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Facility Support Contact Quality Management Manual

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FACILITY SUPPORT CONTRACT

QUALITY MANAGEMENT MANUAL

NAVAL FACILITIES ENGINEERING COMMAND
200 STOVALL STREET
ALEXANDRIA, VA 22332-2300

June 1989

FOREWORD

This publication states the Command's policies and outlines procedures to be followed in the execution of the NAVFACENGCOM Quality Management Program as it relates to Facility Support Contracts. The emphasis in this manual is coordination of requirements definition, specification development and quality assurance planning.

Compliance with the procedures outlined in this manual is mandatory by all personnel involved in the preparation and administration of Facility Support Contracts awarded through NAVFACENGCOM authority.

Recommendations or suggestions that will improve this publication and facilitate its use are invited and should be submitted to the Commander, Naval Facilities Engineering Command, 200 Stovall Street, Attention: Code 022C, Alexandria, VA 22332-2300.

This publication cancels and supersedes NAVFACENGCOM D-327 dated November 1982, MO-326.1 and MO-326.2, dated April 1981, and is certified as an official publication in accordance with SECNAVINST 5600.16A.

A.K. RIFFEY
Rear Admiral, CEC, U.S. Navy
Vice Commander
Naval Facilities Engineering Command

ABSTRACT

The purpose of this manual is to assist naval shore activities to obtain quality public works support services through facility support contracts (FSCs). This manual has been prepared for officers in charge, contracting officers, contract specialists, facility support contract managers and quality assurance evaluators. This manual should be read in conjunction with the Federal Acquisition Regulations (FAR) and supplemental regulations including the NAVFACENGCOM Contracting Manual (NAVFAC P-68) which are the primary sources of contracting policy.

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CHAPTER 1 OVERVIEW

l-100 PURPOSE. The purpose of this manual is to provide naval shore activities guidance on obtaining quality public works support services through facility support contracts (FSCs). Managing the output quality and responsiveness of a facility support contractor starts with the earliest stages of requirements definition and runs through every phase to contract close out. This manual has been prepared for officers in charge, contracting officers, contract specialists, facility supports contract managers and quality assurance evaluators. This manual should be read in conjunction with the Federal Acquisition Regulations (FAR) and supplemental regulations including the NAVFACENGCOM Contracting Manual (NAVFAC F-68) which are the primary sources of contracting policy. If there are any conflicts between this manual and the FAR or the P-68, the FAR or the P-68, shall be followed.

The success or lack of success of a FSC is measured in terms of the extent to which it (1) supports the local mission requirements, (2) obeys applicable procurement statutes, and (3) provides a fair return for the taxpayer's dollar. The most successful contracts can be characterized in the following manner:

(a) Thorough long range planning was undertaken.

(b) Good specifications were prepared.

(c) The best possible contractorwas selected using the most appropriate procurement method.

(d) The contract was administered by a well organized and efficient post-award administration staff.

All components are essential for sustained high quality performance from a service contractor. No amount of good contract administration can overcome a bad specification, and no amount of good contract administration can extract quality work from a contractor with a record of poor performance.

It is inter&d that thismanual be used as a familiarization tool, a training aid, and a desk top reference. It should be a resource for the practitioner, trainer, and decision maker. This manual supersedes and cancels NAVFACENGCOM MO-327 dated November 1982 and MO-326.1 and MO-326.2, dated April 1981. Policies, criteria, and nomenclature in this manual also supersede those contained in instructional materials and guide performance work statements previously issued.

l-200 BACKGROUND. Traditionally, prior to the 1980s, surveillance of service contracts was accomplished in a "hit or miss" fashion, with no writtenplan, utilizing whatever personnel resources were available at the

time. Surveillance usually focused on adherence to specific work procedures rather than on the quality of contract outputs.

During the 1970s, the trend to contract public works functions became evident throughout the Navy. Many factors influenced this trend, but manpower ceiling restrictions, economics, and requirements for specialized services were the principal driving forces. Recent high level emphasis has been directed toward utilizing the private sector when functions are not inherently governmental in nature and economics prevail. The Office of Management and Budget (OMB) Circular No. A-76 specifies policy and conditions for private versus Government operations and reaffirms the Government's policy of reliance on the private sector commercially available goods and services. The Department of Defense (DOD), through the commercial activities (CA) program, has implemented this circular.

Public works support by contract is a partnership between NAVFACENGCOM and the naval shore establishment. NAVFACENGCOM's contributions to that partnership are contracting authority, procurement resources, and technical advice on shore facilities management. The naval shore establishment, or the local activity Commanding Officer, contributes fiscal and human resources and a definition of requirements. For this partnership to culminate in a public works mission fully supported by quality contract services, both parties must participate from beginning to end. NAVFACENGCOM's manual on Organization and Functions for Public Works Departments (NAVFAC P-318) provides additional guidance on coordination responsibilities.

1-300 ORGANIZATION

l-310 Naval Facilities Engineering Command.

(a) The Naval Facilities Engineering Command (NAVFACENGCOM) provides technical and managerial assistance to Navy and Marine Corps field activities with regard to operation and maintenance of shore facilities and related engineering material and equipment.

(b) NAVFACENGCOM is one of several system commands that provide logistics support to the Navy. The chain of command leads to the Chief of Naval Operations, who reports to the Joint Chiefs of Staff for operational control and to the Secretary of the Navy. The Secretary represents the Navy within the Department of Defense.

l-320 Major Claimants Major claimants are the operational components of the Navy charged with carrying out the mission of national defense and sea power. They are responsible for manpower and material readiness including the operation, maintenance, and repair of their shore facilities.

l-330 Engineering Field Division (EFDs). NAVFACENGCOM has established six engineering field divisions as its primary field organization. The head of the contracts department (Code 02) within the EFD is responsible for executing procurement policy and has oversight responsibility for contract

related matters. Within the facilities management department (code 09B), the facilities division (code 10/16), is responsible for facilities maintenance management. EFD (Commanding Officers are designated Contracting Officers and are issued warrants for procurement purposes by the Commander, NAVFACENGCOM. This contracting authority is generally further delegated by the EFD Commanding Officer to Civil Engineer Corps Officers and civilian contracting personnel located at the EFD and Navy field activities.

1-340 Field Activity Organization. Depending upon contract workload factors such as dollar volume, physical location, and type of work, the field activity procurement organization may take many forms. Contracting authority may be delegated by the EFD to a local Civil Engineer Corps Officer to act as either procuring Contracts Officer (FCC)), Administrative Contracts Officer (ACO) or both. In these capacities, he/she may act within the limits specified in the contracting warrant and is responsible for all actions taken in connection with both pre-award and post-award contract activities.

1-400 COMMITMENT TO QUALITY

l-410 Definition. Quality means different things to different people so we must start with a usable definition. Quality is job one," the familiar Ford Motor Company slogan attempts to convince the buying public that every car that rolls off the assembly line measures up to Ford's specifications. In this application of the word "quality," the producer is deciding what is and what is not a quality output. This notion of quality has been referred to as Quality-in-Fact. There is more to quality, however, than just the absence of defects. Because we have both buyers and sellers, or in the case of public works support services, providers and receivers, there is another definition and that is quality as the customer sees it. This notion of quality is more subjective and has been referred to as Quality-in-Perception. Quality-in-perception is believing that the goods or services will meet the customer's expectations. This dual nature of quality is important to understand because no effort to provide contracted support services will be successfuluntil the output meets both tests: Quality-in-Fact -- compliance with specifications and Quality-in-Perception -- consistent with expectations.

l-420 Policy. NAVFACENGCOM is committed to the policy that we exist only to assist the operating Navy in the performance of its mission. The commitment means that individuals at every level will maintain a focus on the customer and assist in the executionof that mission with the best quality support services possible given available resources.

With regard to providing public works support services by contract, NAVFACENGCOM's policy on quality is as follows:

(a) The customer will be a full participant in the establishment of contract quality standards.

(b) All quality requirements and performance standards will be communicated to the market place via the procurement solicitation so that offerors can compete with full knowledge of the Government's quality needs and expectations.

(c) When contractor performance is particularly critical, quality will be emphasized to the extent that it is on an equal footing with price when determining the successful contractor.

(d) Service contract operations will be managed on the premise of "continuous quality improvement" rather "acceptable quality level." Government actions and contractor actions will be regularly reviewed for quality improvement opportunities.

(e) The Government will not pay for services which do not conform to the contract quality standards. Where practical, the contractor will be directed to reperform the work.

1-500 SOURCES OF SUPPORT. Sources of support include oversight and consultation provided by NAVFACENGCOMHQ and the EFDs and training provided by the Naval Facilities contracts Training Center, the Civil Engineer Officers School, and the EFDs.

l-510 Oversight and Consultation.

(a) The oversight function for matters effecting contracts is the responsibility of the NAVFACENGCOMHQ (02) contracts department. This oversight is primarily exercised through the contracts policy and quality assurance and support divisions and by procurement management reviews carried out in the field.

(b) EFD Contracts Department (Code 02). The contracts department has primary authority on all contractual matters, provides guidance and assistance with the interpretation of procurement policy, andretains oversight responsibility.

(c) EFD Facilities Division (Code 10/16).

(1) The facilities division provides technical support for FSC performance work statement (PWS) development and for the development and implementation of QA plans. Code 10/16 personnel work with activity personnel in the identification of FSC requirements and in packaging functions for multifunction contracts. This code maintains a reference library of FSC technical specifications and NAVFACENGCOM guide performance work statements (GPWSs).

(2) The facilities division assists the contracts department in conducting procurement management reviews to determine the adequacy of base level management and surveillance of FSCs.

l-520 Training.

(a) Naval Facilities Contracts Training Center (NFCTC). A course entitled Facility Support Contracting is offered by NFCTC periodically at each EFD, overseas locations, and Port Hueneme, This course provides a general overview of procurement and detailed instructions on contracting for base operations, maintenance, and support. This course is designed for contract specialist and Administrative Contracting Officers. Facility support contract managers are strongly encouraged to attend.

(b) Civil Engineering Corps Officers School (CECOS). A course entitled FSC for Functional Managers is offered by CECOS periodically at each EFD as well as at Port Hueneme, CA. course addresses administration of FSCs and is designed for public works functional managers. Contract specialist, facility support contract managers (FSCMs), and specification writers should also consider attending this course.

(c) EFDs. Quality assurance evaluator (QAE) and performance work statement (PWS) writing training courses are offered by the EFDs periodically. The QAE training course was prepared specifically for QAEs, but all personnel involved with FSC administration are encouraged to attend.

Note: Contact your local EFD to find-out what types of FSC training may be available since this manual was last revised. Also, contact your local EFD to find-out what types of computer programs for FSCs are available.

l-530 NAVFACENGCOM Uniform Contract Format Guide.

The NAVFACENGCOM Uniform Contract Format (UCF) Guide contains approved clauses and provisions for use as an aid in preparing Facility Support Service Contracts over $25,000. The clauses and provisions contained in the UCF have been approved in accordance with the requirements of the Department of Defense Acquisition Regulation (DFARS) and the Navy Acquisition Procedures Supplement (NAPS). No other clause ma be used unless approval is obtained from NAVFAC Code 11. The clauses and provisions are arranged in the UCF as required by the Federal Acquisition Regulations (FAR) and the sections to which they are assigned shall not be changed.

l-540 NAVFACENGCOM Guide Performance Work Statements (GPWSs).

NAVFACENGCOM is developing several GPWSs to assist in the preparation of FSC technical specifications. Appendix C provides a list of NAVFACENGCOM GPWSs currently available. Copies are available from the EFDs in either hard copy or on word processing diskettes. They are designed to be tailored by each using activity to fit local requirements. The policies, criteria, and nomenclature in this manual supersede those contained in previously issued GPWSs.

l-600 COMMERCIAL ACTIVITIES (CA) COST STUDIES. When a function is subject to the CA program, the specification development must be written to the level of performance equivalent to the current in house effort or to the level of effort that can be achieved by the most efficient organization if the function is retained in house.

CHAPTER 2 ACQUISITION PLANNING

2-100 GENERAL. The Federal Acquisition Regulation (FAR) defines acquisition planning as follows:

> *"Acquisition planning means the process by which the efforts of all personnel responsible for an acquisition are coordinated and integrated through a comprehensive plan for fulfilling the agency need in a timely manner and at a reasonable cost. It includes developing the overall strategy for managing* the *acquisition". (FAR Subpart 7.1)*

After the issuance of the FAR in 1984, additional emphasis was placed on acquisition planning. Planning the work and then working the plan is just good common sense and should be accomplished for all procurements with the possible exception of small repetitive buys. In its simplest form, planning consists of clarifying both the objective of the undertaking and the path by which the objective will be pursued. The process starts with a needs analysis.

2-200 NEEDS ANALYSIS. A needs analysis may be very simplistic or it may be very complex depending upon the circumstances. If the function is already under contract, the needs analysis may only consist of a revalidation of existing contract requirements. If the function is currently performed with an in-house force, or if the function is brand new, i.e., no past experience in-house or out, then the needs analysis process becomes more complex.

2-210 T<u>he systems Approach.</u> The systems approach assumes that the function under study is a system and consists of a job or a combination of jobs carried out by people and sometimes machines for a certain purpose. The parts of a system are usually called inputs, work processes, outputs, and control loops. These parts are shown in Figure 2-1. From a contractor's view, the system consists of taking people, facilities, material, and the contract documents and inputting them into a work process. The result of this work process is a contract output.

There are two major control loops in this system. Both loops use standards as the basis for determining acceptability. The contractor quality control (QC) loop feedsback information from the output to the work process so the contractor can adjust performance to meet the specified standard. The Government quality assurance (QA) loop looks at the output and determines its acceptability in light of the same standard. This information becomes an input for contractor management to adjust the work output and the quality control function.

A systems approach permits the analyst to identify outputs and separate them from the specific procedures required to create the outputs. When the Government specifies a given procedure, it assumes responsibility for

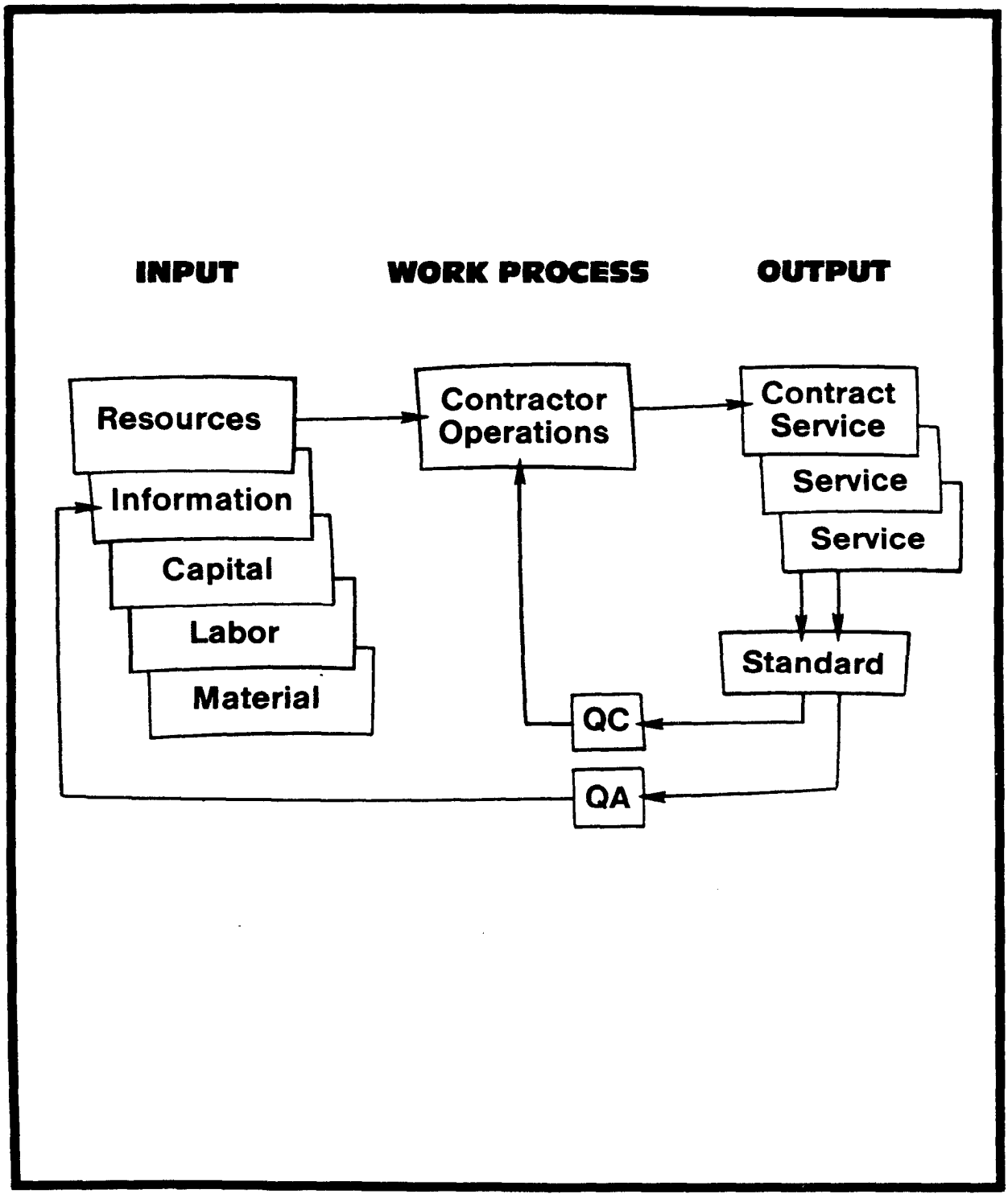


FIGURE 2-1 THE SYSTEMS APPROACH TO CONTRACT SERVICES

ensuring that the procedure will result in the required output. On the other hand, if it specifies the output performance and its quality standard, the contractor must determine how to achieve that level of performance. Additionally, a system approach will identify the input needed to get the j&done. These data are most useful in analyzing a contract price, conducting a pre-award survey, and creating a Government furnished property list.

2-220 Job Analysis. The job analysis technique has been an effective methodology for performing a needs analysis for many years. What follows is a summary listing of the steps involved in the job analysis technique. As mentioned above, the level of detail involved in each step will depend upon the circumstances. What is important, however, is that the process results in a clear definition of the customer's contract requirements.

(a) Functional Analysis. Functional analysis looks at the way the job is now being performed or would be performed if the requirement was new. Functional analysis involves identifying all the functions to be undertaken as part of the contract and breaking down these functions into separate sub-functions or discrete elements.

(b) Tree Diagram or Work Breakdown Structure. A tree diagram divides a job into successively smaller and smaller parts. Each part brings about a final result or service.

(c) Task Analysis. Individual tasks which are carried out under the contract are called contract requirements. Each contract requirement will generally have a series of work requirements related to it. The associated work requirements are the attributes which characterize a successfully performed contract requirement such as timeliness of performance, the preparation of documentation associated with a particular contract requirement, and the quality of the work.

