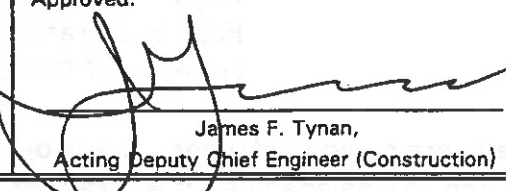


To: SUPERSEDED BY <i>EI 04-005, EFFECTIVE 9/9/2004</i>		New York State Department of Transportation ENGINEERING INSTRUCTION	EI 00-033
Title: ITEM 15637.51 M - DIGITAL CAMERA SYSTEM			
Distribution: ☐ Manufacturers (18) ☐ Surveyors (33) ☒ Main Office (30) ☒ Consultants (34) ☐ Local Govt. (31) ☒ Contractors (39) ☒ Regions/Agencies (32) ☐ ()		Approved:  James F. Tynan, Acting Deputy Chief Engineer (Construction) <i>9-14-00</i> Date	

PURPOSE: This Engineering Instruction (EI) transmits contract specification 15637.51 M - Digital Camera System along with the criteria to determine on which projects it should be used.

EFFECTIVE DATE: The specification is effective with projects submitted for the letting of 05/03/01. The specification may be used prior to this date via contract proposal, amendment, or order-on-contract.

TRANSMITTED MATERIALS: Item 15637.51 M - Digital Camera System. This shelf note will be a Main Office insert into contract proposals from the effective date of the submission. This specification will ultimately be incorporated into the Standard Specifications and Highway Design Manual.

SUPERSEDED MATERIALS: This Engineering Instruction supersedes pay item 15637.50 M - Digital Camera System. This Engineering Instruction supplements the standard 35 mm camera requirement which is part of Standard Specification § 637-'Engineer's Office and Laboratory Building' as well as EI 94-038 which added the 35 mm camera requirement to the Engineer's Office. The standard 35 mm camera shall still be provided as part of the Engineer's Office regardless of whether or not the Digital Camera System pay item is included on the project.

BACKGROUND: The Engineer's Office pay item has provisions for a standard 35 mm camera. As more and more of the benefits of digital imaging are being realized, the need for digital cameras on a project site is also being realized. It is not anticipated that a digital camera system will be required on all projects. As the initial costs associated with digital cameras are higher than the costs associated with standard 35 mm camera use, project selection criteria were established. The goal of project selection criteria is to limit the use of digital cameras to projects of significant size, complexity, and duration. For example, a basic resurfacing project which may be extensive in project length and project cost, probably is not complex enough to warrant a digital camera system over the standard 35 mm camera. However, strong consideration for use of the digital camera system should be taken on projects which will require timely communications of photographic site details to other parties.

The specification calls for various components which may or may not be included. In addition, it is expected that the quantity of materials, such as storage media, photo paper, and ink cartridges, will vary widely from project to project. For these reasons, the method of

measurement for this pay item is fixed price lump sum. This allows for a more accurate reimbursement of actual incurred cost related to the digital camera system than if it was paid on an each basis or a simple lump sum basis.

PROJECT SELECTION CRITERIA: The digital camera system should be considered for any project that meets all of the following criteria:

Engineer's Estimate > \$1,000,000

Project Duration > 6 Months

Number of Pay Items > 30

The above criteria are basic guidelines. If a project does not meet the above criteria, the digital camera system can still be specified if warranted. Examples of situations that may warrant use of a digital camera system include: complex construction, abnormal subsurface conditions/utilities, new construction or significant rehabilitation of a major structure, construction method/technique worthy of documentation, SPDES General Permit documentation, or digital images would significantly aid in timely communications and conflict resolution during construction or anticipated legal disputes. Conversely, even if a project meets the basic guideline criteria, it may be deemed that the complexity of the project does not warrant inclusion of the digital camera system (Example: a large bridge painting project).

DESIGNER INFORMATION: The estimated cost for use with the Engineer's Estimate is \$2,500.00. Digital camera system expenses for most projects are not expected to exceed this amount. However, this amount may be set at another value as the project dictates; particularly if the project duration exceeds two years. In many cases, if the Microcomputer System pay item is required for a project the Digital Camera System pay item should also be considered. This pay item specification is approved for General Use on all projects.

FIELD INFORMATION: If a printer supplied as part of another pay item or from a different source (Example: supplied under a computer system pay item or by the State) meets the Digital Camera System color printer specifications, then no printer should be provided as part of the digital camera system.

Refer to the Contract Administration Manual (CAM) §90 - 'Photographs / Videotape' section for direction on how digital photos shall be taken, stored, cataloged, and transmitted.

(Note: EB 00-053 released concurrently with this EI, updates the March 1996 version of this CAM section.)

