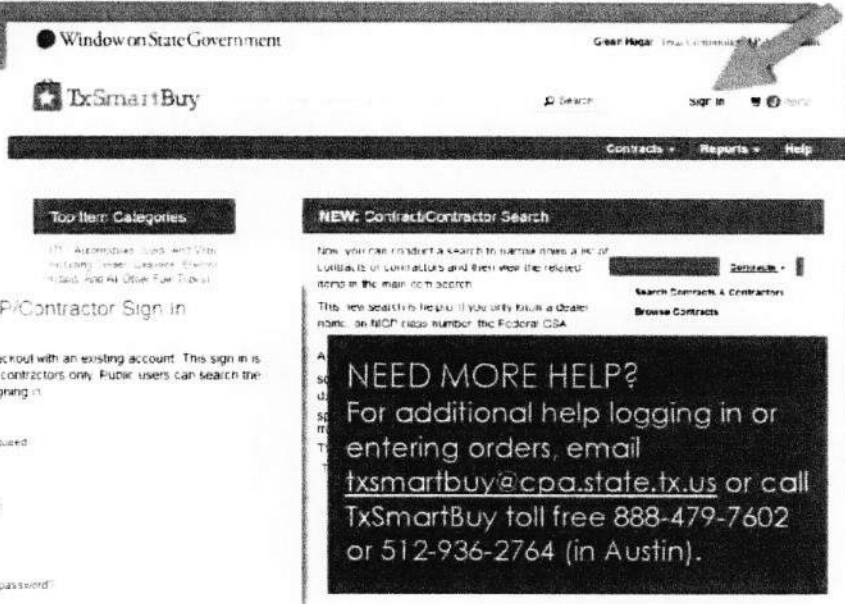
- You will need:**
1. TxSmartBuy Sign in email address and password  
*(usually managed by Purchasing Dept. or Auditor—if you do not have yours, contact TxSmartBuy)*
  2. Kofile's Quote

## STEP TWO

@MAIN PAGE

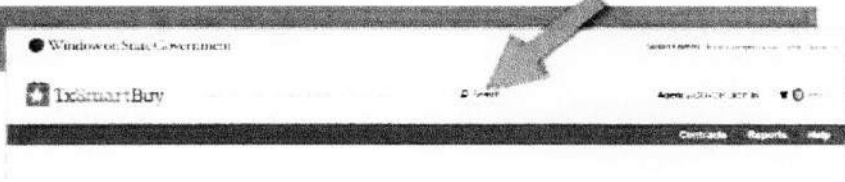
Click on the link at the top right of the page:  
Sign in

Sign into the system



## STEP THREE

Use the Search Bar at the top left of the page to enter: Kofile



## STEP FOUR

@SEARCH RESULTS

Click the blue button:  
Add to cart



KOFILE TECHNOLOGIES

## STEP FIVE

### @ADD ITEM TO CART

**Add Item to Cart** CLOSE

---

<b>Item Information</b>	<b>Shipping Details</b>
Quantity: 1305.91 Dealer: Austin Business F	Commodity Code: Unit Price: \$1.00 per Description: TSMAS Office Furniture Quote Kofile Productions, Inc.
	Delivery date: 6/5/2014
	Ship to saved address: 907 Moor Lane, Abilene
	Ad-hoc address:

---

<b>Additional Charges</b>	TSMAS Insurance \$0.00	Charges \$0.00	Subtotal: \$0.00
Price	Description		
\$	This is only used for open market incidental fees NOT THE TOTAL QUOTE		

Total: \$1,305.89

Complete the following prompts, if applicable:

- Enter total quote \$ amount as the **QUANTITY**:  
*If quote amount is \$1,305.89, then enter \$1,305.89 as the item quantity.*
- If dealers are available, choose dealer from the pull down.
- Enter the amount for non-incidental fees as the quantity of the \$1 item.  
*(Kofile does not quote any non-incidental fees).*
- Add other charges using the 'Charges tab,' if necessary.
- Choose Delivery date.
- Choose Shipping Address.

**Internal Tracking No.:** Use the County-issued Purchase Order No.

**Add to Cart.**

## STEP SIX

### @MY CART

**Attach Kofile quote:**  
Attach File to Item >  
Choose File

**Type in the box 'Add Note to Item':** See attached Quote #...

**Proceed to checkout.**

My Cart    Checkout    Confirmation

---

My Cart 1,415.91

Item	Shipping Address	Price	Qty	UOM	Subtotal	
TSMAS Office Furniture Quote Item #226 Productions, Inc.	907 Moor Lane Abilene, TX 79601 Denise @ Moor 50	\$1.00	1305.91		\$1,305.89	<input type="button" value="Add"/> <input type="button" value="Delete"/>
Incidental Fees		Price: \$1.00	Qty: 1		Subtotal: \$1.00	

Product Name: TSMAS Office Furniture Quote Item #226 Productions, Inc.  
Price: \$1.00 per unit  
Quantity: 1305.91  
Unit Price: \$1.00 per unit  
Total Price: \$1,305.89

Add Note to Item:

**Order Total: \$1,563.99**



## PROJECT PERSONNEL

WEBB COUNTY CLERK  
PRESERVATION OF THE RECORDS ARCHIVE

Due to our commitment and highly trained and experienced staff, Kofile is equipped to handle multifaceted and time relevant projects. Projects are executed efficiently and to the highest professional standards.

Second- and third-generation conservators and public records experts address records. The industry experience of Kofile's ownership and key staff dates to the 1970s. Kofile's extensive experience reaches a wide range of permanent retention media—including manuscripts, volumes, plats, maps, negative Photostats, microfilm, digital images, photographs, etc. Projects range from one map, volume, or document to thousands.



Upper management attend continuing education conferences and hold professional memberships with such organizations as the American Institute for the Conservation of Historic and Artistic Works (AIC). Kofile is an institutional member of the AIC and subscribes to their *Code of Ethics and Standards of Practice*. Kofile was also a 2013 Awardee of a Library of Congress FEDLINK *Preservation Services for Library and Archival Collections* contract (FEDLINK No. LC13G7905).

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### CONSERVATION TEAM STRUCTURE

A conservator supervises the conservation laboratory and daily work in the lab. Each of our locations has technicians that perform limited conservation treatments under close supervision. Kofile is a strong proponent of cross-training. Our conservation team has a strong retention rate and years of experience and practice. Less experienced workers are assigned to specific tasks, such as document prep or basic unbinding procedures.

The conservators oversee the performance of the treatments. They will be responsible for the examination criteria of each item, including cost estimates. Joseph J. 'Joe' Marotti is not limited to any one location. He frequently travels between each location to assist in training and special projects.

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### PROJECT MANAGEMENT

Each project is assigned a job number. All instructions and logs reference this number. Assigned personnel document each item and enter job numbers into our tracking database. Throughout, the Laboratory Manager coordinates and monitors progress by direct observation, supervision, and continuous review of the documentation. Periodic meetings of the staff and management also provide a forum for information exchange. Each client or batch of records is entered on a color-coded production and control board. Storage areas are likewise color-coded to correspond. Work order and individual

documentation logs accompany the item throughout the entire process. The log includes the name of the Supervisor and the assigned technician.

Records are housed in the same location throughout the project so that any given record may be located quickly. When not undergoing treatment, records are immediately sent to the vault. Throughout each step, Kofile can track the exact person, assigned batch, date, time, number of documents, stage of treatment, and status.

#### ACCOUNT MANAGERS

The Account Managers handle all communication with the County Clerk's Office. They ensures the project is completed on schedule and to the client's satisfaction. The Account Managers are responsible for project supervision and are available to meet periodically via phone or in person for project coordination and progress updates.

##### *Catherine 'Cathy' Drolet*

Drolet has been in the document management industry since 2006, and she is a Certified Digital Imaging Architect (CDIA+). Drolet has experience in business development, account management and project management for the state and local public sector. She helps clients manage their procurements with state contracts. Drolet's expertise is in converting high volumes of critical papers and film in a confidential environment utilizing a tightly managed and secure approach.

##### *Scott Fausto*

Fausto has over 20 years of experience in sales and project management for the county recording offices and the private sector. His experience managing county recording systems gives him unique insight into the needs of local government. Fausto specializes in analyzing county government workflows and developing cost-effective recording system solutions tailored to the needs of each client. Fausto gives educational presentations and software demonstrations, and he can assist in training and instruction during implementation processes. Fausto's diverse knowledge of records management and workflow analysis and best practice implementation make him a crucial member of the Kofile team.