(d) Performance Analysis. The specification writer, quality assurance evaluator (QAE), facility support contract manager (FSCM), and the customer representative or functional manager jointly decide how the service will be measured, what standard of performance will apply, and the appropriate maximum allowable defect rate. If the specification is being developed to support a CA cost comparison, the specified levels of performance must be compared to activity resources. The commercial activities program requires that functions retained by the Government (i.e., the Government is low bidder) must be performed to the levels of performance established in the specification.

(e) Directives Analysis. During this step, the specification writer works with the FSCM and customer representative or functional manager to decide what directives (manuals, instructions, etc.), if any, apply to the service that is to be provided.

(f) Cost Analysis. During this step, the FSCM works with the engineering office or other resource for cost estimating expertise to prepare the initial estimated contractor cost of each specified service.

These cost estimates are to inform the customer of the anticipated contract price for the services and performance standards established in preceding steps. If necessary, adjustments are made to meet budgetary constraints.

2-300 THE MASTER PLAN. While many factors have to be considered when packaging a contract, there are three underlying parameters which together form the foundation of public works support by contract. Figure 2-2 illustrates these building blocks of a facility support contract and the paragraphs that follow discuss their importance to the planning process.

2-301 Mission Requirements. Meeting the mission is the primary focus of the local Commanding Officer and the Contracting Officer alike. To effectively meet an installation's requirements with contract services, it is useful to categorize mission elements into scheduled and unscheduled activities. Scheduled activities are those requirements which are continuous or regularly occurring. They are relatively easy to count or quantify because the customer is in a position of having specific knowledge of the requirements, for example, clean the filters weekly, empty the container daily, man the gate round the clock, etc. Unscheduled activities are those requirements which occur on an indefinite basis, for example, when it snows - plow the streets, when the air conditioner breaks - repair it, etc. These activities are difficult to quantify because the customer cannot be certain of his/her specific needs. Making this distinction early in the procurement planning process is important because contractors measure uncertainty in terms of risk, and risk is the principal factor in selecting the most effective contract type.

2-302 Labor Laws. Labor laws are among the many laws that govern procurement. Two labor laws are of particular importance to the procurement planning process, the Davis-Bacon Act (40 U.S.C. 351) and the Service Contract Act (41 U.S.C. 351). The Davis-Bacon Act sets minimum wage rates for those contractor employees who are engaged in a task or project which is individually valued at $2,000 or greater and involves construction, renovation, alteration, or repair type work. The Service Contract Act (for contracts greater than $2,500) sets minimum wage rates for those contractor employees who are engaged in ongoing plant operation and maintenance services. when service and construction work are combined in the same contract, the Service Contract Act applies to its construction type work where individual projects are valued at less than $2,000. It is important for the contracting Officer and the specification writer, to make the appropriate distinction in the type of work being performed. Many of our facility support contract requirements involve both laws, and it is not enough that we meet the needs of the mission but conformance with the applicable laws is also required. Labor laws are discussed further at 6-450.

2-303 Contract Specifications. The third dimension of our building block model is the contract specification itself. The specification is the

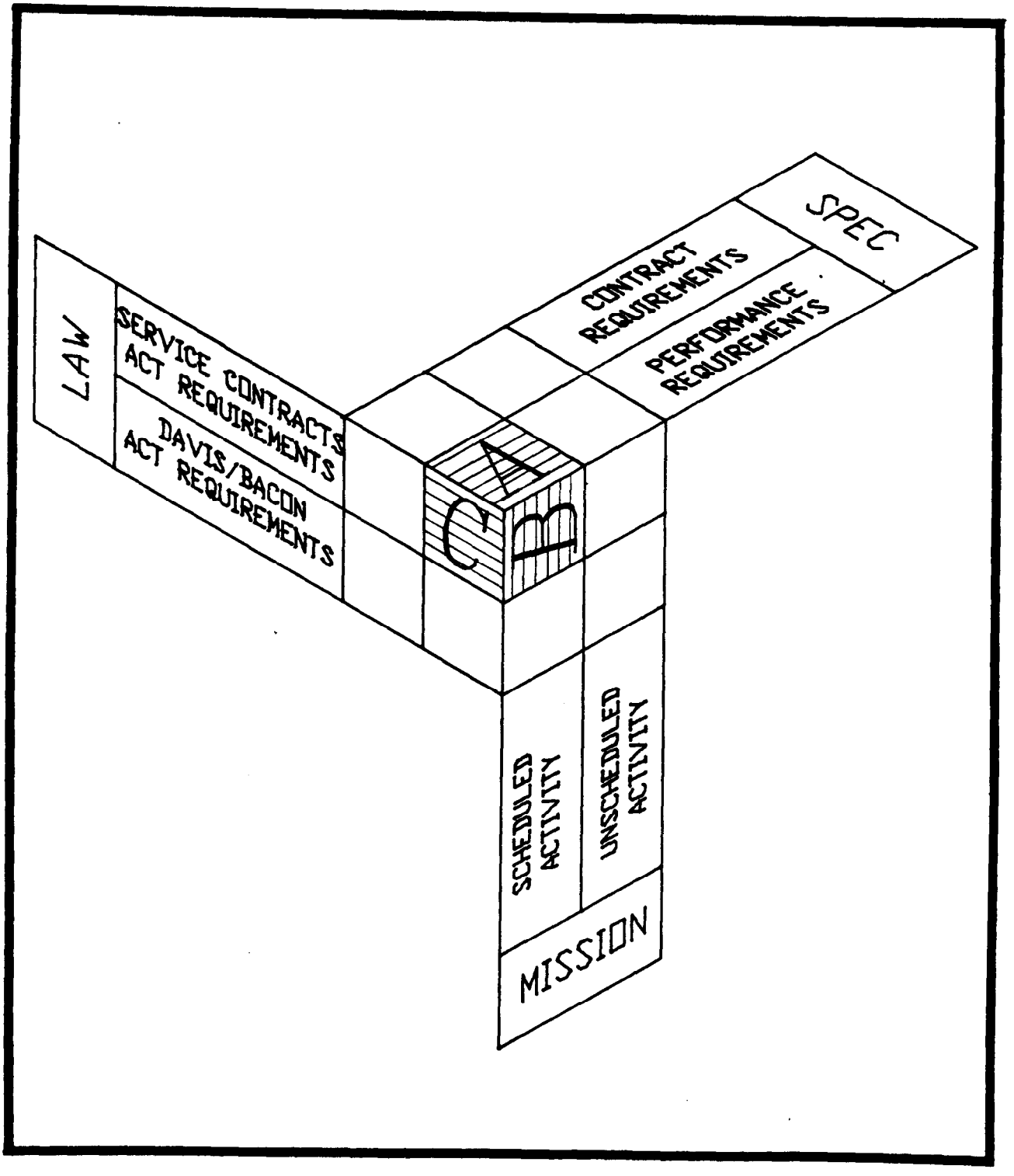


FIGURE 2-2 THE BUILDING BLOCKS OF A QUALITY FACILITY SUPPORT

principal communication device between the contractor and the Government. It must contain:

(a) A clearly defined set of end-item deliverables called contract requirements so we can answer the prospective contractor's question, What work am I bidding on"?

(b) A clearly defined set of acceptance criteria called performance requirements so we can answer the customer's question, "How will I know that I have received the services for which I am paying?"

In the planning of the procurement, the contract document is structured to contain contract requirements and performance requirements in a one-on-one relationship. As the task of writing the specification proceeds to a completion, the contract requirements and associated standards are expanded and clarified in the text of the document.

2-310 The Performance Requirements Summary. The performance requirements summary (PRS) was described in a recent report, published by the Office of Management and Budget, Office of Federal Procurement Policy, as follows:

> *"The heart of the performance work statement (PWS) is the performance requirements summary (PRS) which provides all the information necessary to properly describe the work standards and to measure performance".*

The concept of incorporating a PRS incontracts for facility support was originally developed by the Air Force in 1979, and the PRS became a key item in the Office of Federal Procurement Policy (OFPP) publication commonly referred to as OFPP Pamphlet No.4, published in 1980, outlining policy for the preparation of performance work statements for commercial activities.

Figure 2-3 depicts a PRS in its simplest form. The components of the three parameters of mission, law, and specification requirements are incorporated into a spread sheet format.

Figure 2-4 takes a close up look at block "ABC" of the PRS. In this block or call, the Government's performance requirements are listed for each contract requirement defined during the job analysis stage. In this case, we are dealing with requirements which are appropriate for procurement under the Service Contract Act and which are characterized as scheduled activities. To complete the PRS, contract and performance requirements would similarly be listed for any unscheduled activities and if necessary, for Davis-Bacon Act requirements.

It is essential during the planning phase of a procurement that all procurement team members be fully aware of both the customer's requirements and expectations. Without this knowledge, they cannot prepare a contract document that will effectively meet the needs. The customer may, because of the ambiguity of the communication process, end up with services which do not support the mission. Likewise, it is essential during the solicitation

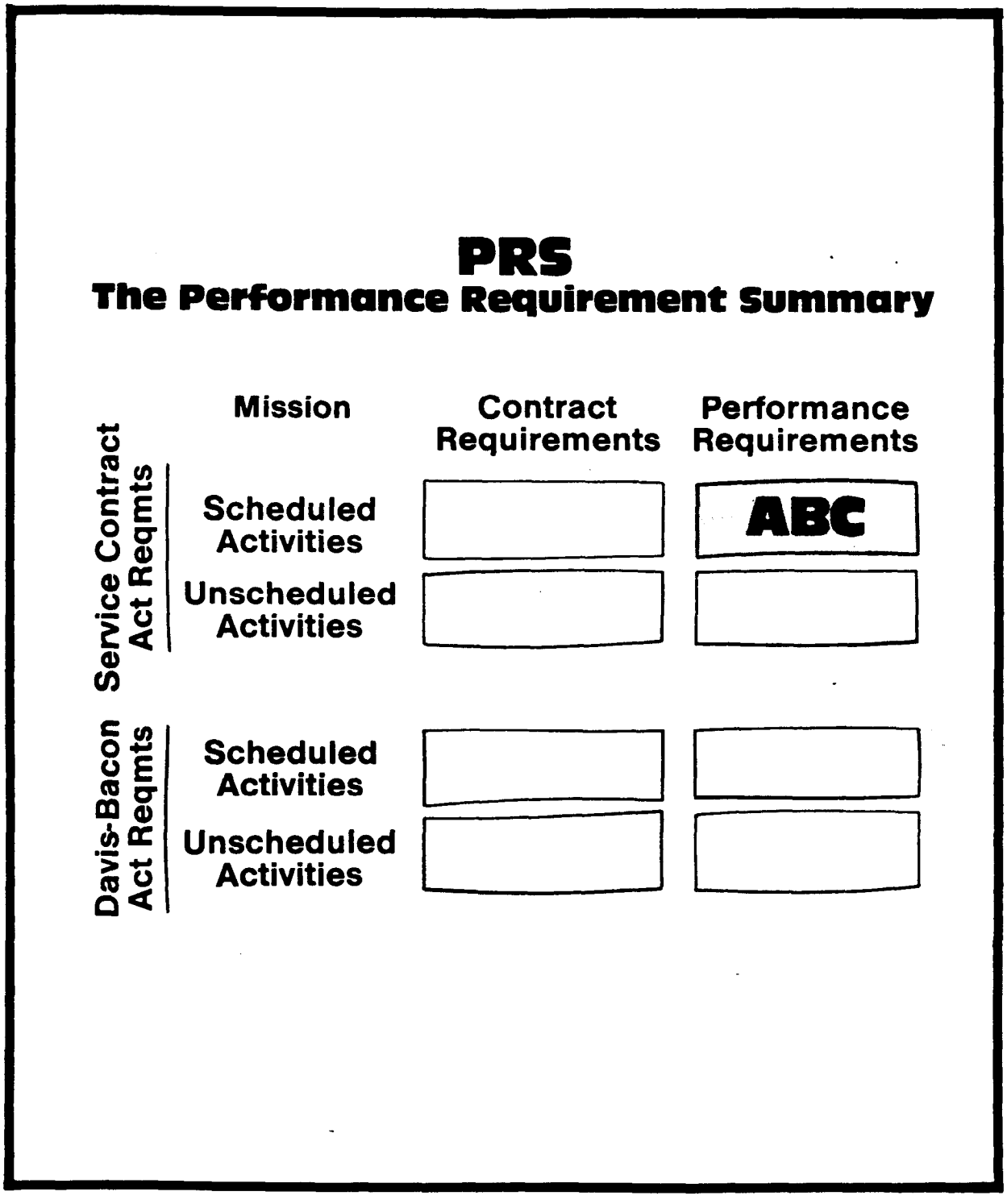


FIGURE 2-3 THE PERFORMANCE REQUIREMENTS SUMMARY - WHERE A QUALITY FACILITY SUPPORT CONTRACT BEGINS

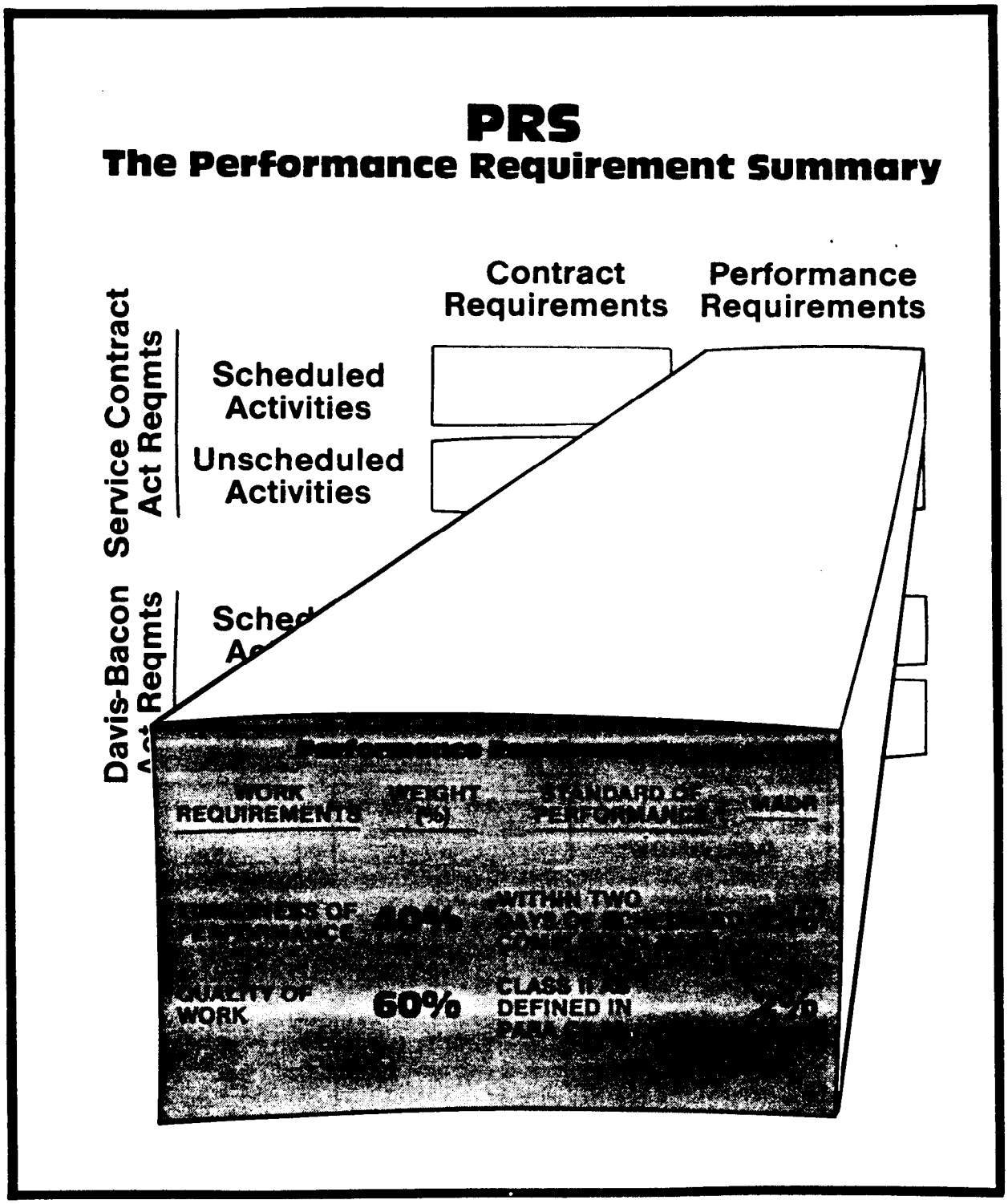


FIGURE 2-4 PERFORMANCE REQUIREMENTS - BUILDING QUALITY IN FROM THE START

phase of a procurement that the offerors be fully informed of the Government's contract requirements and the Government's minimum required level of quality in the performance of those requirements. Without this information, the offerors cannot prepare informed bids and the Government may, bemuse of the competitive process, end up awarding a contract at a price that impedes the successful offeror from performing at the required quality level. Similarly, it is essential during the performance phase of the procurement that the contractor be fully informed of the attributes of each contract requirement on which the performance will be measured. Without this information, the contractor cannot prepare adequate quality control program and the Government may, because of insufficient detail in the specification, end up unable to either effectively assess the contractor's performance or take deductions from the price for poorly performed work.

The performance requirement summary (PRS) serves all of these needs and is the thread of continuity throughout the acquisition process, the post-award administration, and the surveillance of the contract. It is NAVFACENGCOM policy that a PRS be included in all facility support contracts written in the uniform contract format (UCF). For facility support contracts (FSCs) prepared in the Construction Specification Institute (CSI) format, the inclusion of a PRS in the contract is optional.

As important as developing a PRS is, it is only the first step. An important concept in this manual is the expanded performance requirements summary (EPRS). As the name implies, the expanded performance requirements summary builds on the PRS and becomes the master plan for procurement.

2-320 The Expanded Performance Requirements Summary. Look again at the FAR definition of acquisition planning (opening paragraph of Chapter 2). First, it says that acquisition planning is "a process." Then, it states the purpose for that process is to "coordinate and integrate" the efforts of all personnel responsible for the acquisition. And finally, the definition says that the process culminates in a "comprehensive plan" for fulfilling the agency need. For contract services obtained through NAVFACENGCOM authority, that that "process" includes the development of an expanded performance requirements summary (EPRS). The EPRS is not a contract document: it is a planning document. It is prepared in a joint effort with the customer. A worksheet NAVFACENGCOM form 4330/46) for the preparation of the EPRS is contained in Appendix H. The EPRS is an important and useful tool in specification development for the following reasons:

(a) It raises important questions about what we are buying and how we are buying it early in the acquisition process so that time is available to evaluate alternatives and tradeoffs.

(b) It provides a means for coordinating and integrating the efforts, experiences, and priorities of all parties involved in the procurement.

(c) And, it produces the master plan from which most other procurement related documents are derived.

The EPRS adds pricing and surveillance requirements to the data already compiled in the performance requirements summary. Figure 2-5 illustrates how the EPRS, if us& effectively as a planning tool, can become the source document for

(a) The technical portion of the contract specification,

(b) The bid schedule-the schedule of deductions,

(c) The quality assurance plan,

(d) The government estimate;

(e) And the overall framework for the contract document.

