REQUEST FOR PROPOSAL

SOLICITATION NUMBER: USDA-FS-7-08
AERIAL PHOTOGRAPHY SERVICES
For Boise-Payette National Forest, Idaho
Solicitation Issue Date: May 14, 2008
Proposal Due Date: June 13, 2008

U.S. DEPARTMENT OF AGRICULTURE
FARM SERVICE AGENCY
AERIAL PHOTOGRAPHY FIELD OFFICE

NOTICE TO OFFEROR

Any proposal submitted for this RFP must be identified with the following information labeled on the outside of the mailing package:

SOL.NO: USDA-FS-7-08
DUE DATE: 13-JUNE-2008, 4:30 PM
RECEIVING OFFICE: CONTRACTING

Mail To: AERIAL PHOTOGRAPHY FIELD OFFICE
CONTRACTING OFFICER
2222 WEST 2300 SOUTH
SALT LAKE CITY UTAH 84119

NOTICE TO PROSPECTIVE OFFERORS :

OFFERORS ARE CAUTIONED TO NOTE THE FOLLOWING SPECIAL CONTRACT REQUIREMENTS:
Any proposals submitted in response to this solicitation must be presented in two parts, a pricing proposal and a technical proposal. Please limit the size to a maximum of 100 double-sided pages. See Section L for proposal preparation instructions. (Documentation and samples required in accordance with Attachment A of the contract may be submitted in a separate referenced attachment and will not be counted towards the page limitation).

This solicitation is for direct digital acquisition. (See Section L-3 for Digital Sensor Approval Requirements)

This solicitation includes an option to increase quantity (See Section B-3), and additional options for orthorectification services at either a 1 meter or 1 foot resolution, not both. (See Section B-4)

This RFP is subject to the Availability of Funds Clause (FAR 52.232-18). See Section B-1.5, Page 3.

The complete text of any or all clauses referenced herein may be obtained by submitting a request, identifying this solicitation number, to the Contracting Officer, USDA, FSA, Aerial Photography Field Office, 2222 West 2300 South, Salt Lake City, Utah 84119. Complete copies of the FAR in loose-leaf or CFR form may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington D.C. 20402.

SOLICITATION, OFFER AND AWARD

1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700) ▶ RATING

2. CONTRACT NUMBER	3. SOLICITATION NUMBER	4. TYPE OF SOLICITATION	5. DATE ISSUED	6. REQUISITION/PURCHASE NUMBER
	USDA-FS-7-08	☐ SEALED BID (IFB) ☒ NEGOTIATED (RFP)	05/14/08	

7. ISSUED BY CODE

USDA-FSA-Aerial Photography Field Office
2222 West 2300 South
Salt Lake City, UT 84119-2020

8. ADDRESS OFFER TO *(If other than Item 7)*

Contracting Officer, USDA/FSA-APFO
2222 West 2300 South
Salt Lake City, UT 84119

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

SOLICITATION

9. Sealed offers in original and 1 copies for furnishing the supplies or services in the Schedule will be received at the place specified in Item 8, or if handcarried, in the depository located in Rm. 10, Aerial Photography Field Office until 04:30 *(Hour)* local time 06/13/08 *(Date)*

CAUTION - LATE Submissions, Modifications, and Withdrawals: See Section L, Provision No. 52.214-7 or 52.215-1. All offers are subject to all terms and conditions contained in this solicitation.

10. FOR INFORMATION CALL:	A. NAME	B. TELEPHONE *(NO COLLECT CALLS)*			C. E-MAIL ADDRESS
		AREA CODE	NUMBER	EXT.	
	W. Geoffrey Gabbott	801	844-2910		

11. TABLE OF CONTENTS

(X)	SEC.	DESCRIPTION	PAGE(S)	(X)	SEC.	DESCRIPTION	PAGE(S)
		PART I - THE SCHEDULE				PART II - CONTRACT CLAUSES	
✘	A	SOLICITATION/CONTRACT FORM	1	✘	I	CONTRACT CLAUSES	34-37
✘	B	SUPPLIES OR SERVICES AND PRICES/COSTS	2-6			PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACH.	
✘	C	DESCRIPTION/SPECS./WORK STATEMENT	7-16	✘	J	LIST OF ATTACHMENTS	38-54
✘	D	PACKAGING AND MARKING	17-18			PART IV - REPRESENTATIONS AND INSTRUCTIONS	
✘	E	INSPECTION AND ACCEPTANCE	19-21	✘	K	REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS	55-58
✘	F	DELIVERIES OR PERFORMANCE	22-28				
✘	G	CONTRACT ADMINISTRATION DATA	29-31	✘	L	INSTRS., CONDS., AND NOTICES TO OFFERORS	59-63
✘	H	SPECIAL CONTRACT REQUIREMENTS	32-33	✘	M	EVALUATION FACTORS FOR AWARD	64-66

OFFER *(Must be fully completed by offeror)*

NOTE: Item 12 does not apply if the solicitation includes the provisions at 52.214-16, Minimum Bid Acceptance Period.

12. In compliance with the above, the undersigned agrees, if this offer is accepted within _____ calendar days *(60 calendar days unless a different period is inserted by the offeror)* from the date for receipt of offers specified above, to furnish any or all items upon which prices are offered at the price set opposite each item, delivered at the designated point(s), within the time specified in the schedule.

13. DISCOUNT FOR PROMPT PAYMENT *(See Section I, Clause No. 52.232-8)*	10 CALENDAR DAYS (%)	20 CALENDAR DAYS (%)	30 CALENDAR DAYS (%)	CALENDAR DAYS (%)

14. ACKNOWLEDGMENT OF AMENDMENTS *(The offeror acknowledges receipt of amendments to the SOLICITATION for offerors and related documents numbered and dated)*:	AMENDMENT NO.	DATE	AMENDMENT NO.	DATE
	Amendment 1	5-15-2008		

15A. NAME AND ADDRESS OF OFFEROR — CODE ____ FACILITY ____

16. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER *(Type or print)*

15B. TELEPHONE NUMBER			15C. CHECK IF REMITTANCE ADDRESS IS DIFFERENT FROM ABOVE - ENTER SUCH ADDRESS IN SCHEDULE.	17. SIGNATURE	18. OFFER DATE
AREA CODE	NUMBER	EXT.	☐		

AWARD *(To be completed by Government)*

19. ACCEPTED AS TO ITEMS NUMBERED	20. AMOUNT	21. ACCOUNTING AND APPROPRIATION

22. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION:
☐ 10 U.S.C. 2304(c)) ☐ 41 U.S.C. 253(c) ( )

23. SUBMIT INVOICES TO ADDRESS SHOWN IN *(4 copies unless otherwise specified)* ▶ ITEM

24. ADMINISTERED BY *(If other than Item 7)* CODE ____

25. PAYMENT WILL BE MADE BY CODE ____

26. NAME OF CONTRACTING OFFICER *(Type or print)*

27. UNITED STATES OF AMERICA *(Signature of Contracting Officer)*

28. AWARD DATE

IMPORTANT - Award will be made on this Form, or on Standard Form 26, or by other authorized official written notice.

PART I - THE SCHEDULE

SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS

B-1 DIGITAL PHOTOGRAPHY SERVICES

Furnish direct digital imagery and all related services and supplies in accordance with the requirements, specifications, terms, conditions, clauses, and provisions specified herein.

1.1 Intended Use of Imagery

The imagery shall be used by the United States Forest Service to collect and measure natural resource data by mean of photo interpretation and geographic information systems (GIS) technologies.

1.2 Importance of Image Quality

Any imagery submitted to the Government that does not meet the minimum quality requirement may impact the Government's ability to properly use the imagery for its intended purpose and may be subject to a price reduction based on the diminished usability of the product.

1.3 Project Flight Planning Requirement

Contractor is required to provide the necessary flight line plans, which shall include flight altitude determinations, for the acquisition of precise vertical aerial imagery in accordance with the technical requirements in Section C-5.2, Flight Planning.

1.4 Direct Digital Sensor Acquisition

The direct digital imagery acquisition requirements will be for the collection of visible (Red, Green, Blue) and color near infrared (IR) imagery. The digital sensor system shall be a tested, stable, geometrically calibrated system with appropriate documentation, suitable for use in precision photogrammetric orthoimagery applications.

(a) Digital sensor acquisitions require the Contractor to comply with the technical requirements and specifications of this contract, and Attachment A: Specification for Digital Sensor Based Acquisition which defines the essential elements in securing high quality direct digital imagery.

(b) The Contractor is required to provide a detailed technical description and sample image of the digital camera/sensor being proposed for use. See Section L-3, Digital Sensor Approval Requirements.

(c) The digital sensor system shall have the appropriate image resolving power and field of view required to provide the GSD. The proposed direct digital sensor

system shall have the capacity and the through-put necessary to acquire complete project item quantities in accordance with delivery schedules as indicated herein. of the product.

1.5 Non-Discrimination Statement

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its program and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of Discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, SW., Washington, DC 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

1.6 Availability of Funds (FAR 52.232-18, APR 1984)

Funds are not presently available for this contract. The Government's obligation under this contract is contingent upon the availability of appropriated funds from which payment for contract purposes can be made. No legal liability on the part of the Government for any payment may arise until funds are made available to the Contracting Officer for this contract and until the Contractor receives notice of such availability, to be confirmed in writing by the Contracting Officer.

B-2 PROJECT ITEM 1: ACQUISITION FOR BOISE-PAYETTE NF, IDAHO

PROJECT ITEM 1: BOISE-PAYETTE NATIONAL FOREST, IDAHO				
PROJECT ITEM	**QTY**	**UNIT**	**UNIT PRICE**	**TOTAL AMOUNT**
1	**7,796**	Square Miles	**$**	**$**

2.1 Project Requirements

(a) Project Code Item 1: Boise 614020 and Agency Designator: USDA-F.

(b) Spatial Resolution: All imagery shall have a 30 cm (12 inch) ground sample distance (GSD) or better.

(c) Radiometric Resolution: All imagery shall be collected at a minimum of 12-bits per band.

(d) Acquisition Period: July 1, 2008 through September 30, 2008.

(e) Minimum Sun Angle: 45 degrees.

(f) Overlaps: Endlap: Minimum 57%, Maximum 67% (Optimum 62%);
Sidelap: Minimum 15%, Maximum 45% (Optimum 30%).

(g) Contract deliverables: The following deliverables shall be submitted by the Contractor and prepared in accordance with specifications and work statement (Section C), packaging and marking (Section D), inspection and acceptance (Section E), and delivery schedule (Section F):

(1) Project Flight Plan (for approval)
(2) **4-band** Georeferenced, uncompressed digital image files*
(3) ABGPS/IMU Data and supplemental GPS ground data*
(4) Pilot Logs
(5) Progress Reports
(6) Metadata and other text files*

* delivered on external hard drive

B-3 OPTION FOR INCREASE IN QUANTITY: ACQUISITION FOR ADMINISTRATIVE AREA OF BOISE-PAYETTE NF, IDAHO

The Government will accept price proposals on an optional award to increase the area of acquisition. The Contracting Officer may exercise this option by notice to the Contractor within 30 days of the contact award. If this option is exercised this area will be incorporated and become part of Project Item 1.

OPTION ITEM 1: ADMINISTRATIVE AREA OF BOISE-PAYETTE, NF, IDAHO				
OPTION ITEM	**QTY**	**UNIT**	**UNIT PRICE**	**TOTAL AMOUNT**
1	**828**	Square Miles	**$**	**$**

3.1 Project Requirements:

Project requirements will be the same as those specified in Project Item 1.
(See Section B-2)

B-4 ORTHORECTIFICATION FOR BOISE-PAYETTE NF, IDAHO

The Government will accept price proposals on an optional award for orthorectification services. The Contracting Officer may exercise this option by notice to the Contractor within 30 days of the contact award. The Government reserves the right to award only one orthorectification option, not both.

4.1 Option for 1 Meter Orthorectification

OPTION ITEM 2: 1 METER ORTHORECTIFICATION FOR BOISE-PAYETTE NF, IDAHO				
PROJECT ITEM	**QTY**	**UNIT**	**UNIT PRICE**	**TOTAL AMOUNT**
1		Square Miles	**$**	**$**
Option 1		Square Miles	**$**	**$**

(a) Horizontal Accuracy Requirements: All DOQQ tiles shall have 95% of well-defined points tested fall within 6.0 meters of true ground.

4.2 Option for 30 Centimeter (12 Inch) Orthorectification

OPTION ITEM 3: 30 CENTIMETER (12 INCH) ORTHORECTIFICATION FOR BOISE-PAYETTE NF, IDAHO				
PROJECT ITEM	**QTY**	**UNIT**	**UNIT PRICE**	**TOTAL AMOUNT**
1		Square Miles	**$**	**$**
Option 1		Square Miles	**$**	**$**

(a) Horizontal Accuracy Requirements: All DOQQ tiles shall 95% of well-defined points tested fall within 4.0 meters of true ground.

4.3 Contract deliverables: The following deliverables shall be submitted by the Contractor and prepared in accordance with specifications and work statement (Section C), packaging and marking (Section D), inspection and acceptance (Section E), and delivery schedule (Section F):

(a) Pre-production Imagery Sample
(b) Quarter Quadrangle Image Tiles (full resolution)*
(c) Metadata and other text files*
(d) Accuracy and Quality Control Reports*

* delivered on external hard drive

B-5 GOVERNMENT-FURNISHED PROPERTY

Pursuant to the Government-Furnished Property (GFP) clause (see Section I-9, Contract Clauses) the Government shall furnish the item(s) of property listed below as GFP to the Contractor.

5.1 Coverage Shapefile

The Contractor will be furnished upon award one (1) ESRI® compatible shapefile containing the required contract coverage. **Due to the unique foot of digital sensors the Contractor is responsible for the complete acquisition within the shapefile area.**

PART I - THE SCHEDULE

SECTION C - DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

C-1 SCOPE OF CONTRACT

The general scope of the contract is to procure precise vertical aerial imagery for one or more of the following purposes: natural resource inventory, stereomodel compilation, analytical aerotriangulation, orthophotography, and extraction of data by means of photogrammetric measurements. The Contractor is responsible for furnishing direct digital imagery and related services and supplies in accordance with requirements, specifications, terms and conditions specified herein.

1.1 Technical Requirements and Specifications

The technical requirements and specifications of this contract are described in this section and Attachment A, and Attachment B (applicable for Option 2 if exercised), which define the essential elements in securing high quality digital orthoimagery. Any deviation from the specifications stated herein may cause increased time and effort in using the imagery as intended.

1.2 Delivery and Performance

The delivery and performance requirements of this contract are described in Section F, Delivery or Performance. All contract materials shall be shipped within the time limits and to the place of delivery specified herein. Performance of the contract shall be authorized and monitored by the Contracting Officer and/or the Contracting Officer's Representative.

1.3 Quality Control

Quality control shall be exercised by the Contractor continuously throughout the performance of the contract. Procedures shall be established to assure that all aerial photographic materials are delivered in accordance with the delivery schedule and at the required level of accuracy and quality. The Contractor shall acquire immediate reflights of any photography where coverage or image quality fails to meet minimum requirements of the contract specifications. USDA inspection and acceptance procedures are described in Section E, Inspection and Acceptance.

1.4 Location of Work

The project name, location, and quantities of areas to be acquired under this contract will be described in Section B, Supplies or Services & Price and Cost, and shown on project map in Section J, Exhibit 1. The Contractor’s place of performance where work will be performed on this contract shall be indicated in ORCA Certification. (See Section K-1, Representations, Certifications, and Other Statements of Offerors)

1.5 Project Management and Flight Planning

The Contractor is required to provide the necessary project management, coordination, and supervision to conduct project planning, flight line planning and acquisition, image processing, product delivery, and related technical and progress reports as required in the contract (see Section C-7, Project Management).

1.6 Labor and Materials

The Contractor shall furnish all materials, equipment, transportation, superintendence, and labor as required herein. The Contractor shall execute and finish the imagery acquisition, orthoimagery production and related services for the project specified and shall deliver to the USDA all materials called for in Section F-1, Materials to be Delivered.

C-2 APPLICABLE DOCUMENTS

2.1 Attachments

The following documents attached to this solicitation document are considered requirements and specifications under the resulting contract(s), as applicable to the Contractor's technical proposal:

(a) Specification for Digital Sensor Based Acquisition, dated April 30, 2008 (Attachment A)
(b) Digital Orthoimagery Quarter-Quadrangle (DOQQ) Description and Specification, dated April 30, 2008 (Attachment B – applicable if orthorectification Option is exercised)

2.2 References

The following documents referenced in this solicitation document are considered requirements and specifications under the resulting contract(s), as applicable to the Contractor's technical proposal:

(a) Federal Geographic Data Committee (FGDC) Specification, FGDC-STD-001-1998 ("Content Standard for Digital Geospatial Metadata")
(b) Code of Federal Regulation (CFR) Title 14 ("Federal Aviation Regulations")
(c) GeoTIFF Revision 1.0 Specification, dated December 28, 2000 (Version 1.8.2)
(d) TIFF Specification Revision 6 dated June 3, 1992 (Adobe Systems Inc.)

C-3 GENERAL REQUIREMENTS

The Contractor shall furnish all materials, equipment, transportation, superintendence, and labor required to plan, acquire, manage, process, and orthorectify digital imagery for the project items as specified in Section B, Supplies or Services and Price/Cost.

C-4 EQUIPMENT REQUIREMENTS

Any key acquisition equipment such as aircraft and digital sensors (in addition to those submitted at the time of offer) proposed to be used by the Contractor must be approved for use by the Contracting Officer. If the key acquisition equipment proposed for use are not owned by the Contractor, a written statement of availability from the owner of the equipment shall be furnished to the Contracting Officer.

4.1 Precision Aerial Mapping Digital Sensor

Digital sensors used for acquiring aerial imagery shall meet contract specifications (see Attachment A). Digital Sensors must be compatible with precision stereoscopic mapping instruments and with analytical mensuration procedures used in photogrammetric surveys and in preparing accurate orthoimagery.

(a) Digital Sensor Evaluation: Proposed digital sensor systems will be evaluated to determine if they meet the contract specifications, based on current technical descriptions and samples. The Contracting Officer shall have the right to require the removal of a camera/sensor from use when deficiencies in imagery attributable to the camera are found to exist. Any camera/ sensor removed from use by the Contracting Officer shall not be returned to use on any APFO contracts until the cause of the malfunction is corrected to the satisfaction of the Contracting Officer. That determination will be based on acceptable samples, calibration reports, and/or an additional test by the Optical Science Laboratory of the USGS, if directed by the Contracting Officer.

