

CHAPTER 703. NATIONAL CEMETERY SYSTEM - MAINTENANCE AND SERVICE BUILDING

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**1. APPROVAL OF CRITERIA**

Criteria approved by the Department of Veterans Affairs (VA) on September 18, 1984.

Minor revision to Heavy Maintenance approved February 26, 1987.

**2. DEFINITION**

This chapter defines personnel and vehicle and equipment space requirement for the Department of Veterans Affairs (VA) national cemeteries.

**3. PROGRAM DATA REQUIRED**

- a. Staffing projections by position.
- b. Projected burials/day.
- c. Maintenance and service equipment projections by type and quantity.

**4. SPACE DETERMINATIONS**

Cemeteries having less than 1 burial/day must be planned on an individual project basis.

**a. Personnel Facilities**

**(1) Office, Foreman**

(a) **1-6 burials/day** ..... 13.9 NSM (150 NSF)  
 Includes 2.8 NSM (30 NSF) for plan file.

(b) **Over 6 burials/day** ..... 17.7 NSM (190 NSF)  
 Includes 2.8 NSM (30 NSF) for plan file and 3.7 NSM (40 NSF) for drafting table.

(c) **Additional Foremen** ..... 7.4 NSM ( 80 NSF)

(d) **Parts and Tools Clerk** ..... 7.4 NSM ( 80 NSF)  
 (Provided only in cemeteries with over 6 burials/day.)

Space for this function may be located in Parts and Tools Storage.

(2) **Lunchroom** ..... 1.4 NSM ( 15 NSF)  
 per FTE  
 (Minimum =  
 16.3 NSM (175 NSF))  
 (Maximum =  
 53.5 NSM (575 NSF))

Space is based on the minimum and maximum number of employees occupying the room during any one lunch shift.

- (a) **Kitchen Unit** ..... 4.2 NSM ( 45 NSF)
- (b) **Vending Machines** ..... 4.7 NSM ( 50 NSF)
- (3) **Housekeeping Aids Closet** ..... 3.7 NSM ( 40 NSF)
- (4) **Lockers, Toilets, Showers**
  - (a) **Lockers** ..... 0.8 NSM ( 9 NSF)  
per FTE  

The area per locker is based on a locker size of (380 mm x 460 mm) (15" x 18") bench space.
  - (b) **Toilets**
    - 1. **Male**
      - a. **Water Closets** - One for each 18 FTEs or fraction thereof for the first 40 FTEs; one for each 25 FTEs or fraction thereof for FTEs over 40.  
  

One watercloset must be class "B" to accommodate the handicapped, except when the Administration Building and Maintenance and Service Building are connected in cemeteries with 1-6 burials/day.
      - b. **Urinals** - One for each 10 FTEs or fraction thereof for the first 20 FTEs; one for each 18 FTEs or fraction thereof over 20.
      - c. **Lavatories** (Cemeteries with 20 or less total FTEs). One for each 10 FTEs or fraction thereof.
      - d. **Wash Fountains** (Cemeteries with over 20 total FTEs). One for each 24 FTEs or fraction thereof.
    - 2. **Female** - One water closet and one lavatory.
  - 3. **Area Required**
    - a. **Water Closet, Handicapped** (Class B) ..... 3.0 NSM ( 32 NSF)
    - b. **Water Closet, Standard; Lavatory or Urinal** ..... 2.0 NSM ( 22 NSF)
    - c. **Wash Fountain** ..... 4.3 NSM ( 46 NSF)
  - (c) **Shower** ..... 2.3 NSM ( 25 NSF)  
(One for males and one for females.)
- (5) **Boot and Raincoat Holding Area** ..... 0.1 NSM ( 1.5 NSF)  
per FTE

- (6) **Boot Wash** ..... 2.8 NSM ( 30 NSF)  
 (Provided indoors only in cemeteries where winter climate is too severe to wash boots outside. Otherwise, provided at exterior entry from service yard to lockers.)

**b. Maintenance and Equipment Facilities**

**(1) Vehicle and Equipment Maintenance and Storage - Enclosed (Heated) Facilities**

**(a) Vehicle and Equipment Maintenance Area**

(Hydraulic vehicle servicing lifts will be provided on an individual project basis.)

**1. Routine Maintenance**

(Maintenance (oil change, tune-up, lubrication, belt and hose replacement, etc.) that does not necessitate the removal of a major component of a vehicle.)

- a. Up to 15 burials/day** .....44.6 NSM (480 NSF)
- b. Over 15 burials/day** .....89.2 NSM ( 960 NSF)

**2. Heavy Maintenance**

(Maintenance that may necessitate the removal of a major component (engine, transmission etc.) of a vehicle.