When complete, the EPRS becomes part of the "comprehensive plan" addressed in FAR Subpart 7.1. Details for preparing an EPRS can be found at 3-300.

2-400 THE PROCUREMENT TEAM. Obtaining quality contract services in a manner which is both legal and cost effective is a complex matter. The interdisciplinary nature of the effort means no single individual is likely to have all the required knowledge and experience. Therefore, the Contracting Officer, contract specialist, public works officer (PWO), facility support contract manager (FSCM), or commercial activities coordinator should form a procurement team as early as possible in the procurement in order to:

(a) Develop and execute a master plan for the procurement.

(b) Develop a level of dialogue and mutual trust so the team can communicate efficiently and be responsive to change.

(c) Deal effectively with the concepts of "quality in fact" - compliance with specifications and Quality in perception" - consistency with expectations.

Figure 2-6 illustrates the principal constituents of the procurement team and also highlights the path by which the team accomplishes its objectives. The expand& performance requirements summary, as discussed in the preceding section, is the key to tying together both the people and the procurement documentation. While the composition of the procurement team may vary from contract to contract, there are a few key individuals whose contribution arecritical to the success of any contract. They are:

2-410 The Customer. The customer's representative or functional manager brings to the team detailed knowledge of the operational mission requirement. He/she is the central figure in the needs analysis stage and also contributes valuable historical data. To ensure there are no misunderstandings during the performance phase of the contract, it is essential that the customer representative contribute to the establishment of the contractor's performance quality level and have an appreciation of the estimated cost of the services.

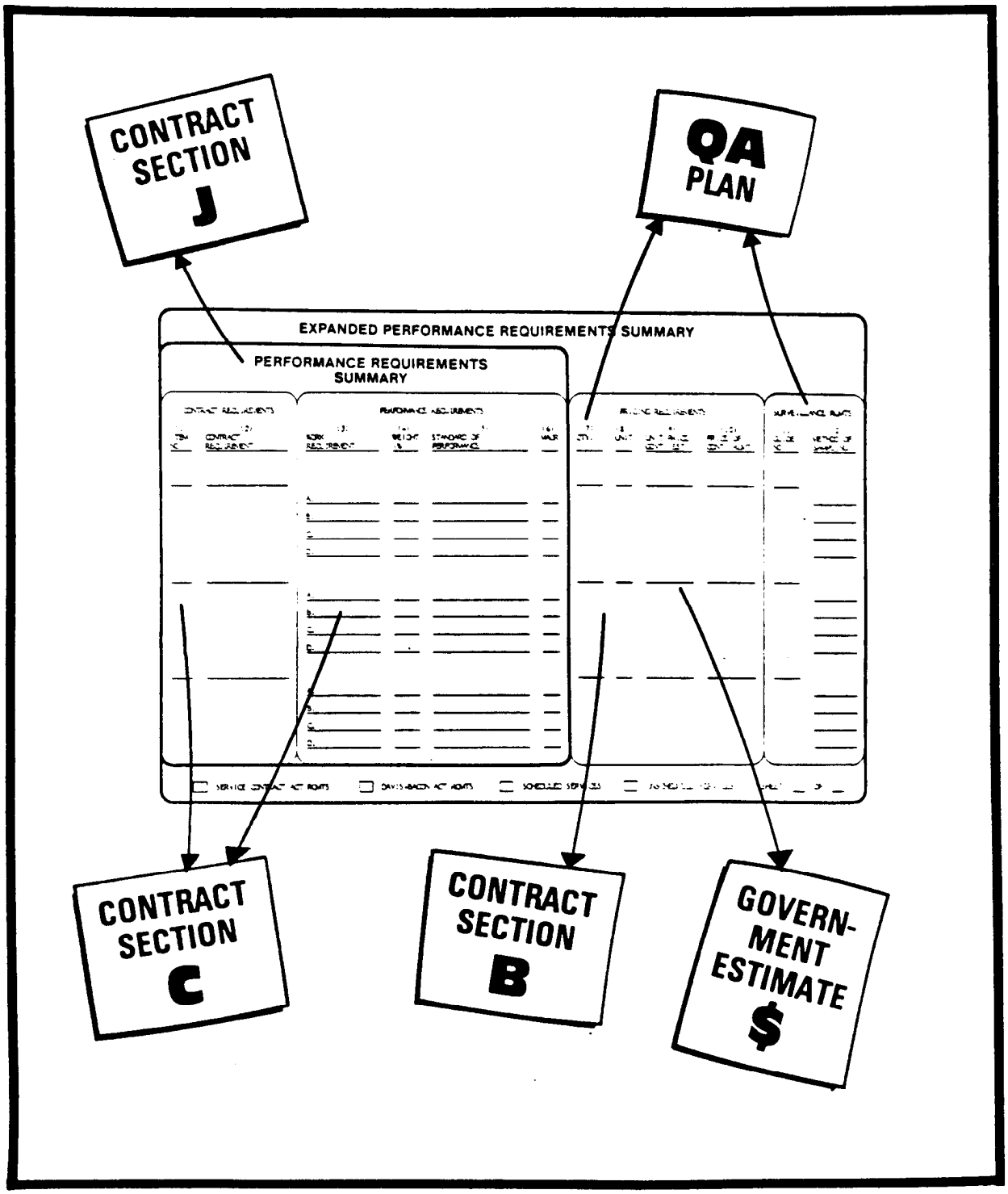


FIGURE 2-5 THE EXPANDED PERFORMANCE REQUIREMENTS SUMMARY THE MASTER PLAN

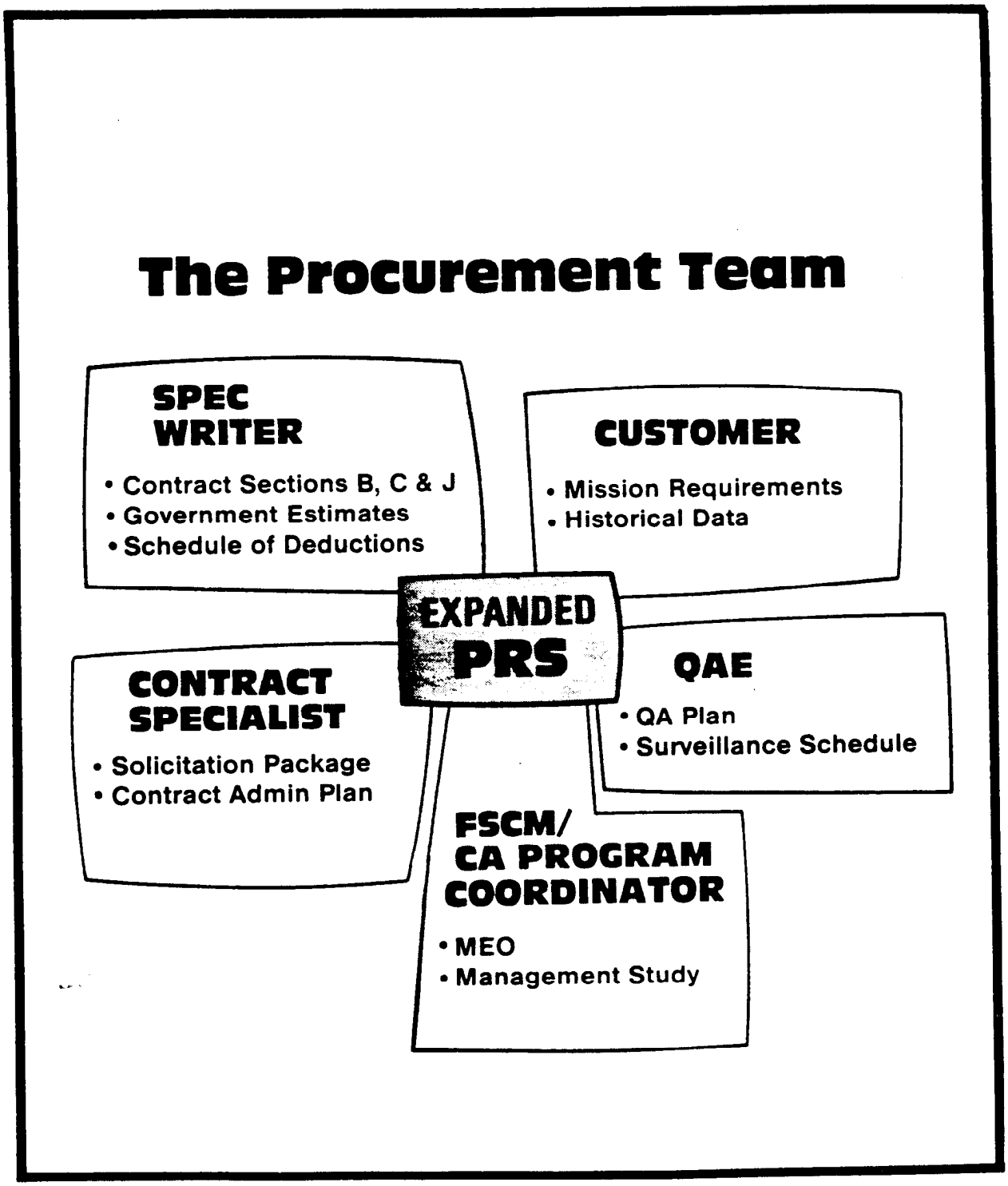


FIGURE 2-6 THE TEAM APPROACH TO FSC PLANNING AND EXECUTION

2-420 Facilities Support Contract Manager (FSCM). The FSCM has direct responsibility for day-to-day management of the activity's FSC program. As such, the FSCM serves as the technical advisor to the public works officer concerning the use and administration of FSCs. The FSCM is appointed by letter from the head of the Contracting Office. Prior-award, the FSCM is usually responsible for coordination of the technical specification, the Government estimate; and the QA surveillance plan. Post-award responsibilities include recommending contract modifications to the Contracting Officer, supervision of quality assurance evaluators (QAEs), implementing quality assurance plans, initiating corrective action in the event of unsatisfactory contractor performance, and providing assistance in the preparation of performance work statements for subsequent contracts. Specific responsibilities and limits of authority are contained Contracting Manual P-68, at Appendix E.

2-430 The Specification Writer. The specification writer contributes technical knowledge of facilities management and a familiarity with specification formats. This is the individual who converts the customer's needs into contract language.

2-440 The Contract Specialist. The contract specialist provides overall contractual guidance in preparing the specifications. The contract specialist works with the specificationwriter in preparing the performance work statement (Section C in the uniform contract format), the performance requirements summary (PRS), the various price schedules, and related attachments. He/she will prepare the majority of the clauses in the remaining contract sections.

2-450 The Quality Assurance Evaluation (QAE) The QAE contributes field experience in the post-award administration and surveillance of service He/she provides guidance to the specification writer to ensure contract requirements are described in a manner which enables the Government to objectively assess performance. He/she serves as the "eyes and ears" of the Contracting Officer. The QAE performs theactual surveillance of the contractor's performance and reports to the FSCM. The scope of their authority is provided by a letter of appointment from the Head of the Contracts Office. Specific responsibilities and limits of authority are contained in the Contracting Manual P-68, at Appendix E.

2-460 The CA Program Coordinator. In the event the acquisition planning process is coupled with a CA study, the CA program coordinator should be a member of the procurement team. This is the individual who is charged with preparing a management study (in the context of OMB Circular A-76). It is essential that the contract requirements for the anticipated procurement be closely coordinated with the results of that management study.

2-500 TIME MANAGEMENT. Facility support contracts are, by definition, contracts for ongoing base operation and maintenance functions. When contract services are closed out or terminated without a follow-on contract in place, the loss of continuity can have serious mission degrading

consequences for the receiving activity. As a result, the careful management of time is essential for operations involving contract services.

2-510 Procurement Lead Time. The Navy Acquisition Procedures Supplement (NAPS) establishes the following policy with regard to procurement lead time:

> *"It is Navy policy that the contracting lead time shall not be a consideration in determining* whether *a requirement can be procured on a competitive basis. The need to obligate* annual *appropriations is insufficient to justify procurement of supplies and/or services on a noncompetitive* basis".

The message here is that full open competition will be obtained for all but the most unusual cases. NAVFACENGCOM provides for full and open competition by using either competitive negotiations or sealed bidding procurement procedures. Figure 2-7 is an example of the procurement lead time requirements for all formal competitive negotiations, referred to as Request for Proposals. The time frames (other than those that have limits set by law) may vary widely depending on local circumstances Figures 2-8 and 2-9 illustrate procurement lead times for sealed bidding procedures. These latter procedures are typically used for facility support contracts where the scope of work is relatively well defined and selection can be made on price factors alone. As before, the frames not constrained by statute may vary widely depending on local circumstances.

2-520 Post-award Contract Administration Plan. Acquisition planning does not end with the award of a contract. Developing a contract administration plan following contract award should be an integral part of the requirements definition phase of every procurement. Figure 2-10 lists many of the post-award activities involved in a typical contract in relation to the contract start date for the ensuing contract term, the key event from the customer's perspective. Note that most of the major decision points in the life of an facility support contract occur far in advance of the next contract start date. In the event of expedited procurement procedures may become necessary, but the procedures are outside the scope of this manual.

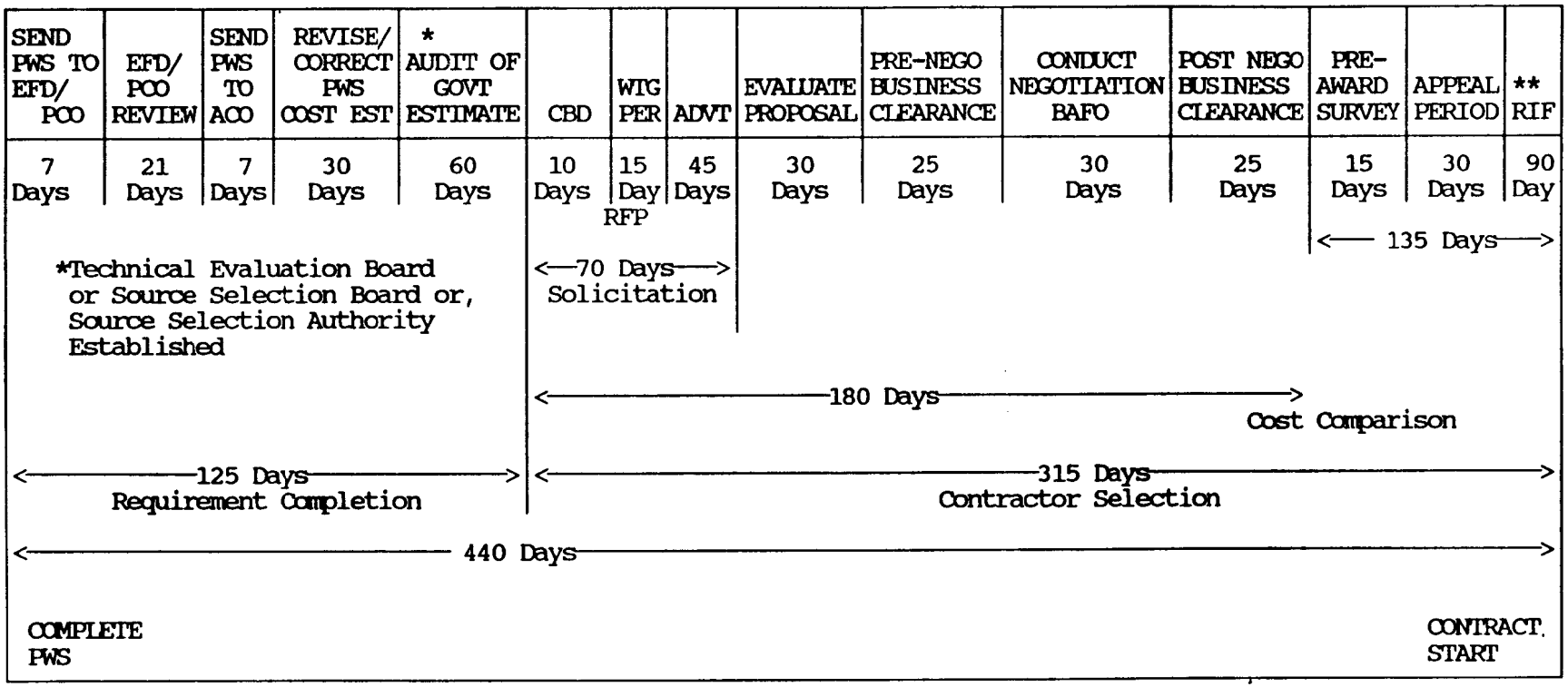
2-530 Cycle Schedules. At any given time, a typical office may have ten to twenty or more active facility support service contracts cycling through the various phases of planning, solicitation, administration, and closeout. Keeping track of all the key decision points and action dates can be made easier by the development of a master cycle schedule. The purpose of the cycle schedule is to pull together data from each contract administration plan to provide visibility of coming events to the contract administration office. In addition to being better prepared to make key decisions, the cycle schedule provides a means for coordinating fiscalmilestones and leveling contract administration workload. The development and maintenance of a cycle schedule (either automated or manual) is essential to the successful management of facility support contracts.

FIGURE 2-7 TYPICAL PROCUREMENT LEAD TIME - REQUEST FOR PROPOSALS

REQUEST FOR PROPOSALS

PROJECTED TIME TABLE FOR NECESSARY
ACTIONS AFTER COMPLETION OF THE PWS & MEO

SEND PWS TO EFD/ PCO	EFD/ PCO REVIEW	SEND PWS TO ACO	REVISE/ CORRECT PWS COST EST	* AUDIT OF GOVT ESTIMATE	CBD	WTG PER	ADVT	EVALUATE PROPOSAL	PRE-NEGO BUSINESS CLEARANCE	CONDUCT NEGOTIATION BAFO	POST NEGO BUSINESS CLEARANCE	PRE-AWARD SURVEY	APPEAL PERIOD	** RIF
7 Days	21 Days	7 Days	30 Days	60 Days	10 Days	15 Day RFP	45 Days	30 Days	25 Days	30 Days	25 Days	15 Days	30 Days	90 Day



NOTES: * Includes events for Commercial Activities Program
Days are calendar days.

SEALED BID

PROJECTED TIME TABLE FOR NECESSARY
ACTIONS AFTER COMPLETION OF THE PWS & MEO

END PWS TO EFD/ CO	EFD/ PCO REVIEW	SEND PWS TO ACO	REVISE/ CORRECT PWS COST EST.	AUDIT OF GOVT ESTIMATE	CBD	WAITING PERIOD	ADVERTISE	EVALUATE BIDS & PRE-AWARD SURVEY	* R I F
7 Days	21 Days	7 Days	30 Days	60 Days	10 Days	15 Days	30 Days	45 Days	90 Days

IFB

55 Days

BID OPENING & COST COMPARISON

AWARD

125 Days
REQUIREMENT COMPLETION

190 Days
CONTRACTOR SELECTION

315 Days

COMPLETE PWS

CONTRACT START DATE

NOTES: * Includes events for Commercial Activities Program
Days are calendar days.

