

APPENDIX M  
MOBILIZATION FACILITIES

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APPENDIX M  
MOBILIZATION FACILITIES

1. GENERAL. This appendix sets forth criteria and standards for mobilization facilities for Army installations during mobilization contingencies. This appendix replaces the Emergency (E) Series Documents with the new Mobilization (M) Series Documents. This document supersedes criteria and standards for mobilization construction that had previously been published for planning purposes. This document ties together the need for these expedient-type facilities and previous master planning documents and guidance. The new M-Series Documents and related planning guidance will enable the Army to better utilize facilities and construct new facilities so as to expeditiously fulfill its mission during mobilization. These criteria and standards apply to Army installations in CONUS, including Alaska and Hawaii.

a. Obsolete Criteria. AR 415-50, dated 15 May 1978, and DAEN-MPE-B letter, subject: Interim Use Criteria for Mobilization Construction, dated 6 May 1982, contain obsolete criteria and standards, and should not be used as design criteria for mobilization facilities.

b. Purpose. This appendix establishes criteria and standards for shelters and facilities (except industrial) required to accomplish the mobilization mission of the Army in the United States during the period of any contingency.

c. Explanation of Terms.

(1) M-Day. The day the Secretary of Defense directs a mobilization based on a decision by the President or the Congress, or both.

(2) Levels of Mobilization. Generally, the magnitude of the emergency governs the level of mobilization. As authorized by law or congressional resolution and when directed by the President, the Department of Defense (DoD) will mobilize all or part of the Armed Forces. Concurrently, DoD and other federal agencies will marshal national resources in order to sustain the Armed Forces. The Office of the Chief of Engineers will plan and program resources for "full" mobilization; however, full mobilization will be considered as only a prelude to "total" mobilization. The following levels of mobilization will require planning for maximum use of existing facilities, utilization of non-industrial facilities, and new construction requirements. For the purpose of this appendix, the following definitions will apply:

(a) Partial Mobilization. For a contingency operation or war plan, the President or the Congress may order augmentation of the active Armed Forces (short of full mobilization) by mobilization of up to one million members of Reserve Component units or individual reservists, or both, for up to 24 months.

(b) Full Mobilization. Full mobilization requires passage by the Congress of a public law or joint resolution declaring war or national emergency. Full mobilization involves the mobilization of all units in the existing approved force structure, all individual reservists, and the materiel needed for these units.

(c) Total Mobilization. Total mobilization involves the expansion of the active Armed Forces by organizing or activating additional units, or both, beyond the existing approved troop basis to respond to requirements in excess of the troop basis and the mobilization of all national resources needed, to include production facilities and the establishment of additional military installations, to round out and sustain such forces.

d. Construction Project Groups. For the purpose of this appendix, the following will apply:

(1) Group I. Projects which must be designed and constructed prior to M-Day in order to meet the required occupancy dates of the facilities. If constructed prior to M-Day, Group I projects will comply with peacetime construction criteria. If constructed after M-Day, construction will comply with mobilization criteria.

(2) Group II. Projects which must be designed prior to M-Day but can be constructed after M-Day in time to meet the required occupancy dates. Construction will comply with mobilization criteria.

(3) Group III. Projects which can be designed and constructed after M-Day in time to meet required occupancy dates. Construction will comply with mobilization criteria.

e. Planning Process. The planning process associated with ER 500-1-2, Corps of Engineers Mobilization and Operating Planning System (CEMOPS) (reference M-1) and EP 500-1-2, US Army Corps of Engineers Support in the Theater of Operations (reference M-2) requires the design and siting of many of the facilities needed for mobilization. Planning for these facilities will be accomplished through the preparation of installation mobilization master plans which will be based on approved peacetime installation master plans. Expansion of existing installations or the construction of new installations to meet mobilization needs will be governed by the following principles:

(1) General. A tailored solution will be developed by each installation to satisfy mobilization construction requirements. The tailored solutions for M to M plus 90 days and beyond should take into account the full spectrum of possibilities, both non-construction and construction, with emphasis on the former and in two specific areas: the initial surge of Army units and the sustaining requirement. These solutions will be incorporated into each installation's Mobilization Master Plan and Installation Support Book. The tailored solution for each installation should consider the following as integral parts.

(a) Non-construction.

- 1/ Existing barracks capacity at 6.7 m<sup>2</sup> (72 ft<sup>2</sup>) or 5 m<sup>2</sup> (54 ft<sup>2</sup>) per person, as appropriate.
- 2/ Redesignation or activation of idle facilities.
- 3/ Evaluation of existing excess capacity to include cross-leveling of requirements between Army installations.
- 4/ Alternate training strategies.
- 5/ Additional direct and modified direct unit deployments.
- 6/ Utilization of non-industrial facilities.
- 7/ Tents.
- 8/ Utilization of federal leased assets.

(b) Construction.

- 1/ Purchase and construction of commercially available off-the-shelf building systems.
- 2/ Expedient construction to include expedient mobilization structures and prefabricated buildings.
- 3/ M-Drawings and related documents.

(2) New Facilities. New facilities provided for mobilization will be of simple design to permit accomplishment of construction in a minimum amount of time with maximum conservation of critical materials. The total of new and existing facilities will not exceed the requirements imposed on the installation from the MOBTDA, MOB ARPRINT, HSC MOB Plan, and the MTBSP.

(3) Siting. Mobilization facilities will be sited in accordance with the approved installation mobilization master plan. Criteria and standards for siting and construction of mobilization facilities have been established by HQUSACE (CEMP-E). Facilities for installations with a mobilization mission will be preplanned and executed in conformance with the mobilization master plan. The layout and siting of facilities will be adapted to the existing terrain with the buildings arranged to provide the most economical grading, paving, and utilities.

(4) Physically Handicapped. Where facilities are intended for use by people other than able-bodied military personnel, such as medical facilities, provisions for the physically handicapped will be in accordance with chapter 7 of this document.

(5) Fallout Shelters. Fallout shelters for the protection of personnel against attack by atomic weapons and chemical and biological agents will not be provided under criteria in this appendix.

(6) Dispersion or Camouflage. Protection of installations against attack by dispersion or camouflage will not be provided.

(7) Energy Conservation. Mobilization facilities will not be designed to meet current energy conservation goals and objectives. Construction materials and methods will be selected based on availability and speed of construction, rather than energy conservation. The use of gas, hot water, oil, and steam as energy sources will be based upon local availability, rather than peacetime restrictions on energy usage. Active solar energy systems will not be incorporated into mobilization facility designs. Passive energy design considerations will be included to the maximum extent practical.

(8) Air-conditioning and Heating. Air-conditioning will not be provided in new mobilization facilities; except when required for functional or operational purposes, such as computer rooms and hospital operating rooms. Comfort cooling will not be provided in administration, food service (enlisted personnel and hospital dining facilities), housing, maintenance, non-refrigerated storage, recreational, and similar-type facilities. Heating will be provided in accordance with chapter 13 of this document.

(9) Fire Protection and Life Safety. Fire protection design and other life safety requirements for mobilization facilities are intended primarily for the protection of building occupants rather than the protection of the facility. Facilities shall comply with NFPA 101, Life Safety Code (reference M-32). The requirements of the Uniform Building Code (UBC) for fire area limitations will be used as guidelines.

(10) Non-essential Facilities. It is anticipated that the design and construction of a number of new facilities, such as bowling centers, music and drama centers, and some other recreational buildings, will not be needed under mobilization conditions. Construction of these facilities maybe canceled, delayed, or deferred under contingency conditions in order to utilize available labor and materials on higher priority construction.

f. M-Series Documents. The M-series documents consist of M-series drawings, M-series standard specifications, M-series mobilization oriented guide specifications, and M-series engineer manuals which replace the obsolete E-series documents. Completed mobilization facility designs are listed in Table M-18. Working drawings for these facilities are available from the district engineer office with the "support" mission for each Army installation.

g. Sizes, Numbers, and Types of Facilities. The sizes and numbers of facilities established by this appendix are required for the housing of soldiers and support activities at operational and training installations. They may be adapted for use at other types of installations, such as arsenals, depots, hospitals, and schools. Installations with requirements not covered by this appendix will be authorized to adjust on the basis of their particular requirements.

h. Floor Areas and Space Allowances.

(1) **Gross Floor Areas.** Floor areas specified in this appendix, unless otherwise noted, are gross floor areas measured from the exterior surface of the outside walls. These areas include the floor areas taken up by outside walls, interior partitions, stairs, toilets, halls and corridors, enclosed walks, mechanical, electrical and electronic equipment rooms (when incorporated within or attached to structures), and covered shipping and receiving platforms. Also included in the gross floor area, but computed at one-half the actual floor area, are all covered open porches, covered but not enclosed passageways and walks, and uncovered shipping and receiving platforms. Space allowances for mobilization facilities will be predicated on the minimum requirements needed to accomplish the mission and not on the requirements for normal-use (peacetime) facilities provided in the chapters and other appendices of this document.

(2) **UEPH.** The net floor space in Unaccompanied Enlisted Personnel Housing (UEPH) is the clear area allocated for an individual's bed and wardrobe, and circulation, but excludes general circulation, halls, and stairways. The net floor space will be measured from the inside face of the peripheral walls.

I. **Housing for Installation Overhead Personnel.**

(1) **Overhead Personnel.** This type of housing will provide accommodations for the installation overhead soldiers or installation complement strength of the installation overhead. The strength of the installation overhead will vary depending on the size and type of installation. The installation overhead is normally divided into two principal sections: the administrative and service section which is the installation administrative and general housekeeping organization; and the medical section, which operates the hospital or troop medical clinic, provided a hospital or troop medical clinic is established at the installation. For planning purposes, the strength of the administrative and service section will approximate three percent of the total installation strength. The strength of the medical section will be established by the current mobilization TDA and unit stationing plans.

(2) **Civilian Personnel.** In addition to military personnel, the installation overhead will be augmented by civilian employees authorized by the appropriate Army commander within Department of the Army personnel ceilings. Civilian employees will not be provided with housing, except in isolated communities where adequate off-post accommodations are not available. Any housing provided civilian employees will be of the same type (temporary) facilities as that provided for military personnel of like responsibility and pay scale. Unless otherwise authorized by HQDA, family-type quarters will not be provided as part of mobilization construction.

j. **Grouping of Facilities.** For purposes of planning, site development and space allowances, facilities will be based on battalion blocks which are contiguously combined into brigade areas, if appropriate. Planning for non-TOE and training organizations will equate to the above unit sizes.

k. **Facility Nomenclature.**

(1) Facilities covered by this appendix are divided into facility classes by category code numbers. At the time the M-drawings were being developed, AR 415-28 (reference M-3) was being revised. Consequently, some of the category code numbers in this appendix and on the M-drawings do not match the numbers that were subsequently published in AR 415-28 (reference M-3). Currently, AR 415-28 (reference M-3) is again under revision. When AR 415-28 (reference M-3) is again revised and published, this appendix and the M-drawings will be updated to reflect the correct and current category code numbers.

(2) Category code numbers currently published in AR 415-28 (reference M-3) will be used in all reporting and programming actions required under AR 405-45 (reference M-4), AR 415-15 (reference M-5), and related regulations. Where space limitations necessitate abbreviations, the "category short title" from AR 415-28 (reference M-3) will be used. In cases where it is necessary to show additional breakouts or it is desirable to show the title as given on drawings, additional titles are provided in parentheses, below the first title.

l. **Unique Facilities.** Requirements for unique facilities such as Sensitive Compartmented Information Facilities and accommodations for female trainees will be determined independently on an as-needed basis for each

installation. The unique aspects of such facilities do not lend themselves to the development of standard definitive designs though standard buildings can be modified to meet most mobilization construction needs.

m. Authorities. In the event of a declaration of mobilization or national emergency, authority to initiate construction to provide facilities in accordance with this appendix will be given to the construction director or construction commanders, or both, if appropriate, in specific construction directives issued by the HQUSACE (AR 415-10 (reference M-6)).

2. MOBILIZATION PLANNING. There are two engineering documents used for mobilization planning at Army installations. They are the Installation Support Book (ISB) and the Mobilization Master Plan (MMP). Both the ISB and MMP are required for the siting and design of the facilities needed for mobilization. The ISB is intended primarily for the MSC or district commands having the mission for mobilization construction, while the MMP is intended for Army installations and is based upon the approved installation mobilization mission. Before attempting to prepare either the ISB or the MMP for an Army installation, it is important to first become familiar with the Corps of Engineers Mobilization Operations Planning System (CEMOPS).

a. Installation Support Books (ISB).

(1) General. Installation Support Books (ISB) are USACE documents for internal use, prepared by USACE district commands (design agencies) and approved at the USACE MSC level. The primary purpose of the ISB is to provide essential information for use by the Direct Support (DS) and General Support (GS) district commands, and on-site field representatives, to design and construct mobilization facilities. ISB are a current and ready source of information for supporting Army installations in time of emergencies or mobilization. By consulting the ISB, the district commands must be able to quickly identify:

- (a) Key points of contact within the supported installation.
- (b) Any restructuring of staff and missions that may occur.
- (c) Actions concerning current projects.
- (d) Mobilization projects needing immediate initiation.
- (e) Sources of standardized designs.
- (f) Sources of materials and expertise.

(g) Possible alternatives to design and construction (such as, sources of housing, medical facilities, potable water).

(2) AE Contract. An architect-engineer (AE) contract may be used if the GS district command lacks the resources to produce the ISB. In this case, DS district command personnel should manage the contract with the GS district command providing review and coordination with the installation. The ISB should be an unclassified working document marked "For Official Use Only." Classified information may be referenced, but not included. An ISB prepared by a GS district command office should be submitted to the DS command and USACE MSC for review and comment prior to the actual submission for approval by the USACE MSC. Upon completion and approval, an information copy of the ISB should be forwarded to the installation, the DS district command, the GS or DS MSC, or both, the Major Sub-command, the MACOM, and HQUSACE (CEMP-ET).

(3) Preparation. The ISB should be prepared in accordance with the following outline:

- (a) Table of Contents.

(b) Distribution sheet.