The digital camera system is a fixed price lump sum pay item. The Engineer will be responsible for approving components of the system and receiving receipts. Only the portion of the fixed bid price equal to the actual digital camera system expenditures, with appropriate profit and overhead costs, shall be paid. Payment will only be made for components and materials provided as part of the digital camera system.

As the paper and ink for printing images tend to be more costly than for normal text printing, good judgement should be used to implement cost conscious printing practices.

Included as part of the digital camera system is software for cataloging/indexing the images.

This software can generate an index file that provides thumbnails (small images of the photographs) along with any descriptions that have been added to the image (date & time, location, PIN, BIN, etc.). When looking for images of a particular nature, these descriptions are useful search tools. While in construction, it may be necessary to sort through hundreds of images. Once archived, it may be necessary to sort through thousands of images from various projects. Hence, time and consideration should be spent on creating project index files and image descriptions.

DATA STORAGE: Temporary storage (during construction) of images should be on compact discs (CDs). If required by the Engineer, diskettes may be used in place of CDs. The Contractor shall replenish these items as required by the Engineer and be of a type, size, and capacity acceptable to the Engineer. Before use of CDs as the data storage media is accepted, verify that the Engineer's field office is equipped with the means to write data to CDs. When transferring data, verify that all involved parties are capable of retrieving data from CDs. It is understood that until the lack of capabilities to read and write to CD is resolved, storage on diskettes may be necessary.

Long term storage (archiving) may be a simple continuation of the storage via CDs. However, alternative storage methods are allowed. Regardless of storage method, the files should be properly secured and accessible, and the method should be acceptable to all affected parties.

When transferring images, it is important to ensure that the information regarding the date and time when the photograph was taken is not lost.

When transferring or archiving information via CD, ensure the CD is properly formatted and 'closed' such that it can be read from most CD-Rom drives.

OWNERSHIP OF MATERIALS: Ownership of the components supplied by the Contractor shall revert to the Contractor upon completion of the contract. Except the State shall retain ownership of the copies of the images and index files on CD/diskette as well as the CD/diskette storage cases.

CONTACT PERSON: Rob Howland, Main Office Construction Division, (518) 457-6472.

ITEM 15637.51 M - DIGITAL CAMERA SYSTEM

DESCRIPTION

This work shall consist of providing a fully operational digital camera system. This pay item or certain components of the pay item may be deleted from the contract.

MATERIALS

The system should include the following components:

1. Digital Camera
2. Color Printer
3. Software
4. Data Storage Media

Certain components should be deleted from the Digital Camera System pay item if a similar component is supplied under a different pay item or from another source and meets the digital camera system requirements. (Example: the printer required as part of the Digital Camera System should be deleted if a suitable printer is supplied under a computer system pay item or is supplied by the Department). The Contractor may also be required to provide, install, and maintain various other digital camera hardware components, software packages, and materials. All equipment and materials furnished shall be subject to approval by the Engineer.

1. DIGITAL CAMERA

The Contractor shall provide the Engineer with one digital camera which meets the following minimum specifications and is acceptable to the Engineer.

Digital Camera Specifications:

- A) Optical Zoom: 3X Optical Zoom Lens (Note: digital zoom is not the same as optical zoom)
- B) Image Size: 1024 x 768 minimum pixel resolution capability
- C) Flash: Built-In, Intelligent (Auto/On/Off)
- D) Time Stamp: Date & Time
- E) Recording Media: 1.44 MB Floppy Diskette, or Engineer approved alternative.

The Contractor shall also provide any required hardware and software to transfer images to the data storage media. The Engineer shall be supplied with a minimum number of recording media units to take 100 images (at 1024 x 768 pixel resolution), plus additional backup recording media unit(s) also capable of recording a minimum of 50 images. Separate units shall be supplied for the main recording media and the backup recording media units.

- F) Viewfinder: Minimum 45 mm (1.8") diagonal

Digital Camera Additional Items:

- G) 2 Sets of Batteries: Rechargeable, Lithium or NiMH, minimum 50 minute usable charge per battery set, or Engineer approved alternative, with Battery Charger Unit
- H) Carry Case

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2. COLOR PRINTER

The Contractor shall provide the Engineer with a color printer, which is totally compatible with the computer system(s) specified for the project. The printer must function in a WINDOWS environment (latest available version). Any necessary software shall be included. The Contractor shall provide the Engineer with one printer which meets the following minimum specifications and is acceptable to the Engineer.

Printer Specifications:

- A) A black and color (16.7 million color minimum) inkjet/laser jet printer capable of printing text, graphics, and photos.
- B) A minimum printing resolution of 48 x 28 dots-per-millimeter (1200 x 720 dpi) for black text, color graphics, and color photos.
- C) A minimum mode of 5 pages per minute (ppm) of color printing.
- D) A minimum paper tray/sheet feeder input capacity of 50 sheets.