FIGURE 2-8 TYPICAL PROCUREMENT LEAD TIME - SEALED BID

TWO-STEP SEALED BID

PROJECTED TIME TABLE FOR NECESSARY
ACTIONS AFTER COMPLETION OF THE PWS & MEO

SEND PWS EFD/ PCO	EFD/ PCO REVIEW	SEND PWS TO ACO	REVISE/ CORRECT PWS COST EST.	* AUDIT OF GOV'T EST.	CBD	WIG PRD	ADVT	STEP ONE	STEP TWO	EVALUATE BIDS & PRE-AWARD SURVEY APPEAL PERIOD	* RIF
7 Days	21 Days	7 Days	30 Days	60 Days	10 Days	15 Days	30 Days	30 Days	21 Days	45 Days	90 Days

RFTP

<—55 days—> <—51 days—>

EVALUATION BOARD ESTABLISHED

BID OPENING & COST COMPARISON

Award

<—125 days—> REQUIREMENT COMPLETION

<—241 days—> CONTRACTOR SELECTION

<—366 Days—>

COMPLETE PWS

CONTRACT START DATE

NOTES: * Includes events for Commercial Activities Program
Additional time may be necessary if the low bidder is determined nonresponsible.
Days are calendar days.

FIGURE 2-9 TYPICAL PROCUREMENT LEAD TIME - TWO-STEP SEALED BID

POST-AWARD CONTRACT ADMINISTRATION PLAN

* RIF & SUB-M'TLS	PHASE-IN	EVALUATE REQUIREMENT	CONS. OPTION	CONT TYPE & KTR SELEC	PREPARE NEW SPEC	SEND PWS TO EFD/ PCO	EFD/ PCO REVIEW	SEND PWS TO ACO	REVISE PWS/ QA PLAN	CBD	WTG PRD	ADVT	EVALUATE BIDS & PRE-AWARD SURVEY	SUBMIT INSUR BONDS SOD QC PLN
90 DAYS	60 DAYS	60 DAYS	15 DAYS	15 DAYS	45 DAYS	7 DAYS	21 DAYS	7 DAYS	14 DAYS	10	15	30	45 DAYS	15 DAYS

IFB

55 Days

PRE-PERFORMANCE MTG

AWARD

FORMAL MEETING WITH CUSTOMER

FORMAL CONTRACTOR EVALUATION

142 Days

202 Days

157 Days

EVALUATION MEETINGS - 1ST EACH MONTH
INVOICE REVIEW - WITHIN 5 DAYS OF RECEIPT

359 Days

CONTRACT START DATE

NEW CONTRACT START DATE

CONTRACT AWARD

NOTES: * Includes events for Commercial Activities Program
Days are calendar days.

FIGURE 2-10 TYPICAL POST-AWARD MILESTONES FOR FSC ADMINISTRATION

CHAPTER 3 SPECIFICATIONS

3-100 GENERAL

Before any invitation for bids or request for proposals can be used or any contract entered into, it is necessary to define the service or product that is to be the subject of the invitation, or contract. The definitive or descriptive words identifying the subject matter are called specifications or the work statement. The specifications commonly are referred to as the performance work statement (PWS).

The PWS, together with the related performance requirements summary (PRS), is the very heart of any procurement. Whether a contract will be successfully performed is quite often determined not at the time the contract is negotiated or the award is made, but rather at the time the specifications are written. The need for clarity and preciseness of expression is perhaps greater in contracts than in any other form of communication. The extent to which clarity is or is not accomplished will have a direct bearing on the ultimate success of the contract

As outlined in the Federal Acquisition Regulation (FAR), specifications may be characterized as:

(a) Performance Specifications. Performance specifications express work requirements in terms of the characteristics of the end product or the service is to be achieved are left to the contractor's discretion. For example, in a refuse disposal contract we would specify that certain containers were to be emptied with a certain frequency, and we would not specify the type of refuse collection equipment to be used by the contractor.

(b) Functional Specification. A functional specification defines the essential-functions to be performed to meet a particular need. This type of specification is typically applicable to specifications for equipment. For example, rather than specifying the use of a brand name refuse compactor, the functional characteristics of the equipment, such as its capability to compact a fixed amount of refuse in a certain time, are specified; The use of functional specifications promotes competition among suppliers.

(c) Design Specifications. Design specifications spell out in detail the equipment, materials, and methods which are to be used in performing the service. When specification of this type are employed, the contractor, while responsible for compliance with the specifications, is not responsible if the goods or services furnished are unsatisfactory.

Specification for facility support contracts are prepared, to the maximum extent possible, as performance specifications in accordance with the policies promulgated by the FAR and by NAVFACENGCOM. The pure form of any particular type of

specification is rarely used and characterization of a specifications as "performance" functional," or "design" merely reflects which category predominates.

3-110 Initial Data Gatherins. Prior to preparation of the specifications, as much data as possible should be assembled concerning the scope of the work required. If the work is currently being done under contract, the scope of the existing contract should be thoroughly reviewed and every effort made to determine the degree of customer satisfaction during performance of the work. Any pattern of delays or problems areas in which occurred in the past, whether or not the work was performed under contract, should be researched. In writing the specifications, careful consideration should be given to past problems.

The data gathering includes securing information such as the contractor's current manning levels, the amount of work performed under the existing contract, cost data, preventive maintenance inspection requirements, operating and maintenance procedures, and activity instructions. If the current contract has provisions for indefinite quantity work, a comparison should be made between the amount of work estimated and the amount that was actually carries out. Work delays and backlogs which occurred should also be identified. If the work is currently the subject of a cost comparison, the same data gathering process is necessary, and the information must be analyzed in accordance with OPNAVINST 4860.7.

3-111 Data Source. Sources of data include

(a) NAVFACENGCOM Contracting Manual. The NAVFACENGCOM Contracting Manual (P-68) implements and supplements the Federal Acquisition Regulation (FAR), the Department of Defense Federal Acquisition Regulation (DFAS), the Navy Acquisition Procedures Supplement (NAPS), and the Naval Facilities Engineering Command Contracting Manual (P-68). The UCF also contains extensive clauses which have been in common use for several years.

(b) NAVFACENGCOM Uniform Contract Format Guide. The NAVFACENGCOM Uniform Contract Format (UCF) Guide contains approved clauses and provisions for use as an aid in preparing Facility Support Service Contracts over $25,000. The clauses and provisions contained in the UCF have been approved in accordance with the requirements of the Department of Defense Acquisition Regulation (DFARS) and the Navy Acquisition Procedures Supplement (NAPS). No other clause may be used unless approval is obtained from NAVFAC Code 11. The clauses and provisions are arranged in the UCF as required b the Federal Acquisition Regulations (FAR) and the sections to which they are assigned shall not be changed.

(c) NAVFACENGCOM Guide Performance work Statement (GPWSs). NAVFACENGCOM is currently developing guide performance work statements (GPWSs) to assist in the reparation of Facility Support Contract specifications. A list of GPWSs currently in development is contained in Appendix C. In the event of conflicts between policies, criteria, and nomenclature contained in this manual and previous1 issued GPWSs this manual shall be followed. Copies are available from engineering field divisions in hard copy and on word processing disks.

(d) MILITARY BULLETIN 34, Engineering and Design Criteria for Navy Facilities. This publication includes a listing of:

(1) Naval Facilities Guide Specifications (NFGS),
(2) Military Standards and Handbooks (MIL-HDBK),
(3) Federal Specifications, Military Specifications, Military Standards and Industrial Standards used in NAVFAC Guide Specifications.

(e) CSI Manual of Practice. This publication of the Construction Specifications Institute (CSI) is the standard of practice of the construction industry with regard to the wording, order of information, and general format of construction specifications. It is particularly useful when the CSI format is used in preparing a facility support contract.

(f) MASTERFORMAT. This is a master list of section titles and numbers. This publication, produced by the CSI, provides as a part of the CSI Manual of Practice, a uniform approach to organizing and numbering specification sections.

(g) CONSTRUCTION CRITERIA BASE/SPECSINTACT. The Construction Criteria Base (CCB) consists of the full electronic text of construction criteria and guide specifications prepared by NAVFACENGCOM, the Corps of Engineers, NASA, the Veterans Administration and other agencies. Full text is directly accessible to IBM compatible personal computers. CCB utilizes compact discs, each capable of holdirq 250,000 pages of information. CCB provides the tools to translate all CCB data bases into various word processing formats including WordPerfect, WordStar, MultiMate, and other formats. SPECSINTACT, which stands for "Specifications (kept) Intact," is an automated system for developing construction project specifications and is one of the program provided on the CCB. The Naval Facilities Guide Specifications are published on the Construction Criteria Base.

The specifications currently available are limited to construction related services.

The CCB/SPECSINTACT system has been installed at the engineering field divisions, public works centers, public works offices, and offices in charge of construction: further information on the system is available from the engineering field divisions.

(h) Trade publications. There are many publications issued by trade associations, procedures, and other groups that provide current "state of the art" procedures and methods. The specification writer should contact trade associations and others to identify these publications.

3-200 JOB ANALYSIS.

As discussed at 2-220, a key component of job analysis is the development of a tree diagram or work breakdown structure. Constructing a work breakdown structure involves identification of all the functions to be undertaken as

part of the contract scope of work. These functions are broken down in sufficiently small subdivisions to permit the description of a discrete end item of service called a "contract requirement."

Consider as an example the way in which a contract for refuse collection and disposal can be broken down by asking the questions, "what," "when," "where," and "how" as shown in Figure 3-1. The end item of service or "contract requirement" in this example is described as follows:

> Empty containers, non-hazardous waste, scheduled service, administration area.

The breakdown of the contract into successively smaller subdivisions is further illustrated in Figure 3-2. Although there are no hard and fast rules for preparing a tree diagram or work breakdown structure, the methods outlined have proven effective in systematically developing specific contract requirements.

This process of analysis is continued until all the contract requirements have been identified. No attempt should be made to limit the number of contract requirements listed by combining contract requirements which are somewhat similar but are not identical. A long list of well thought out contract requirements indicates that an effective analysis has been made of the functions to be carried out by contract.

3-300 EXPANDED PERFORMANCE REQUIREMENTS SUMMARY.

3-310 General. The expanded performance requirements summary (EPRS) consists of two principal sections. The first section consists of the performance requirements summary (PRS) which shows the contract requirements and associated performance requirements. The second section consists of the pricing requirements and the surveillance requirements for each contract requirement. The former section is included as part of the contract documents, and the latter section is used in conjunction with pricing and the development of QA plans. The contract requirements developed as a result of the job analysis are all shown in the PRS. The EPRS is the startingpoint in the preparation of a performance work statement.

3-320 Contract Requirements. The contract requirements are developed by using job analysis as outlined at 3-200 and are entered into the PRS as shown in Figure 3-3. In the case of combination firm fixed price/indefinite quantity (FFP/IQ) contracts and indefinite quantity (IQ) contracts, all the contract requirements should appear on the PRS irrespective of whether they are later designated as being in the firm fixed price part of the contract or as being in the indefinite quantity part.

Ideally, a contract requirement should represent a specific task which is performed under the contract. The cost of a contract requirement includes the costs of all the labor, equipment, materials, fringe benefits, overhead,

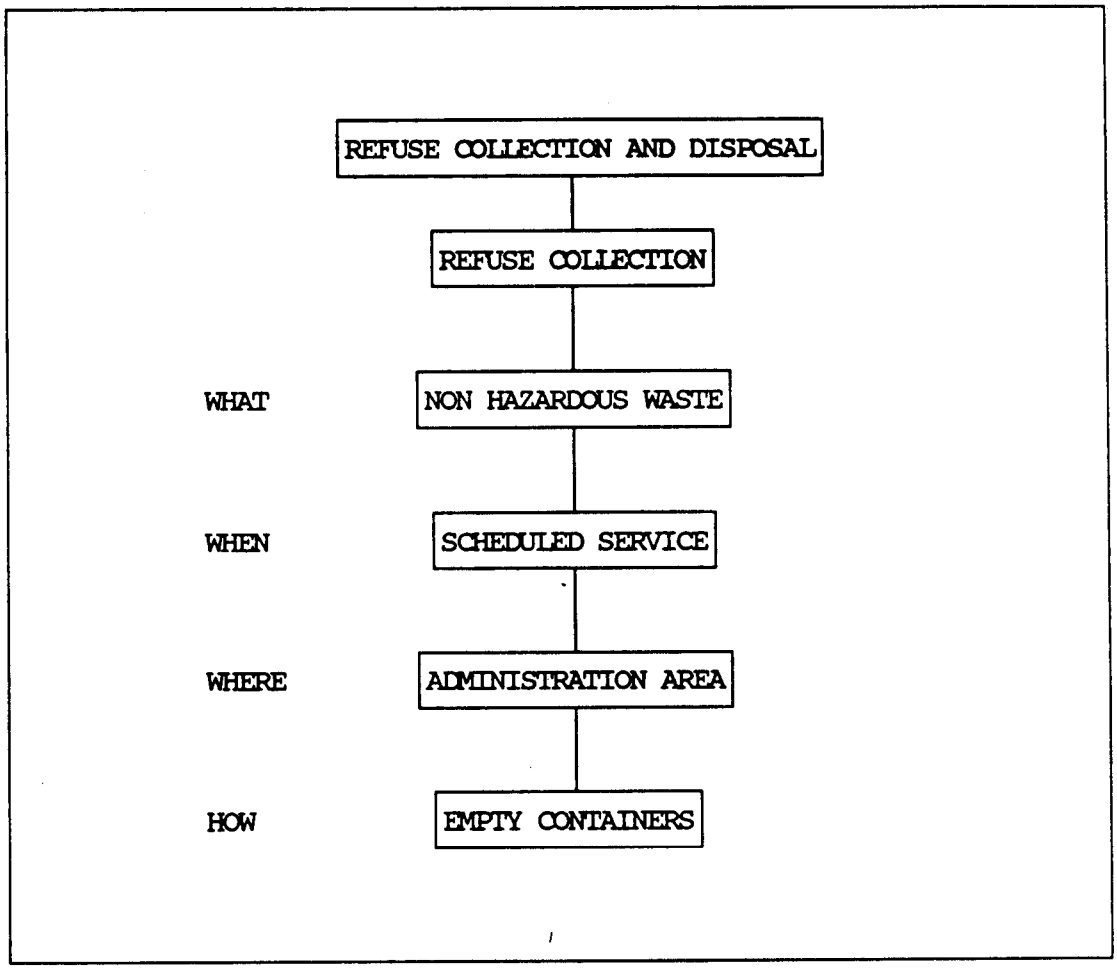


FIGURE 3-1 JOB ANALYSIS -IDENTIFYING CONTRACT REQUIREMENTS

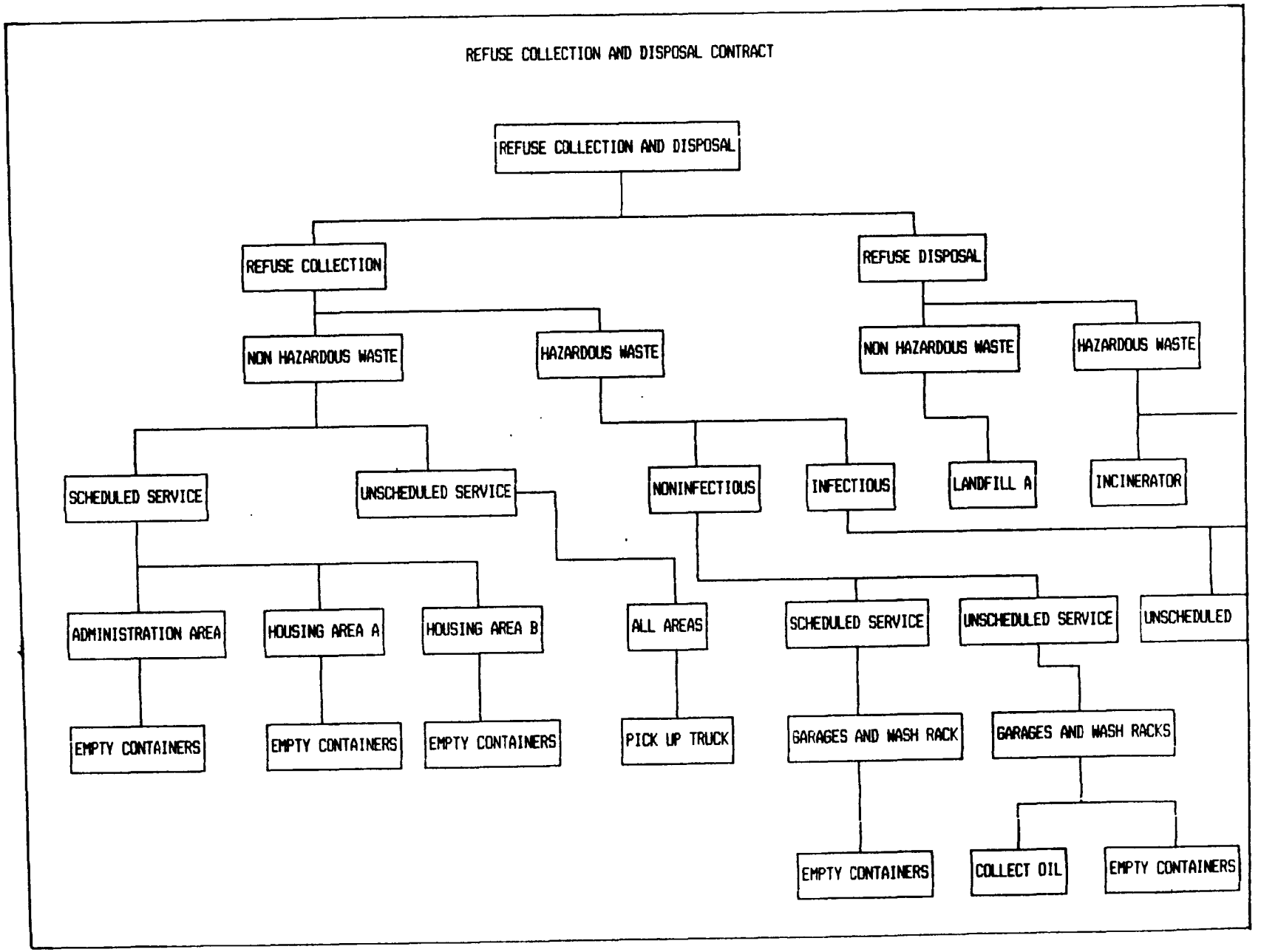


FIGURE 3-2 JOB ANALYSIS - TREE DIAGRAM

EXPANDED PERFORMANCE REQUIREMENTS SUMMARY

PERFORMANCE REQUIREMENTS SUMMARY

CONTRACT REQUIREMENTS		PERFORMANCE REQUIREMENTS				PRICING	
(1) ITEM NO	(2) CONTRACT REQUIREMENT	(3) WORK REQUIREMENT	(4) WEIGHT %	(5) STANDARD OF PERFORMANCE	(6) MADR	(7) QTY	(8) UNIT
001	Empty Containers Non Hazardous Waste, Scheduled Service, Admin Area.		100%			2600	EA
		* A. Empty Containers	80%	Within established standards Para. C.5,a,(1)	0.5%	2600	EA
		B. Comply with schedule	10%	Within established standards Para. C.5,a,(1)	0.5%	2600	EA
		C. Pick up refuse adjacent to containers	10%	Within established standards Para. C.5,a,(1)	0.5%	2600	EA
002	Empty Containers Non Hazardous Waste, Scheduled Service, Housing Area A		100%			3900	EA
		* A. Empty Containers	80%	Within established standards Para. C.5,a,(2)	0.3%	3900	EA
		B. Comply with schedule	10%	Within established standards Para. C.5,a,(2)	0.3%	3900	EA
		C. Pick up refuse adjacent to containers	10%	Within established standards Para. C.5,a,(2)	0.3%	3900	EA
003	Empty Containers Non Hazardous Waste, Scheduled Service, Housing Area B		100%			3900	EA
		* A. Empty Containers	80%	Within established standards Para. C.5,a,(3)	0.3%	4550	EA
		B. Comply with schedule	10%	Within established standards Para. C.5,a,(3)	0.3%	4550	EA
		C. Pick up refuse adjacent to containers	10%	Within established standards Para. C.5,a,(3)	0.3%	4550	EA

* Unsatisfactory performance of this work requirement will result in an unsatisfactory rating for the entire contract requirement.