(c) Change sheet.

(d) Introduction. The introduction of the ISB should contain a description of the relationships of the DS and GS district commands. It should provide detailed organizational information to facilitate emergency or mobilization activities between USACE supporting district commands, their field offices, and the supported Army installation. The ISB should explain the role and responsibilities of the supporting DS and GS district commands in time of emergency or mobilization, and explain any organizational changes resulting from each phase of the emergency or mobilization. A brief statement should be included describing the schedule for review and update of the ISB.

(e) Supporting District Command Mission and Organization. See CEMPOS (reference M-1) description of the planning phases.

1/ Phase I - Peacetime Planning. The on-going mobilization planning activities within the district commands for supported installations should be discussed. A priority list of the district command's peacetime mobilization tasks and requirements, a list of the installation's Group I projects and alternatives, and an organization chart of the supporting district engineer office, including office symbols, names, locations, room numbers, and commercial telephone numbers should be included.

2/ Phase II - Full Mobilization. A prioritized list of the district's mobilization tasks in a sequence that meets the supported installation's mobilization requirements should be presented. Close coordination with the installation is needed because the list of mobilization projects changes with changes in the mobilization scenario and current situation. A mobilization organization chart with an explanation of the changes from the peacetime chart should be included.

3/ USACE Field Office Missions and Organization. The missions and organization of the USACE field office(s) should be described because they are a critical part of mobilization support. Items such as office space, equipment, and communication requirements should be included.

(f) Installation Mission and Organization.

1/ Phase I - Peacetime. The installation peacetime mission, the installation existing conditions map, and the peacetime Directorate of Public Works (DPW) organizational chart should be presented.

2/ Phase II - Full Mobilization. The mission and organizational structure at full mobilization should be described. The functions of essential elements should be included and the Mobilization Table of Distribution and Allowances (MOB TDA) may be referenced.

3/ Work Flow Diagram. This section should include Mobilization Phase I and Phase II project work flow diagrams, similar to the "Critical Path Method," along with a brief explanation of each.

4/ Communications. Phase I and II modes of communication should be described. Telephone networks, radio, and other available electronic methods should be included. The nearest communication center with the capability to send and receive classified messages should be indicated.

(g) Installation Environment. A description of the installation's environmental setting should not be included if it already exists in the Installation Master Plan or the MMP. Reference to either document is adequate.

(h) Full Mobilization Project Information. A summary mobilization project list of MCA projects currently in the 1391 processor (the mobilization project priority during peacetime will be determined by the installation and approved by the MACOM) should be provided, with a list of planning criteria, available M-drawings, site location(s),

and general site and utility maps. A time sensitive list (such as speed of delivery) should be included stating the possible alternatives (construction and non-construction) in providing facilities. Area construction industry resources should be described for an area within a 160 km (100 mile) radius of the installation, and MOB Project Bid Packages should be listed where available.

(i) Real Estate Resources. This section should contain a general discussion of the adequacy of the installation real estate to fulfill its mobilization mission. It should include: additional real property needed, installation out grant program list (indicating those expiring upon mobilization), excess property lists (those declared surplus but not yet disposed of), and any known sources of additional land. Reference should be made to local Non-Industrial Facilities (NIF) (such as, hospitals, hotels, motels, office space, and warehouses) that may be used to accommodate a temporary mobilization "surge." Site specific identification of NIF is classified but may be referenced.

b. Mobilization Master Plans (MMP). While the ISB is designed to be a USACE document, the MMP is an installation document. MACOM exercise approval authority over the development of each plan. The MMP is the installation's assessment of its needs, such as facilities, real estate, utility systems, and the necessary additional needs to support its changing population profiles and mission activities during mobilization. A MMP should not normally be prepared before the Mobilization Mission and the Installation Master Plan for the installation are available.

(1) General Preparation Guidance. Each installation is responsible for its own mobilization planning. USACE will provide technical support. The plans should be prepared by the DS district command or the assigned GS district command, utilizing in-house capabilities. An AE contractor may be used only in cases where the district command's workload does not permit timely completion of the MMP. In all cases, there must be close coordination with each assigned installation by the DS command. Basic planning considerations include; possible land acquisition, time-phased population profile, use of NIF, and land use consistent with the Installation Master Plan. Planned mobilization construction will be phased on the sustained loading. Alternate plans will be developed for peak facility requirements related to population, shipping, receiving, and production needs if deemed necessary.

(a) The Health Services Command activity and Information Systems Command will be consulted during all stages of plan development relative to their facilities.

(b) The point of contact at each installation should be either the master planner or the engineer mobilization planner.

(c) In-process reviews and cut-off dates for planning input will be used to expedite completion.

(d) Completed plans will be unclassified to ensure access by personnel at all levels. However, plan preparation will normally require review of secret documents; therefore, the district command and consultant personnel performing the planning research will need a SECRET clearance.

(e) The MMP report shall be in a standard 216 mm by 279 mm (8-1/2 by 11-inch) loose-leaf form and bound in a standard, hard-cover, 3-ring binder.

(f) Full size 711 mm by 1016 mm (28 by 40 inch) plan sheets will be retained at GS and DS district commands and installations. The DS district engineer office will make half-size copies for transmittal to CONUS, MACOM, USACE division engineer office, and HQUSACE (CEMP-EA).

(g) Required and optional plan sheets will be as listed in and prepared in accordance with TB ENG 353 (reference M-7).

(2) Mobilization Tabulation. A list of existing and required facilities should be developed in the Mobilization Tabulation, that in turn becomes the source document for the mobilization construction programming process. M-drawing facilities will be referenced to meet these construction requirements whenever possible. The completed

Mobilization Tabulation should be submitted in a standard 216 mm by 279 mm (8-1/2 by 11-inch) loose-leaf format, bound in a standard hard-cover 3-ring binder. The format and instructions for preparing the Mobilization Tabulation are as indicated in figure M-1.

FIGURE M-1 TYPICAL LAYOUT FOR MOBILIZATION TABULATION FORM SHEETS									
MOBILIZATION TABULATION PAGE _____ OF _____									
INSTALLATION:							DATE:		
(1)	(2)	(3)				(8)	(9)	(10)	(11)
		(4)	(5)	(6)	(7)				
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)

(3) Mobilization Master Plan (MMP) Report. The MMP Report is a narrative document intended to record the rationale and planning decisions involved in the development of the MMP. There are two basic outlines to be followed for MMP Reports. One is to be used for MACOM installations other than AMC installations (FORSCOM, TRADOC) as indicated in figure M-2, and the AMC installations as indicated in figure M-3.

FIGURE M-2 MOBILIZATION MASTER PLAN REPORT OUTLINE FORSCOM AND TRADOC INSTALLATIONS
1. Table of Contents.
2. Executive Summary.
3. Mission and Operations.
4. Mobilization Concept Plan.
5. Off-Installation Conditions and Support Analysis.
6. Transportation Analysis (On- and Off-Installation).
7. Utility Systems and Solid Waste Analysis.
8. Environmental Analysis.

FIGURE M-2 MOBILIZATION MASTER PLAN REPORT OUTLINE FORSCOM AND TRADOC  
INSTALLATIONS

9. Cantonment Analysis.

a. Training.

(1) Classroom and Facilities.

(2) Ranges.

(3) Maneuver Areas.

b. Communications.

c. Organizational Maintenance Facilities.

d. Supply.

e. Medical.

f. Administration.

g. Billeting.

h. Dining.

i. Expedient and Rapidly Erectable Facilities.

10. Land Use and Building Utilization.

11. Summary of Limitations.

12. Appendices.

a. Construction Project List.

b. Non-Industrial Facilities List.

c. Real Estate Acquisitions and Revocations, to include Maneuver Land.

d. Population Charts.

e. Other.

FIGURE M-3 MOBILIZATION MASTER PLAN REPORT OUTLINE AMC INSTALLATIONS	
1. Table of Contents.	
2. Executive Summary.	
a. Summary of Mission.	
b. Summary of Limitations.	
c. Summary of Major Recommendations and Conclusions.	
3. Introduction.	
a. Purpose and Scope.	
b. Authorization for and Applicability of the Mobilization Master Plan.	
c. Mission and Operations.	
(1) Installation History.	
(2) Mobilization Missions - Brief Discussion.	
(3) Tenants - Brief Discussion.	
(4) Satellite Activities.	
(5) Installation Support Agreements.	
MISSION AND OPERATIONS. This section of the report should briefly discuss each major mission, such as: production for AAPs; supply for maintenance or depots, or both; administrative, testing; training; and resources available to meet the mission, for example, number of lines, igloos, and whether it will expand, decrease, or remain unchanged during mobilization. A storage analysis, including incoming and outgoing items, limitations, and/or residual capacities should be included with each "mission" as appropriate.	
TENANT ACTIVITIES. This section of the report should identify major tenants and their missions not in support of the installation; whether each tenant will likely remain or not upon mobilization should be discussed; and their mobilization requirements in terms of buildings or land areas, or both, should be identified.	
MOBILIZATION CONCEPT PLAN. This section of the report may include a presentation of sketches along with the planning rationale and development policy for the recommended future land use arrangement. Any collective actions necessary between the master plan components should be identified. A mobilization land use plan and discussion of significant land use changes should be included (the peacetime and mobilization land use plans may be combined if identical or if the changes are minor and can be clearly shown on a single plan).	

**FIGURE M-3 MOBILIZATION MASTER PLAN REPORT OUTLINE AMC INSTALLATIONS**

**ON-INSTALLATION CONDITIONS.** This section of the report should consist of a concise and comprehensive analysis of significant on-installation conditions affecting the installation development, including the following:

1. Natural Environment.
  - a. Surface and Subsurface Geology.
  - b. Topography.
  - c. Hydrology (includes a discussion of any flooding problems and delineation of the floodplain on a map, if applicable).
  - d. Land Management.
2. Existing and Planned Population Levels.
3. Existing Land Use Analysis (including peacetime land use plans).
  - a. Land Use Patterns.
  - b. Land Use Relationships.
  - c. Land Use Classification (identify areas not suitable for development such as floodplains, cemeteries and ranges).
4. Installation, Federal and Community Interface.
  - a. Land leases and Easements (such as, grazing, harvesting and timber).
  - b. Cooperative Service Agreements (such as, hospitals and cooperative fire fighting support).

**FIGURE M-3 MOBILIZATION MASTER PLAN REPORT OUTLINE AMC INSTALLATIONS**

OFF-INSTALLATION CONDITIONS AND SUPPORT ANALYSIS. This section of the report should consist of a concise and comprehensive analysis of off-site installation conditions affecting the installation mobilization development. This section may be summarized, if there is an existing installation master plan and off-installation conditions do not impact on mobilization. If this section is summarized, the MMP will reference the date of the Installation Master Plan and the Table of Contents will note that Section 3 is summarized.

1. Geographic Location.
2. Climate.
3. Vegetation and Wildlife (habitat and endangered species near the installation).
4. Socioeconomic Conditions.
  - a. Population.
  - b. Housing.
5. Transportation Systems.
  - a. Road Network.
  - b. Railroad Service and Terminals.
  - c. Airports.
  - d. Water Terminals.
  - e. Public Transit (regional and to the installation from local communities).
6. Community Land Use.
  - a. Existing Land Use Patterns.
  - b. Existing Land Use Controls and Restrictions.
  - c. Projected Land Use and Development Trends.
7. Regional and Local Planning.
  - a. Local and Regional Land Use Plans.
  - b. Land Use Control.
  - c. Environmental Regulations (required or applicable under mobilization, or both).

**FIGURE M-3 MOBILIZATION MASTER PLAN REPORT OUTLINE AMC INSTALLATIONS**

**TRANSPORTATION ANALYSIS (ON- AND OFF-INSTALLATION).** This section of the report should address existing transportation networks on the installation and their relationship to off-installation facilities and to land use areas, including parking.

1. Highways.
2. Railroads.
3. Airfields.
4. Limitations.

**UTILITY SYSTEMS AND SOLID WASTE ANALYSIS.**

1. Utility Service at each echelon, such as, electrical supply, sewage disposal, steam and water supply will be provided on the basis of actual needs at each installation. Utilities will be as simple as practicable but of such permanency as to serve the installation without requiring extraordinary maintenance during the life of the buildings. Under CEMOPS (reference M-1), utility systems have been evaluated for installations with mobilization missions. Where remote sites are necessary, utilities should be preplanned. This information is contained in the ISB, MMP and other planning documents for each installation. In view of the long lead time that may be needed for mechanical equipment, new facilities needed for expansion or remote sites should be contracted as early as possible to prevent unnecessary delay in mobilization efforts, such as:

- a. Electrical Power (Category Code 810). Standby electrical power equipment will be provided only as authorized in AR 420-43 (reference M-8).
- b. Heat and Refrigeration (Category Code 820). Cooling will be provided only where needed for functional or operational purposes. Heating will be provided in accordance with Chapter 13 of this document.
- c. Sewage and Waste (Category Code 830).
- d. Water (Category 840).

2. This section of the report should compare current availability and capacities with mobilization requirements for the installation and all tenants. Tenant requirement should be identifies if their requirements are significant and can be separated. If not, a statement that tenant requirements are included in the analysis will suffice.

3. Water System.
  - a. Domestic Requirements (TM 5-813-1 [reference M-9]).
  - b. Industrial Requirements.
  - c. Fire Protection (see Chapter 9 of this AEI).
  - d. Storage and Distribution (TM 5-813-4 [reference M-10]).
  - e. Limitations.

## FIGURE M-3 MOBILIZATION MASTER PLAN REPORT OUTLINE AMC INSTALLATIONS

## 4. Waste Water System.

## a. Collection (TM 5-814-1 [reference M-11])

(1) Sanitary.

(2) Industrial.

(3) Storm.

## b. Treatment (TM 5-814-3 [reference M-12]).

(1) Industrial and Hazardous Wastes.

(2) Domestic.

