

at the Contract lump sum price. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the work. All buildings not designated for removal and disposal in the Contract Documents will not be measured but the cost will be incidental to Section 101. The Administration reserves the right to eliminate from this item any or all buildings or structures. For each building eliminated from this item, the item will be credited to the extent of the cost eliminated, which will be determined from a breakdown submitted by the Contractor showing the tabulation of individual unit costs used in arriving at the Contract price for this item. A breakdown of the Contract lump sum price for Removal and Disposal of Existing Buildings shall be submitted to the Engineer prior to beginning work.

SECTION 103 — ENGINEERS OFFICE

103.01 DESCRIPTION. This work shall consist of furnishing, cleaning, and maintaining in good condition an Engineers office at a location within the immediate vicinity of the project and approved by the Engineer. The Engineers office shall be separated from any offices used by the Contractor and it and all items therein shall be for the exclusive use of the Administration's Engineers and Inspectors. Rented properties that conform to the type of office specified in the Contract Documents will be acceptable.

103.02 MATERIALS. Not applicable.

103.03 CONSTRUCTION. The office shall be set up, equipped and made ready for use a minimum of five days prior to commencement of other work on the project and shall remain until all field records have been completed. Upon removal the location shall be restored and left in a condition acceptable to the Engineer.

Unless otherwise specified, the Engineers office and all equipment and accessories furnished by the Contractor shall become the property of the Contractor at the completion of the project.

103.03.01 Mobile Housing Unit. The Contractor shall provide a mobile housing unit having a minimum floor space of 60 ft², and a minimum window area of 10 ft² to provide natural light. It shall be entirely enclosed, waterproofed, and have a door that locks. It shall be equipped with at least one table 36 x 48 x 40 in. high and one closet equipped with lock for storing equipment. Two keys for each lock shall be provided to the Engineer. Satisfactory heating and cooling shall be provided.

The unit shall be relocated by the Contractor to the locations as directed by the Engineer.

103.03.02 Handicap Accessibility. When handicap accessibility is necessary, it shall comply with the Federal Register-Volume 56 No. 144-Americans with Disability Act (ADA) Accessibility Guidelines for Buildings and Facilities.

103.03.03 Mobile Office Trailers. Office trailers shall be anchored in conformance with the manufacturer's recommendations. Office trailers defined under the Industrial Building and Mobile Act of Maryland shall be approved by the Maryland Department of Housing and Community Development and bear the Maryland Certification Insignia. The Insignia shall be located in the interior of the office.

103.03.04 Quality Control Laboratory. Refer to Section 915.

103.03.05 Construction Requirements for all Offices.

- (a) Entirely enclosed, waterproofed, and completely insulated to a minimum R11 rating.
- (b) Double thick floor with building paper placed on top of the lower floor.
- (c) Finished inside and outside as approved by the Engineer.
- (d) The building shall have a minimum ceiling height of 7 ft, and have a pitched roof with a ventilating louver in each gable.
- (e) A 4 x 1 ft minimum sign with the message "ENGINEERS OFFICE - STATE HIGHWAY ADMINISTRATION", shall be attached to or mounted in front of the office. The sign shall have a black background with minimum 3 in. height white lettering. It shall have a 1 in. wide white border around the entire sign.
- (f) A 5 x 7 in. minimum no smoking sign shall be posted on the outside of each entrance to the office, plant laboratory, and mobile housing unit.
- (g) Interior and exterior doors shall be equipped with different key locks. Interior doors shall be keyed alike and exterior doors shall be keyed alike. Exterior doors shall have an additional dead bolt lock. The Contractor shall provide the Engineer four keys for the interior and exterior locks.

- (h) Windows shall be capable of being opened and closed and be equipped with latches and screens. Each window shall have venetian blinds or shades.
- (i) Electrified to conform to national and State electrical codes with satisfactory artificial lighting and lighting services. The minimum illumination level shall be 75 ft-c.
- (j) Equipment shall be provided to enable heating the office to at least 70 F and cooling to at least 78 F.
- (k) The restroom facility shall include wash basin, water closet, soap holder, paper towel holder, and mirror. It shall be connected to water and sewage, or a well and septic system. A pressurized water system capable of maintaining a minimum pressure of 20 psi shall be provided. These facilities shall conform to the State Department of Health and Mental Hygiene or other authorities having jurisdiction.
- (l) The Contractor shall maintain the Engineer's facilities in a clean and sanitary condition, and have the trash removed daily. Floors shall be swept daily and damp mopped and waxed biweekly. The interior and exterior of all windows shall be cleaned monthly. Additionally, this work shall be performed on an as needed basis when requested by the Engineer.
- (m) The Contractor shall be responsible for protecting the Administration and Administration employees from any loss or damage to their property stored in the Engineers Office. The protection shall be in the amount of twenty thousand dollars (\$20,000), nondeductible, per each occurrence, for any loss or damage due to fire, theft, vandalism, storms or floods. Reimbursement, replacement, or repair shall be completed within 30 days from the date the Engineer reports the loss to the Contractor.
- (n) A designated parking area, with the specified number of spaces, shall be provided for the exclusive use of Administration employees. The Contractor shall post signs to designate the assigned parking areas and enforce the parking rules. The parking area shall be stabilized as directed by the Engineer.
- (o) Fire extinguishers shall be dry chemical, multi-purpose ABC type (minimum 10 lb), equipped with a visual air pressure gauge. They shall be maintained in conformance with OSHA safety and health standards.