(b) Digital Sensor Operation: The digital sensor and its mount shall be checked for proper installation prior to each mission. In conformance with conventional photogrammetric practice, it is the preference of the Government that the Contractor use digital sensor configurations, that when installed in the aircraft, advances imagery parallel to the line of flight.

(c) Accessories:

(1) Automatic Exposure Control. An automatic exposure control device is permitted, but a manual override capability is required for some types of terrain to achieve proper exposure.
(2) Camera Mount. The camera mount shall be regularly serviced and maintained and shall be insulated against aircraft vibration.
(3) Camera Port Glass. Aircraft camera port glass shall be preferably 50mm thick but not less than 32mm thick. The surface finish shall be 80/50 or better. Glass material shall be polished crown, group category M, Mil Specs Mil-W-1366F (ASG), dated October 1975, C-1 optical quality or better.

4.2 Aircraft Requirements

(a) FAA Certification: All aircraft used in the performance of the work under this contract shall be maintained and operated in accordance with all regulations required by the U.S. Department of Transportation, Federal Aviation Administration (FAA). Aircraft operated in the acquisition of aerial photography or digital imagery under this contract shall be FAA certified to a service ceiling with operating load (crew, camera, film, oxygen, and other required equipment) of not less than the highest altitude required.

(b) Positive Control Airspace: The proposed project item areas may contain areas of controlled or restricted airspace. It is the responsibility of the Contractor to obtain all approvals necessary to assure that required clearances are achieved. When the flight plan and location of any project item coverage fall within positive-control airspace, the aircraft must contain the appropriate equipment to operate in such positive-control areas within the purview of the Federal Aviation Regulations. (See Section H-1, Permits and Clearances.)

(c) Aircraft Configuration: The design of the aircraft shall be such that when the camera is mounted with all its parts within the outer structure, an unobstructed field of view is obtained. The field of view shall be shielded from the exhaust gases, oil, effluence, and air turbulence. The camera port glass shall be free of scratches and of such quality that it will not degrade the resolution or the accuracy of the camera and shall conform to Section C-4.1(c)(3), Camera Port Glass.

(d) Airborne Global Positioning System: The aircraft shall have an Airborne Global Positioning System (ABGPS), Inertial Measurement Unit (IMU) system capable of generating accurate control points used in the creation of the photo-center data file (see C-7.4(c), Photo-Center Data File) and orthoimagery (see Section C-6.2, Quarter Quadrangle Image Tile).

C-5 IMAGERY ACQUISITION REQUIREMENTS

5.1 Photographic Conditions

Imagery shall be acquired when skies are clear, free from smoke, clouds, cloud shadows, excessive haze, and well-defined images can be resolved. The ground shall be free from snow below timberline, standing water (other than natural or man-made ponds and lakes), flood waters from streams which have overflowed their banks, and wet ground which obscures field, soil or crop lines. The Contractor shall minimize specular reflections by patching the area using imagery from other frames.

5.2 Flight Planning

The Contractor shall create a flight plan to be submitted to the Contracting Officer for Government approval prior to commencing acquisition of the project area. The flight plan

shall provide flight line planning necessary to acquire precision, high quality, stereo imagery for the future production of digital quarter quadrangle orthoimagery, which shall include at a minimum, exposure stations, flight altitude determinations and overlap stereoscopic coverage. The boundaries and exact coverage of this project item is determined by the official Flight Exposure Data. See Section B-5.1, Coverage Shapefile.

5.3 Flight Requirements

The Contractor shall obtain precise vertical digital imagery in accordance with the following technical requirements:

(a) Acquisition Periods. The Contractor shall acquire imagery only during that portion of the day when the sun angle exceeds the requirement stated in B-2.1(e), Minimum Sun Angle. The Contractor shall limit operations to the dates specified in Section B, Supplies or Services & Price/Cost or as otherwise provided in writing by the Contracting Officer as stated under Section F-5, Performance of the Work.

(b) Tilt. It is desired that exposures be made when the optical axis of the digital sensor is in a vertical position. The Contractor shall not acquire imagery when the tilt (departure from the vertical) of any exposure exceeding four degrees (4º) or relative tilt between any two successive exposures exceeding six degrees (6º). Tilt shall not average more than 2 degrees (2º) in any 16 km (10 mile) section of a flight line and shall not average more than 1 degree (1º) for the entire project.

(c) Control Points. The Contractor shall be responsible for acquiring or generating any ground control points necessary to meet the horizontal accuracy requirement of the imagery, that are not provided as Government Furnished Material. **(Applicable is Only if Orthorectification Option is Exercised)**

C-6 DIGITAL IMAGERY PROCESSING

6.1 Georeferenced, Uncompressed Digital Image Files

Contractor shall provide single point georeferenced, stereo coverage, uncorrected digital image files at the resolution in accordance with Section B-2.1(b), Spatial Resolution. The image shall be submitted in the native camera footprint. Tile sizes for non-frame based cameras will be mutually agreed upon by the Government and the Contractor.

(a) Image Quality. The Contractor shall not make any radiometric adjustments to the acquired imagery.

(b) File Format. The 4-band imagery shall be 16-bit per band in accordance with the Adobe TIFF and GeoTIFF Specifications.

(c) Georeferenced Accuracy: The principal point shall have an accuracy of no more than 5 meters of true ground. All images shall be oriented so that the direction of North is towards the top of the computer display.

(d) Media Requirements: All georeferenced imagery shall be delivered on external computer hard drives as defined in Section D-1.2, External Hard Drives. The files shall be stored in a single subdirectory under the root directory called "georeferenced."

6.2 Quarter Quadrangle Image Tiles **(Applicable Only if Orthorectification Option is Exercised)**

The Contractor shall provide ortho-rectification services to produce mosaicked quarter quadrangle tiles using the imagery associated with the files created in Section C-6.1, Georeferenced, Uncompressed Digital Files. The tile shall cover the entire image area of one USGS standard quarter quadrangle (QQ), with a 300 meter buffer on all four sides of the QQ and shall be projected in the 1983 North American Datum (NAD83), using Universal Transverse Mercator (UTM) zone 11 in meters. Any DOQQ that does not contain full coverage due to project area boundary may be delivered as a partial DOQQ with the proper buffer maintained.

(a) Image Quality. All tiles shall meet the image quality requirements specified in Attachment B, DOQQ Description and Specification. The Government's preference is not to have the tiles "radiometrically balanced" with other neighboring tiles. The tile shall not contain any borders, artifacts, or other non-image items.

(b) File Format. The digital image shall be a georeferenced tagged image file format (GeoTIFF) created in accordance with Attachment B, DOQQ Description and Specification with the following exceptions:

(1) The spatial resolution and horizontal accuracy shall be specified in Section B-4.1(a) or B-4.2(a), Horizontal Accuracy Requirements. **The maximum and minimum image resolution shall not be less than 15 cm (6 inches) and shall not be greater than 33 cm (13 inches) respectively.**

(2) Exhibit 2 shall specify the appropriate file naming logic convention.

(c) Image Source. The Contractor may use imagery from multiple exposures, i.e., using the "sweet spot" from a preceding or succeeding image, when creating the tile images. Using "chips" (imagery pieces from other frames) to correct defects is also permitted. All exposures shall be from the same type of sensor and must be from same acquisition season. When multiple exposures are used in creating a tile, the acquisition date with the largest area shall be used when reporting dates in a single date field, such as metadata or attribute data. An average or mean date shall not be used.

(d) Preproduction Sample. The Contractor shall submit a single radiometric corrected image within 21 days of the first image acquisition for Government review. The sample shall be a TIFF (GeoTIFF) preferred, and submitted on a standard CD or DVD (labeling requirements in Section E are not required). The Government will evaluate and provide approval or disapproval letter with comments no later than 3 business days, with a goal of 24 hours. Additional project item area samples may be submitted for review if approved by the Contracting Officer Representative (COR).

(e) Media Requirements: All quarter quadrangle image tiles shall be delivered on external computer hard drives as defined in Section D-1.2, External Hard Drives. The files shall be stored in a single subdirectory under the root directory called "doqqs".

6.3 ABGPS/IMU Data Files

The Contractor shall post-process IMU/GPS data collected. The Contractor shall submit both the raw and processed data. The processed data shall be projected in UTM Zone 11, NAD 83 and be compatible with ERDAS Imagine, Leica Photogrammetry Suite (LPS), and ESRI Stereo Analyst for ArcGIS. The Contractor shall create a FGDC compliant metadata file for the ABGPS/IMU.

ABGPS/IMU data files shall be delivered on external computer hard drives as defined in Section D-1.2, External Hard Drives. The files shall be stored in a single subdirectory under the root directory called "gps"

6.4 Supplemental GPS Ground Data

Differentially corrected GPS Ground Data used to supplement the Airborne GPS positional data adjustment shall be delivered in a non-proprietary format mutually agreeable to the Government and Contractor. All supplemental ground control files shall be delivered on external computer hard drives as defined in Section D-1.2, External Hard Drives. The files shall be stored in a single subdirectory under the root directory called "gps_base"

6.5 Regional Settings

All digital files, including imagery and metadata, shall be created using standard ANSI English-US setting. For example, periods (ACII 46) shall be used to separate the whole number from the fractional portion when recording decimal numbers and data representing a long date shall be recorded as "Wednesday, August 17, 2005 5:09:38 PM."

C-7 PROJECT MANAGEMENT

The Contractor shall establish and maintain a project management system with a designated project manager for this effort. Project management consists of those activities required to plan, manage, administer, and control efforts to accomplish the objective of the contract. The project manager will serve as the primary point of contact for the Contractor's activity with the

Government. The project manager's name and contact information shall be identified, in writing, to the Contracting Officer within 21 calendar days of contract award.

7.1 Progress Reports

A Progress Report is required for each day progress is made in acquiring project imagery. Reports shall be transmitted by e-mail following each day of progress. E-mail address will be provided at contract award. See Section F-5.2, Progress Reports, for instructions and Section J, Exhibit 4, Progress Report for syntax and example.

7.2 Flight Logs

The Contractor shall maintain daily flight logs for all acquisition missions. As a minimum, flight logs should record date of flight, tail number, camera serial number and for each flight line information should include: line number, start and stop time, direction, altitude, speed, and number of exposures.

7.3 Subcontract Management

If the Contractor uses subcontractors in the performance of the contract, a plan and procedure will be established to manage its subcontractors. Contractor should give prior notification of any subcontracts in accordance with G-5, Subcontracts. The Contractor is encouraged to maximize its use of partnerships and subcontractors to accomplish the requirements of this contract. However, the Contractor is solely responsible for the performance and cost control of its partnerships and subcontractors.

7.4 Project Data Files

All project data files shall be delivered on external computer hard drives as defined in Section D-1.2, External Hard Drives. The files shall be stored in a single subdirectory under the root directory called "project".

(a) Production Process. The Contractor shall create brief descriptions of the digital image processing system which shall include a narrative explanation of the process steps taken to produce the imagery in accordance with Section F-1.6(a), Production Process Description, and the FGDC specification, paragraph 2.5.2.1, Process Description. Separate descriptions are required for the georeferenced data and, if Option 2 is exercised, for the quarter quadrangle image tiles.

(b) Project Data Files. The Contractor shall create a project description file in accordance with Section F-1.6(b), Project Data File Description, of this contract. Contractor shall include a project data file containing, at a minimum, the following data:

Description:
Project Item
Contract Award Number (to be assigned upon award, USDA-FS-7-08-1)

State (2 digit Abbreviation - ID)
Ground Resolution
Digital Sensor Description: "Free text with quotations”
Film Type (Digital)
Coordinate System Datum
Date Photo-Center Data File was created (YYYYMMDD)
Ortho Rectification System used to produce images: "Free text with quotations” (50 characters max)

Example:
Boise NF Idaho,USDA-FS-7-08-1,AK,30cm,”Intergraph DMC”,Digital, NAD83, 20080801,"production hardware & software description"

(c) Photo-Center Data File. Contractor shall prepare a digital photo-center data file for the aerial imagery delivered under this contract and shall include FGDC compliant metadata support file. The file(s) shall be provided in ASCII comma delimited text format. A comma delineated header file shall proceed the data in each file as shown in the example. The latitude / longitude coordinates shall be expressed in Decimal Degrees, formatted to NAD83 datum, and be accurate within 5 meters (16.4 feet) of the true photo center location. The photo-center data shall include the following attributes:

DESCRIPTION	MAXIMUM NUMBER OF CHARACTERS IN FIELD
Project Identification Code	7
Image Number*	5
Date of Exposure (YYYYMMDD)	8
Time of Exposure-Local 24 Hour Clock (HHMMSS)	6
Sensor Serial Number**	15
Latitude (DD.DDDDD)	8
Longitude (-DDD.DDDDD (Negative))	10
Flight Altitude in meters at camera (MMMMM.MM; AGL)	8
Number of GPS Satellites Acquired	2
Position Dilution of Precision (PDOP)	3
IMU omega value (Radians)	10
IMU phi value (Radians)	10
IMU kappa value (Radians)	10

*Same image number used for naming convention.
**If digital camera has more than one sensor head please use the camera serial number.

Example:
614020,1,20080827,130755,12345678,42.71936,-123.41498,7048.63,5,1.5,.0001358,.01073000, -.8732658

C-8 QUALITY CONTROL

Quality control shall be exercised by the Contractor continuously throughout the performance of the contract. Procedures shall be established to assure that all contract materials are delivered in accordance with the delivery schedule and at the required level of accuracy and quality. The Contractor shall inspect and constantly monitor the image quality and coverage, and shall undertake immediate reflights of any imagery where the quality fails to meet minimum requirements of the contract specifications. Any marginal photography/imagery submitted for inspection which does not meet minimum requirements may be rejected. The marginal photography may be accepted, at the Government's convenience, but shall be subject to a price reduction based on the diminished usability of the product. The nature and urgency of this project may require the Government to make equitable financial adjustments for materials deemed rejectable or where product use is adversely impacted. USDA inspection and acceptance procedures are described in Section E, Inspection and Acceptance.

8.1 Accuracy and Quality Control Report **(Applicable is Only if Orthorectification Option is Exercised)**

The Contractor shall provide RMSE accuracy reports and quality control reports generated during the AT or orthorectification processes for all quarter quadrangle image tiles in accordance with Section F-1.4, RMSE Accuracy and Quality Control Report.

PART I - THE SCHEDULE

SECTION D - PACKAGING AND MARKING

D-1 PREPARATION OF MATERIALS FOR SHIPMENT

All digital imagery and text files shall be labeled and shipped in packaging designed for their protection.

1.1 Compact Disks

All compact disks (CDs) shall be delivered on archival media, 700 Megabytes (80-minute) per disk CD-R, hybrid ISO 9660 Mode 1 format using level 2 interchange with Rockridge and Joliet extensions. The format of the DVD will allow long file names up to 64 characters in length, and will be readable by both Windows and UNIX systems where the file names will appear the same on both systems. The Contractor must insure that each and every copy session has been properly closed. No multi-session enabled CDs shall be acceptable. The CD media shall have a label attached identifying the digital contents of the CD in accordance with Section J, Exhibit 3, Figures 1, CD/DVD Label, (thermal printed CDs are acceptable). In addition to the packaging requirements in D-2, all CD media shall be packaged in standard single CD jewel cases (5-5/8" x 4-15/16" x 3/8") with a clear front cover. The CD label should be readable without opening the case or removing the CD from the case. “Slim” or other non-standard sized jewel cases will not be accepted.

1.1 Digital Versatile Disk.

All digital versatile disks (DVDs) shall be delivered on archival media, single-sided, 4.7 Gigabyte (120-minutes) DVD-R discs. DVD-R(A), DVD-RW, DVD+R, or DVD+RW formats are not acceptable. DVDs shall meet all other requirements, except of the media type, required for CDs (see paragraph above).

1.2 External Hard Drives.

The delivery media for the image files shall be External Combo USB2.0/IEEE1394 (Firewire) hard drives. All external hard drives shall be “Combo” style drives, capable of both USB2.0 and IEEE-1394 (Firewire) connections. The drives shall be formatted using Microsoft’s NTFS file system. The drives shall become property of the Government and will not be returned to the Contractor. Each drive shall have a label attached directly to the drive identifying the project contained on the drive in accordance with Section J, Exhibit 3, Figure 2, External Hard Drive Label.

D-2 PACKAGING FOR SHIPMENT

All material shall be packed for shipment in such a manner that will insure acceptance by common carrier and safe delivery at destination. Containers and closures shall comply with the Interstate Commerce Commission regulations, Uniform Freight Classification rules, or regulations of other carriers as applicable to the mode of transportation. Damaged materials will be replaced by the Contractor at no cost to the Government.

A packing slip shall accompany each shipment and shall itemize all material included in the shipment.

D-3 SHIPPING RECEIPTS

Receipts from common carriers for shipment of materials shall be retained by the Contractor and be made available to the Contracting Officer upon request.

D-4 SHIPPING CONTAINER MARKINGS

All shipping containers shall be clearly marked with delivery address. See Section F-2, Place of Delivery – FOB Destination, within Consignee's Promises.

PART I -THE SCHEDULE

SECTION E - INSPECTION AND ACCEPTANCE

E-1 INSPECTION AND ACCEPTANCE (FEB 1988)(AGAR 452.246-70)

The Contracting Officer or the Contracting Officer's duly authorized representative will inspect and accept the supplies and/or services to be provided under this contract.

Inspection and acceptance will be performed at:

Aerial Photography Field Office
2222 West 2300 South
Salt Lake City, Utah 84119-2020

E-2 INSPECTION PROCEDURE

All materials specified in Section F-1, Materials to be Delivered, will be inspected to determine conformance to all contract requirements and specifications. Inspection of the quarter quadrangle image tiles will be performed utilizing a comprehensive method of quality assurance inspection procedures including a random sampling technique to test for compliance to the horizontal accuracy requirement in the imagery delivered. (Refer to FAR 52.246-2, Inspection of Supplies-Fixed Price and FAR 52.246-4, Inspection of Services-Fixed Price.)

If inspection of materials reveal deficiencies that may cause increased time and effort in using the digital imagery and aerial photography as intended, the Government may require the Contractor to perform the services again in conformity with contract requirements, at no increase in contract amount. When the defects in services cannot be corrected by re-performance, the Government may:

(a) Require the Contractor to take necessary action to ensure that future performance conforms to contract requirements and

(b) Reduce the contract price to reflect the reduced value of services performed.