## 5. Solid Waste (TM 5-814-4 [reference M-13])

## a. Operation and Location.

## b. Life Expectancy.

## c. Limitations.

## 6. Electrical System.

## a. Supply Source.

## b. Substations.

## c. distribution.

## d. Back-up and Emergency Systems.

## e. Electrical Energy Consumption.

## f. Limitations.

## 7. Process Power.

## a. Fuel.

## b. Steam

## c. Limitations.

**FIGURE M-3 MOBILIZATION MASTER PLAN REPORT OUTLINE AMC INSTALLATIONS**

8. Heating Fuel.
  - a. Fuel Sources.
  - b. Fuel Availability.
  - c. Alternatives.
  - d. Distribution.
  - e. Limitations.

**TELECOMMUNICATIONS SYSTEMS.**

1. Telephone.
2. Radio.
3. Auxiliary Systems.
  - a. Fire Alarm.
  - b. Air Raid.
  - c. Security.
4. Limitations.

**MANMADE ENVIRONMENTAL CONDITIONS.**

1. Air Operations.
2. Explosives.
3. Outdoor Firing Ranges.
4. Hazardous Materials.
5. Electromagnetic.
6. Radiation.

**SUMMARY OF LIMITATIONS.**

<b>FIGURE M-3 MOBILIZATION MASTER PLAN REPORT OUTLINE AMC INSTALLATIONS</b>
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<b>MOBILIZATION REQUIREMENTS.</b>
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<p>1. Mobilization Project Listing. A listing of mobilization requirements should be presented which includes category code descriptions, group numbers, category codes and estimated design and construction times.</p>
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<p>2. Project Siting Rationale. The rationale for locating major facilities should be summarized. Potential availability of off-installation facilities, in lieu of mobilization projects, should be briefly discussed.</p>
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<p>3. Project Alternatives and Impacts. This section of the report should be based on the assumption that mobilization will occur without an adequate preparation period. Expedient alternatives to group I and II projects should be identified and discussed. If variance from a regulation or established guidance is required, the regulation or guidance should be referenced. Examples of alternatives may be open storage or reduced storage, in lieu of required igloos; commercial Facilities, in lieu of administrative areas; and reduced speeds and increased maintenance, in lieu of track upgrades. If no alternative exists, for example, a new production line, the report should so state and identify the impacts, such as, "no production of ammunition for 30 months."</p>
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<p>4. Residual Assets. A discussion of additional capabilities, including under utilized land which could be developed for a more intense usage, should be included. If there are no additional capabilities or under utilized land, a statement to that effect should be included.</p>
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3. UTILITIES PLANNING FACTORS. Utilities planning factors should be much more conservative than during peacetime. The following tables represent reasonable guidelines for utilities planning under full mobilization conditions.

a. Per Capita Water Allowances.

(1) Capacity factors, fire flow requirements, and fire hydrant spacing requirements will be the same as EM 1110-3-160 through 164 and 166 (references M-14 through M-19) for mobilization designs.

(2) Materials for construction which are less critical from the standpoint of war production should be utilized; for example, cement products rather than steel products should be used. Clay, concrete, and bituminized fiber pipe, but no iron pipe, should be used.

(3) Overall guidance for mobilization planning will be 378 L per capita per day (100 gallons per capita per day) for water consumption.

(4) The criteria shown in table M-1 are to be used to augment local usage and experience factors which may allow for even greater possible conservation.

TABLE M-1 PER CAPITA WATER ALLOWANCES <sup>1</sup>						
Types of Project/ Military Units	Emergency Type Construction		Field Training Camps (Tents)		Permanent Construction	
	liters	(gallons)	liters	(gallons)	liters	(gallons)
	per day		per day		per day	
Airfields	568	(150)				
Airborne Divisions	568	(150)				
Armored Divisions	568	(150)	284	(75)	568	(150)
Infantry Divisions	568	(150)				
Hospital Units	2271 per bed	(600) per bed	2271	(600)	2271	(600)
Other Types Hotels and Similar Facilities converted for Soldier Housing	265	(70)			265	(70)
Plant, Port and Storage Projects, including Civilian War Workers	114 plus 568 Note <sup>2</sup>	(30) plus (150) Note <sup>2</sup>			189 plus 568 Note <sup>3</sup>	(50) plus (150) Note <sup>3</sup>
POW & Internment Camps					189	(50)

<sup>1</sup> The allowances set forth above include water used for laundries to serve the resident personnel, washing vehicles, limited watering of planted and grassed areas and similar uses. Special allowance for operation of hydraulically-operated fueling systems should be made.

<sup>2</sup> 114 L (30 gallons) per employee per shift and 568 L (150 gallons) for resident personnel.

<sup>3</sup> 189 L (50 gallons) per employee per 8-hour shift and 568 L (150 gallons) per resident.

b. Sewage Flow Guidelines. Sewage flow guidelines are shown in table M-2.

TABLE M-2 PER CAPITA SEWAGE FLOW GUIDELINES FOR MOBILIZATION CONSTRUCTION <sup>1</sup>					
Type of Post	Manual	Permanent	Mobilization	Temporary	Field Training
Hospitals (including station hospitals)	378 L/d (100 g/d)	378 L/d (100 g/d)	378 L/d (100 g/d)	322 L/d (85 g/d)	265 L/d (70 g/d)
All other types of posts, camps, depots, and plants	265 L/d (70 g/d)	378 L/d (100 g/d)	265 L/d (70 g/d)	189 L/d (50 g/d)	132 L/d (35 g/d)
All types	114 L/d (30 g/d) per 8-hour shift, non-resident or worker				

<sup>1</sup> Also see EM 1110-3-172 (reference M-20). Overall guidance for mobilization planning will be 378 L/d per capita (100 gallons per day per capita) for sewage flows.

c. Electrical Guidelines. Electrical guidelines are shown in table M-3.

TABLE M-3 ELECTRICAL GUIDELINES <sup>1</sup>	
SEMI-PERMANENT CONSTRUCTION AND TEMPORARY OCCUPANCY	
BASIC TRAINING FACILITIES	
One duplex receptacle for two persons plus one tenth of a watt per square meter (two watts per square foot)	500 watts per person
Lighting	
Basic training facilities with air-conditioning	800 watts per person
Basic training facilities with electric heat	800 watts per person

TABLE M-3 ELECTRICAL GUIDELINES <sup>1</sup>	
Administrative Facilities	
With air-conditioning	0.75 watts per square meter (8 watts per square foot)
With fans	0.55 watts per square meter (6 watts per square foot)
ADP and Communication Facilities	Same as peacetime
Dining Facilities	Same as peacetime
Health Clinics	Same as peacetime
Unaccompanied Officers Personnel Housing (UOPH)	One kW per person
PERMANENT CONSTRUCTION AND EXTENDED OCCUPANCY	
Basic Training Facilities	Same as peacetime
Administrative Facilities	Same as peacetime
Unaccompanied Officers Personnel Housing (UOPH)	Same as peacetime
TENT CITY: Use 500 watts per person	

<sup>1</sup> For conditions of occupancy and standards of construction other than given above, interpolate between the allowance given.

d. Mechanical Guidelines. Mechanical guidelines are shown in M-4.

TABLE M-4 MECHANICAL GUIDELINES		
Heating	252 watts per square meter	80 Btuh per square foot
Air-conditioning	square meters per kW	square feet per ton
Comfort (such as administration and offices)	7.9	300
ADP and Communications Facilities	2.5	95
UOPH and UEPH	11.9	450
Dining Facilities	5.3	200
Hospitals	6.6	250
NOMINAL DESIGN TEMPERATURE (inside)	°C	°C
Heating	20	68

TABLE M-4 MECHANICAL GUIDELINES		
Heating	252 watts per square meter	80 Btuh per square foot
Air-conditioning	square meters per kW	square feet per ton
Shops	15.6	60
Storage (except medical facilities)	4.4	40
AIR-CONDITIONING		
Comfort - 25.6 °C (78 °C) ADP, medical and communications as required by function. Fuel storage requirements for heating fuels - 30 day storage.		

4. TYPES OF MOBILIZATION FACILITIES. The building numbers referred to in this section are from the list of Army mobilization designs in Table M-18.

a. Company Level Facilities. These are facilities needed to meet the basic housing, classroom, and welfare requirements. The mobilization criteria for authorized units are as follows:

(1) Administration and Supply (Category Code 141-85). Each company is authorized an administration and supply building not to exceed 208 m<sup>2</sup> (2,240 ft<sup>2</sup>) gross area. This type of facility will include spaces such as administration offices, arms vault, communications, conference room, and NBC. Bldg. No. M008.

(2) Company Classroom Building (Category Code 171-50). A company classroom building of 513 m<sup>2</sup> (5,520 ft<sup>2</sup>) gross area with a 288-seat capacity is authorized if justified. Bldg. No. M016.

(3) Unaccompanied Enlisted Personnel Housing (Basic Category 721). Recretees, trainees, hospitalized patients and Officer Candidate School (OCS) students are authorized 6.7 m<sup>2</sup> (72 ft<sup>2</sup>) of net floor space. All other enlisted personnel are authorized 5 m<sup>2</sup> (54 ft<sup>2</sup>) of net floor space. If tents or other types of expedient construction are not available and cannot be made available when required to house enlisted personnel, installation commanders with the concurrence of the installation medical officer are authorized to house enlisted personnel at the rate of one person per 5 m<sup>2</sup> (54 ft<sup>2</sup>) for recretees, trainees and OCS students only, or at the rate of one person per 3.7 m<sup>2</sup> (40 ft<sup>2</sup>) for all other enlisted personnel. In no instance will hospitalized patients be provided less than 6.7 m<sup>2</sup> (72 ft<sup>2</sup>) of net floor space.

TABLE M-5 MOBILIZATION UNACCOMPANIED ENLISTED PERSONNEL HOUSING					
BUILDING NUMBER	NUMBER OF ENLISTED PERSONNEL	m <sup>2</sup> PER PERSON	ft <sup>2</sup> PER PERSON	GROSS AREA <sup>1</sup>	
				m <sup>2</sup>	(ft <sup>2</sup> )
M001	288	5.0	54	3080	(33,152)
M002	288	6.7	72	3478	(37,440)
M003	176	5.0	54	1754	(18,880)
M004	175	6.7	72	2111	(22,720)
SPECIAL DESIGNS					

TABLE M-5 MOBILIZATION UNACCOMPANIED ENLISTED PERSONNEL HOUSING					
BUILDING NUMBER	NUMBER OF ENLISTED PERSONNEL	m <sup>2</sup> PER PERSON	ft <sup>2</sup> PER PERSON	GROSS AREA <sup>1</sup>	
				m <sup>2</sup>	(ft <sup>2</sup> )
M117 <sup>2</sup>	40	8.5	91	339	(3,650) per Pod
M127 <sup>3</sup>	10	6.7	72	71	(768)
M107 <sup>3</sup>	Vaulted Metal Structure			217	(2,338)
M108 <sup>3</sup>	Vaulted Metal Structure			658	(7,079)
M137	200	13.2	142	2646	(28,480)

<sup>1</sup> Mechanical, electrical and electronic equipment room space as required has been added to the gross areas shown. Additional space will not be added when determining a single gross area figure for each facility.

<sup>2</sup> Basic trainee barracks.

<sup>3</sup> Hutments.

(4) Unaccompanied Officer Personnel Housing (Category Code 724-10). Officers billeted in semi-permanent and temporary facilities are authorized 9.3 m<sup>2</sup> (100 ft<sup>2</sup>) of net floor space for company grade and 18.6 m<sup>2</sup> (200 ft<sup>2</sup>) for field grade officers. In no instance will officers be provided less than 9.3 m<sup>2</sup> (100 ft<sup>2</sup>) of net floor space. A building of 737 m<sup>2</sup> (7,936 ft<sup>2</sup>) gross area for 40 to 44 officers is authorized. Bldg. No. M005.

(5) Detached Latrine/Shower Building (Category Code 723-24). Standard size company lavatories with latrines and showers are authorized according to company or unit strength. A building of 297 m<sup>2</sup> (3,200 ft<sup>2</sup>) gross area with a rated capacity of 176 persons will be provided. Bldg. No. M006.

(6) Dining Facilities - Enlisted Personnel (Category Code 722-10). Company size enlisted personnel dining facilities should be provided if justified by mission requirements. Enlisted personnel dining facilities to support military units larger than battalions are not authorized. Smaller facilities will be used for smaller projects. A building of 401 m<sup>2</sup> (4,316 ft<sup>2</sup>) gross area with a rated capacity of 200 persons is authorized. Bldg. No. M007.

(7) Parking Area, Vehicular (Category Code 852-10).

(a) Enlisted Personnel. Parking facilities for the privately-owned automobiles of enlisted personnel will be provided on the basis of one off-street parking space for each 20 persons in enlisted personnel housing areas. The stabilized or paved areas, including the stalls and aisles, exclusive of the "throat" entering areas and access roads to parking areas, will not exceed 29.3 m<sup>2</sup> (35 yds<sup>2</sup>) per vehicle. "Stabilized" as used here refers to any method of providing a satisfactory surface other than paving.

(b) Officer Personnel. Off-street parking space to accommodate the privately-owned automobiles of officers will be provided on the basis of one parking space for each three officers assigned to the installation. The stabilized or paved areas, including the stalls and aisles, exclusive of the "throat" entering areas and access roads to parking areas, will not exceed 29.3 m<sup>2</sup> (35 yds<sup>2</sup>) per vehicle.

b. Battalion Level Facilities. In addition to facilities for various companies, the following should be provided for each battalion:

(1) Battalion Headquarters and Classroom (Category Code 171-51). The battalion administration and classroom building will not exceed 565 m<sup>2</sup> (6,080 ft<sup>2</sup>) gross area. Bldg. No. M009.

(2) Battalion Classroom Building (Category Code 171-50). A battalion classroom building of 285 m<sup>2</sup> (3,072 ft<sup>2</sup>) gross area is authorized if justified. Bldg. No. M010.

(3) Auditorium, General Purpose Battalion (Category Code 740-10). A general purpose battalion auditorium of 673 m<sup>2</sup> (7,245 ft<sup>2</sup>) gross area is authorized if justified. Bldg. No. M011.