- a. 1-6 burials/day** .....None
- b. Over 6 burials/day** .....65.0 NSM ( 700 NSF)

**NOTE:** *Space for this function is not required if the cemetery contracts out heavy maintenance.*

**(b) Parts and Tools Storage**

- 1. 1-3 burials/day** .....31.2 NSM ( 336 NSF)  
 (Includes Insecticide Storage)
- 2. 4-6 burials/day** .....41.8 NSM ( 450 NSF)  
 (Includes Insecticide Storage)
- 3. 7-15 burials/day** .....72.5 NSM ( 780 NSF)
- 4. Over 15 burials/day** .....96.3 NSM (1035 NSF)

**(c) Insecticide Storage**

- 1. 1-6 burials/day** ..... Combined in subpara.(b)1 & 2 above
- 2. Over 6 burials/day** ..... 9.3 NSM ( 100 NSF)

**(d) Workshops**

- 1. 1-6 burials/day** ..... 9.3 NSM ( 100 NSF)

(Added to Routine Maintenance space. See b(1)(a)1. above.)

- 2. **7-15 burials/day** .....40.2 NSM ( 432 NSF)
- 3. **Over 15 burials/day** .....53.5 NSM ( 576 NSF)

(2) **Vehicle and Equipment Storage -**  
 Enclosed (Unheated), Sheltered, Paved

(a) **Vehicles and Grounds Maintenance Equipment -**

The total storage space (NSM/NSF) required will be determined from the following equipment index. The proportion of the total space to be enclosed, sheltered or paved will be determined on an individual project basis. Refer to paragraph 703.06h and i for guidelines.

- 1. Back Hoes .....26.8 NSM ( 288 NSF)
- 2. Utility Truck .....22.3 NSM ( 240 NSF)  
 (one only)
- 3. Dump Trucks .....22.3 NSM (240 NSF)
- 4. Pickup Trucks .....22.3 NSM (240 NSF)
- 5. Truck Trailers .....22.3 NSM (240 NSF)
- 6. Automobiles .....22.3 NSM (240 NSF)
- 7. Plow Blades .....11.2 NSM (120 NSF)
- 8. Street Sweeper (one only) .....11.2 NSM (120 NSF)
- 9. Industrial Tractors ..... 8.9 NSM ( 96 NSF)
- 10. Agricultural/Garden and Lawn Tractors ..... 3.0 NSM ( 32 NSF)
- 11. Trailers (Tractor) ..... 3.0 NSM ( 32 NSF)
- 12. Fork Lift ..... 8.9 NSM ( 96 NSF)
- 13. Tractor-Mounted Gang Mower .....37.2 NSM (400 NSF)
- 14. Hand Mowers and Trimmers ..... 1.1 NSM 12 NSF  
 per 2
- 15. Toro Mower (Grounds Master) ..... 4.5 NSM ( 48 NSF)
- 16. Tank Sprayer (Tractor) ..... 6.5 NSM ( 70 NSF)
- 17. Air Compressor ..... 6.5 NSM ( 70 NSF)
- 18. Wood Chipper ..... 9.3 NSM (100 NSF)
- 19. Seeder ..... 7.4 NSM ( 80 NSF)

20. Spreader ..... 7.4 NSM ( 80 NSF)

(b) **Grounds Maintenance Storage** - Enclosed (Unheated)

- 1. 1-3 burials/day .....None
- 2. 4-6 burials/day ..... 9.3 NSM (100 NSF)
- 3. 7-15 burials/day .....26.8 NSM (288 NSF)
- 4. Over 15 burials/day .....37.2 NSM (400 NSF)

(c) **Flammable Storage** - Enclosed (Unheated)

- 1. 1-6 burials/day ..... 9.3 NSM (100 NSF)
- 2. Over 6 burials/day .....18.6 NSM (200 NSF)

(d) **Headstones** (Paved)

- 1. 1-6 burials/day .....11.2 NSM (120 NSF)
- 2. 7-15 burials/day .....22.3 NSM (240 NSF)
- 3. Over 15 burials/day .....33.5 NSM (360 NSF)

(3) **Fuel Island** .....93.0 NSM (1000 NSF)

(Three pumps and underground storage tanks for gasoline and diesel fuel.)

(The requirements for a fuel island and the number of pumps and storage will be justified on an individual project basis.)

(4) **Paved Parking**

Provide parking space for maintenance and service employees in accordance with appropriate Department of Veterans Affairs (VA) standards.

