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Facilities Engineering

Project Definition and Work Classification

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SUMMARY of CHANGE

DA PAM 420-11

Project Definition and Work Classification

This administrative revision, dated 18 March 2010--

- o Add glossary terminology to include a definition for models, replicas, and simulations (app B).
- o Makes administrative changes (throughout).

This major revision, dated 13 January 2010--

- o Combines maintenance and repair into one classification category (para 2-2).
- o Adds paragraph explaining funded and unfunded costs (para 2-9).
- o Adds additional information on how to calculate the facility replacement value (para 3-4).
- o Updates terminology (throughout).
- o Clarifies the work classification examples to conform to current definition of repair (throughout).
- o Adds guidance governing the classification of work associated with Equipment-in-Place and Information Management equipment in repair projects (throughout).
- o Adds examples from AR 420-1 on work classification of pavements and railroads (throughout).
- o References AR 420-1 and deletes old references (throughout).
- o Makes administrative changes (throughout).

Facilities Engineering

Project Definition and Work Classification

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History. This publication is an administrative revision. The portions affected by this administrative revision are listed in the summary of change.

Summary. This pamphlet provides guidance to Army installations in the areas of project definition and performance of work classification. Procedures are explained to promote uniform interpretation on the classification of work Armywide.

Applicability. This pamphlet applies to the Active Army, the Army National Guard/Army National Guard of the United States, and the U.S. Army Reserve, unless otherwise stated. It also applies to all Active Army installations, sub-installations, assigned activities, and includes Government-owned and contractor-owned facilities.

Proponent and exception authority. The proponent of this pamphlet is the Assistant Chief of Staff for Installation Management. The proponent has the authority to approve exceptions or waivers to this pamphlet that are consistent with controlling law and regulations. The proponent may delegate this approval authority, in writing, to a division chief within the proponent agency or its direct reporting unit or field operating agency, in the grade of colonel or the civilian equivalent. Activities may request a waiver to this pamphlet by providing justification that includes a full analysis of the expected benefits and must include formal review by the activity's senior legal officer. All waiver requests will be endorsed by the

commander or senior leader of the requesting activity and forwarded through their higher headquarters to the policy proponent. Refer to AR 25–30 for specific guidance.

Suggested improvements. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to Assistant Chief of Staff for Installation Management (DAIM–ODF), 600 Army Pentagon, Washington, DC 20310–0600.

Distribution. This pamphlet is available in electronic media only and is intended for command levels C and D for the Active Army, the Army National Guard/Army National Guard of the United States, and the U.S. Army Reserve.

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*This pamphlet supersedes DA Pam 420–11, dated 13 January 2010.

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Chapter 1 Introduction

Section I General

1-1. Purpose

The purpose of this pamphlet is to promote Armywide uniform interpretation on classification by presenting examples of maintenance, repair, and minor construction projects and policy and guidance governing the classification of work. AR 420-1, chapter 2, Management of Public Works Activities, identifies the Director of Public Works (DPW) as the installation staff officer responsible for work classification and contains basic work classification policy and guidance.

1-2. References

Required and related publications and prescribed and referenced forms are listed in appendix A.

1-3. Explanation of abbreviations and terms

Abbreviations and special terms used in this pamphlet are explained in the glossary.

Section II Work Classification Concepts

1-4. General

a. Real property facility (RFP) projects are described by words such as sustainment, restoration, modernization, upgrade, maintenance, repair, construction, revitalization, improvement, and demolition. These words have a variety of meanings conveying different concepts to different people. Because work classification is the process of fitting real property undertakings into the structure of statutes and Army policy, wording must be precise so that everyone understands exactly what is being done. Real property facility projects constitute the basis for essentially all of the facilities engineer activities. The management of real property facility projects is one of the most critical duties of the facilities engineer. Because of the large amount of funds utilized in facilities engineering operations, the complexity of the work, and the size of the workforce, the DPW is constantly required to interpret various regulatory restrictions on the utilization of funds and personnel. Many of these restrictions are in the form of statutory limitations enacted by Congress, while other restrictions are regulatory or administrative in nature. Moreover, the determination of the proper source of appropriated funds to use on a specific project is governed by statutory and regulatory restraints and is subject to legal review. In any case, violations of these rigid statutory and regulatory limitations are a serious offense. Therefore, a clear distinction must be made between maintenance, repair, and construction work. Maintenance and repair are defined in AR 420-1, chapter 2. Minor construction is defined in AR 420-1, chapter 4, while construction for family housing, including incidental improvements and line item improvements, is defined in chapter 3. Soldiers working on real property facilities must comply with the policies contained in AR 420-1, chapters 2-4.

b. Work classification definitions and rules apply to all facilities engineering work, regardless of who performs it and how it is funded. Work classification also determines what is a funded project cost and what is an unfunded project cost. Funded project costs define where the approval authority for a real property project is located. The approval authority, however, is approving only the real property portion of the undertaking. Unfunded project costs are approved separately by various other means. Unfunded project costs are the least understood of the funding categories. It contains all the items that are not part of the real property or items that can not be touched such as design, and permits. It also contains equipment-in-place (EIP); pieces of equipment that the user of the building needs to do his job but are not part of the real property. Both funded and unfunded project costs are covered in detail in AR 420-1, chapter 2. The total project cost is the sum of funded and unfunded project costs.

1-5. Why work classification is important

a. While the current definition of a minor construction project in AR 420-1 chapter 4 (as stated in para 1-6c) appears simple in concept, its application is often difficult. Misclassification of construction as maintenance and repair and errors in defining minor construction projects may result in a statutory violation of the Anti-Deficiency Act (see DFAS-IN 37-1 Regulation).

b. Antideficiency statutes state that any officer or employee of the United States who makes or authorizes an expenditure or obligations exceeding an amount available in an appropriation or fund for the expenditure of an obligation shall be subject to appropriate administrative discipline, including, when circumstance warrant, suspension from duty without pay or removal Title 31, United States Code, Section 1341(a) (31 USC 1341(a)) and 31 USC 1349. Those convicted of a knowing and willful violation shall be fined not more than \$5,000, imprisoned for not more than 2 years, or both (31 USC 1350 and 31 USC 1519).

c. Antideficiency violations are serious and affect the Army's credibility. The DOD and DA policy calls for disciplinary action in Antideficiency violation cases. A violation that was not willful does not constitute a crime, but it

may still warrant disciplinary action. Circumstances such as “a heavy workload at year-end” or an employee’s “past exemplary record” or an urgent need to provide mission support, generally are relevant only in determining the appropriate level of discipline, not in determining whether discipline should be imposed. In view of this, care must be taken to ensure that the Army does not violate the Antideficiency Act. The DPWs are encouraged to seek guidance from the Installation Management Command (IMCOM) Region, IMCOM headquarters, or the Assistant Chief of Staff for Installation Management (ACSIM) (DAIM-ODF) on questionable rulings.

1–6. Definitions

a. Repair. Repair means “to restore a real property facility, system or component to such a condition that it may effectively be used for its designated functional purpose.”

(1) When repairing a facility, the components of the facility may be repaired by replacement, and the replacement can be up to current standards or codes. For example, heating, ventilation, and air conditioning (HVAC) equipment can be repaired by replacement, can be state-of-the-art, and provide for more capacity than the original unit due to increased demand/standards. Interior rearrangements (except for load-bearing walls) and restoration of an existing facility to allow for effective use of existing space or to meet current building code requirements (for example, accessibility, health, safety, or environmental) may be included as repair.

(2) Correction of deficiencies in failed or failing components of existing facilities or systems to meet current Army standards and codes where such work, for reasons of economy, should be done concurrently with restoration of failed or failing components. When the facility is in an overall failing condition corrective work may involve increases in quantities or capacities and inclusion of systems or components not previously present in the facility.

(3) A utility system or component may be considered “failing” if it is energy inefficient, or technologically obsolete, provided—

(a) The utility system or component of such a system exists and is, in fact, energy inefficient or technologically obsolete;

(b) The system/component to be replaced has been in service for a minimum of 3 years; and

(c) The project is estimated to have a payback period of about 10 years or less.

(4) Major work (for example, building interior gutting and replacement) required to restore a generally deteriorated facility to such a condition that it may be effectively used for its designated purpose. Multipurpose facilities are repaired as a single unit without regard to separately identified areas.

(a) *Building components.* Such an undertaking may include, under the classification of repair, the relocation or reconfiguration of building components such as partitions, windows, and doors. The inclusion of greater quantities of components or systems is acceptable to provide for effective use of the facility for its designated functional purpose.

(b) *Utility systems.* Such an undertaking may include, under the classification of repair, the relocation and reconfiguration of utility systems into arrangements to meet current standards and current code requirements.

(c) *Failed or failing systems.* In case of failed or failing systems or components, such an undertaking may also incorporate additional components, if based on good engineering practice and to meet current code or system requirements, to permit the efficient and safe use of the replacement system.

(5) *Repair.* Repair does not include increases in quantities of components nor extension of utilities or protective systems to areas not previously served for functional reasons or to meet codes or standards, when the condition of the systems and components do not support calling a facility as failed or failing. Increases in exterior building dimensions, are usually construction.

(6) *Additions, new facilities, and functional conversions.* Additions, new facilities and functional conversions must be done as construction. A construction project which is complete and usable by itself, may be accomplished concurrent with a repair project.

(7) *Complete replacement.* Complete replacement of a RPF is construction, not repair. (See para 1–7j for further guidance.)

(8) *Maintenance is a subcategory of repair.* It means the work required to preserve and maintain a RPF in such condition that it may be effectively used for its designated functional purpose. Maintenance includes cyclic work done to prevent damage which would be more costly to restore than to prevent. Maintenance includes work to sustain components. Examples include renewal of disposable filters, painting, caulking, refastening loose siding, and sealing bituminous pavements. Painting done in connection with repair work (that is, as a result of the repairs) is properly classified as repair.

b. Construction. A military Construction project includes any construction, development, conversion, or extension of any kind carried out with respect to a military installation, whether to satisfy temporary or permanent requirements. It includes all military construction work, or any contribution authorized in 10 USC Chapter 169, necessary to produce a complete and usable facility or a complete and useable improvement to an existing facility (or to produce such portion of a complete and useable facility or improvement as is specifically authorized by law). (Note: Construction projects greater than the current statutory Operations and Maintenance (O&M) funding limit (10 USC 2805) must be funded from the Military Construction Appropriations). Examples of construction are:

(1) The erection, installation, or assembly of a new facility either temporary or permanent.

- (2) The addition, expansion, extension, alteration, conversion (in the sense of facility modification caused by a change in functional purpose), or complete replacement of an existing facility.
- (3) The relocation of a real property facility from one installation to another.
- (4) Installed building equipment made a part of the facility.
- (5) Related site preparation, excavation, filling, landscaping, or other land improvements.
- (6) Foundations, site work and utility work associated with the setup of relocatable buildings, in accordance with AR 420-1, chapter 6.

c. Facility. A facility is a building, structure, or other improvement to real property.

d. Undertaking. An undertaking encompasses the entire effort put forth by a garrison to support work on a facility. It may include any one or all of the following projects: maintenance and repair; construction; and, the installation of EIP.

e. Sustainment, restoration, and modernization. Sustainment, restoration, and modernization (SRM) are budgetary terms used to describe work performed on real property. Sustainment may contain maintenance and repair. Restoration may contain repair or construction. Modernization is mostly construction, but can contain repair if replacing components that normally last more than 50 years.

(1) Sustainment means the maintenance and repair activities necessary to keep an inventory of facilities in good working order. It includes regularly scheduled adjustments and inspections, preventive maintenance tasks, and emergency response and service calls for minor repairs. It also includes major repairs or replacement of facility components (usually accomplished by contract) that are expected to occur periodically throughout the life-cycle of facilities. This work includes regular roof replacement, refinishing of wall surfaces, repairing and replacement of heating and cooling systems, replacing tile and carpeting, and similar types of work. It does not include environmental compliance costs, facility leases, or other tasks associated with facilities' operations (such as custodial services, grounds services, waste disposal, and the provision of central utilities).

(2) Restoration means the restoration of real property to such a condition that it may be used for its designated purpose. Restoration includes repair or replacement work to restore facilities damaged by inadequate sustainment, excessive age, natural disaster, fire, accident, or other causes.

(3) Modernization means the alteration or replacement of facilities solely to implement new or higher standards, to accommodate new functions, or to replace building components that typically last more than 50 years (such as, the framework or foundation).

f. Recapitalization. Recapitalization means the major renovation or reconstruction activities (including facility replacements) needed to keep existing facilities modern and relevant in an environment of changing standards and missions. Recapitalization extends the service life of facilities or restores lost service life. It includes restoration and modernization of existing facilities. Recapitalization encompasses both renovation and replacement of existing facilities and essentially resets the Army's sixty-five year life-cycle period for the facility.

g. Relocatable buildings. A relocatable building is defined as—

(1) An arrangement of components and systems designed to be transported over public roads with a minimum of assembly upon arrival and a minimum of disassembly for relocation. A relocatable building is designed to be moved and reassembled without major damage to floor, roof, walls, or other significant structural modification.

(2) The costs for disassembly, repackaging, any exterior refinishing (for example, brick façade, and so on) and any interior work (for example, electrical systems, fire suppression systems, walls or ceilings, and so on) including labor applied to the building after site delivery to make the relocatable building useable, and non-recoverable building components, including foundations, may not exceed 20 percent of the purchase price of the relocatable building. (Foundations include blocking, footings, bearing plates, ring walls, and concrete slabs. When concrete slabs are used as relocatable building foundations or floors the entire cost of the slab will be included in the foundation cost.) Non-recoverable building components are components that cannot be used again in the reassembly of the subject building.

(3) Relocatable buildings are not real property, they are equipment and accounted for as equipment. In the Integrated Facility System (IFS) relocatable buildings are noted by the letter "R."

h. Tents. Tents are not considered relocatable buildings. A tent is a temporary or semipermanent portable shelter consisting of sheets of fabric or other material draped over or attached to a frame of poles. It is easy to assemble and disassemble. Tents may be attached to the ground with stakes, lines, or ropes. They are accounted for as equipment, personal property. Tension fabric shelters are not considered tents.

1-7. Work classification applications

The garrison DPW, or for U.S. Army Reserve the Regional Support Command, as the Work Classification authority, makes all work classification actions based on good faith, sound judgment and in conformance with all regulatory requirements and limitations (for example, AR 420-1). The decision making process should be supported by clear explanations in the project file. When doubt exists, clarification should be requested from the IMCOM Region, IMCOM headquarters, or the ACSIM (DAIM-ODF).

a. There are two principal considerations when determining work classification.

(1) Strict adherence to the prohibition against incrementing or fragmenting construction or repair for the purpose of circumventing approval authority limitations.

(2) For construction an honest assessment of what constitutes a “complete” and “usable” facility(ies) or a “complete” and “usable” improvement to existing facility(ies) must be made. Consider the following examples:

(a) *Example A.* An airfield exists and is in use. There are concurrent requirements for a new control tower and an addition to the hangar. Each is properly a separate project, since each is independently “complete and usable” upon completion.

(b) *Example B.* A new airfield is to be constructed where none now exists. Assume the requirements for the airfield consists of a control tower, hangar, landing strip and taxiways. Classification of each facility as a separate project would be improper. While each may be “complete,” such interrelated facilities are not independently “usable”.

(c) *Example C.* An administrative building exists and is in use. There are concurrent but unrelated alteration requirements in the basement’s mechanical room and in the headquarters area of the facility. Each is properly a separate project, since each is independently “complete and usable” upon completion.

(d) *Example D.* A new commissary is to be established at an installation where none now exists. The installation is planning on using three existing vacant collocated buildings and the surrounding paved area for parking. The three buildings and parking area require repairs and improvements in order to convert the buildings into a complete and usable commissary facility. Classification of each building as a separate construction project would be improper. While each may be “complete”, such interdependent facilities are not independently “usable” until all four components of the commissary are completed, that is, the sales store, the dry storage, the cold storage and the parking lot. In this case, there should be a repair project for each building; a repair project for the parking; and one associated minor construction project which contains all necessary construction for the four facilities needed to establish the commissary.

(e) *Example E.* An administrative facility is found to need a fire suppression system. No fire suppression system exists in the building and current code requirements state that administrative facilities will have suppression systems. There is an audible fire alarm system that is considered to be in a failing condition. A requirement also exists for the fire alarm to alarm both in the building and at a supervised panel so that fire response may be initiated. It is decided that the fire alarm must be repaired. The repair must be made to code. Thus, the repair will be made by replacing the current system with an audible fire alarm system that alarms not only in the building but also at the fire station. The additional equipment for alerting the fire station is proper for a repair project to bring the alarm system up to code. The addition of a fire suppression system in this case would not be proper. If, however, there were enough failed or failing components and systems in the facility to justify repair of the entire failing facility, the facility repair should properly include a fire suppression system. Key to this is that the fire suppression is not being installed as an act to just bring the facility up to code but as part of a larger undertaking to repair the facility and make it useable for its intended purpose.

b. The guidance in AR 420–1, chapter 2, defining a maintenance and repair “project” is more general than the definition of construction in AR 420–1, chapter 4. A maintenance and repair project is defined in part by AR 420–1, chapter 2, as a “single undertaking” (that is, an activity which would be readily and separately identified as a logical task). The undertaking may embody a maintenance and repair project, a construction project and the installation of EIP, each of which could be funded as a separate project.

(1) A single undertaking could range from repairing one block in a sidewalk to all work required to repair a building. Its scope is dependent upon need for accomplishment, economical contracting practice, and good engineering judgment. Also, the scope may be limited by fund availability.

(2) When a finite project is to be funded (phased) over a number of years the entire project must be approved at one time.

(3) Project scope must be based on reason or logic that could not in any way be interpreted as intending to circumvent dollar approval levels. For example, it would be inappropriate to divide the work required to repair a building into separate projects on systems and components to keep the repair of the facility within local approval authority when the entire building is in need of repair. Breaking the repair project into many smaller projects rather than developing one repair project for the entire failing facility in essence makes the addition of systems and components that are currently not present (but which are required by codes and standards) construction. Part of the analysis on a repair project is the calculation of a repair to replacement ratio expressed as a percentage. The numerator of the repair to replacement ratio consists of the sum of all repair work on the facility to be accomplished on the facility and adding any associated construction. The denominator is the calculated cost to replace the facility. This calculation is a part of each repair record with a funded cost greater than \$750,000.

(4) Repair projects are further defined as involving “a finite scope.” This could be repairing only the deteriorated wallboard in one building or repairing many items. If many items are of equal priority in the same facility, and good engineering judgment indicates that they should be accomplished simultaneously, they should be considered as a single undertaking of finite scope and therefore one project.