E-3 INSPECTION SCHEDULE

The Government will make every effort to inspect all material specified within 60 calendar days from the date materials have been received at the point designated. **Therefore, without the complete delivery of all materials the Government cannot efficiently begin inspection, thus delaying the inspection schedule.** Should the inspection procedure be delayed longer than 60 days, the Contractor will be notified of the reason(s) for delay and given the estimated completion date.

Contract materials will be inspected in the order of their receipt, unless otherwise prioritized by the Government. Inspection of project items where the photographic season is open will be given priority over projects for which the season has closed.

The Contractor will be notified in writing whether the materials are satisfactory and what areas, if any, shall be rephotographed and what materials, if any, shall be remade because of nonconformity with contract requirements.

E-4 PARTIAL COVERAGE

If the Contractor obtains only partial coverage for any project item during the season, all partial imagery shall be processed and delivered according to the requirements specified for completed imagery. The requirement for processing partial coverage may be waived only by the Contracting Officer.

E-5 ACCEPTANCE

Final acceptance will be made after inspection by the Government of all required materials delivered at the specified destination. Delivery dates for individual products by project items are specified under Section F-3, Schedule for Delivery of Materials. The acceptance date shall be the date of the letter, by the Government to the Contractor, stating all materials are acceptable and an invoice may be submitted.

Partial acceptance on any fully completed project due to rejection of deficient or non-compliant material will be made based on both preliminary inspection results of the digital imagery and the final inspection results of all remaining materials. A partial acceptance will result in a contract price reduction based on the final determination of contract material compliance to contract requirements and specifications.

Partial acceptance on any uncompleted area will be made only after the photographic season has ended and all materials required for the partial area have been delivered, inspected, and accepted by the Government. The acceptance date shall be the date of the letter by the Government to the Contractor identifying the amount of partial acceptance and referring the Contractor to the Contracting Officer.

E-6 CLAUSES INCORPORATED BY REFERENCE (FEB 1998) (FAR 52.252-2)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this address: www.arnet.gov/far.

FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) CLAUSES:

52.246-02 Inspection of Supplies - Fixed Price (AUG 1996)

52.246-04 Inspection of Services - Fixed Price (AUG 1996)

52.246-16 Responsibility for Supplies (APR 1984)

PART I - THE SCHEDULE

SECTION F - DELIVERIES OR PERFORMANCE

F-1 MATERIALS TO BE DELIVERED

The materials shall be delivered as required and consist of the following items. The Contractor shall maintain a copy of the digital data until APFO acknowledges receipt.

1.1 PROJECT FLIGHT PLAN

Item	Requirement
Format	txt, doc, or pdf
Media	Paper Copy, Email, or CD-ROM
Naming Convention	None
Quantity	One (1)
Date of First Submittal	Prior to Commencing Acquisition
Submittal Frequency	Once
Government Approval Required	Yes
Required Metadata	No

1.2 GEOREFERENCED, UNCOMPRESSED DIGITAL IMAGE TILES

Item	Requirement
Format	GeoTIFF
Media	Hard Drive (see Section D-1.2)
Naming Convention	See Section J, Exhibit 2 (i.e. “cnf_237_080827.tif”)
Quantity	One (1) per tile
Date of First Submittal	No later than sixty (60) calendar days after acquisition period.
Submittal Frequency	Once
Government Approval Required	Yes (see Section E)
Required Metadata	No

1.3 QUARTER QUADRANGLE IMAGE TILES (Applicable Only if Orthorectification Option is Exercised)

Item	Requirement
Format	GeoTIFF
Media	Hard Drive (see Section D-1.2)
Naming Convention	See Section J, Exhibit 2 (i.e. "n_s5715211se_05_1_20060721.tif")
Quantity	One (1) per DOQQ
Date of First Submittal	No later than sixty (60) calendar days after acquisition period.
Submittal Frequency	Once
Government Approval Required	Yes (see Section E)
Required Metadata	No

1.4 RMSE ACCURACY AND QUALITY CONTROL REPORTS (Applicable Only if Orthorectification Option is Exercised)

Item	Requirement
Format	ASCII preferred
Media	Hard Drive (see Section D-1.2)
Naming Convention	None
Quantity	One (1)
Date of First Submittal	Delivered with Production Process (see Section F-1.6(a))
Submittal Frequency	Once
Government Approval Required	No
Required Metadata	None

1.5 PROGRESS REPORTS

Item	Requirement
Format	See Exhibit 4
Media	Electronic mail
Quantity	One per day per crew
Date of First Submittal	Daily (as required in accordance with Section C- 7.1)
Submittal Frequency	Daily (only required for days that aerial acquisition was accomplished)
Government Approval Required	No
Required Metadata	None

1.6 PROJECT DATA FILES

(a) PRODUCTION PROCESS DESCRIPTION

Item	Requirement
Format	ASCII text file
Media	Hard Drive (see Section D-1.2)
Naming Convention	See Section J, Exhibit 2
Quantity	One (1) for Georeferenced tiles and One (1) for DOQQs
Date of First Submittal	No later than sixty (60) calendar days after acquisition period.
Submittal Frequency	Once
Government Approval Required	No
Required Metadata	None

(b) PROJECT DATA FILE DESCRIPTION

Item	Requirement
Format	ASCII comma delimited text file
Media	Hard Drive (see Section D-1.2)
Naming Convention	See Section J, Exhibit 2
Quantity	One (1)
Date of First Submittal	Delivered with Production Process (see Section F-1.6(a))
Submittal Frequency	Once
Government Approval Required	No
Required Metadata	None

(c) PHOTO-CENTER DATA FILE DESCRIPTION

Item	Requirement
Format	ASCII comma delimited text file
Media	Hard Drive (see Section D-1.2)
Naming Convention	See Section J, Exhibit 2
Quantity	One (1) per project item
Date of First Submittal	Delivered with Production Process (see Section F-1.6(a)).
Submittal Frequency	Once
Government Approval Required	No
Required Metadata	Yes

1.5 PILOT LOGS

Item	Requirement
Format	Paper copies
Media	Paper
Quantity	One per day mission
Date of First Submittal	Delivered with Production Process (See Section F-1.6(a))
Submittal Frequency	Once
Government Approval Required	No
Required Metadata	None

F-2 PLACE OF DELIVERY - FOB DESTINATION, WITHIN CONSIGNEE'S PREMISES

The materials to be furnished hereunder shall be delivered, all transportation charges paid by the Contractor, and in accordance with FAR Clause 52.247-35, F.o.b. Destination, Within Consignee's Premises, to:

USDA Aerial Photography Field Office
Attn: Contracting Officer - Resource
2222 West 2300 South
Salt Lake City, Utah 84119-2020

Offers submitted on a basis other than F.o.b. Destination within consignee's premises will be deemed unacceptable or rejected as non-responsive.

F-3 SCHEDULE FOR DELIVERY OF MATERIALS

All delivery materials required in this contract shall be shipped within the time period specified below. Failure to ship within this period will be considered as failure by the Contractor to prosecute the work as to ensure completion and will render the contract subject to default. Date of shipment will be shown by postmark or carrier receipt.

3.1 Original Materials - Delivery Schedule

The required delivery schedule for all contract materials required for a project item shall be shipped no later than sixty (60) calendar days after the acquisition period has ended, or any season extension thereof.

DELIVERY SCHEDULE		
Item Number	**Project Name**	**Required Shipment Date**
Project Item 1	Boise-Payette National Forest, ID	November 29, 2008
Option Item 1	Boise-Payette NF, Admin Area, ID	November 29, 2008
Option Item 2 or 3	Orthorectification Services	November 29, 2008

It is recommended that materials be shipped when completed, since prompt delivery of materials will better assure timely inspection and avoidance of peak seasonal workload delivery.

3.2 Remake Materials - Delivery Schedule

Remake materials shall be shipped as soon as possible after correction is made, but no later than 30 days after receipt in the Contractor's facility of the materials or data required to make the corrections. Only materials as specifically requested by USDA to be remade shall be submitted for inspection. Signed delivery receipts will be required to verify date of receipt of such data or materials by the Contractor.

F-4 CONTRACTOR'S RESPONSIBILITIES

The Contractor shall: furnish all materials, superintendence, labor, transportation, and equipment; execute and complete the imagery acquisition of the item(s) specified and deliver to the USDA the materials called for; execute all work expeditiously, to the satisfaction of the Contracting Officer or authorized Contracting Officer's Representative(s).

F-5 PERFORMANCE OF THE WORK

The Contracting Officer will authorize and direct the acquisition period to begin or end anytime within thirty (30) days before or after the approximate acquisition dates specified in Section B-2.1(d), Acquisition Period, depending upon the weather, ground, foliage, and sun angle conditions required for the project item. No imagery shall be undertaken before the Notice to Proceed is issued or after the final date of the acquisition period (or its extension) has occurred. Weather and ground conditions for all project locations will be monitored daily to determine Contractor compliance to performance requirements.

5.1 Notice To Proceed

The Notice to Proceed will be given by telephone and confirmed in writing by regular mail. Failure of the Contractor to proceed with flights on a project item within ten (10) calendar days after a "Notice to Proceed" is given, may be considered as evidence of failure to preform the work so as to ensure its timely completion. As evidence of performance, Progress Reports shall be submitted.

5.2 Progress Reports

Progress Reports indicating the progress made in acquiring project aerial photography shall be prepared in accordance with instructions in Section J, Exhibit 4, Progress Reports. Reports shall be submitted only for days performance was accomplished.

Each progress report shall be sent by email transmission not later than the day following performance. In the event that day is a holiday or non-business day, the report shall be sent on the next business day. Separate reports are required from each photographic crew assigned to a project item. Such "next day" reporting shall start when the Contractor receives the Notice to Proceed, and continue until the area is completed or the photographic season and any extension ends.

If it is determined that a season extension or additional flying is required, or reflights are ordered by USDA, reports covering such performance periods shall be submitted.

5.3 Acquisition Period Extension

The Government reserves the right to extend the acquisition period of this contract beyond the approximate period indicated in Section B-2.1(d), Acquisition Period. A lower minimum sun angle requirement may be necessary to allow the season extension.

The Government may extend the season of this contract, at no increase in price, by written notice to the Contractor at any time prior to the end of the acquisition period. (Refer to FAR 52.217-08 "Option to Extend Services".)

5.4 Extension of the Term of the Contract (MAR 2000) (FAR 52.217-09)

IT IS THE EXPRESSED INTENT OF THE GOVERNMENT TO HAVE ALL IMAGERY REQUIRED UNDER THIS CONTRACT COMPLETED WITHIN THE ACQUISITION PERIOD SPECIFIED IN SECTION B.

The Government may extend the term of this contract, at no increase in price, by written notice to the Contractor within six (6) months after the acquisition period has ended. The Contracting Officer may extend this option twice. (Refer to FAR 52.217-09 “Option to Extend the Term of the Contract”.)

F-6 CLAUSES INCORPORATED BY REFERENCE (FEB 1998) (FAR 52.252-2)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this address: www.arnet.gov/far.

FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) CLAUSES:

52.242-15 Stop Work Order (AUG 1989)

52.242-17 Government Delay of Work (APR 1984)

PART I - THE SCHEDULE

SECTION G - CONTRACT ADMINISTRATION DATA

G-1 CONTRACTING OFFICE

The Aerial Photography Field Office (APFO) of the United States Department of Agriculture (USDA), Farm Service Agency (FSA), is responsible for the solicitation, award, and administration of this contract.

Communications shall be directed to:

Contracting Officer, USDA - FSA
Aerial Photography Field Office
2222 West 2300 South
Salt Lake City, Utah 84119-2020

Telephone (801) 844-2910
Facsimile (801) 956-3640

Written correspondence shall reference the contract number and/or solicitation number plus project item number.

G-2 CONTRACTING OFFICER'S REPRESENTATIVE

Each awarded contract item may have a Contracting Officer's Representative (COR) or a Contracting Officer's Technical Representative (COTR). Such designations will be made either at the time of award or by appointment letter.

G-3 CONTRACT INTERPRETATION

Technical assistance regarding interpretation of the specifications and/or terms of the contract will be provided by the Contracting Officer or the COR. Only the Contracting Officer has authority to award, modify, and terminate contracts. The Contractor is encouraged to visit the USDA-APFO facilities and discuss the contract and inspection procedures.

3.1 Discrepancies

Any discrepancy in the schedule or official flight data shall be immediately called to the attention of the Contracting Officer for decision. A discrepancy shall not be adjusted without approval of the Contracting Officer, except at the Contractor's own risk and expense.

G-4 PROGRESS REPORTS

Progress Reports are required for this contract. If completion instructions contained in the reports (see Section J, Exhibit 4) are not adequate, contact the Contracting Officer for clarification. It is essential that all items of information requested on the report be provided. Progress Reports shall be prepared and submitted for performance periods during the acquisition period as state in Section F-5.2, Progress Reports. Failure to comply with the requirement may result in $25,000 or 5 percent of the contract amount, whichever is less, being withheld from payment. (Refer to FAR 52.242-2, Production Progress Reports.)

G-5 SUBCONTRACTS

Before entering into a subcontract covering any part of the work called for, the Contractor shall inform the Contracting Officer and submit information required by the Contracting Officer to determine acceptability and approval of the anticipated subcontractor's equipment to be used.

G-6 CHARGES TO CONTRACTOR

The USDA may, at its option, correct deficiencies found to exist in connection with materials submitted by the Contractor and deduct from the Contractor's vouchers the cost thereof to the Government. When the deficiencies to be corrected are such that the cost exceeds $500.00 at current prices, such corrections will be made only with the prior approval of the Contractor, except in the event of termination for default.

G-7 INVOICES

One original invoice shall be submitted to the Contracting Officer designated in this contract. To constitute a proper invoice, the invoice must include the following information and/or attached documentation:

(a) Name and address of the Contractor
(b) Invoice date.
(c) Contract number, or other authorization for supplies delivered or services performed.
(d) Description, quantity, unit of measure, unit price, and extended price of supplies delivered or services performed.
(e) Shipping and payment terms.
(f) Name (where practicable), title, phone number, and complete mailing address of responsible official to whom payment is to be sent.
(g) Any other information or documentation required by the contract.
(h) While not required, contractors are strongly encouraged to assign an identification number to each invoice.

Notice of an apparent error, defect, or impropriety in an invoice will be given to the Contractor within 7 days of receipt of an invoice and suitable documented.

G-8 PARTIAL PAYMENTS

For a partially completed project item or partially completed area with in a project item, listed as a line item in Section B, acceptance and payment will be made on a DOQQ basis at the rate of ninety (90) percent of the amount due. Any payment thus made is a partial payment of the contract. Upon acceptance of the complete project item awarded, the remaining payment, to total the full payment due for the project item awarded, will be made. Partial payments shall be approved by the Contracting Officer under the conditions stated in FAR 52.232-1, Payments.

G-9 PAYMENT DUE DATE

The required payment date will be thirty (30) calendar days after the date of actual receipt of a proper invoice by the office designated to receive the invoice, or the date all contract deliverables are accepted, whichever is later. The date of the check issued in payment or the date of the payment by electronic funds transfer shall be considered to be the date payment is made.

G-10 INTEREST ON OVERDUE PAYMENTS

The Prompt Payment Act, Public Law 100-496 (96 Stat. 85, 31 USC 1801) is applicable to payments under this contract and requires the payment to Contractors of interest on overdue payments and improperly taken discounts.

Determinations of interest due will be made in accordance with the provisions of the Prompt Payment Act and Office of Management and Budget Circular A-125.

PART I - THE SCHEDULE

SECTION H - SPECIAL CONTRACT REQUIREMENTS

H-1 PERMITS AND CLEARANCES

It shall be the responsibility of the Contractor to determine and secure all necessary permits and clearances for controlled or restricted airspace areas.

The Contractor shall contact the Federal Aviation Administration (FAA) watch supervisor in charge of the Air Traffic Control (ATC) facility to gain approval to operate within controlled airspace. It is suggested that pre-flight coordination be completed at least one week in advance. The FAA suggests that on the day of the flight the photo mission pilot contact the ATC facility and:

(a) Confirm previous arrangements,

(b) State that "this is a photo survey mission" via air/ground communications, and subsequently inform the controller when the flight line is commenced.

Military Operation Areas (MOA) will be identified in advance, and if necessary a contact for airspace clearance established. The Contractor is responsible for obtaining flight approvals and security clearances if required by the U.S. Department of Defense. Photographic and digital materials of classified areas shall be stored, handled, and shipped in accordance with existing security regulations. In the event of difficulty, the Contracting Officer shall be contacted for guidance and/or assistance.

H-2 AIRCRAFT REGULATIONS AND CERTIFICATIONS

All aircraft used in the performance of the work under this contract shall be maintained and operated in accordance with all regulations required by the U.S. Department of Transportation, Federal Aviation Administration (FAA). Aircraft operated in the acquisition of aerial photography or digital imagery under this contract shall be FAA certified to the highest flying altitude required to obtain proposed imagery.

H-3 OWNERSHIP OF CONTRACT MATERIALS

The Government shall receive copyright and ownership to all data delivered under this contract, including but not limited to photographic materials, orthorectified imagery, databases, and paper products, upon formal acceptance. The Contractor may maintain copyright and ownership of all original or derived works which are not required submittals under this contract. The Contractor is encouraged to create, market, and sell derived works not related to or in direct competition with the data delivered under this contract. For example, if this contract requires 1m

orthorectified imagery be delivered to the Government, the Contractor may create 5m imagery from the original product, prior to its submittal to the Government, and resell it to other Government agencies or the general public. However, the Government also maintains the rights to derive additional products from the data delivered under this contract. No public distribution of the original or derived works shall be made prior to acceptance by the Government unless specified in the contract or authorized by the Contracting Officer.

H-4 NOTICE TO THE GOVERNMENT OF DELAY

The Contractor shall immediately, upon becoming aware of any difficulties in meeting performance requirements during the photographic season or when difficulties are encountered which may delay deliveries under the contract, notify the Contracting Officer in writing thereof. Such notification shall identify difficulties, the reasons therefore, and the estimated period of anticipated delay.

FAILURE OF THE CONTRACTOR TO GIVE SUCH NOTICE MAY PRECLUDE LATER CONSIDERATION OF ANY CLAIM FOR NON-PERFORMANCE DUE TO WEATHER CONDITIONS OR ANY REQUEST FOR AN EXTENSION OF CONTRACT TIME.