FIGURE 3-3 EXPANDED PERFORMANCE REQUIREMENTS SUMMARY (EPRS)

and profit associated with that particular contract requirement. Itemslike "Maintenance Management" should therefore not be listed as contract requirements as such functions are considered included in the scope of the individual contract requirements.

Occasionally, there is a temptation to make the PRS as short as possible by lumping together contract requirements which have different characteristics under a single heading. For example, routine service calls and emergency service calls are sometimes combined under one heading as service calls. This short cut invariably leads to serious problems in the preparation of quality assurance plans and in attempting to take deductions from the contract price for nonperformed or defective work. A comprehensive list of well thought out contract requirements indicates that an effective analysis has been made of the functions to be carried out under the contract.

3-330 Performance Requirements. The performance requirements associated with each contract requirement are shown in the PRS and include:

(a) Work Requirements. A series of work requirements associated with each particular contract requirement is listed in the PRS. The work work requirements are typically specified in terms of timeliness of performance, the preparation of documentation associated with a particular contract requirement, and the quality of the work. The relationship between a contract requirement and associated work requirements may be visualized as shown in Figure 3-4.

The number of work requirement is not limited to three, and it may sometimes be advantageous to have a greater or lesser number of work requirements associated with any particular contract requirement. For example, it may be advantageous to have more than one work requirement related to the quality of the work or the documentation required in connection with a particular contract requirement. However, in general, it is desirable to limit the number of work requirements to a minimum with no one particular work requirement representing an insignificant portion of a contract requirement. Sometimes the preparation of separate work requirements for an associated contract requirement may be unnecessary or inappropriate, and in such instances the description of the work requirement will correspond to the description of the contract requirement in the PRS. The work requirements for each contract requirement are summarized on the performance requirements summary (PRS) and are described in detail in the performance work statement (PWS) text.

(b) Weight. The value of each work requirement is specified as a percentage of the contract requirement with which it is associated. The percentages are based on judgement, taking into account both the costs incurred by the contractor in carrying out a particular work requirement and the detriment to the Government if the work requirement is not satisfied. The weight assigned to each work requirement will be used in calculating deductions to the contract price for nonperformed or unsatisfactory work and must be reasonable.

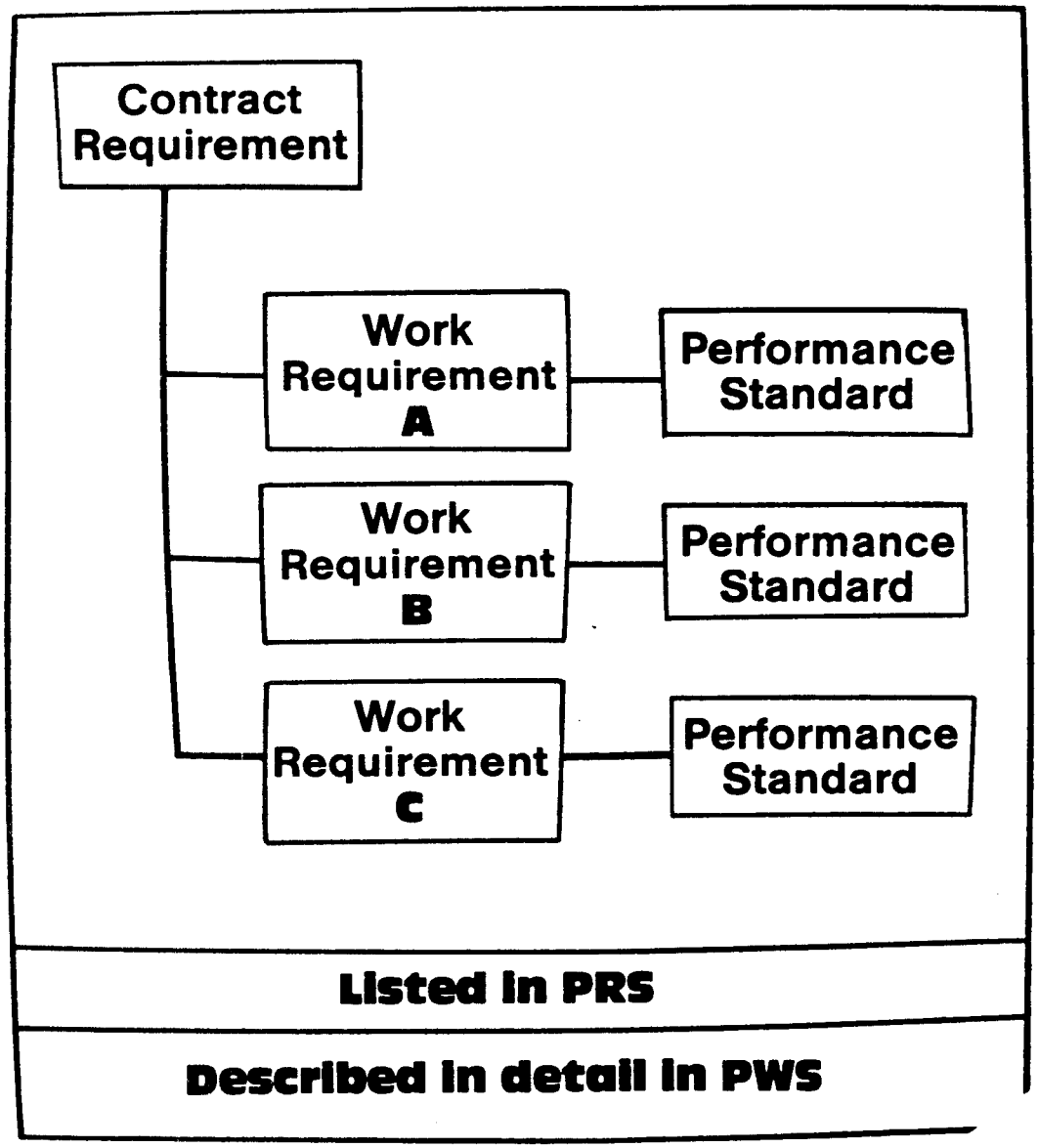


FIGURE 3-4 TASK ANALYSIS - RELATIONSHIP BETWEEN A CONTRACT REQUIREMENT AND WORK REQUIREMENT

Example: The cost for emptying containers of non-hazardous waste in the administration area at a particular Naval Station is estimated as $20,800 per month. (See Figure 3-5)

WORK REQUIREMENT	WEIGHT	% COST OF WORK REQUIREMENT
Empty containers in accordance with schedule	90%	$18,720.00
Pickup refuse adjacent to containers	10%	$2,080.00
	100%	$20,800.00

(c) Standard of Performance. As shown in the PRS in Figure 3-5, each contract has a number of associated work requirement. As an example, consider Item No. 1 in the PRS (Figure 3-5). There are two work requirements "A" and "B" associated with this contract requirement as shown in column (3) of the PRS. The standard of performance for each work requirement is summarized in a column (5) of the PRS by referring to a paragraph in section C of the PWS as shown at 3-535.

(d) Maximum Allowable Defect Rate (MADR). The contractor is responsible for maintaining an effective quality control (QC) program during the course of the contract. The maximum allowable defect rate (MADR) is the measure used to evaluate the contractor's quality control. The MADR is the defect rate in a population of services above which the contractor's quality control is consideredunsatisfactory. The MADR for each work requirement is specified in the PRS.

Careful consideration should be given in deciding on the MADR. The MADR is a part of the contract and cannot be changed during the term of the contract without a contract modification. Prior to establishing the MADR, the importance of the service, the population or the number of occurrences of the service, and the number of defects which can be tolerated must be considered. The population must be known or estimated before a MADR can be rationally specified. As discussed at 3-340, the "unit" must be correctly chosen. As anexample, the unit for emptying containers is not the number of containers but rather the number of pickups per month.

Examples of the determination of MADR are as follows:

WORK REQUIREMENT	POPULATION	UNITS	TOLERABLE DEFECTS/ MONTH	MADR %
Garbage Collection 300 containers, 13 pickups a month. 300 x 13 = 3900	3900	Pickup6	10	0.25 % say 0.3 %

EXPANDED PERFORMANCE REQUIREMENTS SUMMARY

PERFORMANCE REQUIREMENTS SUMMARY

CONTRACT REQUIREMENTS		PERFORMANCE REQUIREMENTS				PRICING REQUIREMENTS				SURVEILL. REQS.	
(1) ITEM NO	(2) CONTRACT REQUIREMENT	(3) WORK REQUIREMENT	(4) Weight (%)	(5) STANDARD OF PERFORMANCE	(6) MADR	(7) QTY	(8) UNIT	(9) UNIT PRICE	(10) TOTAL PRICE	(11) GUIDE NO.	(12) SAMPLING METHODS
001	Empty Containers Non Hazardous Waste, Scheduled Service, Admin Area.		100%			2600	EA	$8.00	$20,800.00	001	RSED
		* A. Empty containers in accordance with schedule	90%	Within established standards Para.C.5.2.1	0.5%	2600	EA	$7.20	$18,720.00		
		B. Pick up refuse adjacent to containers	10%	Within established standards Para. C.5.2.1	0.5%	2600	EA	$0.80	$2,080.00		
002	Empty Containers Non Hazardous Waste, Scheduled Service, Housing Area A		100%			3900	EA	$7.00	$27,300.00	002	RSED
		* A. Empty containers in accordance with schedule	90%	Within established standards Para. C.5.2.2	0.3%	3900	EA	$6.30	$24,570.00		
		B. Pick up refuse adjacent to containers	10%	Within established standards Para. C.5.2.2	0.3%	3900	EA	$0.70	$2,730.00		

* Unsatisfactory performance of this work requirement will result in an unsatisfactory rating for the entire contract requirement

FIGURE 3-5 EXPANDED PERFORMANCE REQUIREMENTS SUMMARY (EPRS) - REFUSE COLLECTION AND DISPOSAL

WORK REQUIREMENT	POPULATION	UNITS	TOLERABLE DEFECTS/ MONTH	MADR %
Housing Maintenance Service call completed within specified time	500	Each	10	2 %
Change of occupancy within specified time	75	Each	2	2.6 % say 3 %
Lawn Maintenance 50 plots x 21 work days	1050	Plot days	15	1.4 % say 2 %
Guard Services Guard on duty 8 gates X 30 workdays X 24 hr/day X 60 minutes x hr.	345,600	Guard minutes	0	0.0 %
Bus Service On time within specified limits Population is total number of stops in a month	10,500	Stops	40	0.4 % say 1 %

It should be noted that the higher the population, the lower the MADR required to keep potential complaints within tolerable levels. For instance, if in the first example (garbage collection) a MADR of 5% was specified, there would have been a potential for 195 customer complaints per month -- a clearly unacceptable number of complaints. There has been a tendency in the past to automatically specify a MADR of 5 to 10 percent. Such high MADRs are rarely justified and endanger the effective use of MADR as a measure of the contractor's quality control.

MADR does not control the level of performance at which deductions are taken for nonperformance or unsatisfactory work. Deductions are taken for all defects, with allowance for rework where appropriate, even if the MADR is not exceeded.

3-340 P<u>ricing Requirements.</u> An estimate is prepared of the cost of the contract to the Government. This estimate includes all contractor furnished labor, equipment, and materials together with allowances for the contractor's overhead and profit and corresponds to the Government's estimate of the bid amount of the successful contractor. The estimate is referred to as the Independent Government Estimate (IGE). In the course of developing the IGE, the estimated cost of each contract requirement shown on the EPRS is determined. In the examples given below, the prices have been calculated on a monthly basis. However, they can also be summarized in a

similar manner for the initial contract period and for subsequent option periods. In many instances the initial contract period will be different from the first option period so that using the month as a basis for prices simplifies the examples.

Let us assume that the estimated monthly cost for the first contract item shown on the EPRS in Figure 3-5 was $20,800 (see page 34 of the text). In order to complete pricing requirements section of the EPRS (shown in a condensed form below), a decision must now be reached as to the appropriate unit which should be used.

The unit should correspond to the unit of work which will be observed in the field. In this case, it is an individual container pickup. The number of container pickups scheduled for a month is therefore 2600 pickups.

By filling in the Total Column (Column 10, Figure 3-5) first, calculating the cost attributable to each work requirement based on the weight and given that the number of pickup of containers is 2600 a month, the pricing requirements section of the EPRS is completed as shown below.

EXPANDED PERFORMANCE REQUIREMENTS SUMMARY (EPRS) - PRICING REQUIREMENTS

ITEM NO.	WORK REQ.	WEIGHT %	QTY.	UNIT	UNIT PRICE	TOTAL
001		100%	2600	EACH	$8.00	$20,800.00
	A	90%	2600	EACH	$7.20	$18,720.00
	B	10%	2600	EACH	$0.80	$2,080.00

The correct choice of the "unit" in the EPRS is important because the unit chosen has a direct bearing on the surveillance of performance and on the Government's ability to calculate deductions to the contract price in the event of defective or nonperformed work. The unit chosen should represent an occurrence of the service being performed and should be measurable. As shown in the EPRS in Figure 3-5, the unit for emptying containers is not the number of containers but rather the number of pickups per month. Examples of typical units for a refuse collection and disposal contract include:

CONTRACT REQUIREMENT	UNIT
Pickup Containers	EA (No. of pick ups accomplished)
Sludge	Gallons Refuse placed in Landfill Cubic Yards (C.Y) measured in place or Tons (Weighed at Landfill)
Special refusepickups	EA (No of pickups accomplished)
Disinfecting Chemicals	Drums (Drum capacity specified in PWS)

If the work requirement under the contract was carried out under the indefinite quantity part of a prior contract, the units used should be determined. The effect the particular choice of unit had on the ease of contract administration or any difficulties encountered, which could be attributed to the particular unit chosen. should be examined. The fact that a particular unit was chosen for use in a prior contract should not alone determine the unit chosen for the new contract.

The pricing requirement section of the EPRS is used in determining the units which will be used for those items on the schedule of indefinite quantity work. The units shown in the EPRS for items included in the firm fixed price part of the contract will not usually correspond to the units in the schedule of deductions as discussed at 3-560. However, all of the units in the EPRS will be used in the quality assurance plan and in calculating deductions to the contract price for nonperformed or defective work. The pricing requirements section of the EPRS also serve as a source of prices for comparison with the contractors' bids and for comparison with the prices the successful contractor submits in the various schedules.

3-350 Surveillance Requirements. A quality assurance (QA) plan including surveillance guides (SGs) for each contract requirement or group of contract is prepared at the same time the PWS is prepared. The number of the SG and the principal method of surveillance for each contract requirement is taken from the EPRS as shown in Figure 3-5. QA plans are discussed in detain in Chapter 4.

3-400 PERFORMANCE REQUIREMENTS SUMMARY.

As shown in Figure 3-5, The EPRS consist of two principal sections. The first section consist of the performance requirements summary (PRS), which shows the contract requirements and the performance requirements. The second section consist of the pricing requirements and the surveillance requirements. The (PRS) is included, as a matter of policy, as part of the contract documents in the case of all facility support contracts written in the Uniform Contract Format. The use of the PRS is optional in the case of contracts written in the Construction Specifications Institute (CSI) format. Contract formats are discussed at 3-510 and 3-610. Ensure that line items in the PRS and Schedule of Deductions match.

3-500 UNIFORM CONTRACT FORMAT.

3-510 General. Facility support contracts (FSCs) are prepared in one of two formats, the uniform contract format or the Construction Specifications Institute (CSI) format. The CSI format, with some modifications, is the format NAVFACENGCOM uses for construction contracts. Normally, the uniform contract format is used for FSCs when the wage rates are governed exclusively by the Service Contract Act. Such contracts are referred to as facility support "service" contracts. The CSI format is used when the wage

rates are governed exclusively by the Davis-Bacon Act. Such contracts are referred to as facility support "construction" contracts. FSCs, which are subject to both the Service Contract Act and the Davis-Bacon Act, are written in the uniform contract format with both the Service Contract Act and Davis-Bacon Act wage determinations included in the contract. When cost comparison studies are undertaken under Office of Management and Bud et (OMB) Circular A-76, the uniform contract format (UCF) is used irrespective of whether the wage rates are governed by the Service Contract Act or the Davis-Bacon Act or both acts. The determination of which labor act applies and the characterization of a facility support contract as being "service" or "Construction" is often complex and the Contracting Manual P-68 should be consulted for further guidance.

The UCF is contained in the Federal Acquisition Regulation (FAR) at subparts 14.2 and 15.4 and consists of four parts with 13 sections as given below. The names of the various sections differ slightly depending on whether or not the solicitation is by sealed bid or competitive negotiation. All clauses contained in sections indicated below by an asterisk sign (*) must be NAVFAC approved clauses or FAR, DFARS, NAPS clauses.

PART I - THE SCHEDULE

* Section A Solicitation/Contract Form
  Section B Supplies or Services and Prices/Costs
  Section C Description/Specifications/Work statements
  Section D Packaging and Marking
  Section E Inspection and Acceptance
  Section F Deliveries or Performance
* Section G Contract Administration
* Section H Special Contract Requirements

PART II - CONTRACT CLAUSES

* Section I Contract Clauses

PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS

Section J List of Documents, Exhibits, and Other Attachments

PART IV - REPRESENTATIONS AND INSTRUCTIONS

* Section K Representations, Certifications and Other Statements of Bidders
* Section L Instructions, Conditions, and Notices to Bidders
* Section M Evaluation Factors for Award

3-520 Preparation and Coordination of the Contract Documents. In accordance with the FM, the Contracting Officer has overall responsibility for the documents included in the solicitation. However, a successful solicitation requires a team effort in which the specification writer and the contract specialist play key roles.

Using the expanded performance requirements summary (EPRS), developed during the planning phase of the procurement, the specification writer prepares the performance requirements summary (PRS) for inclusion in attachment J-C-. Working from the EPRS, the specification writer also prepares the performance work statement (PWS) which consist of Section C and related attachments. The specification writer should review the Special Contract Requirements, Section H and Delivery of Performance, Section F. Section F contains provisions concerning the work schedule. The bid schedule and schedule of deductions should be prepared by the specification writer and carefully reviewed by the contracts specialist. The specification writer should also ensure that an attachment, Attachment J-E-, is included in the contract describing statistically extrapolated surveillance techniques when the use of such techniques is planned. A typical attachment for statistically extrapolated surveillance techniques is included in Appendix D. Coordination between the various schedules contained in the solicitation and the PRS is important.