(4) Dining Facilities (Category Code 722-10). Battalion size enlisted personnel dining facilities may be provided in lieu of company size enlisted personnel dining facilities, if justified based on mission requirements. The building will not exceed 844 m<sup>2</sup> (9,082 ft<sup>2</sup>) gross area with a rated capacity of 800 persons. Bldg. No. M012. In addition, a building of 977 m<sup>2</sup> (10,516 ft<sup>2</sup>) gross area with a rated capacity of 1,100 persons may be authorized if justified. Bldg. No. M138.

(5) Recreational Facilities - Exterior. (See Bldg. Nos. M132, M133, and M134.)

(a) Basketball Courts (Category Code 750-12). Each battalion unit is authorized four all-weather hard-surfaced basketball courts.

(b) Volleyball Courts (Category Code 750-13). Each battalion unit is authorized four volleyball courts.

(c) Softball Field (Category Code 750-21). Each battalion unit is authorized one regulation softball field.

(6) Arms Building (Category Code 442-23). A building of 119 m<sup>2</sup> (1,280 ft<sup>2</sup>) gross area suitable for the cleaning and storage of crew-served weapons contained in the battalion arms pool will be provided for each normal replacement training center battalion. Bldg. No. M031.

(7) Company/Battalion Combined Warehouse (Category Code 442-70). A storehouse facility of 1,005 m<sup>2</sup> (10,815 ft<sup>2</sup>) gross area will be provided for each battalion. The building will be used by all units within the battalion to store bivouac equipment, training aids, and/or other supplies. Bldg. No. M013.

(8) Maintenance, Tank and Automotive Maintenance Facilities (Category Code 214).

(a) General.

1/ The term "vehicle" as used here refers to any item of equipment mounted on wheels, tracks, runners, rollers or any combination thereof, except aircraft, and which may or may not be self-propelled. The term "motor vehicle" means any vehicle propelled by a self-contained power unit.

2/ The vehicles assigned as organic equipment to organizations or units will be stored and maintained in the organizational or tactical motor park. Vehicles with weapons will be provided guard protection or surveillance as prescribed in DoD 5100.76M (reference M-21) with additional consideration for protection against the weather for weapons systems. The motor park will consist of a suitable stabilized or paved area with paved roads for access and circulation. The necessary maintenance, servicing, and storage facilities will be located within the motor park. Vehicles, except those equipped with delicate instruments requiring protection from the weather and motor vehicles at installations located in climates where the low temperatures and heavy snowfall require covered storage, will be parked on open hard-surfaced areas.

3/ Vehicles equipped with delicate instruments requiring protection from the weather will be stored in open shed-type shelters (see Vehicle Sheds, Category Code 442-62). In areas where the average minimum temperature, as determined by U. S. Weather Bureau Climatic Data, for winter is -23 °C (-10 °F) or where the annual snowfall is 760 mm (30 inches) or more, unheated, closed shed-type shelters may be considered for 25

percent of the installation motor vehicles. The balance of the vehicles will be stored on open hardstand areas.

(b) Motor Repair Shop, Organizational (Category Code 214-10). The number of motor repair shops provided for a battalion motorpark accommodating 250 vehicles normally will be one standard shop with a gross area not to exceed 670 m<sup>2</sup> (7,215 ft<sup>2</sup>). When smaller motor parks or pools (administrative) are authorized, shop facilities will be provided based on one shop of 360 m<sup>2</sup> (3,875 ft<sup>2</sup>) gross area for each 125 motor vehicles to be accommodated. Any additional special-type repair shops, such as tank shops, required to service large equipment will be authorized according to the requirements and mission of the units. Bldg. No. M014.

(c) Grease Racks (Category Codes 214-50 and 214-52). One grease rack (two-vehicle type) will be provided for each motor repair shop (Category Code 214-50). One grease rack in each motor park or pool will be the covered type (Category Code 214-52). Bldg. No. M027. (Also, see Bldg. No. M028.)

(d) Vehicle/Tank Oil House (Category Code 214-70). One oil storage house of 30 m<sup>2</sup> (320 ft<sup>2</sup>) gross area will be provided for each four grease racks authorized with a minimum of one per motor park or pool. Bldg. No. M015.

(e) Dispatch Office (Category Code 214-14). One building, not to exceed 18 m<sup>2</sup> (192 ft<sup>2</sup>) gross area, to serve as a dispatch office will be provided for each motor park or pool.

(f) Tank Repair Shops (Category Code 214-20). One shop of 613 m<sup>2</sup> (6,600 ft<sup>2</sup>) gross area may be provided for each "group" of 60 tanks or less. One shop of 837 m<sup>2</sup> (9,015 ft<sup>2</sup>) gross area may be provided for each "group" of 61 to 100 tanks. Bldg. No. M017.

(g) Grease Racks, Tanks (Category Codes 214-51 and 214-53). One grease rack (one-vehicle type, covered) will be provided with each 613 m<sup>2</sup> (6,600 ft<sup>2</sup>) tank repair shop. One grease rack (two-vehicle type, covered) will be provided with each 837 m<sup>2</sup> (9,015 ft<sup>2</sup>) tank repair shop.

(h) Wash Facility, Centralized (Category Code 214-56). Centralized wash facilities (toll booth configuration) will be sized for cleaning battalion wheeled and tracked vehicles in four hours. This facility will utilize high pressure, cold-water hose stands in conjunction with appropriate prewash (tank bath) facilities. Hose stands will provide cold water at 550 to 1,580 kPa (80 to 110 psi) and 0.95 to 1.58 L/s (15 to 25 gpm). Wash water will be treated and recycled. These facilities will be located at the egress points from the installation training areas and will include lighting to permit a 24-hour operation. Bldg. No. M029.

(i) Parking Area, Military Vehicles (Category Code 852-10).

1/ The paved or stabilized area within consolidated motor parks accommodating 250 varied-sized organizational vehicles, including space for the parking of vehicles, roads for circulation, and service aprons for maintenance activities, will not exceed 15,677 m<sup>2</sup> (18,750 yds<sup>2</sup>).

2/ When smaller motor parks are authorized, the total paved or stabilized area provided within the motor park will not exceed 62.7 m<sup>2</sup> (75 yds<sup>2</sup>) per vehicle to be accommodated. If the majority of the vehicles to be accommodated have an overall length of 3.7 m (12 ft) or less and a width of 1.8 m (6 ft) or less, as in the case of most installation transportation vehicles, then the allowable paved area will be reduced to 41.8 m<sup>2</sup> (50 yds<sup>2</sup>) per vehicle.

(j) Fencing (Category Code 872-10). Fencing will be provided as authorized in AR 420-70 (reference M-22).

c. Brigade Level Facilities. In addition to those required for various companies and battalions, the following additional facilities will be provided for brigades.

(1) Recreational Facilities - Exterior, Football/Baseball Field (Category Code 750-22). One combination football field superimposed on a baseball field will be provided for each brigade. Bldg. No. 135.

(2) Headquarters Building (Category Code 141-82). One building of 580 m<sup>2</sup> (6,240 ft<sup>2</sup>) gross area will be provided for each TOE brigade. Bldg. No. M019.

(3) Auditorium, General Purpose (Category Code 740-10). One all-purpose building of 1,189 m<sup>2</sup> (12,800 ft<sup>2</sup>) gross area will be provided for each brigade. This building will be suitable for use as an assembly hall, classroom, and gymnasium. Bldg. No. M021.

(4) Troop Medical Clinic (Category Code 550-10) and Troop Dental Clinic (Category Code 540-10). For planning purposes, subject to a survey and determination of requirements by The Surgeon General prior to authorization, the following will be used as a guide: troop medical clinics are generally authorized on the basis of one for each brigade at 1,332 m<sup>2</sup> (14,340 ft<sup>2</sup>) gross area; and troop dental clinics are generally authorized on the basis of one for each brigade at 18 chairs and 755 m<sup>2</sup> (8,126 ft<sup>2</sup>) gross area. Bldg. Nos. M024, M025. A 38-chair troop dental clinic design has been developed with 1,427 m<sup>2</sup> (15,360 ft<sup>2</sup>) gross area. Bldg. No. M026.

(5) Skill Development Center (Category Code 740-22). One branch multi-purpose shop and special interest facility not to exceed 372 m<sup>2</sup> (4,000 ft<sup>2</sup>) gross area will be provided for each brigade. Satellite shops, incorporated within existing unaccompanied enlisted personnel housing or dayrooms, will serve the requirements of soldiers in isolated installations, and staging and maneuvering areas.

(6) Exchange, Branch (Category Code 740-50). One branch exchange building of 190 m<sup>2</sup> (2,048 ft<sup>2</sup>) gross area will be provided for each brigade. Bldg. No. M018, M020.

(7) Brigade Parachute Packing and Drying Facility (Category Code 218-10). For an airborne brigade, enclosed facilities with a gross area not to exceed 3925 m<sup>2</sup> (42,251 ft<sup>2</sup>) and 3716 m<sup>2</sup> (40,000 ft<sup>2</sup>) of exterior fenced storage will be provided. Bldg. No. M035.

(8) Unit Chapel (Category Code 730-19). One centrally located chapel with a seating capacity of 300 persons with 639 m<sup>2</sup> (6,880 ft<sup>2</sup>) gross area will be provided for each brigade. The chapel should include six office spaces, each approximately 2.7 m (9 ft) by 3 m (10 ft), administrative space, and an activity center with kitchenette. Bldg. No. M023.

d. Division Level Facilities. Facilities for divisions, unless otherwise specified, are alike for light and heavy divisions.

(1) Division Headquarters Building (Category Code 610-12). One division headquarters building of 2051 m<sup>2</sup> (22,080 ft<sup>2</sup>) gross area will be provided for each light or heavy division. Bldg. No. M032. For replacement training divisions and staging areas, a headquarters building of 1021 m<sup>2</sup> (10,994 ft<sup>2</sup>) gross area or an appropriate size will be provided depending on the military strength of the installation. Bldg. No. M033.

(2) Battalion Headquarters Building (Category Code 141-83). Each division and support command will be provided with one headquarters building of 580 m<sup>2</sup> (6,240 ft<sup>2</sup>) gross area. The regimental/brigade headquarters building design will be used (Category Code 141-82). Bldg. No. M019.

(3) Dining Facilities - Officer Personnel (Category Code 722-20). A separate officers' field ration dining facility is authorized to serve groups of 100 or more officers. Normally, separate dining facilities will not be authorized where the average number of officers to be served is less than 100. When there are 100 to 200 officers, the dining facility will not exceed 401 m<sup>2</sup> (4,316 ft<sup>2</sup>) gross area. Field ration dining facilities provided for officers will be of the same type as those provided for enlisted personnel (Category Code 722-10). Bldg. No. M007.

(4) Division Parachute Packing and Drying Facility (Category Code 218-10). A compound for an airborne division to include heavy-drop rigging facilities, closed storage areas, organizational maintenance, heavy and light packing, drying towers, administration, and a secure staging area will be provided. The gross area of the facilities will not exceed 22 974 m<sup>2</sup> (247,300 ft<sup>2</sup>) and the secure staging area will not exceed 6968 m<sup>2</sup> (75,000 ft<sup>2</sup>) gross area. Bldg. No. M038.

(5) Division Breakdown Building (Category Code 442-86). A building, not to exceed 1005 m<sup>2</sup> (10,815 ft<sup>2</sup>) gross area, to serve as a division ration breakdown point, division quartermaster's office, and storage will be provided for each type of division. Bldg. No. M036.

(6) Division Storehouse (Category Code 442-70). A storehouse of 262 m<sup>2</sup> (2,816 ft<sup>2</sup>) gross area will be provided for each type of division. The building will be provided for the use of the division headquarters. Bldg. No. M037.

e. Post (Installation) Level Facilities. In addition to facilities for company, battalion, group, brigade, and division echelons, the following facilities should be provided at the installation level when existing facilities are not adequate to accommodate mobilization expansion.

(1) Post Headquarters Building (Category Code 610-11). A post headquarters building will be provided for each installation. At smaller installations and where local conditions dictate, the post headquarters and other post administrative functions will be consolidated into one building. Post headquarters buildings will include sufficient space for the command group, finance, personnel, provost marshal, and Army community services to include the Red Cross and Army Emergency Relief. Post headquarters buildings will also provide administrative space for chemical, post exchange, transportation, and supply and services administration. Post headquarters facilities will be provided according to the installation military strength as follows and of the same type provided for division headquarters (Category Code 610-12).

TABLE M-6 MOBILIZATION POST HEADQUARTERS BUILDINGS			
BUILDING NUMBER	INSTALLATION MILITARY STRENGTH	GROSS AREA <sup>1</sup>	
		m <sup>2</sup>	(ft <sup>2</sup> )
M033	3,000 to 10,000	1021	(10,994)
M032	10,001 and above	2051	(22,080)

<sup>1</sup> Mechanical, electrical and electronic equipment room space as required has been added to the gross areas shown. Additional space will not be added when determining a single gross area figure for each facility.

(2) Engineer Administration Building (Category Code 610-21). For an installation military strength of from 3,000 to 10,000 persons, a building with a gross area of 255 m<sup>2</sup> (2,750 ft<sup>2</sup>) will be provided.

(3) Bank Buildings (Category Code 740-06). Except in unusual circumstances, bank buildings will not be provided at installations with a military strength of less than 10,000 persons. At installations with a military strength of over 10,000, a bank building will be provided only after it has been determined by the Department of the Army that a facility is needed at the installation. Any banking facility provided will not exceed 214 m<sup>2</sup> (2,304 ft<sup>2</sup>) gross area. Bldg. No. M039.

(4) Bus and Taxicab Station Buildings (Category Code 730-13). The minimum facilities will be provided.

(5) Exchange Cafeteria Building (Category Code 740-51). Facilities for the operation of an exchange

cafeteria may be provided as a part of the main exchange building or as a separate building. When the cafeteria is provided as part of the main exchange building, the space allocated for the cafeteria will be added to the main exchange space allowance as a combined activity. The gross area provided for the exchange cafeteria will not exceed the following:

TABLE M-7 MOBILIZATION EXCHANGE CAFETERIA BUILDINGS			
NUMBER OF CAFETERIA	INSTALLATION MILITARY STRENGTH	GROSS AREA <sup>1</sup>	
		m <sup>2</sup>	(ft <sup>2</sup> )
1	up to 20,000	377	(4,060)
1	20,001 and above	627	(6,750)

<sup>1</sup> Mechanical, electrical and electronic equipment room space as required has been added to the gross areas shown. Additional space will not be added when determining a single gross area figure for each facility.

