# SECTION 2: DESIGN PROCEDURES, SUBMITTALS, AND DOCUMENTATION

2.1 General. This section defines the minimum OASD-HA (TMA/DMFO) requirements for design procedures, submittals, and documentation for a typical DoD Medical MILCON project. The Design Agent(s), in coordination with the using Military Service(s), may establish additional or lesser project specific requirements to meet specific project requirements. Submittal requirement variations for TMA/DMFO submissions must have written TMA/DMFO approval.

2.2 Design Goals.

2.2.1 Scope and Criteria. The goal during concept design (0 to 35%) development is to produce concept design documentation which meets project requirements and complies with criteria while establishing final project scope and an appropriate Programmed Amount (PA). Final scope and PA will be based on the approved concept submittal and validated cost estimate.

2.2.2 Design to Cost. The goal during the final design phase (35 to 100% design completion) is to produce a set of construction documents within the PA and/or DDA established at the concept design approval. If design requirements or refinements cause the estimated project cost to exceed the established PA, the Design Agent with participation of the using Military Department, will present cost adjustment or reduction alternatives to TMA/DMFO before completing the design documents.

2.2.3 Design Schedules.

2.2.3.1 Major Construction. For specified location projects, the TMA/DMFO goal is to be at concept (35%) design by 1 August of the year prior to planned budget execution. The Design Agent must request written approval from TMA/DMFO for late submission. The goal during final design is to complete design in time for a construction contract award during the first quarter of the program year of the project.

2.2.3.2 Unspecified Minor Construction. For Unspecified Minor Construction (DODI 4270.36, reference 2a), the TMA/DMFO goal is to have designs complete and projects ready for advertisement within 12 months of the date of the original TMA/DMFO Design Authorization Memorandum.

2.3 Design Sequence and Responsibilities.

2.3.1 2807 Action. TMA/RM issues the Section 2807, Title 10 USC (reference 2b) Congressional notification. Typically, the 2807 notification is conducted concurrently with the Design Authorization to select an Architect/Engineer. This notification is required for all projects where the funded cost of design is expected to exceed $500,000 (typically a projected construction cost of $3.5 million and up). (See Figure 2-1).

2.3.2 Design Funds. TMA/RMFO sub-allocates design funds to the Design Agents to achieve the authorized level of design in accordance with Figure 2-1.

2.3.3 Design Authorization. The TMA/DMFO issues the design authorizations to the Design Agent with an information copy to the using Military Department, as appropriate, to meet design and programming milestones in Figure 2-1. The Design Agent manages design in accordance

with established policies and procedures unless otherwise established in coordination with the user and TMA/DMFO during initial project acquisition strategy planning. Separate design authorization memoranda are normally issued for A-E Selection, Concept Design, and Final Design. However, separate or combined DA's may be issued for design-build projects. The Design Agents shall not pursue any level of design beyond that authorized in writing by TMA/RM.

**Figure 2-1**

**DoD MEDICAL MILITARY CONSTRUCTION TIMETABLE**

**FOR PLANNING, BUDGETING, AND EXECUTION OF A "TYPICAL" MILCON" PROJECT IN THE FY XX PROGRAM**

*THIS IS A MINIMUM TIMETABLE WHICH DOES NOT PRECLUDE EARLIER DESIGN STARTS FOR OCONUS, LARGE, OR COMPLEX PROJECTS OR TO MEET ALTERNATIVE EXECUTION STRATEGIES (E.G., DESIGN-BUILD, etc) DEVELOPED JOINTLY BY TMA, THE AGENT, AND THE SERVICE--CRITICAL MILESTONES ARE IN BOLDFACE*

