TO:

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Design Quality Assurance Bureau

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ASSURANCE BUREAU
MAY 10 1993

# ENGINEERING INSTRUCTION

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

SUBJECT: REVIEW
REVISED MICROCOMPUTER SYSTEM SPECIFICATION
ITEM 15637.32
Subject Code:

**SUPERSEDED**
**BY EI 94-021 EFFECTIVE 11/17/94**

Distribution:
30 Main Office 32 Regions 34 Special

Code: EI 93-004

Date: March 05, 1993

Supersedes:

APPROVED: Paul J. Wells

This Engineering Instruction announces the revised item specification for Microcomputer System, Item 15637.31 to 15637.32. The new item specification shall be used for all projects with lettings scheduled on or after 08/19/93 (PS&E; May 27, 1993).

Also established by this EI is that:

1. The estimated bid price for use with the Engineers Estimate is now $6000.00. The previous estimate was $8000.00. This revised estimate is a result of historic bid price data.

2. The item specification warrant criteria for incorporation of this item into a capital construction contract is unchanged:

| | |
|---|---|
| Engineers Estimate: | > $350,000 |
| Project Duration: | > 6 Months |
| Number of Items: | > 30 |

3. The Approved List, "PERSONAL MICROCOMPUTER, ENGINEER'S OFFICE" which was referenced under Item 15637.31, is no longer a requirement of this revised Item 15637.32. This change is a result of the improved compatibility of personal microcomputer over the past several years. Continuation of an approved list is no longer considered necessary.

4. The item specification will continue to be treated as a main office insert and inserted into the contract proposals by the Design Quality Assurance Bureau.

The purpose of the item specification changes are to supply construction field offices with equipment consistent with the Department's Field Office Automation Plan and current field staff responsibilities. Major revisions include the following:

Increased RAM
Standardized Floppy Drive Configuration
Higher Graphic Resolution & Color Monitor
A 24 PIN Printer
Norton Anti-Virus software
Larger Hard Disk

Distribution of the actual item specification, as an attachment to this EI, was as follows:

List 30: Recipients received 1 copy.

List 32: Copies have been sent to the Regional Design Engineer, Regional Estimating Engineer, and Region Construction Engineer.

List 34: Recipients received 1 copy.

Copies of the item specification may be requested.

Any questions concerning this EI should be directed to Anthony Torre of the Construction Division at (518) 457-3225.

AJT:RMSS.EI

15637.32 MICROCOMPUTER SYSTEM

Description. This work shall consist of providing a fully operational microcomputer system for the Engineer's field office. This item may be deleted from the Contract.

Materials. The system shall include the following components: microcomputer (see Attachment 1); printer (see Attachment 2); microcomputer software programs (see Attachment 3); and a hard-disk (see Attachment 4).

The Contractor may also be required to provide, install, and maintain various other microcomputer hardware components and software packages. Such additional items shall be incorporated by Order-on-Contract with compensation to be made in accordance with SS. 109-05. However, profit and overhead shall be computed at 5% instead of the 20% specified SS. 109-05 B2(6).

Construction Details. The Contractor shall install, prior to the start of work, and maintain, a microcomputer system in the Engineer's field office. The Contractor shall make the system fully operational prior to the start of any contract work. The Contractor shall be responsible for all modifications to the Engineer's field office, such as, but not limited to, the office electrical system, necessary to make it compatible with and capable of supporting the Microcomputer System. The system shall remain in service until the Engineer requests its removal in writing or the State relinquishes the Engineer's field office in which the system is installed. Data Diskettes and Diskette Storage Containers, as specified in Attachment 1 of this item specification, shall remain the property of the State.

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 working days.

All equipment and software furnished shall be subject to approval by the Engineer.

Method of Measurement. The microcomputer system will be measured for payment on the Lump Sum Basis.

Basis of Payment. The price bid for the microcomputer system will include the cost of furnishing, installing, maintaining, and removing all equipment for the system.

Twenty percent of the price bid will be paid when the system has been installed and is operational; the balance will be paid in equal monthly payments distributed over the estimated contract life.

## ATTACHMENT 1: MICROCOMPUTER SPECIFICATION

The Contractor shall provide the Engineer with one Personal Microcomputer that is 100% IBM compatible and which also meets the following specifications. A DOS environment (non-windows) is required.

Specifications:

A) A minimum of an 80-286 based Central Processor Unit (CPU) operating at a minimum clock speed of 7 MHZ.

B) A minimum of 1.0 Megabyte RAM (Random Access Memory) with 640k directly addressable, expandable to 2.0 Megabyte.