(6) Unit Chapel Building (Category Code 730-19). One centrally located 300-seat post chapel will be provided at installations with a military strength of 10,000 to 20,000 persons. At installations with a military strength of over 20,000, two 300-seat post chapels will be provided. The gross area of the post chapel will not exceed 639 m<sup>2</sup> (6,880 ft<sup>2</sup>) and be the same type as provided for the unit chapel (Category Code 730- 19). Bldg. No. M023.

(7) Multi-Purpose Recreation Building (Category Code 740-69). A multi-purpose recreation building will be provided for required activities. The building may include space for indoor swimming pools, religious, recreation center, enlisted personnel club, NCO open mess, officers' open mess, entertainment activities, recreation workshop, and theater. The size of the building will be based on the population to be served adjusted to take advantage of common spaces. Space criteria are stated under separate headings for the activities elsewhere in this appendix. Separate activity facilities will be built only if doing so would be a more economical use of time and material resources.

(8) Exchange Facilities.

(a) Exchange and Snack Bar (Category Code 740-53). In addition to the branch exchanges provided at the brigade level, a centrally located facility will be provided for the operation of the main exchange retail activities. The building will normally contain the exchange main retail store, a snack bar and soda fountain, necessary service outlets, and administrative space for the installation exchange activities. For an installation military strength up to 20,000 persons, exchange main retail stores will not exceed 1363 m<sup>2</sup> (14,674 ft<sup>2</sup>) gross area. Bldg. No. M042. An exchange and snack bar building of 933 m<sup>2</sup> (10,038 ft<sup>2</sup>) gross area may be provided if justified. Bldg. No. M022.

(b) Coin-Operated Laundry (Category Code 740-56). A coin-operated laundry building of 95 m<sup>2</sup> (1,024 ft<sup>2</sup>) gross area may be provided if justified. Bldg. No. M116.

(9) Physical Fitness Center Buildings (Category Code 740-28). A field house will be provided at each installation with a military strength of 15,000 persons and over, except at staging areas. This type of facility supplements the brigade all-purpose building by providing space for indoor instruction, military personnel assemblies, and entertainment during inclement weather. The gross area of the field house will not exceed 1784 m<sup>2</sup> (19,200 ft<sup>2</sup>). Bldg. No. M043.

(10) Confinement Buildings (Stockade) (Category Codes 610-28,730-14, 730-15, 872-20, and 872-30).

(a) A central facility for the confinement of prisoners will be provided at each installation where warranted by the number of military prisoners to be confined. For planning purposes, the number of prisoners will be estimated to be one percent of the installation military strength and the guard detachment will be approximately one-half of the prisoner capacity of the confinement facility.

(b) The confinement facilities will include tents and buildings with sufficient space for housing and messing prisoners and administration personnel, as well as drill areas and means for making the confinement facility secure against escape. At small installations where the number of prisoners does not warrant the construction of separate buildings as listed below, the necessary confinement facilities will be consolidated into a single building.

(c) The basic space allowance for the housing of prisoners will be 6.7 m<sup>2</sup> (72 ft<sup>2</sup>) net area of sleeping space per person, excluding the close confinement area.

(d) During an emergency (expected to be less than seven days duration), the minimum sleeping space per person may be reduced to 3.7 m<sup>2</sup> (40 ft<sup>2</sup>) net area.

(e) Facilities used for confinement of female prisoners will be modified for separate living conditions, such as sleeping areas and toilet facilities.

(f) Confinement facilities of the following sizes and quantities will be provided at installations with a military strength of 10,000 to 20,000 persons.

TABLE M-8 MOBILIZATION CONFINEMENT FACILITIES				
BUILDING NUMBER	FACILITY TYPE	NUMBER OF BUILDINGS	GROSS AREA <sup>1</sup>	
			m <sup>2</sup>	(ft <sup>2</sup> )
M044	Administration Building	1	256	(2,752)
M049	Assembly Building	1	268	(2,880)
M052	Barracks Facility	1	446	(4,800)
M050	Processing and Storage Building	1	166	(1,792)
M048	Segregation Building	1	262	(2,816)
M047	Sentry House	1	1.5	(16)
M045	Sentry Towers	3	25	(272)

<sup>1</sup> Mechanical, electrical and electronic equipment room space as required has been added to the gross areas shown. Additional space will not be added when determining a single gross area figure for each facility.

(g) Security fencing will be provided as required.

(11) Guest House (Category Code 740-32). Guest house facilities will be provided to furnish overnight transient accommodations for visiting relatives and friends of military personnel only at installations where it has been determined that accommodations are not available in nearby civilian communities at reasonable prices. Bldg.

No. M131 - 15 rooms. Guest house facilities will not exceed the following:

(12) Main Library Building (Category Code 740-41). A central library building with a gross area of 422 m<sup>2</sup> (4,544 ft<sup>2</sup>) will be provided at each installation with a military strength of 2,500 persons or more. Library facilities for smaller installations will be combined with other activities. Bldg. No. M051.

(13) Open Dining Facility, NCO/Officers' (Category Codes 740-47 and 740-48). An 1064 m<sup>2</sup> (11,450 ft<sup>2</sup>) gross area facility will be provided at installations for the operation of an open dining facility for each 1,000 NCOs or officers. The facility will not only provide essential dining facilities, but also space for the recreational activities of the personnel assigned to an installation. Bldg. No. M053.

TABLE M-9 MOBILIZATION GUEST HOUSE BUILDINGS			
NUMBER OF GUEST HOUSES	INSTALLATION MILITARY STRENGTH	GROSS AREA <sup>1</sup>	
		m <sup>2</sup>	(ft <sup>2</sup> )
0	up to 5,000	0	0
1	5,001 to 10,000	520	(5,600)
2	10,001 to 20,000	1040	(11,200)
3	20,001 and above	1560	(16,800)

<sup>1</sup> Mechanical, electrical and electronic equipment room space as required has been added to the gross areas shown. Additional space will not be added when determining a single gross area figure for each facility.

(14) Recreation Center (Service Club) Buildings (Category Code 740-68).

(a) One recreation center containing essential recreational facilities will be provided at each installation according to the military strength as listed below.

(b) Additional recreational centers may be provided if justified by the number and location of enlisted personnel, the inaccessibility of other recreational facilities, and the peculiar needs of the installation.

(c) Recreation center buildings will not exceed the following:

TABLE M-10 MOBILIZATION RECREATION CENTER BUILDINGS			
BUILDING NUMBER	NUMBER OF ENLISTED PERSONNEL	GROSS AREA <sup>1</sup>	
		m <sup>2</sup>	(ft <sup>2</sup> )
-	up to 500	Dayroom space only	
M054	501 to 5,000	770	(8,286)

<sup>1</sup> Mechanical, electrical and electronic equipment room space as required has been added to the gross areas shown. Additional space will not be added when determining a single gross area figure for each facility.

(15) Main and Branch Post Office Buildings (Category Codes 730-73 and 730-72). Facilities for the operation of the installation postal service will be determined by The Adjutant General, Department of the

Army, according to the actual needs of each installation. For planning purposes, post office buildings will be provided generally on the following bases:

(a) Main Post Office. For installations with a military strength between 5,000 and 10,000 persons, one main post office building will be provided not to exceed 590 m<sup>2</sup> (6,352 ft<sup>2</sup>) gross area. Bldg. No. M055.

(b) Branch Post Offices. When the installation military strength exceeds 10,000 persons, branch post offices will be located throughout the installation on the basis of one such building for each 10,000 persons (or major fraction thereof) over and above the original 10,000 population. For installations with a military strength between 3,000 and 5,000 persons, a branch post office will be provided. The standard branch post office will not exceed 412 m<sup>2</sup> (4,440 ft<sup>2</sup>) gross area. Bldg. No. M056.

(16) Post (Installation) Restaurants (Category Code 740-64). Where there is a substantial number of civilians regularly employed at an installation, and the installation commander determines that food service is required for the maintenance of the morale and efficiency of the civilian employees, a post restaurant may be established, provided it has been determined that existing exchange cafeteria facilities cannot be made available for adequate service to civilian employees. Post restaurants will not be provided where the number of civilian employees to be served is less than 500.

(17) Theater (Category Code 740-76). One theater with a stage will be provided at each installation with a military strength of 6,000 persons. The theater will be provide 1076 m<sup>2</sup> (11,579 ft<sup>2</sup>) gross area with seating for 929 people. Bldg. No. M057.

(18) Recreational Facilities - Exterior (Category Code 750).

(a) Baseball Field (Category Code 750-20). Each installation with a military strength of 10,000 persons or more will be provided with central athletic facilities which will consist of one regulation baseball field lighted for night play. Where space permits, the baseball field may be located apart from the football field. Portable bleachers will be provided to serve both the central baseball facility and the combination football and baseball field. The total number of seats provided will not exceed one-third of the installation military strength. Bldg. No. M133.

(b) Football/Baseball Field (Category Code 750-22). One combination football field superimposed on a baseball field lighted for night play will be provided at installations with a military strength of 10,000 persons or more. Bldg. No. M135.

(c) Outdoor Swimming Pool and Bathhouse (Category Codes 750-30 and 740-07). (Indoor swimming pools (Category Code 740-72) are authorized as a training facility in cold regions.) Bldg. No. M128.

1/ Outdoor Swimming Pool. Swimming pools will be furnished as training facilities. Swimming pools will be provided at training installations on the basis of one 25-meter, 6-lane pool, and filter plant for each 5,000-person increment of the installation's enlisted personnel strength.

2/ Bathhouse. One bathhouse of 341 m<sup>2</sup> (3,675 ft<sup>2</sup>) gross area will be provided with each outdoor swimming pool.

(19) Hospital and Medical Facilities (Facility Class 500). The numbers, types and sizes of Army medical facilities will be authorized by the Department of Army in accordance with the individual requirements at each installation. These facilities will include hospitals, health clinics and dental clinics, and all allied facilities, such as laboratories, installation medical supply and maintenance activities, and quarters for certain medical personnel. The locations of installation medical supply and maintenance activities should be contiguous to the primary medical treatment facility. See Site Plans for 500- and 1,000-bed hospitals. Separate buildings designs are shown in Bldg. Nos. M081 through M106.

## (a) Hospitals (Category Code 510-10).

1/ The planned normal bed capacity of the hospital or medical treatment facilities of an installation will be three percent of the expected maximum military strength to be served for general medical care. This is an initial planning figure which may or may not indicate the actual requirement for medical treatment.

2/ Actual requirements will be determined in accordance with FM 8-55 (reference M-23) (bed requirements, three percent of trained soldiers, and four percent of the trainee population).

3/ All supporting facilities and their functional relationship to nursing units and to each other should be designed to permit expansion of the normal bed capacity originally constructed.

4/ For planning purposes, subject to a survey and determination of requirements by The Surgeon General prior to authorization, the following will be used as a guide:

TABLE M-11 MOBILIZATION MEDICAL REQUIREMENTS		
INSTALLATION MILITARY STRENGTH	BED REQUIREMENTS	NUMBER OF NURSING UNITS
Up to 6,000	(See Troop medical clinic, Group facilities)	
6,001 to 17,000	500	10
17,001 to 30,000	1,000	20

(b) Troop Dental Clinics (Category Code 540-10). Clinics will be established at installations on the basis of two chairs per operating dentist, one chair per dental hygienist, and one chair per full-time dental general practice resident or dentist receiving specialized training.

(c) Troop Medical Clinic Without Beds (Category Code 550-10). See troop medical clinic, brigade facilities.

(d) Housing (Facility Class 700). For planning purposes, subject to a determination of the actual requirements prior to design, unaccompanied enlisted personnel housing will be provided on the basis of the current mobilization TDAs and unit stationing plans.

## (e) Parking (Category Code 852-10).

1/ Parking facilities at hospitals will be provided initially on the basis of one off-street parking space for each bed for hospitals with a rated normal capacity of 500 beds and under.

2/ For hospitals having a normal bed capacity greater than 500 beds, one parking space will be added for every four beds over and above the first 500 beds.

3/ Parking areas should be located to allow provisions for possible future additional parking spaces. The stabilized or paved areas, including the stalls and aisles, exclusive of the "throat" entering areas and access roads to parking areas, will not exceed 293 m<sup>2</sup> (35 yds<sup>2</sup>) per vehicle.

(f) Helipads (Category Code 111-30). Hospital helipads, as required, will be provided in accordance with TM 5-803-4 (reference M-24).

## (20) Service Facilities.

(a) Chemical Maintenance Shop (Category Code 218-80). A maintenance shop will be provided for the repair of gas masks and the maintenance of chemical equipment at installations where there is a requirement for such a facility. The gross areas of these facilities will not exceed 223 m<sup>2</sup> (2,400 ft<sup>2</sup>) for a military strength up to 10,000 persons. Bldg. No. M124.

(b) Engineer Field Maintenance Shop (Category Code 218-20). At installations where this activity has been authorized, maintenance shops and related facilities will be provided on the following bases:

NUMBER OF MAJOR ITEMS (Including items of palletized equipment)	SHOP GROSS AREA		SPARE PARTS STORAGE GROSS AREA		TOTAL GROSS AREA		HARDSTAND AREA	
	m <sup>2</sup>	(ft <sup>2</sup> )	m <sup>2</sup>	(ft <sup>2</sup> )	m <sup>2</sup>	(ft <sup>2</sup> )	HECT-ARCE	ACRE
Up to 600	1672	(18,000)	464	(5,000)	2136	(23,000)	0.4	1
601 to 1,400	2267	(24,400)	650	(31,400)	2917	(31,400)	0.6	1 <sup>1/2</sup>
1,401 and above	2787	(30,000)	929	(10,000)	3716	(40,000)	0.8	2

<sup>1</sup> Mechanical, electrical and electronic equipment room space as required has been added to the gross areas shown. Additional space will not be added when determining a single gross area figure for each facility.