For facility support services, for which there exist a NAVFAC Guide Performance Work Statement (GPWS), NAVFACENGCOM encourages the use of the GPWS (see listing of available GPWS in Appendix C) (see paragraph l-520 "Training"). When an existing specification from a previous contract is used to develop a new contract, use caution to assure that the existing specification is completely edited to fit the new purpose. Improperly edited existing specifications are a major source of conflicts and ambiguities in FSCs.

Typically for every contract requirement shown on the PRS, which is included in the firm fixed price part of the contract, a corresponding item should be included in the schedule of deductions (or schedule of prices as appropriate). For every contract requirement shown on the PRS, but not included in the firm fixed price portion of the contract, a corresponding item should be included in the schedule of indefinite quantity work.

The contract specialist is tasked with insuring that all the appropriate contract clauses including NAVFAC's "Consequence of the Contractor's Failure to Perform Required Services", "Schedule of Deductions," and "Estimating the Price of Nonperformed or Unsatisfactory Work" are included in the contract in accordance with the latest edition of the Contracting Manual P-68.

3-530 Section C Performance Work Statement. The performance work statement (PWS) generally will include the following paragraphs (See UCF Guide for additional paragraphs that may be used in Section C):

PARAGRAPH NO.	
	C.1 GENERAL INTENTION
	C.2 GENERAL REQUIREMENTS
	C.3 DEFINITIONS - TECHNICAL
	C.4 GOVERNMENT FURNISHED PROPERTY AND SERVICES
	C.5 CONTRACTOR FURNISHED ITEMS

C.6 MANAGEMENT
C.7 CONTRACT REQUIREMENTS
C.8 DETAILED SPECIFICATIONS
C.9 WORK DOCUMENTATION

It is NAVFACENGCOM policy to include a PRS as a part of the contract documents for all facility support contracts prepared in the uniform contract format. The use of a PRS is optional for facility support construction contracts. Facility support construction contracts should be written in the Construction Specification Institute (CSI) format.

The contract requirements listed in the PRS are further defined in paragraphs C.7 through C.9 with reference to appropriate additional data contained in attachments J__. An alternate arrangement for numbering the paragraphs may be used whereby "CONTRACT REQUIREMENTS" and "DETAILED SPECIFICATIONS" are,

for example, contained in a series of paragraphs starting with C.7 and extending to say C.22. In this case, "WORK DOCUMENTATION" would be numbered C.23.

In multifunction contracts, the PWS may be divided into Annexes and numbered Section C, Annex 1; Section C, Annex 2; Section C, Annex 3; etc. Each Annex shall have its own table of contents and paragraphs numbered C.1, C.2, C-3, etc. Reference to paragraphs are stated as "Paragraph C.2 of Annex 2, or Paragraph C.2 of Annex 3, etc." Attachment to these paragraphs are inserted in Section J and listed in the Table of Contents of Section J.

3-531 Paragraph C.1 GENERAL INTENTION, briefly states the intention of the solicitation is to obtain specific services at a specific activity by means of a specific type or types of contracts.

3-532 Paragraph C.2 GENERAL REQUIREMENTS, is generally the second paragraph and includes the following:

C.2,a. FACILITIES
C.2,b. WORKING HOURS
c.2,c. CONTRACTOR QUALITY CONTROL
C.2,d. GOVERNMENT QUALITY ASSURANCE

The paragraphs are discussed below, and typical examples of the paragraphs are given. These typical paragraphs are for <u>illustrative purposes only</u> Generally, significant tailoring is necessary to make these examples applicable to a particular contract.

Paragraph C.2 GENERAL REQUIREMENTS, includes a general description of the scope of work. This paragraph should be written broadly to facilitate a measure of flexibility in the event additional work is required, and the contract needs to be modified.

A work excluded paragraph is optional and should be used with care in order to avoid giving bidders the impression that if work is not specifically included, it is automatically excluded. work excluded paragraph may be useful in clarifying the scope of complicated multifunction contracts, especially if some of the work is already being performed by contract.

Typical Paragraphs

C.2 GENERAL REQUIREMENTS

GENERAL REQUIREMENTS. The Contractor shall provide all labor, supervision, tools, materials, equipment, and transportation necessary to maintain the facilities as described herein, including manning the trouble call desk, performing emergency work, urgent work, routine service work, preventive maintenance, performance of routine recurring work such as relamping, maintaining emergency lighting systems, cleaning grease traps, implementing facility inspection program, preparing estimates, and performing a facility inspection program, preparing estimates, and performing indefinite quality work items of maintenance, repair, and minor construction designated by the Contracting Officer.

Paragraph C.2,a. FACILITIES, includes a description of the location of the work, utility systems, and unusual hazards which may be encountered by the contractor in carrying out the work.

Typical Paragraphs

C.2,a. FACILITIES

Location. All work under this contract is within eleven family housing areas at Naval Station Anywhere. Naval Station Anywhere is located on US 100 one mile west of Route 15.

Utility Systems. The contractor shall obtain a digging permit form the Maintenance Control Director, prior to excavating at any site within the boundaries of the Station. [Specify the conditions under which permits will be issued, who will issue etc.] [Specify how interruption of services, such as electric power, required by the contractor's work, will be handled].

Hazards. Many areas, including paved roads, in the northern portion of the Station are subject to flash floods. [Describe hazards such as oil and gas lines/]

Paragraph C.2,b. WORKING HOURS, describes the normal working hours at the installation, the need to work under certain circumstances outside normal working hours, and lists federal holidays. A clear statement of when the contractor is permitted to work and when he is not permitted to work is important to customer satisfaction in man service type contracts. example, it may be undesirable to allow garbage collection during the night in a residential area. Some tasks, such as cleaning of galley vent hoods or elevator repairs, may be more convenient ly scheduled after normal working hours.

Typical Paragraphs

C.2,b. WORKING HOURS.

Normal Working Hours. Normal working hours shall be Monday through Friday, 0730 to 1600 hours, except federal holidays. The approval of the Contracting Officer, is required for performance of work outside normal working hours. In the case of emergencies, or for the completion of emergency-work initiated during normal working hours, the contractor will be required to work outside normal working hours. contractor will also be required to work on certain tasks, outside normal working hours, as shown on the schedule in Attachment J-F__.

Federal Holidays. [List federal holidays.]

Paragraph C.2,c. CONTRACTOR QUALITY CONTROL. The standard quality control clause is on longer a valid clause for use. The contractor's quality control shall be performed in accordance with the requirements of FAR clause 52.246-1, "INSPECTION OF SERVICES - FIXED PRICE" and an additional inspection or reporting requirements included in Paragraph C.2,c.

Typical Paragraphs.

C.2,c. CONTRACTOR QUALITY CONTROL

The contractor shall establish and maintain a complete quality control program in accordance with FAR 52.246-l "INSPECTION OF SERVICES - FIXED PRICE", and the provisions of this paragraph.

Contractor performed inspections are independent of those performed by the Government. The con tractor shall perform his inspections prior to requesting acceptance of the work by the Government.

The contractor's project manager and his QC inspector shall attend the preperformance meeting. The QC inspector shall also attend meetings with the Contractor Officer and other Government personnel to resolve quality considerations and problems that may arise in the course of the work.

Paragraph C.2,d. GOVERNMENT QUALITY ASSURANCE. The standard quality assurance clause is no longer a valid clause for use. The FAR clause 52.246-l "INSPECTION OF SERVICES - FIXED PRICE" and any additional requirements included in Paragraph C.2,d covers this subject.

Typical Paragraphs

C.2,d. GOVERNMENT QUALITY ASSURANCE

The Government reserves the *right to establish and maintain a quality assurance program in accordance with FAR 52.246-l "INSPECTION OF SERVICES - FIXED PRICE" clause and the provisions of this paragraph.*

3-533 Paragraph C.3 DEFINITIONS-TECHNICAL. This paragraph contains the definitions associated with the work described in Section C. The technical definitions shall be inserted in alphabetical order in full text in the "DEFINITIONS-TECHNICAL" paragraph. Avoid using acronyms, words, terms, technical jargon, or titles which are not identified in the "DEFINITIONS-TECHN ICAL" paragraph Acronyms should be spelled out the first time they are used in each section. Insert the subparagraphs in alphabetical order in full text below.

3-534 Paragraph C-4 GOVERNMENT FURNISHED PROPERTY, AND SERVICES. This paragraph specifies the property and services which will be provided by the Government. Government property may include real property or personal property. The specification writer must clearly identify Government furnished facilities (GFF), Government furnished equipment (GFE), and Government furnished material (GFM) and detailed listing should be placed in the Attachment J-C. The type of information for GFE should include identification number, age, location, condition, size or capacity etc. The specification should state if GFE and GFM is to be furnished for the entire contract period or on a one issue basis. Add any additional paragraphs that are necessary to clearly indicate any maintenance.

or repair that the contractor must perform if he uses GFF, GFE, or GFM. Ensure that all Government furnished property. (GFP) to be included in the solicitation is in serviceable condition and usable for its intended propose as required by FAR 52.245.2, "GOVERNMENT FURNISHED PROPERTY (FIXED-PRICED CONTRACTS) (APR 1984)" clause, Section I. Policy and guidance concerning Government furnished property is contained in part 45 of the Federal Acquisition Regulation (FAR) and supplementary regulations.

Typical paragraphs for Government furnished facilities, Government furnished materials and for utilities are contained in the Uniform Contract Format (UCF) Guide. Additional typical paragraphs are given below.

Typical Additional Paragraphs.

C-4 GOVERNMENT FURNISHED PROPERTY, AND SERVICES

The Government will not provide gas or refuse facilities. The contractor shall dispose of all garbage and other waste materials generated by his work at a licensed off site landfill.

One telephone will be provided to the contractor's work areas by the Government at no expense to the contractor. The telephone will have ability to receive long distance calls. It will not be possible to place long distance calls on this phone. The contractor will be permitted to contract, at his expense, with the local phone company for additional telephone services.

3-535 Paragraph C.5 CONTRACTOR FURNISHED ITEMS. This paragraph specifies the items to be furnished by the contractor and other additional conditions pertaining to contractor furnished items. Use a broad statement which requires the contractor to furnish everything not listed as Government furnished.

Typical Paragraphs

C.5 CONTRACTOR FURNISHED ITEMS.

The contractor shall furnish all equipment, material, parts, supplies and tools necessary for the performance of the work of this contract unless otherwise specified herein.

Items of equipment necessary to perform work as required or ordered under this contract shall be furnished, maintained, and operated by the contractor. The items of equipment include but are not limited to tractors, mowers, hydro mulchers, fertilizer distributors, rollers, rakes, hoses,, sprinklers, water containers, and hand operated power driven equipment.

Materials and supplies procured by the contractor shall meet the specifications, standards,, and manuals listed in these specifications. The Contracting Officer may require test data showing that any material or supplies procured by material contractor meet the specifications.

Contracting Officer may at any time require samples of materials to be used in work performed under this contract.

Administrative supplies and equipment shall be furnished by the contractor. Such contractor supplies should include, but are not limited to, paper, pens, pencils, sharpeners scratch pads, file cabinets, office furniture, office machines, etc.

3-536 PARAGRAPH C.6 MANAGEMENT. This paragraph should be tailored to the nature of the service being contracted and set forth the level of management expected of the contractor to provide duties including but not limited to, planning, scheduling, quality control, furnishing adequate supplies and materials, furnishin adequate staffing of qualified personnel to assure performance of the work, completing work in accordance with the time and quality standards specified, etc.

3-537 PARAGRAPH C.7 CONTRACT REQUIREMENTS

Paragraph C.7 CONTRACT REQUIREMENTS, describes the relationship between the contract requirements, the performance requirements summary (PRS), and the detailed specifications in Paragraph C-8. (Note that the PRS is contained within the EPRS as shown in Figure 3-5, but only the PRS portion is included in the contract documents.)

Typical Paragraphs

C.7,a. GENERAL. The contract requirements listed below shall be performed in accordance with the performance requirements summary (PRS), and the detailed specifications.

Paragraph C.7,b. CONTRACT REQUIREMENTS, contains a listing of each contract requirement listed in the PRS together with the work requirement(s) associated with each contract requirement. the standard of performance of each work requirement (A, B, C, etc.) is stated in detail and reference is made to the detailed specification in paragraph C.8.

The typical paragraphs given below should be read in <u>conjunction with the PRS</u> shown in Figure 3-5 at page 34 of this text.

Typical Paragraphs - Refuse collection and disposal contract.

C.7,b, (1) Contract Requirement No. 001. Empty containers, non-hazardous waste in administration area. requirements are as follows:

A. Empty containers in accordance with the schedule in Attachment J-F6. The location of the containers is shown on Drawing No. 6251.

B. Pickup refuse adjacent to containers. All refuse within 10 feet of the container shall be picked up. Before leaving the collection site, the contractor shall clean up any spillage caused by the collection operation.

C.7.b. (2) Contract Requirement No. 002. Empty containers, non-hazardous waste in Housing Area A. The work requirements are as follows:

Empty containers in accordance with the schedule in Attachment J-F5. Typically, there will be two 32 gallon can per household. Included as part of the refuse to be collected at the households are disposable bags of leaves and grass clippings, hedge or tree trimmings, wood, metal, rubble, earth, and gravel, weighing not more than 40 pounds each. The containers shall be replaced in their original positions at curb side

and the lid of each container shall be replaced. The location of the houses in Area A is shown on Drawing No. 6252.

B. Pickup refuse adjacent to containers. Before leaving a collection point the contractor shall clean up any spillage caused by his collection operation. The contractor will not be responsible for pickup of refuse adjacent to containers not caused by his operations unless it is placed in disposable bags.

The typical paragraphs given below should be read in conjunction with the PRS shown in Figure 3-6.

Typical Paragraphs - Housing maintenance contract.

C.7.b. (8) Contract Requirement No. 008. Routine Service calls. The work requirements are as follows:

A. Response time. All routine service calls shall be completed within for (4) working days after of receipt. Once work is commenced, it shall be prosecuted until complete.

B. Classification and documentation Service calls shall be classified as routine service calls when the work does not qualify as an emergency or priority call Examples of routine service calls include, but are not limited to repair of windows, floors, counters and cabinets, freeing up binding doors, repair of bathroom tile and leaking faucets. Routine service calls shall be documented by either a work authorization form, change of occupancy work authorization, or an indefinite quantity work authorization form.

C. Cost accounting. All service work is included in the fixed price portion of the contract except when the cost exceeds $500 based on the cost of labor and materials. If the contractor believes that the total cost will be grater the Government shall be provided with a detailed cost estimate.

D. Quality work. The contractor shall perform the work in accordance with the specifications and to the general standard of an experienced journeyman skilled in the trade. All material and supplies shall be new unless specified otherwise.

C.7.b. (30) Contract Requirement No. 30. Change of Occupancy Maintenance. The work requirements are as follows:

A. Response time. Change of occupancy work shall commence after the premises are vacated an contractor during the hours of 0700 through 2000, seven (7) days a week. All chang of occupancy work shall be completed within two (2) calendar days after the unit becomes available. For example, if the unit becomes available on Tuesday at 1800, the work must be completed and the unit turned back over to the Government by 1800 Thursday.

EXPANDED PERFORMANCE REQUIREMENTS SUMMARY

PERFORMANCE REQUIREMENTS SUMMARY

CONTRACT REQUIREMENTS		PERFORMANCE REQUIREMENTS				PRICING REQUIREMENTS				SURVEILL. REQS.	
(1) ITEM NO	(2) CONTRACT REQUIREMENT	(3) WORK REQUIREMENT	(4) Weight (%)	(5) STANDARD OF PERFORMANCE	(6) MADR	(7) QTY	(8) UNIT	(9) UNIT PRICE	(10) TOTAL PRICE	(11) GUIDE NO.	(12) SAMPLING METHODS
008	Routine service calls		100%			600	EA	$22.00	$13,200.00	008	RSED
		A. Respond to service calls on time	30%	Within established standards Para.C.5.2.8	3%	600	EA	$ 6.60	$3,960.00		
		B. Properly document and classify service calls	5%	Include all required information Para. C.5.2.8	3%	600	EA	$1.10	$ 660.00		
		C. Properly classify service calls for cost	5%	Include correct accounting data Para. C.5.2.8	3%	600	EA	$1.10	$ 660.00		
		* D. Perform quality maintenance	60%	All work in compliance with standards Para. C.5.2.8	3%	600	EA	$13.20	$7,920.00		
030	Change of occupancy maintenance		100%			30	EA	$120.00	$3,600.00	016	100%
		A. House ready on time	40%	Work performed by by date specified Para. C5.2.30	No Defects	30	EA	$48.00	$1,440.00		
		* B. Perform quality maintenance	60%	All work in compliance with standards Para. C.5.2.30	2%	30	EA	$72.00	$2,160.00		

* Unsatisfactory performance of this work requirement will result in an unsatisfactory rating for the entire contract requirement

FIGURE 3-6 EXPANDED PERFORMANCE SUMMARY (EPRS) - HOUSING MAINTENANCE

B. Quality work. The contractor shall perform the work in accordance with the detail specifications (Paragraph C.8) and to the general standards of an experienced Journeyman skilled in the trade. the work includes any required interior and exterior maintenance and repair work, including painting, floor finishing, tile replacement, or other work described in the specification

Historical work load data should be provided as an a appendix to the contract requirements listed in Paragraph C.7. The historical data and work schedules are essential to provide prospective contractors with a scope of work which along with the contractor's own expertise, becomes the basis for the preparation of a bid for the work.

I 3-538 Paragraph C.8 DETAILED SPECIFICATIONS

Paragraph C.8,a. GENERAL, describes the relationship between the work to be performed under the contract and the detailed specifications contained in Paragraph C.8 and in Attachment J-C9. Detailed specifications may not be required for some contract requirements. For example, there are no detailed specifications for the two contract requirements for the refuse and collection contract shown above.

The specification shown in Attachment J-C9 are, where appropriate, based on the NAVFACENGCOM guide specifications (NAGS). The guide specifications should be carefully reviewed in the light of on site conditions and the nature of the work contemplated. revisions to the guide specifications should be made as necessary.

Typical Paragraphs - Housing maintenance contract.

C.8,a. GENERAL. Work performed under this contract shall be performed in accordance with these specifications and the specification shown in Attachment J-C9.

C.8,b. MAINTENANCE OF STRUCTURES AND SYSTEMS GENERAL REQUIREMENTS

The contractor shall repair all family housing including dwellings, sewage collection s stems, water supply systems, electrical supply systems, and gas distribution systems within the following limits.

(1) Repair to dwellings shall include repair to porches and garages.

(2) The contractor's responsibilities for repair and maintenance extends to all plumbing s stems and fixtures for each dwelling unit and extends to and includes the connection with the main sewer line located in the roadway in front of each dwelling.

