

## Introduction to Outsourcing

As more companies enter into this burgeoning marketplace, high-tech equipment, people, experience and skill sets are the ultimate competitive differentiators. **Data2CD** can provide you with a cost effective solution to all these back office operations for fractions of the cost of doing it yourself.

Data2CD offers a wide-array of back office solutions from basic data entry and scanning to high-volume e-publishing.

Microfilm technology was introduced in the sixties to reduce the cost of hardcopy printing, minimize required storage space and provide an archival media to insure historical document preservation. The technology was widely accepted throughout the private and public sector and for years it was the best answer for the storage of valuable information.



With the advent of Digital Technology it has become increasingly apparent that the data being filmed has a much greater value than just as an archival document. The advantages of historical records maintained in a digital format are endless. Documents can be re-printed, faxed or e-mailed on demand---directly from the end user's PC. Millions of records can be accessed in seconds through local and wide-area networks, or data can be placed in a secure web site. The new digital technology is being used widely on a day-forward basis to take advantage of this advancement.

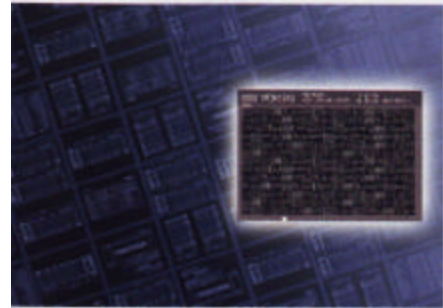
We will supply the necessary technical expertise and workforce to complete any size conversion job. Our state of the art, 24x7, facility and highly trained staff will ensure that each project is completed quickly, correctly and at the least possible cost.

Call **(612) 296-5346** or e-mail us at [solutions@data2cd.com](mailto:solutions@data2cd.com) to obtain individual quotations, free test samples and the specific information you need for a successful conversion.

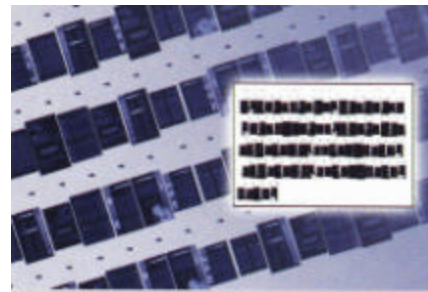
## Media Types

Microfiche - There are four types of archival media that are referred to as microfiche. Computer Output Microfiche normally referred to as COM fiche. Fiche Jackets can be 16 or 35mm, Step-and-Repeat fiche, and Re-writable fiche.

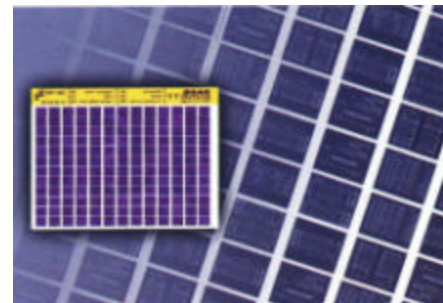
The most common type is referred to as **COM fiche**. They are produced by a specialized piece of hardware that reads data in a print image format and through a laser burning process creates an archival image on a Mylar card. Accounting reports, payroll records, tax rolls, and most any computer-generated report that requires an archival retention period of over seven years, have been committed to COM fiche. Standard microfiche are either 42 or 48X - 208 or 270 pages of data respectively. There are also Super Dense fiches that have been created at 72X, which can be converted to a digital format by our equipment.



**Jacketed fiche** is 4x6 inch plastic sleeves designed to hold cut strips of either 16 or 35mm film. This allowed the grouping of related data in one logical record. Payroll and Human Resource departments used this technology to facilitate filing and retrieval of an individual's records. There are also duplicated jacketed fiche that have a purplish or bluish tint to them. These duplicates no longer have plastic sleeves, but there are horizontal lines where the sleeves were.