| ACTIVITY | FY 02 | FY 03 | FY 04 |
|---|---|---|---|
| · Begin FYXX Planning Year | FEB 98 | FEB 99 | FEB 00 |
| · Begin FYXX EA Efforts (Services) | JUL 98 | JUL 99 | JUL 00 |
| **· FYXX EA Efforts Completed (Services) and Validated (DMFO)**<br>· Preliminary Scope Available (Services)<br>· Determine Execution Strategy (Services/Design Agent/DMFO)<br>. Submit Project Book to TMA | **APR 99** | **APR 00** | **APR 01** |
| **. Final PFD and DD Form 1391 validated by TMA**<br>**· Release Design Authorization (TMA)**<br>**· 2807 Action (TMA)**<br>**· Issue 35% Design Authorization (TMA)** | **MAY 99**<br><br><br>**OCT 99** | **MAY 00**<br><br><br>**OCT 00** | **MAY 01**<br><br><br>**OCT 01** |
| **· Best Concept Design Cost Estimate to TMA (Design Agent)** | **JUL 00** | **JUL 01** | **JUL 02** |
| **· 35% Design Submission to TMA (Design Agent)** | **AUG 00** | **JUL 01** | **JUL02** |
| · Scope and PA Approval and 35% Design Certified (TMA) | SEP 00 | AUG 01 | AUG 02 |
| · FYXX Budget Submitted to OSD(Comp) (TMA) | SEP 00 | SEP 01 | SEP 02 |
| **· Issue Final Design Authorization (TMA)** | **OCT 00** | **OCT 01** | **OCT 02** |
| **· FYXX MILCON Program to Congress (DOD)** | **JAN 01** | **JAN 02** | **JAN 03** |
| · Ready to Advertise (Design Agent) | SEP 01 | SEP02 | SEP03 |
| · FYXX Funds Available (TMA) | Nov 01 | NOV 02 | NOV 03 |

2.3.3.1 Exceptions. Some larger, more complex, or OCONUS projects may require a greater level of effort and more time to achieve the concept (35%) design milestone in Figure 2-1. When this occurs, the Design Agent, in coordination with the using military department, may request variations to the milestones in Figure 2-1 from TMA/DMFO.

2.3.4 Architect-Engineer (A-E) Selection Authorization. This is authorization to synopsize, slate, select an A-E and to negotiate, but not to award a contract, or proceed with design. Following authorization by TMA/RM, the Design Agent selects an A-E following their established procedures. The using Military Department may participate in A-E selection in accordance with established Memoranda of Understanding (MOUs). TMA/DMFO may also participate when so specified in the design authorization or when requested by the using Service and/or the Design Agent.

2.3.5 Concepts (0 to 35%) Design Authorization. This is authorization to award an A-E contract and to proceed to the concept (35%) level of design. This authorization will normally be issued when a project has a completed economic analysis, an approved Program For Design (PFD), the project is in the appropriate Program FY to start design action, and design funds are available. Normal presentation requirements to the TMA/DMFO are the S2 (preliminary concept design) for scope approval and the S4 (final concept/35% design)for cost approval. The Concept Design phase is complete when TMA/DMFO approves the S4 submittal, scope and cost estimate.

2.3.6 Concept (35%) Review and Certification. Following design agent presentation and certification of the concept submittal, TMA/DMFO certifies 35 percent design completion and project cost estimates by 15 September of the year prior to planned budget execution. The TMA/DMFO will also notify the Design Agent and the using Military Department if the Concept Design is approved, with or without comments, or disapproved, with comments.

2.3.7 Final Design Authorization. This is authorization to proceed from concept (35%) to final design. TMA/RM normally provides this authorization after the concept design is certified complete by the Design Agent and approved by the TMA/DMFO.

2.3.8 Design Coordination. Designs will be developed and managed with close coordination between the Design Agent, using Military Department representatives, and TMA/DMFO. TMA/DMFO will be advised of issues relating to scope, design or construction cost, criteria, policy and procedure, and/or schedule.