(3) Domestic water lines shall be maintained to the service stop and box outside the unit.

(4) Gas lines shall be maintained both within and outside building to and including the pressure regulator outside the building.

(5) The contractor's responsibilities for the repair and maintenance of electrical systems starts at the connection between the entrance conductors and the service drop including all circuit breakers. The service drop is considered to be at the masthead connection on units having mastheads: on units having outside distribution panels, the breakers in the exterior distribution panels are the responsibility of the Government.

C.8,c. PLUMBING.

All plumbing systems and fixtures of each housing unit shall be maintained in a good and safe operating condition free of leaks and drips in accordance with the specification in Attachment J-C9 Any sidewalk, road,, grass, or any portion of a housing unit such as a wall, ceiling or floor, which is damaged or removed to gain access for repair or replacement of an concealed pipe or fitting, shall be replaced or repaired by the contractor to its original condition. There will be no separate payment for such replacement or repair.

Paragraph C.8,c. is followed by subsections giving more detailed specifications for plumbing items under such heading as "Plumbing Fixtures," "Water Heaters," "Dishwashers," and "Garbage-Disposals" with a reference where appropriate to the specification section which is applicable in Attachment J-C6.

3-539 Paragraph C-9 WORK DOCUMENTATION. This paragraph lists the work documentation, including work schedules inspection reports, certification of materials, occupational licenses, accident report, contract discrepancy reports, and other documentation required by the terms of the contract. "Performance Evaluation" should be included in the listing with an explanation that the contractor ma be afforded an opportunity to comment on these evaluations.

Typical Paragraphs.

C.9 WORK DOCUMENTATION

The principal documentation required by this contract is summarized below The listing is not all inclusive and additional documentation may be required to fulfill the objectives of the contract.

Work Scheduling. The contractor shall submit a monthly work schedule of planned performance of preventative maintenance inspections and janitorial services to the Contracting Officer by the 25 th day of the preceding month for approval. The schedules shall be coordinated with Paragraphs F.5., Any changes to the schedules shall be coordinated with the' Contracting Officer 24 hours prior to implementation.

Service interruptions will be scheduled in accordance with Section F.5,d and will be subject to approval by the Contracting Officer.

Preventive Maintenance Checklist. The contractor shall carry out preventive maintenance in accordance with the checklists shown in

Attachment J-C17. A separate checklist for each inspection shall be completed and submitted to the Contracting Officer within three-working days of each inspection.

Contract Discrepancy Report. the Contracting Officer may send a Contract Discrepancy Report" to the contractor, listing deficiencies in the contractor's work. The contractor shall inform the Contracting Officer in writing within three (3) calendar days of the receipt of the report of the action the contractor proposes to take to remedy the deficiencies and the measure the contractor plans to adopt to insure that similar deficiencies will not reoccur in the future.

Material Submittals. The contractor shall submit shop drawings, manufacturer's data, samples, material lists, and other required data in accordance with the specification prior to incorporating the material in the work.

Contractor's Personnel Certification. Personnel involved in pesticide handling, transportation,, mixing, and application shall be certified in accordance with Federal, State, and local laws and requirements. The certification shall be submitted prior to beginning work.

Pa roll Records and Documentation. The contractor shall submit payroll records and documentation in accordance with FAR 52.222-43 and 52.222-44.

Modification Proposals. Proposals for contract modification shall be submitted in accordance with DFARS 252.243-7001.

Pest Control Records and Reports. The contractor shall prepare and submit daily records of all pest control operations (Attachment J-C9) in accordance with paragraph *C.15*

Performance Evaluation. The Government may, at its discretion, prepare evaluation reports on the contractor's performance. The contractor may be periodically requested to comment on these reports in writing.

3-540 Section B, Supplies or Services and Prices/Costs. Bid schedules are prepared in accordance with the format shown in the Uniform Contract Format (UCF) Guide.

In the case of firm fixed price/indefinite quality contracts, the firm fixed price (lump sum) art of the contract includes all the work to be performed under the contract, with the exception of the work included in the schedule of indefinite quantity. In the indefinite quality part of the contract, the contractor agrees to perform the work on an "as ordered basis" and a price to perform each contract requirement on a price per occurrence as established in the bid schedule.

The schedule of firm fixed price work may be prepared in any one of the three formats. It may be prepared as:

a. A single line item, supported by as schedule of deductions, or

b. as a single line item, supported by subline items instead of a schedule of deductions, or

as a single line item, supported by a limited number of sublines and by a schedule of deductions which breaks down the subline items. An example of a contract with two subline items is shown in Figure 3-7.

In the case of firm fixed price/indefinite quantity contracts, careful consideration should be given to the contract requirements which should be included in the firm fixed price (lump sum) part, and those which should be in the indefinite quantity part.

The contract requirements shown in the EPRS are reviewed one by one and a decision is made as to which should be included in the firm fixed price part of the contract. Contract requirements which are readily quantifiable or fixed in scope are included in the firm fixed price. Therefore, if the number of occurrences of a particular contract requirement over a fixed period of time can be established in advance, the contract requirementwill generally be included in the firm fixed price. Generally, if the service is scheduled as opposed to unscheduled, it will be included in the firm fixed price.

If the work required was carried out under a prior contract, a determination should be made as to whether the contract requirement was included in the firm fixed price or indefinite quantity part of the contract. The effect of including the work in the firm fixed price part or in the indefinite quantity part depends on the ease of contract administration, or any difficulties which were encountered should be examined. The fact that the work was included in a particular part in a prior contract should not alone determine where the work will be included in the new contract.

Whether or not a particular contract requirement calls for unscheduled services, or a contract requirement that is not readily quantifiable should be included in the firm fixed price, is often unclear and a decision has to be made weighing a number of factors. These factors include what proportion of the total contract price the contract requirement under consideration represents: the reliability, of the historical record; the accuracy of an estimated quantity; and the amount of variation in the occurrence of this particular contract requirement in the past. If the quantity cannot be forecast with any degree of reliability and a significant dollar value is involved, the contract requirement should, in most cases, be included in the indefinite quantity part of the contract.

There is a temptation to include items which are not readily quantifiable in the firm fixed price part of the contract. This expedient puts a major burden of risk on the contractor and makes it difficult for the contractor to bid a realistic price. Furthermore, a contract requirement, which is erroneously included in the firm fixed price part of the contract, often

BID SCHEDULE

Item No.	Supplies/Services	Quantity	Unit	Unit Price	Amount
0001	SCHEDULE OF FIXED PRICE WORK: Price to perform fixed price work in accordance with all the terms of this contract. The price for Contract Line Item 0001 is the sum of Subline Items 0001AA through 0001AB.				
SCHEDULE OF FIRM FIXED PRICE WORK					
0001AA	_____ (per PRS Items_____ through_____)	____	MO	$_____	$_____
0001AB	_____ (per PRS Items_____ through_____)	____	MO	$_____	$_____
	PRICE FOR CONTRACT LINE ITEM 0001 (0001AA through 0001AB)	XXXXX	XX	XXXXX	$_____
0002	INDEFINITE QUANTITY WORK: Price to perform indefinite quantity work in accordance with all the terms of the contract. The price of Contract Line Item 0002 is the sum of Subline Items 0002AA through 0002ZZ				
SCHEDULE OF INDEFINITE QUANTITY WORK		MAX. QTY.			
0002AA	_____ (per PRS Item _____)	____	EA	$_____	$_____
0002AB	_____ (per PRS Item _____)	____	EA	$_____	$_____
0002AC	_____ (per PRS Item _____)	____	SY	$_____	$_____
0002AD	_____ (per PRS Item _____)	____	SY	$_____	$_____
0002AE	_____ (per PRS Item _____)	____	SQ	$_____	$_____
0002AF	_____ (per PRS Item _____)	____	SF	$_____	$_____
0002ZZ	_____	____	SF	$_____	$_____
PRICE FOR CONTRACT LINE ITEM 0002		XXXX	XX	XXXXX	$_____
TOTAL BID PRICE (ITEMS 0001 AND 0002)		XXXX	XX	XXXXX	$_____

FIGURE 3-7 BID SCHEDULE

leads to disputes with the contractor concerning the scope of the work included in the contract.

If the solicitation is an indefinite quantity contract, a minimum dollar value must be specified. A minimum quantity need not be specified for the indefinite quantity part of a firm fixed price/indefinite quantity (FFP/IQ) contract. The quantities shown on the schedule of indefinite quantity work are maximum quantities and they cannot be exceeded without a formal modification to the contract.

A series of standard clauses, dependent on the type of contract being used, are given in the contracting Manual P-68 at Part 52. The various types of contracts commonly employed by NAVFACENGCOM are described in Chapter 5 of this manual.

An example of a bid schedule, as completed by the contractor, for a firm fixed price/indefinite quantity contract for refuse collection and disposal is shown in Figure 3-8.

3-550 S<u>ection E, Consequences of the Contractor's Failure to Perform Required Services.</u> The primary goal of the Government is to obtain timely performance in accordance with the contract specifications while preserving the integrity of the competitive procurement system. To insure that this goal is achieved, various clauses are included in the contract giving the Government substantial rights to monitor performance and to take appropriate steps when performance is unsatisfactory. The two principal clauses which contain the fundamental rules for inspection and acceptance of the contractor's work are "Inspection of Services-Fixed Price" which is included in the Federal Acquisition Regulation (FAR), and "Consequences of Contractor's Failure to Perform Required Services" which is a NAVFACENGCOM clause.

The Government is given a wide range of remedies if the contractor's work is unsatisfactory. The "Consequences of Contractor's Failure to perform Required Services" allows the Government to:

(1) reject work and order the contractor to correct,
(2) take an equitable deduction in price for defective work,
(3) have defective services performed by Government personnel or by other means.

The various versions of the "Consequences" clauses are given in the Contracting Manual P-68, Part 52. Alternate I is used when statistically extrapolated surveillance techniques, random sampling for extrapolated deductions (RSED), or random sampling without extrapolated deductions (RSWED) are used. Alternate II is used when statistically extrapolated surveillance techniques will not be used to either assess the contractor's performance or determine the amount of payment due. Alternate III is used for watchstanding. Alternate I should be used for watchstanding if statistically based inspection techniques are used.

BID SCHEDULE

Item No.	Supplies/Services	Quantity	Unit	Unit Price	Amount
0001	SCHEDULE OF FIXED PRICE WORK: Price to perfom fixed price work in accordance with the terms of this contract.				
0001	PRICE FOR CONTRACT PERIOD	12	MO	70,000.00	$840,000.00
0002	INDEFINITE QUANTITY WORK: Price to perform indefinite quantity work in accordance with all the terms of the contract. The price of Contract Line Item 0002 is the sum of Subline Items 0002AA through 0002AN.				
	SCHEDULE OF INDEFINITE QUANTITY WORK	MAX. QTY.			
0002AA	Furnish 4 c.y. containers (per PRS Item 37)	40	ea	$ 800.00 per ea.	$ 32,000.00 Total for 12 months
0002AB	Furnish 10 c.y. containers (per PRS Item 38)	100	ea	$1,200.00 per ea	$120,000.00 Total for 12 months
0002AC	Paint 4 c.y. containers (per PRS Item 39)	200	ea	$ 250.00 per ea	$ 50,000.00 Total for 12 months
0002AL	Furnish Dumpster steps (per PRS Item 56)	30	ea	$ 400.00 per ea	$ 12,000.00 Total for 12 months
0002AM	Empty containers at stadium (per PRS Item 57)	8	mo	$2000.00 per mo	$ 16,000.00 Total for
0002AN	Special pick up at garage F (per PRS Item 58)	70	ea	$ 40.00 per ea	$ 2,800.00 Total for 12 months
	PRICE FOR CONTRACT LINE ITEM 0002	XX	XX	XXXXX	$300,000.00
	TOTAL BID PRICE (ITEMS 0001 AND 0002)				$1,140,000.00

FIGURE 3-8 BID SCHEDULE- REFUSE COLLECTION AND DISPOSAL

3-560 Section E, Schedule of Deductions. The preparation of a proper schedule of deductions (or schedule of prices if appropriate) is very important because this schedule, when completed after contract award, serves as a basis for taking deductions to the contract price in the case of nonperformed or unsatisfactory work in accordance with the "Consequences of Contractor's Failure to Provide Required Services" clause.

Firm fixed price and combination firm fixed price/indefinite quantity contracts must include a clause in Section E, in accordance with the Contracting Manual P-68 at Part 52, requiring the contractor submit a schedule of deductions within 15 days after the contract award. The form for the schedule of deductions to be completed by the contractor is included in the solicitation. (Alternatively line items may be used to breakdown the firm fixed price portion of facility support service contracts. The guidance given below is equally valid for the preparation of these line items except that if line items are used instead of a schedule of deductions, the prices are submitted as part of the bid.)

The schedule of deductions applies only to the firm fixed price part of a combination contract. A typical form for the schedule of deductions for inclusion in the solicitation for a refuse collection and disposal contract is shown in Figure 3-9.

The form for the schedule of deductions can only be successfully written by taking into consideration both the PRS and the bid schedule. Remember that the PRS contains a listing of all the contract requirements including those in the firm fixed price portion of an FFP/IQ contract and those contained in the indefinite quantity part. All the contract requirements associated with the firm fixed price (lump sum) part of the contract must be listed in the schedule of deductions. Therefore, if 50 contract requirements are listed in the PRS, associated with the firm fixed price portion of the contract, there must be 50 corresponding items on the schedule of deductions. Failure to ensure that the contract requirements in the firm fixed price part of the contract, shown in the PRS, match with the item in the schedule of deductions will inevitably lead to a defective and possibly useless schedule of deductions.

In the typical PRS, shown in Figure 3-5, at page 34 of this text, Items 1 through 36 might be included in the firm fixed price portion of the contract, and Items 37 through 58 might be included in the it-definite quantity work portion. (See the bid schedule in Figure 3-8.) Items 1 through 36 would therefore be listed on the schedule of deductions as shown in Figure 3-9.

As shown in Figure 3-9, the "Unit" for quantity measurement in the schedule of deductions is shown as "Month." This is the case because the schedule of deductions is a breakdown of the firm fixed price part of the work. When the contractor bid on the firm fixed price part of the contract, the Government required the contractor to make his own estimate of the number of occurrences of each particular contract requirement based on historical data or schedules appearing in the contract. In conformance with that philosophy, the contractor, when completing the schedule of deductions, must again use his own judgement of the number of occurrences of a particular contract requirement which will take place during the contract.

SCHEDULE OF DEDUCTIONS FOR THE BASE PERIOD

DO NOT SUBMIT SCHEDULE OF DEDUCTIONS WITH THE BID;

SCHEDULE

Item No.	Supplies/Services	Quantity	unit	Amount Per Month	Total Months
0001	Empty Containers Non Hazardous Waste, Scheduled Service, Administration Area. (per PRS item 0001)	--	Mo.	$_____	$_____
0002	Empty Containers, Non-Hazardous Waste, Scheduled Service Housing Area A. (Per PRS Item 0002)	--	Mo.	$_____	$_____
0003	Empty Containers, Non Hazardous Waste, Scheduled Service, Housing Area B. (per PRS item 0003)	--	Mo.	$_____	$_____
0004	Pickup, Non Hazardous Waste, Unscheduled Service, All Areas, (Per PRS item 0004)	--	Mo.	$_____	$_____
0005	Empty Containers, Hazardous, Noninfectious waste, Scheduled Service, Garages and Wash Rack. (Per PRS item 0005)	--	Mo.	$_____	$_____
0035	Dispose of Non Hazardous Waste Landfill A. (Per PRS item 0035)	--	Mo.	$_____	$_____
0036	Dispose of Sludge, from Sewage Treatment Plant, Landfill B. (Per PRS item 0036)	--	MO.	$_____	$_____

TOTAL PRICE FOR THE FIRM FIXED PORTION OF THE CONTRACT $_____

Insert the number of months for the base period or subsequent periods.)

FIGURE 3-9 SCHEDULE OF DEDUCTIONS - REFUSE COLLECTION AND DISPOSAL

Alternatively, the Contracting Officer may decide to use units such as square yards, gallons, etc. in the schedule of deductions. However, because the schedule of deductions is a part of the contract, variations from the quantities shown in the schedule may necessitate changes in the schedule by means of contract modifications. If line items are used (as schedule of prices) in place of a schedule of deductions, units such as square yards, gallons etc., should not be used because to do so would convert the firm fixed price part of the contract into an indefinite quantity contract. Further should be sought from the contract specialist before varying the standard methods of preparing schedules.

The units in the pricing requirements section of the EPRS for the corresponding requirements in the schedule of deductions are for individual occurrences of the contract requirement such as "Each," and these are the units which will be used in calculating deductions for unsatisfactory performance as shown at 6-600 -- Payment Calculations.

The prices shown in the schedule of deductions are used in conjunction with the "Consequences of the Contractor's Failure to Perform Required Services" Clause in Section E, in making deductions to the contract price for nonperformed or unsatisfactory work. In accordance with the "Consequences" clause, resorting to the schedule of deductions (or the schedule of prices in Section B, where appropriate) is not the only means by which deductions of the contract may be calculated. For example, if portions of the work are carried out by the Government or by another contractor in order to correct deficiencies, the actual cost of the work the the Government is used to determine the deduction to the price for that portion of the work.

3-570 Section J, List of Attachments. The attachments to other sections of the contract are included in Section J. A partial listing of attachments is shown in the Uniform Contract Format Guide (UCFG).

3-580 Attachment J-C. The attachments included in connection with Section C, the performance work statement typically include the following:

ATTACHMENT No.	ATTACHMENT NAME
J-C__	Performance Requirements summary
J-C__	Government Furnished Facilities, Equipment, Materials, and Utilities
J-C__	Contractor Furnished Items
J-C__	Historical Performance Data
J-C__	Work Documentation

A performance requirements summary (PRS) must be included in Attachment J-C for all contracts written in the uniform contract format (UCF). The PRS shall in accordance with established policy include a listing of all the contract requirements in the firm fixed price part of the contract as well as the contract requirements included in the indefinite quantity part. The PRS shall be included irrespective of the type of surveillance employed. When the Construction Specifications Institute (CSI) format, which is used for construction contracts, is employed, the use of a performance requirements summary is optional.

3-590 Attachment J-E. Statistically Extrapolated Surveillance Techniques.

This attachment must contain at a minimum all the information required by the contractor so he understands how the Government plans to assess his work and take deductions to the payment due when statistically extrapolated inspection techniques are employed by the Government in accordance with the "Consequences of Contractor's Failure to Perform Required Services Clause."

The sample sizes and the adjustment factors which will be employed by the Government are disclosed to the contractor in advance of bidding or negotiations. The underlying policy for giving the contractor this information is to permit the contractor to have the opportunity of assessing the degree of risk he will be undertaking if he is successful in obtaining the contract.

The Government does not warrant that any particular "confidence" level will be achieved in the statistical sampling. Instead, the contractor is afforded the opportunity to consult with his own experts prior to bidding, assess the degree of risk he will be undertaking, and bid accordingly. The contractor is therefore in effect agreeing to the validity of the statistical methods by choosing to bid or enter into negotiations for the contract. When this policy of full disclosure is followed, the contractor does not have a legally valid basis for later complaining that the statistical methods are unfair or unreliable.