H-5 WAGE DETERMINATION

The Wage Determination applicable to any contract resulting from this solicitation is determined by the location of the Contractor's establishment.

Wage Determination number 1995-0222, Revision 23, dated February 6, 2008 will be applicable for Contractors located nationwide. See Section J, Exhibit 7, Wage Determination.

H-6 INDUSTRY SMALL BUSINESS STANDARD

The small business industry size standard for the type of services covered by this procurement, under NAICS code 541922, is the average annual receipts of the concern and its affiliates for the preceding three (3) years not in excess of $6.5 million.

PART II - CONTRACT CLAUSES

SECTION I - CONTRACT CLAUSES

I-1 STATEMENT OF EQUIVALENT RATES FOR FEDERAL HIRES (MAY 1989) (FAR 52.222-42)

In compliance with the Service Contract Act of 1965, as amended, and the regulations of the Secretary of Labor (29 CFR part 4), this clause identifies the classes of service employees expected to be employed under the contract and states the wages and fringe benefits payable to each if they were employed by the contracting agency subject to the provisions of 5 U.S.C. 5341 or 5332.

THIS STATEMENT IS FOR INFORMATION ONLY.
IT IS NOT A WAGE DETERMINATION.

Employee Class	Monetary Wage - Fringe Benefits
Aircraft Pilot	$47,444
Aerial Photographer	$23,691
Photo Lab Technician	$22,000

I-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998) (FAR 52.252-2)

This contract incorporates the following clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this address: www.arnet.gov/far.

FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) CLAUSES:

52.202-01 Definitions (JUL 2004)

52.203-03 Gratuities (APR 1984)

52.203-05 Covenant Against Contingent Fees (APR 1984)

52.203-06 Restrictions on Subcontractor Sales to the Government (SEP 2006)

52.203-07 Anti-Kickback Procedures (JUL 1995)

52.203-08 Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity (JAN 1997)

52.203-10 Price or Fee Adjustment for Illegal or Improper Activity (JAN 1997)

52.203-12 Limitation on Payments to Influence Certain Federal Transactions (SEP 2007)

52.204-04 Printing/Copying Double-Sided on Recycled Paper (AUG 2000)

52.204-07 Central Contractor Registration (JUL 2006)

52.204-08 Annual Representations and Certifications (JAN 2006)

52.209-06 Protecting the Government's Interest When Subcontracting With Contractors Debarred, Suspended, or Proposed for Debarment (SEP 2006)

52.211-05 Material Requirements (AUG 2000)

52.215-02 Audit and Records - Negotiation (JUN 1999)

52.215-08 Order of Precedence - Uniform Contract Format (OCT 1997)

52.215-11 Price Reduction for Defective Cost or Pricing Data - Modifications (OCT 1997)

52.215-13 Subcontractor Cost or Pricing Data - Modifications (OCT 1997)

52.215-14 Integrity of Unit Prices (OCT 1997)

52.217-09 Option to Extend the Term of the Contract (MAR 2000)

52.219-08 Utilization of Small Business Concerns (MAY 2004)

52.219-09 Small Business Subcontracting Plan (NOV 2007)

52.222-03 Convict Labor (JUN 2003)

52.222-04 Contract Work Hours and Safety Standards Act - Overtime Compensation (JUL 2005)

52.222-21 Prohibition of Segregated Facilities (FEB 1999)

52.222-26 Equal Opportunity (MAR 2007)

52.222-35 Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans (SEP 2006)

52.222-36 Affirmative Action for Workers with Disabilities (JUN 1998)

52.222-37 Employment Reports on Special Disabled Veterans and Veterans of the Vietnam Era, and Other Eligible Veterans (SEP 2006)

52.222-41 Service Contract Act of 1965, as Amended (NOV 2007)

52.222-44 Fair Labor Standards Act and Service Contract Act - Price Adjustment (FEB 2002)

52.223-06 Drug-Free Workplace (MAY 2001)

52.223-14 Toxic Chemical Release Reporting (AUG 2003)

52.225-03 Buy American Act - North American Free Trade Agreement - Israeli Trade Act (AUG 2007)

52.225-13 Restrictions on Certain Foreign Purchases (FEB 2006)

52.227-01 Authorization and Consent (DEC 2007)

52.227-03 Patent Indemnity (APR 1984)

52.227-14 Rights in Data - General - Alternate I (DEC 2007)

52.229-03 Federal, State, and Local Taxes (APR 2003)

52.232-01 Payments (APR 1984)

52.232-08 Discounts for Prompt Payment (FEB 2002)

52.232-09 Limitation on Withholding of Payments (APR 1984)

52.232-11 Extras (APR 1984)

52.232-17 Interest (JUN 1996)

52.232-19 Availability of Funds for the Next Fiscal Year (APR 1984)

52.232-23 Assignment of Claims (JAN 1986)

52.232-25 Prompt Payment (OCT 2003)

52.233-01 Disputes (JUL 2002)

52.233-03 Protest After Award (AUG 1996)

52.242-02 Production Progress Reports (APR 1991)

52.242-13 Bankruptcy (JUL 1995)

52.243-01 Changes - Fixed Price - Alternate II (AUG 1987)

52.246-25 Limitation of Liability - Services (FEB 1997)

52.248-01 Value Engineering (FEB 2000)

52.249-04 Termination for Convenience of the Government (Services) (Short Form) (APR 1984)

52.249-08 Default (Fixed-Price Supply and Service) (APR 1984)

52.253-01 Computer Generated Forms (JAN 1991)

PART III - LIST OF DOCUMENTS, EXHIBITS, AND OTHER ATTACHMENTS

SECTION J - LIST OF ATTACHMENTS

Exhibit	Description	Page
Exhibit 1	Project Maps (2 page)	39-40
Exhibit 2	File Naming Convention (1 page)	41
Exhibit 3	Labeling Requirements (2 pages)	42-43
Exhibit 4	Progress Report (2 page)	44-45
Exhibit 5	Image Scan Naming Logic (1 page)	46
Exhibit 6	Flight Line Exposure Station Reference System (1 page)	47
Exhibit 7	NAPP Exposure Station Reference System (1 page)	48
Exhibit 8	Wage Determination (5 Pages)	49-53
Exhibit 9	Glossary and Definitions (1 page)	54

Attachment A: APFO Specification for Digital Sensor Based Acquisition, dated April 30, 2008 (4 pages)

Attachment B: DOQQ Description and Specification, dated April 30, 2008 (15 pages)

EXHIBIT 1
Figure 1 (a)

PROJECT MAP

U.S. DEPARTMENT OF AGRICULTURE
AERIAL SURVEY
SOLICITATION NO: USDA-FS-7-08
ITEM 1: Boise & Payette National Forests, IDAHO
IMAGERY: Direct Digital
RESOLUTION: One-foot
PROJECT IDENTIFICATION CODE: 614020

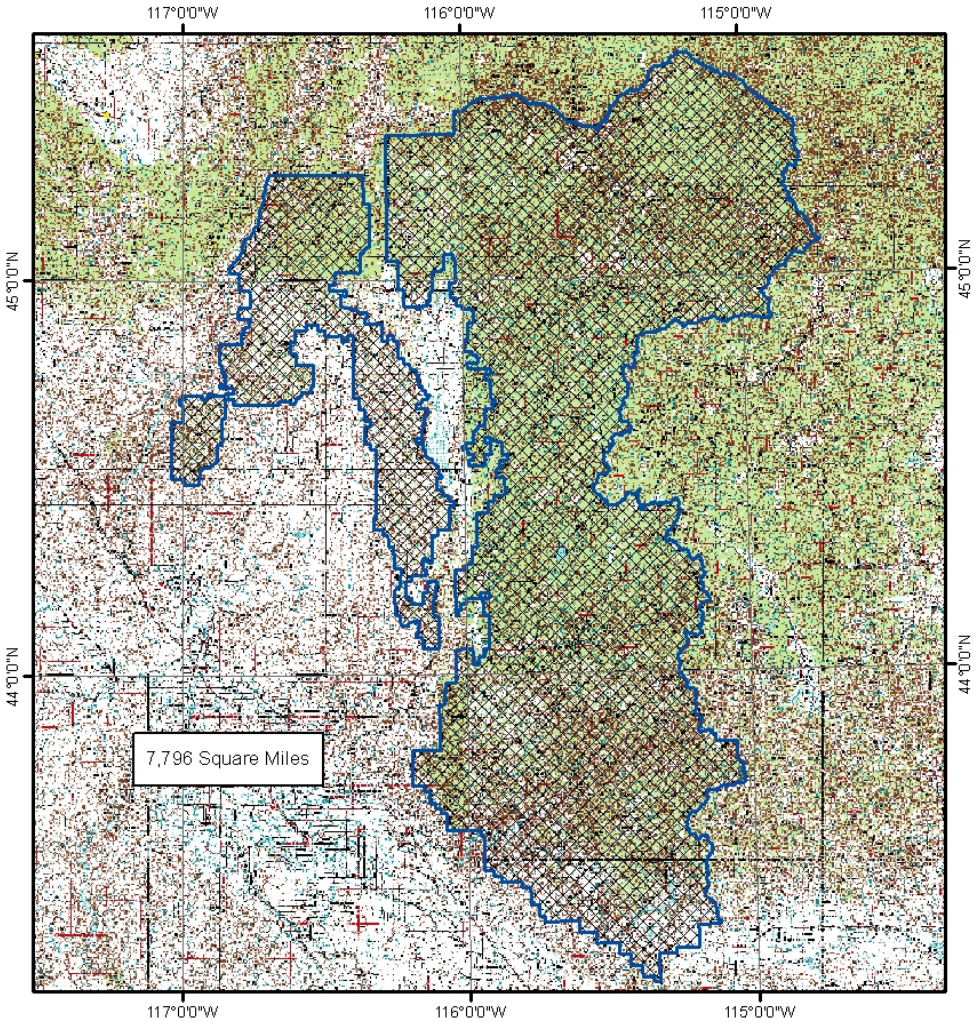


EXHIBIT 1
Figure 1 (b)

PROJECT MAP

U.S. DEPARTMENT OF AGRICULTURE
AERIAL SURVEY
SOLICITATION NO: USDA-FS-7-08
ITEM 2: Boise & Payette National Forests
(Plus Area), IDAHO
IMAGERY: Direct Digital
RESOLUTION: One-foot
PROJECT IDENTIFICATION CODE: 614020

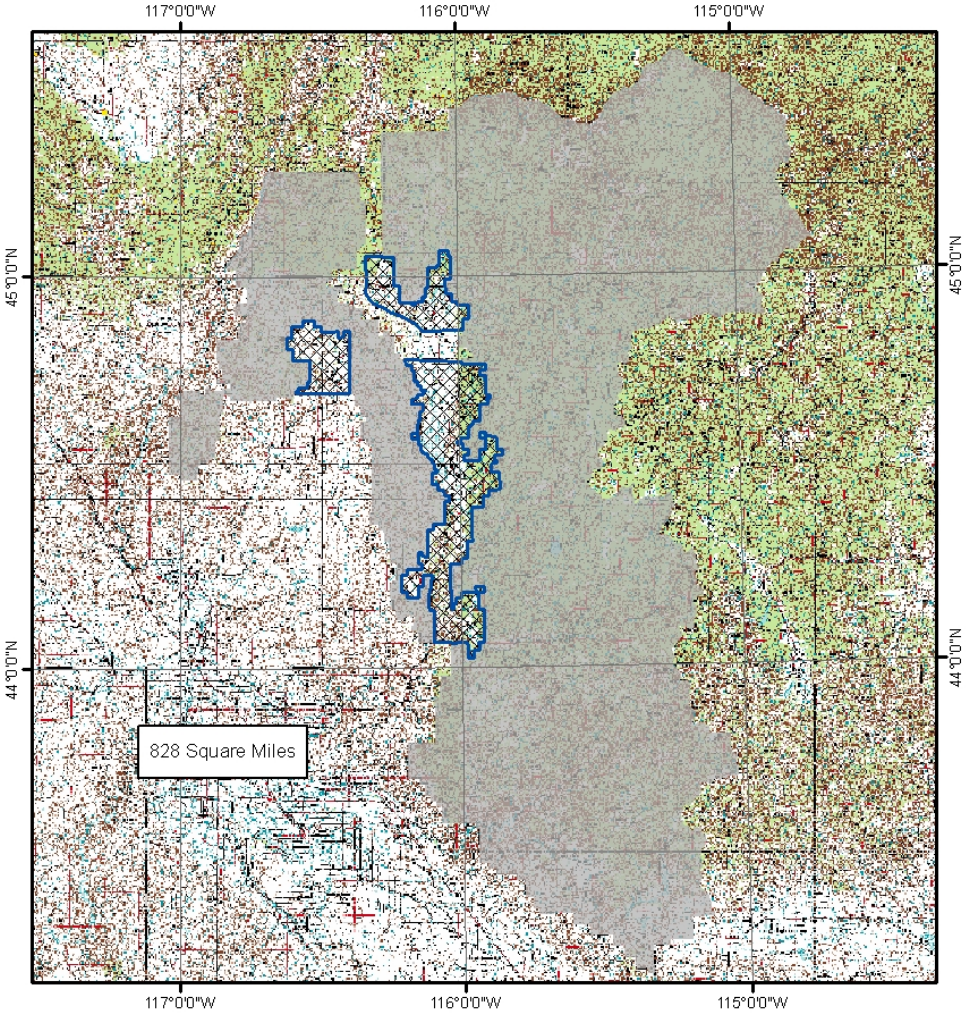


EXHIBIT 2

FILE NAMING CONVENTION

Text Data Files:

File Name: <type>_<solno>_<item>_<st>.txt

type - file type (must be “process-georeferenced” “process” “project” or “photo”)
solno - contract solicitation number
item - item number
st - state abbreviation

Example: process_1-08_1_ak.txt
project_1-08_1_ak.txt

Non-geoprocessed, Unprocessed Digital Image Files:

File Name: cnf_<imagenumber>_<yymmdd>.tif

<imagenumber> - consecutively numbered value
<yymmdd> - image exposure date

Example: process_1-08_1_ak.tif
project_1-08_1_ak.tif

Quarter Quadrangle Image Tiles:

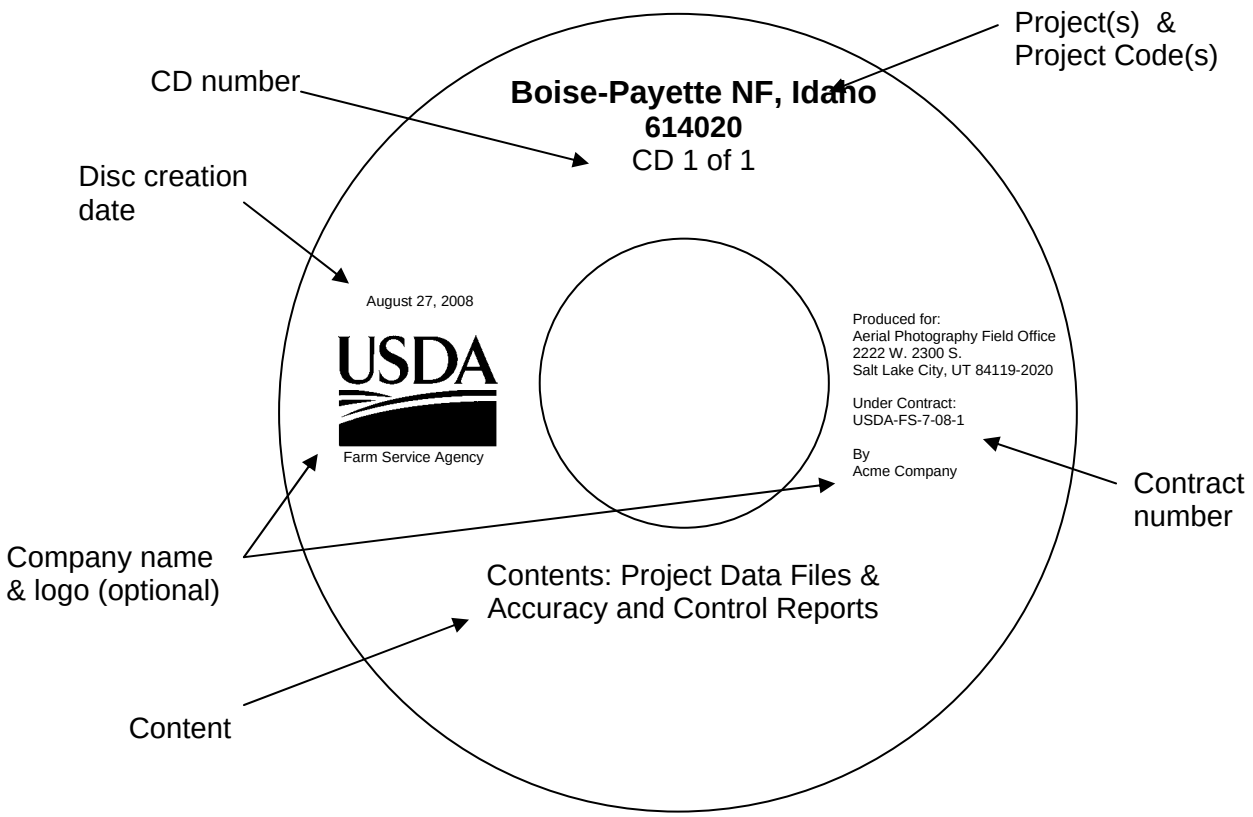
File Name: <n>_<lat><lon><quad>_<loc>_<xx>_<r>_<yyyymmdd>.tif

n – film type/bandwidth designator (“o”=black & white; “n”=natural color;” “c”=color IR, or “m”=multispectral)
lat - latitude, identified by 2 digit numerical value of a 1º block
lon - longitude, identified by 3 digit numerical value of a 1º block (including the leading “0” if needed)
quad - quadrangle number, identified by grid number
loc - quadrangle location, identified by grid letters (nw, ne, sw, se)
xx – two digit UTM zone
r - resolution (1=1 meter; 2=2 meter)
yyyymmdd - date of acquisition (majority date)