(5) **Wash Rack** .....22.3 NSM (240 NSF)

(6) **Loading Dock** ..... 4.7 NSM ( 50 NSF)

**5. OPERATING RATIONALE (BASIS OF CRITERIA)**

**a. Personnel Facilities**

**(1) Office, Foreman**

Tasks .....Supervision of maintenance personnel and operations.  
 Supervises and may issue parts and tools.  
 Control gasoline pumps.  
 Maintains inventory records.  
 Meets visitors, e.g., business.  
 Meets staff, e.g., operations.  
 Prepares purchase orders.  
 Typing/writing at work station.  
 Files plans and maps.  
 Records.

User .....Foreman.

- Related Areas .....Parts and tools.  
Gas pumps (Ancillary functions (lunch, locker, toilet).
- Special Requirements .....Maximum wall storage.  
Shelves for catalogues tack wall surface for maps secured supply cabinets  
Wall-Mounted book-type map storage plan file with work counter at 1070 mm (42").  
Work stations.  
File Box drawers, pencil drawers.  
Reference shelves.  
Telephone.  
Typing.  
Drafting board.  
File cabinet may be under work counter.

**(2) Lunchroom**

(a) Kitchen Unit

(b) Vending Machines

Tasks .....No personnel assigned to this area.

Related Areas .....Toilets.  
Locker/dressing.  
Boot cleaning.

Special Requirements .....Small built-in food preparation center.  
Sink.  
Overhead cabinet-mounted microwave oven.  
Overhead storage.  
Base cabinet storage with work counter surface.  
Refrigerator.  
Task lighting.  
Vending machines recessed.  
Maximum natural light.  
Should be bright, relaxing, non-institution  
Easy maintenance on all finishes.  
Four person tables with individual chairs.  
Lunchroom may serve as circulation to locker room or other areas used by staff.

**(3) Housekeeping Aids Closet**

**(4) Lockers, Toilets, Showers**

(a) Lockers

Tasks.....Storage of clothes, dressing. Boot and raincoat storage

Users .....Maintenance staff.



Related Areas .....Lunchroom.

Special Requirements .....No natural light required  
 Lockers at the VA standard size (380 mm w x 460 mm d) (15" w x 18" d), must be full height.  
 Requirements for separate male/female facilities do not necessarily reflect actual conditions as they will occur. It is, therefore, desirable that the female facilities be designed so as to accommodate either sex as required by current conditions.  
 A common entry "vestibule" for both male and female facilities is desirable. The "vestibule" may serve as boot room.  
 Hooks for raincoats.  
 Finishes easily maintained.

- (b) Toilets
  - 1. Male
  - 2. Female

(c) Showers

**(5) Boot and Raincoat Holding Area**

**(6) Boot Wash** (Interior or exterior as required)

Interior floor drains required.

- Boot cleaning at exterior entry to personnel area
  - Exterior drain
  - Hose bib
  - Mud scrape

**b. Maintenance and Equipment Facilities**

**(1) Vehicles and Equipment Maintenance and Storage - Enclosed (Heated) Facilities**

(a) Vehicle and Equipment Maintenance Area

- 1. Routine Maintenance
- 2. Heavy Maintenance

Tasks.....Major equipment service including tune-ups, engine overhauls, standard engine repairs and maintenance repairs.

Related Areas .....Parts and tools Service Yard.

Special Requirements.....Minimum headroom of 5490 mm (18") with no obstructions, height may be less at rear 10% of bay depth.

Work counter with maximum storage and electrical outlets every 915 mm (36")  
 Maximum electrical power sources and locations, minimum one duplex 240v outlet.  
 Garage door should be 3660 mm (12') wide, 3660 mm (12') minimum height 4270 mm (14') best height); steel roll-up type preferred; vision lights desirable but not required.  
 Pedestrian access from Service Yard.  
 Where vehicular hoist is noted on space requirements, it is to be hydraulic, flush to floor, 10-12 ton capacity.  
 Overhead hoist, lubrication, system, air compressor required in conjunction with lift.

(b) Parts and Tools Storage

Tasks.....Clerk or other maintenance staff personnel will issue supplies, uniforms, equipment, parts, small tools and insecticides.  
 Tools and field equipment issued and recorded.  
 Orders parts and tools.  
 Keeps all records pertaining to parts, tools, equipment, supplies, vehicles.

Users .....Parts and Tools Clerk Mechanics.