(5) When maintenance and repair, and minor construction are to be done at the same time, maintenance and repair, and minor construction work are treated as two separate projects (see table B–1).

c. The definition of an individual repair project in AR 420–1, chapter 2, contains the phrase, “one or more real

property facilities.” Therefore, only one real property facility need be included in the scope of a project. Two or more real property facilities may be included in a project if they fit the term "single undertaking" and for repair, “finite scope.” Following the general criteria outlined above, the facility engineer examines the particular case and determines the scope of a project based on—

- (1) Good engineering practices.
- (2) Operational or administration considerations.
- (3) Economical contracting practices.
- (4) Rules applicable to family housing.
- (5) Statutory guidance provided in 10 USC 2805 and 10 USC 2811.

d. An analysis of work classification and project scope is essential in determining project approval authority and adhering to statutory and regulatory requirements and limitations. The scope of a contract may include one or more projects or one project may be divided into several contracts. Project approval levels do not apply in so far as the packaging of contracts is concerned. A contract’s scope must be determined on the basis of good engineering principles, operational and administrative considerations, and contracting practices that are in the best interest of the government. It is important when contracting maintenance and repair, construction, and EIP in the same contract that clear audit trails be maintained for each category of work.

e. The availability of funds does not affect approval levels or what must be combined into a project. Additionally, the type or source of funds does not affect the work classification rules or project scope determinations; however, approving officials must consider limitations when other than Operation and Maintenance, Army (OMA) funds are being used. Similar type repair work need not be combined into a single project or a repair project need not satisfy a total requirement. Maintenance and repair projects that are single undertakings, of finite scope, and/or satisfy specific requirements, may stand alone. Work must not, however, be divided into a number of projects solely to keep the projects within an approval authority.

f. Repair means that the facility or facility component or facility system has failed, or is in the incipient stages of failing, or is no longer performing the functions for which it was designated. Repair may sometimes include work that under other circumstances would be considered as construction. The following are examples—

(1) A wall relocated solely to provide a better interior arrangement would be an alteration (construction). The same wall, if relocated during a repair project, would be properly classified as repair, even if the wall itself did not need repair. Interior rearrangements (except for load-bearing walls) of an existing facility to allow for effective use of existing space is repair when done in conjunction with a restoration of the components that define the existing space.

(2) The installation of code requirements such as fire detection and suppression and isolation systems would be an addition (construction). The same fire systems if included in a major repair project of a failed or failing facility would be repair. In a barracks that has been declared to be failed or failing, entire floor layouts may be rearranged. In barracks that contain central latrines and shower facilities (or have these systems in outlying buildings), the latrines and showers may be relocated and reconfigured into arrangements to meet current standards. Such work may be classified as repair provided the existing utility systems and latrines are in a failed or failing condition. The work may result in increases in overall quantities of fixtures and piping and other materials. The rearrangement includes the reconfiguration of partitions, doors, windows, and utility systems and must include the inclusion of code requirements such as fire detection and suppression and isolation systems. The installation of such systems and increases in quantities of materials would be properly classified as repair when included into the major repair project (see table B-2).

g. Repair also means that something exists which needs to be repaired or restored. For example, replacing a leaking four-gallon fire extinguisher with an automatic sprinkler system is not repair. Neither is replacing a long deteriorating electrical extension cord with conductors in conduit considered repair. In both examples, replacing EIP with real property systems or components would be an addition and thus construction.

h. In the case of component replacement, the repairs do not need to be in kind and it does not preclude use of improved materials, equipment, methods, or arrangements. As a matter of general policy, all repairs are made to code and to current standards. Further, energy and water saving materials should be used in repair projects whenever feasible. An economic analysis should be a routine decision making tool in the selection of materials or methods of maintenance and repair. As part of repair, constituent utilities systems that need to be replaced within a facility (for example, electrical, plumbing, heating, and ventilation are categorized as installed building equipment (IBE)) may be increased in capacity to accommodate accumulated growth, expected growth, or to meet current codes or modern accepted engineering standards. For example, a failing air conditioning system within an existing facility may be replaced with a larger system and in determining the replacement capacity of the air conditioner (AC), future growth in heat load will be considered. Further, the AC system may be extended to areas not previously served to allow for effective use of existing space or to meet current building code requirements.

i. Standards change, and the Army will comply with current practices, standards, and codes when executing repair projects. An existing incandescent street light that is destroyed by accident, nature, or has failed to the point of requiring complete replacement, may be replaced with a more modern type, such as mercury vapor, sodium vapor (high or low pressure), or high-intensity-discharge street light. A broken 4-inch sewer line may be replaced with a 6-inch

line because the latter size is the current minimum standard permitted. Replacement of a sewer line in good condition, however, with a larger size to provide additional capacity to serve a new proposed facility would be construction. Likewise, replacement of the broken 4-inch sewer line with an 8-inch line may be accomplished as repair when it is known that the additional capacity will be needed to serve a new facility which is planned in the area.

j. Complete replacement of a facility is construction. Partial replacement may be repair as long as the replaced components are failed or deteriorating and as long as the facility is not being completely replaced and the architectural appearance has not been significantly altered.

k. For work classification purposes, a RPF is a separate and individual building, structure, utility system, or other real property improvement identifiable in the three-digit Category Codes (CATCDs) listed in DA Pam 415-28. An RPF may contain one functional area. A multipurpose RPF may contain more than one functional area. During a repair of an entire failed or failing facility, the areas are considered against the overall function of the facility and individual areas may increase in size or decrease in size and new functional areas may be added and functional areas may be removed to accommodate the overall facility function. Examples are as follows:

(1) *Buildings.*

(a) One enlisted personnel barracks (CATCD 721) represents a single RPF. A barracks facility damaged by fire may be repaired if the foundation and walls still exist, and do not require total replacement.

(b) A Starship training barracks (CATCD 721) may contain various other functional areas such as a battalion headquarters, a company headquarters, a dining facility, class-rooms, an arms room, and storage rooms all of which represent a single RPF. A starship barracks that is damaged by inadequate sustainment, excessive age, natural disaster, fire, accident, or other causes can be considered failed or failing. It may be repaired without regard to the individual constituent functional areas. These functional areas may be increased or decreased. Additionally, new functional areas may be added and old ones removed to allow for effective use of existing space or to meet current building code requirements as long as the overall use of the buildings remains a training barracks. This concept applies to other multiuse facilities.

(2) *Utilities.* A single (physically or geographically identifiable) system for any of the following: generation and supply of electric power; treatment or supply of water; collection or treatment of wastewater; generation or supply of steam, hot water, and chilled water; or supply of natural gas.

(a) A real property utility system includes the equipment, fixtures, structures, and other improvements utilized in connection with a system referred to in paragraph (2), above. Associated real property, easements, and rights-of-way are included as part of the real property utility system.

(b) For example, a water supply system will contain several identifiable CATCDs. It includes the pipes, valves, pumps, storage tanks, and wells needed to maintain pressure and supply the water. Therefore, category group 840 defines the water supply utility. A failing water storage facility, which has a CATCD 841XX, may be completely replaced as repair since it is considered a component part of a RPF. Another example, a failing electrical switching station (813) may be completely replaced as it is considered a component of the electrical utility system.

(3) *Surfaced areas.* Linear real property facilities, roads, streets, walks, and parking are grouped into the facilities that reflect their construction. These facilities include the signs, signals, safety barriers, bridges, and other appurtenances necessary for a safe efficient road, sidewalk, and parks. When calculating the replacement facility cost for surfaced areas the following defines the facility:

(a) All the paved roads and streets on an installation whether paved with bituminous material, concrete, paving block, cobblestone, or gravel/tar within the three digit CATCD 851 are a single RPF. The facility may be one large facility consisting of all roads and streets or grouped into geographical areas.

(b) All unpaved roads and streets on an installation listed under the three digit CATCD 851 are another single RPF. The facility may be one large facility consisting of all roads and streets or grouped into geographical areas.

(c) All the paved sidewalks, parking, staging areas, marshaling areas, pads and pedestrian bridges on an installation whether paved with bituminous material, concrete, paving block, cobblestone, or gravel/tar within the three digit CATCD 852 are a single RPF. The facility may be one large facility consisting of all roads and streets or grouped into geographical areas.

(d) All the unpaved sidewalks, parking, staging areas, marshaling areas, pads, and pedestrian bridges on an installation within the three digit CATCD 852 are a single RPF. The facility may be one large facility consisting of all roads and streets or grouped into geographical areas.

(e) All the paved training roads, trails and streets on an installation whether paved with bituminous material, concrete, paving block, cobblestone, or gravel/tar within the three digit CATCD 857 are a single RPF. The facility may be one large facility consisting of all roads and streets or grouped into geographical areas.

(f) All the unpaved training roads, trails and streets on and within the three digit CATCD 857 are a single RPF. The facility may be one large facility consisting of all roads and streets or grouped into geographical areas.

(g) All contiguous airfield pavements, that is, runways, taxiways, aprons, category code 110, represent a single RPF. The airfield pavement facility includes all signs, lights signals, and other appurtenances necessary for safe and efficient airfield operations.

l. In the case of major facility restoration, for example, interior gutting and removal where building components

such as partitions, windows, doors, or utilities need to be replaced, such work is repair even though replacement items may be installed in a different location or configuration within the building than the original components. Major facility repairs or restoration projects are approved as a single project and not by component or system.

(1) Interiors may be rearranged and components and systems may be added to the extent that they are meeting established standards and codes or to make effective use of the existing space. Any increase in the exterior building dimensions is construction except those to meet codes and standards (that is, placing a ramp at the entrance of the facility or an elevator on the exterior to allow for handicapped access is repair).

(2) Undertakings on facilities that consist of many small individually approved projects put together may not include the addition of systems that currently do not exist as repair. The addition of systems in this case is construction. To be considered a major facility repair or restoration the maintenance and repair project must be approved in its entirety as a single project; this allows the inclusion of the needed systems, which currently do not exist but are required by codes and standards, as part of the overall repair.

m. As stated above, repair means that the facility or facility component has failed, or is in the incipient stages of failing. A utility system or utility system component may be considered failed or failing when that item is energy inefficient, technologically obsolete, and the replacement project has a simple payback of 10 years or less when using energy savings, demand reduction and maintenance reductions parameters. The treatment facility may be considered failing that is technically obsolete when a law has been enacted that will require levying a fine if compliance with new standards are not met. Projects that may qualify under technological obsolescence include the following examples:

- (1) Demand Side Management (DSM) agreements with private utility companies such as—
 - (a) Replacing T-12 fluorescent lamps (F40T12) and electromagnetic ballast with T-8/T-5 fluorescent lamps with electronic ballast or light emitting diode (LED) lamps.
 - (b) Replacing incandescent lamps with compact fluorescent or LED lamps.
 - (c) Replacing motors with premium efficiency motors.
 - (d) Replacing air conditioning/heat pump units with >15 seasonal energy efficiency rating (SEER) rated equipment.
- (2) Replacing uncooled boiler water collection lines with sample coolers.
- (3) Replacing toilets, faucets and showerheads with Ultra low-flow aerated fixtures or waterless urinals.
- (4) Replacing boilers/furnaces with high efficiency condensing boilers/furnaces > 92 percent annual fuel utilization efficiency (AFUE) rating.
- (5) Bringing a utility system into compliance with local, state, or Federal laws to avoid fines.

n. Energy Savings Performance Contracting (ESPC) Guidance.

(1) The ESPC is a contracting procedure in which a private contractor evaluates, designs, finances, acquires, installs, and maintains energy savings equipment for an agency, and receives compensation based on the performance of that equipment. The conditions of the contract determine the level of compensation to the contractor, with the remainder of the savings retained by the agency. This type of contracting provides an alternative method of implementing energy savings projects, when installation resources such as manpower, technical expertise, or funding are not available.

(2) Determination of project viability is based on such factors as utility rates and costs, availability of conservation opportunities, projected building use requirements, ability for savings performance verification and support of the base contracting, engineering and legal personnel. Typically, large facilities or large groups of facilities with older energy consuming systems (with large utility bills) are good ESPC candidates. A preliminary technical and economic analysis must be conducted to determine if a proposed energy conservation measure has ESPC potential, which will be based on both the agency's ability to achieve a reduction in operating costs, and the contractor's ability to obtain an acceptable return on investment.

(3) Examples of ESPC projects include the following:

(a) *Propane/Air Mixing Plant.* The mixing plant provides the installation with natural gas peak shaving capability. The plant allows the installation to purchase "interruptible gas" in lieu of "firm gas." When the installation natural gas supply is interrupted, propane is mixed with air and piped into the natural gas distribution system. The installation benefits from the cost advantage offered by interruptible gas but is not inconvenienced by the interruptions.

(b) *Lighting retrofits.* Existing inefficient light fixtures are replaced by higher efficiency light fixtures. The installation benefits from the lower electrical usage and the reduced maintenance.

(c) *Mechanical equipment.* The Government has a large energy hog chiller which is old and inefficient. A contractor replaces the chiller and the Government pays the contractor with the reduced utility bill differential. The installation benefits from the cost advantage of lower maintenance cost from the newer high efficiency chiller and pays the contractor with utility funds he would have paid to run the inefficient chiller if it was still installed but avoided the large initial capital cost.

o. Conversion is construction.

(1) Conversions are usually made from excess facilities to facilities that are in shortage. In most cases the Garrison Commander will not have the authority to make the conversion. Therefore, the first step is always obtaining an approval to make the conversion. The request to make conversions should always come through the real property office in ACSIM Operations. Only after the conversion has been approved can the DPW execute a construction project to

physically make the facility useable for the new usage. The DPW should be careful not to use a repair project to make a conversion. This is because conversion is construction by law.

(2) In all cases of conversion, systems and components that were failed or failing under the old use CATCD are considered to be failed or failing under the new use. Any new systems or components that are required by the new use must be installed as construction.

p. Life-threatening, health-threatening, or safety-threatening (LHS) minor construction projects are defined as construction projects that are intended solely for an urgent requirement whose sudden emergence could not have been anticipated and when the requirement poses so immediate a threat to the life, health, or safety of personnel that the correction cannot wait until the next appropriation cycle. The LHS projects are limited to a funded project cost of \$1,500,000 using funds available for operation and maintenance or current threshold per 10 USC 2805. In order to qualify as a LHS project the following questions must be answered in sufficient detail to allow auditors to follow the logic.

(1) The answers to the following questions must be fully addressed in the approval documents.

(a) Did the requirement exist during the previous fiscal year? If the requirement existed during the last or previous fiscal years then the execution of a project under this authority can not be authorized.

(b) Is the deferral acceptable? If the project can be deferred until it can be programmed under a different execution method, then execution of a project under this authority can not be authorized.

(c) Is there a work-around to mitigate risk? If there are work-arounds then why the work-around is not acceptable must be fully explained; otherwise, execution of a project under this authority can not be authorized.

(d) Can the deficiency be corrected by other means? If there is another legal way to accomplish the objective of the project then execution of a project under this authority can not be authorized.

(e) Is the primary purpose to correct an immediate threat to the life, health, or safety of personnel? The answer to this question must be yes to have a valid LHS project.

(2) When the undertaking consists of a LHS construction project and a non-LHS construction project for a single facility, the approval limit for the construction portion of the undertaking (the sum of the two projects) is equal to the approval amount authorized for a LHS construction project. Of this amount, the funded cost of the non-LHS project must not exceed the approval amount authorized for a non-LHS construction project.

q. Final scoping decisions on major construction projects and unspecified minor construction projects are made by ACSIM. Until the ACSIM places a project into the project book, the scope may be corrected by the work classification authority with the approval of the garrison commander. The scope may be amended by deletions or additions as dictated by the work classification authority. However, this is not to be taken as authority to improperly split or phase projects properly classified as construction.

r. Minor construction prohibitions include—

(1) No project will be subdivided in order to reduce costs for purposes of approval.

(2) Planned Phasing of Construction on an existing facility, a new facility, or in connection with a new or existing interdependent group or complex of facilities is not permissible. “Phasing” is the process of breaking a complete project into sequential tasks such as foundation, superstructure, and finish work. One “phase” is no good without companion “phases” as far as producing a completed project. Phasing has meaning only in reference to the construction sequence or perhaps the funding process. A single “phase” of a project should never be requested for authorization.

(3) Planned Incremental Construction on an existing facility, a new facility, or in connection with a new or existing interdependent group or complex of facilities is not permissible. “Incrementing” is the segmenting of a complete project into usable “increments.” For example, a project to construct an airfield could be broken into increments of runways, taxiways, aprons, control tower, and hangars, each of which are complete and usable; but the total project is not complete until all increments are complete and the total requirement is satisfied.

(4) Minor construction authority (10 USC 2805) normally will not be used to begin or complete major construction projects contained in the annual Military Construction Authorization Act. It will not normally be used as a basis to complete projects financed under other authorizations when available funding is lacking. In rare instances, a minor Military Construction (MILCON) project may precede a major MILCON project when it meets a specific need during a specific time frame. A minor project may follow a major project when new mission requirements arise following project approval.

(5) How construction projects relate to one another can be used to determine what should be considered a single undertaking.

(a) Interdependent projects are considered a single undertaking. The projects construct those facilities which are mutually dependent in supporting the function(s) for which they were constructed and therefore must be planned as a single project. For example, a new airfield for which the runways, taxiways, ramp space and lighting are mutually dependent to accomplish the intent of the construction project. Each facility can be a separate project but because of their interdependence they must be considered as a single unit.

(b) Interrelated projects do not need to be considered as a single undertaking. These projects construct those facilities having a common support purpose but are not mutually dependent and are therefore funded as separate projects. For example, billets are constructed to house Soldiers with the subsequent construction of recreation facilities.

Their common purpose to support health, welfare, and morale creates an interrelationship. Neither facility, however, is necessary for the operation of the other. Only if mission requirements or stationing require all the facilities at the same time they could be considered a single undertaking.

(6) The following may constitute a statutory violation and is prohibited.

(a) Planned acquisition or improvement of real property facilities through a series of minor construction projects.

(b) The subdivision of a construction project to reduce costs to a level that meets a statutory limitation or the splitting or incrementing of the costs of a project to reduce costs below an approval threshold.

(c) Development of a minor construction project solely to reduce the cost of an active MILCON project below the level at which Congress would be informed of the cost variation.

(d) Leasing a relocatable building, then purchasing the relocatable building, as part of a lease buyout option, and then placing the relocatable building on real property records without Deputy Secretary of the Army (DASA) approval may result in an Antideficiency Act violation. When using the relocatable building as construction materials, the cost of the relocatable building is part of the construction cost for the real property project and the approval must include all costs incurred including site preparation, lease costs, and purchase costs.