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#### KEY CONSERVATION STAFF RESUMES

*Key personnel are identified below, and resumes for are provided in the following pages:*

<u>NAME</u>	<u>ASSIGNMENT</u>
Chris Marotti	<i>Chief Conservator</i>
Joe Marotti	<i>Senior Conservator; Special Projects</i>
Scott Williams	<i>Senior Conservator Consultant</i>

CHRIS MAROTTI  
*Conservator/Director of Central Operations*

*Marotti has served as Director of Operations for over seven years. He has a lifetime of experience in conservation and preservation practices. From a young age, he apprenticed in his father's conservation laboratory. He performs preservation and condition assessment surveys. He is also responsible for day to day operations, including coordinating purchasing and production to meet contract deadlines and goals. His input is invaluable, and his is readily available to customers to records collection challenges. He directly manages the Dallas Conservation laboratory.*

*Marotti also has experience researching and writing marketing, financial, and feasibility reports concerning new business acquisitions and acquisition prospects. He filled a key role in preparing and carrying out satellite operations in Carson City, Nevada, and Dallas, Texas. He has worked as a consultant for large municipalities concerning vault equipment and preservation/conservation approaches and practices. He has an exceptional knowledge of municipal markets, business practices, and conservation/preservation practices.*

### **Professional History**

- 2009—present *Associate Conservator and Director of Central Operations, Kofile Preservation, Inc.*
- Oversee day to day operations, including coordinating purchasing and production to meet contract deadlines and goals
  - Directly manage the Dallas-based Conservation laboratory
- 2004—2009 *Assistant Conservator and Director of Sales and Marketing, Joseph J. Marotti Co., Essex, VT*
- Research and write marketing, financial, and feasibility reports concerning new business acquisitions and acquisition prospects
  - Filled a key role in preparing and carrying out satellite operations in Carson City, Nev., and Dallas, Tex.
  - Consultant for large municipalities concerning vault equipment and preservation/conservation approaches and practices
- 1991—2000 *Preservation Technician, Joseph J. Marotti Co.*

### **Education**

- 2005—2006 *Business Management Studies, Community College of Vermont*
- 2000—2004 *Recreation Management and Business-Economic Studies, University of Vermont*



## Training and Certifications

1991—2000, 2004-2009

*Apprenticeship.* Joseph J. Marotti and Carole Marotti.

1991

*Apprenticeship.* Leopold Saint Paul, the former Director of the Conservation Laboratory at the Université de Liege, Belgium.

- Minor varnish removal for oil paintings, paper suction table cleaning of prints, fine book restoration, and paper dating through use of water mark identification.
- UV light observation of artifacts checking for evidence of previous restoration, ink solubility, and paper Ph testing.

1991—1995

*Apprenticeship.* Carole Homola.

- Traditional hand-bookbinding

1991

*Assistant.* "Restoration of Documents and Works of Art on Paper." Maria Pukownik, former Chief Conservator at the Regional Historical Library Museum in Plock, Poland, and Conservation Department Head at the State Museum of Art Nouveau, Plock, Poland.

- Pukownik specializes in works of art on paper, and she is also extensively trained and experienced in the complete treatment of paintings. She is also skilled in cleaning, seamless repairs, reconstructions, painting in all traditional techniques, book repair, and bookbinding.

JOSEPH J. "JOE" MAROTTI  
Conservator

*Joe Marotti's experience is in art restoration and the preservation of archival materials such as books and manuscripts (primarily public records of County and Municipal Clerks). His interest was peaked working in his father's municipal and county supplies company.*

*The company opened a conservation division in 1985, and hired conservators, including Leopold Saint Paul, as Director, and Maria Pukownik. With 23 years of conservation experience, Saint Paul's expertise included the restoration of incunables and rare manuscripts dating to the 9th century. Norman Beaudoin, who had four years of previous conservation experience, was hired as conservation assistant and apprentice to Saint Paul.*

*In 1985, Mr. Marotti established Vermont's first private conservation lab specializing in public documents, oil paintings, works of art on paper, books and manuscripts, maps and charts, and vellum and parchment artifacts. Mr. Marotti established preservation programs in 150+ Vermont municipalities. With his education endeavors, Vermont record storage facilities updated crude safes and storage devices to NFPA-rated record storage vaults.*

*Mr. Marotti has collaborated with many conservators throughout his years in private practice, and he has conducted numerous Introduction to Archival Records Preservation workshops and presentations across New England. He frequently travels across the United States and consults with other Kofile conservators and technicians on best practices.*

*Mr. Marotti has conserved books, maps, artwork, parchment, vellum, and even papyrus. He routinely treated artwork that included offset reproductions, pen and ink drawings, lithographs, wood blocks, engravings, etchings, pastels, watercolors, photographs, and collages. Many were the work of well known artists such as Paul Gauguin, Mary Cassatt, Albert Bierstadt, John James Audubon, Gordon Grant, James McNeill Whistler, Ansel Adams, Ogden Pleissner, Sam Motherwell, Marc Chagall, and Nathaniel Currier.*

### **Professional History**

2009—present      Special Projects Conservator Consultant and Chairman Emeritus  
Kofile Preservation, Inc.

1972—2009      President  
Joseph J. Marotti Co., Essex, VT

### **Education**

1964—1965 and 1971—1975  
Electrical Engineering, University of Vermont

### **Professional Activities**

Records Management System Design for the Fresno County Recorder's Vital Records,  
Fresno County Recorder, Fresno, CA—2013-Present

- Assessment of historical and public records, development of a Project Plan, coordinate with the County engineer and architect to design storage solution for 1,600 volumes.

Presenter. Suction Table Demonstration. Preservation Workshop for Texas County and District Clerks, Dallas, Texas—2011

Presenter. "Preservation of County Records/Before and After Conservation Treatments." County & District Clerks Association of Texas, South Padre Island, Texas—2005.

Presenter. "Preservation of County Records." County Officials Association of Tennessee—2008

- Presented to over 500 attendees.

Presenter. "Preservation Presentation." Tennessee Register of Deeds Association Spring Conference—June 4, 2009

Engineer custom paper suction table and conduct training for Kathryn Myatt Carey & Associates, Salem, MA—1990s

Professional Exchange. Fine Art Restoration collaboration with Paul Lengyel, Fine Art Conservation and Restoration Services, Albany, NY—1990-1993

- Collaborations included the restoration of numerous works of art, including those by Rembrandt, Picasso, Maxfield Parrish, Alexander Calder, Joan Miro, Currier & Ives, etc.

Restoration of WWII Memorabilia and Military Posters. Watervliet Arsenal Museum, The United States Army, Watervliet, NY.

Instructor. "Conservation" course. Saint Michael's College, Winooski, VT. Continuing education program for Certified Municipal Clerks (CMU)—1991

Trainer. "Preservation of a Set of Wilson's American Ornithology Volumes." Keiran Rutherford, Intern.

- This project lasted one year and saw the restoration of a complete set of volumes, including a leaf by leaf restoration of original hand-colored plates.

System Storage Design Solution Architect for 38,682 Maps. Sacramento County Clerk and Recorder, Sacramento, CA—1991

- Conserve, encapsulate, re-house, and image volumes and maps. Provide storage system for 38,682 maps.

Attendee. "Use of a Suction Table: Site Training." Conducted by a conservator based out of a museum in mid-state New York—1991

Apprenticeship. Maria Pukownik, former Chief Conservator at the Regional Historical Library Museum in Plock, Poland, and Conservation Department Head at the State Museum of Art Nouveau, Plock, Poland—1986-1991

Intern Supervisor. Local high school, Saint Michael's College, and University of Vermont (UVM) curriculums—multiple years.

### **Professional Affiliations**

Member, American Institute for Conservation (AIC)



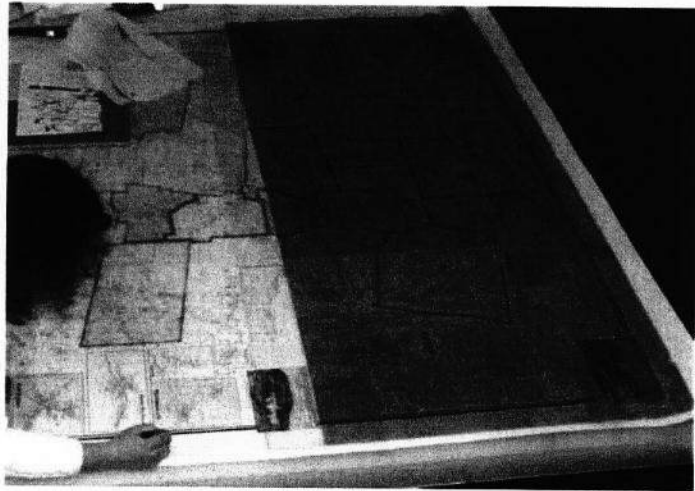
# QUALIFICATIONS & EXPERIENCE

## EXPERIENCE

*President Abraham Lincoln, Stephen F. Austin, President John Quincy Adams, Bruce Lee, President John F. Kennedy, General Stonewall Jackson, King George III, Wyatt Earp, Grandma Moses, James Morris, and Henry David Thoreau.*

Whether written with their hands, treasured as their keepsake, recorded in their last breath, the names above represent a short selection of the historical significance personified by the written records and prints that Kofile has preserved.

