

Heritage Documentation Programs

HABS/HAER/HALS Photography Guidelines

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Heritage Documentation Programs (HDP), part of the National Park Service, administers HABS (Historic American Buildings Survey), the Federal Government's oldest preservation program, and companion programs HAER (Historic American Engineering Record), and HALS (Historic American Landscapes Survey). Documentation produced through the programs constitutes one of the nation's largest archives of historic architectural, engineering, and landscape documentation. Records on over 40,000 historic sites, consisting of large-format, black and white photographs, measured drawings, and written historical reports, are maintained in a special collection at the Library of Congress, available to the public copyright free in both hard copy (at the Library of Congress Prints and Photographs Reading Room) and electronic formats (via the Library of Congress' website: <http://www.loc.gov/pictures/collection/hh/>).

HDP establishes the standards for the production of drawings, histories, and photography, as well as the criteria for preparing documentation for inclusion in the Collection currently recognized as the *Secretary of the Interior's Standards and Guidelines for Architectural and Engineering Documentation* (hereafter referred to as *Secretary's Standards*). The resulting documentation comes from three sources today. The Washington Office produces documentation in-house directing field teams (made up primarily of students) all over the country. HDP also receives documentation from the mitigation program satisfying Sections 106/110 of the National Historic Preservation Act. This material is often generated by the individual states plus regional offices of the National Park Service. Those preparing mitigation documentation should contact the appropriate regional National Park Service office or the HDP Washington staff with questions and for review of materials. A third source of documentation comes from donated documentation from interested members of the public, such as student-work in university programs or consultants in the preservation field. The following guidelines are intended to provide an overview of the large-format photographic component of the documentation.

General Guidelines

Film

Film continues to be the best way to store visual information about architecture and engineering for the long term, which is why it is still the standard in the HABS, HAER, and HALS collections. Photographs taken and printed for HABS, HAER, or HALS, in accordance with the *Secretary's Standards* are made from large-format, black and white film. The images are perspective corrected in the field at the time of capture using a view camera. Large-format (4x5, 5x7, and 8x10) refers to the size of the negative in inches, not the print.

The large-format negative is preferred for two reasons: longevity of the film and clarity of the image. The material stability of cut sheet film satisfies the archival requirements for longevity

(500 years), while the clarity of the resulting image comes from a high level of resolution not possible in smaller film formats. Film can always be digitized but exclusively digital information may not always be recoverable due to the vulnerabilities of digital data including media degradation, hardware and software obsolescence, file format migration, proprietary formats, etc. In addition, maintenance of digital archives is much more expensive than maintenance of film archives. While the growing field of digital photography has resulted in decreased availability of some film processing materials and equipment, there still continues to be a broad range of materials available. While there is currently a wide range of film materials available for photographers, photographers may need to anticipate their film and chemistry needs in advance. Therefore, these guidelines reflect the changes in the availability of the necessary materials for producing large-format negatives and prints.

Equipment

The following is a list of recommended equipment to produce large-format photographs that meet the *Secretary's Standards*.

- **Camera:** A large-format view camera with ample movement for perspective correction must be used. Acceptable film formats are 4x5, 5x7, and 8x10. The 5x7 size has long been preferred due to its ability to capture context and structures both long and tall.
- **Lenses:** The minimal complement of lenses includes a sharp rectilinear wide angle, a normal, and a mildly telephoto lens. In the 4x5 format, this would translate to a 65mm, 90mm, 150mm and a 210mm lens. *It is very important to choose lenses that will allow ample movement of both front and rear standards of the camera without vignetting.*
- **Filters:** Use of yellow, orange, and Polarizing filters are recommended in appropriate conditions because of their ability to clarify and reveal details and other information about the structures being documented.
- **Film:** Use polyester-based film when producing HABS, HAER, or HALS photographs. Acceptable polyester-based films include those of medium and slow speed (100 and 400 ASA) produced by Kodak, Ilford, and others. When ordering any film, please ascertain that the base of the film is polyester and not acetate (the old safety film). Acetate must be avoided because the fumes it gives off break down the emulsion, causing the film to curl.
- If continuous tone copy photographs are required for the project, it is best to make these using an orthochromatic copy film specifically manufactured for this purpose. As of November 2011, Ilford Ortho Plus black-and-white film is still available. Kodak recommends using Kodak T-max 100 as a replacement for their discontinued copy film.

HDP now recommends making line copies of drawings by scanning the originals onto vellum. These can either be transmitted as part of the formal documentation with the appropriate HABS, HAER or HALS title block and adjustments made to insure clarity or legibility, or they can be included in the field records. Line drawings can also be

included as figure pages in an appendix to the historical reports, but again, they must be legible.

