

SPECIFICATIONS for CO-LOCATED DIGITAL AERIAL PHOTOGRAPHY

This document is a reference guide for those providing digital aerial photographic services for Central Federal Lands Highway Division (CFLHD) of the Federal Highway Administration (FHWA), Lakewood, Colorado.

I. GENERAL DESCRIPTION

Photography will be taken at the same time that the LiDAR data is being gathered using a digital camera mounted in the aircraft carrying the LiDAR sensor. An inertial navigation system is to be employed in the aircraft to record positional data of the camera, which is used to determine plotter settings for softcopy digital photogrammetric workstations.

II. TECHNICAL REQUIREMENTS

- A. The camera platform used will be a Contax 645 or another precision digital camera having similar performance characteristics.
- B. CFLHD will furnish photographically identifiable ground control points within the project area. Make the necessary adjustments to insure that the resulting photographic images fit the photo-identifiable ground control at a 95% confidence level to a horizontal accuracy of 0.5 foot and a vertical accuracy of 0.30 foot.
- C. The photographic coverage will not have less than 55% forward overlap with sufficient side overlap to allow for planimetric ties.
- D. The Ground Sample Distance of the digital imagery will not be more than 0.2 foot.
- E. The imagery must be free from deep shadows. To insure this, photography should be collected when the sun is greater than 30° above the horizon. The images must be free of clouds, shadows, smoke, haze, snow or other deficiencies, which would interfere with their intended use.
- F. Titling data is to be placed 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 will be three groups of characters separated by dashes, beginning with "CFL". The fourth and fifth characters represent the year, as in 07 for 2007. The sixth and seventh characters represent the state the project lies in, as in CO for Colorado. The eighth, ninth, tenth and eleventh characters will designate the project name as provided. The code "CFL-07CO-GRSA" would indicate a 2007 project in Colorado named Great Sand Dunes. 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

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and/or west. Each strip will begin with exposure number one. (This is not meant to dictate direction the mission is to be flown.)

- G The image files for each frame of photography will be in either TIFF or VITEC format. These image files are to be on DVD+R disks in 1/4" jewel cases with disk labels and jewel case inserts stating the creator's name, date of photography, mission number and names and sizes of the files contained.
- H Provide a report to CFLHD to include discussion of GPS control, Geoid information and Airborne GPS solutions as well as camera attitude and positional data for each frame of photography. Provide CFLHD with all files needed to accurately set and compile 3-D planimetric mapping from the supplied digital imagery using the current version of Socet Set.
- I Provide a current camera calibration report.