Example: c_3509320_ne_15_1_20080721.tif

EXHIBIT 3
Figure 1

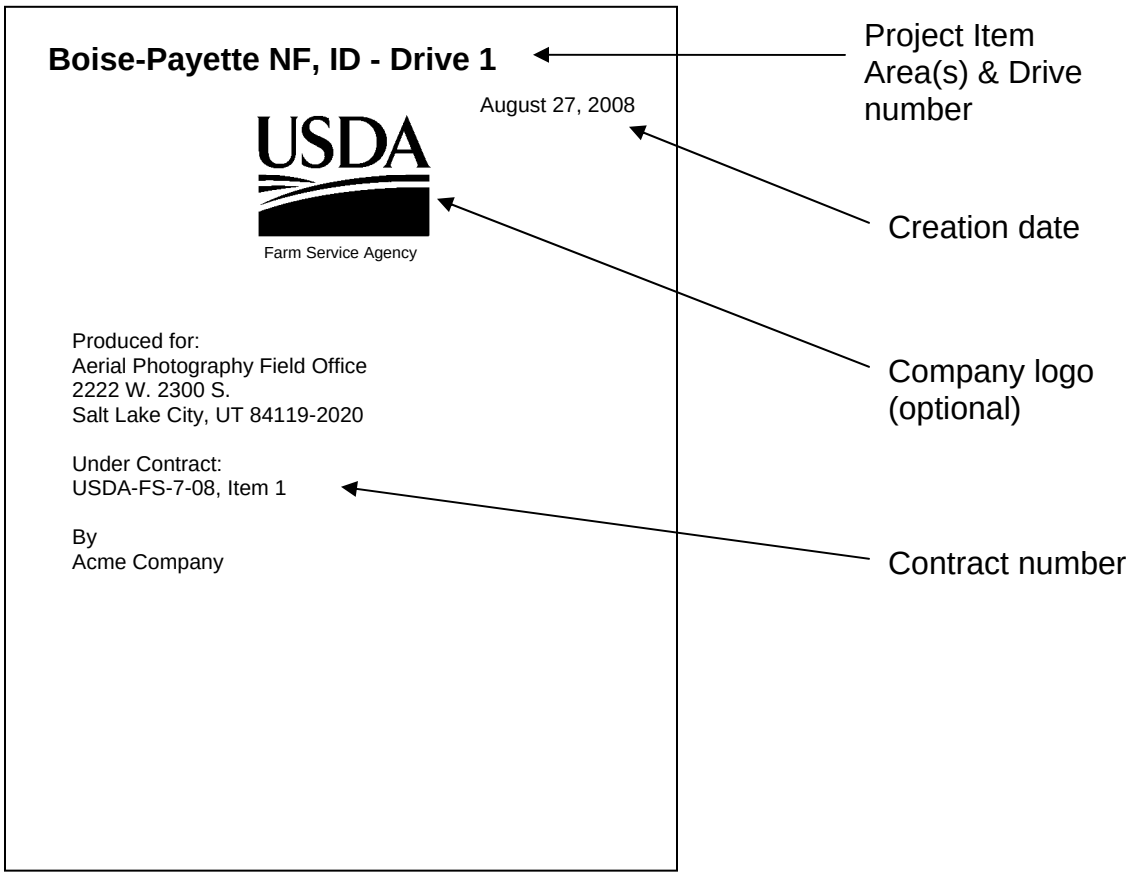
CD/DVD Labeling Requirements



ELEMENT	EXAMPLE
CD Number	CD 1 of 1
Company name & logo	Acme Company
Content	Project Data Files & Accuracy and Control Reports
Contract number	USDA-FS-7-08-1
Creation date	August 27, 2008
Project Code	614020

EXHIBIT 3
Figure 2

External Hard Drive Labeling Requirements



ELEMENT	EXAMPLE
Company name & logo	Acme Company
Contract number	USDA-FS-7-08-1
Creation date	August 27, 2008
Project item area & drive number	Boise-Payette NF, ID–Hard Drive 1

Approximate label dimensions: 3-1/2” (width) x 4-1/2” (height)

EXHIBIT 4

PROGRESS REPORT CONVENTION

Syntax:

HEADER ITEMS:	field-name ":"[field-body][CRLF]
BODY ITEMS:	body item [CRLF]

Header Items:
All four header items are required to be submitted in each and every submittal.

DESCRIPTION	KEYWORD	FORMAT
Contractor Name	CONTRACTOR	Alphanumeric
Contract Award Number	CONTRACT	Numeric (N-YY)
Award Item	ITEM	Numeric (N)
Date Flown	DATE	Date (YYYYMMDD)

Body Items:
All data elements are required for each line of data submitted. Data elements are to be separated by 5 ASCII decimal 32 (white space). Acquisition and rejected exposure stations can be submitted as separate reports or as a combined report.

DESCRIPTION	KEYWORD	FORMAT
Latitude	N/A	DD.DDDDD
Longitude	N/A	-DDD.DDDDD
Status	N/A	Char(1)*

* Status Field:
A - Indicates the Exposure Station has been collected
R – Indicates the contractor has rejected a previously acquired Exposure Station

When an exposure station is rejected the exposure station will appear in a later report marked with an "R". Each report submitted should include only one status indicator for a particular exposure station.

EXHIBIT 4 (CON'T)

PROGRESS REPORT CONVENTION

Sample:

```
CONTRACTOR:  Acme Photography
CONTRACT:  7-08
ITEM:  1
DATE:  20080827

64.00002    -144.18751    A
64.04166    -144.18750    A
64.08332    -144.18752    A
64.12501    -144.18751    A
```

Notes:
1) Text is case insensitive.
2) Header fields are not required to occur in any particular order.
3) Body items must occur after the headers.
4) Each header item must be on a single line (no "folding")
5) Keywords may not contain spaces and must be followed immediately by a colon.
6) The header items and body items may be separated by a NULL line (a blank line with a carriage-return/line-feed (CRLF)(ASCII 13 and 10).
7) Body items can only contain one data item per line and must be terminated by a carriage-return/line-feed.
8) Contract award number must be sent without prefix (i.e., USDA-FS-7-08 should be sent as 7-08).
9) Date must be transmitted as YYYYMMDD.
10) No e-mail attachments.

EXHIBIT 5

IMAGE SCAN NAMING LOGIC

121° 00' 00"
49° 00' 00" •

01	02	03	04	05	06	07	08
09	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56
57	58	59	60	61	62	63	64

• 48° 00' 00"
120° 00' 00"

NW	NE
SW	SE

The image ID for this scan would be:
4812043_ne

Each Block (ie: 43) is a full Quad within the 1 degree grid; it is further subdivided into 4 quarter-quads

Sample: **4812043_ne** Where:

Latitude: Identified by 2 digit numerical value of a 1 degree block.
Longitude: Identified by 3 digit numerical value of a 1 degree block, including a leading “0" as needed.
Quadrangle Number: Identified by grid number (01, 02, 03, ... 63, 64) See Exhibit 7.
Quarter Quadrangle Location: Identified by grid letters (nw, ne, sw, se)

EXHIBIT 6

FLIGHT LINE EXPOSURE STATION REFERENCE SYSTEM

95º 00’

	96º 00’	**95º 45’**		**95º 30’**		**95º 15’**		**95º 00’**	
	8W / 8E	**7W / 7E**	**6W / 6E**	**5W / 5E**	**4W / 4E**	**3W / 3E**	**2W / 2E**	**1W / 1E**	
40º 00’	**513**	**513**	**513**	**513**	**513**	**513**	**513**	**513**	**40º 00’**
	512	512	512	512	512	512	512	512	
	511	511	511	511	511	511	511	511	
	510	510	510	510	510	510	510	510	
	509	509	509	509	509	509	509	509	
	508	508	508	508	508	508	508	508	
	507	507	507	507	507	507	507	507	
	506	506	506	506	506	506	506	506	
39º 45’	**505**	**505**	**505**	**505**	**505**	**505**	**505**	**505**	**39º 45’**
	504	504	504	504	504	504	504	504	
	503	503	503	503	503	503	503	503	
	502	502	502	502	502	502	502	502	
	501	501	501	501	501	501	501	501	
	500	500	500	500	500	500	500	500	
	499	499	499	499	499	499	499	499	
	498	498	498	498	498	498	498	498	
39º 30’	**497**	**497**	**497**	**497**	**497**	**497**	**497**	**497**	**39º 30’**
	496	496	496	496	496	496	496	496	
	495	495	495	495	495	495	495	495	
	494	494	494	494	494	494	494	494	
	493	493	493	493	493	493	493	493	
	492	492	492	492	492	492	492	492	
	491	491	491	491	491	491	491	491	
	490	490	490	490	490	490	490	490	
39º 15’	**489**	**489**	**489**	**489**	**489**	**489**	**489**	**489**	**39º 15’**
	488	488	488	488	488	488	488	488	
	487	487	487	487	487	487	487	487	
	486	486	486	486	486	486	486	486	
	485	485	485	485	485	485	485	485	
	484	484	484	484	484	484	484	484	
	483	483	483	483	483	483	483	483	
	482	482	482	482	482	482	482	482	
39º 00’	**481**	**481**	**481**	**481**	**481**	**481**	**481**	**481**	**39º 00’**
	8W / 8E	**7W / 7E**	**6W / 6E**	**5W / 5E**	**4W / 4E**	**3W / 3E**	**2W / 2E**	**1W / 1E**	

FLIGHT LINE AND EXPOSURE EXAMPLE FOR NORTHEAST CORNER EXPOSURE: 0951E - 0513

Flight Line: **095** = Eastern Longitude coordinate of 1 degree x 1 degree area (padded by leading zeros).
1 = Number assigned to 7-1/2 minute column within 1 degree x 1 degree area.
E = East flight line within 7-1/2 minute column.

Exposure Station: **0513** = number assigned by latitude position to each predetermined photo center.

The Flight Line and Exposure Station Reference System was developed for identifying the geographic location of individual photos acquired for the National Aerial Photography Program.

EXHIBIT 7

NAPP EXPOSURE STATION REFERENCE SYSTEM

50° -- 833				
7 -- 829	7 -- 669	7 -- 509	7 -- 349	7 -- 189	7 -- 29
6 -- 825	6 -- 665	6 -- 505	6 -- 345	6 -- 185	6 -- 25
5 -- 821	5 -- 661	5 -- 501	5 -- 341	5 -- 181	5 -- 21
4 -- 817	4 -- 657	4 -- 497	4 -- 337	4 -- 177	4 -- 17
3 -- 813	3 -- 653	3 -- 493	3 -- 333	3 -- 173	3 -- 13
2 -- 809	2 -- 649	2 -- 489	2 -- 329	2 -- 169	2 -- 9
1 -- 805	1 -- 645	1 -- 485	1 -- 325	1 -- 165	1 -- 5
49° -- 801	44° -- 641	39° -- 481	34° -- 321	29° -- 161	24° -- 1
7 -- 797	7 -- 637	7 -- 477	7 -- 317	7 -- 157	
6 -- 793	6 -- 633	6 -- 473	6 -- 313	6 -- 153	
5 -- 789	5 -- 629	5 -- 469	5 -- 309	5 -- 149	
4 -- 785	4 -- 625	4 -- 465	4 -- 305	4 -- 145	
3 -- 781	3 -- 621	3 -- 461	3 -- 301	3 -- 141	
2 -- 777	2 -- 617	2 -- 457	2 -- 297	2 -- 137	
1 -- 773	1 -- 613	1 -- 453	1 -- 293	1 -- 133	
48° -- 769	43° -- 609	38° -- 449	33° -- 289	28° -- 129	
7 -- 765	7 -- 605	7 -- 445	7 -- 285	7 -- 125	
6 -- 761	6 -- 601	6 -- 441	6 -- 281	6 -- 121	
5 -- 757	5 -- 597	5 -- 437	5 -- 277	5 -- 117	
4 -- 753	4 -- 593	4 -- 433	4 -- 273	4 -- 113	
3 -- 749	3 -- 589	3 -- 429	3 -- 269	3 -- 109	
2 -- 745	2 -- 585	2 -- 425	2 -- 265	2 -- 105	
1 -- 741	1 -- 581	1 -- 421	1 -- 261	1 -- 101	
47° -- 737	42° -- 577	37° -- 417	32° -- 257	27° -- 97	
7 -- 733	7 -- 573	7 -- 413	7 -- 253	7 -- 93	
6 -- 729	6 -- 569	6 -- 409	6 -- 249	6 -- 89	
5 -- 725	5 -- 565	5 -- 405	5 -- 245	5 -- 85	
4 -- 721	4 -- 561	4 -- 401	4 -- 241	4 -- 81	
3 -- 717	3 -- 557	3 -- 397	3 -- 237	3 -- 77	
2 -- 713	2 -- 553	2 -- 393	2 -- 233	2 -- 73	
1 -- 709	1 -- 549	1 -- 389	1 -- 229	1 -- 69	
46° -- 705	41° -- 545	36° -- 385	31° -- 225	26° -- 65	
7 -- 701	7 -- 541	7 -- 381	7 -- 221	7 -- 61	
6 -- 697	6 -- 537	6 -- 377	6 -- 217	6 -- 57	
5 -- 693	5 -- 533	5 -- 373	5 -- 213	5 -- 53	
4 -- 689	4 -- 529	4 -- 369	4 -- 209	4 -- 49	
3 -- 685	3 -- 525	3 -- 365	3 -- 205	3 -- 45	
2 -- 681	2 -- 521	2 -- 361	2 -- 201	2 -- 41	
1 -- 677	1 -- 517	1 -- 357	1 -- 197	1 -- 37	
45° -- 673	40° -- 513	35° -- 353	30° -- 193	25° -- 33	

SAMPLE:

40°
7 --39° 52½'
6 --39° 45'
5 --39° 37½'
4 --39° 30'
3 --39° 22½'
2 --39° 15'
1 --39° 7½'
39°

EXHIBIT 8

1995022223.txt

```
REGISTER OF WAGE DETERMINATIONS UNDER  |        U.S. DEPARTMENT OF LABOR
       THE SERVICE CONTRACT ACT        |  EMPLOYMENT STANDARDS ADMINISTRATION
By direction of the Secretary of Labor |         WAGE AND HOUR DIVISION
                                       |         WASHINGTON D.C.  20210
                                       |
                                       |
                                       |
                                       | Wage Determination No.: 1995-0222
William W.Gross          Division of   |           Revision No.: 23
Director            Wage Determinations|  Date Of Last Revision: 02/06/2008
_______________________________________|_____________________________________

Nationwide: Applicable in the continental U.S. Alaska, Puerto Rico, Hawaii and
Virgin Islands.

_____________________________________________________________________________

          **Fringe Benefits Required Follow the Occupational Listing**

OCCUPATION CODE - TITLE                                   MINIMUM WAGE RATE

31010 - Airplane Pilot                                            23.62
(not set) - First Officer (Co-Pilot)                              21.51
(not set) - Aerial Photographer                                   11.80


EXCEPT SCHEDULED AIRLINE TRANSPORTATION AND LARGE MULTI-ENGINE AIRCRAFT SUCH AS THE
B-727, DC-8, AND THE DC-9.

_____________________________________________________________________________

▯

ALL OCCUPATIONS LISTED ABOVE RECEIVE THE FOLLOWING BENEFITS:

                                   Page 1
```

EXHIBIT 8 (Con't)

1995022223.txt

HEALTH & WELFARE: $3.16 per hour or $126.40 per week or $547.73 per month

VACATION: 2 weeks paid vacation after 1 year of service with a contractor or successor; 3 weeks after 5 years, and 4 weeks after 15 years. Length of service includes the whole span of continuous service with the present contractor or successor, wherever employed, and with the predecessor contractors in the performance of similar work at the same Federal facility. (Reg. 29 CFR 4.173)

HOLIDAYS: A minimum of ten paid holidays per year, New Year's Day, Martin Luther King Jr's Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day, and Christmas Day. (A contractor may substitute for any of the named holidays another day off with pay in accordance with a plan communicated to the employees involved.) (See 29 CFR 4174)

VACATION (Hawaii): 2 weeks paid vacation after 1 year of service with a contractor or successor; 3 weeks after 10 years, and 4 weeks after 15 years. Length of service

includes the whole span of continuous service with the present contractor or successor, wherever employed, and with the predecessor contractors in the performance of similar work at the same Federal facility. (Reg. 29 CFR 4.173)

HEALTH & WELFARE (Hawaii): $1.37 per hour, or $54.80 per week, or $237.47 per month hour for all employees on whose behalf the contractor provides health care benefits pursuant to the Hawaii prepaid Health Care Act. For those employees who are not receiving health care benefits mandated by the Hawaii prepaid Health Care Act, the new health and welfare benefit rate will be $3.16 per hour.

HAZARDOUS PAY DIFFERENTIAL: An 8 percent differential is applicable to employees employed in a position that represents a high degree of hazard when working with or in close proximity to ordinance, explosives, and incendiary materials. This includes work such as screening, blending, dying, mixing, and pressing of sensitive ordance, explosives, and pyrotechnic compositions such as lead azide, black powder and photoflash powder. All dry-house activities involving propellants or explosives. Demilitarization, modification, renovation, demolition, and maintenance

operations on sensitive ordnance, explosives and incendiary materials. All operations involving regrading and cleaning of artillery ranges.

A 4 percent differential is applicable to employees employed in a position that represents a low degree of hazard when working with, or in close proximity to ordance, (or employees possibly adjacent to) explosives and incendiary materials which involves potential injury such as laceration of hands, face, or arms of the employee engaged in the operation, irritation of the skin, minor burns and the like; minimal damage to immediate or adjacent work area or equipment being used. All operations involving, unloading, storage, and hauling of ordance, explosive, and

incendiary ordnance material other than small arms ammunition. These differentials are only applicable to work that has been specifically designated by the agency for

Page 2

EXHIBIT 8 (Con't)

ordance, explosives, and incendiary material differential pay.

** UNIFORM ALLOWANCE **

If employees are required to wear uniforms in the performance of this contract (either by the terms of the Government contract, by the employer, by the state or local law, etc.), the cost of furnishing such uniforms and maintaining (by laundering or dry cleaning) such uniforms is an expense that may not be borne by an employee where such cost reduces the hourly rate below that required by the wage determination. The Department of Labor will accept payment in accordance with the following standards as compliance:

The contractor or subcontractor is required to furnish all employees with an adequate number of uniforms without cost or to reimburse employees for the actual cost of the uniforms. In addition, where uniform cleaning and maintenance is made the responsibility of the employee, all contractors and subcontractors subject to this wage determination shall (in the absence of a bona fide collective bargaining agreement providing for a different amount, or the furnishing of contrary affirmative proof as to the actual cost), reimburse all employees for such cleaning and maintenance at a rate of $3.35 per week (or $.67 cents per day). However, in those instances where the uniforms furnished are made of "wash and wear" materials, may be routinely washed and dried with other personal garments, and do not require any special treatment such as dry cleaning, daily washing, or commercial laundering in order to meet the cleanliness or appearance standards set by the terms of the Government contract, by the contractor, by law, or by the nature of the work, there is no requirement that employees be reimbursed for uniform maintenance costs.