(7) Nonappropriated funds (NAF) or private funds may be used with appropriated funds for construction when it can be clearly shown that the construction projects are intended for different purposes. The combination of funding sources is not to be used to increment the project or to circumvent limitations. Construction projects having a total combined cost of \$750,000 or less may be approved by the Army Command, Army Service Component Command, or Direct Reporting Unit as applicable. Construction projects that have a total combined cost in excess of \$750,000 are considered unspecified minor military construction (UMMCA) or Military Construction, Army (MCA) and must be submitted to the ACSIM for review and approval. Separate and identifiable projects having different funding sources may be combined for contracting purposes without prior approval; however, the costs for each type of project must be clearly identifiable (see AR 215-1 and AR 420-1).

(8) No minor construction projects will be done until the terms of the National Environmental Policy Act (PL 91-190) have been met (AR 200-1 and AR 420-1). This includes base realignment or closure actions.

(9) The Secretary of the Army (SA) or his designee must approve any proposed minor construction project. Regardless of cost, that Congress previously denied.

(10) Project cost limitations (10 USC 2805) in effect at the time of approval of a minor construction project remain in effect throughout the life of the project. Any subsequent change in project cost limitations cannot be applied to previously approved minor construction projects, unless the project is submitted for reapproval.

(11) The AR 405-80 describes limitations on expenditures for maintenance, repair, and minor construction for leased facilities.

(12) Minor Construction Projects funded with funds available for operation and maintenance will not be allowed to exceed the statutory limit in 10 USC 2805 in effect at the time of project approval. If it becomes apparent that a construction project is approaching the statutory limit, the following actions will be taken.

(a) Work costs will be monitored daily to ensure costs do not exceed the statutory limit.

(b) Work will be halted before the statutory limit is exceeded.

(c) The approving official will review the project and reduce the scope of work while still obtaining a facility that is complete and useable, if possible.

(d) If a reduction in scope is not possible, ACSIM (DAIM-OD) will be notified for assistance.

Chapter 2

Work Classification Examples

2-1. General

This chapter contains specific examples of maintenance and repair and construction type work. The AR 420-1 may provide additional work classification guidance for individual facilities and utility systems. The DA Pam 420-1-3 provides additional work classification guidance for surfaced areas, bridges, and railroad trackage.

2-2. Work classification - buildings and transportation systems

Maintenance and repair are considered a single category of work.

a. Maintenance and repair.

(1) *Buildings.* Maintenance is performed to keep a facility in good order. Even with a good maintenance program materials fail. In general, deteriorated materials or unserviceable surfaces may be replaced or overlaid as part of the maintenance and repair process. This includes— reroofing, overlay of wood floors in kind, or with hardboard and resilient flooring or carpeting; repair or overlay of concrete floors with concrete topping, resinous floor coating, ceramic or quarry tile; repair or replacement of windows, doors, screens, siding, trim, skirting, stair treads and risers, railings, ladders, fire escapes, and shelves; repair or replacement of existing wall linings; repair or replacement of wood

steps and platforms with concrete; and replacement of sheathing and framing lumber. Meeting codes and standards is the rule when performing maintenance and repair.

(a) *Example A.* Elimination of hairline cracks in plaster by grooving out and patching.

(b) *Example B.* Total or partial skin coating of hairline cracks.

(c) *Example C.* Painting of building exterior or interior.

(d) *Example D.* Sanding, sealing, and finishing of wood floors.

(e) *Example E.* Pointing of masonry joints and sealing of masonry walls.

(f) *Example F.* The replacement of failing wood trusses or the installation of supplemental trusses, beams, or columns to augment the existing failing roof structural system. The strengthening of structural systems, specifically to increase the load carrying capacity beyond initial design capacity to accommodate code or standards changes during repair projects is repair. Strengthening of structural systems to increase the load carrying capacity beyond initial design capacity to accommodate a facility conversion is construction.

(g) *Example G.* The replacement of rigid underlayment and application of floor covering in a building to correct failing, unsafe, or unsanitary conditions.

(h) *Example H.* Installation of slip resistant treads or nosings on existing stairs if stairs are in need of repair.

(i) *Example I.* Installation of fiberglass roof shingles to replace deteriorated roll roofing if installation is essential to protect the building. The use of higher quality material is justified to reduce further maintenance costs. Further, the placement of reflective insulation materials on the roof or insulation materials under the roof where none exists to meet current criteria would be considered repair if it was accomplished in conjunction with repair.

(j) *Example J.* Installation of prefabricated siding over deteriorated siding or siding that will not economically retain paint. For the latter, replacement of siding must be cost effective with respect to painting over the expected life of the facility. Installation of insulation, where none exists, to meet current criteria would be considered repair if it was accomplished in conjunction with residing or replacement of a wall liner, or ceiling. In case of the wall liner or ceiling, they must exist and be in a failed or deteriorated condition; otherwise, the installation of only insulation, where none exists, unless justified economically by providing a payback within 10 years or meeting a standard or code, is properly classified as construction.

(k) *Example K.* When it is proven to be more cost effective to paint building interiors by first covering the unlined ceilings and walls with gypsum board than to paint bare studded walls and exposed trusses, the installation of gypsum board ceiling and painting will be classified as repair.

(l) *Example L.* Replacement of carpeting serving as prime floor finish which is worn to the extent it requires complete replacement is repair.

(m) *Example M.* When windows or doors of nonstandard size need replacement, changing the size of the window or door frame to accommodate standard sizes is repair.

(n) *Example N.* Replacing windows to meet the requirements of Anti-terrorism and Force Protection (AT/FP) and energy conservation when the windows are failing is repair. The failing condition may be justified by documentation that hardware is difficult to obtain; the manufacture has discontinued the window model being used; or an excessive amount of repair resources are needed to keep the windows functional.

(o) *Example O.* Total replastering of deteriorated walls or ceilings is repair.

(p) *Example P.* Replacement of failed venetian blinds with draw shades or vice versa is repair.

(q) *Example Q.* Replacement of failed or failing kitchen cabinets is repair. This could include an increase in counter area and cabinet space to meet current standards or codes.

(r) *Example R.* Replacement of a spalling deteriorated ceiling with a suspended ceiling is repair.

(s) *Example S.* During a conversion, overlaying an existing, failing vinyl floor with vinyl or carpet as a prime floor finish, in accordance with current criteria, is repair.

(t) *Example T.* When the restoration of a generally deteriorated building requires replacement of partitions, interior rearrangements (except for load-bearing walls) is considered repair. Increases in the amount of linear feet of partitions, the number of doors, or the number of windows over the amount previously removed to allow for effective use of the building or to meet current standards or codes is repair.

(u) *Example U.* When a facility is being repaired or constructed the installation of Prefabricated Office and Medical Modules is properly classed as non-construction and the modules are EIP when the conditions in paragraph 2-8g are met.

(v) *Example V.* Periodic inspection to meet statutory and regulatory requirements, such as inspection of truss and roofing structures, is considered maintenance.

(2) *Transportation Systems.* Roads, railroads and airfields are managed using computerized engineering management systems. These systems have been proven to save funds when used as management tools. Airfield pavement evaluations are centrally funded and managed by IMCOM. All airfield pavements use Pavement Engineered Management System (PAVER) as the management tool.

(a) *Example A.* Seal coat, asphalt rejuvenation, and a single surface treatment of asphalt roads and hard stands.

(b) *Example B.* Cleaning out sediment basins.

(c) *Example C.* Cleaning and sealing of cracks and joints in pavements and repairing potholes, patching, and repairing spills.

(d) *Example D.* Tightening bolts on rail and turnouts.

(e) *Example E.* Lubrication of switches and switch stands.

(f) *Example F.* Adjustment of switches and switch stands.

(g) *Example G.* Compaction of ballast.

(h) *Example H.* Vegetation control in ballast areas and roadways and the removal of debris and silt, and grading and seeding of drainage ditch side slopes.

(i) *Example I.* Leaning ditches and cutting overhanging trees.

(j) *Example J.* Re-gauging track.

(k) *Example K.* Re-spiking.

(l) *Example L.* Tightening loose tie plates.

(m) *Example M.* Work necessary to restore failing pavement sections designated by PAVER to serve their designated purpose may include replacement of constituent materials (surface course, base course, subbase, and so on). Asphalt concrete overlays used as a method of repairing failed or failing pavements may be designed to accommodate accumulated normal growth and evolutions in missions, equipment, and facilities and should include any anticipated missions or increases in usage based on the Master Plan.

(n) *Example N.* On an unsurfaced road, replacing road materials such as crushed stone, gravel, sand, or clay which have been displaced by traffic; addition of materials to reestablish prior grade and cross section; application of a single or double surface treatment to an existing stabilized surface.

(o) *Example O.* Restoring surface smoothness by heating, sacrificing, remixing, compacting, and resurfacing.

(p) *Example P.* Paving of the invert of an open drainage ditch, to increase hydraulic efficiency or as an erosion control measure, is repair. Likewise paving sidewalls of a drainage structure as an erosion control measure is repair and paving the sidewall and the invert concurrently, may be repair when justified to correct erosion damage.

(q) *Example Q.* Replacing component parts of damaged pavements appurtenances, rails, and traffic signs and signals is repair.

(r) *Example R.* Repair work required to restore railroads including work necessary to restore trackage to the current standard necessary to ensure safe and efficient operation. Work also includes ballast cleaning, replacement, and/or addition, rail and tie replacement, and reconstruction of failed crossings to current standards.

(s) *Example S.* Work necessary to repair failed or failing storm drainage systems including reshaping, seeding or sodding ditches or channel slopes, and replacing damaged or deteriorated drainage structures.

(t) *Example T.* Complete replacement of a damaged or failing bridge and reconstruction of the associated intersecting roads to provide access to the bridge is repair. The bridge is considered a component of the road system and thus this is a partial replacement of the facility and repair is appropriate.

(u) *Example U.* Repair of failed or failing roads at the entrance to an installation may include increasing the base data of surfaced areas (widening, extending and enlarging) to accommodate additional lanes parking, turning and holding areas as well as appurtenances, rails, and traffic signs and signals necessary to provide proper traffic control and access to an installation that meets force protection and anti-terrorism standards.

(v) *Example V.* Repair work includes recycling, applying overlays, slab replacement, and repairing drainage systems. Paving of the invert or side walls of an open drainage ditch and placement of erosion control measures such as riprap and gabions are properly classified as repair.

(w) *Example W.* If a pavement segment or segments are repaired by replacement, changes in alignment can properly classified as repair in order to correct safety deficiencies, accommodate current geometric design standards (curvature, sight, distance, obstacle avoidance) contained in UFC 3-250-18FA, improve traffic flow, or provide acceptable safety margins for takeoff and landing operations.

(x) *Example X.* When repairing a failed or failing runway pavement an increase in pavement lane width and/or an increase in runway length to eliminate documented safety deficiencies are properly classified as repair. In addition, realignment of the pavement segment that is required to meet geometric design provisions in UFC 3-260-02 or to meet standards that will eliminate waiver requirements for the governing aircraft operating from the airfield are also repair.

(y) *Example Y.* Periodic inspection to meet statutory and regulatory requirements, such as pavement inspections (airfields, roads, or parking) and airfield obstruction surveys are considered maintenance.

b. *Construction.*

(1) *Buildings.* Work pertaining to the conversion (in the sense of facility modification caused by a change in facility utilization), addition, expansion, extension, alteration, or total replacement of a building is classified as construction.

(a) *Example A.* Extensions or additions that increase the overall dimensions.

(b) *Example B.* Provision of new partitions, lining of unlined walls and ceilings, including necessary painting, and provision of associated insulation is construction. Unless, it is done during a major restoration, that is justified by failed or failing conditions on existing components or systems, then it is repair. Installation of moveable partitions in buildings is EIP. The partitions may support cabinets, desks, sinks, or electronic equipment as supplied by the

manufacturer. A building may be considered complete and usable if it is constructed with all utility connections, and has a covered floor, ceiling, utility room with HVAC, and toilet. Partition repair and replacement are the responsibility of the personal property owner and any work accomplished by the DPW to support repair of the EIP will be reimbursable and subject to the work load of the DPW.

(c) *Example C.* Relocation of walls, partitions, doors and windows in good condition to permit more effective use of the building or to allow for a change in the use (conversion) of the facility when not accomplished as a part of a repair project.

(d) *Example D.* Alterations in arrangement of utilities within buildings, initial permanent installation of equipment, and adding doors or windows, for functional reasons are construction. However, in the case where repair of a facility has been justified the number and arrangement of doors, windows, partitions, and utilities within the building will be made to allow for effective use of the space. Further, in case of conversions, repair work to the facility that would have been done regardless of its functional use and irrespective of the conversion project, is classified as repair.

(e) *Example E.* Addition of insulation for energy conservation when such work is not related to a repair project. Unless justified as technically obsolete (10 year payback, and having existed for 3 years) and thus declared failing. (See para 2-2b(1), example J.)

(f) *Example F.* The addition of a suspended ceiling where there was no ceiling before is construction. Where repair of a facility has been justified, however, the suspended ceiling may be installed if it allows for effective use of the space.

(2) *Transportation systems.*

(a) *Example A.* An overlay which is used to convert unsurfaced roads or roads with only a surface treatment to an asphaltic concrete surface is construction. Asphalt concrete overlays to increase pavement strength to accommodate a change in mission is construction and may not be accomplished as repair unless justified by PAVER, PCI calculations.

(b) *Example B.* Restoration of a pavement following deterioration, damage, or failure, which comprises complete replacement or reconstruction of the pavement facility, is construction and may not be accomplished as repair.

(c) *Example C.* Paving of sidewalls of a drainage system or ditch only for beautification purposes is construction.

(d) *Example D.* Work which will increase the base data of surfaced areas (widening, extending and enlarging) is construction; however, an increase in road, street, bridge lane width or runway or taxiway length and width to meet current minimum standards if accomplished incidental to major repair of the existing facility, is properly classified as repair.

(e) *Example E.* Installation of additional appurtenances, such as drainage structures, curbs, and combination curb and gutters is construction, except as follows: concrete curb and gutters added incidental to major street and parking lot repair are classified as repair to existing pavement edges and shoulders. Any extension to storm drainage systems to accommodate curbs and gutters is classified as construction.

(f) *Example F.* Asphaltic concrete surfacing of a stabilized or surface treatment pavement.

(g) *Example G.* Reconstruction of trackage to higher standards to meet new missions

(h) *Example H.* Extension of trackage.

(i) *Example I.* Replacing inadequately sized drainage lines and structures with larger sizes to meet capacity of a new mission requirement when the drainage lines and structures are not failed or failing.

(j) *Example J.* Improvement of an unimproved area with subbase, base, wearing surface, and/or drainage or the overlay of an unsurfaced pavement with bituminous or Portland cement concrete.

2-3. Work classification - grounds

This section contains examples of work classification for maintenance, repair, and construction of grounds. (Note: Replacement or additional landscape planting must be in accordance with the installation's approved Natural Resources Management Plan.) Funding for many of the activities in this section, is accounted for as Base Operations Support and accomplished as a service but the activity must be approved as repair and maintenance. In some cases, the same activity, when it is associated with a specific real property structure, should be properly accomplished as a real property project that is accounted for under Base Operations, Sustainment ****78.** account.

a. Maintenance and Repair.

(1) *Example A.* Grass cutting for beautification purposes is repair. It is accounted for as a service under base operations support (BOS). Grass cutting and vegetation control on dams, railroad right-of-ways and to clear visibility on road ways is repair and accounted for as SRM.

(2) *Example B.* Periodic cutting back of brush under power lines or from edges of roads and railroad right-of-ways and dams is repair and accounted for as SRM.

(3) *Example C.* Application of fertilizer and weed/pest control agents on improved grounds is repair, but is accounted for as a service, except when accomplished on road right-of-ways and dams.

(4) *Example D.* Periodically scheduled lime, fertilizer, and seed application to maintain good growth on undamaged, vegetated waterways and other areas where vegetation has been previously established is repair, but it is accounted for under BOS. If it is performed on edges of roads, railroad right-of-way, or dams, it is accounted for as SRM. This excludes prescribed follow-up treatments outlined as performance standards for initial establishment of vegetation

associated with construction or repair projects and on areas maintained for beautification which is accounted for as BOS.

(5) *Example E.* Periodic inspection to meet statutory and regulatory requirements, such as inspection of erosion control structures and dam structures are considered maintenance.

(6) *Example F.* Periodic removal of sediment from sediment barriers, catchments, harbors, and navigation channels is repair. When removing the sediment, the depth of the structure may be increased to meet new standards or codes.

(7) *Example G.* Removal of debris from an erosion control structure inlet to prevent damage or failure is repair.

(8) *Example H.* Controlling trees and vegetation to prevent subsurface drainage systems from clogging is repair.

(9) *Example I.* Removal of sediment from erosion control structures, barriers, or catchments and from constructed ranges and other real property facilities is repair.

(10) *Example J.* Removal of sediment from inundated areas not designed as real property facilities or as constructed sediment barriers or catchments is repair.

(11) *Example K.* Replacement of dead, deteriorated, or overgrown landscape planting is repair. Replacement does not have to be on a “one for one” or “same species” basis and, the location and size of the area landscaped may vary to fit the overall Installation Design Guide (IDG).

(12) *Example L.* Replacement of dead or deteriorated turf by seeding or sodding is repair.

(13) *Example M.* Replacement of damaged trees, shrubs and turf is repair.

(14) *Example N.* Work required to eliminate erosion, such as filling and shaping to correct gullies, rills and sheet erosion on training lands or real property facilities to reduce soil loss, to restore the natural shape of the land or land-formed facility, or to prevent further damage is repair.

(15) *Example O.* Maintenance of sediment barriers and catchments, excluding sediment removal, is repair.

(16) *Example P.* Root removal and replacement of damaged subsurface drainage systems where failure has occurred (for example, water backup, out-of-pipe flow) is repair.

(17) *Example Q.* Erosion control measures such as the placement of rip-rap, gabion structures, or small check dams to prevent or contain erosion is repair.

b. Construction.

(1) *Example A.* Additional landscaping around family quarters and other real property facilities whether accounted for as BOS or SRM.

(2) *Example B.* Providing a drainage ditch to carry surface runoff where no ditch previously existed.

(3) *Example C.* Extending subsurface or surface drainage systems to include additional drainage area.

(4) *Example D.* Creation of a sediment retention structure (that is, basin, pond) by means of excavation and/or erection of a dam where no structure previously existed.

(5) *Example E.* Creation of an erosion control structure for grade control and channel lining where no previously constructed erosion control structure existed is construction.