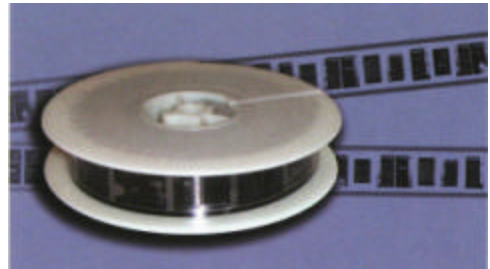


Normal usage for **Step-and-Repeat fiche** is for owner manuals or operational handbooks. The images are arranged permanently in a grid pattern (there are no plastic sleeves). The cards have a header at the top, which contains identification information. There are cases where a step-and-repeat card may hold more than 300 images. Re-writable fiche (Microx and AB Dick) contain positive images that can be erased or have a new record added. These cards are utilized in a filing system, usually under a name or social security number. Any of the variations of the microfiche process are candidates for the digitizing process. However to make the end product most valuable, Indexing of the records is recommended. Since microfiche were used originally in a filing system, naming the files or directories is a simple process. The box, batch, envelope, or the data on the header can be utilized to index images.



**16mm Roll film** is used primarily to record 8 1/2x11 and 11x14 documents that were created by manual methods. Documents, especially ones that have signatures such as employment records, contracts, hospital records have been committed to film due to archival requirements. A normal roll of 16mm will contain from 2000-5000 images these types of records are found in most governmental agencies. The County Recorder or Clerk of Courts offices have the responsibility to maintain all Official Record indefinitely and many have acknowledged the need for automation (conversion to digital media) and are actively working toward that goal.

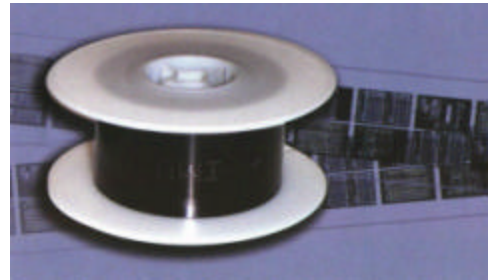
35mm roll film has most often been used for large drawings such as plat maps and engineering drawings. These A (8 1/2x11) through E size (44x34) drawings can be found in every City Building Department and at large architectural firms. The film is created by a photographic process and requires a development process to complete. The images are stored on small reels, (300 to 500 images per roll) boxed normally with hand written identification on the outside.



Images may have been filmed as simplex (one document per frame), or duplex (two images side-by-side in the frame). Many times the duplex images contain the front and back of the original source document. Most reels are simplex, but we process duplex rolls easily. Depending on your needs, we can scan both document sides in one frame, or split out the two documents into two separate images.

There are many variations of image quality. For instance, images can be filmed positive or negative, with variable image lengths, different sizes, and varied densities. However, our production team and technical experts will always bring out the best potential from any form of media.

The value of the converted data is multiplied when it is properly indexed. Index information can be manually encoded in the end product. As an option for film that contain 'blips (small counters created when the film was made), we can extract the information those blips represent. For example, a roll of film may contain medical records with a 'big blip indicating the start of a new patient's folder, and a 'small blip" indicating the pages within that folder. The output file name format for blip-extracted images can be arranged anyway you'd like, in a multi-tiff, in subdirectories, or by indexing each master blip.



The cost of conversion of roll film to a TIFF image is based on volume, the DPI required and the amount of special enhancements required. The standard 200 DPI produces a reasonably sized quality end product. Other resolutions of 200-400 DPI are available.