2.3.9 Design Changes. The Design Agent, in coordination with the using Military Department, will submit proposed concept design scope refinements and final design scope changes to TMA/DMFO for approval. After S2 approval by TMA/DMFO, all scope increases above the TMA/RM authorized amount will be submitted to TMA/DMFO for approval with the S4 presentation. After the concept design approval by TMA/DMFO, all scope increases in area and/or cost, or which add new functions will be submitted to TMA/DMFO for approval with justification prior to incorporation into the design. The Design Agent may decide whether or not design should be suspended pending TMA/DMFO action. Design changes which jeopardize the Design Agent's ability to meet the required design schedule will be avoided, unless necessary to meet criteria or mission requirements.

2.3.10 Stopped or Deferred Designs. Decisions to stop or defer designs will be made by TMA/DMFO, in coordination with the design agent and the using Service. Written direction will be provided to the Design Agent and the using Service.

2.4 Reporting Requirements. The Design Agents will establish design cost targets, maintain accurate records on design fees, schedules, construction cost, and other project data and report this information as required below.

2.4.1 Notification of Concept Design Start. The Design Agent will notify TMA/DMFO and using military department of the A-E's name, and the design schedule within seven calendar days after the A-E has been issued a Notice-To-Proceed (NTP) to concept (35%) design.

2.4.2 Notification of Final Design Start. The Design Agent will notify TMA/DMFO of the schedule for the Final Design within seven (7) calendar days after the A-E has been issued a NTP to design completion.

2.4.3 Quarterly Execution Reports. The Design Agent shall submit the following reports to TMA/DMFO and using Military Department Agencies no later than three working days prior to each Quarterly Execution meeting. Automated reports currently in use by the Design and Construction Agents which contain the requested information are acceptable substitutes for the report formats listed below: (Fig 2-3)

2.4.3.1 Design Funds Status Report. Provide in format of Figure 2-2 for all projects authorized for design by TMA/RM.

2.4.3.2 Project Status Report. Provide in format of Figure 2-3 for each project authorized for design by TMA/RM.

2.4.3.3 MILCON Funds Status Report. Provide a report in Figure 2-4 format for all appropriated projects.

2.5 Design-Build Projects. For the vast majority of projects, the traditional facilities acquisition method of firm-fixed-price design-bid-build will continue to be used. However, other non-traditional project delivery systems, to include design-build and third party contracting, should be considered when appropriate. With the concurrence of the Using Military Department, the Design Agents may elect to procure medical facilities using the Design-Build process. The Request For Proposal (RFP) for a medical facility shall include a sufficient design developed to the concept level to effectively establish scope and cost. The Design Agent, in consultation with the Using Military Department, shall determine for each project whether specifications shall be prescriptive, performance, or a combination thereof.

2.6 Design Submittals and Documentation Requirements.

2.6.1 Economic, Architectural, Engineering, and Environmental Studies. The design is to be supported by architectural, engineering, economic, and environmental evaluations of those features, which contribute most to the construction cost, energy efficiency, and environmental impact. The design is to provide the optimum combination for an efficient and effective facility at the most economical cost with the least adverse environmental impact. Such studies shall consider life-cycle-cost of the

facility, and not just the initial construction cost. Specific information concerning study requirements will be provided in accordance with appropriate laws and Executive Orders as defined by the Design Agent(s). Economic Analyses (EA) of new versus addition/alteration will be paid for and accomplished by the appropriate Military Department with their operation and maintenance funds for projects with a program amount of $2.0 million and over prior to any design authorization being issued.

2.6.2 Value Engineering Study (VE). The Design/Construction Agent will establish procedures for conducting VE studies in accordance with Office of Management and Budget Circular No. A-131 and Section 432, Title 41, USC, Value Engineering. VE studies consist of investigations of certain high-cost aspects of a design to determine if an alternate way exists to achieve an improved design, which meets all functional requirements, at a lower life—cycle-cost.