2–4. Work classification - utilities

This paragraph contains examples of work classification for maintenance, repair, and construction in the utilities area.

a. Maintenance and repair.

(1) *Example A.* Periodic replacement of filters, belts, and brushes in heating, pumping, ventilation, air conditioning, and refrigeration systems.

(2) *Example B.* Lubrication of pumps, motors, and shaft bearings.

(3) *Example C.* Adjustment of controls in elevators and HVAC systems.

(4) *Example D.* Replacing oil in self-cooled transformers.

(5) *Example E.* Relamping.

(6) *Example F.* Fire flow testing and flushing of water and sewer lines.

(7) *Example G.* Flushing and cleaning of boilers.

(8) *Example H.* Checking continuity of electrical grounding systems.

(9) *Example I.* Replacement of failed or failing lighting fixtures with fixtures that provide the correct level of illumination prescribed by current Army standards or codes.

(10) *Example J.* Replacement of serviceable lighting fixtures is repair when the ceiling is being replaced as repair, and when a different type fixture is dictated by the replacement ceiling.

(11) *Example K.* Replacement of failed or failing overhead electrical distribution system components such as distribution lines, poles, insulators, or lightning arrestors with an underground distribution system to conform to the Installation Design Guide or the National Electric Code.

(12) *Example L.* Replacement of a serviceable 110 volt circuit with a 220 volt circuit when a failed 110 volt window air-conditioning unit is being replaced as repair with a 220 volt unit.

(13) *Example M.* Replacement of a corroded pipe that is failed or failing with a pipe having higher corrosion resistance or a greater capacity to accommodate growth in the areas served.

(14) *Example N.* Replacement of a failed or failing manual control system with an automatic state of the art control system.

(15) *Example O.* Replacement of a failed or failing water or sewer line with a line in a new location to serve the same system for continuation of service during project execution.

(16) *Example P.* Replacement of a failed or failing warm air furnace or boiler with a furnace or boiler using the same or different fuel. (Note: Fuel conversions require life cycle cost type justification (see AR 420–1). All piping in the building to the five-foot line, controls, electric wiring and fuel storage specifically required for replacement is repair.

(17) *Example Q.* Replacement of failed or failing installed space heaters with a central heating system. Area served by the heating system may be increased to make efficient use of existing space within a building or structure.

(18) *Example R.* The cost of removal and replacement of failed or failing food service equipment. (Note: The actual cost of the equipment itself is not funded from SRM accounts.) Failed or failing food service equipment need not be replaced in the same location and they may be rearranged to meet new DA approved layouts, as repair.

(19) *Example S.* Replacement of failed or failing trough urinals with an adequate number of wall-mounted urinals.

(20) *Example T.* Replacement of a multiplicity of failed or failing installed air-conditioning units with a central system including duct-work, piping, and wiring is repair. The area served may be increased to provide for efficient use of existing space. (Note: For work to be classified as repair, existing air-conditioning units must be installed real property, not occupant-owned or EIP units.)

(21) *Example U.* A failed or failing Heating Ventilation and Air conditioning system may be repaired. The equipment can be repaired by replacement, can be state-of-the-art, and provide for more capacity than the original unit due to increased demand or changes in codes or standards. For example, accessibility, health, safety, or environmental) may be included as repair.

(22) *Example V.* Replacement of failed or failing wall mounted or free-standing drinking fountains.

(23) *Example W.* Replacement of a failed or failing air-cooled condenser with a water-cooled condenser, or replacement of a failed or failing water-cooled condenser with an air-cooled condenser.

(24) *Example X.* Replacement of a failed or failing single bowl kitchen sink with a double kitchen sink.

(25) *Example Y.* Replacement of twin sinks in a bathroom, when only one needs replacement and a matching sink is not available.

(26) *Example Z.* The replacement of a heating system that is failed or failing with a heat pump will be repair and inclusion of air-conditioning is repair if it is required by existing codes or standards, even if it does not exist.

(27) *Example AA.* If a multiplicity of failed or failing heating plants or systems are replaced with a consolidated plant (equal or less capacity) and distribution system, both the replacement plant and distribution system are repair. The individual building heat transfer equipment requirements replacing the failed or failing building heat source are also repair. Replacement of the individual building heating system, in conjunction with “consolidation” in order to accommodate the new system, can either be repair or construction depending on the condition of the existing system and must stand on its own merit concerning appropriate work classification. Providing a building to house the replacement system is construction. The replacement distribution system may be overhead, shallow trench, or direct buried. Replacing existing manholes is repair if the system is relocated to follow a different route than that of the existing system.

(28) *Example AB.* A failed or failing consolidated plant may be replaced with a multiplicity of smaller more efficient units as repair. In order to accommodate the new system, the equipment requirements in the individual buildings are also repair as is the placement of structures for storage of fuel. The decision to replace the consolidated plant must be supported by an economic analysis that supports the decision.

(29) *Example AC.* An existing plant may be expanded to accommodate the capacity of the failed or failing systems as repair, or a new plant may be constructed. In these cases, the replacement heating equipment is repair; the new building housing the equipment is construction.

(30) *Example AD.* Failed and failing storm water systems that are overloaded may be increased in capacity to meet existing and planned flows. In addition, if required by appropriate regulatory authority, the system may include retention basins where no basin existed to meet current standards.

(31) *Example AE.* Replacement of a failed or failing heat distribution or chilled water distribution with a new system in a new location to serve the same facilities is repair.

(32) *Example AF.* Replacement of a failed or failing direct buried system with a shallow trench or overhead system is repair.

(33) *Example AG.* When repairing a failed or failing water system in a laundry facility, a water recycling subsystem may be included as repair to reduce waste water.

b. Construction.

(1) *Example A.* Additions or expansions of existing serviceable utility distribution and collection systems, that is, overhead and underground electric distribution systems, steam, hot water, and gas distributions systems, water mains and services, sewer mains and laterals.

- (2) *Example B.* Altering unit arrangement and/or making changes to existing serviceable utility plants and systems to accomplish increases in capacity or operational efficiency to accommodate new or changed operational requirements.
- (3) *Example C.* A fuel conversion on a serviceable furnace, boiler, or water heater, unless the existing equipment can be justified as technically obsolete and thus failing.
- (4) *Example D.* Installation of new installed building equipment or systems, such as, kitchen equipment, space heating, water heaters, or plumbing systems where none existed and no repair project can be justified.
- (5) *Example E.* Re-installation of any previously removed installed building equipment where such equipment was originally removed to accommodate a new use.
- (6) *Example F.* The interconnection of two serviceable heating plants to eliminate the operation of one heating plant.
- (7) *Example G.* The installation of fuel oil storage tank at a gas fired heating plant to permit gas/oil operation unless the fuel oil storage tank is part of a larger repair project.
- (8) *Example H.* The installation of a new humidifier in a warm air heating system.
- (9) *Example I.* The installation of any size air-conditioning equipment and mechanical ventilation equipment in any facility is construction except when air-conditioning is classified as EIP. If the air-conditioning equipment is part of a larger repair project and it has been justified by codes or standards it is repair.
- (10) *Example J.* The alteration of any serviceable air-conditioning or ventilation system to improve or increase operating characteristics.
- (11) *Example K.* The addition of secondary or advanced treatment to a primary sewage treatment plant.
- (12) *Example L.* The installation of new water pumps or wells to meet new loads.
- (13) *Example M.* Connection charges to utility companies for the connection of new or expanded facilities, or capital contributions to the utility suppliers' "backbone" system, see AR 420-1. Each utility is considered separately when privatized.

2-5. Work classification - landfills

a. General Background.

- (1) In accordance with AR 420-1, chapter 23, it is Army policy to use municipal utility systems in lieu of Army landfills when the cost of municipal systems is no more than 125 percent of the Army cost. Projects that are estimated to cost over 125 percent should be referred through higher headquarters to ACSIM, Facilities Policy Division (DAIM-ODF) for exception to policy approval at HQDA. Therefore the preferred method of solid waste management at an Army installation is to participate in a regional solid waste disposal system, if feasible.
- (2) In the absence of a regional system, contractual arrangements for solid waste collection, hauling and disposal should be made with a public agency or a commercial entity. New landfills on Army installations will be planned only when studies (including third party contracting) show that these services are not economically available from outside sources.
- (3) If corrective actions are required on closed landfills because of environmental contamination, funds may be eligible for programming under the Defense Environmental Restoration Program as Solid Waste Management Unit (SWMU) projects. This Defense Environmental Restoration Account (DERA) funding mechanism is for continental United States (CONUS) facilities only. Installations outside the continental United States (OCONUS) must use environmental compliance funds or Host Nation Infrastructure Funding as appropriate.

b. Operations.

- (1) Operation of existing landfills is not construction and is considered an operating expense that is covered under the Base Support, Real Property Service ****79.** account. This includes costs of opening new cells to include cell liner and cell leachate collection systems, the day-to-day operations of placing refuse, compacting, daily and final cover, closure, and erosion control.
- (2) Operation of closed landfills to include the operation of an existing leachate collection and treatment systems are engineering support efforts that are covered under the Base Support, Real Property Service ****79.** account.

c. Repairs. If a landfill, either existing or closed, is determined to be a failed or failing system, for example, confirmed ground or surface water contamination, may be fixed with repair funds. Repair funds should be utilized for the correction such as liner or leachate collection system repairs. The DERA is the preferred funding mechanism to correct a failed or failing system on a closed landfill in CONUS.

d. Construction.

- (1) All new landfills are construction efforts and will be programmed as construction projects, either MILCON or Operation and Maintenance, Army undertakings that are accounted for under the Base Operations Restoration and Modernization ****76.** account. All preparatory work for the overall site footprint will be included in the construction project. This includes site development, leachate collection, pumping stations, treatment facilities, scales, fencing, monitoring wells, haul roads, storm water drainage control.
- (2) Improvements, for example, leachate collection, treatment facilities, fencing, monitoring wells, required on the original overall footprint after project completion are classified as construction, and are funded using either MILCON

or Operation and Maintenance, Army undertakings that are accounted for under the Base Operations Restoration and Modernization ****76.** account.

(3) If additional construction, for example, installation or extension of liners and additional leachate collection or treatment systems, at an existing landfill is required solely to meet new Federal or State regulations and there is no sign of ground or surface water contamination, the work is a construction effort; either MILCON or Operation and Maintenance, Army undertakings that are accounted for under the Base Operations Restoration and Modernization ****76.** account.

2-6. Work classification - asbestos

a. Background. Garrison DPWs are responsible for the surveys of their facilities to determine the location and condition of asbestos containing material (ACM) (Surveys are properly funded under BOS Environmental Compliance, removal or abatement is not). The asbestos containing material will not normally be removed just because it exists. The ACM is managed in place. The DPW is responsible for monitoring the condition of ACM to ensure no hazard exists to building occupants. Any ACM that is not a hazard - not friable - will be encapsulated to ensure containment. If a project is planned in a facility that contains ACM, removal of the ACM will be considered part of the funded project cost and funded by the sponsor of the project.

b. Repair.

(1) If ACM is in a failed or failing condition, abatement work is considered repair.

(2) If ACM is not failed or failing by itself but is removed in connection with repairs to failed or failing building components or systems, the asbestos abatement is considered an integral part of the repair project and is therefore repair.

c. Construction.

(1) If ACM is not failed or failing but is removed in connection with alteration or construction work, the asbestos abatement is an integral part of the construction project and is therefore construction.

(2) If ACM is not failed or failing but is removed anyway as a matter of policy, such abatement work is construction.

d. Service.

(1) If ACM is contained in a facility which is scheduled to be demolished, not as part of a construction project, but as part of the installation master plan, asbestos abatement is not considered construction and should be funded with demolition funds.

(2) Surveys for the identification and inventorying of ACM is a service and thus an unfunded project cost and is funded under BOS; the environmental compliance account should be used.

2-7. Work classification - Defense Environmental Restoration Program

a. The following summarizes Army policy governing the classification of work for projects performed under the Defense Environmental Restoration Program (DERP) at Army installations.

b. All DERP cleanups in accordance with 10 USC 2701 address hazardous substances, pollutants and contaminants, and military munitions sites consistent with the provisions of 42 USC 9601, et seq. (CERCLA); 40 CFR 300 (National Oil and Hazardous Substances Pollution Contingency Plan); Executive Order (EO) 12580; and 42 USC 6901, 3004u, 3004v, and 3008h. For activities that resulted in contamination prior to 17 October 1986 at non-permitted sites, see AR 200-1, paragraph 12-2. The Defense Environmental Restoration Account (DERA) was established by 10 USC 2703-Environmental Restoration Transfer Account as a "transfer account." In 1997, Public Law 105-56 Department of Defense Appropriations Act, 1998, changed DERA to a direct appropriation to the Components through the establishment of the Component Environmental Restoration (ER) account (for the Army, the restoration account is known as Environmental Restoration, Army (ER,A)). Under 10 USC 2703, all funds appropriated to carry out the functions of the Secretary of Defense relating to environmental restoration are appropriated to the transfer account and are subsequently transferred to other appropriate accounts (for example, O&M¹ procurement for use in conducting environmental restoration activities).

c. The following procedures and guidelines will be employed to ensure that the proper appropriation is identified in the Army request for transfers. This section also contains examples of work classification for typical projects accomplished under the DERA program. Proper work classification of projects prior to the beginning of the fiscal year in which the project is to be executed is critical. Improper work classification may result in project delays.

(1) The basic work classification guidance contained here is derived from AR 200-1, Environmental Protection and Enhancement; this document, AR 420-1, chapter 2, Management of Public Works Activities; and AR 420-1, chapter 4, Army Military Construction and Nonappropriated-Funded Construction Program Development and Execution, apply to

¹ The FY03 Defense Authorization Act (Section 313): The FY03 Defense Authorization Act revised 10 USC 2707 to specify that environmental restoration projects are not military construction and that such projects should be funded from appropriations for environmental restoration (ER,A for Army). This rescinds the current DOD Management Guidance for the DERP, Sep 01, which requires the use of MILCON funding for environmental restoration response activities resulting in the construction of a real property facility.

DERP projects. This guidance is subject to change, one should check the Army Regulations prior to execution of DERP projects.

(2) The installation accountable for the real property needing DERP projects must be involved in the work classification selection.

(3) The Garrison is responsible for providing MILCON sites which have been surveyed; preparation of environmental documentation and site survey is considered advance planning and will be funded from other than MILCON or nonappropriated funds (NAF).

(a) If a proposed project must be sited in a known environmentally sensitive area where an Army cleanup program has already cleaned to current or reasonably anticipated future land use, the cost of design and construction of mitigation measures required as a direct result of MILCON or NAF projects may be paid from MILCON funds, if these costs are included in the cost estimate and description of work on the DD Form 1391 (FY_ Military Construction Project Data).

(b) If during the execution of a MILCON project environmental contaminants are discovered, the installation is responsible for emergency response/initial response activities when these costs are not included in the MILCON project. If initial response activities are not adequate and additional remediation/cleanup is required, the project proponent is responsible for identifying the environmental requirements and securing funds.

(4) Environmental restoration projects using funds that have passed through the Component ER transfer account may result in the construction of real property using a work classification other than "construction".

(a) The work classification for DERP projects must be accomplished in accordance with current public laws and Army guidance.

(b) Operational expenses for DERP projects are O&M expenses.

(5) Construction projects above O&M thresholds at environmental restoration sites using funds that have not passed through the Component ER transfer account are not eligible for the MILCON exemption applied to DERP projects, and must be classified as "construction" if a complete and usable facility will remain in place after the restoration effort is complete. An example would be a steel building using a slab on grade foundation that housed a groundwater pump and treatment system during restoration efforts. At the end of the pump and treat effort, the building would remain in place.

(a) If funded using dollars that had passed through the Component ER transfer account, the project would be classified as repair.

(b) If funded using normal O&M funds, the project would be classified as construction, and if above the O&M threshold for MILCON, must be funded from the MILCON appropriation.

2-8. Work classification - equipment classification

a. Installed building equipment. Installed building equipment (real property) are items that are affixed or built into the facility and become an integral part of the facility. Not all equipment that is provided as part of the construction contract and have their costs included as a funded construction cost are considered IBE. For example, Information System (IS) items such as cables and distribution panels are not IBE; cable trays and conduits (usually within the wall, ceiling, or floor) are IBE, except for secure systems which are required to be mounted on the wall exterior. Maintenance and repair of IBE follows the classification guidance contained in paragraphs 2-2 through 2-7. The IBE is accounted for as real property on the real property records. Examples of supporting equipment that are considered IBE are listed below—

- (1) Auxiliary Generators (See para 2-8j).
- (2) Bedside headwall units (built-in).
- (3) Benches (built-in).
- (4) Bleachers (built-in).
- (5) Boilers.
- (6) Bookcases (built-in).
- (7) Cabinets (built-in).
- (8) Cable trays and conduits (for IM and unclassified communications).
- (9) Carpet (Primary Floor Covering).
- (10) Chapel seating, baptisteries, pulpits, and communion rail and raised platforms (built-in).
- (11) Closets (built-in).
- (12) Correctional facility equipment.
- (13) Desks and tables (built-in).
- (14) Dishwasher and pot and pan washing equipment (built-in).
- (15) Drinking water coolers (built-in).
- (16) Electrical (electric fixtures and power utilization and distribution equipment).
- (17) Elevators and elevator doors.
- (18) Escalators.