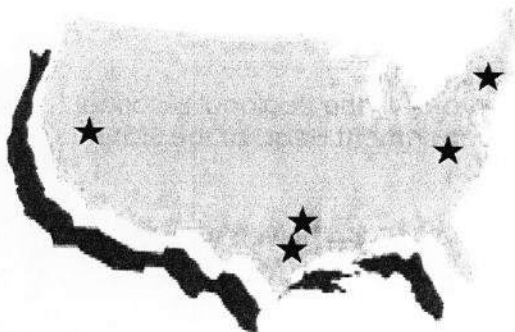
Our persistence and workmanship has allowed Kofile to promote and contribute to the preservation of local records as well as those of national significance. As our references document, Kofile establishes enduring professional relationships and remains loyal to each project.



## FIRM HISTORY

Kofile is comprised of the oldest and most experienced private firms *specializing* in the preservation of permanent public records in the US. Established in 2009, as Brown's River Marotti Co. (BRM), Kofile was renamed following a merger in 2011. Now Kofile Technologies, Inc., we take great pride in our legacy. *Moving forward with a new name, familiar faces remain.* Each of our three root companies is introduced below.

- ▶ Joseph J. Marotti Co., Inc. dates to 1961 and operated under that name for 48 years.
- ▶ Brown's River Bindery dates to 1972 and operated under that name for 37 years.
- ▶ Louisiana Binding Service, Inc. (LBS) dates to 1987 and operated under that name for 24 years.



Kofile operates five regional conservation facilities (Dallas, TX, San Antonio, TX, Essex, VT, Greensboro, NC, and Carson City, NV), the location where all of the proposed services will be performed is our Dallas facility. At this facility, Kofile employs full-time, permanent employees. This is not a temporary facility.

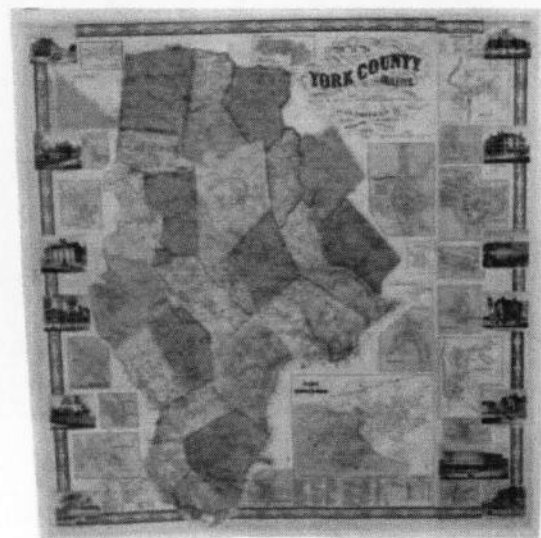
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## QUALIFICATIONS

As stated, each location has an advanced paper suction table for treatments such as ultrasonic humidification, washing, deacidification of fragile materials, backing, lining, repair, leaf casting, and stain reduction. This device treats books, maps, artwork, parchment, vellum, and even papyrus. Treated artwork included offset reproductions, pen and ink drawings, lithographs, wood blocks, engravings, etchings, watercolors, photographs, and collages.

Solutions above and beyond the normal scope of paper conservation include:

- Water damaged volumes in which the pages have fused into a solid block.
- Removal of 1898 F.W. Emery lamination with enzyme treatment.
- Removal of Barrows lamination on manuscripts and charters.
- Applying polyacrylic coatings to soluble colored media for suction table treatment (Wilson's Ornithology, 1813).
- Removal of polyurethane coatings on soft stone (Verdite) Statuary.
- Removal of gelatin photo emulsion photographs stuck on glass.
- Cleaning, reinforcement, and preservation of severely mold and mildew damaged materials.
- Cleaning, mending, preservation, and framing of large media such as wall maps.
- Flattening, stabilization, and conservation framing of medieval sheet music on parchment (12<sup>th</sup> century).
- Consolidation, repair, flattening, and conservation framing of unique 19<sup>th</sup>-century sampler (Mary Todd Lincoln).
- Re-humidification, stabilization, and flattening of rare African primitive painting on goat hide (circa 1800s).
- Flattening and stabilization of badly warped Russian Icon paintings on wooden panels circa 1400s.
- Repair and stabilization of damaged Ming Dynasty wooden horses.
- Restoration of severely fire damaged art, both paper and oil paintings.



*This York County, Maine, map was created in 1856. It arrived in two very tattered pieces. This work of art and irreplaceable information is now saved for future generations. It underwent conservation treatments and restoration at the Dallas laboratory.*

## NOTABLE PROJECTS

Projects are often long-term and based on available budgets. This partnership illustrates Kofile's interest in the success of each project. Please note that references are available upon request. Kofile also restores special and unique document from private collections. A short selection of the variety of projects completed by Kofile includes:

*Preservationists for the Texas Court Records Preservation Task Force, 2010—2012.*

*"Ship Papers Issued to Obed Shearman, Master and Commander of the Minerva Smyth"—2013*

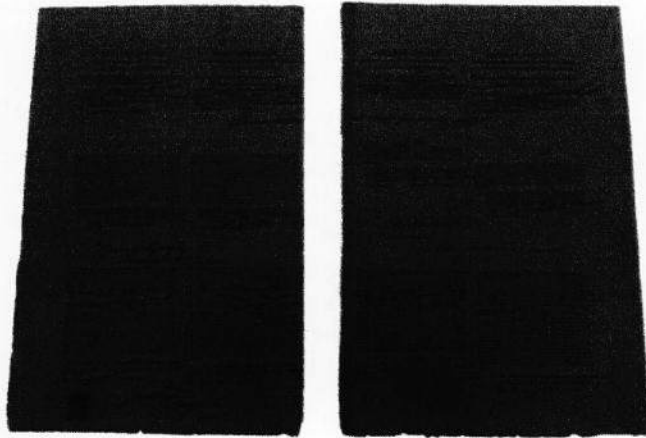
*Private Collection. The Anatomical Exercises of Dr. William Harvey, ed. 1673—2013*

*Historical Official Records Pre-1850 to 1950, Hidalgo County Clerk's Office, Edinburg, TX—2009-Present*

*Historical Public Documents and Volumes, Brazoria County Clerk's Office, Angleton, TX—2009-Present*



*This volume of The Anatomical Exercises of Dr. William Harvey, ed. 1673, was located in an attic and nearly disposed. Its value is estimated at \$20,000 to \$25,000. Conservator Chris Marotti deacidified the pages and preserved it in a custom box that he constructed.*



*These ship papers were issued to Obed Shearman, Master and Commander of the Minerva Smyth. It was signed by President Abraham Lincoln and Secretary of State William H. Seward. Although dated April 20, 1865, the document was signed prior to Lincoln's assassination on April 14. The text appears in four languages, and contains a stamp and Presidential seal. Shearman received it on the same day that he heard the news of the President's death. Kofile performed conservation treatments including cleaning and deacidification. The Document was encapsulated and custom archival housing folder was created.*

*Historical Public Documents and Volumes, Nueces County Clerk's Office, Corpus Christi, TX—2013*

*Circa 1934 Town Charter and Town Deed, Artist Edward J. Ades, Works Progress Administration, Westport Town Clerk's Office, Westport, VT. 2005.*

*San Francisco County and City of San Francisco, CA, McInerney Judgments*

*Shasta County, CA, Original Shasta County map restoration and housing*

*Los Angeles County Clerk and Recorder, Norwalk, CA, Preservation of County Records: 1,975 volumes of Patents, Grantor/Grantee Indexes, and Vitals.*

*The Bruce Lee Foundation, Commentaries on the Martial Way (Lee's original memoirs)*

*Bureau of Conveyances, Department of Land and Natural Resources, Honolulu, HI, Original Pearl Harbor Map and Deeds of Conveyances*

*Cochise County Superior Court, AZ , Wyatt Earp Manuscripts*

*Pima County, AZ, San Pedro Cattle Company Records*

*Accomack County, VA, documents from The Daughters of the American Revolution*

*Barnstable, MA, Civil War Rebellion Record*

*Clinton, NY, King George letter*

*Dare County, NC, Birth Certificates of The Mighty Midgets of Chicamacomico*

*Dutchess County, NY, Indentures*

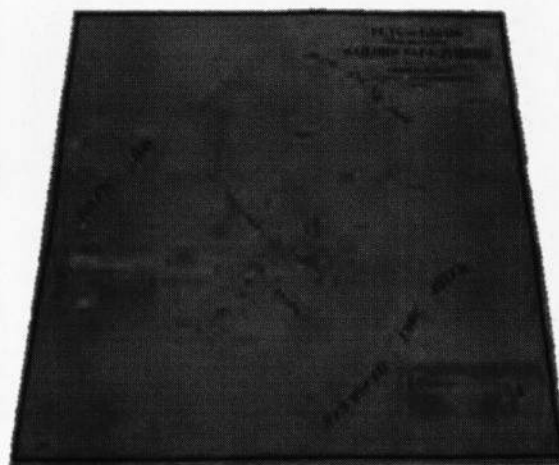
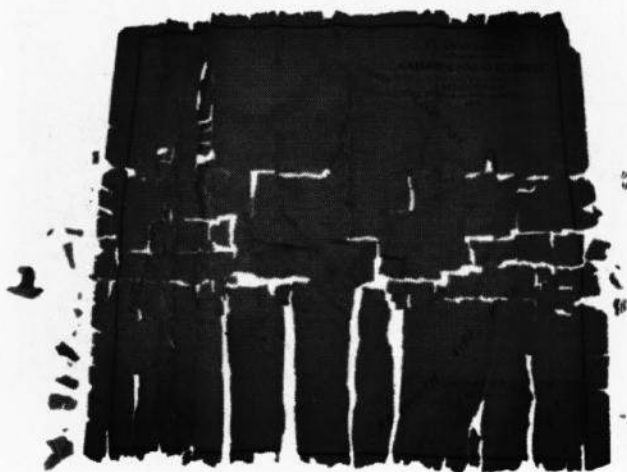
*Ellington, CT, Jewish Cemetery Records*