C) Two (2) disk drives, labeled A & B, w/controller card, meeting the following configuration:

One (1) disk drive shall be a 360k drive, 5.25 inch.
One (1) disk drive shall be a 1440k drive, 3.50 inch.

Only one (1) disk drive may be external.

D) Parallel and Serial interface ports

E) Battery operated clock and calendar functions

F) High resolution graphic capabilities such as provided by an IBM Video Graphic Array, VGA (640 X 480) or SVGA (800 X 600) or EVGA (1024 X 768)

G) Eighty (80) column display function

H) Latest operations manual & diskettes

I) Minimum of MS-DOS 3.3 system manual & diskettes or approved equal as required to properly operate disk drive configuration supplied

J) IBM Basica, GW Basic or QBasic diskette and manual

K) Enhanced Keyboard with 101 Keys and number pad with key on-off indicator lights.

Additional Items:

A) High Resolution (VGA or SVGA or EVGA) color 12-inch (minimum) monitor with a minimum DOT Pitch of .39 supporting the required microcomputer graphic capabilities.

B) SURGE PROTECTOR, 15 amps, four outlets w/circuit breaker control and surge failure indicator light

C) Clear plastic dust cover for microcomputer and a separate dust cover for the keyboard

*D) 100 diskettes, which shall remain the property of the State, and are compatible with the specified disk drives.

*E) Diskette storage containers, 2-100 count & 5-10 count, which shall remain the property of the State.

* The Contractor shall replenish the items as required by the Engineer and be of a type, size and capacity acceptable to the Engineer.

## ATTACHMENT 2: PRINTER SPECIFICATION

The Contractor shall provide the Engineer with a printer, which is totally compatible with the microcomputer, software and hard-disk provided in Attachments 1, 3 and 4 of this item specification.

Specifications:

A) A 24 Pin, 132-column (15-inch carriage) dot matrix printer w/IBM Graphics Character Set capabilities, both tractor and friction feed with a minimum draft mode of 180 cps (characters per second) and a minimum near letter quality (NLQ) mode of 30 cps. An Operator-Accessible Selector (control panel) with functions of paper feed, mode, and pitch.
B) Density Bit-Image Graphics capability of 816 dot columns (60 dots per inch horizontal) and 1632 dot columns (120 dot per inch horizontal).
C) Vertical Density dot printing capability of 72 dots per inch and 144 dots per inch.
D) Line feed and form feed functions
E) Variable pitch characters per inch, (both 10 and 12 cpi) with compressed print function (17 cpi)
F) Variable lines per inch (both 6 and 8 lpi)
G) Interface cable (parallel port)
H) Latest user manuals
I) Clear plastic dust cover for printer
J) Steel table-top printer stand with slot for bottom paper feed
*K) Two replacement printer ribbons or cartridges
*L) One box each of 132-column (14 7/8" x 11") and 80-column (9 1/2" x 11") continuous feed, 20# bond weight printer paper (min. 2000 sheets per box). The 80-column paper shall be letter quality with disappearing perforations on the edges.
*M) 500 mailing labels on continuous form paper for use in the printer (1 1/2" X 4" minimum label size)

* The Contractor shall replenish the items as required by the Engineer and be of a type acceptable to the Engineer.

## ATTACHMENT 3: SOFTWARE SPECIFICATION

The Contractor shall provide the Engineer with the latest available DOS version of the following microcomputer software packages, which are totally compatible with the microcomputer, printer, and hard - disk provided in Attachments 1, 2, and 4 of this item specification.

A) Professional Write
B) Professional File
C) Lotus 1-2-3, Version 2.xx
D) Norton Anti-Virus

It is the Contractor's responsibility to ensure that the Personal Microcomputer supplied also operates the following Department Software Application:

1) Computerized Engineer's Estimate System, CEES

## ATTACHMENT 4: HARD-DISK SPECIFICATION

The Contractor shall provide the Engineer with a hard-disk, labeled C drive, which is totally compatible with the microcomputer, printer, and software programs provided in Attachments 1, 2, & 3 of this item specification.

Specifications:

A) An external or internal unit may be provided
B) Formatted capacity of a minimum of 60 Mega-Bytes labeled C drive
C) All cables, controller card(s) and software necessary to make the unit fully operational
D) Bit transfer rate: 5.0 M bits/sec.
E) Average Access Time (Milliseconds): <45
F) Direct microcomputer-booting from hard-disk
G) Partitioning command for hard-disk
H) Automatic hard-disk safe zone landing when unit is turned off and/or power is cut from unit
I) Head-Parking command for unit relocation
J) Latest guide to operations and/or user manuals

File: AJT-MICROSYS