- (19) Exhaust systems.
- (20) Fire alarm and detection systems including built-in cabinets.
- (21) Food service equipment (built-in).
- (22) Gas fittings.
- (23) Hardware and fixtures for handicapped needed for compliance with American Disabilities Act.
- (24) Heating, ventilating and air conditioning and control systems.
- (25) Hoists (crane and crane rails) (designed as part of the structure or built-in).
- (26) Incinerators.
- (27) Information systems (For construction, see AR 420-1 para 4-72; for repair see para 2-7k).
- (28) Intercom systems.
- (29) Key Control systems (Electronic card key entry systems; Special cipher locks for Secure Areas are EIP).
- (30) Kitchenette Units.
- (31) Laboratory sinks, tables, benches (built-in).
- (32) Lockers (built-in).
- (33) Mass Notification (Mass Notification which has been added to existing FireAlarm and Paging Systems which are themselves IBE.).
- (34) Meat cutting equipment.
- (35) Medical gas systems.
- (36) Nurse call system.
- (37) Electrical Panel boards.
- (38) Plumbing.
- (39) Pneumatic tube systems.
- (40) Pot and pan washing equipment.
- (41) Protective construction features.
- (42) Refrigeration equipment (built-in). (Excluding Defense Commissary Agency, Army and Air Force Exchange System (AAFES), and morale, welfare, and recreation (MWR) concessionaires equipment.)
- (43) Storm sash and doors.
- (44) Safety signs.
- (45) Screens.
- (46) Shelving and racks (built-in).
- (47) Signs and markings for boundary, area, building room, and unit identification.
- (48) Sprinklers.
- (49) Sterilizers (built-in).
- (50) Storage bins (built-in).
- (51) Theater and auditorium railings.
- (52) Theater stage and fire curtain.
- (53) Traffic railings.
- (54) Vaults.
- (55) Vehicle and pedestrian traffic control and signs.
- (56) Venetian blinds and window shades.
- (57) Wardrobes (fixed).
- (58) Waste disposers.
- (59) Other similar nonseverable items.

b. Personal property (fixed). Personal property consists of capital equipment and other equipment of a movable nature which has been fixed in place or attached to real property, but which may be severed or removed from buildings without sever structural damage. For a repair project the acquisition and installation of personal property (Equipment-in-Place)) is an unfunded project cost. In a construction project some personal property are considered part of the project (funded project cost). Personal property is accounted for in accordance with AR 710-2. Examples of fixed personal property are listed below—

- (1) Antennas and antenna towers for point-to-point communications.
- (2) Air Compressors supporting other items of personal property.
- (3) Blanking equipment.
- (4) Blast furnaces.
- (5) Blasters and roto blasters.
- (6) Chain and tractor equipment.
- (7) Conveyor systems.
- (8) Demountable partitions.

- (9) Dental Chairs, pedestal units. (And support equipment including vacuum and airlines.)
- (10) Dies.
- (11) Drills.
- (12) Dryers.
- (13) Educational television systems.
- (14) Electronic repair laboratory and shop equipment.
- (15) Electronic navigational aids, such as Terminal very high frequency (VHF) Omni-directional Range (TVOR) and tactical air navigation (TACAN).
- (16) Fixed facilities for radio and meteorological stations.
- (17) Fixed target range systems.
- (18) Forges.
- (19) Grinders.
- (20) Heat treating machines.
- (21) Intrusion detection systems (Joint Services imagery digitizing system (JSIDS) and intrusion detection system (IDS)).
- (22) Infant Abduction Monitoring System.
- (23) Jigs.
- (24) Lathes.
- (25) Laundry equipment.
- (26) Local Area Network (LAN) equipment and cables.
- (27) Mass Notification Systems that are stand alone systems.
- (28) Medical and dental equipment.
- (29) Metal plating equipment.
- (30) Microscopes (fixed).
- (31) Modular office furnishing with or without hanging furniture.
- (32) Molders.
- (33) Organs.
- (34) Ovens and furnaces.
- (35) Paint sprayers.
- (36) Photographic equipment.
- (37) Planners.
- (38) Presses.
- (39) Prewired workstations.
- (40) Printing presses and related equipment.
- (41) Punches.
- (42) Raised Flooring required solely for operating equipment (computer rooms).
- (43) Riveters.
- (44) Scientific measuring instruments.
- (45) Sewing machines.
- (46) Sheet metal equipment.
- (47) Stamping and cleaning equipment.
- (48) Steam cleaning equipment.
- (49) Stills.
- (50) Stitchers.
- (51) Telescopes.
- (52) Telephones, cabinets and Cabling.
- (53) Testing equipment.
- (54) Training equipment and simulators.
- (55) Vats.
- (56) Wash tanks.
- (57) Welding machines.
- (58) Woodworking equipment.

c. Personal property (movable). Equipment that is movable and not affixed as an integral part of the facility is generally accounted for as personal property rather than real property. Examples of movable personal property are listed below—

- (1) Automated data processing equipment.
- (2) Dental chairs and pedestal units and supporting equipment including piping.

- (3) Filing cabinets and portable safes.
- (4) Food service equipment (portable).
- (5) Furnishings, including rugs.
- (6) Furniture.
- (7) Office machines.
- (8) Photographic equipment (portable).
- (9) Shop Equipment.
- (10) Training aids and equipment, including simulators.
- (11) Wall clocks (unless hardwired to facility electrical service).

d. Costs. Costs associated with installing equipment that is movable and not permanently affixed as an integral part of existing real property facilities is not construction. It is an unfunded project cost which is charged to the property book holder of the equipment. It will not be funded as a construction cost. The associated cost of this equipment and the costs related to its procurement (including items such as transportation, packing, unpacking, assembly, and attachment) are not construction (unfunded project cost). All costs to support EIP are funded from the owning property book holder with the same appropriation that bought the equipment when the installation is in an existing building or facility. Some typical examples are as follows:

(1) Installation and relocation of prefabricated interior screens, partitions, modular furniture, and dividers which are mainly unattached. Movable screens or detachable panels that are readily removed without structural damage to the facility.

(2) Installation of false floors and platforms required solely for operating equipment to be installed.

(3) Installation of required shielding for electromagnetic radiating devices. Structural changes, including new partitions related to installing shielding, are construction.

(4) The temporary removal and reinstallation of items such as portions of walls, roof, and utility systems to permit the installation of equipment. Reinstallation may involve rerouting or relocation of some items.

(5) Installation of special foundations, pads on slab-on-grade, or pits in facilities. Installation of floors other than slab-on-grade are limited to bases needed to spread load and to secure EIP. Increase in load bearing capacity of these floors by additional or larger structural components is construction.

(6) Installation of dedicated secondary utility work to connect the equipment to utility services within a facility. This work lies between the utilities primary entry or source within the structure and the equipment to be served. For example, utility work from the existing main electrical service panel, or for equipment requiring primary voltage, from the building primary bus.

(7) Installation of air conditioning under the following circumstances:

(a) To meet manufacturers' specifications for equipment temperature, humidity, particulate matter, and air circulation.

(b) In clean rooms installed in non-air-conditioned spaces or when the building central system cannot meet the temperature and humidity requirements of clean room operations.

(c) For operator occupied areas where installed equipment will increase the temperature or humidity beyond safety levels in the immediate area of equipment. Under this policy, air conditioning may be provided only in bona fide equipment spaces directly related to the equipment and not in administrative or other working spaces.

(8) Installation of mechanical ventilation and separate exhaust systems when needed for personnel safety or for the proper functioning of the equipment as required by the manufacturer.

(9) Installation of intrusion detection equipment, except for conduit and junction boxes.

(10) Installation of specialty fire extinguishing systems for rooms that contain substantial amounts of computers, communications, and automatic data processing (ADP) equipment.

(11) When installed as part of a construction project in an existing facility, items listed in d(3), (6), (7), (8), and (10) above, are construction. Related costs are properly chargeable to a construction project as a funded cost.

e. Other Procurement, Army Funded Construction (Equipment Shelter Exception to Policy). Prefabricated equipment shelters may be placed either with Other Procurement, Army (OPA) funds or OMA/MCA (use of MCA funding requires prior approval from HQDA) funds. The OPA funded equipment shelters and support facilities/systems are not classified as real property and not maintained by the DPW.

(1) All equipment shelters, facilities/systems, regardless of the source of funding or construction agency, will be built to Corps of Engineers' standards.

(2) Master planning will be performed, and site approval obtained from the servicing DPW.

(3) Final design approval will be obtained from the servicing DPW prior to awarding a construction contract.

(4) Construction management will be accomplished by the DPW or U.S. Army Corps of Engineers (USACE) District Engineer at the discretion of the servicing DPW.

(5) Transfer of construction to the DPW's real property records will be in accordance with the procedures outlined in AR 420-1.

(6) The purchase, installation, maintenance and repair of computer and communications equipment (personal property) continues to be the responsibility of the tenant, and where DPW services are required and available, must be accomplished on a reimbursable basis.

f. Automatic Box Conveyor System. The Automatic Box Conveyor (ABC) System can best be described as a state of the art transportation system for records and other small items. They are now routinely being installed at Army hospitals. The ABC system consists of two parts—

(1) An installed track system, including switches and controls, normally designed to fit a particular facility and integrated into the building's fire protection and mechanical systems. If removed, the system is impossible to reuse without major modifications.

(2) Conveyor carts and containers that can be removed from the conveyor track system.

(3) The ABC System will be accounted for and subsequently maintained and repaired as follows:

(a) The track structure and control systems will be treated as real property (Installed Building Equipment) and maintained and repaired by the engineer.

(b) The conveyor carts and containers will be treated as personal property and the maintenance and repair will be accomplished by or reimbursed from the user.

g. Prefabricated office and medical modules. The purchase and installation of modular units with equipment funds as personal property is permissible provided the equipment is—

(1) Owned and accounted for by the user.

(2) Maintained and repaired with user's operating funds.

(3) Made for indoor use only.

(4) Movable or if attached to the real property, can be severed or removed without destroying the usefulness of the building or the office module.

h. High altitude electromagnetic pulse. The DPW has the responsibility for programming and performing maintenance and repair functions for high altitude electromagnetic pulse (HEMP) hardened facility features where those features are classified as installed building equipment. The DPW is not, however, responsible for the maintenance and repair of such features when they are classified as personal property. When classified as personal property, the responsibilities outlined above belong with the installation's Network Enterprise Center, the user, or the occupant of the facility. This work may be done by the DPW on a reimbursable basis.

i. Uninterruptible Power Supply System. An Uninterruptible Power Supply (UPS) System, depending upon the type, size, and installation, may be classified as either IBE or EIP. To assist you in your classification the following guidance is offered:

(1) An UPS system which occupies a specific area of a building and is structurally, mechanically and electrically affixed as an integral part of that facility is classified as real property and the DPW should operate, maintain, and repair the system.

(2) An UPS system which requires no structural changes and is not affixed or built into a facility and which can be moved and relocated without destroying the usefulness of the facility is classified as personal property and the user operates, maintains, and repairs it.

j. Auxiliary generators.

(1) Generators affixed as a permanent part of a facility that provide power to facility electrical loads are considered to be installed building equipment (real property) and should be funded with MILCON funds and maintained by the DPW. Generators that solely support personal property are not MILCON funded and are maintained by the DPW on a reimbursable basis as work load allows. Fixed generators that support a combination of both real and personal property are considered real property, and will be funded with MILCON funds and maintained by the DPW.

(2) Auxiliary generators maintained by the DPW and funded by MILCON appropriations are authorized only for the facilities and systems listed below.

(a) Air and sea navigational aids, both visual and electronic.

(b) Air traffic control towers.

(c) Aircraft and aircrew alert facilities.

(d) Central fire stations, including associated communications and central station equipment.

(e) Cold storage warehouses and major refrigerated storage areas.

(f) Command and control facilities.

(g) Information systems facilities, such as dial central offices, information processing centers, and information systems facilities.

(h) Mission-critical computer and information processing systems.

(i) Mission-critical munitions and research processing systems, including associated safety, alarm, and shutdown systems.

(j) Mission-critical utility plants.

(k) One dining facility per OCONUS installation.

(l) The DPW control centers.

- (m) Disaster preparedness and emergency operations centers.
 - (n) Fire protection and alarm systems.
 - (o) Hospitals.
 - (p) Law enforcement and security police facilities, including associated information processing systems, and confinement facilities Stations.
 - (q) Specific requirements required by law, such as for some sewage lift stations.
 - (r) Mission, property, and life support facilities and systems at remote and not readily accessible sites for aircraft warning and surveillance systems.
 - (s) Nuclear power plants and storage and operating facilities for nuclear and chemical surety materials (See AR 50-5, AR 50-6, and AR 190-54 for special features that apply to generators.).
 - (t) Photographic laboratories providing mission-critical and essential support to tactical missions facilities.
 - (u) Petroleum, oils, and lubricants (POL) storage and dispensing.
 - (v) Security lighting, surveillance, and warning systems.
 - (w) Weapons systems.
 - (x) Weather stations.
- k. *Information system support for projects.* Information system (IS) support for projects is an important part of project planning. All repair projects that affect the communications systems in a facility will be coordinated with the installation Network Enterprise Center prior to starting the planning and design. The coordination should begin early enough to allow the Network Enterprise Center to identify the IS costs for the IMCOM/Garrison Commander or tenant user to program the funds needed to support the facility. A continuing dialogue is needed from the time of project inception until the building is turned over to the end user. The software developed to support TAB F in the DD Form 1391 should be used to calculate costs associated with IS support. In today's work environment it is essential that tenants have the communications abilities needed for him to carry out their mission. Operation and Maintenance funded construction projects should use AR 420-1, table 4-2 to determine funding for Unspecified Minor Military Construction Army (UMMCA) projects. The following table is to be used as a guide to determine funded project cost and unfunded project cost for IS in repair projects. Funded project costs are approved as part of the SRM real property undertaking. IS items are unfunded costs; usually classified as equipment. Neither the IS equipment nor its installation is SRM funded and it is either funded by IMCOM/Garrison Commander or the tenant user of the building.

Table 2-1
Funding for Information System Support Components of Real Property Projects

System Component	O&M Repair, Type of Cost
1. Building Telecommunications Cabling System (BCS) — All MILCON. ^{1, 10}	
Communications equipment rooms (CERs). ²	FUNDED
Cable paths, protected. ^{3, 2}	FUNDED
Cables. ⁴	UNFUNDED
Application-specific electrical components. ^{5, 6}	
Attached device - common user service.	UNFUNDED
Attached device - personal demand service.	UNFUNDED
Signal line filters - PDS secure systems.	
Installed on signal lines procured with CONF project funds.	UNFUNDED
Installed on signal lines procured with other than CONF project funds.	UNFUNDED
Secure Internet Protocol Network (SIPRNET) ²³	
Protective Distribution System (Cable Path) for	
Battalion level and higher	UNFUNDED
Below Battalion level	UNFUNDED
SIPRNET Cabling System	
Battalion level and higher	UNFUNDED
Below Battalion level	UNFUNDED
SIPRNET Encryption Device ²²	
Battalion level and higher	UNFUNDED

**Table 2-1
Funding for Information System Support Components of Real Property Projects—Continued**

System Component	O&M Repair, Type of Cost
Below Battalion level	UNFUNDED
SIPRNET Data Switch ²²	
Battalion level and higher	UNFUNDED
Below Battalion level	UNFUNDED
2. Telephone System, Administrative (Common user voice service using DOD approved technology)	
Central office equipment upgrade/expansion/replacement. ⁷	
Not associated with MILCON. (ISC)	UNFUNDED
Telephone instruments, common user. ⁸	
REPAIR.	UNFUNDED
Medical REPAIR.	UNFUNDED
Telephone instruments, all others. ⁹	
REPAIR.	UNFUNDED
Medical REPAIR.	UNFUNDED
Other attached devices:	
REPAIR.	UNFUNDED
Medical REPAIR.	UNFUNDED
3. Telephone System, non-Administrative (individual subscriber): AFH, Barracks, BOQ, BEQ, and so forth. ¹⁵	
Building Telecommunications Cabling system (BCS) — see #1 above ¹⁰	
Outside plant infrastructure, cable, equipment and equipment shelter. ¹¹	SUB UNFUNDED
Telephone instruments and other attached devices.	SUB UNFUNDED
4. Local area networks (LANs)	
I3A compliant data switches and edge devices.	
Common user - NIPRNET systems. ¹²	UNFUNDED
User specific - other than NIPRNET data systems: i.e., SIPRNET, GCCS-A, etc.	UNFUNDED
Other LAN/data network devices: terminals, printers, keyboards, peripheral equipment, etc.	UNFUNDED
Wireless LAN (WLAN) ²⁴	UNFUNDED
Wireless Intrusion Detection Devices (WIDS) ²⁴	UNFUNDED
Thin Client Solution ²⁵	
Thin Client Server	UNFUNDED
Thin Client Software	UNFUNDED
Thin Client Hardware	UNFUNDED
5. Outside cable plant (OSP) ^{11, 13, 15}	
Expand/upgrade/replace outside cable plant - as a direct result of REPAIR	
Cable pathway: manholes, hand holes, duct, poles, pedestals, etc.	FUNDED
Cables.	UNFUNDED
Line equipment.	
Wired-in: required to complete the cable path.	UNFUNDED
Personal property: user application-specific electrical components	UNFUNDED
Expand/upgrade/replace outside cable plant not a direct result of MILCON.	UNFUNDED
6. Entertainment Television Systems.	
6.1. Government-owned master antenna. ^{10, 14}	
Television (MATV) systems. ¹⁶	FUNDED

**Table 2-1
Funding for Information System Support Components of Real Property Projects—Continued**

System Component	O&M Repair, Type of Cost
Cabling, interior. ¹⁵	UNFUNDED
Cabling, exterior. ¹⁵	UNFUNDED
Antennas, dipole and loop, fixed.	UNFUNDED
Antennas, dish, non-medical facility.	UNFUNDED
Antennas, dish, medical facility.	UNFUNDED
Amplifiers, splitters, couplers, etc.	UNFUNDED
Receivers, non-medical facility.	UNFUNDED
Receivers, medical facility.	UNFUNDED
6.2. Commercially-Owned Cable Company. ¹⁰	
Entertainment Television Systems not government owned/operated.	
Cable path/access systems. ³	FUNDED
Cabling, interior - inside the 5-foot line. ¹⁵	UNFUNDED
Cabling, exterior - outside the 5-foot line. ¹⁵	SUB UNFUNDED
Set-up and recurring fees and charges.	SUB UNFUNDED
7. Audio/Video System, non-entertainment, common equipment (non-medical, non-IDS).	
Common system items:	
Cable paths, protected. ³	FUNDED
Cables - coaxial. ¹⁵	UNFUNDED
Cables - BCS. ⁴	UNFUNDED
Amplifiers, splitters, couplers, line drivers, etc.	UNFUNDED
Application-specific electrical components - installed externally to the cable path. ^{5, 6}	
Attached device - common user service, i.e., impedance matching devices, etc.	UNFUNDED
Attached device - personal demand service, i.e., adapters for user unique devices.	UNFUNDED
Signal line filters.	
Installed on signal lines procured with project funds.	UNFUNDED
Installed on signal lines procured with other than CONF project funds.	UNFUNDED
Monitors.	UNFUNDED
Cameras.	UNFUNDED
Sound subsystems.	UNFUNDED
Video projectors.	UNFUNDED
Video recorders (VCR, etc.) and video playback systems.	UNFUNDED
Antennas.	UNFUNDED
7.1. Closed-circuit television (CCTV) for training and surveillance purposes.	
Common system items: see 7.0	
Operating consoles and other head-end equipment.	UNFUNDED
7.2. Mission orientated visual information systems for stand-alone briefing rooms, auditoriums, command and control facilities, conference rooms, and other applications not addressed elsewhere in this table.	
Common system items: see 7.0	
Operating consoles and other head-end equipment.	UNFUNDED
7.3. Video Information Projection Systems.	
Common system items: see 7.0	
Computer workstations.	UNFUNDED