2.6.3 Design Documentation. The Design Agent, in coordination with the using military department, is responsible for the design documentation on each project. The Contract A-E will be held fully accountable for design in accordance with the "Responsibility of the Architect-Engineer Contractor" clause set out in FAR 52.236-23. However, Design Agents shall provide for peer review of appropriate portions of design documents to assure the proper functioning of the Architect-Engineer’s own Quality Control effort.

2.6.3.1 Submissions required for TMA/DMFO. The design documentation for Schematic and Concept level design, described in B.2 and B.4 of Appendix B will be submitted to TMA/DMFO for approval.

2.6.3.2 Appendix B. Appendix B provides a description of general submittal and documentation requirements, which are appropriate for a typical medical facility. For minor facilities, such as medical warehouses, contingency facilities, or small outpatient clinics, Design Agents may deviate from these submission requirements as practically and economically appropriate for the scope and complexity of the project.

2.6.4 Schematic Design Submittal (S2). This submittal includes development of the room-by-room floor plans, elevations, and initial analysis of the building systems. The primary purpose of this submittal and review is to identify and resolve all major space program deficiencies at an early stage in design and "fix" the footprint of the building. The Design Agent and using Military Department representatives, if required based on the project acquisition plan, will present the reviewed S2 to TMA/DMFO. Requests for scope revisions with justification should be submitted at this time. Scope changes will not be entertained after approval of S2 unless fully justified. TMA/DMFO will provide approval/disapproval, with review comments, within 14 calendar days of the submittal.

2.6.5 Concept (35 Percent) Design Submittal (S4). This is the technical Concept Design submittal. The design agent will certify to TMA/DMFO that design is 35 percent complete. The Design Agent, with using Military Department coordination and participation, will submit a summary of the reviewed S-4 to TMA/DMFO. Final scope and PA (cost) shall be determined with this submission. All issues regarding costs, Value Engineering Study (VE), constructability, phasing, and any other special studies must be resolved, though the results of all studies may not be incorporated prior to presenting this submission to TMA/DMFO for approval.

2.7 Rendering. If the design agent requires a rendering, then a photographic copy of the rendering shall be provided to TMA/DMFO and the military department. The rendering should be prepared either before or after the concept submittal is approved by TMA/DMFO. The TMA/DMFO copy of the rendering should be titled, matted, glazed with nonglare glass or plexiglass and framed in brushed aluminum or other format prescribed by the Design Agent.

2.8 Design Review Policy. Prior to use of a design documents package for construction, the Design Agent shall conduct an independent review to evaluate the completeness and quality of the documents. This review does not replace or nullify the designer's own quality control process or review responsibilities. The A-E will be held fully accountable for design in accordance with the "Responsibility of the Architect-Engineer Contractor" clause set out in FAR 52.236-23. The Design Agent’s review is to establish that the designer has fulfilled the documentation requirements of his contract, adequately addressed any unique government requirements, and provided documents exhibiting a level of accuracy, coordination, completeness, clarity, and absence of error indicative of a quality design and an effective designer quality control procedure. In addition, A-E design shall be accomplished or reviewed and approved by architects, engineers or other professionals registered to practice in the particular professional field in accordance with FAR 52.236-25.

2.8.1 Review Agency Qualifications. Designs prepared by private A-E firms or geographical elements of the Design Agent will be reviewed by the Design Agent’s Medical Facilities Design Office (Center of Expertise for COE), employing a highly qualified, multi-disciplinary team of engineer and architect professionals with extensive experience, and day-to-day involvement in, medical facility designs and technical issues. The Design Agent’s Medical Facilities Design Office or Center of Expertise shall review all medically unique aspects of the design, and all aspects of design shown to be historical areas of concern for medical facilities. Design Agents may designate qualified engineer and architect professionals without extensive experience in the medical field to review general aspects of medical facility designs.

2.8.2 Constructability Review. The Design Agent shall provide for an independent Constructability Review for all medical facility projects. Constructability is defined as the ease with which a designated project can be administered, bid, built, enforced, and understood. Constructability must be strongly emphasized by the designer, and Design Agent, throughout the entire planning and design process. As a minimum, these reviews should occur at both the 35% and Final Design completion stages.