**Please call (612) 296-5346 or e-mail [solutions@data2cd.com](mailto:solutions@data2cd.com) for a quotation.**

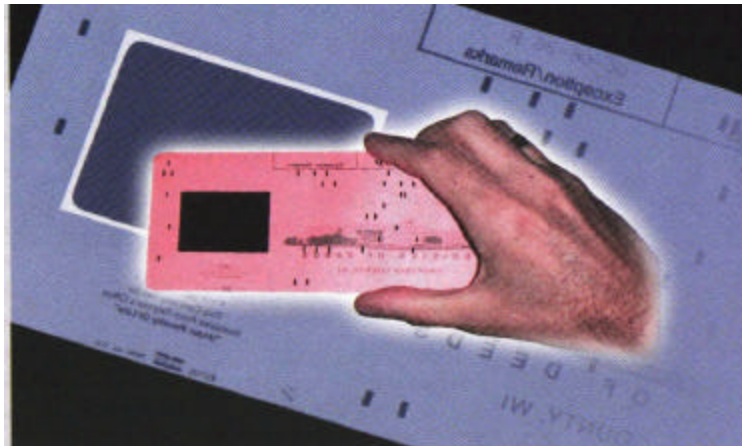
As with all other media, a project plan is developed per your specifications. Each roll film project that we receive is logged into a production database. This production database is used to track the job through the entire process. Each roll is checked to determine proper scanning settings and focus; several images are printed for manager approval before scanning can begin. Each scanner is monitored during the scanning process, to maintain quality and to locate any defects on the film. When scanning is complete, each roll is stored until the entire project is complete. If there are any changes from the original test, we will contact and notify you. We have indexing software that can accommodate documents that have a book and page numbering system. That, coupled with our quality control validation, would assure that the pages match their file names. We can also index other types of documents using our data entry staff. Also, our document management solutions can match your images to your unique database files.

**Aperture Cards** - An aperture card is a punched card with a 2x2 piece of 35mm film set on one side. They are used typically for the storage and retrieval of blue prints or engineering drawings. The microfilm portion may contain one or more A size (8 1/2 x 11) through E size (44x34) drawings. Normally the title or other identifying information is keypunched into the aperture card and interpreted across the top. This data is used primarily to programmatically create the index for the job.

The size of the drawing is important because it dramatically affects the price. Should the end user be required to print the document in its original size, it must be scanned as such. If the requirement is only for viewing and it can be printed at a smaller size than the original, a more economical approach can be used. Due to the required processing time, larger size drawings and a higher DPI affect the price. Data2CD uses Océ equipment for scanning aperture cards, this allows us to scan A thru F size drawings at 200 to 400 DPI.

**To request aperture card pricing contact us (612) 296- 5346 or e-mail us at [solutions@data2cd.com](mailto:solutions@data2cd.com)**

However for a firm price and production time estimate, send a representative sample of the media to our Headquarters. Please include the require DPI factor, and a definition of any indexing requirements.



## **The Process**

We pride ourselves on the consistency of our end product. To ensure reliability and consistency we have developed a process that is adhered to strictly for each of the projects that have been entrusted to our care.

Projects may involve as many as two dozen individual processes. Depending on the complexity of your project will be processed in the following manner.

Prior to the acceptance of any project, a sample of the film to be converted is requested. The media submitted is reviewed and tested based on the specifications provided by the end user. The resulting test images are then sent to you, either on portable media (CD, DVD, tape, etc.), or as an e-mail attachment to establish the proper level of expectation. Simultaneously an Estimated Invoice/Work Order is created and faxed to you. This is to document the functions to be performed, the price quotation, and based on the volume figures supplied, a total price. The project does not commence until the client approves the quality of the output, the job specifications and the pricing.

Upon receipt of the media and the necessary inventory documentation for each client-approved project, the media is immediately inventoried to ensure concurrence with the shipping documents. When total agreement is reached, the information is then entered into our automated tracking system. This provides for control of the individual images that make up the project and gives us the ability to locate any image that you might need to reference while the actual film is in our care.

The media is then re-tested to determine the optimal scanner settings based upon the quality of the film. The results of this test are also e-mailed to the client for a final check and client approval.

The scanners are set to the approved specifications and adjusted as necessary on a media unit basis. An integral part of the scanning process is the enhancement of the images that includes despeckle, deskew, and rotation as required. These enhancements are included in the basic price.