- (p) A 24 unit first aid kit shall be furnished and maintained as described in the Code of Federal Regulations, Title 29 Subpart D, Section 1926.50(d)2.
- (q) A waterproof bulletin board, minimum 4 x 8 ft, shall be installed within the limits of the project in an easily accessible area and shall be conspicuously displayed to all employees. The Contractor shall post all pertinent and required notices and shall maintain it for the duration of the project.
- (r) Touch-tone telephones equipped with an answering device capable of answering, recording, storing, and playing back messages at least 30 minutes in length. The machine shall be voice activated, beeperless, to record as long as speaker speaks, and shall play back recorded messages without dial tone or pauses. The machine shall be capable of recording outgoing messages up to 15 seconds in length.

If a telephone or answering machine becomes defective, is stolen, or for any other reason does not function as intended, it shall be replaced with an equal or better unit within eight hours after the Contractor is notified at no additional cost to the Administration.

Emergency telephone numbers shall be conspicuously posted in the office.

- (s) One 12 ft³ electric refrigerator.
- (t) One modern cassette player/recorder with cassettes and approved by the Engineer.
- (u) One modern one-step operation paper copier machine. The Contractor shall supply paper and provide service as needed.
- (v) One sanitary type electric water cooler including bottled water and disposable cups.

103.03.06 Microcomputer System for all Offices.

(a) Desktop Unit.

- (1) Pentium microprocessor minimum, processor shall be year 2000 compliant.
- (2) Minimum microprocessor speed of 700 MHz.
- (3) One 3-1/2 in. HD (high-density) floppy diskette drive.

- (4) Minimum hard drive storage of 6.0 GB (gigabyte).
 - (5) Minimum of 64 MB RAM (Random Access Memory).
 - (6) Enhanced 101 key keyboard with wrist rest.
 - (7) Super Video Graphics Accelerator (SVGA) with minimum 2 MB memory.
 - (8) Modem shall have a minimum of 56K BPS, ITU V.90 compliant, with separate independent telephone line and phone number to dedicated phone jack.
 - (9) Mouse with mouse pad.
 - (10) One CD-ROM drive having a minimum of 8X speeds.
 - (11) One Iomega compatible ZIP Drive.
- (b) **Operating System.** Minimum Microsoft® Windows 98™.
- (c) **Video Monitor.** Color Super VGA monitor conforming to Energy Star requirements with a minimum screen size of 17 in.
- (d) **Printer.** HP Compatible Color Inkjet or Color Laser Printer with minimum resolution of 600 DPI (dots per in.) and a minimum of 2 MB of RAM. Officejets and Bubblejets will not be accepted. Printer shall have a minimum print speed of 10 PPM (pages per minute) in black and white mode and 6 PPM in color.
- (e) **Software.**
- (1) Microsoft® Office 97 Professional for Windows™ or later.
 - (2) Symantec® pcAnywhere32 for Windows™ version 8.0 or later.
- (f) **Internet Access.** The microcomputer system shall be provided with Internet access.
- (g) **Accessories.**
- (1) Uninterruptible power supply (UPS).
 - (2) Standard computer workstation with minimum desk space of 60 x 30 in. and a swivel type office chair, padded with arm rests.

- (3) 8-1/2 × 11 in. xerographic paper to be supplied as needed.
- (4) 3-1/2 in. disks as needed.
- (5) Toner or ink as needed for printer.
- (6) Maintenance agreement to provide for possible down time.
- (7) Physical security system to deter theft of computer components.
- (8) Four 100 MB Cartridges for Iomega compatible Zip Drive.

(h) Notes.

- (1) The microcomputer system shall be completely set up ready for use on or before the day the Engineers office is to be occupied.
- (2) All software stated above shall be supplied on original disks with original manuals and be retained in the construction field office for the duration of the Contract.
- (3) If for any reason the system fails to operate, the system shall be replaced or repaired within 48 hours.
- (4) When the microcomputer system is no longer required, the Construction Management software system including original user/operator guide manuals, program disks, and all data files will be removed by the Engineer and delivered to the District Engineer and become the property of the Administration. The remaining microcomputer system shall remain the property of the Contractor.

103.03.07 Facsimile (FAX) Transceiver for all Offices.

- (a) Shall have separate independent telephone line and phone number to dedicated phone jack.
- (b) Shall conform to and be compatible with CCITT Group Transmission Standards (see specific line items for compatibility requirements).
- (c) Shall use public switched telephone networks and standard two wire leased line through RJ11C jacks or similar devices.