**Table 2-1
Funding for Information System Support Components of Real Property Projects—Continued**

System Component	O&M Repair, Type of Cost
7.4. Teleconferencing.	
Common system items: see 7.0	
Screens.	UNFUNDED
Coding and decoding equipment.	UNFUNDED
Computer subsystems.	UNFUNDED
7.5. Educational Television Systems.	
Common system items: see 7.0	
Head-end transmitters.	UNFUNDED
7.6. Computer-Aided Instruction Systems.	
Common system items: see 7.0	
Learning station equipment.	UNFUNDED
Computer subsystems.	UNFUNDED
8. Audio/Video System, non-entertainment, common equipment (medical facilities).	
Common system items:	
Cable paths, protected. ³	FUNDED
Cables - coaxial. ¹⁵	UNFUNDED
Cables. ⁴	UNFUNDED
Amplifiers, splitters, couplers, etc.	UNFUNDED
Monitors and cameras.	UNFUNDED
Sound subsystems.	UNFUNDED
Antennas.	UNFUNDED
8.1. CCTV for medical facilities.	
Common system items: see 8.0	
Operating consoles and other head-end equipment.	UNFUNDED
8.2. Composite medical information system.	
Common system items: see 8.0	
Operating consoles and other head-end equipment.	UNFUNDED
9. AM-FM radio and public address system, complete.	FUNDED
10. Antennas and antenna towers for point-to-point communication.	UNFUNDED
11. Cellular telephone instruments. ¹⁸	UNFUNDED
12. Central clock, complete.	FUNDED
13. Electronic navigational aids: terminal VHF omni-directional range (TVOR), tactical air navigation (TACAN), etc.	UNFUNDED
14. Fire alarm and detection system complete.	FUNDED
15. Fixed and portable facility equipment for radio and meteorological stations. ¹⁷	UNFUNDED
16. Intercommunication (Intercom) systems complete.	FUNDED
17. Intrusion detection system, Physical Security.	
Cable paths, protected. ³	FUNDED
Cables. ⁴	UNFUNDED
Sensors.	UNFUNDED
Operating consoles and other head-end equipment.	UNFUNDED
Amplifiers, splitters, couplers, etc.	UNFUNDED

**Table 2-1
Funding for Information System Support Components of Real Property Projects—Continued**

System Component	O&M Repair, Type of Cost
Assessment cameras and monitors.	UNFUNDED
Application-specific electrical components - installed externally to the cable path. ^{5, 6}	
Attached device - common user service, i.e., impedance matching devices, etc.	UNFUNDED
Attached device - personal demand service, i.e., adapters for user unique devices.	UNFUNDED
18. Nurse Call, complete	FUNDED
19. Official (TCC) record traffic equipment (teletype, facsimile, terminal, etc.).	
Common user.	UNFUNDED
Dedicated/special purpose.	UNFUNDED
20. Operating and malfunction alarms associated with CONF equipment.	FUNDED
21. Portable clock (battery or plug-in).	UNFUNDED
22. Radio paging systems, complete. ¹⁷	UNFUNDED
23. Real-time clock.	
EMCS.	FUNDED
Non-EMCS.	UNFUNDED
24. Reproduction, photographic, printing, and similar hard copy developing and processing equipment.	UNFUNDED
25. Test, measurement, and diagnostic equipment (TMDE), and special tools.	
Dedicated to fixed CONF-procured and installed systems and components. ¹⁹	FUNDED
Dedicated to fixed ISC-procured and -installed systems and components. ¹⁹	UNFUNDED
Other TMDE.	UNFUNDED
26. Trunk radio set.	
Trunk Radio Set - non-medical facility. ²⁰	UNFUNDED
Trunk Radio Set - medical facilities. ²¹	UNFUNDED
27. Un-interruptible power supplies (see para 2-8c).	
28. Utility/Energy monitoring and control system (UMCS/EMCS)	
UMCS/EMCS, non-energy conservation investment program (ECIP), with maintenance management subsystem.	FUNDED
UMCS/EMCS, ECIP, without maintenance management subsystem.	FUNDED
UMCS/EMCS maintenance management subsystem in conjunction with ECIP-funded UMCS/EMCS.	UNFUNDED

Legend for Table 2-1:

FUNDED: A cost that is counted toward the real property approval amount accounted for as SRM.

UNFUNDED: A cost that is not part of the real property approval amount it is not accounted for as SRM. These costs are usually paid by the user or DOIM.

SUB: Subscriber pays for this element. These costs are unfunded costs and not part of the real property approval amount.

Notes:

¹ BCS includes all voice and data information system infrastructure requirements associated with the Repair project, including infrastructure support for NIPR, SIPR, telemetry, and so forth; as validated by the IMCOM-Region/ACOM, ASCC, and DRU. Representative features include — (a) CERs, (b) horizontal and backbone cable path infrastructure, (c) installed communications cables, and (d) cable management equipment and devices. Items c and d above are not a funded as part of the real property repair project. They are approved separately and funded by either DOIM or the user. These items can be included in the repair contract for economy of effort. BCS will be designed, installed and tested IAW TIA/ EIA 568-B, TIA/EIA-569-A, and UFC 3-580-01. SIPRNET PDS will be designed and installed IAW the USAISEC TG for the Integration of SIPRNET.

² A room will be provided by the repair project to accommodate the telecommunications equipment, a Telecommunications Equipment Rooms (TERs). The equipment contained in the rooms include equipment cabinets, equipment racks, cable box enclosures, telephone terminal backboards, protective blocks, cable terminations/cross-connect blocks, cable patch panels, cable management hardware, patch cords, electrical power outlets with ancillary hardware and fittings are Equipment-In-Place (EIP) and not a funded project cost. These items may be included in the repair contract or by a separate contract.

³ Communications cable paths, except for SIPRNER, are funded cost and thus a part of the real property project. Cable paths include cable trays, cable raceways (enclosed duct), cable conduits, surface raceway, pull boxes, cable consolidation point, cable transition point, outlet boxes and installed cable pull cords along with ancillary hardware and fittings extending from the CERs to the outlet boxes. Paths may be placed within the overhead utility space, within or on the walls, and within or under the floor. In repair projects cable paths for SIPRNET are an unfunded project cost and are funded by the user or the DOIM. The cable path, conduit, may be included in the contract.

Table 2-1
Funding for Information System Support Components of Real Property Projects—Continued

⁴ Communications cables are not a funded project cost and are funded by the user or the DOIM. Cables will—(a) consist of recognized TIA/EIA-568-B horizontal and backbone transmission media, (b) support the voice, data, and building management systems, and (c) be installed within the BCS cable paths. Application-specific electrical components will not be installed as part of the cable path. Cables can be included as part of the repair contract but funding will not be accounted for as SRM.

⁵ Application-specific electrical components will be attached externally to the TIA/EIA-568-B cable. Typical items include impedance matching devices, connector/jack adapters, and so forth. These items are EIP and not a funded project cost. These items may be included in the repair contract or by a separate contract.

⁶ Application-specific electrical components exclude LAN, MAN, and WAN devices such as servers, routers, data switches, edge devices, modems and other service-specific attached devices. These items are EIP and not a funded project cost. These items may be included in the repair contract or by a separate contract.

⁷ Central office equipment is an unfunded project cost; it is funded by the user or the DOIM and approved as equipment. Central office equipment provides circuit-switched voice service IAW the current U.S. Army Installation Information Infrastructure Architecture (I3A) for users authorized telephone service IAW AR 25-1. This equipment includes DCOs, RSUs, RSCs, and when appropriate, EPABXs and key systems and VoIP equipment. Any procured equipment will be compliant/compatible with the installation's current voice switching architecture. Equipment not compliant/compatible with the installation's current voice switching architecture is the responsibility of the proponent to procure and install. VoIP systems must not be installed using ISC funds on posts that do not have currently active, DOIM operated and JTIC approved VoIP systems.

⁸ Telephone instrument, common user-includes POTS (plain old telephone system) dual-tone multi-frequency (DTMF) series 2500 type, explosion-proof, weatherproof, and multi-line telephone sets. Common user telephone provides basic telephone service in support of official use, safety, courtesy and convenience. These items are EIP and not a funded project cost. These items may be included in the repair contract or by a separate contract.

⁹ Telephone instruments, all-other-include call directors, key systems unique sets, integrated voice/digital terminals, ISDN sets, secure terminal/instruments systems, and so forth. Non-common user telephones provide features in excess of that considered essential for basic service; these items are EIP and not a funded project cost. These items may be included in the repair contract or by a separate contract.

¹⁰ For AFH, BEQ/BOQ and enlisted barracks cables and conduits for TV and telephone service are a funded project cost that are part of the project approved cost. For AFH— provide TIA/EIA-570 compliant telephone outlets in the kitchen, dining room, family room, living room, and all bedrooms. In addition, cable TV outlets will be installed, as a minimum, in the living room, family room and all bedrooms. BCS conduit is not required in AFH unless the project consists of multi-family or apartment style units. In those cases, install BCS conduit from the building utility entrance point to each unit/apartment, but not throughout the unit (that is, a minimal amount of conduit). For BEQ/BOQ: provide TIA/EIA-570 compliant telephone outlets and cable TV outlets in the living room and bedrooms (if separate rooms). For permanent party troop billets, (excluding billets associated with basic entry training): provide a single connector TIA/EIA-568-B compliant telephone outlet and a single connector cable TV outlets for each potential sleeping area. Service is provided by ARMP (Army Recreational Machine Program), an MWR program.

¹¹ For student troop billets: a dual connector TIA/EIA-568-B compliant telephone outlet may be substituted for the single connector telephone outlet to support in-billet training LAN services when specifically required by the appropriate training manager. For AFH— telephone service will be installed, operated, and maintained by the local commercial carrier, IAW existing installation procedures and protocol, as is done for other local, non-military housing. Class B (unofficial telephone service) may be provided using government facilities per AR 25-1 when qualified commercial telephone providers are not available. For BOQ/BEQ: telephone infrastructure will be project funded while telephone service will be installed, operated, and maintained by the local commercial carrier, IAW existing installation procedures and protocol, as is done for other local, non-military housing. Class B (unofficial telephone service) may be provided using government facilities per AR 25-1 when qualified commercial telephone providers are not available. For permanent party troop billets (excluding billets associated with basic entry training): telephone service will be installed, operated, and maintained by the local commercial carrier, IAW existing installation procedures and protocol, as is done for other local, non-military housing. Class B (unofficial telephone service) may be provided using government facilities per AR 25-1 when qualified commercial telephone providers are not available. AR 25-1 assigns AAFES (this will be changed to ARMP) as the preferred local commercial carrier. For student troop billets: telephone service will be installed, operated, and maintained by the local commercial carrier, IAW existing installation procedures and protocol, as is done for other local, non-military housing. Class B (unofficial telephone service) may be provided using government facilities per AR 25-1 when qualified commercial telephone providers are not available.

¹² DPW will ensure that Repair projects will support to the common user LAN, that is, the NIPR data network. The project funded cost will provide conduits and cable trays. All other items are an unfunded project cost. The DOIM must be involved in the planning and design of all facilities that contain communications equipment. The DOIM will ensure the undertaking will: (a) provide the data interface between the facility/separate functional area and the existing installation data network. (b) provide common user level data switches linking all satellite TERs back to the main TER. (c) provide a data switch to interconnect facilities in a multiple building project. (d) provide a network management solution to manage the data system assets. Typical devices include I3A compliant data switches, edge devices, and when appropriate, xDSL modems for smaller facilities.

¹³ The outside cable plant includes the cable support infrastructure (underground, direct buried and/aerial) and the installed communications cables required to interconnect the MILCON project with its voice, data and video service points. Spare cable paths will be routinely engineered as part of all MILCON. Line equipment may be required to complete the cable path; representative line equipment includes wired-in equipment such as voice multiplexers and SONET terminals. Line equipment does not include LAN, CAN, MAN, and WAN devices or other user application-specific electrical components.

¹⁴ For Medical facilities that use a commercial CATV signal as the source of entertainment channels, the complete head-end, distribution system, and connection to the CATV source shall be CONF.

¹⁵ Planning for the outside cable plant will be included in all major repair projects. If the repair undertaking will result in increases in support that can not be supported by the existing cable infrastructure, the increase in cable size may be justified by the project. In UPH projects the cable plant may be included in the project. This includes the cable support infrastructure (underground, direct buried and/aerial) and the installed communications cables required to interconnect the repair project with its voice, data and video service points. Spare cable paths will be routinely engineered as part of all MILCON or repair projects. Line equipment may be required to complete the cable path (unfunded project cost); representative line equipment includes wired-in equipment such as voice multiplexers and SONET terminals. Line equipment does not include LAN, CAN, MAN, and WAN devices or other user application-specific electrical components.

¹⁶ All costs associated with Government-owned, -operated, and -maintained entertainment television systems are unfunded project costs (excluding UPH and AFH systems) this includes commercial cable television systems, whose services are procured on a subscriber basis, to include all system components and associated connection charges.

¹⁷ For Army hospitals, fixed and portable radio paging equipment are an unfunded project cost.

¹⁸ Cellular telephone sets are considered personal property; their procurement, activation, and any monthly recurring service charges are the responsibility of the proponent/user. If USAISEC-FDED determines that it is advantageous to the government to use cellular telephones as a substitute for wired-in telephone service, USAISEC-FDED will fund for the procurement and activation of the cellular telephone instruments with basic service. The proponent/user remains responsible for any monthly recurring service charges. In a repair undertaking, these costs are an unfunded project cost.

Table 2-1
Funding for Information System Support Components of Real Property Projects—Continued

¹⁹ Testing and diagnostic equipment and special tools necessary to operate and maintain systems and equipment that are both procured and installed with construction funds, and remain within the facility in which the construction funded systems and equipment are fixed, may be funded with construction funds. For example, diagnostic equipment for EMCS hardware or special wrenches required for a specific make and model diesel engine, for which no generic equipment or tool exists for use with other makes and models of systems or equipment. These items are EIP and are an unfunded project cost.

²⁰ Trunk radio sets are considered personal property; their procurement, activation, and any monthly recurring service charges are the responsibility of the proponent/user. If USAISEC–FDED determines that it is advantageous to the government to use trunk radio sets as a substitute for wired-in telephone service, USAISCE–FDED will fund the procurement and activation of the trunk radio sets with basic service. The proponent/user remains responsible for any monthly recurring service charges. In a repair undertaking, these costs are an unfunded project cost.

²¹ Hospital facilities must support the use of hand held Trunk Radio Transceivers for Post EOC and Disaster Preparedness teams. Therefore, radio frequency (RF) repeating equipment will be installed in the hospital to insure adequate RF transmission into and out of the hospital is provided to ensure operation of these units. In a repair undertaking, these costs are an unfunded project cost.

²² Funding for SIPRNET Encryption Devices and SIPRNET Data Switches are Project Year dependent. PY 2006–2007 are Proponent funded, and PY 2008 and beyond is ISC funded as per CIO/G6 guidance. Funding for SIPRNET Encryption Device is forwarded to DOIM for disbursement by the COMSEC custodian, or the DOIM designated cryptographic hand receipt holder. Planning is needed to ensure these critical items are programmed for major repair undertakings. Look ahead and have the DOIM provide a request for this equipment well ahead of the repair project execution.

²³ Specific information on the implementation of SIPRNET infrastructure is defined in the USAISEC TG for the integration of SIPRNET. Local DAA or Post mandates that exceed the minimum SIPRNET Technical Guide requirements are to be proponent funded.

²⁴ Wireless LANs must be considered on a case-by-case basis, and are proponent funded. WLAN must be centrally managed by DOIM equipment. WLAN must not be installed on Posts that do not have a currently active, DOIM operated, USAISEC–TIC and DAA approved WLAN network. Proponents will not receive a wireless and wired solution for a facility. Only one solution will be provided. Note that QoS standards have not been developed nor implemented for VoIP over wireless. The proponent must consider this when mandating a wireless solution.

²⁵ Thin client must be considered on a case-by-case basis, and is proponent funded. Thin Client Hardware and software must not be installed on Posts that do not have a currently active, DOIM operated and thin client network. Thin client will use the same BCS.

2-9. Work classification - funded and unfunded project costs

a. Funded project costs. Appropriations that finance a project will be used to reimburse other appropriations for all funded costs initially financed by such other appropriations. Funded project costs are those that are directly related to the real property facility such as, the labor, materials, supplies, demolition and site preparation expenses incurred in the construction and repair of the facility. For example, a DPW starts a project by stockpiling materials for a project using research, development, test, and evaluation (RDT&E) funds. It is determined during the initial phases of construction that O&M funds are a more appropriate source for the project. This means that the RTD&E funds expended on the project must be reimbursed by O&M funds. There are several types of funds that can be used to fund real property projects. Some Garrisons have access to several funding sources. Part of the Work Classification process is to determine which source of funds is appropriate for different classes of work. Funded project costs include—

(1) Government-owned real property, materials, supplies, services, rental trailers and buildings, utilities, or items applicable to the project.

(2) Installed capital equipment (that are an integral part of the building) and installed building equipment.

(3) Transportation costs applicable to materials, supplies, real property items, installed equipment, and government owned equipment.

(4) Civilian labor costs including labor costs of foreign national civilians, but not including civilian prisoner labor. Costs of foreign military troops such as Korean Augmentation to the U.S. Army will be treated as unfunded costs. Costs for labor provided by foreign quasi-military organizations that are paid from the Operation and Maintenance, Army (OMA) appropriation, such as the Korean Service Corps, are funded costs.

(5) Supervision and inspection costs.

(6) Troop travel and per diem directly related to the project.

(7) Costs for maintenance and operation of government-owned equipment (including organic troop unit equipment) and rental cost for non-government equipment.

(8) Costs for preparation of operation and maintenance manuals for installed systems.

(9) Demolition and site preparation costs.

(10) The cost of installing EIP in new facilities.

(11) Costs of mitigation identified in environmental documentation completed in accordance with 32 CFR 651.

(12) Actual funds expended overseas when the funds used do not have a fluctuation account.

b. Unfunded project costs. Unfunded project costs are items or funds which would have been expensed regardless of project execution and in most cases have application to many undertakings. Unfunded project costs are limited to the following:

(1) Costs financed from military personnel appropriations.

(2) Depreciation of government-owned equipment (except depreciation cost of a plant owned by working capital funds).

(3) Materials, supplies, and items of installed equipment that have been obtained from other U.S. Government agencies or foreign governments without reimbursement. When such items become available as excess distributions

from other Government agencies, their value will be at Federal Supply Catalog prices or estimated replacement value according to Defense Finance and Accounting Service-Indianapolis (DFAS-IN) 37-1 regulation.