2.9 Design Management Plan. For each project, the Design Agent shall develop a plan for managing the design of the facility. This plan shall identify project schedule and milestones.

2.10 Construction Cost Estimates. Preparation, review, and approval of construction cost estimates shall be in accordance with established design agent practices. All estimates prepared by A-E firms will be reviewed and validated by the cost engineering element of the design agent. Prior to the submittal to TMA/DMFO, estimates prepared by in-house personnel will be reviewed in accordance with established procedures. The quality and integrity of cost estimates will not be compromised in order to meet completion deadlines or imposed budget requirements.

2.11 Final Design (35 percent to 100 percent). The final design phase may be initiated only after approval of Concept Design by the TMA/DMFO. If, in the preparation of final design, it is necessary to deviate substantially from the approved Concept Design, such as the rearrangement of a major medical department or a change in the interrelationship of functional elements, design may be suspended and the pertinent facts and justifications concerning the deviations will be submitted for review and approval by TMA/DMFO.

2.12 Comprehensive Interior Design (CID). The final design phase, at option of the using Military Department, may include a CID effort (using MILCON P&D funds) for furniture and accessory selection, layout and identification, and documentation for procurement. Subsequent selections of furnishings and medical equipment are to be coordinated with the CID.

2.13 Final Submittal to TMA/DMFO . When the design is complete, the Design Agent will submit a copy of the final documents (i.e. CD-ROM, drawings, specification, cost estimate, instructions to bidders, etc.) to TMA/DMFO. Along with this package, the Design Agent shall provide a memorandum to TMA/DMFO certifying that the design has been completed and that all technical requirements and cost criteria approved at the 35 Percent Design stage have been incorporated into the Final Design.

REFERENCES

2a. DoD Directive 4270.36, "DoD Emergency, Contingency and Other Unprogrammed Construction Projects." May 17,1997

2b. Section 2807, Title 10 USC, "Architectural and Engineering Services and Construction Design."

2c. DOD Directive 6015.1&, "Department of Defense Policies for Planning and Execution of Military Healthcare Facilities." (DRAFT)

2d. DoD Directive 4245.8, "Value Engineering."

FIGURE 2-2
DESIGN FUNDS STATUS REPORT

| PROJECT | ACT DES % | EST 0-35% COST | EST 35-100% COST | TOTAL DESIGN COST | DESIGN FUNDS AVAIL | DELTA |
|---|---|---|---|---|---|---|

FIGURE 2-3
PROJECT STATUS REPORT

PROJECT: FY: ____ NUMBER: _____ USING SERVICE:_____ LOCATION: _____
Major/Minor/BRAC _____

TITLE: _____

FUNDS: Programmed Amount (PA):

| DESIGN | CONSTRUCTION | CONTINGENCY |
|---|---|---|
| DDA: | AWARD CWE: | STARTING TOTAL: |
| CWE: | CURRENT CWE: | CHANGES TO DATE: |
| | | PENDING CHANGES: |
| | | REMAINING BALANCES: |