The duties of employees under job titles listed are those described in the "Service Contract Act Directory of Occupations", Fifth Edition, April 2006, unless otherwise indicated. Copies of the Directory are available on the Internet. A links to the Directory may be found on the WHD home page at http://www.dol.gov/esa/whd/ or through the Wage Determinations On-Line (WDOL) Web site at http://wdol.gov/.

REQUEST FOR AUTHORIZATION OF ADDITIONAL CLASSIFICATION AND WAGE RATE {Standard Form 1444 (SF 1444)}

Conformance Process:

The contracting officer shall require that any class of service employee which is not listed herein and which is to be employed under the contract (i.e., the work to be performed is not performed by any classification listed in the wage determination), be classified by the contractor so as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination. Such

EXHIBIT 8 (Con't)

1995022223.txt

conformed classes of employees shall be paid the monetary wages and furnished the fringe benefits as are determined. Such conforming process shall be initiated by the contractor prior to the performance of contract work by such unlisted class(es) of employees. The conformed classification, wage rate, and/or fringe benefits shall be retroactive to the commencement date of the contract. {See Section 4.6 (C)(vi)} When multiple wage determinations are included in a contract, a separate SF 1444 should be prepared for each wage determination to which a class(es) is to be conformed.

The process for preparing a conformance request is as follows:

1) When preparing the bid, the contractor identifies the need for a conformed occupation(s) and computes a proposed rate(s).

2) After contract award, the contractor prepares a written report listing in order proposed classification title(s), a Federal grade equivalency (FGE) for each proposed classification(s), job description(s), and rationale for proposed wage rate(s), including information regarding the agreement or disagreement of the authorized representative of the employees involved, or where there is no authorized representative, the employees themselves. This report should be submitted to the contracting officer no later than 30 days after such unlisted class(es) of employees performs any contract work.

3) The contracting officer reviews the proposed action and promptly submits a report of the action, together with the agency's recommendations and pertinent information including the position of the contractor and the employees, to the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, for review. (See section 4.6(b)(2) of Regulations 29 CFR Part 4).

4) Within 30 days of receipt, the Wage and Hour Division approves, modifies, or disapproves the action via transmittal to the agency contracting officer, or notifies the contracting officer that additional time will be required to process the request.

5) The contracting officer transmits the Wage and Hour decision to the contractor.

6) The contractor informs the affected employees.

Information required by the Regulations must be submitted on SF 1444 or bond paper.

When preparing a conformance request, the "Service Contract Act Directory of

Page 4

EXHIBIT 8 (Con't)

Occupations" (the Directory) should be used to compare job definitions to insure that duties requested are not performed by a classification already listed in the wage determination. Remember, it is not the job title, but the required tasks that determine whether a class is included in an established wage determination. Conformances may not be used to artificially split, combine, or subdivide classifications listed in the wage determination.

** OCCUPATIONS NOT INCLUDED IN THE SCA DIRECTORY OF OCCUPATIONS **

Aerial Photographer

The aerial photographer must be skilled in reading flight maps, capable of assisting

the pilot to adhere to flight lines, be able to level and operate a cartographic camera and its auxiliary equipment mounted in the aircraft so that the photographs that are taken will have the required forward lap and side lap for use in photogrammetric mapping equipment, and possess a working knowledge of aerial films and camera filters to insure proper exposure of the films.

First Officer (Co-Pilot)

Is second in command of commercial airplane and its crew while transporting passengers, mail, or other cargo on scheduled or nonscheduled flights. Assists or relieves an airline captain in operating the controls of an airplane; monitoring flight and engine instruments; and maintaining air-to-ground communications.

EXHIBIT 9

GLOSSARY AND DEFINITIONS

Acquisition Period: The calendar period in which the project item area imagery is required to be acquired.

Camera System: The combination of lens, cone, magazine(s), and camera filter(s) which have been calibrated as an integral unit.

Contract Award Item: A separately awarded contract that may contain one or more project item areas awarded to a single contractor. Contract award items are indicated by the numeric solicitation number followed by sequential award item numbers (i.e., 1-06-1, 1-06-2, 1-06-3, etc).

Contracting Officer's Technical Representative (COTR): A person who has the responsibility of providing technical information such as site ground and weather conditions on a contract.

Contracting Officer's Representative (COR): A person who is responsible for specific technical and administrative duties related to a contract.

Direct Digital Imagery: Vertical, high resolution imagery directly captured using a digital sensor. Either airborne or space-borne systems.

Exposure Stations: Pre-determined locations where photo centers of individual frames are to be exposed.

Georeferenced: Registering data with correct real world coordinates. Defining location using map coordinates and assignment of a known reference system, which allows data to be viewed, queried, and analyzed with other geographic data.

Ground Sample Distance: The ground sample distance is the distance on the ground represented by each pixel in the x and y components.

Original Imagery/Photography: All aerial imagery/photography, as secured by the Contractor, prior to its inspection by the USDA, including any reflights made at the discretion of the Contractor.

Project Item Area: An area or areas described in the Schedule for which an award shall be made to one offeror.

Quarter Quadrangle: A full quadrangle is defined in Alaska as a 30 by 15 minute (except between latitude 59º and 62º North, where the full quadrangle is defined as 22½ by 15 minute) area as established for the USGS topographic mapping series. A quarter quadrangle is one-fourth the size and is 15 by 7½ minute (or 11¼ by 7½ minute between latitude 59º and 62º North).

Reflight Photography: Photography reflown to replace original imagery/photography rejected by USDA.

Remake Materials: Any contract materials ordered remade by USDA.

Stereomodel: The area covered by the conjugate images of three successive overlapping exposures.

Uncorrected: Not radiometricly corrected or balanced

PART IV - REPRESENTATIONS AND INSTRUCTIONS

SECTION K

REPRESENTATIONS, CERTIFICATIONS, AND OTHER STATEMENTS OF OFFERORS

K-1 ANNUAL REPRESENTATIONS AND CERTIFICATIONS (JAN 2006) (FAR 52.204-8)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is **541922**.

(2) The small business size standard is **$6.5 million**.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b)(1) If the clause at 52.204-7, Central Contractor Registration, is included in this solicitation, paragraph (c) of this provision applies.

(2) If the clause at 52.204-7 is not included in this solicitation, and the offeror is currently registered in CCR, and has completed the ORCA electronically, the offeror may choose to use paragraph (c) of this provision instead of completing the corresponding individual representations and certifications in the solicitation. The offeror shall indicate which option applies by checking one of the following boxes:

[ ] (i) Paragraph (c) applies.

[ ] (ii) Paragraph (c) does not apply and the offeror has completed the individual representations and certifications in the solicitation.

(c) The offeror has completed the annual representations and certifications electronically via the Online Representations and Certifications Application (ORCA) website at http://orca.bpn.gov. After reviewing the ORCA database information, the offeror verifies by submission of the offer that the representations and certifications currently posted electronically have been entered or updated within the last 12 months, are current, accurate, complete, and applicable to this solicitation (including the business size standard applicable to the NAICS code referenced for this solicitation), as of the date of this offer and are incorporated in this offer by reference (see FAR 4.1201); except for the changes identified below *[offeror to insert changes, identifying change by clause number, title, date]*. These amended representation(s) and/or certification(s) are also incorporated in this offer and are current, accurate, and complete as of the date of this offer.

FAR Clause #	Title	Date	Change
_____	_____	_____	_____

Any changes provided by the offeror are applicable to this solicitation only, and do not result in an update to the representations and certifications posted on ORCA.

(End of provision)

K-2 INCOMPLETE CONTRACTS AS OF DATE OF PROPOSAL:

Indicate by Linear Miles	Remaining Work - Summer	Remaining Work - Winter
U.S. Government Contracts		
All Other Contracts		

K-3 AIRCRAFT TO BE USED IN COMPLETION OF ITEM(S) IN THIS CONTRACT:

Make/Model	Registration #	Operating Ceiling	Offeror Owned (check appropriate block)
			[ ] Yes [ ] No *
			[ ] Yes [ ] No *
			[ ] Yes [ ] No *

* If the aircraft is/are not offeror owned, a written statement of availability from the owner of the aircraft must be enclosed. See Section C-2.

K-4 CAMERA(S) TO BE USED IN COMPLETION OF ITEM(S) IN THIS CONTRACT:

Current calibration report(s) must be enclosed or on file at the Aerial Photography Field Office.

Calibration Report Number	Camera Make/Model	Serial Number	Offeror Owned (check appropriate block)
			[ ] Yes [ ] No *
			[ ] Yes [ ] No *
			[ ] Yes [ ] No *

* If the camera(s) is/are not offeror owned, a written statement of availability from the owner(s) of the camera(s) must be enclosed. See Section C-4.

K-5 ADDRESS TO WHICH PAYMENT SHOULD BE MAILED

In the space provided below, the Contractor is requested to indicate the address to which payment should be mailed, or indicate "same" if it is the same as the address shown on the solicitation form (page 1).

_____

_____

K-6 PAST PERFORMANCE REFERENCES

If no previous contracts have been held by the offeror with the Aerial Photography Field Office, list two (2) references with whom the offeror has held similar contracts. If possible, one reference should be within the Federal Government.

(List company or agency name, address, name of person to contact, and telephone number)

(1)_____ (2)_____

_____ _____

_____ _____

K-7 KEY PERSONNEL INTENDED FOR PERFORMANCE ON THIS CONTRACT:

List all key professional and technical personnel intended to perform on this contract. List may include project manager, pilot(s), photographer(s), and key back-up or support personnel.

Name	Title	Education	Years of Experience

K-4 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998) (FAR 52.252-1)

This contract incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this address: www.arnet.gov/far.

FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) PROVISIONS:

52.203-11 Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions (SEP 2005)

52.204-05 Women-Owned Business (Other Than Small Business) (MAY 1999)

PART IV - REPRESENTATIONS AND INSTRUCTIONS

SECTION L - INSTRUCTIONS, CONDITIONS, AND NOTICES TO OFFERORS

L-1 TYPE OF CONTRACT (APR 1984)(FAR 52.216-01)

The Government contemplates award of a Firm-Fixed-Price contract resulting from this solicitation.

L-2 INSTRUCTIONS FOR PREPARATION OF TECHNICAL AND PRICING PROPOSALS

The following instructions establish the acceptable minimum requirements for the format and content of proposals. Offeror's are advised to furnish all information in the sequence and format specified below. Failure to furnish all information requested may adversely affect the evaluation of the proposal. Proposals will be evaluated in accordance with the evaluation factors set forth in Section M of this solicitation.

2.1 General Instructions

Proposal must be prepared in two parts: Part I: Pricing Proposal, and Part II: Technical Proposal. Each of the parts shall be separate and complete in itself so that evaluation of one may be accomplished independently from evaluation of the other. The technical proposal must not contain any reference to cost or price.

Proposal should be precise, factual and responsive and must include, but is not limited to, the information listed below. Proposal content shall be organized in two separate parts and be submitted in the order indicated as follows:

2.2 PART I Pricing Proposal

Pricing information and related data shall be submitted as Part I of the offeror's proposal. Each proposal must contain a signed and dated Standard Form 33 (page 1 of the solicitation) with items 12 through 18 completed. Section B should be submitted in its entirety with the quantities offered, the unit price(s), and the total price(s) for the item(s) indicated in the appropriate locations.

2.3 PART II Technical Proposal

Response to the following technical statements will form the basis of a proposal's technical merit. Offerors are cautioned to address all requested information as complete and accurate as possible. Data contained in Section K of the solicitation document shall be referenced in support of statements.

(a) Project Management Capability

(1) Statement of technical approach to project management that would assure timely completion and shipment of all work by or before the required delivery schedule. Statement should include detailed description of planned approach, procedures, management techniques, capacities, and specialized equipment and processes to be used in performance of the work.

(2) Statement of subcontractor management plan which includes a list of proposed subcontractors, what work they will perform, and how their performance will be managed and monitored.

(3) Scheduling and site basing of aerial photo crew and aircraft based on knowledge of the weather patterns during the acquisition period of the project item.

(4) Detailed overviews of scanning and/or digital image processing procedures of the aerial photography/imagery.

(b) Past Performance History

(1) Past performance will be evaluated based on relevant performance history contained in USDA contract records of projects awarded by the FSA Aerial Photography Field Office. Offeror's past performance will be evaluated according to the following criteria and may include other relevant factors:

(i) Contract performance record;
(ii) Project completion record;
(iii) Delivery schedule compliance record.

(2) If no previous contracts have been held by the offeror with the Aerial Photography Field Office, list two (2) references with whom the offeror has held similar contracts. List past performance references in the space provided in Section K of the solicitation document.

(3) If an offeror does not have, or have available, a past performance history, the offeror's proposal will not be evaluated favorably or unfavorably on past performance.

(c) Quality Control System

Detailed statement on Contractor quality control system that will insure all contract materials submitted for inspection are in compliance with contract specifications. (See Section C, Paragraph 1.1(c), Section C-1.3) for quality control requirements.

(d) Personnel Qualifications

List all professional and technical personnel intended to perform on this contract in the

appropriate location in Section K of this solicitation document. Recommended list includes: Project Manager, Aircraft Pilot(s), Aerial Photographer(s), and key back-up or support personnel. Brief resumes may be provided on separate papers for the personnel listed, stating name, title, education, past experience, and years of experience.

(e) Aircraft and Digital Sensor Availability

List all aircraft and digital sensors intended to be used in completion of this contract in the appropriate locations in Section K of the solicitation document. If availability of equipment is contingent on other contractual commitments running concurrently with the work contemplated by this solicitation, indicate such in proposal statement. Unless otherwise stated, all aircraft and digital sensors listed will have exclusive availability for performance of the work as defined in this contract.

(f) Incomplete Contracts

List all incomplete contracts which require performance during the approximate photographic period indicated in Section B and affect equipment and personnel listed herein. List shall include project name, client, and remaining linear miles. Total remaining linear miles shall be summarized in the appropriate location in Section K of the solicitation document.

2.4 Solicitation Document and Supporting Data

The offeror's proposal must include the following required information and supporting data specified in the solicitation document:

Section K:

(a) Annual Representations and Certifications (CCR and ORCA),
(b) Incomplete Contracts as of Date of Proposal,
(c) Aircraft to be Used in Completion of the Contract,
(d) Cameras or Digital Sensors to be Used in Completion of the Contract,
(e) Past Performance References (if required),
(f) Key Personnel to Perform on the Contract.

Section L:

(a) Camera Calibration Report(s),
(b) Current Financial Statement,
(c) Digital Sensor Sample Imagery

The solicitation document may be submitted in its entirety, complete with Sections C through M, or at a minimum with Sections A, B, K, and L.

L-3 DIGITAL SENSOR APPROVAL REQUIREMENTS

Each offeror proposing to use a digital camera/sensor, shall have on file with the Aerial Photography Field Office, or shall submit with the offer, (1) a report of calibration, (2) sample digital imagery, (3) digital sensor documentation from the camera/sensor proposed for use. Please refer to Attachment A for digital camera/sensor approval requirements.

For each digital sensor proposed to be used, please indicate which statement is correct:

[ ] Digital Sensor Approval Requirements on file at APFO.

[ ] Digital Sensor Approval Requirements submitted with offer.

[ ] Not required.

L-4 CURRENT FINANCIAL STATEMENT

Offerors may be required to provide a "current" financial statement. For purposes of this solicitation, a current financial statement would be the most recent annual report, updated, if necessary, so that information reflects the company's financial status within six (6) months.

All data shall be certified by an authorized company officer as to its accuracy and veracity or validated by an independent certified public account. If necessary, the Contracting Officer may request additional financial information.

Financial information received will be treated as confidential and will not be used for purposes other than evaluation of financial responsibility. Failure to provide this information may delay or prohibit the Contracting Officer from making an affirmative decision on the offerors responsibility. Please indicate which statement is correct:

[ ] Current financial statement on file at APFO.

[ ] Current financial statement submitted with offer.

L-5 CONTRACT DIFFICULTIES AND CONTINGENCIES

Offerors are cautioned to examine the solicitation, visit the work location if necessary, and evaluate the facilities needed and difficulties attending the execution of the proposed contract. Considerations include local conditions, uncertainty of weather, availability of landing fields, restricted air space, and all other contingencies.

L-6 SERVICE OF PROTEST (AUG 1996) (FAR 52.233-2)

Protests, as defined in Section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO) shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from; Director, Acquisition Management, USDA/FSA/MSD/AG Code 0567, P.O. Box 2415, Washington, D.C. 20013-2415.

The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

L-7 INQUIRIES (FEB 1988) (AGAR 452.204-70)

Inquiries and all correspondence concerning this solicitation should be submitted in writing to the Contracting Officer. Offerors should contact only the contracting officer issuing the solicitation about any aspect of this requirement prior to contract award.

L-8 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998) (FAR 52.252-1)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this address: www.arnet.gov/far.

FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) PROVISIONS:

52.204-06 Data Universal Numbering System (DUNS) Number (OCT 2003)

52.215-01 Instructions to Offerors - Competitive Acquisition (JAN 2004)

PART IV - REPRESENTATIONS AND INSTRUCTIONS

SECTION M - EVALUATION FACTORS FOR AWARD

M-1 PROPOSAL EVALUATION

Proposal evaluation is an assessment of the proposal and the offeror's ability to perform the prospective contract successfully. The Government shall establish an evaluation team that includes appropriate contracting, technical, and other expertise to ensure a comprehensive evaluation of proposals.

1.1 Technical Evaluation Team

The Technical Evaluation Team will evaluate, and rank according to technical merit, all proposals in accordance with the evaluation factors established in this solicitation. The team will not have access to the pricing proposal during the technical evaluation process. The offeror's proposal shall be in the format prescribed in Section L and shall contain a response to each of the areas identified.

1.2 Competitive Range

The Contracting Officer shall establish the competitive range based on ratings of each proposal against all evaluation criteria including price. The competitive range shall be comprised of all of the most highly rated proposals. The competitive range can be limited for purposes of efficiency (see FAR 52.215-1(f)(4)). If negotiations are conducted in the source selection process they shall occur after establishment of the competitive range.

1.3 Source Selection Decision

The Contracting Officer shall select for purposes of contract award the overall superior proposal which offers the "best value” to the Government, price and other factors considered. The decision shall be based on a comparative assessment of proposals against all source selection criteria in the solicitation.