*The Episcopal Diocese of Vermont, Burlington, VT, Early Church Records*

*Hague, NY, American Graphite Company, 1889*

*Hunterdon County, NJ, Naturalization Records, 1804—1966*

*Kofile has provided conservation and restoration services for the projects administered by the Connecticut State Library, the State Library of Virginia, and the Vermont State Archives and Records Administration (The Constitution of 1777, Vermont).*



*The 1894 map above is titled, "Plan of Lands Belonging to the Sailors' Snug Harbor" and is from Quincy, Massachusetts. Rolled for years, the map was pieced together and backed.*

Little Compton, RI, *Copy of the Declaration of Independence*

Long Island Rail Road (LIRR), NY, *Preservation of 19 historical volumes containing the earliest maps of the LIRR System*

Massachusetts Supreme Judicial Court, *Salem Witchcraft Trials Transcripts, 1600s*

Middlebury College, VT, *The Nuremberg Chronicles, 1493, and Henry Thoreau's Personal Copy of Walden*

Middletown, RI, *The Boston Post*

Montgomery County, VA, *Register of Free Negroes, 1823—1847*

Morningside Gallery, Latham, NY, *JFK Congressional letter, dated Sept. 11, 1952*

Morris, CT, *James Morris Museum Parchment Documents*

Nantucket, MA, *Wharf Rats Club Documents (Weather Records, 1700s)*

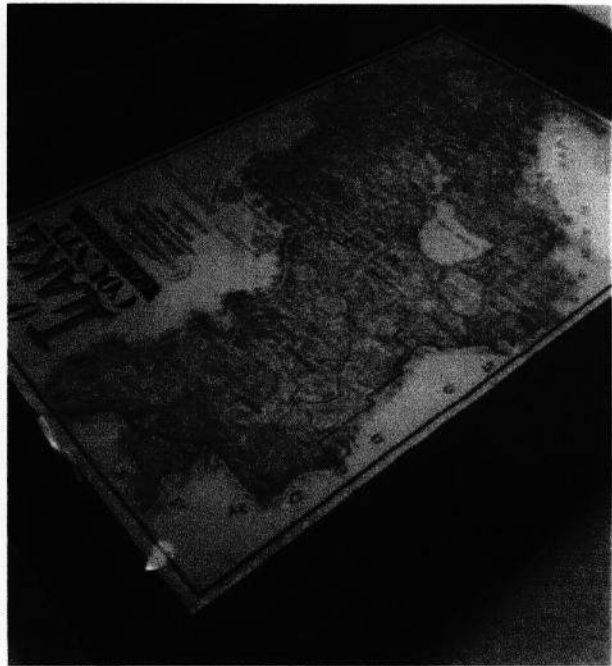
New Hampshire Archives, NH, *Australian Ballots, 1892 and 1894*

Order of the Alaska Moose, AK, *Order of the Alaska Moose*

Pawtuxet, RI, *Pawtuxet Valley Gleaners*

Plymouth, MA, *General Laws 1658—1691, Colony Records*

Kofile provided ongoing restoration for the Jackson Barracks Military Library of the Louisiana Military Department. This project included restoration of Civil War documents, including: books, manuscripts, periodicals, maps and memorabilia. These documents were damaged during Hurricane Katrina.



The map pictured above is the "Official Map of Lake County, California" and dates to the late 1890s. This map is part of a large collection of restored maps. As pictured, these maps were laminated, water damaged, taped, and tattered. After conservation and restoration at Kofile, the map was returned for flat storage.



Private Collection, NY, Top Secret  
Declassified U.S. Government Records and  
Telegraph Transmissions/ Nazi Records

Swan Lake, NY, Restoration of "Sugaring Off"  
by Grandma Moses, a limited edition print

Private Collection, VA, Civil War scrapbook

Thomaston, CT, House Joint Resolution No. 155  
and the Petition of Seth Thomas

Private Collection, VA, Stonewall Jackson's  
Final Medical Records from Dr. Hunter  
McGuire

Trenton, NY, Trenton Falls Hotel Register,  
1862—1875

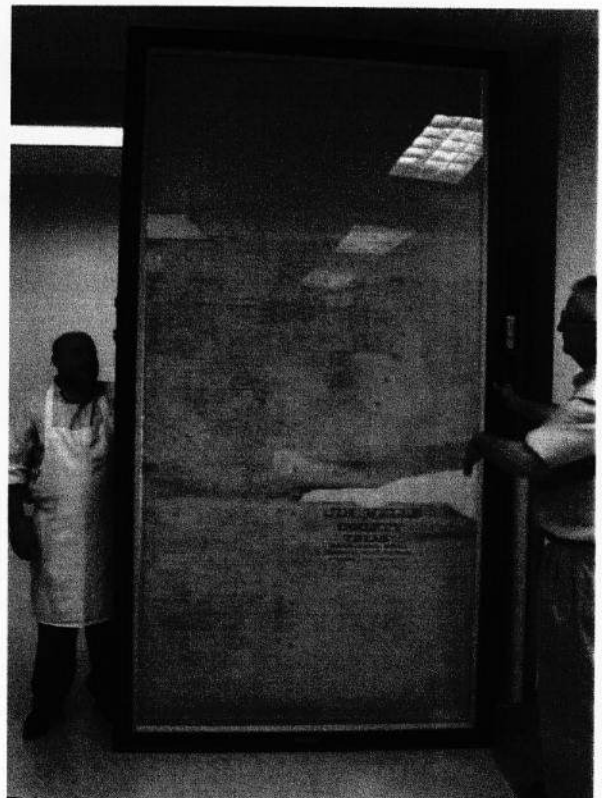
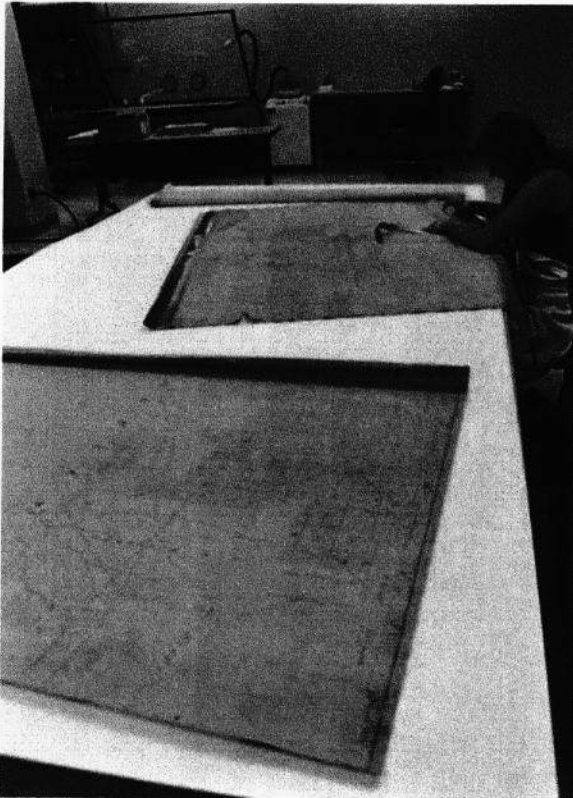
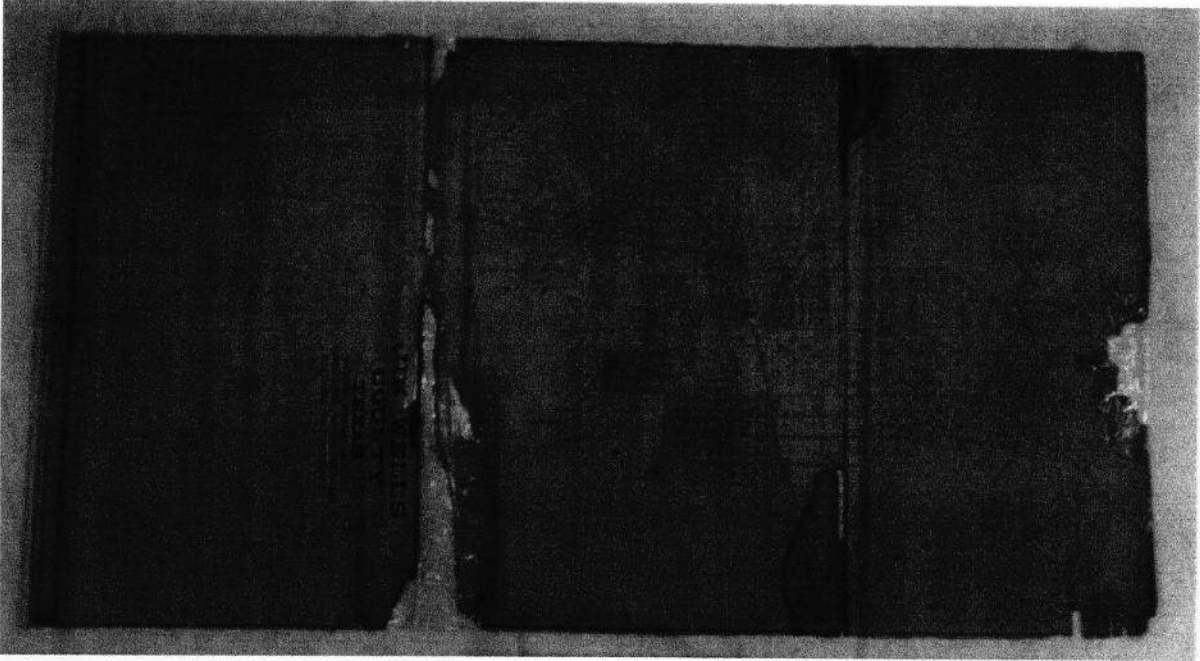
Sussex County, VA, 118 Early Wills