STATUS: TMA/DMFO AUTH: _____ LEVEL OF DESIGN (%): _____ CONSTRUCTION COMPLETE (%): SCH._____ ACT._____

| EVENT | SCHEDULE DATE | ACTUAL DATE | REMARKS |
|---|---|---|---|
| 2807 NOTIFICATION | | | |
| A-E SELECT AUTHORITY | | | |
| A/E SELECTION COMPLETE | | | |
| DEFTAB SUBMIT TO TMA/DMFO | | | |
| DEFTAB APPROVED BY TMA/DMFO | | | |
| 35% DESIGN AUTHORITY | | | |
| AWARD A/E CONTRACT | | | |
| A-E SUBMITS S-1 | | | |
| A-E SUBMITS S-2 | | | |
| S-2 SUBMITTED TO TMA/DMFO | | | |
| TMA/DMFO S-2 REVIEW COMPLETE | | | |
| A-E SUBMITS S-3 | | | |
| A-E SUBMITS S-4 | | | |
| 35% SUBMITTED TO TMA/DMFO | | | |
| 35% APPROVED BY TMA/DMFO | | | |
| 100% DESIGN AUTHORITY | | | |
| A-E SUBMITS 65% | | | |
| A-E SUBMITS 100% | | | |
| A-E SUBMITS FINALS | | | |
| REQUEST ADVERTISE AUTH. | | | |
| ADVERTISE AUTHORITY | | | |
| BID OPENING | | | |
| AWARD AUTHORITY | | | |
| CONST. CONTRACT AWARD | | | |
| CONST. COMPLETED | | | |
| BENEFICIAL OCCUPANCY | | | |
| FACILITY OPERATIONAL | | | |

ISSUES:

FIGURE 2-4
MILCON FUNDS STATUS REPORT

| PROJECT TITLE/ LOCATION | USING MIL DEPT | PA | SUBALLOCATED FUNDS | EST CWE | EST BID DATE | ACT CWE | ACT AWARD DATE | %CONST COMP SCH | %CONST COMP ACT |
|---|---|---|---|---|---|---|---|---|---|

FIGURE 2-5
Instructions for Preparing Gross Area Tabulation.

This is the square meter (foot) quantity number used on the project DD Form 1391. The gross area documentation consists of calculation and tabulation of the building gross floor area illustrated with small scale, single-line dimensioned drawings as demonstrated in the attached figure. The following procedures will be used to calculate the gross building area.

a. The gross area includes the total area of all floors with a floor-to-ceiling height of 2134 mm (7 ft) or greater, including basements, mezzanines, penthouses, mechanical and electrical spaces, enclosed loading docks, and ambulance garages. Gross area is measured from the exterior surfaces of all enclosing walls except where the exterior wall surface overhangs the exterior window surface by one foot or more. In this case, the gross area is measured from a point one-half the distance between the exterior plane of the window glazing and the outermost plane of the wall.

b. The following spaces are counted as one-half of the actual gross area:

(1) Exterior balconies and porches.
(2) Covered but not enclosed walks, passageways, ramps, ambulance shelters, and entry canopies.
(3) Exterior open stairs (covered or uncovered).

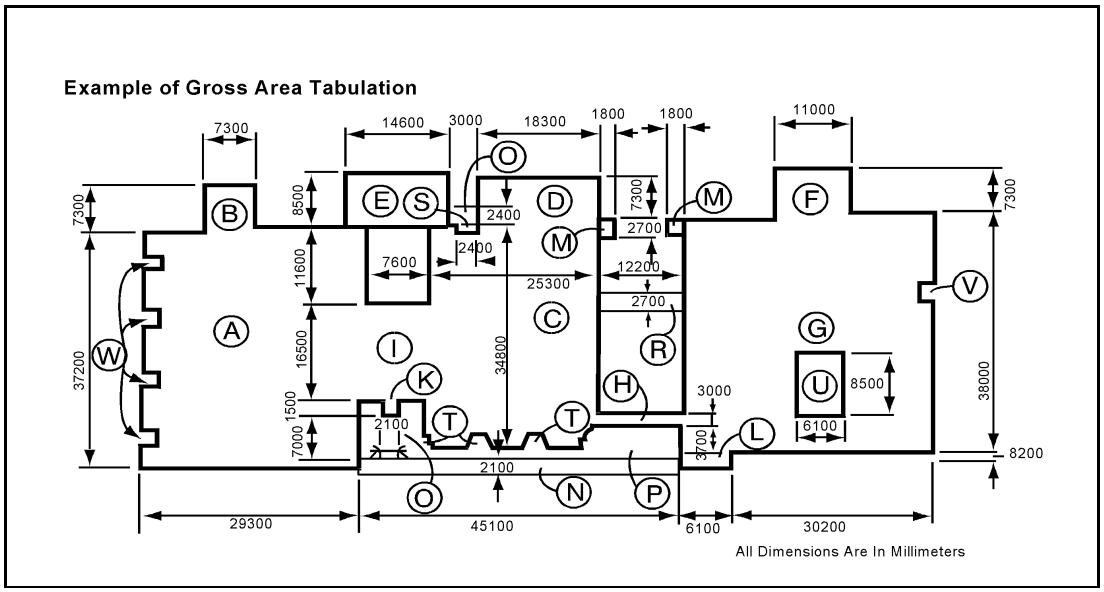
c. The following shaft type elements are counted in the gross area of one floor only: atria, unenclosed floor openings, stairs, escalators, elevators and lifts, mechanical and electrical shafts, and other shafts connecting two or more floors.