- (4) Costs of real property items relocated on the same garrison except transportation and relocation costs.
- (5) Planning, engineering, and design costs before and during construction. This includes surveys and studies conducted during the developmental stages of an undertaking. The design cost in a design-build repair project are unfunded and will not be shown with funded costs on the DD Form 1391.
- (6) Costs for licenses and permits required by state or local laws for pollution abatement, for transportation, or by Status of Forces Agreements overseas.
- (7) Material costs of EIP items and the installation costs for repair projects.
- (8) Civilian and military prisoner labor.
- (9) Public works activity overhead costs such as utilities, supplies, equipment, and supervisors (second-line and above).
- (10) Funds expended from a Centrally Managed Fluctuation account.
- (11) The DPW costs of site preparation for NAF projects which provides a clean site.

Chapter 3

Project Documentation

3-1. General

a. The examples in paragraph 2-9 are useful for determining whether similar or related decisions can be supported. It is the responsibility of the facility engineer to support decisions with adequate records. The project file should contain dated documents with memoranda to support the basis of each judgment decision. Care should always be taken in use of language. If a worn-out sink is being replaced, the work order should so indicate. It should not state, "Install sink in mess hall #1." The word "install" implies new work (construction). Further, at the time of inception all work with an estimated cost over \$15,000 must have a documented record of what will be considered as Capital Improvements. This decision will be used as a guide but may be altered during execution by the Project Manager.

b. The words "upgrade," "renovate" and "rehabilitate" are misleading and generally imply construction; eliminate this terminology in justifying repair projects. Also, state whether the work is repair or replacement, not both. The best policy on any project is to spell-out as much detail as is necessary to provide a logical account of the project's history.

c. Recent Army Audit Agency audits have criticized DPWs where the record was not clear that various components had failed or were failing and in need of repair. A clear description that will provide an audit trail is necessary. The use of photographs to support the record is recommended.

d. While projects are in progress or near completion, the facility engineer is responsible for exercising control over costs to insure that the project limitations are not exceeded. The engineer will use the appropriate Integrated Facilities System (IFS) reports to monitor the project (for example, Special Projects Report), and under Integrated Facilities System-Micro/Mini (IFS-M) will use information obtained from the Job Cost Accounting system. Project costs are entered and accumulated daily and should be tracked closely at some point near the approval limitation, normally 80 percent. The percentage depends upon the size of the project in dollars and the amount of costs being incurred daily. See table 3-1 for an example of a blotter record when costs are not automated.

e. If it appears that the local approval authority will be exceeded, an immediate request for approval with supporting documentation will be forwarded to a higher authority. The work should be halted to prevent exceeding the approved cost limitation. If project costs are being kept manually, it is imperative that costs be reported at regular intervals, daily or weekly, depending on the established threshold limitation. Under IFS, cost generating elements (labor, supplies, equipment) are automatically identified with a particular project, but with manual records these elements must be identified and reliable means of capturing their costs must be established.

f. All projects which exceed local Garrison approval authority will use DD Form 1391 and Memorandum as the appropriate approval mechanism. The DD Form 1391 Processor is located on the PAX system. The PAX system is now centrally funded and users need not pay to access the system. A request for a user ID and password can be sent to the PAX support help desk at e-mail address PAXSPT-Huntsville@hnd01.usace.army.mil. Forms are automatically routed to the correct approval or reviewing authority. (For U.S. Army Reserve projects, use the ENBOSS system for developing the DD Form 1391.)

(1) As a minimum TAB A of the DD Form 1391 will be used to document project scope, costs, and to justify the repair. Any associated construction will be included in section 9 under the Associated Construction Cost and a brief description of the construction will be included in the paragraph titled Associated Project Scope in section 11.

(2) Once the DD Form 1391 is prepared and submitted, a memorandum sent to the next level of authority is required to initiate a review for approval. Approvals will be granted on a Memorandum addressed to the requestor for his official project files. As a minimum the approvals will state the approved amount, the Project Number assigned by the 1391 Processor, the date of the 1391, and the revision date of the approved document.

**Table 3-1
Blotter Record**

Date	Item	Funded	Unfunded	Total Funded	Total Unfunded
Summary				\$230,000	\$20,000
Nov 3-7	Plumbing Labor	\$800		\$230,800	
Nov 5	Supplies	\$500		\$231,300	
Nov 14	Military Labor		\$2,400		\$22,400
Nov 14	Equipment Rental	\$1,100		\$232,400	
Nov 14	Equipment Depreciation		\$300		\$22,700

Notes:

¹ PROJECT: Alteration of building 1928.

² APPROVED AMOUNT: Funded Cost \$250,000; Unfunded Cost \$50,000.

3-2. Establishment of official project files

a. The project file is a complete historical record of the project from inception to completion. Correspondence and other documentation pertinent to the project will be included in the project files at all appropriate levels. This will include work requests, project approval documents, inspection reports, and memorandum for record pertaining to decisions resulting from discussions, meetings, and telephone conversations.

(1) Each undertaking will be approved on a DA Form 4283 (Facilities Engineering Work Request). The minimum requirement is a form that provides approval for design. If the DA Form 4283 is approved for execution, it will clearly describe the work to be accomplished in each classification of work that has an estimated funded cost on the form. The maintenance and repair will be considered as one project and the construction a separate project. Both projects can be included on a single contract provided costs can be separated after contract completion.

(2) If the approval limit for the installation is exceeded then a DD Form 1391 will be used to obtain an approval. Some forms will have approvals transmitted electronically with execution numbers assigned and some will be approved by memorandum which state the revision date of the document approved and the amount approved. The body of the DD Form 1391 contains five paragraphs, Project Description, Project justification, Additional Information, Impact if not funded, and Associated Project Scope.

(a) The Project Description should state what is being accomplished. State a brief description of what will be contained in the contract. Limit the referrals to who is going to occupy the facility.

(b) The Project Justification describes the condition of the components, systems and the facility in general. The faults and defects in the physical condition of the facility stand as the primary justification for a repair project. When a substantial amount of the components and systems that make up a facility have failed or are failing the facility should be considered failing and a general repair is in order. State that this condition exists.

(c) Additional Information contains any information that would impact the decision to accomplish the repair. The age of the building, its historic status, and its effect on the environment should be briefly discussed if it has a bearing on the repair. In addition, there are some mandatory statements that need to be placed in this block.

1. This project is consistent with force structure plans.
2. The repair of this facility is more cost effective than replacement. The estimated replacement cost of the facility is _____. The repair cost to replacement ratio is approximately ____ percent.
3. The project is an appropriate use of operation and maintenance funds.
4. Asbestos, lead-based paint, bio-hazards or other hazardous materials, if found, will be handled, stored, and disposed of in accordance with current laws and regulations.
5. The facility will meet the Standard of "Substantial Life-Safety" upon completion of the project.
6. This project has been coordinated with the installation physical security plan and all physical security measures are included. Alternative methods of meeting this requirement have been explored during project development.
7. All required anti-terrorism/force protection measures are included.
8. Sustainable principles will be incorporated into the design, development and construction of the project in accordance with EO 13423 and other applicable laws and executive orders.
9. The Design is expected to cost _____.
10. Communications and Information Management equipment costs (should use TAB F software to complete: see DOIM).

- a. Section I Primary Facility, Inside the 5 Foot Line - Installed Equipment \$_____.
- b. Section II Primary Facility, Inside the 5 Foot Line - Equipment In Place \$_____.
- c. Section III Supporting Facilities, Outside the 5 Foot Line - Installed Equipment \$_____.
- d. Section IV Supporting Facilities, Outside the 5 Foot Line - Equipment In Place \$_____.
- 11. Unfunded furniture cost is estimated at _____.
- 12. Other Equipment-In-Place cost is estimated at _____.
- 13. _____ in SRM was spent on M&R for this facility in FY____ and _____ in SRM was spent on M&R for this facility in FY_____.
- 14. This facility had an Installation Status Report (ISR) rating of _____ last year. Upon completion of the project, it will have an ISR rating of _____.
- 15. The Building is CAT CODE _____. The CAT CODE is not changing and has not been changed within the past two years. This is not a conversion.
 - b. A project folder will be established by the DPW for each real property facility project costing over \$15,000.
 - c. For single undertakings involving both construction and maintenance and repair, only one project folder will be established.
 - d. Each folder will represent a complete historical record of a project, from inception to filing of the actual costs incurred. It must be located in one place to facilitate review and inspection.
 - e. As a minimum, the project file should contain the following documentation for each project—
 - (1) For maintenance, repair, and construction projects:
 - (a) Initial estimate, identification of estimator, justification for the project, and related correspondence.
 - (b) Requests for approval to higher authority when applicable.
 - (c) Signed approval documents from higher authority to include letters, estimates, specifications and plans, and approved DD Form 1391 as applicable.
 - (d) Sets of revised plans and estimates, if changes to these documents were required by the approving authority.
 - (e) Supporting auditable list of materials, such as the printed list of issues from the Future Extraction Software System (FESS). The folder may contain more than one work order if it is desired to control each classification of work.
 - (f) Job phase calculation sheets and other documentation used in estimating the project, to include identification of funded and unfunded costs, estimated total costs, calculations to show how costs were developed, identification of crafts involved, and source documents used for the estimates.
 - (g) On projects approaching regulatory or statutory limitations, a day-to-day blotter record showing all actual costs incurred to date. Maintenance and analysis of this day-to-day blotter record should preclude the potential violation of the Anti-Deficiency Act.
 - (2) In addition to the above requirements, folders for construction type projects should also include—
 - (a) A document signed by the requesting agency indicating when the need for the project became known, when the work must be completed, and what the consequences would be if the project were not completed by the specified time.
 - (b) A notation that the Inventory of Military Real Property has been changed to include the sum of all the recordable facilities engineering costs of the project.
 - (c) A notation that the Installation Master Plan has been amended and approved by the IMCOM in accordance with AR 210–20.
 - (3) Other documentation required by AR 420–1, chapter 4, or information deemed pertinent to the history of the project should also be included.
 - f. The DPW is responsible for ensuring that Capital Improvements are properly documented. Each project costing over \$25,000 requires a statement on the work request that states as a minimum: “\$ _____ of this project is considered a Capital Improvement for real property accounting purposes.” The following are examples of what must be considered a Capital Improvement. (See DA Pam 405–45 for more information on capitalization.)
 - (1) Repair can allow the inclusion of components and systems to bring a failing facility up to code. These components and systems must be capitalized.
 - (a) The costs of including a fire suppression system in a building that did not previously have one.
 - (b) The cost of changing a local fire alarm system to a fire alarm system that is supervised at a central location.
 - (c) The inclusion of a mass notification system in a facility that did not previously have one.
 - (2) Repair also allows the inclusion of components and systems that bring a failing facility up to current standards. These components and systems must also be capitalized.
 - (a) Adding an air conditioning system to a facility where one did not previously exist.
 - (b) The cost of making a facility accessible.
 - (c) The cost associated with making a space useable such as demolition of existing walls, or the addition of walls in a different location.

3-3. Integrated undertaking

When construction and maintenance and repair are accomplished simultaneously as an integral undertaking, the construction should be treated as a separate project, and engineering estimates will be used to prorate costs applicable to the construction portion.

3-4. Facility replacement value

a. One critical element requiring careful analysis on all maintenance and repair projects is the determination of the percentage of total repair cost or repair plus alteration cost for a combined undertaking to the replacement value for a new facility. All undertakings with a combined cost of maintenance and repair and construction over \$750,000 must have a repair to replacement value calculated and placed in the official project files.

b. The replacement value of the affected facility generally being used is for a facility of the same type (permanent, semipermanent, or temporary) and identical size that is, same square footage at current construction standards and unit costs contained in UFC 3-701-09, DOD Facilities Pricing Guide, with applicable adjustments. These publications are revised nearly every year and located in PAX Newsletter 3.2.2. One should read carefully to see which costs are included and which costs are not included. For example, costs such as supervision, inspection and overhead and costs associated with AT/FP or SDD/EPact05 may not be addressed in the costs provided. This cost comparison is to be used to determine whether the project exceeds 50 percent of the replacement value and must be submitted to DA for approval, in accordance with AR 420-1, chapter 2. Note: that in determining replacement value, costs of demolition, asbestos removal, site work, and historical considerations may be included if applicable. In addition, support facilities being repaired as part of the undertaking must be considered when calculating the repair to replacement ratio. This would include work such as parking lot repair and sidewalk repair.

c. UFC 3-701-09 provides guidance and procedures for computing the replacement facility value. The following supplementation guidance is provided for use in conjunction with UFC 3-701-09 to ensure a uniform application when computing the replacement facility cost estimate.

(1) The replacement facility must be of the same square footage at current construction standards. If current limitations dictate otherwise (such as occurs with the oversized family housing units), the replacement value must be based on the current authorized square footage. The primary facility cost will be extracted from the Programming Administration and Execution System (PAX) newsletter 3.2.2, FYXX Unit Cost Value Guidance on the PAX computer system.

(2) Support cost will be based on the existing conditions at the site. Site cost can include utility work, paving, landscaping, clearing and site preparation and any other work which is done outside the building's five foot line.

(3) The use of standard supervision, inspection, and overhead (SIOH) and Contingency factors should be added.

(4) Additional cost may be added for demolition and environmental restoration related to the siting of the project and any historical documentation cost.

(5) Additional cost may also be added for temporary accommodations during construction.

(6) By definition, the replacement value of a World War II (WWII) wood temporary building is \$100/SF and 50 percent is \$50/(SF).

(7) Special consideration should be give historic facilities. Costs calculated in UFC 3-701-09 use modern construction techniques and materials. If the facility is of such historic value that it must be replaced in kind, calculate the replacement values accordingly.

3-5. Safeguarding information

All documents reflecting detailed cost of work estimates (as opposed to engineering appraisals) of a project, prior to contract award, must be initially marked "FOR OFFICIAL USE ONLY."

Appendix A References

Section I

Required Publications

The following publications are available on the APD Web site (<http://www.apd.army.mil>) unless otherwise stated. Executive Orders are available at the National Archives Web site (<http://www.archives.gov/federal-register/executive-orders/disposition.html>). Public Laws numbered from 101 (101st Congress) onward are available at the Library of Congress Web site (<http://www.thomas.loc.gov/bss/>) and Public Laws numbered 100 and below are available from any Federal Depository Library (locations identified at the GPO Access Services Web site (<http://www.gpoaccess.gov/libraries.html>)). Unified Facilities Criteria documents are available at the Whole Building Design Guide Web site (<http://www.dod.wbdg.org/>). Volumes of the U.S. Code and the Code of Federal Regulations are available at the Government Printing Office Access Services Web site (<http://www.gpoaccess.gov/cfr/index.html>). DD forms are available from the OSD Web site (<http://www.dtic.mil/whs/directives/infomgt/forms/formsprogram.htm>).

AR 25-1

Army Knowledge Management and Information Technology (Cited in para 2-1.)

AR 37-60

Prices for Material and Services (Cited in para B-1.)

AR 40-61

Medical Logistics Policies (Cited in para B-1.)

AR 50-5

Nuclear Surety (Cited in para 2-8j(s).)

AR 50-6

Chemical Surety (Cited in para 2-8j(s).)

AR 190-54

Security of Nuclear Reactors and Special Nuclear Materials (Cited in para 2-8j(s).)

AR 200-1

Environmental Protection and Enhancement (Cited in paras 1-7r(8), 2-7b.)

AR 210-20

Real Property Master Planning for Army Installations (Cited in para 3-2e(2)(c).)

AR 215-1

Military Morale, Welfare, and Recreation Programs and Activities and Nonappropriated Fund Instrumentalities (Cited in para 1-7n(6).)

AR 420-1

Army Facilities Management (Cited in paras 1-1, 1-4, 1-5a, 1-6c(6), 1-7, 1-7b, 1-7c, 1-7n(7), 1-7n(11), 2-1, 2-4b, 2-5a(1), 2-7c(1)(a), 3-2e(3), 3-4a.)

AR 415-28

Real Property Category Codes (Cited in para 1-7j.)

AR 710-2

Supply Policy Below The National Level (Cited in para 2-8b.)

AR 735-5

Policies and Procedures for Property Accountability (Cited in para Terms.)

DA Pam 405-45

Real Property Inventory Management (Cited in para 3-2f.)

DA Pam 415–28

Guide to Army Real Property Category Codes (Cited in para 1–7k.)

DFAS–IN 37–1 Regulation

Finance and Accounting Policy Implementation (Cited in para 1–5a.) (Available at <http://www.asafm.army.mil/budget/di/di.asp>.)

UFC 3–250–18FA

General Provisions and Geometric Design for Roads, Streets, Walks and Open Storage Areas (Cited in para 2–2a(2)(w).)

UFC 3–260–02

Pavement Design for Airfields (Cited in para 2–2a(2)(x).)

UFC 3–701–09

DOD Facilities Pricing Guide (Cited in paras 3–4b, 3–4c, table B-1.)

UFC 3–850–01

Telecommunications Building Cabling Systems Planning and Design (Cited in para 2–1.)

EO 12580

Superfund Implementation; as amended (Cited in para 2–7b.)

EO 13423

Strengthening Federal Environmental, Energy, and Transportation Management (Cited in para 3–2a(2)(c)8.)

PL 91–190

National Environmental Policy Act (Cited in para 1–7r(8).)

PL 105–56

Department of Defense Appropriations Act (Cited in para 2–7b.)

32 CFR 651

Environmental Analysis of Army Actions (Cited in para 2–9a(11).)

40 CFR 300

National Oil Hazardous Substances Pollution Contingency Plan (Cited in para 2–7b.)

10 USC 2701

Environmental restoration program (Cited in para 2–7b.)

10 USC 2703

Environmental restoration accounts (Cited in para 2–7b.)

10 USC 2805

Unspecified minor construction (Cited in para 1–7c(5) and 1–7r(4).)

10 USC 2811

Repair of facilities (Cited in para 1–7c(5).)

31 USC 1341

Limitations on expending and obligating amounts (Cited in para 1–5b.)

31 USC 1349

Adverse personnel actions (Cited in para 1–5b.)

31 USC 1350

Criminal penalty (Cited in para 1–5b.)

31 USC 1518

Adverse personnel actions (Cited in para 1–5b.)

31 USC 1519

Criminal penalty (Cited in para 1–5b.)

42 USC 9601

Definitions (Cited in para 2–7b.)

Section II**Related Publications**

A related publication is a source of additional information. The user does not have to read it to understand this publication. The following publications are available on the APD Web site (<http://www.apd.army.mil>) unless otherwise stated.