Washington County, NY, The John Williams  
Papers

This page is from an 1841 Execution Document from a Texas County. The jumbled pieces were held in a folded sheet of paper with a note that read: "...destroyed in haste without thought" —see below. A puzzle no more, the page is now conserved and preserved.

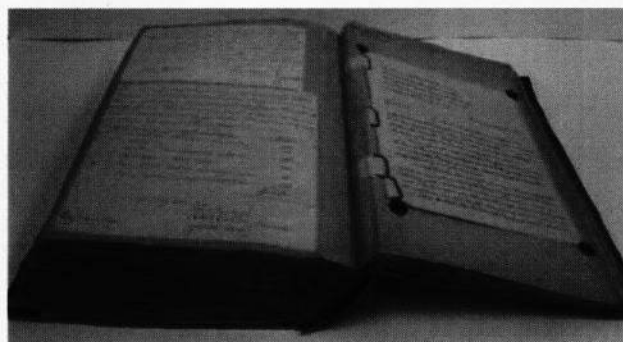
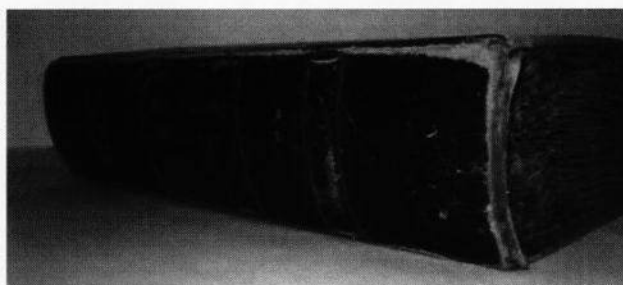
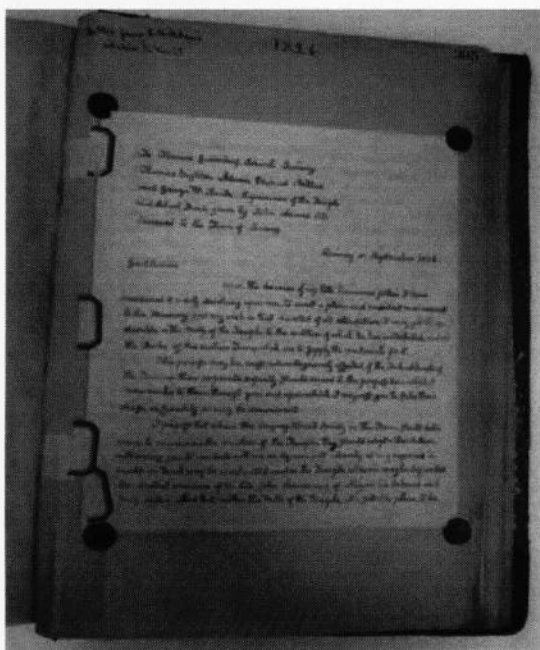


Once the tape was removed from this 1911 Map, it separated into three pieces. The map was restored and framed. The map was framed with an extra depth custom frame molding. A lens with ultraviolet filter is utilized to add a measure of protection. The mat, backing, and sealing are all acid free.

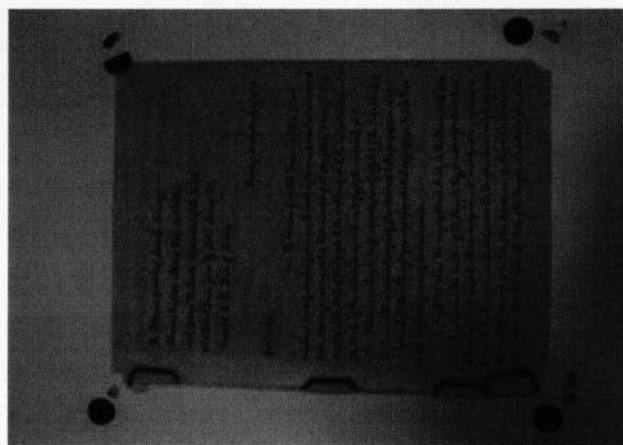
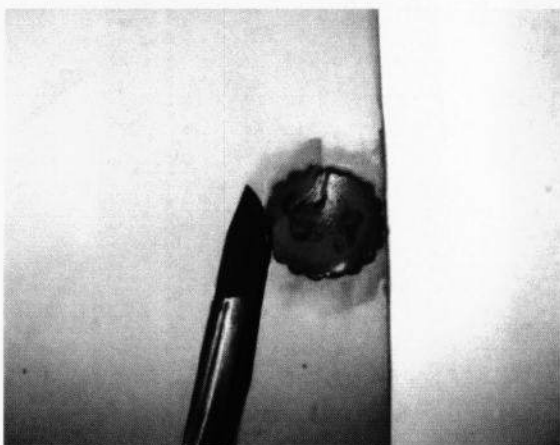


This project saw the conservation and imaging of 86 items (volumes, documents, photographs, portraits & framing) from April 2010 to October 2011 for the Town Clerk of Quincy, MA. Project highlights included the preservation and imaging of Kennedy Family-related letters and photographs.

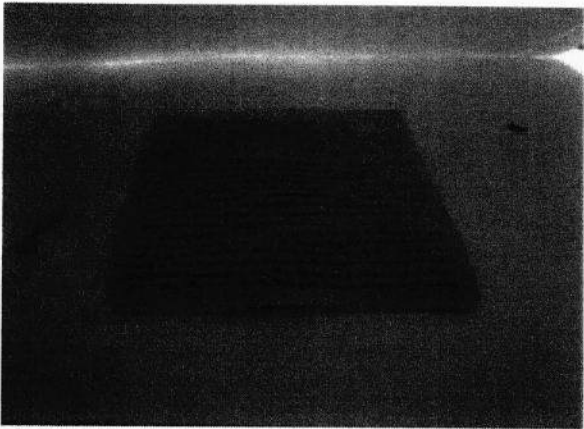
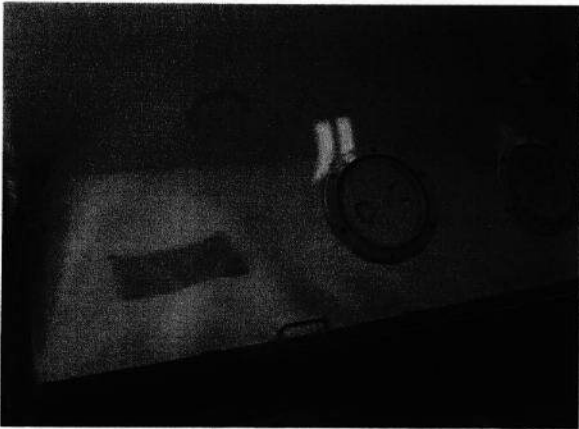
One of the volumes contained a handwritten letter from President John Quincy Adams in which he discussed the burial plans for his parents, dated September 8, 1826. The existence of this letter was unknown to the world as it had been long buried in the volume.



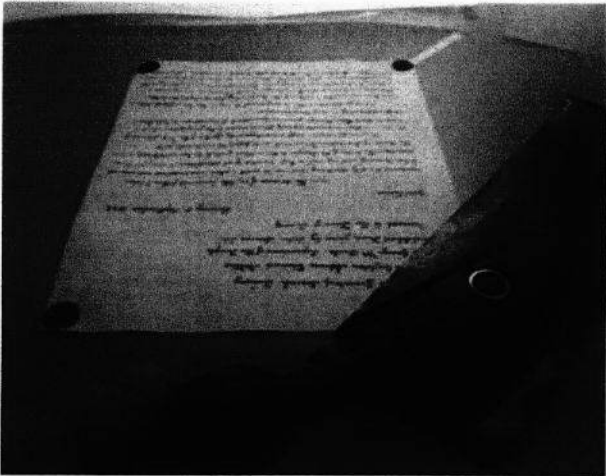
The President Adams letter was found in Archives Volume 1, 1792—1827, on Page 305.