The scanned images are then reviewed by a separate Quality Control Department. This department acts on behalf of the client to ensure all images are legible and of the best possible quality. Rejected images are returned to the Scanning Department to be re-scanned and inserted in the proper media location as required.

The normal quality control process visually inspects a reasonable percentage of the output and if it is found to be within normal parameters the roll is OK'd. On occasions, 100 percent verification is required. This is possible only when a consistent numbering system is on the original document and an up-charge is applicable.

Depending on the original filming process, a shaded border or halo may exist around the actual image. This border results primarily from the contrast between the document being scanned and its background, although other factors may also be involved. Along with reducing the effective size of the image when printed, the border also increases the file size (considerably, in some cases). There are two ways to eliminate this situation. When there is a great deal of contrast between the image and the border, it may be possible to auto-crop the images. When that is not the case, manual intervention is required and each image is trimmed individually. This condition can only be determined by testing. When this is considered necessary an up-charge will apply. When the client requires cropping, a second Quality Control process is initiated.

Additional processes may be required. Each additional procedure is individually priced based on the complexity of the procedure.

The most common requirement is the addition of an index key. Simple indexing can often times be automated. An example of a simple indexing key is a book and page lineup, where the tiff names correspond to the book and page stamps on the document. Database matching, whereby a simple index is expanded by matching a simple key to a computer readable file provided by the client to create multiple keys, is also available.

A very complex indexing scheme may require manual indexing. For instance, we can index and group images by social security number or account information. Up-charges for indexing are quoted individually based on review and testing of the actual media.

The scanning process produces records in TIFF IV image format normally. TIFF images can be identified individually or provided as a single multi page TIFF file. TIFF to PDF or other special request formats can be accommodated and will be priced based on user requirements.

The final product is usually written to a CD or DVD with the appropriate identification label, although we are capable of delivering it by various other means (FTP and Web server for on-line viewing.).

The final product has an additional quality control step to ensure the correctness of the CD creation process prior to shipping.

Please contact a Data2CD representative today at 1-612-296-5346 or e-mail us at [solutions@data2cd.com](mailto:solutions@data2cd.com)

EXAMPLE :

(A)

FILE NAME:

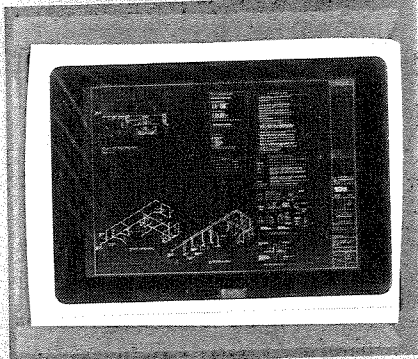
000718 - ALBERTA  
CALGARY, CAN

FOLDER NAME

CITY: ALBERTA CALGARY 4TH & 5TH STATE: CAN SHEET: P-1 OF TYPE OF DRAWING: AS BUILT STORE #: 718

DESCRIPTION:  
" PART PLUMBING PLAN SPECIFICATION AND DETAILS "

ROLL #: 1007



2004, 01, 05

(B)

File contents :



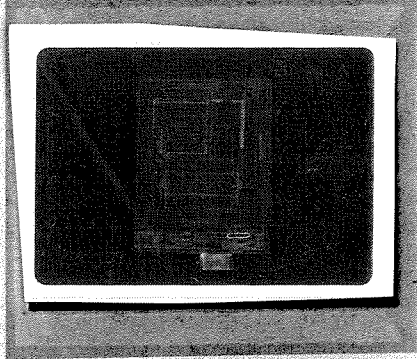
- 001 - P-1 - PART PLUMBING PLAN SPECIFICATION AND DETAILS.
- 002 - HISTORY RECORD PLOT PLAN.TIF

FOLDER NAME

CITY: ALBERTA CALGARY 4TH & 5TH STATE: CAN SHEET: OF TYPE OF DRAWING: AS BUILT STORE #: 718

DESCRIPTION:  
" HISTORY RECORD PLOT PLAN "

ROLL #: 1007



2004, 01, 05