

SPECIFICATIONS FOR AERIAL PHOTOGRAPHY

This is a reference guide for providing aerial photography and related products used by the Central Federal Lands Highway Division (CFLHD) of the Federal Highway Administration (FHWA), Lakewood, Colorado.

GENERAL DESCRIPTION

A. AERIAL PHOTOGRAPHY

- 1) Full stereoscopic coverage will be obtained on each flight line, for its entire length. Forward overlap should average 60 percent at the mean terrain elevation of each flight strip, unless otherwise indicated on the flight data sheet provided. In no case will the overlap be less than 55 percent. Ground control is to be established in advance of the photography date.
- 2) The flights will be made at a height that will produce photography at an average scale as listed in the Scope of Work (SOW). The photography will be obtained using a precision aerial mapping camera having a focal length of approximately 6 inches with a 9 inch by 9 inch negative format. The photography obtained must be suitable for mapping and digitizing with a second order, optical train stereo plotter as well as a softcopy photogrammetric work station.
- 3) The suitability of the camera(s) will be determinable from the test report (calibration data) which will be furnished to the Government by the consultant for the project work. Such report(s) will be based on adequate tests and measurements made by an approved aerial camera testing authority. The report(s) will have been performed within 36 months prior to the date of the photo mission.
- 4) Breaks in flight strips will not be permitted. Any photographs crabbed or tilted in excess of 5 degrees may be cause for rejection of that particular flight strip. Any flight strip deviating from the plotted flight line, that results in insufficient lateral ground coverage, may also be rejected.
- 5) There will be no apparent blurring of the imagery due to ground motion on the aerial negative when magnified up to 6 diameters. A combination of aircraft speed, camera shutter speed, lens f-stop and high quality photographic aerial film will be used to produce negatives suitable for precise analytical triangulation, stereo compilation and digital data acquisition.
- 6) The negatives will be free from deep shadows. To insure this, photography will not be collected when the sun is less than 30° above the horizon unless specific prior permission is obtained from the Government. The aerial negatives must be free of clouds, shadows, smoke, haze, snow or other deficiencies, which would interfere with their intended use.
- 7) The developed negative film, supplied on a standard aerial film spool in a sturdy metal or plastic canister, will become the property of CFLHD. The CFLHD provided film can label is to be completed, listing all flight lines and exposures contained on the film.
 - a. The processed negatives will be stamped or hand lettered from left to right along the edge of overlap on each exposure, with the following information; date, photo scale, project code name and flight line exposure number. The project code name is to be three groups of characters separated by dashes, beginning with "CFL". The third and fourth characters represent the year, as in 07 for 2007. The fifth and sixth characters represent the state the project lies in, as in CO for Colorado. The seventh, eighth and ninth characters designate the film roll number as determined by CFLHD. The code "CFL-07CO-542" would indicate a 2007 project in Colorado on the five hundred forty second roll of film in the CFLHD Film Archives. The project code name need only appear on the first and last exposures of the flight line. Exposure numbering will increase as indicated by the direction of the arrows on

the flight line maps. Generally, this is toward the north and/or west. Each strip will begin with exposure number one. (This is not meant to dictate direction the airplane is to be flown on the mission.)

B. PHOTOGRAPHIC PRINTS

- 1) Furnish contact prints from the aerial negatives. Prints are to be made emulsion to emulsion, on medium weight, matte R.C. paper. One set of prints will be annotated with field control. They are to be trimmed with a margin of 1/8 inch outside the photographic image. The tonal quality or color will be of good quality, allowing correct interpretation of the ground control.
- 2) Furnish a digital file containing copies for each of the original images in TIF format and scanned on a mapping-grade optical scanner in color and at 12.5 μ resolution. Where possible, this imagery will be scanned from the original negative.

C. INDEX OF AERIAL PHOTOGRAPHY

- 1) The digital index will include title information identifying the project, name of the contractor furnishing the photography, name of the contracting authority (CFLHD), photo scale, index scale, camera calibrated focal length, flight height, date of photography, north arrow and a graphic bar scale. The digital index will be in TIFF format with flight line and exposure numbers indicated on the appropriate exposure, and have an associated world file.