

JULY 1, 2001

**MINNESOTA DEPARTMENT OF TRANSPORTATION  
OFFICE OF LAND MANAGEMENT  
SURVEYING AND MAPPING SECTION  
PHOTOGRAMMETRY UNIT**



**SPECIAL PROVISIONS FOR:**

**GROUP 4: DIGITAL PHOTOGRAMMETRIC PRODUCTS  
AND SERVICES**

***DIGITAL ORTHOPHOTO***

## **INTRODUCTION**

This Specification is established to provide the Minnesota Department of Transportation (MN/DOT) with “Photogrammetry Products and Services” from Private Photogrammetric Partners (Contractor).

## **SCOPE OF WORK**

These Specifications set forth the minimum standards to be met and general procedures to be followed in the production of digital orthophotos. “Digital Orthophoto” is a seamless orthorectified digital raster image, created using photogrammetric techniques to support transportation activities.

## **ITEMS PROVIDED AND/OR COMPLETED BY MN/DOT**

Specific information to be supplied for each project includes the following:

- Work Order Contracts. Each Work Order Contract will include the following information:
  - Project designation or numbers.
  - Project location.
  - Project limits.
  - Accuracy Requirements.
  - Units of measurement.
  - Coordinate Datum/Projection/Adjustment.
  - True Ortho Requirements for Buildings.
  - Terrain Model Classification/ Requirements.
  - Black and White or Color.
  - Deliverables Schedule/Evaluation.
  - Special Requirements.
  - Digital Deliverable Specifications.
    - Nominal Ground Resolution.
    - Deliverable Format.
    - File Format/ File Size/ File Naming Convention
    - Tile Format.
    - Orthophoto Index Requirements.
    - File Compression Requirements.
    - Number of Copies.
  - Hardcopy Deliverable Specifications, if applicable.
    - Sheet Size Requirements.
    - Paper Requirements.
    - Plot Scale.
    - Plot Resolution.
    - Orthophoto Index Requirements.
    - Number of Copies.
  - Start date.
  - Completion date.
  - Invoice, Incentive/Disincentive Schedule.
  - Total project cost payable to Contractor.
- Orthophoto Limit Diagram.
- Project Aerial Film/Contact Prints/Diapositives/Digital Images, if applicable.
- List of control points, if applicable.
- List of analytical control points/camera station parameters, if aero-triangulation solution is provided.

Please be advised: It is the Contractor's responsibility to provide safe storage and prompt return for all items supplied by MN/DOT. The Contractor is liable for lost or damaged items.

## **DELIVERABLES BY CONTRACTOR**

Specific deliverables authorized by this specification include the following:

- Cost estimate for each project.
- Monthly progress reports
- Aero-Triangulation solution, if applicable (see separate specification).
- Digital Terrain/ Surface Model, if applicable (see separate specification).

## **DIGITAL PRODUCTS**

Specific Digital Products will be specified in the Work Order Contract.

A minimum of 2 copies of each of the following digital products will be required:

- Raster File of Orthophoto Index.
- Raster Files of Project Orthophotos (uncompressed).

## **HARDCOPY PRODUCTS**

Specific Hardcopy Products will be specified in the Work Order Contract.

A minimum of 1 copy of the following hardcopy products will be required:

- Hardcopy plot of Orthophoto Index.

## **PERFORMANCE BASED SPECIFICATIONS**

All products and services authorized under this specification will be completed in accordance with the MN/DOT MANUAL OF SURVEYING AND MAPPING, Chapter Four (current edition), the MANUAL of PHOTOGRAMMETRY (Fourth Edition), DIGITAL PHOTOGRAMMETRY, An Addendum to the MANUAL of PHOTOGRAMMETRY, and the following performance specifications.

## **DEFAULT DELIVERABLE SPECIFICATIONS**

The default orthophoto specifications are as follows:

Units of measurement:	English.
Coordinate Projection:	Minnesota County Coordinate System.
True Ortho Requirements for Buildings:	Not Required.
Black and White or Color:	Black and White.
Nominal Ground Resolution:	0.5'
Deliverable Format:	CD.
File Format:	2 copies .TIF/.TFW
File Size/Tile Format:	200MB maximum
Orthophoto Index Requirements:	Scale: 1" = 1000'.

## **ACCURACY STANDARDS**

Orthophoto horizontal accuracy will be specified in the Work Order Contracts. The NSSDA reporting method will be used to evaluate the data.

The image coordinates will be compared to the ground surveyed coordinates at the same feature.

## **PROCEDURAL BASED SPECIFICATIONS**

All products and services authorized under this specification will be completed in accordance with the following procedural specifications and as directed by the Photogrammetric Engineer:

### **GENERAL**

Where these specifications, the Work Order Contract and contract documents describe portions of the work in general terms, but not in complete detail, it is understood that only “Best Industry Practices” are to prevail.