

Required Materials to Review Consultant Photogrammetric Mapping

California Department of Transportation – HQ - Office of Photogrammetry (OoP)

A. Materials to be submitted BEFORE the flight:

- 1. Purpose of mapping project? Caltrans Project Number: _____
- 2. Map Units: U.S. Survey Foot Metric
- 3. Control: Airborne GPS Conventional
- 4. Project Datum: Horizontal (including epoch) and Vertical _____
- 5. Map Scale: _____ Contour Interval: _____ Caltrans Design Plane: _____
- 6. Aerial camera calibration report (dated within three years of date of photography).
- 7. Flight plan showing flight lines, flying heights, and average photo scale.
- 8. Control layout diagram showing: neat models, ground targets, and mapping limits.
- 9. Proposed schedule for delivery of Item B and C materials to the district.
- 10. Name and contact information for the aerial consultant and design consultant?
- 11. Name of the Caltrans Project Manager?
- 12. Design by: Caltrans Consultant
DTM by: Caltrans Consultant
- 13. Sheet Layout Diagram and Text Orientation Layout approved by District Photogrammetry Coordinator (DPC)

B. Materials to be submitted AFTER the flight and BEFORE map compilation:

- 1. District approval of photo control survey. Include copy of approval memo with B.2 materials.
- 2. The following aerotriangulation data should be delivered in a digital format. All data should be submitted to the DPC. Contractors should **not** submit data directly to the OoP. DPC should send only a complete submittal to OoP.
 - a. **Strip layout diagram.** Shows location of ground control and analytic points within each model. PDF file or delivered as hard copy.
 - b. **Aerotriangulation bundle block adjustment report.** An ASCII file that includes apriori assumptions, rejection criteria, summary image residual statistics, control intersection residuals, and final calculated ground point coordinates.
 - c. **Ground point file.** An point list of aerial control targets and operator selected points coordinates in a column delimited, decimal justified ASCII file with format:
Point# X Y Z Description. The filename should be *projectname_GP_units.DAT*
 - d. **Exterior orientation file.** A column delimited, decimal justified ASCII file with format:
Photo# Strip # Photo# X Y Z omega phi kappa.
The filename should be *projectname_EO_units.DAT* (units: ft-gons or ft-decdeg)
 - e. **Two sets of photographic prints.** One set annotated with field control points and mapping limits, for OoP review. The second set is for the District Office.

C. Materials to be submitted AFTER map compilation has been completed:

- 1. Original film with a leader, on a roll in a can. Send labeled can directly to the address in Note #4 below.
- 2. Digital map files on CD or DVD *in current Caltrans standard file format.* See Caltrans CADD website for current file format specifications: http://www.dot.ca.gov/hq/oppd/cadd/rsc_files/webpage.htm
- 3. One photo reproduction print or plotted digital reproduction of the Photo Index(s) sent to the District for review and acceptance.
- 4. Upon District review and acceptance of the Photo Index, Consultant shall send Photo Index Negative(s) or Digital Photo Index on CD / DVD in .psp image format with layers intact and one photographic reproduction or plotted digital reproduction of the Photo Index(s) to the OoP, with cover letter, to the address in Note #4 below. See: <http://www.dot.ca.gov/hq/esc/photogrammetry/resources.html>

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Reference and Notes:

- 1) Items A, B, and C are sequential deliverables for review. Each Item must be found acceptable **prior** to beginning the next Item.
- 2) OoP cannot perform Quality Control for the Consultant. Consultants and DPC must be aware that OoP completes Independent Quality Assurance (IQA) reviews. The Office of Photogrammetry checks a representative sample of the oversight projects and reports our findings as general comments. The mapping accuracy and symbology comments may apply to one or all of the sheets.
- 3) Consultant shall comply with the current:
 - a) Caltrans Surveys Manual, Chapter 13 - Photogrammetry located at:
http://www.dot.ca.gov/hq/row/landsurveys/SurveysManual/Manual_TOC.html
 - b) Standards and Symbols for Photogrammetric Mapping (SSPM)
SSPM and example mapping is located at:
<http://www.dot.ca.gov/hq/esc/photogrammetry/resources.html>
 - c) Photogrammetry cell library, font library, custom line styles, seed files, etc. available via the CADD and Engineering GIS Support website at:
http://www.dot.ca.gov/hq/oppd/cadd/rsc_files/webpage.htm
 - d) Oversight electronic file naming convention can be found in the CADD Manual, Chapter 2.2 website located at: <http://www.dot.ca.gov/hq/oppd/cadd/usta/caddman/default.htm>
- 4) OoP cannot verify the final accuracy of consultant mapping unless all phases of the consultant's work meet Caltrans photogrammetric mapping specifications as outlined in Chapter 13 of the Surveys Manual. In the event OoP is unable to verify the accuracy of the mapping, field checks will be required.
- 5) Send Item C-1 & C-3 materials to: Department of Transportation
All other materials are submitted Division of Engineering Services
to the District Photo Coordinator. Office of Photogrammetry – MS 35
1820 Alhambra Blvd.
Sacramento, CA 95816
- 6) OoP will archive the Original film can, Photo Index negative(s), and a photographic reproduction of the Photo Index(s) in their Sacramento facility.
- 7) If you have any questions, please contact your local District Photogrammetry Coordinator.