d. The following areas are not counted in the gross area: spaces with less than seven feet floor-to-ceiling height; exterior insulation applied to an existing building; exterior, uncovered, unenclosed terraces, ramps, stoops, and pads; open courtyards; utility tunnels; equipment yards; and crawl spaces. Crawl spaces with a clear height of seven feet or greater are not counted in the gross area provided the clear height of seven feet and greater is the result of the natural site terrain or foundation construction.

e. The gross area for site and supporting facilities, such as the central utility plant, pump house, and utility buildings, which are not included in the Program For Design is tabulated separately from the main building gross area tabulation. The gross area of all site and supporting facilities which are identified in the Program for Design is accounted for in the main building gross area tabulation.

f. A separate tabulation is required for the mechanical area. This tabulation will include the net area of all mechanical, electrical, and telecommunication rooms and utility shafts. Walls, partitions and structural elements associated with these spaces are included in the general gross area not the mechanical area. Vertical circulation spaces, such as elevators, escalators, lifts, stairs, and trash chutes, are counted in the general gross area not the mechanical

area. Mechanical, plumbing, electrical, and telecommunication shafts are counted in the mechanical area.




GROSS AREA TAKE-OFF

| Plan Area Reference/Type | | Plan Dimensions | | | Scope | GSM |
|---|---|---|---|---|---|---|
| A | bldg. space | 29300 | x 37200 | x | 1.0 | 1089.96 |
| B | " | 7300 | x 7300 | x | 1.0 | 53.29 |
| C | " | 25300 | x 34800 | x | 1.0 | 880.44 |
| D | " | 7300 | x 18300 | x | 1.0 | 133.59 |
| E | " | 8500 | x 14600 | x | 1.0 | 124.10 |
| F | " | 7300 | x 11000 | x | 1.0 | 80.30 |
| G | " | 36300 | x 38000 | x | 1.0 | 1379.40 |
| H | " | 3000 | x 12200 | x | 1.0 | 36.60 |
| I | " | 7600 | x 16500 | x | 1.0 | 125.40 |
| K | " | 1500 | x 2100 | x | 1.0 | 3.15 |
| L | " | 700 | x 6100 | x | 1.0 | 4.27 |
| M | entry canopy | 1800 | x 2700x2 | x | .5 | 4.86 |
| N | covered walk | 2100 | x 45100 | x | .5 | 47.35 |
| O | " | 2100 | x 7000 | x | .5 | 7.35 |
| P | " | 2100 | x 3700 | x | .5 | 3.88 |
| Q | covered porch | 2700 | x 3000 | x | .5 | 4.05 |
| R | covered walk | 2700 | x 12200 | x | .5 | 16.47 |
| S | covered porch deduct | 1200 | x 2400 | x | -.5 | -1.44 |
| T | alcove deduct | 1700 | x 1800x3 | x | -1.0 | -9.18 |
| U | courtyard deduct | 6100 | x 8500 | x | -1.0 | -51.85 |
| V | alcove deduct | 1200 | x 2400 | x | -1.0 | -2.88 |
| W | " | 1200 | x 1800x4 | x | -1.0 | -8.64 |
| First Floor Total Gross Area | | | | | | 3920.47 |

FIGURE 2-5

FIGURE 2-6

NET AREA TABULATION

The net floor area of a space is measured from the interior surface of the walls that enclose the space. Exterior walls, interior partitions, columns, structural members, and internal circulation space for other than individual occupancy(ies) are excluded from the net floor area.