Related Areas .....Maintenance Bays Insecticides Service Yard

Special Requirements.....Counter, cage enclosure, secured where staff exceeds 10. Must have locked cabinet 1525 mm W x 510 mm D x 2135 mm H (60" w x 20" d x 84" h) with adjustable shelves where staff is 10 or less. Must have opening for loading, unloading trucks  
 3050 mm (10') wide garage door.  
 Metal shelving for parts; storage for supplies and uniforms supplied by cemetery.  
 Pedestrian access directly to Service yard.  
 Maximum storage utilizing all available volume (balcony).  
 No exterior windows.  
 Ice machine at or near pedestrian door.  
 Hose bib, 120v outlet required on exterior.  
 Insecticide room may be within space.  
 Separate positive ventilation.  
 Locked access.  
 Easily accessible to garage door.  
 Requires desk with typing return where staff exceed 10.  
 Mechanic may control Parts & Tools, desk may be located in Maintenance Bay.

(c) Insecticide Storage

(d) Workshops

Tasks.....	Repair and fabrication of carpentry, electrical plumbing items required for cemetery operations; limited degree of complexity.
Users .....	Carpenters Plumbers Electricians
Special Requirements.....	3050 mm (10') garage door width. Pedestrian access directly to Service Yard. Pipe and lumber storage. Maximum work space, counters, storage. Solid laminated 760 mm (30") and 610 mm (24") deep work counters with drawers; wood. Maximum 120v outlet; no less than one 240v outlet. 120v outlet on exterior. Covered exterior work area when possible.

**(2) Vehicle and Equipment Storage - Enclosed (Unheated), Sheltered, Paved**

(a) Vehicles and Grounds Maintenance Equipment

1. Enclosed
2. Sheltered
3. Paved

(b) Grounds Maintenance Storage - Enclosed (Unheated)

This area provides space for the storage of bier covering, chairs, seed, fertilizer, lowering devices, tenets, etc.

(c) Flammable Storage - Enclosed (Unheated)

(d) Headstones - Paved

**(3) Fuel Island**

**(4) Paved Parking**

**(5) Wash Rack**

Tasks.....	Cleaning of vehicles and equipment
Users .....	Maintenance Staff
Special Requirements.....	Concrete slab in service yard Hose bib, steam, air, 120v outlet required at wash rack.

**(6) Loading Dock**

Tasks.....	Unloading headstones, etc. from trucks
Users .....	Maintenance Staff
Special Requirements.....	Concrete dock with ramp - minimum height 1070 mm (42"), minimum width 2440 mm (8')

**6. DESIGN CONSIDERATIONS**

a. The maintenance and service will be fenced for security purposes and screened from public view. Provide for fire and security alarm system and security lighting of areas immediately around the building.

b. Toilet and shower facilities assigned to females should be so arranged as to be usable by males when no females are assigned to the staff. A single entry to both spaces is recommended.

c. The Vehicle and Equipment Maintenance Area should have minimum depth of 9145 mm (30') and be provided with a system to remove vehicle exhaust.

d. Parts and Tools Storage should be easily accessible from the Foreman's office and the Vehicle and Equipment Maintenance Area.

e. In Parts and Tools Storage the volume of space over 3135 mm (7') high should be utilized to the greatest extend possible mezzanine storage.

f. Insecticide Storage requires and exhaust fan.

g. Workshops require a positive ventilation system.

h. Vehicle and Equipment Storage - Definitions.

(1) Enclosed - structure will have a roof and be enclosed on all 4 sides.

(2) Sheltered - structure will have a roof and be enclosed on 3 sides.

(a) Exception - structure will have a roof and be open on all sides in geographical location where climate permits.

(3) Paved - no structure.

i. Vehicle and Grounds Maintenance Equipment Storage – Guidelines for determining the proportion of the total storage space to be Enclosed (E), Sheltered (S) and Paved (P). These general guidelines should be used in conjunction with specific climatic data for the cemetery.

Vehicle/Equipment	Storage by Geographical Location	
	South	North
(1) Back Hoes	S	E
(2) Utility Trucks	S (or exception)	S
(3) Dump Trucks	One S All others P	One E All others S
(4) Pickup Trucks	P	S
(5) Truck Trailers	S (or exception)	S
(6) Automobiles	P	S
(7) Plow Blades	P	P
(8) Street Sweeper	S	E
(9) Industrial Tractors	S (or exception)	E
(10) Agricultural and Garden and Lawn Tractors	S (or exception)	S
(11) Trailers (Tractor)	P	P
(12) Fork Lift	S (or exception)	E
(13) Tractor-mounted Gang Mower	S	S
(14) Hand Mowers and Trimmers	E	E
(15) Toro Mower (Grounds Master)	S	S
(16) Tank Sprayer (tractor)	S (or exception)	E
(17) Air Compressor	E	E
(18) Wood Chipper	S	S
(19) Seeder	E	E
(20) Spreader	E	E