AR 11–18

The Cost and Economic Analysis Program

AR 140–483

Army Reserve Land and Facilities Management

AR 405–80

Management of Title & Granting Use of Real Property

DA Pam 415–3

Economic Analysis: Description and Methods

DA Pam 420–1–3

Transportation Infrastructure and Dams

Section III**Prescribed Forms**

There are no entries in this section.

Section IV**Referenced Forms**

Except where otherwise indicated below, the following form is available as follows: DA Forms are available on the Army Publishing Directorate Web site (<http://www.apd.army.mil>).

DA Form 2028

Recommended Changes to Publications and Blank Forms

DA Form 4283

Facilities Engineering Work Request

DD Form 1391

FY _ Military Construction Project Data

Appendix B Tables

B-1. Steps in development of a project or projects table

See table B-1 for steps in deployment of a project or projects.

Table B-1 Steps in development of a project or projects	
STEP I - ESTABLISH PROJECTS BASED ON NEEDS	
STEP II - CLASSIFY ALL WORK	
Maintenance	AR 420-1, chapter 2, Management of Public Works Activities
Repair	AR 420-1, chapter 2, Management of Public Works Activities
Construction	AR 420-1, chapter 4, Army Military Construction and Nonappropriated-funded Construction Program Development and Execution; AR 420-1, chapter 3, Housing Management
STEP III - DETERMINE FUNDED & UNFUNDED PROJECT COSTS	
Cost Estimates	UFC 3-701-09
Equipment-in-place	AR 735-5; AR 420-1, chapter 4, Army Military Construction and Nonappropriated-funded Construction Program Development and Execution; AR 420-1, chapter 6, Facilities Engineering Materials, Equipment, and Relocatable Building Management; AR 40-61
Surplus materials	AR 37-60
STEP IV - FIND APPROVAL LEVEL (FUNDED COSTS)	
Construction	AR 420-1, chapter 4, Army Military Construction and Nonappropriated-funded Construction Program Development and Execution
Minor Construction	AR 420-1, chapter 4, Army Military Construction and Nonappropriated-funded Construction Program Development and Execution
Maintenance or Repair Army Family Housing projects	AR 420-1, chapter 2, Management of Public Works Activities AR 420-1, chapter 3, Housing Management

B-2. Outline of work classification table

See table B-2 for the outline of work classification.

Table B-2 Outline of work classification	
Existing Items or Component. (Buildings, road, roof shingles, electric lines, poles, sewer- line, pipe, manhole, and so on)	
a. Deteriorated by action of the elements or wear and tear in use	
(1) Work proposed will correct failed or failing conditions and result in meeting codes and standards;	
(a) Recurring type work to preserve or maintain	Maintenance
(b) Overhaul, reprocessing, or replacement of deteriorated constituent parts (but not total facility replacement)	Repair
(c) Correction of conditions for nonconformance to Army standards when done for economy concurrently with and incidental to (b) above	Repair
(d) Correction of conditions for nonconformance to Army standards not done concurrently with (b) above	Construction
(2) Work proposed will result in substantial improvements of items or components in quality (for example, capacity, area and so on, that are not in failing condition	Construction
(3) Work Proposed will completely replace a real property facility (a building, exterior heat distribution system and so on)	Construction
b. Not deteriorated by action of elements or wear and tear in use	
(1) Work proposed will not change functional purposes	Construction
(2) Work proposed will change functional purpose (change of category code)	Construction

Glossary

Section I Abbreviations

AAFES

Army and Air Force Exchange System

ABC

automated box conveyor

AC

air conditioning

ACM

asbestos containing material

ACOM

Army Command

ACSIM

Assistant Chief of Staff for Installation Management

ADP

automatic data processing

AFH

Army Family Housing

AFUE

annual fuel utilization efficiency

AM/FM

amplitude modulated/frequency modulated

APF

appropriated funds

AR

Army regulation

ARMP

Army Recreational Machine Program

ASCC

Army Service Component Command

AWP

annual work plan

AT/FP

antiterrorism/force protection

BCS

building telecommunication systems

BEQ

bachelor enlisted quarters

BOQ

bachelor officer quarters

BOS

base operations support

BMAR

backlog of maintenance and repair

CAN

campus area network

CATCD

category code

CATV

cable television

CCTV

closed-circuit television

CER

communications equipment room

CERCLA

Comprehensive Environmental Response, Compensation, and Liability Act

CIO/G-6

Chief Information Officer, G-6

COMSEC

communications security

CONF

construction funded

CONUS

continental United States

DA

Department of the Army

DAA

Designated Accreditation Authority

DAIM

Department of the Army Installation Management

DASA

Deputy Assistant Secretary of the Army

DASA(I&H)

Deputy Assistant Secretary of the Army (Installations and Housing)

DCO

Dial Central Office

DERP

Defense Environmental Restoration Program

DERA

Defense Environmental Restoration Account

DFAS-IN

Defense Accounting and Finance System - Indianapolis

DMAR

deferred maintenance and repair

DOD

Department of Defense

DOIM

Directorate of Information Management

DPW

Director/Directorate of Public Works

DRU

Direct Reporting Unit

DSM

demand side management

DTMF

dual-tone multi-frequency

ECIP

Energy Conservation Investment Program

EIA

Electronics Industry Association

EIP

equipment-in-place

EMCS

energy monitoring and control system

EO

Executive Order

EOC

emergency operations center

EPABX

electronic private automatic branch exchange

EPN

expansion port network

ER

environmental restoration

ER,A

environmental restoration, Army

ESPC

Energy Savings Performance Contracting

FDED

Fort Detrick Engineering Directorate

FESS

Feature Extraction Software System

FY

fiscal year

GCCS-A

Global Command and Control System - Army

HEMP

high altitude electromagnetic pulse

HVAC

heating, ventilation, and air conditioning

I3A

Installation Information Infrastructure Architecture

IBE

installed building equipment

ID

identification

IDG

Installation Design Guide

IDS

intrusion detection system

IFS

Integrated Facilities System

IFS-M

Integrated Facilities System-Micro/Mini

IS

information system

IM

information management

IMCOM

Installation Management Command

IPB

Installation Planning Board

ISC

Information Systems Command

ISDN

integrated services digital network

ISR

installation status report

JSIDS

Joint Services Imagery Digitizing System

JTIC

Joint Interoperability Test Command

LAN

local area network

LCC

life cycle cost

LED

light emitting diode

LHS

life, health, and safety

M&R

maintenance and repair

MAN

metropolitan area network

MATV

master antenna television

MCA

Military Construction, Army

MILCON

military construction

MWR

morale, welfare, and recreation

NAF

nonappropriated funds

NIPR

nonsecure internet protocol router

NIPRNET

nonsecure internet protocol router network

O&M

operations and maintenance

OCONUS

outside the continental United States

OMA

Operation and Maintenance, Army

OMAR

Operation and Maintenance, Army Reserve

OMARNG

Operation and Maintenance, Army National Guard

OPA

Other Procurement, Army

OSD

Office of the Secretary of Defense

OSP

outside cable plant

OSP

outside cable plant

PAVER

pavement engineered management system

PAX

Programming Administration and Execution System

PCI

pavement condition index

PDS

premises distribution system

POL

petroleum, oils, and lubricants

POTS

plain old telephone system

QOS

quality of service

RDT&E

research, development, test, and evaluation

RPF

real property facility

RSU

remote switching unit

RSC

remote switching center

SA

Secretary of the Army

SDD

sustainable design and development

SEER

seasonal energy efficiency rating

SIOH

Supervision, Inspection, and Overhead

SIPR

secure internet protocol router

SIPRNET

Secure Internet Protocol Router Network

SONET

synchronous optical network

SRM

sustainment, restoration, and modernization

SWMU

Solid Waste Management Unit

TER

telecommunications equipment room

TACAN

tactical air navigation

TCC

telecommunications center

TIA

Telecommunications Industry Association

TMDE

testing, measurement, and diagnostic equipment

TV

television

TVOR

terminal very high frequency omni-directional range

UMCS

utility monitoring and control system

UMCS/EMCS

utility/energy monitoring and control system

UMMCA

unspecified minor military construction

UPH

unaccompanied personnel housing

UPS

uninterrupted power supply

USACE

United States Army Corps of Engineers

USAISEC

U.S. Army Information Systems Engineering Command

USAISEC–FDED

United States Army Information Systems Engineering Command - Fort Detrick Engineering Directorate

USC

United States Code

VCR

video cassette recorder

VHF

very high frequency

VoIP

voice over internet protocol

WAN

wide area network

WIDS

wireless intrusion detection device

WLAN

wireless local area network

WWII

World War II

Section II**Terms****Addition-expansion-extension**

A change to a real property facility that adds to its overall external dimension.

Administrative approval

The functional review of a project for activity coding, essentiality, priority, mission requirements, programming, and functional and concept validation. Includes authorization to accomplish the project with appropriate technical approval.

Alteration

A change to interior or exterior facility arrangements to improve the use of the facility for its current purpose. This includes installed equipment made a part of the existing facility. Additions, expansions and extensions are not alterations.

Backlog of maintenance and repair

A fiscal year-end measurement of the maintenance and repair (M&R) of non-Family housing real property (not equipment) work which remains as a firm requirement and was not started during the fiscal year due to a lack of resources. To be eligible for consideration as Backlog of maintenance and repair (BMAR), real property M&R work requirements must have been included on an approved annual work plan (AWP) that includes unfunded requirements. When BMAR work is started by in-house personnel, or contract funds are obligated, this is considered to be work in process and is no longer BMAR. The BMAR provides only for the M&R of real property work needed to restore failed or failing facilities or components to an operative condition, or to a state that prevents further deterioration. The BMAR consists of work chargeable only to the M&R of a real property account. Deferred maintenance and repair (DMAR) has the same definition as BMAR except as it applies to family housing.

Construction

A military Construction project includes any construction, development, conversion, or extension of any kind carried out with respect to a military installation, whether to satisfy temporary or permanent requirements. It includes all military construction work, or any contribution authorized in 10 USC 169, necessary to produce a complete and usable facility or a complete and useable improvement to an existing facility (or to produce such portion of a complete and useable facility or improvement as is specifically authorized by law).

- a. The erection, installation, or assembly of a new facility either temporary or permanent.
- b. The addition, expansion, extension, alteration, conversion (in the sense of facility modification caused by a change in facility utilization), or complete replacement of an existing facility.
- c. The relocation of a facility from one installation to another.
- d. Installed building equipment made a part of the facility.
- e. Belated site preparation, excavation, filling, landscaping or other land improvements.
- f. Foundations, site work and utility work associated with the setup of relocatable buildings, in accordance with AR 420-1, chapter 6.

Conversion

The work required to adjust interior arrangements or other physical characteristics of an existing facility or part thereof

so that it may be used for a new purpose. This includes equipment installed in, and made a part of, the existing facility. A conversion always results in a change in facility CATCD. There are three types—

a. Facility structure—A change to a facility's interior or exterior arrangement so that the facility may be used for a new purpose. This includes changes to installed equipment made a part of the existing facility as appropriate to make the facility complete and useable.

b. Facility utilization—Permanent change in use from existing facility CATCD to another facility CATCD. Requires a change in CATCD on real property inventory.

c. Utility service—Removal of installed energy utilization (fuel-burning) equipment and installation of equipment to use a different energy source. Included are:

(1) Change in energy source in a repair project.

(2) Replacement of a boiler or furnace with a new unit that uses a different energy source.

(3) The expansion of an existing plant or system by the addition of boilers or heating equipment using an energy source other than that used in the plant or system being expanded. Selection of a different fuel from that being used in the existing plant must be economically supportable (life cycle cost (LCC) basis).

(4) A change in energy source to meet air pollution emission standards. The addition of dual-fuel capability to existing systems is not considered a conversion for purposes of this regulation.

Equipment-in-place

Personal property consisting of capital equipment and other equipment of a movable nature which has been fixed in place or attached to real property, but which may be severed or removed from buildings without destroying the usefulness of the structures. It does not include installed building equipment, a building or structure. Equipment-in-place is an unfunded project cost. By itself, it is never a separate repair, maintenance, or construction project (see AR 735-5 and AR 420-1).

Facility classes and construction category

A prescribed Armywide classification of a military facility defined in terms of the functional character of the facility (see AR 420-1 and DA Pam 415-28).

Funded project costs

The following are funded project costs definitions—

a. Government-owned real property, materials, supplies, services, rental trailers and buildings, utilities, or items applicable to the project.

b. Installed capital equipment (for Construction Projects) and installed building equipment. EIP is excluded from project costs for repair projects.

c. Transportation costs applicable to materials, supplies, real property items, installed building equipment, (IBE) and government owned equipment installed as IBE.

d. Civilian labor costs including labor costs of foreign national civilians, but not including civilian prisoner labor. Costs of foreign military troops such as Korean Augmentation to the U.S. Army will be treated as unfunded costs. Costs for labor provided by foreign quasi-military organizations that are paid from the Operation and Maintenance, Army (OMA) appropriation, such as the Korean Service Corps, are funded costs.

e. Supervision and inspection costs.

f. Troop travel and per diem directly related to the project.

g. Costs for maintenance and operation of government-owned equipment (including organic troop unit equipment) and rental cost for non-government equipment. These costs are expensed at a reasonable rate established locally and does not include the repair costs of government-owned equipment broken on the project site.

h. Costs for preparation of operation and maintenance manuals for installed systems.

i. Demolition unless it is associated with previously established garrison plans and the cost of site preparation except for NAF projects which require a clean site down to 6 inches prior to starting a project.

j. The cost of installing equipment in place in MCA funded new facilities.

k. Costs of mitigation identified in environmental documentation completed in accordance with 32 CFR 651.

l. Actual funds expended on cost when the funds used do not have a fluctuation account.

Incrementation

The splitting of a project into separate parts where—

a. It is done solely to reduce costs below an approval threshold or the minor construction ceiling, or

b. Each part is not in itself complete and usable, or

c. The total project is not complete until all parts are complete.

Installation

A fixed location together with its land, buildings, structures, utilities, and improvements controlled and used by Army elements.

Installed building equipment

Installed building equipment (real property) are items that are affixed or built into the facility and become an integral part of the facility.

Master plan

The master plan for an established installation is an integrated series of documents which presents in graphic, narrative and tabular form the present composition of the installation and the plan for its orderly and comprehensive development to perform its various missions in the most efficient and economical manner over a 20-year period (see AR 210–20).

Models

Models, simulations, and replicas used by Army Laboratories for conducting tests are equipment-in-place (not real property). The models, simulations, or replicas may be part scale models, full scale, or exact replicas. They are usually funded with RDT&E funds. The models, simulations, and replicas are a unique, integral component of the tests being conducted, as opposed to a facility in which tests are being conducted, which would be a real property facility. The maintenance and repair of these test models, simulations, and replicas, or test sites, and demolition after they are determined to no longer be needed, and any utility cost associated with the tests are funded by the testing organization. A test site is the area upon which a test is conducted. It may be part of the testing process and not just where a test is being conducted. An example of a test site would be a test road or test building used for testing blast mitigation and damage analysis. A road used for testing new vehicles is not a test site in the sense of a model. Utilities should be metered by the garrison and expenses charged against the organization that uses them.

Real property facility

For work classification purposes, a separate and individual building, structure, utility system, or other real property improvement identifiable in the three-digit CATCD listed in AR 420–1. A real property facility will be assigned only one 3–digit CATCD based on the primary construction CATCD being used (see AR 420–1).

Relocatable buildings

A building designed for the specific purpose of being readily moved, erected, disassembled, stored, and reused without structural damage and a minimum of refurbishment. The term includes fully assembled, mobile (with axles) structures; fully assembled, stationary (with skids) structures; factory preassembled buildings; and modular offices, classrooms, and similar units to be used outdoors. Specifically excluded from this definition are building types and forms, provided as an integral part of a mobile equipment item, which are incidental portions of such equipment components, such as communication vans or trailers. A relocatable building is defined as—

a. An arrangement of components and systems designed to be transported over public roads with a minimum of assembly upon arrival and a minimum of disassembly for relocation. A relocatable building is designed to be moved and reassembled without major damage to floor, roof, walls, or other significant structural modification.

b. The costs for disassembly, repackaging, any exterior refinishing (for example, brick facade, and so on) and any interior work (for example, electrical systems, fire suppression systems, walls or ceilings, and so on) including labor applied to the building after site delivery to make the relocatable building useable, and non-recoverable building components, including foundations, may not exceed 20 percent of the purchase price of the relocatable building. (Foundations include blacking, footings, bearing plates, ring walls, and concrete slabs. When concrete slabs are used as relocatable building foundations or floors the entire cost of the slab will be included in the foundation cost.) Non-recoverable building components are components that cannot be used again in the reassembly of the subject building.

c. The relocatable building may be used for no more than 3 years, unless DASA(I&H) approves a longer period of use.

Relocation

A project for movement of a building or structure from one site to another. The item may be moved intact or disassembled and later reassembled. This includes connection of new utility lines and excludes relocation of roads, pavements, or airstrips. Relocation of two or more facilities resulting in a single facility will be considered a single project.

Replicas

See definition for “models.”

Simulations

See definition for “models.”

Temporary World War II buildings

All temporary wood buildings similar to those built for troop mobilization before, during and after WWII.

Unfunded project costs

The following are unfunded costs definitions:

- a.* Costs financed from military personnel appropriations.
- b.* Depreciation of Government-owned equipment (except depreciation cost of a plant owned by working capital funds).
- c.* Materials, supplies, and items of installed equipment that have been obtained from other U.S. Government agencies or foreign governments without reimbursement. When such items become available as excess distributions from other Government agencies, their value will be at Federal Supply Catalog prices or estimated replacement value according to Defense Finance and Accounting Service-Indianapolis (DFAS-IN) 37-1 regulation.
- d.* Costs of real property items relocated on the same garrison. The transportation and relocation costs are a funded project cost.
- e.* Planning, engineering, and design costs before and during construction. This includes surveys and studies conducted during the developmental stages of projects. The design costs in a design-build repair project are unfunded and will not be shown with the funded project cost on the DD Form 1391.
- f.* Costs for licenses and permits required by state or local laws for pollution abatement or by Status of Forces Agreements overseas.
 - g.* The cost of equipment-in-place items and the cost of installation in existing facilities.
 - h.* Civilian and military prisoner labor.
 - i.* Public works activity overhead costs such as utilities, supplies, equipment, and supervisors (second-line and above).
 - j.* The DPW cost of site preparation for NAF projects which provides a clean site.
 - k.* Funds expended from a fluctuation account.

Section III**Special Abbreviations and Terms**

This section contains no entries.

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