## (c) Facilities Engineer Shops.

1/ Facilities Engineer Maintenance Shop with Administration (Category Code 219-10). Facilities provided for the maintenance and upkeep of buildings, grounds, and utility systems will normally be concentrated in the facilities engineer shop area or compound. The necessary shops and facilities for carpenters, electricians, painters, plumbers, sheet metal technicians, and other workmen employed in maintaining the installation will be located within this compound and enclosed by a suitable fence. In addition to the maintenance shops, open and closed space will be provided for the storage of equipment, spare parts, and supplies. A facility with a gross area of 977 m<sup>2</sup> (10,516 ft<sup>2</sup>) will be provided to accommodate the necessary facilities engineer administration area and maintenance shops for a military strength of 10,000 persons. Bldg. No. M061.

2/ Railroad Engine Shop (Category Code 218-60). One railroad section shed of 14 m<sup>2</sup> (150 ft<sup>2</sup>) gross area will be provided in facilities engineer area at installations of over 3,000 military personnel where required.

3/ Inflammable Material Storehouse (Category Code 442-40). One building of 36 m<sup>2</sup> (384 ft<sup>2</sup>) gross area will be provided in the facilities engineer area and one in the installation maintenance area in support of airborne, armored, or infantry units. Bldg. No. M062.

4/ Lumber and Pipe Shed (Category Code 442-61). One building of 666 m<sup>2</sup> (7,170 ft<sup>2</sup>) gross area will be provided in the facilities engineer area to support a military strength of 10,000 persons. Bldg. No. M063.

5/ Vehicle Sheds (Category Code 442-62). Vehicles equipped with delicate instruments requiring protection from the weather will be stored in open shed-type shelters. For vehicles in areas where the average minimum temperature, as determined from U. S. Weather Bureau Climatic Data, for winter months is -23 °C (-10 °F) or where the annual snowfall exceeds 762 mm (30 inches), unheated, closed shed-type shelters may be

considered for 25 percent of the installation motor vehicles. A vehicle shed of 659 m<sup>2</sup> (7,095 ft<sup>2</sup>) gross area will be provided in the facilities engineer area to support a military strength of 10,000 persons. Bldg. No. M064.

6/ Facilities Engineer Storehouse (Category Code 442-70). Provisions will be made within the facilities engineer compound for a 1005 m<sup>2</sup> (10,815 ft<sup>2</sup>) gross area storehouse to support a military strength of 10,000 persons.

(d) Fire Stations. The criteria for determining the structural, grass and brush, and aircraft fire fighting and rescue requirements for each installation are contained in AR 420-90 (reference M-26). Fire stations will be provided only at installations where the need for such facilities has been determined by the commander having command and technical supervision over the fire prevention and protection activities of the installation.

1/ Fire Station (Category Code 730-10). When a fire station is authorized, it will be a one company fire station consisting of dayroom and squad room facilities for one company and two fire apparatus stalls at 148 m<sup>2</sup> (1,590 ft<sup>2</sup>) gross area. The total fire station facility will be limited to 356 m<sup>2</sup> (3,832 ft<sup>2</sup>) gross area. Bldg. No. M067.

2/ Airfield Fire and Rescue Station (Category Code 141-11). Requirements and allowances for items in this category will be the same as those prescribed by TM 5-803-4 (reference M-24).

(e) Fixed Laundry and Dry Cleaning Plant (Category Code 730-32). Whenever a laundry and dry cleaning plant is required and constructed, a steam plant of an appropriate size will be provided to supply steam to the laundry and dry cleaning facility and other quartermaster activities which require steam, such as the bakeries and the meat-cutting plant. The laundry and dry cleaning plant of 1670 m<sup>2</sup> (17,975 ft<sup>2</sup>) gross area is sized to serve a military strength of 10,000 persons based on 80 hours of operation per week. Bldg. No. M068.

(f) Garrison Bread Bakery with Pastry Kitchen (Category Code 730-23). Only when suitable commercial or common services are not or cannot be made available or where the use of such commercial facilities will not result in ultimate economy to the government, provisions will be made for a combined bread bakery and pastry kitchen (when mobile or portable field baking equipment capable of providing necessary services cannot be made available), dry cleaning, ice making, laundry, and similar facilities. The bread bakery with pastry kitchen of 2927 m<sup>2</sup> (31,505 ft<sup>2</sup>) gross area is sized to serve a military strength of 10,000 persons based on 80 hours of operation per week. Bldg. No. M070.

(g) Cold Storage - Warehouse (Category Code 432-10). Refrigerated facilities for the storage, distribution, and handling of fresh and frozen perishable subsistence supplies, and facilities for central meat-cutting and fat-rendering will be combined into one structure. The cold storage warehouse of 1784 m<sup>2</sup> (19,200 ft<sup>2</sup>) gross area is sized to serve a military strength of 10,000 persons based on 80 hours of operation per week. Bldg. No. M071.

(h) Field Maintenance Shops. Facilities for the post ordnance and field maintenance activities will be provided according to the needs of each installation, as determined by the Army commander of the area in which the installation is located. The facilities usually provided in the post ordnance area consist of field maintenance shops (Category Code 214-30), which include major assembly and overhaul buildings (Category Code 214-31), chassis/small engine repair buildings (Category Code 214-32), general storehouses (Category Code 442-70), flammable storage buildings (Category Code 442-40), loading platforms (Category Code 149-70), and suitable hardstand areas (Category Code 452-20).

1/ Vehicle Maintenance Shop (Category Code 214-30). A vehicle maintenance shop to perform field maintenance on various types of armored equipment will be provided at installations where the amount of equipment used justifies the establishment of such repair facilities. This facility normally will include an administration area, repair bays for tracked vehicles, a pneumatic hose repair area, cleaning and assembly area, engine test and run area, parts painting area with paint storage, tool room, machine shop, and parts storage area. The vehicle maintenance shop of 1373 m<sup>2</sup> (14,784 ft<sup>2</sup>) gross area is sized to support 60 to 100 tracked

vehicles. Bldg. No. M118. A repair shop support building of 461 m<sup>2</sup> (4,960 ft<sup>2</sup>) gross area may be provided if justified. Bldg. No. M119.

2/ Major Assembly and Overhaul Building (Category Code 214-30). A major assembly and overhaul building to perform major engine overhaul, reassembly and testing of various types of armored equipment engines will be provided at installations where the amount of equipment used justifies the establishment of such a facility. This facility will normally include work bays for disassembling and assembling engines, steam cleaning equipment, paint spray booth for painting engines, and dynamometer equipment. The major assembly and overhaul building of 666 m<sup>2</sup> (7,170 ft<sup>2</sup>) gross area is sized to support 60 to 100 armored vehicles. Bldg. No. M120.

3/ Chassis/Small Engine Repair Building (Category Code 214-32). A chassis/small engine repair building to perform general and direct support maintenance and repair on wheeled vehicles and small engines will be provided at installations where the amount of equipment used justifies the establishment of such a facility. This facility will normally include work bays for wheeled vehicle mechanical repairs, small engine repair bays, metal and body shop, glass shop, radiator shop, battery shop, and an automotive paint booth. The chassis/small engine repair building of 1599 m<sup>2</sup> (17,208 ft<sup>2</sup>) gross area is sized to support approximately 250 vehicles of various sizes. Bldg. No. M121.

4/ Loading Platform (Category Code 149-70). For planning purposes, the post ordnance facilities in support of an airborne, armored, or infantry division will include: three types of loading platforms, one end-loading of 100 m<sup>2</sup> (1,080 ft<sup>2</sup>) gross area; one side-loading of 364 m<sup>2</sup> (3,915 ft<sup>2</sup>) gross area; and one end- and side-loading of 421 m<sup>2</sup> (4,530 ft<sup>2</sup>) gross area. Bldg. No. M066.

5/ Hardstand for Maintenance Shop (Category Code 452-20) and Hardstand for Tank Shop (Category Code 452-30). For planning purposes, the installation maintenance facilities will include hardstand at installations where the major assigned units are airborne, armored, or infantry units.

6/ Quartermaster/Woodworking Shop (Category Code 218-82). Shop facilities to perform field maintenance on various types of equipment will be provided at installations where the number of personnel and amount of equipment used justify the establishment of such repair facilities. Such facilities normally will include those necessary for the maintenance and repair of wood and metal furniture, office appliances, material-handling equipment including special purpose equipment, and clothing and equipment including shoes, canvas webbing, and heavy tentage. The quartermaster repair shop of 1249 m<sup>2</sup> (13,440 ft<sup>2</sup>) gross area is sized to support a military strength of 10,000 persons. A lumber shed of approximately 149 m<sup>2</sup> (1,600 ft<sup>2</sup>) gross area will be provided adjacent to the quartermaster repair shop. Bldg. No. M122.

7/ Small Arms Repair Shop (Category Code 215-10). One small arms repair shop of 550 m<sup>2</sup> (5,920 ft<sup>2</sup>) gross area will be provided at installations with a military strength of 10,000 persons or more for complete breakdown, overhaul, and assembly of small arms. Bldg. No. M123.

8/ Electronics/Electrical Communication Maintenance Shop (Category Code 217-10). The requirements for facilities for electronics/electrical communication field maintenance at each installation will be determined by the US Army Information Systems Command. If justified, an electronics/electrical communication maintenance shop of 1137 m<sup>2</sup> (12,240 ft<sup>2</sup>) gross area will be provided at installations with a military strength of 10,000 persons or more. Bldg. No. M125.

(i) Telephone and Telegraph Exchange with Radio Station and Maintenance Shop (Category Code 131-22). The requirements for communications buildings at each installation will be specified by the US Army Information Systems Command. Information systems facilities to be considered in installation planning include, but need not be limited to, a telephone exchange, radio station (Category Code 131-30) and maintenance shop (Category Code 217-22). The telephone and telegraph exchange with radio station and maintenance shop building of 297 m<sup>2</sup> (3,200 ft<sup>2</sup>) gross area is sized to support a military strength of 10,000 to 20,000 persons. Bldg. No. M076. In addition, a telephone center building of 74 m<sup>2</sup> (800 ft<sup>2</sup>) gross area is authorized if justified (Category Code

740-83). Bldg. No. M130.

(j) Training and Audiovisual Support Center (Category Code 171-60). The requirements for training and audiovisual support center facilities at installations should not exceed 520 m<sup>2</sup> (5,600 ft<sup>2</sup>) gross area. For planning purposes, these centers may be composed of functional elements which provide products and services as follows: audio, audio-visual media library, graphic arts, learning centers, loan of devices and equipment, material maintenance, motion picture photography, photo-optical instrumentation, presentation areas, still photography, television, and training device fabrication. Bldg. No. M073.

(k) Airborne Equipment Repair Shop (Category Code 218-81). At installations where an airborne division is stationed, a field maintenance facility with a gross area not to exceed 4760 m<sup>2</sup> (51,240 ft<sup>2</sup>) will be provided to support the parachute maintenance company. Bldg. No. M074.

(l) Gasoline Stations (Category Code 123-10).

1/ A central liquid fuel storage and dispensing system will be provided for each installation or group motor pool to serve the organizational motor vehicles. Additional branch dispensing points may be provided where the travel distances, types of vehicles, and vehicle complement involved make such dispensing points essential.

2/ Vehicles will be fueled from underground storage tanks, the capacities of which should be equal to approximately two complete fillings of all fuel-consuming vehicles assigned to the dispensing points.

3/ One dispensing nozzle will be provided for each 50 vehicles served.

4/ If more than one grade of motor fuel is to be handled, each grade and type will be stored and dispensed through a separate system.

5/ A building with a gross area not to exceed 35.7 m<sup>2</sup> (384 ft<sup>2</sup>) will be provided for each dispensing point to serve as a control house or gas station for the dispensing activity. Bldg. No. M075.

(m) Training Facilities Other Than Buildings (Basic Category 179).

1/ Weapons training facilities required at each installation will depend upon the type of tactical organization using the installation as well as the military strength. Responsibility for the development of weapons training facilities is defined in AR 210-21 (reference M-26).

2/ Special school training facilities required at each installation will depend upon the type of training to be conducted and the military strength as determined by the Army Mobilization Plan. Because of the varied character of units, advanced special classrooms or shops may be required in addition to the basic facilities provided for here. These facilities, if needed, will be matters of special consideration for each installation having service schools. Facilities thus provided will conform to the standards of design and construction for similar (temporary) type structures.

(n) Storage Facilities. Storage-Covered, Installation and Organizational (Basic Category 442).

1/Storage facilities at each installation (not including depots) embrace general warehousing for clothing, equipment, subsistence and supplies, as well as warehousing for other miscellaneous activities.

2/ Facilities for the storage of fresh and frozen perishable subsistence supplies, because of the peculiar characteristics of the material to be stored and the special type of storage facilities required to care for them, will be provided in the cold storage warehouse and meat processing facility authorized by Category Group 432.

## (o) General Purpose Warehouse (Category Code 442-20).

1/ General purpose warehousing will include: chemical equipment; closed storage space required to store supplies and equipment necessary for the operational and training activities of the installation; clothing issue and sales; engineer supplies (exclusive of facilities engineer shop storehouse); flammable materiel (which require separated facilities); maintenance supplies and equipment (exclusive of engineer supplies); self service supply center; space needed to store subsistence (exclusive of cold storage); and transportation requirements.

2/ General warehousing provided at installations under normal circumstances may be less than, but will not exceed, the following:

TABLE M-13 MOBILIZATION GENERAL WAREHOUSING			
BLDG. NUMBER	NUMBER OF ENLISTED PERSONNEL	GROSS AREA <sup>1</sup>	
		m <sup>2</sup>	(ft <sup>2</sup> )
M077	3,000 to 5,000	4681	(50,390)
M078	5,001 to 15,000	13 660	(147,038)

<sup>1</sup> Mechanical, electrical and electronic equipment room space as required has been added to the gross areas shown. Additional space will not be added when determining a single gross area figure for each facility.