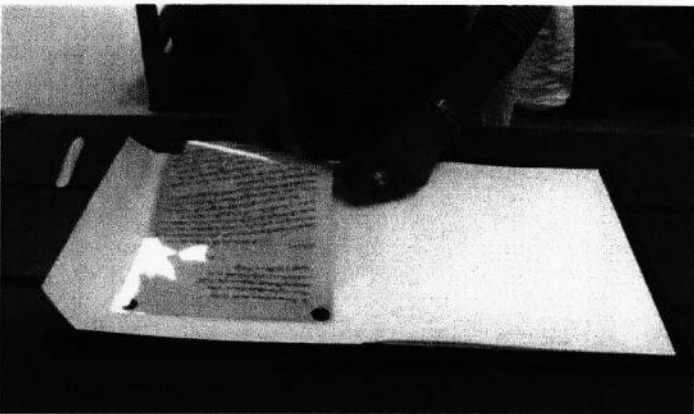
In order for the preservation of the sheet to commence, the seals were carefully removed. The letter was then removed from the page.



The letter was humidified in a humidification chamber due to its age and condition.



The letter was gently mended, then imaged in a Mylar sleeve.



The letter was encapsulated in a custom Mylar sleeve, and a custom enclosure was constructed to house the letter.



# DEFINITIONS

## PROFESSIONAL TERMINOLOGY

A Records Manager is assigned the task of managing a specific agency's current and historic records. This responsibility includes providing public access to these records. Such a task requires understanding the differences between preservation, restoration, and conservation, and knowing why preservation is the preferred method for county records.

**What is Preservation?** The protection of cultural property through activities that minimize chemical and physical deterioration and damage to prevent the loss of information. The goal is to prolong the existence and useable life of cultural property. Preservation can incorporate any combination of conservation, treatment, stabilization, preventative care, or digitization—or any maintenance or repair of the *existing* resource to protect from further deterioration.

**What is Restoration?** Treatment procedures that aim to return cultural property to a known or assumed state, often through the addition of non-original material. The goal is to eliminate the appearance of aging and restore the media to its original appearance or form (or that of a particular period).

**What is Conservation?** A profession devoted to the preservation of cultural property for the future. Conservation activities include examination, documentation, treatment, and preventive care supported by research and education.

Conservators treat records to preserve them in their original format. They examine records, assess condition/materials, and recommend remedial treatments to arrest deterioration and improve condition. Treatments are documented (in writing and with photographs) to provide information for future archivists and conservators. Conservation is a dynamic and developing field. Conservators perform research on materials and techniques, participate in continuing education programs, and follow the AIC Code of Ethics & Guidelines.

**What is Treatment?** The deliberate alteration of the chemical and/or physical aspects of cultural property, aimed primarily at prolonging its existence. Treatment may consist of stabilization and/or restoration. Example treatments include cleaning, removing damaging materials (e.g. mold, tape, or deteriorating adhesives), mending tears, deacidifying records at risk from acid deterioration, and providing custom housing made from stable materials.

**What is Preventative Care?** Also referred to as preventive conservation, it mitigates deterioration and damage to cultural property through the formulation and implementation of policies and procedures for the following: appropriate environmental conditions; handling and maintenance procedures for storage, exhibition, packing, transport, and use; integrated pest management; emergency preparedness and response; and reformatting/duplication.

*Definitions are compiled directly from the following sources:*

- \* AIC Definitions of Conservation Terminology, Directory of the American Institute for Conservation of Historic and Artistic Works (AIC), 1998, p. 22. <<http://aic.stanford.edu/geninfo/defin.html>>
- \* Bellardo, Lewis J. and Bellardo, Lynn Lady, A Glossary for Archivists, Manuscript Curators, and Records Managers, The Society of American Archivists, Chicago, 1992, pp. 8, 26-27.
- \* Ritzenhaler, Mary Lynn, Preserving Archives and Manuscripts, The Society of American Archivists, Chicago, 1993, pp. 1-3.

**Alkalization (Deacidification)**

Alkalization (deacidification) refers to the addition of a finely divided alkaline material to the paper fibers. Alkalization is different from simple water washing, which does remove acid but does not leave an acid-neutralizer in the paper. The addition of an alkaline buffer is recommended for certain papers that would otherwise deteriorate because of their tendency to produce acid, or for acidic papers that cannot be washed.

Where possible, alkalinization is achieved aqueously by immersion in an appropriate alkaline solution. If water-soluble media are present, the artifact may be alkalinized non-aqueously with an alkaline salt in an organic solvent. A fine mist of this solution is sprayed on the object.

**Archives**

Records of an individual or organization maintained as a body of documentation after they have fulfilled the purpose for which they were created, because they contain information of enduring value.

**Archival Enterprise**

Refers to the work of the archivist in (1) identifying and acquiring those bodies of records that have enduring value, (2) arranging, describing, and preserving each group of records in a manner that at the same time reflects the form in which the creator kept them and permits every subsequent user to determine readily their scope and content, and (3) providing assistance to customers in locating documentation pertinent to the search that brought them into the archival repository.

**Backing Board**

Wedge-shaped board beveled at the top edge used to form a joint when a book is being backed.

**Bench Shears**

A species of large shears used for cutting book boards, sometimes fastened to a workbench.

**Bit Depth**

The number of bits of image information in an image. Black and white images have 1 bit per pixel. Grayscale images typically have 8 bits per pixel. RGB images usually have 24 bits per pixel (eight in each of the three RGB channels) while CMYK images typically have 32 bits per pixel. If the bit per pixel increases in an image, the total image bit depth increases as well. For instance, an 8-bit per color RGB image has a total image bit depth of 24 bits, while a 10-bit per color image will have a total image bit depth of. See Capture bit depth.

**Bitmap**

A type of file, usually photos or artwork of some sort, that is composed of pixels. This type of format allows for a continuous tone and fine detail to be possible on the computer. Examples: TIFF, Paint, PICT.

**Book Covers**

A term applied to the covered sides of a book. Protective covers of soft leather, like doeskin, sewed fast to a leather covered book. This custom was in use during the Middle Ages and early Renaissance.

**Bound Book**

A covered book the sections of which have been sewn around cords or some other material, the ends of which are laced through the cover boards.

**Braded Binding**

A type of temporary binding said to have originated in Germany and first adopted in France by a binder named Bradel. Known in France as "cartonnage à la Bradel."

**Capture Bit Depth**

The number of bits per pixel which an image capture device such as a scanner or digital camera can capture. Typical capture bit depths are 8, 10, 12 and 14 bits per pixel. The higher the bit depth the more image information is captured. Often capture bit depth is expressed as the total number of bits captured in a three-channel RGB image, where a 10-bit per pixel capture bit depth is expressed as a 30-bit capture bit depth for the combination of all three channels.

**Calibration**

The adjustment which must be done to make sure that a scanner or digital camera will properly capture an image. Fundamental calibration techniques usually involve linearization and neutralization.

**Channel**

A single, usually 8-bit grayscale portion of an image. There are two kinds of channels, Color and Selection channels. Color channels are the fundamental building blocks of color images, while selection channels are created from selections. Channels are often saved.

**Color Cast**

The presence of color when none should be there. Color cast is typically identified when a neutral or gray portion of an image has unequal amounts of red, green or blue. Fixing a color cast is called neutralization. There are two types of color cast, scanner and image casts, which should be adjusted separately. See Neutralization.

**Commercial Binder**

A term used to denote a binder who turns out publishers' editions in "castings," using machinery for the work. Better termed a machine binder.

### Common Rendition

Controlling the image tones so detail or information is not clipped or lost. Ensuring accurate tone reproduction (the appropriate distribution of the tones) for digital images by placing selected densities on a grayscale reference target at specific digital levels or aim points (*white point* is the lightest spot in the image and *black point* the darkest spot in the image). Adjusting production master files to a Common Rendition provides significant benefits in terms of being able to batch process and treat all images in the same manner.

### Consolidation and Fixing

When it is absolutely necessary, flaking or friable material can be consolidated with a synthetic resin or gelatin. Pastels are usually not fixed as color change can result. When it is desirable to wash a paper artifact, water-soluble color can be fixed with applications of a dilute synthetic resin. This treatment is practical only when small areas of soluble media are present.

### Contone

Abbreviation for continuous tone image. Contone images typically contain a variety of gradually changing grayscale values, unlike a line art images which are typically flat looking with few if any shades of gray. A photograph is a typical example of a contone image. Contrast with line art.

### Curve

A line graph which controls the ratio of input to output values for grayscale values in an image. A curve is often used to control the brightness and contrast of images and is used to adjust the distribution of grayscale values in individual color channels to accomplish color correction.

### Deckle Edge

The rough or irregular edge produced on a sheet of paper when in process of being made. Especially characteristic of handmade paper.

### Disbinding

A word coined to describe the process of reversing the binding on a book. Books are taken apart by hand, by first removing the cover, then removing the glue and all sewing threads. Then the signature is taken apart into individual leaves, which are dismantled into individual sheets.