Provide a tabulation of net areas, by room, in thirteen columns as follows:

a) Room Code Number From Program For Design (PFD),
b) Functional title of room,
c) Number of rooms,
d) Net area of room from Program For Design,
e) Total net space programmed for rooms [Product of cols.(c) x (d)],
f) If Add/Alt - allocated to unaltered existing space,
g) If Add/Alt - allocated to altered existing space,
h) If Add/Alt - allocated to new space,
i) Net individual room areas as designed,
j) Difference between program and design [columns (i) minus (d)],
k) Percent variation between program and design [cols (j)/(d)x100%],
l) Notes. Provide justification if the deviation listed in k) is more than 10 percent. Rooms of 4.65 $m^2$ (50 $ft^2$) or less are exempt from the 10 percent justification process. The justification is to indicate why the deviation was made, not just who authorized it. As a minimum, the spaces considered irreducible are Operating Rooms, Examination Rooms, Treatment Rooms, Provider's Offices, Emergency Rooms, Dental Treatment Rooms, Labor Rooms, Delivery Rooms, Diagnostic and Therapeutic Radiology Rooms, and Patient Bedrooms/Toilets. Depending on function and mission, there may be other rooms identified by the using Military Department which will be identified as irreducible, and,
m) Provide a total summary of each column.

After the above is accomplished, prepare a Net to Gross ratio in the same format as provided in the Program For Design (PFD).

FIGURE 2-6 (continued)

NET TO GROSS SQUARE METER (GSM)[1] CALCULATIONS

FACILITY W/O HARDENING
NEW/REPLACEMENT PROJECT

ALLOWANCES/CATEGORIES

| | MEDICAL/ DENTAL CLINICS | AMBULATORY HEALTH CARE FACILITIES | STATION/ COMMUNITY HOSPITALS | REGIONAL MEDICAL CENTERS |
|---|---|---|---|---|
| TOTAL NSM[2] | NSM | NSM | NSM | NSM |
| MECHANICAL | 11.0% of NSM | 13.0% of NSM | 14.0% of NSM | 16.0% of NSM |
| CIRCULATION of NSM | 41.0% of NSM | 41.5% of NSM | 42.0% of NSM | 46.0% |
| WALLS & PARTITIONS | 14.0% of NSM | 15.0% of NSM | 15.5% of NSM | 15.5% of NSM |
| HALF AREAS | 1.5% of NSM | 1.5% of NSM | 1.5% of NSM | 1.5% of NSM |
| FLEXIBILITY | 1.0% of NSM | 1.0% of NSM | 1.0% of NSM | 1.0% of NSM |
| TOTAL GSM | 168.5% of NSM | 172.0% of NSM | 174.0% of NSM | 180.0% of NSM |

NOTES:

1. GSM = Gross Square Meter

2. NSM = Net Square Meter

3. For hardened facilities, increase walls & partitions allowance by 1.0%; and half areas allowance by 2.0%.

4. For addition/alteration projects, up to 15% of the gross total alterable space may be added to the flexibility allowance to offset physical constraints in the existing facility. Gross alterable space is defined as the existing net space, interior partitions, departmental circulation, and mechanical spaces within the departmental/functions included in the Program for Design, plus general circulation immediately adjacent to the affected departments/functions. This increased allowance, which for programming and planning purposes will be considered to be new or addition scope, must be validated during design.