3/ Additional warehousing requirements, determined on a functional basis rather than on the basis of total installation military strength, may be necessary to provide for special-type units or other activities which may be located at an installation. Warehouse requirements in excess of the above basic allocation will be authorized only after each increase has been specifically justified.

4/ When authorized, computation of additional covered storage requirements will be based on density factors contained in Chapter 6, AR 740-1 (reference M-27), which specify: Type of storage required -General supplies; Density factor - 1.9 m<sup>2</sup> (20 ft<sup>2</sup>) (gross area) Per S/T.

5/ Insulated warehouse space will be determined based on a ratio of approximately 95 mm<sup>2</sup> (one square foot) for each 190 mm<sup>2</sup> (2 ft<sup>2</sup>) of non-insulated warehouse space. Heating will be provided only in insulated warehouse space.

6/ Where areas are available and topographic conditions permit, warehousing will be constructed in batteries, end to end, with dividing fire walls spaced to meet fire prevention requirements.

(p) Exchange Warehouse (Category Code 740-55). At large installations, separate warehouse space over and above the allocation of general warehousing will be provided for the exchange service. At smaller installations (under 10,000 military strength) where the volume of turnover is not large, a portion of the general warehouse space will be considered available for the exchange service. Exchange warehouses will be provided as follows:

TABLE M-14 MOBILIZATION EXCHANGE WAREHOUSES		
MILITARY STRENGTH	GROSS AREA <sup>1</sup>	
	m <sup>2</sup>	(ft <sup>2</sup> )
10,000 to 20,000	589	(6,340)
20,001 to 30,000	799	(8,600)
30,001 and above	975	(10,500)

<sup>1</sup> Mechanical, electrical and electronic equipment room space as required has been added to the gross areas shown. Additional space will not be added when determining a single gross area figure for each facility.

(q) Open Storage Area - Coal Storage (Category Code 452-10). At installations where coal-burning equipment is used, coal is generally purchased in large quantities. In order to preserve and adequately care for this fuel, central storage facilities will normally be provided for 50 percent of the annual coal consumption. This percentage should be appropriately reduced where the availability and source of supply warrant.

(r) Ammunition Storage - Installation (Category Group 420). For preservation in a ready-for-issue condition and for safety reasons, ammunition will be provided with covered storage that is isolated and designed for that purpose. The location and layout of the magazine area, including the lethal and non-lethal gas areas, will be in accordance with safety provisions prescribed by AR 385-60 (reference M-28), AR 385-64 (reference M-29), and TM 9-1300-206 (reference M-30). Storage requirements will be computed in accordance with AR 740-1 (reference M-27) which specifies:

TABLE M-15 AMMUNITION STORAGE - INSTALLATION		
TYPE OF STORAGE REQUIRED	DENSITY FACTOR	
	GROSS AREA PER S/T	
	m <sup>2</sup>	(ft <sup>2</sup> )
Conventional Ammunition	0.74	(8)
Chemical Munitions	1.30	(14)
Missiles	1.30	(14)

(s) Liquid Fuel Storage - Bulk (Category Group 411). At installations where fuel oil-burning equipment is used, a minimum 30-day fuel oil storage capability will be provided. The amount of storage capacity provided above the minimum will be dependent on the availability of a local supply and local conditions prevailing at each installation.

(t) Aviation Gas and Jet Fuel Storage Facility (Category Codes 411-20 and 411-21). Requirements and allowances will be the same as those prescribed by TM 5-803-4 (reference M-24) under Category Codes 124-10 and 124-11.

(u) Diesel Oil Storage Facility (Category Code 411-30). Facilities will be provided as required at each installation based upon an adequate supply for 15 days where deliveries can be made within seven days of placing an order, otherwise storage for a 30-day supply (based on the estimated consumption rate during mobilization

conditions) will be provided.

(v) Motor Gasoline Storage Facility (Category Code 411-40). Fuel storage will be adequate for a 15-day supply where deliveries can be made within seven days of placing an order, otherwise storage for a 30-day supply (based on the estimated consumption rate during mobilization conditions) will be provided.

(w) Salvage and Surplus Property Facilities (Category Code 442-85). Minimum facilities for receipt and storage of surplus property will be provided only at installations with a military strength of 20,000 persons or more. The gross area of such a facility will not exceed 465 m<sup>2</sup> (5,000 ft<sup>2</sup>). An open storage salvage area of 0.40 hectare (one acre) should be provided adjacent to this facility.

(x) Airborne Repair/Humidity Controlled Facility (Category Code 442-30). An airborne/humidity controlled building of 1860 m<sup>2</sup> (20,018 ft<sup>2</sup>) gross area is authorized if justified. Bldg. No. M126.

(y) Lumber/Pipe Shed Facility (Category Code 442-61). A lumber/pipe shed building of 149 m<sup>2</sup> (1,600 ft<sup>2</sup>) gross area is authorized if justified. Bldg. No. M140.

(21) Airfield Facilities.

(a) TM 5-803-4. For the following types of facilities, the requirements and allowances will be the same as those prescribed by TM 5-803-4 (reference M-24).

1/ Aircraft Direct Fueling Activity (Category Code 121-10).

2/ Aircraft Fuel Storage (Category Code 124-10).

3/ Aircraft Maintenance Hangars (Basic Category 211). The following types of aircraft maintenance hangars are authorized if justified:

4/ Aircraft Parts Storage Building (Category Code 442-10).

5/ Airfield Fire and Rescue Station (Category Code 141-11).

6/ Airfield Operations Building (Category Code 141-10).

7/ Airfield Pavements - Aprons (Basic Category 113).

8/ Airfield Pavements - Runways and Helipads (Basic Category 111).

9/ Airfield Pavements - Taxiways (Basic Category 112).

TABLE M-16 MOBILIZATION AIRCRAFT MAINTENANCE HANGERS			
BUILDING NUMBER	M-DRAWING NUMBERS	GROSS AREA <sup>1</sup>	
		m <sup>2</sup>	(ft <sup>2</sup> )
M113	M 211-12-A	2676	(28,800)
M114	M 211-12-B	4013	(43,200)
M115	M 211-12-C	4571	(49,200)

- <sup>1</sup> Mechanical, electrical and electronic equipment room space as required has been added to the gross areas shown. Additional space will not be added when determining a single gross area figure for each facility.

10/ Aviation Unit Operations Building (Category Code 141-12).

11/ Avionics Maintenance Shop (Category Code 217-40).

12/ Land Purchase and Condemnation (Category Code 911-10).

13/ Navigational Aids (Non-Buildings) (Basic Category 134).

(b) Aviation Pavement Lighting (Basic Category 136). Requirements and allowances will be the same as those prescribed by TM 5-811-5 (reference M-31).

(c) Parking Area, Vehicular (Category Code 852-10). See subparagraph 4.a.

(d) Flight Control Tower (Category Code 133-10). Minimum standard facilities for housing flight tower equipment and ATC personnel will be provided when required. A tower facility of 24 m<sup>2</sup> (258 ft<sup>2</sup>) gross area is authorized if justified. Bldg. No. M079.

(e) Flight Simulator Building (Category Code 171-12). Flight simulator buildings will be authorized in accordance with a DA Basis of Issue (BOI) to the type of helicopter or fixed-wing trainer and required building scope. The facility will be a two-story structure of 1242 m<sup>2</sup> (13,365 ft<sup>2</sup>) gross area. Bldg No. M080.

(f) Aircraft Flammable Storage Building (Category Code 442-45).

1/ This type of space is normally included with hangars, Category Code 211; however, a separate building may be provided for the storage and safeguarding of oils, paints, and dopes in such quantities as are necessary to meet the needs of organic and transient aircraft.

2/ Authorized space will be as prescribed in Table 3-1 of TM 5-803-4 (reference M-24).

(g) Aviation Administration. Administrative space for aviation operations will normally be located in the airfield operations building (Category Code 141-10) and the unit operations building (Category Code 141-12).

- f. Miscellaneous Facilities. The following types of facilities may be provided if fully justified:

TABLE M-17 MISCELLANEOUS MOBILIZATION FACILITIES			
BUILDING NUMBER	TYPE OF FACILITY	GROSS AREA <sup>1</sup>	
		m <sup>2</sup>	(ft <sup>2</sup> )
M129	Bowling Center	977	(10,516)
M040	Clothing Initial Issue Point	4287	(46,143)
M058	Clothing Sales Store	471	(4,960)
M112	Gas Chamber	71	(768)
M136	Grandstand/Bleachers	N/A	N/A
M111	Observation Tower	37	(400)

TABLE M-17 MISCELLANEOUS MOBILIZATION FACILITIES			
BUILDING NUMBER	TYPE OF FACILITY	GROSS AREA <sup>1</sup>	
		m <sup>2</sup>	(ft <sup>2</sup> )
M059	Provost Marshall and Military Police	345	(3,712)
M110	Range Latrine	74	(800)
M041	Receptee Processing Building	7856	(84,566)
M065	Utility and Carpenter Shop	1318	(14,183)

<sup>1</sup> Mechanical, electrical and electronic equipment room space as required has been added to the gross areas shown. Additional space will not be added when determining a single gross area figure for each facility.

TABLE M-18 ARMY MOBILIZATION DESIGNS					
BUILDING NUMBER	DESIGN NOMENCLATURE (Capacity, No. of Stories)	CATEGORY CODE	DRAWING NUMBER	GROSS AREA <sup>1</sup>	
				m <sup>2</sup>	(ft <sup>2</sup> )
M001	Unaccompanied Housing Enlisted Personnel (288 Persons at 5 m <sup>2</sup> (54 ft <sup>2</sup> ) per person, 2 Stories)	721-15	M 720-00-A	3080	(33,152)
M002	Unaccompanied Housing Enlisted Personnel (288 Persons at 6.7 m <sup>2</sup> (72 ft <sup>2</sup> ) per person, 2 Stories)	721-15	M 720-00-B	3478	(37,440)
M003	Unaccompanied Housing Enlisted Personnel (176 Persons at 5 m <sup>2</sup> (54 ft <sup>2</sup> ) per person, 2, Stories)	721-15	M 720-00-C	1754	(18,880)
M004	Unaccompanied Housing Enlisted Personnel (176 Persons at 6.7 m <sup>2</sup> (72 ft <sup>2</sup> ) per person, 2 Stories)	721-15	M 720-00-D	2111	(22,720)
M005	Unaccompanied Housing Officers Quarters (40-44 Officers, 2 Stories)	724-10	M 724-00-A	737	(7,936)
M006	Detached Lavatory (176 Person, 1 Story)	723-24	M 723-24-A	297	(3,200)

TABLE M-18 ARMY MOBILIZATION DESIGNS					
BUILDING NUMBER	DESIGN NOMENCLATURE (Capacity No. of Stories)	CATEGORY CODE	DRAWING NUMBER	GROSS AREA <sup>1</sup>	
				m <sup>2</sup>	(ft <sup>2</sup> )
M007	Dining Facility (200 Person, 1 Story)	722-10	M 722-10-A	401	(4,316)
M008	Administration and Supply (1 Story)	141-18	M 723-30-A	208	(2,240)
M009	Battalion Headquarters and Classroom (1 Story)	175-51	M 723-30-B	565	(6,080)
M010	Battalion Classroom (1 Story)	171-50	M 723-30-C	285	(3,072)
M011	Auditorium, General Purpose, Battalion (1 Story)	740-10	M 740-10-A	673	(7,245)
M012	Dining Facility (800 Persons, 1 Story)	722-10	M 723-30-D	844	(9,082)
M013	Company/Battalion Combined Warehouse (1 Story)	442-70	M 442-70-A	1005	(10,815)
M014	Motor Repair Shop (250 Vehicles, 1 Story)	214-10	M 241-10-A	670	(7,215)
M015	Vehicle/Tank Oil House (1 Story)	214-70	M 214-70-A	30	(320)
M016	Company Classroom (288 Seats, 1 Story)	171-50	M 171-50-B	513	(5,520)
M017	Tank Repair Shop (61-100 Tanks, 1 Story)	214-20	M 214-20-A	837	(9,015)
M018	Exchange Branch	740-50	M 740-50-A	190	(2,048)
M019	Headquarters, General Building (65 Persons, 1 Story)	141-82	M 141-82-A	580	(6,240)
M020	Branch PX without Barbershop (1 Story)	740-50	M 740-50-B	190	(2,048)
M021	Auditorium, General Purpose, Brigade (1 Story)	740-10	M 740-68-A	1189	(12,800)

TABLE M-18 ARMY MOBILIZATION DESIGNS					
BUILDING NUMBER	DESIGN NOMENCLATURE (Capacity No. of Stories)	CATEGORY CODE	DRAWING NUMBER	GROSS AREA <sup>1</sup>	
				m <sup>2</sup>	(ft <sup>2</sup> )
M022	Exchange and Snack Bar (1 Story)	740-53	M 740-53-A	933	(10,038)
M023	Unit Chapel (300 Seats, 1 Story)	730-19	M 730-19-A	639	(6,880)
M024	Health Clinic - Consolidated (2 Stories)	550-10	M 550-10-A	1332	(14,340)
M025	Dental Clinic (18 Chairs, 1 Story)	540-10	M 540-10-A	755	(8,126)
M026	Dental Clinic (38 Chairs, 2 Stories)	540-10	M 540-10-B	1427	(15,360)
M027	Grease Rack - Vehicle (1 Story)	214-52	M 214-50-A	169	(1,815)
M028	Grease Rack - Tracked Vehicle (1 Story)	214-53	M 214-50-B	169	(1,815)
M029	Wash Facility - Centralized (1 Story)	214-56	M 214-56-A	30	(320)
M031	Arms Building (1 Story)	442-23	M 442-90-A	119	(1,280)
M032	Division Headquarters - Light or Heavy Division (1 Story)	610-12	M 610-12-A	2051	(22,080)
M033	Division Headquarters - Training Division (1 Story)	610-12	M 610-12-B	1021	(10,994)
M035	Parachute Packing and Drying Facility, Brigade (1 Story, Quartermaster Company)	218-10	M 218-10-A	3925	(42,251)
M036	Division Breakdown Building (1 Story)	442-86	M 442-86-A	1005	(10,815)
M037	Division Storehouse (1 Story)	442-70	M 442-70-B	262	(2,816)
M038	Parachute Packing and Drying Facility, Division (1 Story)	218-10	M 218-10-B	22 974	(247,300)
M039	Bank Building (1 Story)	740-06	M 740-11-A	214	(2,304)