M-2 EVALUATION FACTORS

Proposals shall be evaluated according to the following criteria including all supporting information furnished by the offeror with the proposal. The evaluation criteria are listed in descending order of importance with relative point values indicated. See Section L for instructions for preparation of technical and pricing proposals.

2.1 Technical Evaluation

Evaluation Criteria	Relative Point Value
(a) Project Management Capability	25
(b) Past Performance History	25
(c) Quality Control System	20
(d) Personnel Qualifications	10
(e) Aircraft and Camera Availability	10
(f) Incomplete Contracts	10
	100

2.2 Price Evaluation

While technical excellence is considered more significant than price, the proposed price between technically superior proposals shall be an important factor in selection of a proposal for award. The Government reserves the right to make an award to other than the lowest priced offeror, or other than the highest technically rated offeror, when the perceived benefits and tradeoffs provide the Government the greatest value.

Based on comparative evaluations of the pricing proposals for the basic and optional award item requirements (see Sections B-1 and B-5), the Government will consider for award that offer that represents the greatest value and is determined to be in the best interest and the most advantageous to the Government.

Offerors are cautioned to insert the unit price and the total price for the Project Item(s) in the appropriate locations in Section B. In case of discrepancy between a unit price (price per DOQQ) and an extended price (total price), the unit price will be presumed to be correct, subject, however, to correction to the same extent and in the same manner as any other mistake.

2.3 Other Factors

The Contracting Officer will consider, in addition to the evaluation criteria, the prospective Contractor's responsibility record in terms of financial resources, business integrity and ethics, and other standards, as defined in the Federal Acquisition Regulation, Part 9.

M-3 CONTRACT AWARD

The Government intends to evaluate proposals and award a contract or contracts resulting from this solicitation after conducting discussions with offerors whose proposals have been determined to be within the competitive range.

3.1 Contract Award

The contract will be awarded to that responsive and responsible offeror whose proposal represents the greatest value and is determined to be in the best interest and the most advantageous to the Government, price and other factors considered.

3.2 Possibility of Award Without Discussion

Notice is given to all offerors that there is a possibility that award may be made without discussion or further negotiation. Proposals should be submitted initially on the most favorable terms, from a price and technical standpoint, which the offeror can submit to the Government.

3.3 Required or Requested Information

Award will be made only in conjunction with proposals from responsible prospective Contractors. Failure to provide the information, material, and/or documentation either required in Sections K and L may result in the proposal being rejected. Information requested by the Contracting Officer shall be submitted within eight (8) calendar days of the request, failure to do so may result in the proposal being rejected.

ATTACHMENT A

SPECIFICATION FOR DIGITAL CAMERA BASED ACQUISITION

(Dated April 30, 2008)

1.0 INTRODUCTION AND BACKGROUND

The U.S. Federal Government has not yet established an independent government evaluation and calibration policy for digital camera systems since digital sensor technology is still rather new. Until a policy is developed and implemented, the U.S. Department of Agriculture (USDA), Farm Service Agency (FSA) has proceeded to validate the quality and capabilities of current digital camera systems by obtaining relevant information from camera manufacturers and data providers. The following specifications and requirements have been developed to ensure that any digital camera proposed for used on USDA contracts meet minimum requirements to provide the highest quality orthoimagery products.

2.0 DIGITAL CAMERA SPECIFICATIONS AND REQUIREMENTS

This document covers digital camera specifications and requirements for the USDA-FSA Aerial Photography Field Office. Acquisition of the digital imagery may be from airborne or space borne platforms. Digital cameras for acquiring precise vertical digital imagery are required to be tested and calibrated. Digital camera systems proposed for use must be of comparable precision and quality with traditional stereoscopic mapping cameras. Digital camera systems must also be compatible with analytical mensuration procedures used in photogrammetric surveys and in preparing accurate orthophotography. Only approved digital camera systems, which meet the requirements of these specifications as determined by appropriate camera system documentation and sample imagery submitted, shall be used.

3.0 GENERAL REQUIREMENTS

Digital cameras systems must be tested and calibrated with appropriate certification documentation. The digital camera must be geometrically stable and suitable for use in precise, high-accuracy photogrammetric orthoimagery applications. The digital camera system shall provide the following:

3.1 Ground Sample Distance

The camera shall provide the resolution and field of view necessary to meet the ground sample distance (GSD) requirement, as specified in Section B of the contract.

Color interpretation or pan sharpening will be permitted to achieve the one-meter GSD requirements. The color bands (RGB) and near infrared (IR) bands may be collected at a ratio no greater than 1:5 to achieve the pan sharpened one-meter orthoimagery.

3.2 Color Band and Depth.

The digital camera shall capture red, green, and blue channels (RGB) for natural color, and a near infrared channel(s) for color infrared (CIR) orthoimagery. The camera shall capture a minimum of 12-bits per color channel. All systems that use "pan-sharpened" algorithms shall have a color to panchromatic ratio not greater that **1:5**.

3.3 Radiometric Accuracy

If more than one lens and more than one shutter are used in the camera system, the difference in radiometric values between two panchromatic or two multi-spectral sensors shall be less than ±5%. For example, a 12-bit image shall not have more than ±205 difference in gray values.

3.4 System Operation

The digital camera and its mount shall be checked for proper installation prior to each mission. An automatic exposure control device is permitted, but a manual override capability is required for some types of terrain to achieve proper coverage and exposure. The camera mount shall be regularly serviced and maintained and shall be insulated against aircraft vibration.

(a) Camera Port Glass. Aircraft camera port glass shall be preferably 50 mm thick, but not less than 32 mm thick. The surface finish shall be 80/50 or better. Glass material shall be polished crown, group category M, Mil Specs Mil-W 1366F (ASG), dated October 1975, C-1 optical quality or better.

(b) Malfunctions. The contracting officer shall be notified of all digital camera system malfunctions within 72 hours with a written report of the malfunction. A malfunction is defined as a failure in any element or process of the digital camera system that causes an interruption of the normal operations of the system. Any malfunctions or failures of global positioning systems or inertial measurement unit systems shall be reported directly to the contracting officer.

3.5 Calibration Reports

Calibration reports for each digital camera proposed for use shall be submitted to the contracting officer with the contractor's proposal and prior to project imagery acquisition if the digital camera system is removed and remounted. The contractor shall follow manufacturer's specifications for appropriate calibration and recalibration. The calibration reports shall address the geometric performance of the system, and at a minimum, include:

(a) Date of report
(b) The name of the person or company performing the calibration
(c) The methodology and procedures used for calibration
(d) Final calibration parameters, such as calibrated focal length, lens distortion values, radiometric calibration parameters, and principal point location.

NOTE: The government recognizes that individual calibration reports, procedures, and parameters may be unique to a certain manufacturer since equipment and systems vary from manufacturer to manufacturer.

3.6 System Maintenance

The contractor shall perform all maintenance in accordance with the manufacturers recommended and established procedures. The contractor shall maintain a complete history of all maintenance done to the digital camera system and have it available for Government inspection. The contractor shall provide certification that the system has been maintained, preventive maintenance and calibration performed, to the manufacturers requirements.

4.0 DIGITAL CAMERA APPROVAL REQUIREMENTS

All digital camera systems must be approved by the Contracting Officer before acquiring imagery under this contract. When requesting approval, the Contractor shall submit, or have on file with APFO, a report of calibration (see Paragraph 3.5), sample digital imagery (see Paragraph 4.1), and camera documentation (see Paragraph 4.2). Sample imagery must be at the same scale and resolution of the project that the Contractor is requesting approval for. It is highly recommended that the sample imagery include agriculture areas.

4.1 Digital Camera Sample Imagery Requirements

The contractor shall acquire and submit with their proposal, sample images from the digital camera proposed for use. The sample imagery shall represent the type of terrain (agriculture, cropland, forest, etc.) that is similar to the proposed project item area being offered. (See Section L-2 of the contract).

The digital camera sample imagery shall provide the following minimum characteristics:

(a) Display the same GSD resolution being offered as indicated in Section B.
(b) For natural color proposals (RGB bands), the sample image shall be 24 bits in color depth. It may be collected at 12 bits per color band, but be re-sampled to 8 bits per band for sample image delivery.
(c) For color infrared proposals (IR, R, G bands), the sample image shall be 24 bits in color depth. It may be collected at 12 bits per color band, but be re-sampled to 8 bits per band for sample image delivery.
(d) Sample image shall be ortho-rectified, with geodetic standards of North American Datum 1983 (NAD83) and UTM projection with the appropriate Zone indicated.

(e) Sample shall be produced as a DOQQ formatted, GeoTIFF image using the standard indicated in Section C-6.2 of the contract.
(f) The sample imagery shall fit on one standard CD, formatted as described in Section D of the contract.

4.2 Digital Camera Documentation Requirements

The contractor shall provide with their proposal detailed documentation of the digital camera proposed for use. Documentation may include brochures, technical specifications, marketing material, manufacturer's user manuals, or other descriptive literature. The documentation shall contain at a minimum the following information:

(a) General overview information
(b) Product configuration description
(c) Camera component description
(d) Technical specifications
(e) Computer management and storage systems
(f) Image acquisition and processing workflow.

4.3 Multiple Camera Approval

The use of more than one type of digital camera system (i.e.: DMC, ADS40, UltraCam) in the acquisition of the same project item area requires submittal of sample imagery and approval by the contracting officer. The contractor must submit sample imagery with appropriate documentation that demonstrates successful mixing or blending of two different camera systems without offsets, obvious seam lines, or other apparent defects. The contractor's sample imagery of "mixed" camera systems shall be provided in accordance with the image characteristics as specified in Paragraph 4.1 above. Sample imagery may be submitted as part of the contractor's proposal and must meet all accuracy and quality requirements and specifications of this contract.

ATTACHMENT B

USDA
DIGITAL ORTHOIMAGERY QUARTER QUADRANGLE (DOQQ) DESCRIPTION AND SPECIFICATION

(Dated April 30, 2008)

USDA Farm Service Agency
Aerial Photography Field Office
2222 West 2300 South
Salt Lake City, UT 84119-2020
(801)844-2900

1.0 SCOPE 2

2.0 APPLICABLE DOCUMENTS 2

3.0 GENERAL REQUIREMENTS 2
3.1 General 2
3.2 Image Quality 3
3.3 Radiometric Resolution 4
3.4 Spatial Resolution 4
3.5 Horizontal Accuracy 4
3.6 Digital Image File Format 5

4.0 VERIFICATION 6
4.1 General 6
4.2 Image Quality 6
4.3 Radiometric Resolution 7
4.4 Spatial Resolution 7
4.5 Horizontal Accuracy 7
4.6 Digital Image File Format 7

5.0 NOTES 8
Figure 1, UTM Zones 9
Table 1, Required GeoTIFF Specific Tags 10
Table 2, Approved Private Tags 10
Table 3, Required GeoTIFF MetaTags 11
List 1, Tag Listings 13
List 2, “tiffinfo” Output 14
List 3, ListGeo Output 14

1.0 SCOPE

This document establishes the technical criteria to be used in the production of digital orthoimagery quarter quadrangles (DOQQs) for all contracts issued by the Aerial Photography Field Office. The standard DOQQ format is a 3.75-minute by 3.75-minute[1] quarter-quadrangle natural color or color near-infrared (CIR) image[2].

2.0 APPLICABLE DOCUMENTS

In the event of conflict between the contents of this specification and the documents referenced herein, the contents of this specification shall take precedence.

2.1 TIFF Specification Revision, 6 dated June 3, 1992 (Adobe Systems Inc.). The Tagged Image File Format (TIFF) is a copyrighted standard of Adobe Systems, Inc.

2.2 GeoTIFF Revision 1.0 Specification, dated December 28, 2000 (Version 1.8.2). The GeoTIFF Format Specification is a public domain extension of TIFF that provides a robust and flexible method of storing georeferencing information in a TIFF file.

3.0 GENERAL REQUIREMENTS

United States Department of Agriculture (USDA) programs use DOQQs for various program uses including, but not limited to agriculture land use analysis, natural resource inventory, and extraction of data by means of photogrammetric measurements. The complex nature and the need for consistent but radiometric correct imagery require DOQQs to adhere to exact format and content of this specification.

3.1 General.

(a) Geographic Extent. Each DOQQ shall cover the entire image area of one standard USGS quarter quadrangle with a minimum 300 (±30) meter buffer on all four sides. Extents shall be computed by projecting the geographic corners and side midpoints to the appropriate projection, then adding the buffer on each side of the resulting minimum bounding rectangle.

(b) Non-image data. DOQQs shall not contain any non-image data. Non-image data includes photographic frame borders, fiducal marks, artifacts, and titling. Non-image data also includes “fill” induced by a lack of elevation surface model coverage that results in white, black, or spurious intensity values.

[1] The 3.75-minute by 3.75-minute quarter-quadrangle is only standard in continental United States. The size of Alaska quarter-quadrangles will vary with the latitude.
[2] A combined natural color and CIR image (commonly called a 4-band) is also required to meet all requirements state herein (See paragraph X.X).

(c) Datums and Coordinates. All DOQQs shall be projected in the North American Datum of 1983 (NAD83), using the corresponding native Universal Transverse Mercator (UTM) zone (see Figure 1, UTM Zones) with coordinates in meters. The vertical datum for all DOQQs shall be North American Vertical Datum of 1988 (NAVD88). The latest datum version shall be used.

(d) Image Mosaicking. DOQQs may be created using multiple digital images ("chips") to produce the final product. Specular reflections in DOQQs should be minimized, especially in agriculture areas, by patching the area using chips from other imagery.

(1) Radiometry Balance. When a mosaic of two or more chips is made, the brightness and color values of the other chips will be adjusted to match that of the principal chip. The join lines between the overlapping chips will be chosen to minimize tonal variations. Localized adjustment of the brightness and color values will be done to reduce radiometric differences between join areas.

(2) Edge-Matching. All chips shall not have more than ±3 pixels offset between the principal chip.

3.2 Image Quality. All digital images shall have proper histograms and tone balance. Color imagery shall also have proper color balance and saturation.

(a) Clipping. The DOQQs shall have a tonal range that prevents the clipping of highlight or shadow detail from the image. When calculated against the luminosity histogram, the cumulative pixel count between the first and last five histogram bin values (5 and 250 respectively for 8-bit depth) shall not be less than 98.0%, with a preferred value greater than 99%.

(b) Contrast. When calculated against the luminosity histogram, the difference between the histogram bin value that contains 99.0% of the cumulative pixel count and the value that contains 1.0% shall be greater than 140 but less than 160 (aim point of 150). If the cumulative pixel count percentage falls between two histogram bin values, the close value shall be used. For example, if the luminosity value 222 contains 99% of the cumulative pixel count and value 44 contains 1% count, therefore the difference is 178.

(c) Histogram Peak. All DOQQs shall have a pixel count peak within ±15% of the middle digital value allowed for the bit depth. For example, an 8-bit depth image must have the histogram peak between 108 and 148.

(d) Color Balance. All DOQQs should have a neutral tonal range without the dominance of any individual color. The difference between the minimum and maximum value in a RBG triplet of any nearly neutral objects within the image shall be less than 5.

(e) Band-to-Band Registration Accuracy. Misregistration between any color bands shall not exceed 1 pixel.

(f) Image blemishes, scratches and artifacts. Imagery shall be free of blemishes, scratches, and artifacts that obscure ground feature detail. The following table defines the maximum acceptable limits for blemishes, scratches, and artifacts. Clusters of blemishes, scratches, and artifacts that do not individually meet these criteria may be considered unacceptable.

Acceptable Image blemishes, scratches and artifacts	
1 pixel wide	100 pixels in length
2 pixels wide	60 pixels in length
3 pixels wide	20 pixels in length
4 – 12 pixels wide	12 pixels in length

3.3 Radiometric Resolution.

(a) Black & White Imagery. All B&W imagery shall be an 8-bit grayscale image in accordance with Section 4, Grayscale Images, of the TIFF Specification.

(b) Color Imagery. All color imagery shall be an 8-bit RGB image in accordance with Section 6, RGB Full Color Images, of the TIFF Specification. Both natural color and near-infrared color are considered to be color imagery.

(c) 4-Band Imagery. All imagery that contains both natural color and CIR shall meet the same requirements as color imagery specified in the paragraph above and shall have the bands saved in the following order: Red, Green, Blue, and Infrared.

3.4 Spatial Resolution. The spatial resolution will be either 1-meter or 2-meter ground sample distance (GSD), depending on USDA's requirements. DOQQs produced under this specification shall not be resampled from the original image, original scan or original capture, with resolution greater or less than the following numbers:

Ground Sample Distance (GSD)	**Original Image Resolution**	
	Maximum (meters)	**Minimum (meters)**
1-meter	0.50	1.05
2-meter	1.00	2.10

3.5 Horizontal Accuracy. All DOQQs shall have 95% of all well-defined points tested fall within the specified distance listed below of true ground.

Ground Sample Distance (GSD)	Horizontal Accuracy (meters)
1-meter	6.0
2-meter	10.0

3.6 Digital Image File Format. All DOQQs shall be produced using a georeferenced tagged image format (GeoTIFF) in accordance with this specification, the GeoTIFF 1.0 Specification, and the baseline TIFF 6.0 Specification (stated in order of precedent). All DOQQs shall be readable by older applications that assume TIFF 5.0 or an earlier version of the specification. List 1, Tag Listings, List 2, "tiffinfo" Output, and List 3, ListGeo Output shows an example of a TIFF tag listing.

DOQQs that use designated "Extended TIFF 6.0 file" features, as defined in Section 2 of the TIFF Specification, shall not be used. This includes, but not limited to, any of the major new extensions such as "tiled images." Features designated as "not recommended for general data interchange" are considered extensions to the baseline TIFF 6.0 specification and shall not be used.

(a) Tagged Image File Format (TIFF) Requirements

(1) All public tags shall confirm to the TIFF Specification and shall not be modified outside of the parameters given in the specification. Use of tag numbers not specified in the TIFF Specification for either Grayscale or RGB full color images, depending on color band of the DOQQ, is not permitted. As a minimum, the TIFF tags listed in Table 1, Required TIFF Tags, and Table 2, Required GeoTIFF Specific Tags, shall be included when creating DOQQs under this specification.

(2) Tags numbered 32,768 or higher, sometimes called private tags, are reserved and shall not be used unless listed in Table 3, Approved Private Tags. Enumeration constants numbered 32,768 or higher are reserved and shall not be used.

(3) Tags numbered in the "reusable" 65,000-65,535 range shall not be used.