- (d) Shall transmit at a minimum of 9600 BPS with automatic stepdown to compensate for phone line conditions.
- (e) Shall transmit a standard 8-1/2 × 11 in. page within 20 seconds through a clear phone line, based on CCITT #1 test chart.
- (f) Shall have a minimum of two levels of resolution with contrast control:
 - (1) Standard 200/96 lines
 - (2) Fine 200/196 lines
- (g) Shall have self-test capability, provide activity reports, and provide page headers, time and date.
- (h) Shall use standard copy paper for receiving transmissions.
- (i) Shall have automatic document feeder tray (see specific requirements for each transceiver class).
- (j) Shall be supplied with handsets.
- (k) Shall provide for automatic answer, receive, and disconnect features.
- (l) FCC registration number, ringer equivalence, and connection circuitry shall be provided for each transceiver.

103.03.08 Specific Field Office Requirements.

Type A Engineers Office – Standard office trailer with a minimum of 200 ft² of floor area under one roof.

Type B Engineers Office – Standard office trailer with a minimum of 400 ft² of floor area under one roof.

Type C Engineers Office – Standard office trailer with a minimum of 700 ft² of floor area under one roof.

Type D Engineers Office – One-story structure containing a minimum of 1300 ft² of floor area under one roof. Modular construction is acceptable. Office trailers are not acceptable.

Table 103 Specific Requirements

ENGINEERS OFFICE				ITEM
A	B	C	D	
–	1	2	–	Inner Offices–100 ft ² each
–	1	1	–	General office area
–	–	–	4	Inner Offices–120 ft ² each
–	–	–	1	Conference room–240 ft ²
–	–	–	1	Storeroom with shelves–120 ft ²
1	1	1	2	Restroom, minimum 30 ft ²
–	1	1	1	Inner office ingress and egress to the other rooms
3	4	4	5	Executive type desks with center drawers. Minimum top dimensions of 32 X 60 in.
3	4	4	5	Swivel chairs, padded with arm rests
1	1	1	1	Slant top drafting table and stool, approximately 40 in. high at the front edge and having minimum top dimensions of 30 X 72 in.
1	2	3	6	Folding utility tables, 30 in. high and having minimum top dimensions of 30 X 72 in.
–	–	–	1	Conference table with padded chairs for 12 persons
2	6	10	12	Additional padded chairs
1	2	2	3	Plan racks
1	1	1	2	Coat racks
1	1	1	1	3 X 6 ft blackboard or whiteboard
1	2	3	3	Electronic desk calculators with memory and tape readout (including instruction manuals and replacement tapes as needed)
1	1	2	6	Legal size steel filing cabinets, four-drawer fire resistant (D label) with locks
–	2	2	2	Standard size steel filing cabinets, four-drawer with locks
1	1	1	5	Bookcases having four shelves 36 X 12 in.
1	2	2	2	Closets extending the full height from floor to ceiling, measuring not less than 24 X 30 in. and equipped with locks and at least two shelves in each
1	1	1	–	Utility cabinet with three adjustable shelves
1	1	1	–	Overhead cabinet minimum dimensions of 8 ft long 15 in. deep, and 18 in. high
1	1	1	2	Fire extinguisher as described in 103.03.05
1	2	2	4	Touch-tone telephones with separate lines, as described in 103.03.05
2	2	2	2	Battery-operated smoke detectors
4	8	10	15	Designated parking spaces

103.04 MEASUREMENT AND PAYMENT. Engineers office will not be measured but will be paid for at the Contract lump sum price for the pertinent Engineers Office specified in the Contract Documents.

Payment of 50 percent of the Contract lump sum price will be payable on the first estimate subsequent to complete installation of the Engineers office. The remaining 50 percent will be prorated and paid in equal amounts on each subsequent monthly estimate. The number of months used for prorating will be the number estimated to complete the work. The final month's prorata amount will not be paid until the office is removed and the area is restored. The payment will be full compensation for site preparation, utility costs, all specified furnishings, to provide, equip, clean, maintain, insure, remove and dispose of the office, restore the site and for all material, labor, equipment, tools, and incidentals necessary to complete the work.

The only exception to the all inclusive Contract lump sum price is the stabilization of the parking area, which will be measured and paid for using the pertinent items as directed by the Engineer.

SECTION 104 — MAINTENANCE OF TRAFFIC

104.00 GENERAL. This work shall consist of maintaining vehicular and pedestrian traffic on or along any transportation facility as specified in the Contract Documents. This Section sets forth the traffic control requirements necessary for the safe and continuous maintenance of traffic throughout the area affected by the work, and is intended to minimize inconveniences to the traveling public, while providing for the safety of motorists, pedestrians, and workers.

When speed of traffic is noted, this means the posted speed or prevailing travel speed, whichever is higher unless otherwise specified.

Items used for temporary maintenance of traffic shall be removed from the project site when no longer needed and become the property of the Contractor, unless otherwise specified in the Contract Documents.

Ninety percent of all reflective barrier markers, warning lights, and raised pavement markers shall be operational at any given time unless more are specified by the Engineer. Any deficiencies shall be corrected within 24 hours.

Upon initial installation reflectorized traffic control signs shall have a minimum of 70 percent reflectivity specified in 950.03 over 90 percent of their reflectorized surface, and channelizing devices shall have a