TABLE M-18 ARMY MOBILIZATION DESIGNS					
BUILDING NUMBER	DESIGN NOMENCLATURE (Capacity No. of Stories)	CATEGORY CODE	DRAWING NUMBER	GROSS AREA <sup>1</sup>	
				m <sup>2</sup>	(ft <sup>2</sup> )
M040	Clothing, Initial Issue Point (1 Story)	141-90	M 141-90-A	4287	(46,143)
M041	Receptee Processing Building (1 Story)	141-25	M 141-25-A	7856	(84,566)
M042	Main Exchange, Retail Store with Administration (1 Story)	740-53	M 740-53-A	1363	(14,674)
M043	Physical Fitness Center (1 Story)	740-28	M 740-28-A	1784	(19,200)
M044	Confinement Administration (1 Story)	730-14	M 690-90-A	256	(2,752)
M045	Confinement Facility Sentry Tower (1 Story)	872-20	M 872-20-A	25	(272)
M047	Confinement Facility Sentry House (1 Story)	872-30	M 872-30-A	1.5	(16)
M048	Confinement Facility Segregation Building (16 internees, 1 Story)	730-14	M 722-40-A	262	(2,816)
M049	Confinement Facility Assembly Building (1 Story)	730-15	M 171-90-A	268	(2,880)
M050	Confinement Facility Processing and Storage Building (1 Story)	610-28	M 442-70-A	166	(1,792)
M051	Main Library (1 Story)	740-41	M 740-41-A	422	(4,544)
M052	Confinement Barracks (50 Prisoners, 2 Guards, 1 Story)	730-15	M 722-40-B	446	(4,800)
M053	Officers/NCO Club (1 Story)	740-47 740-48	M 740-47-A	1064	(11,450)
M054	Recreation Center (1 Story)	740-68	M 740-68-A	770	(8,286)
M055	Main Post Office (1 Story)	730-73	M 740-59-A	590	(6,352)

TABLE M-18 ARMY MOBILIZATION DESIGNS					
BUILDING NUMBER	DESIGN NOMENCLATURE (Capacity No. of Stories)	CATEGORY CODE	DRAWING NUMBER	GROSS AREA <sup>1</sup>	
				m <sup>2</sup>	(ft <sup>2</sup> )
M056	Branch Post Office (1 Story)	730-72	M 740-58-A	412	(4,440)
M057	Theater with Stage (929 Seats, 2 Stories)	740-76	M 740-76-A	1076	(11,579)
M058	Clothing Sales Store (1 Story)	740-20	M 740-20-A	471	(4,960)
M059	Provost Marshal and Military Police (Administration, 1 Story)	610-28	M 610-28-A	345	(3,712)
M061	Facilities Engineer Maintenance Facilities (1 Story with Administration)	219-10	M 219-10-A	977	(10,516)
M062	Inflammable Material Store House (1 story)	442-40	M 442-40-A	36	(384)
M063	Lumber and Pipe Shed (1 Story)	442-61	M 442-61-A	666	(7,170)
M064A	Vehicle Shed (Closed, 1 Story)	442-62	M 442-62-A	659	(7,095)
M064B	Vehicle Shed (Open)	442-62	M 442-62-B	659	(7,095)
M065	Utility and Carpenter Shop (1 Story)	218-83	M 219-10- B	1318	(14,183)
M066 " A " B " C	Loading Platforms: Type P-1, Side; Type P-2, End; Type P-3, End and Side	149-70	M 219-20-A M 219-20-B M 219-20-C	364	(3,915) Type P-1
M067	Fire Station (2 Stories)	730-10	M 141-11-A	356	(3,832)
M068	Laundry/Dry Cleaning (1 Story)	730-32	M 730-30-A	1670	(17,975)
M070	Garrison Bread Bakery with Pastry Kitchen (2 Stories)	730-23	M 730-20-A	2927	(31,505)
M071	Cold Storage Warehouse (1 Story)	432-10	M 432-10-A	1784	(19,200)

TABLE M-18 ARMY MOBILIZATION DESIGNS					
BUILDING NUMBER	DESIGN NOMENCLATURE (Capacity No. of Stories)	CATEGORY CODE	DRAWING NUMBER	GROSS AREA <sup>1</sup>	
				m <sup>2</sup>	(ft <sup>2</sup> )
M073	Training and Audio/Visual Support Center (1 Story)	171-60	M 171-60-A	520	(5,600)
M074	Airborne Equipment Repair Shop (1 Story)	218-81	M 218-81-A	4760	(51,240)
M075	Gasoline Station (1 Story)	123-10	M 123-10-A	36	(384)
M076	Communications Building (1 Story)	131-22	M 141-30-A	297	(3,200)
M077	General Purpose Warehouse (1 Story)	442-20	M 442-20-A	4681	(50,390)
M078	General Purpose Warehouse (1 Story)	442-20	M 442-20-B	13 660	(147,038)
M079	Flight Control Tower (1 Story)	133-10	M 133-10-A	24	(258)
M080	Flight Simulator Building (1 Story)	171-12	M 171-12-A	1242	(13,365)
	500 - BED HOSPITAL (Site Plan) 1,000 - BED HOSPITAL (Site Plan)				
M081	Physical Therapy (1 Story)	510-10	M 510-10-A	666	(7,170)
M082	Radiology (1 Story)	510-10	M 510-10-B	666	(7,170)
M083	Intensive Care Unit (1 Story)	510-10	M 510-10-C	1021	(10,995)
M084	Surgery/CMS - 6 O.R. (1 Story)	510-10	M 510-10-D	1858	(20,000)
M085	Medical Supply Medium (1 Story)	510-10	M 510-10-E	1601	(17,230)
M086	Ward - 46 Bed (1 Story)	510-10	M 510-10-F	999	(10,755)
M087	Pharmacy (1 Story)	510-10	M 510-10-G	334	(3,600)
M088	Clinic - OPD/ER/Admission (1 Story)	510-10	M 510-10-H	1018	(10,955)

TABLE M-18 ARMY MOBILIZATION DESIGNS					
BUILDING NUMBER	DESIGN NOMENCLATURE (Capacity No. of Stories)	CATEGORY CODE	DRAWING NUMBER	GROSS AREA <sup>1</sup>	
				m <sup>2</sup>	(ft <sup>2</sup> )
M089	Clinic - Surgery/Gynecology (1 Story)	510-10	M 510-10-I	666	(7,170)
M090	Clinic - Neurology/Medical (1 Story)	510-10	M 510-10-J	666	(7,170)
M091	Clinic - Social Work/Psychiatry (1 Story)	510-10	M 510-10-K	666	(7,170)
M092	Clinic - EENT/Plastic Surgery (1 Story)	510-10	M 510-10-L	666	(7,170)
M093	Clinic - UROL/ORTHO (1 Story)	510-10	M 510-10-M	666	(7,170)
M094	Laboratory - Small (1 Story)	510-10	M 510-10-N	666	(7,170)
M095	Dental Clinic (1 Story)	510-10	M 510-10-O	666	(7,170)
M096	Administration (1 Story)	510-10	M 510-10-P	1155	(12,430)
M098	Food Service, Medical, Large (1 Story)	510-10	M 510-10-R	2787	(30,000)
M101	Corridor and Mechanical Building (1 Story)	510-10	M 510-10-U	30	(320)
M103	Surgery - 12 O.R. (1 Story)	510-10	M 510-10-W	2964	(31,900)
M104	CMS - Inhalation Therapy Building (1 Story)	510-10	M 510-10-X	758	(8,156)
M105	Occupational Therapy/Brace Shop (1 Story)	510-10	M 510-10-Y	666	(7,170)
M106	Path Inciner/Control Building (1 Story))	510-10	M510-10-Z	30	(320)
M107	Vaulted Metal Structure (1 Story)	725-10	M 725-10-B	217	(2,338)
M108	Vaulted Metal Structure (1 Story)	725-10	M 725-10-C	658	(7,079)
M110	Range Latrine (1 Story)	723-21	M 179-24-A	74	(800)

TABLE M-18 ARMY MOBILIZATION DESIGNS					
BUILDING NUMBER	DESIGN NOMENCLATURE (Capacity No. of Stories)	CATEGORY CODE	DRAWING NUMBER	GROSS AREA <sup>1</sup>	
				m <sup>2</sup>	(ft <sup>2</sup> )
M111	Observation Tower (1 Story)	179-71	M 179-71-A	37	(400)
M112	Gas Chamber (1 Story)	171-70	M 171-70-A	71	(768)
M113	Aircraft Hanger (1 Story)	211-12	M 211-12-A	2676	(28,800)
M114	Aircraft Hanger (1 Story)	211-12	M 211-12-B	4013	(43,200)
M115	Aircraft Hanger (1 Story)	211-12	M 211-12-C	4571	(49,200)
M116	Coin-Operated Laundry (1 Story)	740-56	M 740-56-A	95	(1,024)
M117	Starship Barracks, Ground Floor Enclosure (40 Persons per Pod, 1 Story)	721-15	M 521-15-E	339	(3,650) per Pod
M118	DIO Tank Repair Shop (12 Bays, 1 Story)	214-30	M 214-30-A	1373	(14,784)
M119	DIO Repair Shop Support Building (1 Story)	214-30	M 214-30-B	461	(4,960)
M120	DIO Major Assembly Overhaul (1 Story)	214-30	M 214-30-C	666	(7,170)
M121	DIO Chasis/Small Engine Repair (1 Story)	214-32	M 214-30-D	1599	(17,208)
M122	DIO Quartermaster/ Woodworking Shop (1 Story)	218-82	M 218-82-A	1249	(13,440)
M123	DIO Small Arms Repair (1 Story)	215-10	M 215-10-A	550	(5,920)
M124	DIO Chemical Maintenance Shop (1 Story)	218-80	M 218-80-A	223	(2,400)
M125	DIO Electronics/Electrical Maintenance Shop (1 Story)	217-10	M 217-10-A	1137	(12,240)
M126	Airborne Repair/Humidity Controlled Warehouse (1 Story)	442-30	M 442030-A	1860	(20,018)

TABLE M-18 ARMY MOBILIZATION DESIGNS					
BUILDING NUMBER	DESIGN NOMENCLATURE (Capacity No. of Stories)	CATEGORY CODE	DRAWING NUMBER	GROSS AREA <sup>1</sup>	
				m <sup>2</sup>	(ft <sup>2</sup> )
M127	Hutment (10 Persons, 1 Story)	725-10	M 725-10-A	71	(768)
M128	Bathhouse and Swimming Pool (1 Story)	750-30	M 750-30-A	841	(9,056)
M129	Bowling Center (8 lanes, 1 story)	740-11	M 740-11-A	977	(10,516)
M130	Telephone Center (20 Phones, 1 Story)	740-83	M 740-83-A	74	(800)
M131	Guest House (15 Rooms, 1 Story)	740-32	M 740-32-A	520	(5,600)
M132	Multi-Sport Court (4 Courts)	750-11	M 750-11-A	2024	(21,789)
M133	Baseball Field	750-20	M 750-20-A	N/A	N/A
M134	Softball Field	750-21	M 750-21-A	N/A	N/A
M135	Football Field	750-22	M 750-22-A	N/A	N/A
M136	Grandstand/Bleachers (10 Seats)	750-61	M 750-61-A	N/A	N/A
M137	200 Person Barracks (2 Stories)	724-15	M 724-15-A	2646	(28,480)
M138	Dining Facility (1,100 Persons, 1 Story)	722-10	M 722-10-C	977	(10,516)
M140	DIO Lumber/Pipe Shed (1 Story)	442-61	M 442-61-B	149	(1,600)

<sup>1</sup> Mechanical, electrical and electronic equipment room space as required has been added to the gross areas shown. Additional space will not be added when determining a single gross area figure for each facility.

## 5. REFERENCES.

- M-1 ER 500-1-2, Corps of Engineers Mobilization and Operating Planning System (CEMOPS), 30 October 1995
- M-2 EP 500-1-2, US Army Corps of Engineers Support in the Theater of Operations, 30 October 1995
- M-3 AR 415-28, Department of the Army Real Property Category Codes, 2 February 1995
- M-4 AR 405-45, Inventory of Army Military Real Property, 18 March 1977, (Change 1 - 15 November 1980)

- M-5 AR 415-15, Army Military Construction Program Development & Execution, 30 August 1994
- M-6 AR 415-10, Military Construction - General, 1 March 1984
- M-7 TB ENG 353, Installation Master Plan Preparation, 9 August 1988
- M-8 AR 420-43, Electrical Services, 27 November 1987
- M-9 TM 5-813-1, Water Supply Sources and General Considerations (AFM 80-10 V.1), 4 June 1987
- M-10 TM 5-813-4, Water Supply Water Storage (AFM 88-10 V.4), 20 September 1985
- M-11 TM 5-814-1, Sanitary and Industrial Wastewater Collection, Gravity Sewers and Appurtenances, 4 March 1985
- M-12 TM 5-814-3, Domestic Wastewater Treatment, 31 August 1988
- M-13 TM 5-814-4, Incineration, 7 May 1959
- M-14 EM 1110-3-160, Water Supply, General Considerations - Mobilization Construction, 9 April 1984
- M-15 EM 1110-3-161, Water Supply, Sources - Mobilization Construction, 9 April 1984
- M-16 EM 1110-3-162, Water Supply, Water Treatment - Mobilization Construction, 8 April 1984
- M-17 EM 1110-3-163, Water Supply, Water Storage - Mobilization Construction, 9 April 1984
- M-18 EM 1110-3-164, Water Supply, Water Distribution - Mobilization Construction, 9 April 1984
- M-19 EM 1110-3-166, Water Supply, Fire Protection - Mobilization Construction, 9 April 1984
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