Note: If existing drawings or photographs are scanned or photographically copied, a copyright release form *must* be obtained if the drawings are not in the public domain. More information on copyright law and a copyright release form are available at: <http://www.nps.gov/hdp/standards/copyright.htm>

- **Aerial Photographs:** Aerial photographs are generally used to record large complexes, historic districts and landscapes, as well as geographic or urban contexts. Recommended flying altitude ranges from a low of 150' to 1,000' or more for broader contextual views. Helicopters are preferred over fixed-wing aircraft due to their greater maneuverability. Ideally, the helicopters should be equipped with a sliding door that can be opened while in flight, otherwise the door will have to be removed. Minimum format 4x5 cut film or 5 inch-wide aerial roll film is recommended. Older hand-held press cameras using cut film holders will allow the photographer to use the film of his or her choice and avoid the problem of getting aerial roll film developed. The use of 400 ASA speed film is recommended for adequate shutter speed that will minimize the effects of vibration degradation in the image. The highest shutter speed possible should be used. Yellow and orange (G) filters are recommended to reduce haze and increase contrast.

Views Required

The following are suggested views for various types of structures, but the required views will ultimately depend on the project specifications and the focus of the documentation. A scale device must be included in specific views to show the size of the object recorded, particularly in documentation for the main façade of a building. The direction, such as the cardinal point from which the view was taken or the direction a building is facing, should be noted in the accompanying Index to Photographs.

Architectural Structures:

- General or environmental view(s) to illustrate setting, including landscaping, adjacent building(s), and roadways.
- Front façade, with and without a scale stick.
- Perspective view, front and one side.
- Perspective view, rear and opposing side.
- Detail, front entrance and/or typical doorway.
- Typical window.
- Exterior details, such as chimney, clerestory, oriel, date stone, gingerbread ornamentation, or boot scrape, indicative of era of construction or of historic and architectural interest.
- Interior views to capture spatial relationships, structural evidence, a typical room, and any decorative elements; these include hallways, stairways, attic and basement framing, fireplaces and mantels, moldings, interior shutters, kitchen (especially if original), and mechanicals.

- If they exist, at least one view of any dependency structures, such as privies, milk or ice houses, carriage houses, sheds, detached garages, or barns. These structures need to be identified in the Index to Photographs.

Engineering and Industrial Structures:

This encompasses a wide variety of structure types, such as manufacturing complexes, bridges, locks and dams, and mines. The buildings and structures housing the industrial process should be captured with the types of views outlined above and special attention should be paid to the equipment involved in the flow and transformation of material going through the building. This can include:

- Any extant machinery and equipment, also capturing the spatial arrangements.
- Machinery details, such as the governor on a turbine, valves of a steam engine, or the gearing in machines like fabric looms, or other details that reveal a machine's function like the cone of a rock crusher or drum of a shredder.
- Power transmission systems, such as line shafting.
- General views and details of structural framing systems, including roof trusses and floor beam systems and pedestals that supported the building structure and the equipment and machinery.

Bridges:

- General views of all sides.
- Detail views of portals, portal connections, upper chord connections, vertical members, traffic deck, bridge plates, manufacturer's badge and any decorative features.
- If accessible, the traffic deck support system (such as floor beams and stringers viewed from underneath the bridge).
- Abutments and approach details.

Linear resources:

For canals, railroads, or roads; the photographs should be organized in a logical progression with the captions including mile markers. The following types of views should be captured along with views of the resource itself:

- Significant or typical structures; depending on the resource, this might include culverts, retaining walls, bridges, or locks and dams.
- Contextual shots that illustrate the resource's path through the landscape.

Watercraft:

The captions for watercraft do not include cardinal directions; rather, the maritime terms of aft, forward, starboard, and port are used. In addition, on larger ships, the deck names or numbers must be identified. The following should be captured, depending on whether the watercraft uses mechanical or sail propulsion:

- Elevations of port, starboard, bow, and hull.
- General deck views.
- Details of deck machinery, such as windlasses, as well as propulsion systems.
- Details of ship or vessel that relate directly to its specialized functions. These images should answer what the vessel actually does.

- Sailing rig.

Cultural Landscapes:

Possible subject matter could include formal gardens, ranches, or city parks, with an emphasis on capturing the broader context of landscape design, use, and geography. Aspects of a cultural landscape to capture including the following:

- Contextual views of the landscape under various seasonal conditions; aerial photographs can be especially helpful.
- General landscape views.
- Structures and structural elements, such as fences and hardscaping.
- Views capturing the spatial relations of buildings, structures, and the landscape.
- Vegetation should be identified with both common and botanical names in the Index to Photographs.

Processing

All films and prints are processed according to the manufacturer's specifications using fresh chemistry. The developer should be replenished according to the manufacturer's recommendations or replaced after each batch of film is processed. All film is treated in a hypo clearing bath between water rinses. Increased image permanence can be achieved by adding 3 ounces of selenium toner to each gallon of stock clearing agent, such as Perma-Wash (manufactured by Heico Inc., Delaware Water Gap, Pennsylvania). The final water rinse for the film is the amount of time it takes to completely eliminate hypo from the surface of the film or paper. This can range from 5 minutes to 60 minutes for film. Clearing hypo from double-weight prints, depending on how many prints are being washed at one time, may take much longer. Testing for residual hypo in negatives and prints will help minimize washing time and reduce water waste.