Printer Additional Items:

- E) Interface cable (parallel or USB).
- F) Latest user manuals.
- G) Dust cover for printer.
- H) Table-top printer stand.
- I) One replacement black printer cartridge. ⁽¹⁾
- J) One replacement color printer cartridge. ⁽¹⁾
- K) 500 sheets of 216mm x 279 mm (8 1/2" x 11"), 75 g/m² (20 lb.) bond weight, letter quality, printer paper. ⁽¹⁾
- L) 200 sheets of 216mm x 279 mm (8 1/2" x 11"), photo quality, printer paper. ⁽¹⁾

Notes: (1) The Contractor shall replenish these materials as required by the Engineer and be of a type acceptable to the Engineer. The costs for these additional materials shall be paid at the final estimate.

3. SOFTWARE

The Contractor shall provide the Engineer with the latest available WINDOWS version of the following computer software package, which is totally compatible with the computer system(s) specified for the project including the printer provided for under this pay item specification. The complete software package, including license and/or registration materials, shall be provided to the Engineer and be functioning properly.

REQUIRED SOFTWARE : ThumbsPlus (by Cerious Software Inc.)
or latest Department standard software.

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4. DATA STORAGE MEDIA

For temporary (during construction) and possible long term (project archive) storage purposes, images should be transferred from the recording media to the data storage media. The data storage media shall be compact discs (CDs). CDs shall be a minimum of 650 MB CD-R (writeable). A minimum of 10 CDs shall be supplied. In addition, a minimum of 10 diskettes shall also be supplied for temporary file management tasks. If storing or retrieving images on CDs is deemed unreasonable by the Engineer, diskettes may be used in place of CDs. In this case, a minimum of 100 formatted diskettes shall be supplied.

CD and diskette storage containers shall be provided which sufficiently store and protect all of the data storage media. All data storage media and storage containers shall remain the property of the State.

The Contractor shall replenish these items as required by the Engineer and be of a type, size, and capacity acceptable to the Engineer. The costs for these additional materials shall be paid at the final estimate.

CONSTRUCTION DETAILS

Prior to the start of work, the Contractor shall provide and make fully functional a digital camera system. The system shall be maintained and remain in service until either (a) thirty (30) days after either the final contract acceptance date or the date the Contractor provided the last documentation necessary for processing the final contract acceptance, whichever is later; or (b) the Engineer requests its removal in writing. Once the digital camera system is taken out of service, ownership of the digital camera, printer, software, and related hardware shall revert to the Contractor. The State shall retain ownership of the copies of the images and any index files on CD/diskette, as well as the CD and diskette storage cases.

The Contractor shall maintain all furnished equipment and software in good working condition and shall provide replacement due to breakdown, damage, or theft within ten (10) working days at no additional cost.

This pay item or certain components of the pay item may be deleted from the contract. All equipment and materials shall be of a type and cost acceptable to the Engineer.

METHOD OF MEASUREMENT

The digital camera system will be measured on a fixed price "Lump Sum" pay unit basis.

The lump sum of money shown in the itemized proposal for this pay item will be considered the price bid even though payment will be made only for actual equipment and materials supplied. This lump sum figure is not to be altered in any manner by the bidder. Should the bidder alter the amount shown, the altered figure will be disregarded, and the original price will be used to determine the total amount bid for the contract.

ITEM 15637.51 M - DIGITAL CAMERA SYSTEM

BASIS OF PAYMENT

The price bid for the digital camera system will include the cost of furnishing, installing, maintaining, and removing all equipment and materials for the system.

The pay item will be a 'draw down' item. A fixed lump sum price bid shall be made for the pay item at the price published in the proposal. As components and materials are supplied, the receipts for the equipment or material shall be submitted to the Engineer. Profit and overhead may be added to the equipment and material costs, and shall be computed at five percent (5%) instead of the twenty percent (20%) specified in Standard Specifications § 109-05 B2(6). Receipts shall be reimbursed as a portion of the fixed lump sum price bid.

For equipment and materials supplied at the beginning of the project, seventy percent (70%) of the cost will be paid when the equipment or material has been supplied and is operational; the balance of thirty percent (30%) will be paid at the final estimate. For additional equipment and materials supplied during the course of the project, one hundred percent (100%) of the cost will be paid at the final estimate.

Only the portion of the fixed lump sum price bid equivalent to the total actual cost for equipment and materials, with profit and overhead, shall be paid.

If new equipment is not provided, the Engineer shall determine a reasonable cost for the equipment. The Contractor should provide a copy of the original receipt for the equipment to assist the Engineer in assessing the current value of the equipment. Equipment over one (1) year old shall be assessed at no more than fifty percent (50%) of the original receipted cost. Equipment over two (2) years old shall be assessed at no more than twenty five percent (25%) of the original receipted cost. Equipment over three (3) years old should not be considered for approval.