### DMAX ( Maximum Density)

Measurement is often used to state the darkest shade of gray which an image capture device can distinguish. Instruments with high dynamic ranges usually have high DMax's as well. See *Dynamic Range*.

### Dot (Halftone Dot)

The building block of continuous tone-printed images. Halftone dot resolution is usually commonly referred to as line screen or LPI (lines per inch). Typically line screens in commercial printing vary from 133 lpi to 150 lpi. See *Output resolution*.

### Dot Gain

The tendency for halftone dots to "grow" or enlarge when they are printed. This dot gain occurs because ink and toner tend to spread out when they are applied to printing substrates. Dot gain results in images which print darker than they scan and view.

### Dot Gain Adjustment

The lightening of an image, usually through the application of a lightening curve, to precompensate for the darkening which will occur when a halftone dot-based image is printed.

### dpi

A commonly used general term for resolution. DPI is often used when other terms are more accurate and useful. See ppi, Spot, Dot, and Res.

### Diffuse Highlights

Lightest portion of an image which still has detail. This is the most important highlight portion of an image to be captured and preserved. See *Specular highlight*.

### Dynamic Range

The range of grayscale values, from black to white, which can be captured by a scanner or digital camera. The dynamic range scale is a logarithmic scale ranging from 0 to 4.0 with 4.0 being the highest. Image capture devices which have high dynamic range can distinguish wider range or grayscale values than devices which have low dynamic range. Low dynamic range devices, with dynamic ranges <3.0, typically have a difficult time distinguishing shadow details in images.

### Edge Reproduction

The main focus of scanning line art. Reproducing the edge of line art is the key to good line art scans. Using the optical resolution of the scanner is often a key to accurate reproduction of line art edges.

### Electronic Records

Records created and effectively usable, if not usable only, within the electronic environment. Hard copy printouts, because they lack the manipulability and often the provincial data essential to fully understand a record, or because they are only slices of information in a database, are not the same as the record in electronic form.

### Electrostatic Print

A method of printing on various types of paper, vellums and films, in which image formation depends on electrical, rather than chemical changes induced by light. A copy machine or Xerox machine uses an electrostatic process.

### End Papers

The extra unprinted papers placed at the beginning and the end of a text, a sheet of which is pasted down on the inside of the front and back book covers.

### Extra Binder

A hand binder who uses the best materials and employs the soundest methods of construction and who usually decorates each binding with a design especially made for it.

**Extra Binding**

A term used to denote a binding done by hand with especial care.

**Filling Areas of Paper Loss**

Holes or paper losses may be filled with Japanese paper (the least expensive method) or with paper pulp. Pulp fills of extensively damaged papers may be achieved by leaf casting the entire sheet using a specialized machine. Another option is inlaying with a paper carefully chosen to match the original in weight, texture, and color. The latter is the most time-consuming option, reserved for objects of aesthetic value.

**Final Scan**

A scan performed at high resolution after an image has been viewed, cropped, analyzed and set up using a low resolution preview scan. See *Preview scan*.

**Finishing Press**

A small lying press used for holding a book while it is being tooled, and for some other operations in bookbinding.

**Flattening**

Flattening is necessary following aqueous treatment or when environmental conditions, accidents, or handling have distorted a sheet. After gentle humidification, flattening is done between blotters or felts under moderate pressure. Objects that have been lined can be flattened on a drying screen.

**Fold Endurance**

A method of measuring a paper's ability to fold without breaking the fibers. Paper is folded with enough force to crease paper fibers, creating a memory. Same is folded in opposite direction. Process is continued until paper fibers fatigue and break free from one and another. The endurance is measured by the number of successful folds, without failure.

**Full-bound**

When the entire back and sides of a book are covered with leather.

**Gamut**

The range of reproducible colors which a device has available. A color monitor usually has a larger color gamut than a CMYK printer; therefore there are colors which we can see and produce on a color monitor which we cannot reproduce on the CMYK printer.

**Gang or Batch Scan**

Scanning multiple images in one pass (all images have identical settings).

**Gold Leaf**

A thin leaf of gold beaten out of a block of gold.

**Gray Map**

A chart, usually a histogram, which shows the distribution and frequency of the grayscale value in an image.

**Grayscale Reproduction**

The main focus of scanning contone images, such as grayscale and color photographs. Scanner calibration, linearization and neutralization, as well as the setting of proper highlight and shadow points are keys to accurate reproduction of grayscale values.

**Grayscale vs. Black and White**

Grayscale imaging works best for older documents with poor legibility or diffuse characters, with handwritten annotations or other markings, with low inherent contrast between the text and the paper background, with staining or fading, and with halftone illustrations.

**Guarding**

The process of pasting strips of paper over the folds of the leaves of a book.

**Halftone**

An image built out of a pattern on halftone dots. Continuous tone images (photographs) cannot be printed as a continuous tone on a printing press, so they are reconstructed out of patterns of dots. These patterns are small and appear as a continuous tone image when viewed at the proper distance.

**Highlight Point-Diffuse**

The lightest portion of an image with details. A diffuse highlight area contains significant grayscale value or information, and will print as a light value of grayscale, with details. An example would be the lightest portion of a white shirt. The typical range in which a shadow point will fall is 3% - 15% grayscale.

**Highlight Point-Specular**

The lightest portion of an image which contains NO details. A specular highlight area contains little or no grayscale value or information, and will print as pure white with no details. An example would be a reflection off of a chrome bumper. A typical grayscale value for a specular highlight is 0% gray.

**Histogram**

A chart with highlight, mid-tone and shadow sliders which displays the frequency and distribution of grayscale values in an image. A histogram is often used for setting the highlight and shadow points in an image.

**HSV/L**

Hue, Saturation and Value/Lightness are used to describe the color of a pixel. Hue is the basic color determined by its frequency or wavelength of light. Saturation is a measure of the intensity or purity of the color and is controlled by the amount of white color added to the basic color. Value or Lightness is the measure of the grayscale value of the color.

**Inpainting (Retouching)**

Inpainting is done by judicious application of watercolor, acrylics, gouache, or pastel to filled areas or to surface losses such as scratches, small abrasions, or media losses along tears.

**Input Resolution**

Resolution terminology used to refer to images which have been captured or created as pixel-based images. Usually expressed as the number of pixels per inch (ppi) or pixels per millimeter (Res). See *Input resolution*.



#### **Intensitometer**

A tool, often called a densitometer, which is used to measure the grayscale values of pixel-based images.

#### **Iron-Gall Ink**

It is the most common ink used before the 19th Century, both for writing and for drawing, and was made from a concoction of iron sulfate, gall-nuts, and gum Arabic, which was added as a binder. Iron-gall ink may be somewhat less transparent, but is only very obviously distinguishable from bistre when it has been applied in excessive concentration. In these cases, the acidity of the ink eats through the paper to the severe detriment of the artwork. Curiously, it was this quality which first attracted scribes to iron-gall ink in the Middle Ages. It became invaluable for drafting legal documents, since, once it began to eat through the paper fibers, it could not be erased or blurred by scraping or washing.

#### **Line Art**

Line art images are typically flat looking with few if any shades of gray. A logo and pencil drawing are typical examples of line art images. Contrast with contone image.

#### **Linearization**

Adjusting, or calibrating, a scanner so that it will capture grayscale values with their proper values. For instance, a linear scanner will create a 35% pixel when it "sees" a 35% grayscale value. A non-linear scanner will capture grayscale values other than 35% when it "sees" a 35% grayscale value. Typically, uncalibrated/nonlinear scanners create pixels which are darker than the original grayscale values of an image. For example, an original 50% grayscale area may be captured as a 60% gray by a nonlinear scanner.

#### **Matting and Framing**

Matting is often recommended for works of art or artifacts that are intended for exhibition. Mats are usually composed of a window and backboard of 4-ply 100% rag-board or lignin-free archival board. The object is attached to the backboard with hinges of Japanese paper and starch paste. Once properly matted, an object is ready for framing.

An object can be placed into a new frame or it can be put back in the existing frame. The old frame may have to be enlarged so that the edges of the object do not come in contact with the wood. Some frames must be made deeper to accommodate a mat, glazing, and the backing layers needed to protect the artifact. Frames can be made deeper by building up the back of the frame with strips of wood screwed in place. Ultraviolet-filtering acrylic or glass is recommended as a glazing. Please note that acrylics carry a static charge so is not appropriate for objects with powdery or loosely-attached media such as pastels.

#### **Mending**

Tears are carefully aligned and reinforced on the reverse with thin strips of Japanese paper and a starch-based adhesive. With double-sided documents, the thinnest papers are used to avoid obscuring writing on the reverse.

#### **Midtone**

Tonal range of an image which centers around 50% gray scale. Grayscale values in an image roughly in the range of 35% to 65% gray scale are considered to be in the mid-tone region.

#### **Multiple Scan**

Scanning multiple images in one pass with each image having its own separate scan settings.