(4) All DOQQ files shall be created using the little-endian byte order as specified in the TIFF Specification. Bytes 0-1 of the Image File Header must be "II" (4949.H).

(5) All DOQQ files shall only have a single Image File Directory (IFD).

(6) Tiled TIFF files are not allowed.

(b) Georeferenced Tagged Image Format (GeoTIFF) Requirements. A GeoTIFF file is a TIFF 6.0 file, and inherits the file structure as described in the

corresponding portion of the TIFF Specification. All GeoTIFF specific information is encoded in several additional reserved TIFF tags, and contains no private Image File Directories (IFD's), binary structures or other private information invisible to standard TIFF readers.

The GeoTIFF 1.0 standard uses a MetaTag (GeoKey) approach to encode dozens of data elements into just six TIFF 6.0 tags. GeoKeys are structurally similar to TIFF 6.0 tags, but at one lower level of abstraction. As a minimum, the four tags listed in Table 3, Required GeoTIFF MetaTags, shall be included when creating DOQQs under this specification.

4. VERIFICATION

Any DOQQs not meeting the requirement in Section 3 may be rejected for non-compliance. Each DOQQ or, at the APFO's determination, a random sample from the lot may be inspected using the following methods. The use of automated processes, such as computer scripts, may be substituted for visual verification.

4.1 General.

(a) Geographic Extent. Visual verification will be done to verify DOQQ coverage.

(b) Non-image items. Visual verification will be done to ensure DOQQs do not contain any non-image.

(c) Datums and Coordinates. Verification of georeferencing, correct datums and coordinate systems shall be accomplished by visually viewing the image using GIS software other than the software used to create the image.

(d) Image Mosaicking. Visual verification will be done to verify tonal and brightness values across chips used to create the DOQQ and to verify edge-matching against adjacent tiles.

4.2 Image Quality.

(a) Clipping. Visual or automated verification on the luminosity histogram will be done to verify overall clipping.

(b) Contrast. Visual or automated verification on the luminosity histogram will be done to verify image contrast range.

(c) Histogram Peak. Visual or automated verification on the luminosity histogram will be done to verify peak histogram value.

(d) Color Balance. Visual or automated verification on the luminosity histogram will be done to verify overall clipping. Visual verification will be done to each DOQQ to verify proper histogram and tone balance.

(e) Band-to-Band Registration Accuracy. Visual verification on the luminosity histogram will be done to verify band-to-band registration.

(f) Image blemishes, scratches and artifacts. Visual verification on the luminosity histogram will be done to verify that the image does not contain artifacts.

4.3 Radiometric Resolution. Visual verification will be done to verify bit depth and compliance with TIFF Specification.

4.4 Spatial Resolution. Visual verification will be done to measure spatial resolution.

4.5 Horizontal Accuracy. Visual verification will be done to verify DOQQ horizontal accuracy. This may include measurements compared against existing control imagery or other means at the disposal of USDA.

4.6 Digital Image File Format. Automated computer scripts will be used to verify that all GeoTIFF and TIFF Specifications are complied with. Correct encoding of all required Meta-Keys (also called GeoKeys) shall be confirmed by referencing each GeoKey using a software application designed to check each against the specifications.

5.0 NOTES

5.1 DEFINITIONS

Band – a range of wavelengths of electromagnetic radiation. Also, image data gathered at this wavelength range.

Brightness value – a number (normally 0-255) representing a discrete intensity gray level of a pixel in an image.

Chip – each separate piece of a mosaick image that contributes to the final image.

Clipping – The presence of pixels exhibiting the minimum or maximum digital count in an image's dynamic range.

Dodging – manipulation of the intensity of part if a photograph by selectively shading or masking.

Field – refers only to the entire field, including the value, of the geokey (as defined in the TIFF Specification).

Ground Sample Distance (GSD) – the area of ground represented in each pixel in x and y components.

Image File Directory – contains information about the image. There must be at least 1 IFD in a TIFF file and each IFD must have at least one entry.

Metadata – description of the content, quality, condition, and other characteristics of the data.

Private tags – TIFF tags numbered 32768 or higher. Private tags are not defined in the TIFF Specification.

Public tags – TIFF tags that are defined by the TIFF Specification.

Resample – interpolation of pixel values based upon neighboring pixel values.

Tag – refers only to the identifying number portion of the geokey (as defined in the TIFF Specification).

Figure 1, UTM Zones

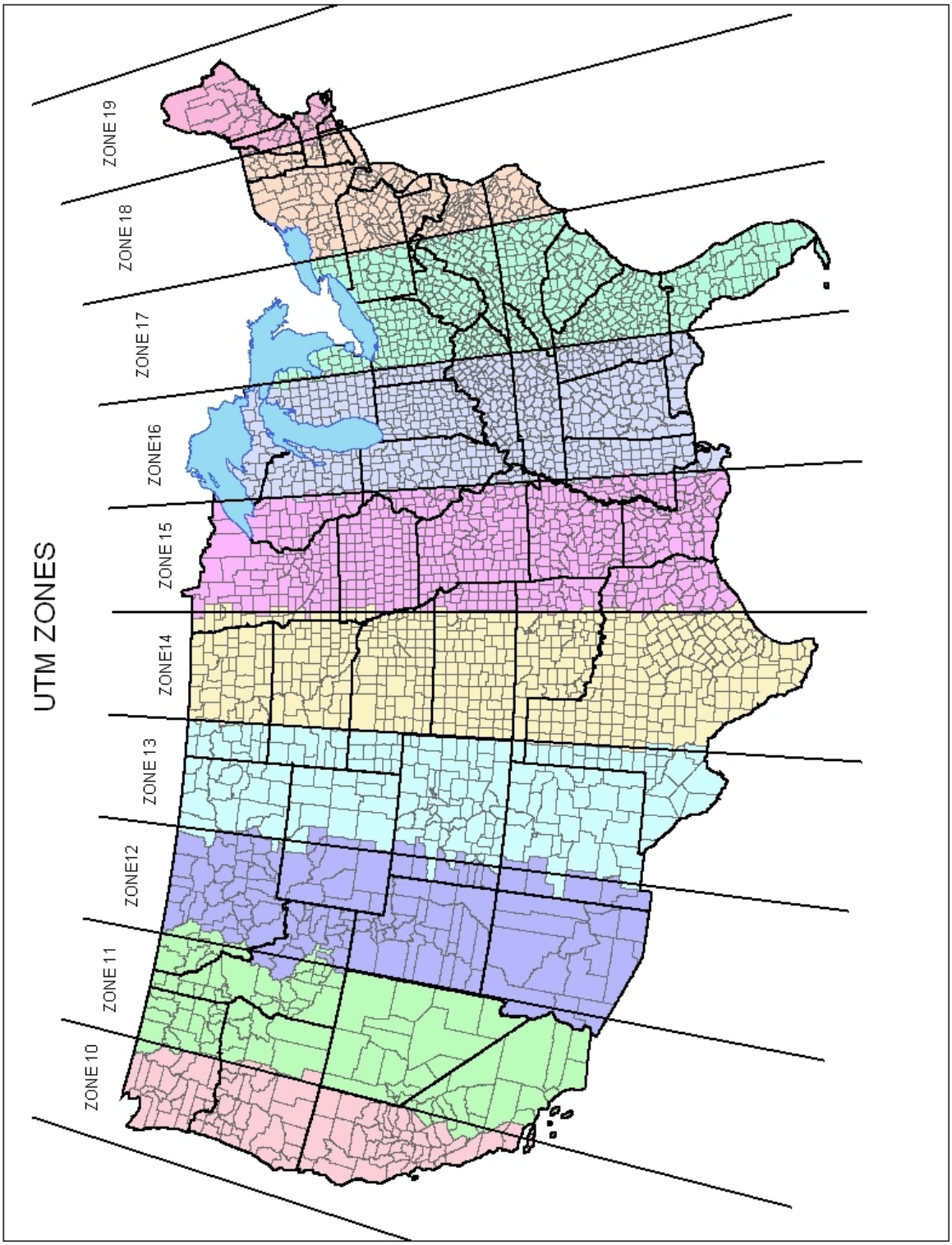


Table 1, Required TIFF Tags

TAG NAME	DESCRIPTION
ImageDescription tag (270.d, 10e.h)	The ImageDescription tag shall contain the program name. For example, under the NAIP contract the tag will read: "USDA-FSA-APFO National Agriculture Image Program"
DocumentName tag (269.d, 10d.h)	The DocumentName tag shall have the following form: <Quad Name> <Quadrant> <Quad id> where: <Quad Name> is the name of the quadrangle taken from the provided list of quarter quadrangles for a county. <Quadrant> Is the quadrant identifier for a quadrangle. <Quad id> is the "Usgsqdno" field taken from the provided list of quarter quadrangles for a county

Table 2, Required GeoTIFF Specific Tags

TAG NAME	DESCRIPTION
ModelPixelScaleTag (33550.d, 830e.h)	The X and Y values must be populated and be equal to the ground distance of one DOQQ pixel.
ModelTiepointTag (33922.d, 8482.h)	This tag specifies the (X,Y) ground coordinates of the (0,0) image pixel, by convention in the upper left corner of the image. All DOQQs shall use the UTM project reference frame. GeoTIFF 1.0 allows considerable flexibility in how an image is tied to the ground, but DOQQ image data should be tied to the (0,0) pixel. The Z coordinate value should be set to 0. See section 2.6.1 of the GeoTIFF 1.0 standard.
GeoAsciiParamsTag (34737.d, 87b1.h) (required)	This tag is used to store all the ASCII-valued GeoKeys. See section 2.4 of the GeoTIFF 1.0 standard.
GeoKeyDirectoryTag (34735.d, 87af.h) (required)	This tag references all non-ASCII GeoKeys. All projection and datum information is stored in GeoKeys. See section 2.10.2.2 of this standard and section 2.4 of the GeoTIFF 1.0 standard.

Table 3, Approved Private Tags

TAG NAME	ID
ModelPixelScaleTag	33550 (SoftDesk)
ModelTransformationTag	34264 (JPL Carto Group)
INGR Packet Data Tag	33918 (Intergraph)
INCR Flag Registers	33919 (Intergraph)
IrasB Transformation Matrix	33920 (Intergraph)
UnUsed	33921 (Intergraph)
ModelTiepointTag	33922 (Intergraph)
GeoKeyDirectoryTag	34735 (SPOT)
GeoDoubleParamsTag	34736 (SPOT)
GeoAsciiParamsTag	34737 (SPOT)

Table 3, Required GeoTIFF MetaTags

TAG NAME	DESCRIPTION
GTModelTypeGeoKey (1024.d, 400.h) (required)	The required value is 1 (ModelTypeProjected).
GTRasterTypeGeoKey (1025.d, 401.h) (required)	a. The required value is 1 (RasterPixelIsArea) which is the default value. b. The "PixelIsArea" raster grid space uses coordinates I and J, with (0,0) denoting the upper-left corner of the image, and increasing I to the right, increasing J down. The first pixel-value fills the square grid cell with the bounds top-left = (0,0), bottom-right = (1,1) and so on; by extension this one-by-one grid cell is also referred to as a pixel. An N by M pixel image covers an area with the mathematically defined bounds (0,0),(N,M). c. This raster space designates the upper-left corner of an image. The coordinate pair values for this location shall be “a whole number of pixels.” Each value “must be integer multiple of the resolution” of the DOQQ image. For a 1-meter resolution image this pair can be odd or even whole numbers, for a 2-meter resolution image this pair needs to even whole numbers. d. The desired result is to have “Exact Pixel Registration,” meaning that pixels from multiple images line up exactly. This should not be confused with overlaps or gaps, but the cells have to fall on an even multiple of the cell width and height from one another, and adjacent images cannot have cells starting halfway, or partially into the cells of the original image

ProjectedCSTypeGeoKey (3072.d, c00.h) (required)	This key contains a coded value for the projection, datum, and possibly plane coordinate zone. Legal values for this key are listed in section 6.3.3.1 of the GeoTIFF 1.0 standard.
PCSCitationGeoKey (3073.d, c01.h) (required)	This is a free text field for describing the projection and datum. DOQQ images are projected into the UTM coordinate system. These fields shall describe the projection, zone, and datum and shall be in the following form: a. <datum>/UTM Zone <number> <N/S> (i) <datum> is the common datum abbreviation, NAD83. (ii) Where <number> is the UTM zone number. b. Example: NAD83 / UTM zone 15N
GTCitationGeoKey (1026.d, 402.h) (required)	This is a free text field for providing a description of the DOQQ. The GeoKey contents shall be in the following form. a. <program> <year> <n>_<lat><lon><quad>_<loc>_ <xx>_<r>_<yyyymmdd> program – Program Name (i.e., NAIP). year - Program year (i.e., 2005). n – Film type (n=natural color or c=color infra red) lat – Latitude, identified by 2 digit numerical value of a 1º block (including the leading “0” if needed). lon – Longitude, identified by 3 digit numerical value of a 1º block (including the leading “0” if needed). quad – Quadrangle location, identified by a 2 digit numerical value to identify the position in a one degree block. loc – Quarter quadrangle location, identified by grid letters (nw,ne,sw,se). xx – Two digit UTM zone. r – Image resolution (1 = 1-meter; 2 = 2-meter). yyyymmdd – date of acquisition. b. Example: NAIP 2005 n_3309403_nw_15_2_20050714
ProjLinearUnitsGeoKey (3076.d, c04.h) (required)	This key contains a coded value for the linear units used by the projection. Legal values for this key are listed in section 6.3.3.1 of the GeoTIFF 1.0 standard. DOQQs shall use the code value of 9001 (“Linear_Meter”).

List 1, Tag Listings

The following table summarizes the TIFF 6.0, GeoTIFF 1.0, and GeoKey requirements. The values in the table are consistent with the TIFF 6.0 and GeoTIFF 1.0 standards, but there are less options than are allowed by TIFF. Additional guidelines and requirements for the values of tags and keys are detailed in the body of this standard. Additional public tags and keys may be used at the data producer's option, providing they do not conflict with the required tags.

TIFF tags required by baseline TIFF:

TagName	Decimal	Hex	Type	Value
ImageWidth	256	100	SHORT or LONG	
ImageLength	257	101	SHORT or LONG	
BitsPerSample	258	102	SHORT	8,8,8
Compression	259	103	SHORT	1
PhotometricInterpretation	262	106	SHORT	2
Orientation	274	112	SHORT	1
StripOffsets	273	111	SHORT or LONG	
SamplesPerPixel	277	115	SHORT or LONG	3
RowsPerStrip	278	116	SHORT or LONG	1
StripByteCounts	279	117	LONG or SHORT	

TIFF tags defined by GeoTIFF:

TagName	Decimal	Hex	Type	Value
ModelPixelScaleTag	33550	830E	DOUBLE	
ModelTiepointTag	33922	8482	DOUBLE	
GeoAsciiParamsTag	34737	87B1	ASCII	
GeoKeyDirectoryTag	34735	87AF	SHORT	

GeoKeys defined by GeoTIFF and used by APFO:

TagName	Decimal	Hex	Type	Value
GTModelTypeGeoKey	1024	400	6.3.1.1 code	1
GTRasterTypeGeoKey	1025	401	6.3.1.2 code	1
GTCitationGeoKey		1026	402	ASCII
ProjectedCSTypeGeoKey	3072	C00	6.3.3.1 code	
PCSCitationGeoKey	3073	C01	ASCII	
ProjLinearUnitsGeoKey	3076	C04	SHORT	

List 2, "tiffinfo" Output

This listing is an output of the libtiff utility program "tiffinfo".

```
TIFF Directory at offset 0x2370bc4
  Image Width: 3247 Image Length: 3815
  Resolution: 200, 200 (unitless)
  Bits/Sample: 8
  Compression Scheme: none
  Photometric Interpretation: RGB color
  Document Name: "Garvin NE 3309401:
  Image Description: "USDA-FSA-APFO National Agriculture Imagery Program"
  Samples/Pixel: 3
  Rows/Strip: 1
  Planar Configuration: single image plane
```

List 3, ListGeo Output

The following is an example of a GeoTIFF tag and GeoKey listing from a NAIP image. This listing is the output of the libgeotiff utility program "listgeo". The projection information below the line "End_Of_Geotiff" is implied by the standard projection and is not stored explicitly in the data file. The descriptions are retrieved from libgeotiff lookup tables in the listgeo application.

```
Geotiff_Information:
   Version: 1
   Key_Revision: 1.0
   Tagged_Information:
      ModelTiepointTag (2,3):
         0          0          0
         337962     3763838    0
      ModelPixelScaleTag (1,3):
         2          2          1
      End_Of_Tags.
   Keyed_Information:
      GTModelTypeGeoKey (Short,1): ModelTypeProjected
      GTRasterTypeGeoKey (Short,1): RasterPixelIsArea
      GTCitationGeoKey (Ascii,45): "2004 NAIP n_3309403_nw_15_2_20050714"
      ProjectedCSTypeGeoKey (Short,1): PCS_NAD83_UTM_zone_15N
      PCSCitationGeoKey (Ascii,21): "NAD83 / UTM zone 15N"
      ProjLinearUnitsGeoKey (Short,1): Linear_Meter
      End_Of_Keys.
   End_Of_Geotiff.
```

PCS = 26915 (name unknown)

Projection = 16015 ()
Projection Method: CT_TransverseMercator
  ProjNatOriginLatGeoKey: 0.000000 (0d 0' 0.00"N)
  ProjNatOriginLongGeoKey: -93.000000 (93d 0' 0.00"W)
  ProjScaleAtNatOriginGeoKey: 0.999600
  ProjFalseEastingGeoKey: 500000.000000
  ProjFalseNorthingGeoKey: 0.000000
GCS: 4269/NAD83
Datum: 6269/North American Datum 1983
Ellipsoid: 7019/GRS 1980 (6378137.00,6356752.31)
Prime Meridian: 8901/Greenwich (0.000000/ 0d 0' 0.00"E)
Projection Linear Units: 9001/metre (1.000000m)

Corner Coordinates:
Upper Left (337962.000,3763838.000) (94d45'16.56"W, 34d 0' 9.55"N)
Lower Left (337962.000,3756208.000) (94d45'11.47"W, 33d56' 1.94"N)
Upper Right (344456.000,3763838.000) (94d41' 3.51"W, 34d 0'13.09"N)
Lower Right (344456.000,3756208.000) (94d40'58.63"W, 33d56' 5.47"N)
Center (341209.000,3760023.000) (94d43' 7.54"W, 33d58' 7.53"N)