Note: Film and prints developed by automatic processors have repeatedly failed tests for residual hypo. Thus they are not archivally stable and will not be accepted for inclusion in the HDP collection at the Library of Congress.

Prints

Size: All prints are produced at contact print size (e.g. the image area of the print will be the same exact size as the negative), whether digitally or in the wet photo lab. Contact sheets must have the black (bleed) margins of the entire sheet of film to reveal all the detail in the picture area plus the clear film margin. This insures that no cropping of the image has taken place. Same-size enlargements do not meet the *Secretary's Standards*. Prints must include the margins or borders of the film

Paper: *Resin-coated papers of any kind are not archival and will not be accepted for inclusion in the HABS, HAER, and HALS collections in the Library of Congress.* Double-weight paper is now accepted since little, if any, single-weight paper is being manufactured. Photographers

wishing to make traditional contact prints may be able to obtain contact printing paper from the following source:

Smith/Chamlee Photography
P.O. Box 400
Ottsville, PA 18942
610-847-2005

Smith/Chamlee is the only known producer of contact printing paper and is an acceptable replacement for Kodak's discontinued Azo paper. Enlarging paper is another acceptable alternative, but the print results will not be as good as those obtained using slower speed contact printing paper.

Digital Prints: The increasing availability of archival photographic inkjet printing has led HDP to develop methods of printing large-format photographs on archival inkjet paper using pigment or carbon inks. The digitally produced prints must be of equivalent quality to the traditional photographic contact print and be a true representation of the negative including the borders. Digital contact prints can be made from TIFFs by scanning the film and printing it on 100 percent cotton, acid-free matte paper using pigment or carbon inks on an inkjet printer. The paper/printer/ink combination used for the digital prints must have a permanency rating of 150 years or greater by an independent rating organization. For suggestions on workflow for printing large-format photographs, see Appendix 1.

Labeling

The large-format negatives, prints, and photograph sleeves must be labeled with the appropriate HABS, HAER, or HALS number and view number. Please see the Transmittal Guidelines for specific instructions, available at: <http://www.nps.gov/hdp/standards/Transmittal.pdf>

Index to Photographs

Every set of photographs submitted to HABS, HAER, or HALS is accompanied by a list of captions. These should be submitted in both hard-copy and electronic format as outlined in the Transmittal Guidelines. The captions should include appropriate directional information and any significant details. Site plans or maps with locations of photographs denoted are encouraged, particularly on complex sites or those with several buildings. Please see the Transmittal Guidelines for additional information, available at: <http://www.nps.gov/hdp/standards/Transmittal.pdf>

Contacts

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Appendix 1: Creating Digital Print Cards

Heritage Documentation Programs (HDP) has developed the following procedure to produce digital contact prints (instead of wet contact prints) that meet both HDP standards and the archival requirements mandated by the Library of Congress. The basic suggested procedure is the same for both black-and-white prints and color transparencies. This process creates a print card that mimics the photo mount cards HDP has used for decades. HDP photographers developed this method as an efficient way to produce digital print cards. Results may vary based on hardware, software, and scanning environment.

Creating the digital file:

- Scan image emulsion side facing light source on a flatbed scanner with Anti-Newton glass.
- Crop scanning area to include film margins.
- Scan images at a resolution of 5000 pixels across, about 800 ppi for 5x7 negative, to yield a file roughly 18-20 MB for a black & white image and save as an uncompressed TIFF.

Creating the digital print (e.g. photo mount card with image):

- Create a new folder with copies of images for mounting.
- Downsize all images to 400 ppi, for printing ease.
- Mount images upon a 400 ppi black canvas (i.e. 4.75" x 6.76" image area upon a 5" x 7" black canvas) for size uniformity, then flatten to reduce image size.
- Create a new canvas with the dimensions 8.5" x 11" at 400 ppi and copy the image onto that canvas. The image should be centered and the actual image size.
- Using horizontal text tool (Times New Roman, 12 pt., black font) on the overlay grid, create a text box in the upper right-hand corner. The following is an example of what the box must contain:

**HISTORIC AMERICAN LANDSCAPES SURVEY
SEE INDEX TO PHOTOGRAPHS FOR CAPTION
HALS No. CA-42-1**

Do NOT flatten after this step in case you need to modify the text.

Printing:

- The print quality should be set to the highest, neutral monochrome settings (unless it is a color image).
- Batch all print cards in one folder and print from folder as "full sheet fax" to prevent image compression and to maintain actual size.
- Print entire folder or use rip software.