#### **Mold and Insect Treatment**

Mold and insect deposits are best removed mechanically. A small vacuum aspirator is recommended for lifting mold. It is not always possible to remove all traces of mold, since the mycelia may deeply root in the paper. Fumigation, once a standard treatment for mold and insects, is now seldom done. This is because chemical fumigants can have adverse effects both on works of art and on people. Moreover, fumigation is ineffective in the long run if the objects are returned to storage conditions that promoted mold growth in the first place.

#### **Neutralization**

Adjusting, or calibrating, a scanner so that neutral portions of an image will be captured as neutral, rather than having a color cast. A neutral area will have equal RGB values. A non-neutral area will have unequal RGB values. For instance, a neutral 5% gray area should have RGB values each equal to 5%.

#### **Optical Resolution**

The true or hardware resolution of an image capture device such as a scanner. Using the hardware resolution of a scanner results in faster and more accurate scans. Scanning at other than the optical resolution of a scanner results in interpolated pixels, which are manufactured and therefore less accurate.

#### **Output Resolution**

Resolution terminology used to refer to images which have been recreated or printed as spot-based and dot-based images. Usually expressed as the number of spots or dots per inch (dpi) or halftone dots per inch or lines per inch (lpi).

#### **Overcasting**

A sewing operation. Section leaves are bound together by thread. Sometimes called "whipping" or "whipstitching."

**pH Testing**

pH is a numeric scale used to express a solution's acidity or alkalinity, terms that refer to concentration of hydrogen ions. The greater the concentration of hydrogen ions, the more acidic the solution; fewer hydrogen ions and a solution is considered alkaline. The pH scale ranges from 0 to 14. Seven is the mid-point at which a solution (such as distilled water) is neither acid nor alkaline. A pH lower than seven indicates acidic solutions, while pH values higher than seven represent alkaline solutions.

**Photographic Activity Test (PAT)**

This is a worldwide standard (ISO Standard 14523) for archival quality in photographic enclosures. Developed by IPI, this test predicts possible interactions between photographic images and the enclosures in which they are stored. The PAT is also used to test the components of enclosures, such as adhesives, inks, paints, labels, and tapes. The test involves incubating materials in temperature and humidity-controlled chambers to simulate aging and takes from four to six weeks. After incubation and sample evaluation, a final report is provided.

**Pixel**

Basic building block of a bitmap image.

**Polyester Film Encapsulation**

This method of protection and reinforcement is most appropriate for archival materials. Encapsulation sandwiches the object between two sheets of polyester film (3 or 4 mil). The envelope is sealed at all edges ultrasonically or with heat. Encapsulation is not usually recommended for materials that are not deacidified.

**PPI (Pixels Per Inch)**

The most common term used to express correctly the resolution of a digital image. Ppi refers to the number of pixels per inch both horizontally and vertically in an image. See *input resolution*.

**Preservation Administration**

It is the corpus of actions taken to extend the life of information to serve the purpose for which the information is maintained. Preservation administrators focus on such matters as the environment (levels of temperature, humidity, and light) in which records are maintained, disaster preparedness, and ways of handling material compatible with extending its life. It is identifying and implementing measures that, taken as a whole, extend the useful life of archival repository holdings at the lowest cost.

**Preview Scan**

Low resolution, usually 72 ppi, overview scan which is done at the beginning of a scan session. This previewed image is used to locate and crop the image to be scanned and set up the scanner for the final high resolution scan. See *Final scan*.

**Production Master**

Production master files document the image at the time of scanning, not what it looks like if restored to original condition. Additional versions of the images can be produced for other purposes with different reproductions renderings. Any techniques done in a traditional darkroom may be done in the digital images (contrast and brightness adjustments, dodging, burning, sporing, etc).

**Quarternone**

Tonal range of an image which centers around 25% gray scale. Image grayscale values in the range of 15% to 35% gray scale are considered to be in the quarternone region.

**Records**

Documents in all media written, received, or accumulated by organizations and individuals for the purposes of carrying forward and documenting life.

**Records Management**

An administrative function within an organization designed to: (1) have information at the right place at the right time in the right form for efficient functioning; (2) manage in a fiscally responsible way all those records that are continuing to fulfill the purpose for which they were created; (3) protect the integrity of the organization and its clients.

**Removal and Replacement of Backings**

Where a backing is destructive or inadequate, we recommend separating it from the object. Sometimes the backing is removed in a water bath. If water-soluble media are present, mechanical means are necessary. Use of steam or careful application of moisture can assist. Removing fragile paper from a solid backing is time consuming and costly. It is often difficult for a conservator to know how long a backing removal will take.

If necessary, the removed backing is replaced with Japanese tissue or paper of appropriate weight. These are adhered with a diluted starch-based paste, may be handmade or machine-made of high-quality cellulose fibers such as pure kozo. The weight of the paper chosen will vary according to the size and weight of the artifact and the extent of the damage.

**Removal of Old Repairs**

Old repairs have often been made with materials harmful to paper, such as those with unstable or staining adhesives. Water-based adhesives are removed in a water bath, with moisture, or with steam. Sometimes, synthetic adhesives and pressure-sensitive tapes must be removed with an organic solvent.

**Res**

A less commonly used input resolution term which designates the number of pixels per millimeter in a digital image.

**Resolution**

The number of an image's components per unit distance, such as dots per inch (dpi) or pixels per inch (ppi). Distinguish resolution as either input or output resolution. See *Input resolution* and *Output resolution*.

**RIP: Raster Image Processor**

The hardware and/or software device through which all document components, including line art, contone images and text, are processed in order to convert them into printed images.

**Scan Mode**

Determines the pixel depth and color space in which an image will be captured or converted, including: 1-bit (B&W lineart), 8-bit (grayscale), 24-42-bit (RGB), 32-bit (CMYK).

**Scanner**

Capture device which converts analog images into digital pixels.

**Shadow Point**

The darkest portion of an image which still has details in it. Typical range in which a shadow point will fall is 85% - 100% grayscale.

**Specular Highlight**

A featureless highlight portion of an image containing no details. See *Diffuse highlight*.

**Spot**

The smallest block of a text or line art image. Often expressed as dpi (dots per inch). A 300 dpi laser printer has spots which are 1/300" across, while a 2400 dpi image setter has spots which are 1/2400" across. See *Output resolution*.

**Stain Reduction**

Stain reduction that does not respond to washing can sometimes be done by bleaching. This is a time-consuming and tricky operation. It is warranted only in the case of disfiguring staining on objects of aesthetic value. Bleaching may be done by exposure to artificial light or with chemicals. The former method is preferable since no bleaching chemicals are needed. Some stains, however, require the use of chemicals.

Chemical bleaching of paper is considered safe if an appropriate bleaching agent is used under controlled conditions and thoroughly removed from the paper after treatment. Chemical bleaching is followed by thorough water rinsing of the treated area. Whenever possible, the chemical is confined to the area of stain, but sheets with overall staining or discoloration may have to be bleached overall.

**Stainless Steel**

The generic name commonly used for that entire group of iron-base alloys which exhibit phenomenal resistance to rusting and corrosion because of chromium (Cr) content. Contents of Cr exceeding 10%, with carbon (C) held suitably low, make iron effectively rustproof.

**Streamline**

An Adobe Inc. program which converts pixel-based images into vector-based line art. As in "streamline an image."

**Surface Cleaning**

Superficial grime, dirt, and soot are removed from paper with a soft brush or, where possible, with a latex sponge, powdered vinyl eraser, or soft block eraser. Surface cleaning fragile artifacts and works of art requires sensitivity and experience, and is best done by a conservator, but non-rare material that is reasonably sturdy can be cleaned by a non-conservator. Instructions for surface cleaning are given in the NEDCC leaflet, "Surface Cleaning of Paper."

Accretions, including insect deposits and mold growth, are best mechanically eliminated by a conservator. A small vacuum aspirator is used for removing mold. It is often not possible to eliminate the staining caused by mold.

**Three-Quartertone**

Tonal range of an image which centers around 75% grayscale. Grayscale values in an image roughly in the range of 65% to 85% gray scale are considered to be in the quartertone region.

**Tone Compression**

Setting the highlight and shadow points of an image which will determine where the captured grayscale values will be placed in an image.

**Turned Grain**

Leather that has been dampened and has had its grain turned over with an agate polisher is said to have a turned grain.

**Unsharp Mask**

A software filter used to increase the sharpness or focus of an image. Most digitally-captured images need to have sharpening applied in order to return an image to its original sharpness.

**Washing**

Many documents and works of art can be washed in water. When desirable, all media are tested for sensitivity. When the materials permit, objects are immersed in filtered water. On occasion, a carefully controlled amount of an alkaline material is added to the water to raise the pH to facilitate the cleaning process. This must be carefully controlled, as excessive alkalinity can damage paper and media. Soluble artifacts are not be immersed, but may be partially washed, float washed, or washed on a suction table or wet blotters. Washing removes dirt and aids in stain reduction, and reduces acidity. It can relax brittle or distorted paper. Certain artifacts may benefit from washing even when this procedure does not reduce discoloration to any noticeable extent.

**Whipping, or Whipstitching**

Same as *overcasting*.