The attachment must include the following:

(1) A short description of random sampling for extrapolated deductions (RSED) and random sampling without extrapolated deductions (RSWED),

(2) An An example of payment calculations using statistical surveillance techniques,

(3) Sample size tables for normal sampling level and minimum sampling level,

(4) A table of adjustment factors to be used in calculating the defect rate based on the observed defect rate.

A typical text for inclusion in Attachment J-E is shown in Appendix D of this Manual.

3-600 CONSTRUCTION INSTITUTE FORMAT

3-610 General. Facility support contracts areprepared in one of two formats, the uniform contract format or the construction Specification Institute (CSI) format. (The CSI format, with some modification, is the format NAVFACENGCOM uses for construction contracts.)

The CSI format is used when the wage rates are governed exclusively by the Davis-Bacon Act, which determines labor rates for various construction trade

classifications. Such contracts are referred to as facility support "construction" contracts.

Facility support contracts which are subject to both the Service Contract Act and the Davis-Bacon Act, are written in the uniform contract format with both, the Service Contract Act and Davis-Bacon Act wage determinations included in the contract.

When cost comparisons studies for FSCs are undertaken under Office of Management Budget (OMB) Circular A-76, the uniform contract format (UCF) is used irrespective of whether the wage rates are governed by the Service Contract Act or the Davis-Bacon Act or both acts.

The determination of which labor act applies and the characterization of a FSC as being "construction" governed by the Davis-Bacon Act or as being "services" governed by the Service Contract ACT is sometimes complex, and the Contracting Manual EL68 should be consulted for further information.

The basic steps required to prepare a facility support contract when using the CSI format do not differ greatly from those followed when using the UCF. These steps include job analysis as required and the preparation of an expanded performance requirements summary (EPRS). However, there are important differences which must be considered when using the CSI format. Facility support contracts written in the CSI format are nearly always Indefinite Quantity Contracts rather than firm fixed price or combined firm fixed price/indefinite quantity contracts. Because there is no firm fixed price component in the contract, a schedule of deductions is not necessary. The bid schedule provides the necessary pricing data to deal with circumstances of nonperformed work.

The method employed in assessing damages for delays in completing the work is also different when the CSI format is used. In the UCF the timely performance of the work is specified as a work requirement, and damages for delay in completing the work depend on the weight the work requirement is given as a percentage of the associated contract requirement in the PRS. When the CSI format is used, the damages fordelays in completing the work are calculated on the basis of a daily rate for liquidated damages dependent on the value of the work being ordered. The differences between the use of the CSI format and the UCF are discussed further below.

3-620 Job Analysis. Job analysis, as outlined in Section 3-200, should be carried out for all complicated facility support construction contracts written in the CSI format. However, most facility support construction contracts are indefinitequantity (IQ) contracts with a limited number of contract requirements. Therefore, it is often more practical to proceed directly to the preparation of an expanded performance requirements summary (EPRS).

3-630 Expanded Performance Requirements Summary. The inclusion of a performance requirements summary (PRS) in facility support contracts written

in the CSI format is optional. However, an expanded performance requirements summary (EPRS) should be prepared as a planning document. The EPRS provides a tool for systematically coordinating the technical specification, the bid schedule, the Government estimate, and the quality assurance plan.

The EPRS summarizes the requirements under the contract, including the performance, pricing, and the surveillance requirements for each contract requirement. The contract requirements for a typical contract for the supply and installation of vinyl-coated wall covering are listed on the EPRS as shown in Figure 3-10.

3-631 Performance Requirements. Provision is made in the standard and EPRS form for listing the work requirements associated with each contract requirement as sham in Figure 3-10. When the UCF is used, the work requirements, as discussed at 3-330, typically consists of timeliness of performance, the preparation of documentation associated with a particular contract requirement, and the quality of the work. When the CSI format is used, damages for failure to carry out the work on time are assessed on the basis of the size of the work authorization and the duration of the delay. This approach leads to deductions at a daily rate, for example, of $25 per day. Thus, the deductions for delays are not calculated on the basis of a separate work requirement associated with each contract requirement and the designation of a work requirement for timeliness would not be appropriate. This generally leaves only two other work requirements for consideration which are work quality and work documentation.

The example chosen to illustrate the preparation of an EPRS when the CSI format is used, is the installation of vinyl-coated wall covering. Work documentation in this particular contract is considered a minimal routine job, and a decision was not to assign a specific work requirement for documentation. Thus, the quality of the work is left as the principal standard of performance, and the work requirement columns in the standard EPRS form need not be filled out. The standard of performance is specified in the text of the specification. (The development of the specification text is discussed at 3-651.)

The contractor is responsible for maintaining effective quality control (QC) during the course of the contract. In Section 3-330, the use of the maximum allowable defect rate (MADR) as a measure of the contractor QC was discussed in detail. However, a decision was made in this particular case - the installation of vinyl-coated wall covering - not to use MADR as a measure of quality control. MADR is therefore not specified nor used as a measure of quality control in the example shown in the EPRS in Figure 3-11. Becauseof the wide diversity of contracts written in the CSI format, the decision whether or not to use MADR or to specify work requirements in a PRS is left to the discretion of the Contracting Officer.

When work requirements are not listed, the "weight percentage," the ratio of the value of the work requirement to an associated contract requirement, is also not listed.

EXPANDED PERFORMANCE REQUIREMENTS SUMMARY

PERFORMANCE REQUIREMENTS SUMMARY

CONTRACT REQUIREMENTS		PERFORMANCE REQUIREMENTS				PRICING	
(1) ITEM NO	(2) CONTRACT REQUIREMENT	(3) WORK REQUIREMENT	(4) Weight (%)	(5) STANDARD OF PERFORMANCE	(6) MADR	(7) QTY	(8) UNIT
0001AA	Removal of existing wall covering			In accordance with Spec. Section 02050		75,000	SF
0001AB	Vinyl-coated wall covering (Normal wall covering)			In accordance with Spec. Section 09951			
	Type 2					75,000	SF
	Type 3					300	SF
0001AC	Vinyl-coated wall covering (Abnormal wall covering)			In accordance with Spec. Section 00951			
	Type 2					5,000	SF
	Type 3					600	SF
0001AD	Substrate Preparation			In accordance with Spec. Section 00951			
	Crack repairs (less than 1/4")					400	LF
	Crevice repairs (1/4" to 1")					500	LF
	Hole Repairs (1" to 3")					100	EA

FIGURE 3-10 EXPANDED PERFORMANCE REQUIREMENTS SUMMARY (EPRS) - VINY-COATED WALLCOVERING

EXPANDED PERFORMANCE REQUIREMENTS SUMMARY

PERFORMANCE REQUIREMENTS SUMMARY

CONTRACT REQUIREMENTS		PERFORMANCE REQUIREMENTS				PRICING REQUIREMENTS				SURVEILL. REQS.	
(1) ITEM NO	(2) CONTRACT REQUIREMENT	(3) WORK REQUIREMENT	(4) Weight (%)	(5) STANDARD OF PERFORMANCE	(6) MADR	(7) QTY	(8) UNIT	(9) UNIT PRICE	(10) TOTAL PRICE	(11) GUIDE NO.	(12) SAMPLING METHODS
0001AA	Removal of existing wall covering			In accordance with Spec. Section 02050		75,000	SF	$0.20	$15,000.00	001	Planned Sampling
0001AB	Vinyl-coated wall covering (Normal wall covering)			In accordance with Spec. Section 00951						002	Planned Sampling
	Type 2					75,000	SF	$1.50	$112,500.00		
	Type 3					300	SF	$2.25	$675.00		
0001AC	Vinyl-coated wall covering (Abnormal wall covering)			In accordance with Spec. Section 00951						003	Planned Sampling
	Type 2					5,000	SF	$1.75	$8,750.00		
	Type 3					600	SF	$2.50	$1,500.00		

FIGURE 3-11 EXPANDED PERFORMANCE REQUIREMENTS SUMMARY (EPRS) - VINYL-COATED WALLCOVERING

3-632 Pricing Requirements. An estimate is prepared of the total cost of the contract to the Government. This estimate includes all contractor furnished labor, equipment, and materials, together with allowances for the contractor's overhead and profit and corresponds to the Government's estimate of the bid amount of the successful contractor. The estimate is referred to as the Independent Government Estimate (IGE). In the course of developing the IGE, the cost of each contract requirement shown on the EPRS is determined.

The unit chosen should correspond to the unit of work which can be observed in the field. Inaddition, consideration shall be given to using the unit of work which the particular construction trade typically uses, unless there are compelling reasons for not doing so. Square feet (S.F.) are used for the removal and installation of vinyl covered wall covering shown in Figure 3-11.

The pricing requirements in the EPRS are used to prepare the bid schedule and as a check on the reasonableness of the prices bid.

3-633 Surveillance Requirements. A quality assurance (QA) plan including surveillanceguides (SGs) for each contract requirement or group of contract requirements, including indefinite quantity contract requirements, must be prepared at the same time the PWS is prepared. The number of the SG and the principal n&hod of surveillance for each contract requirement is taken from the EPRS as shown on Figure 3-11. QA plans are discussed in detail in Chapter 4.

3-640 Performance Requirements Summary. As shown in Figure 3-11, the EPRS consists of two principal sections. The first section consists of the performance requirement summary which shows the contract requirement and the performance requirements. The second section consists of the pricing requirements and the surveillance requirements. The performance requirements summary (PRS) is included, as a matter of policy, as part of the contract documents in the case of all facility support contracts written in the uniform contract format However, because contracts written in the CSI format typically are indefinite quantity (IQ) contracts, and in many instanceswork requirements are not specified, the inclusionof a PRS in a contract in the CSI format may sometimes be of limited utility and is considered optional.

3-650 CSI Format- Divisions and Sections. The CSI format for specifications consists of 16 divisions with titles and numbers that are fixed as shown below. In addition to the 16 divisions, there is also a Division 0 called Bidding and Contract requirement. The contract includes the Standard Construction Contract Clauses prescribed by NAVFACENGCOM and all the items listed in the Contracting Manual P-68 at Subpart 14.2, Solicitation of Bids.

3-651 Divisions. The sixteen divisions of the CSI format are as follows:,

Division 1 - (General Requirements
Division 2 - Site Work

Divisions cont'd.

Division 3 - Concrete
Division 4 - Masonry
Division 5 - Metals
Division 6 - Wood and Plastics
Division 7 - Thermal and Moisture Protection
Division 8 - Doors and Windows
Division 9 -Finishes
Division 10 - Specialties
Division 11 - Equipment
Division 12 -- Furnishings
Division13 --Special Construction
Division 14 - Conveying Systems
Division 15 - Mechanical
Division16 - Electrical

3-652 Division 1. General Requirements. Division 1 typically includes information on the following items:

Summary of Work
Abbreviations and Symbols
Project Meetings
Submittals
Quality Control
Testing, Adjusting, and Balancing of Systems

This listing is not all inclusive, but is included to give an idea of the scope of the General Paragraphs.

Division 1 includes a specification for quality control numbered 01400 in accordance with the standard numbering system prescribed by the Construction Specifications Institute. (The standard numbers are given in "MASTERFORMAT" published by the Construction Specification Institute.) In accordance with the Contracting Manual P-68 the clause "Inspection of Construction (FAR 52.246-12)" is included by reference in the contract.

3-653 Division 2-16. A series of sections has been developed for each division by the Construction Specifications Institute and is publish& in "MASTERFORMAT" by the Institute.

For example, Division 9 - FINISHES isdivided into sections as shown in Figure 3-12. The bold face type identifies "Broadscope" Section Titles and the lighter type identifies the narrowscope section titles. A narrowscope section title is a specific unit of work related to the broadscope section title such as Section 09951 Vinyl-Coated Fabric Wall Covering, or Section 09954 Wallpaper, which are units of work related to the broadscope section 09950 WALL COVERING. In general, broadscope titles are used on less complex work and narrowscope titles are used where a greater number of sections are used for clarity. Section titles developed by the CSI are not mandatory. They are preferred titles presented in a preferred sequence. However, every

Section Number	Title	Broadscope Explanation
09800	SPECIAL COATINGS	09800 — SPECIAL COATINGS
-810	Abrasion Resistant Coatings	High-performance, glazed resinous coatings, including epoxy polyester, or polyurethane, interior and exterior cementitious coatings; heavy industrial coatings, including chlorinated rubber, heat resistant, elastomeric, and zinc-rich primers; and fire retardant paint. Includes storage tank coating systems.
-815	High Build Glazed Coatings	
-820	Cementitious Coatings	
-830	Elastomeric Coatings	
-835	Textured Plastic Coatings	
-840	Fire Resistant Paints	
-845	Intumescent Paints	
-850	Chemical Resistant Coatings	
-860	Graffiti Resistant Coatings	
-870	Coating Systems for Steel *Exterior Coating System for Steel Storage Tanks* *Interior Coating System for Steel Storage Tanks* *Coating System for Steel Piping*	
-880	Protective Coatings for Concrete	
		Related Sections: *Section 02760 - Restoration of Underground Pipe: Relining existing underground pipelines.* *Section 06300 - Wood Treatment: Fire retardant treated lumber.* *Section 07180 - Water Repellents.* *Section 07250 - Fireproofing: Fire resistant mastic and applied fireproofing.* *Section 09540 - Special Wall Surfaces: Aggregate coatings.* *Section 09700 - Special Flooring.* *Section 13200 - Liquid and Gas Storage Tanks.*
09900	PAINTING	09900 — PAINTING
-910	Exterior Painting	Exterior and interior painting with transparent and opaque finishes. Includes stains, varnishes, lacquers, primers, fillers, paint removers, and waxes, and preparation of surfaces.
-920	Interior Painting	
-930	Transparent Finishes	
		Related Sections: *Section 09550 - Wood Flooring: Wood floor finishes and waxes.* *Section 09800 - Special Coatings: Fire resistant paints.* *Section 15050 - Basic Mechanical Materials and Methods: Mechanical identification systems.* *Section 16050 - Basic Electrical Materials and Methods: Electrical identification systems.*
		Notes: *Pavement marking may be specified in this section or in Section 02500 - Paving and Surfacing.* *Painted mechanical and electrical identification may be specified in this section or in Sections 15050 - Basic Mechanical Materials and Methods and 16050 - Basic Electrical Materials and Methods.*
09950	WALL COVERINGS	09950 — WALL COVERINGS
		Wall coverings applied over solid substrates. Includes vinyl-coated fabric backed for light, medium, and heavy usage; unsupported vinyl and cork wall coverings; wallpapers; wall fabrics; and flexible wood sheets
		Related Sections: *Section 06200 - Finish Carpentry: Wood paneling.* *Section 06400 - Architectural Woodwork: Wood and plastic laminate paneling.* *Section 09250 - Gypsum Board: Prefinished gypsum board.* *Section 09500 - Acoustical Treatment: Fabric covered acoustical wall and ceiling panels.* *Section 09680 - Carpet: Carpet wall covering.* *Section 10260 - Wall and Corner Guards: Impact resistant wall protection.*

FIGURE 3-12 CSI MASTERFORMAT - SPECIFICATION NUMBERING SYSTEM

attempt should be made to use the titles as shown. There will be times when it is necessary to modify or add titles to convey a particular meaning for a particular project.

As an example, assume that a specification is required for vinyl coated wall covering. By checking the Masterformat (See Figure 3-l2), the broadscope section is 09950 WALL COVERING in DIVISION 9 - FINISHES. Checking down the listing under the broadscope section, the appropriate narrowscope section is found as 09951 Vinyl-Coated Fabric Wall Covering. This task may also be accomplished on the computer using CCB/SPECSINTACT.

Having determined the correct name and number for the specification, the next step is to determine the availability of a NAVFACENGCOM Guide Specification (NFGS). Checking the Index of NFGS, a specification is found for Vinyl-Coated Wall Covering, numbered NFGS-09951. The text of this specification should be reviewed and edited as necessary to suit the particular project for which specifications are being prepared. A copy of the NFGS is available on the CCB/SPECSINTACT system. Note that the text of the NFGS, edited as necessary, must be included in the contract documents and may not be included by reference. A copy of the NFGS for vinyl coated wall covering is contained in Appendix E to further illustrate the CSI format.

The specification for vinyl coated wall covering is numbered 09951 and this number is used for the wall covering specification in the PWS. Note that the number 09951, the CSI number, is not changed to suit the numbering system of the PWS.

In a similar manner, other standard specifications related to the work are located and modified to suit the project and are incorporated into the PWS.

If a NFGS is not available, it may be possible to locate a specification prepared by another agency such as the Army, the Air Force, or NASA, contained in the CCB/SPECSINTACT System. The General services Administration (GSA) and the Veterans Administration also publish specifications. In the private sector, specifications are available *for* a fee. Private sector specifications including MASTERSPEC are available from the AIA Service Corporation.

CHAPTER 4 QUALITY ASSURANCE PLANS

4-100 GENERAL. This chapter describes quality assurance plans and evaluation methods used to monitor the performance of facility support contractors. When the Government purchases goods or services, there must be some means provided to attest to the value received for monies spent. Recipients of the contracted goods or services, in this case Naval shore activities, are responsible for developing and implementing procedures to insure that contract services conform to specifications. A quality assurance plan (QAP) generally consists of a series of surveillance guides (SGs) together with a performance requirement summary. The QAP documents the means and methods by which the Government intends to implement quality assurance (QA) at the local level. Quality assurance plans

(a) Provide quality assurance evaluators (QAEs) with a systematic plan for the surveillance of the contractor's work,

(b) Provide the methods for collecting information necessary to evaluate the contractor's performance,

(c) Provide a basis for documenting the official contract file on matters pertaining to performance and quality,

(d) Provide the methods for collecting data to justify deductions to the contract pride in the event of unsatisfactory performance by the contractor,

(e) Provide shore establishment with a basis for providing QA resources at an adequate level.

Contractors, on the otherhand, are responsible for providing quality control (QC). The purpose of quality control is to control the service producing process and insure that the desired level of quality is obtained. Quality assurance on the part of the receiving activity is no substitute for quality control and likewise, quality control on the part of the contractor is no substitute for quality assurance -- both must be present to effectively meet the mission of providing quality services by contract.

4-200 QUALITY- (QA) PLANS.

4-210 Quality Assurance (QA) Approach. The QA approach adoptedby NAVFACENGCOM is keyed to performance oriented specifications.

(a) It focuses on the quality of the product delivered by the Contractor and not on the steps taken or procedures used to provide that product.

(b) It includes appropriate use of the various types of inspection including 100% inspection, planned sampling, random sampling, validated customer complaints, and incidental or unscheduled inspections.

(c) It provides a structure appropriate to surveillance that permits management control of QA.

4-220 Quality Assurance Criteria There are several criteria for good QA.

(a) The PWS (including the PRS) must be written so that the quantity and quality of the contract requirements are measurable. The development of the PWS and the QA plan should be viewed as a single process. These documents are interrelated; one defines contract and performance requirements, while the other defines how contract requirements will be observed and measured.

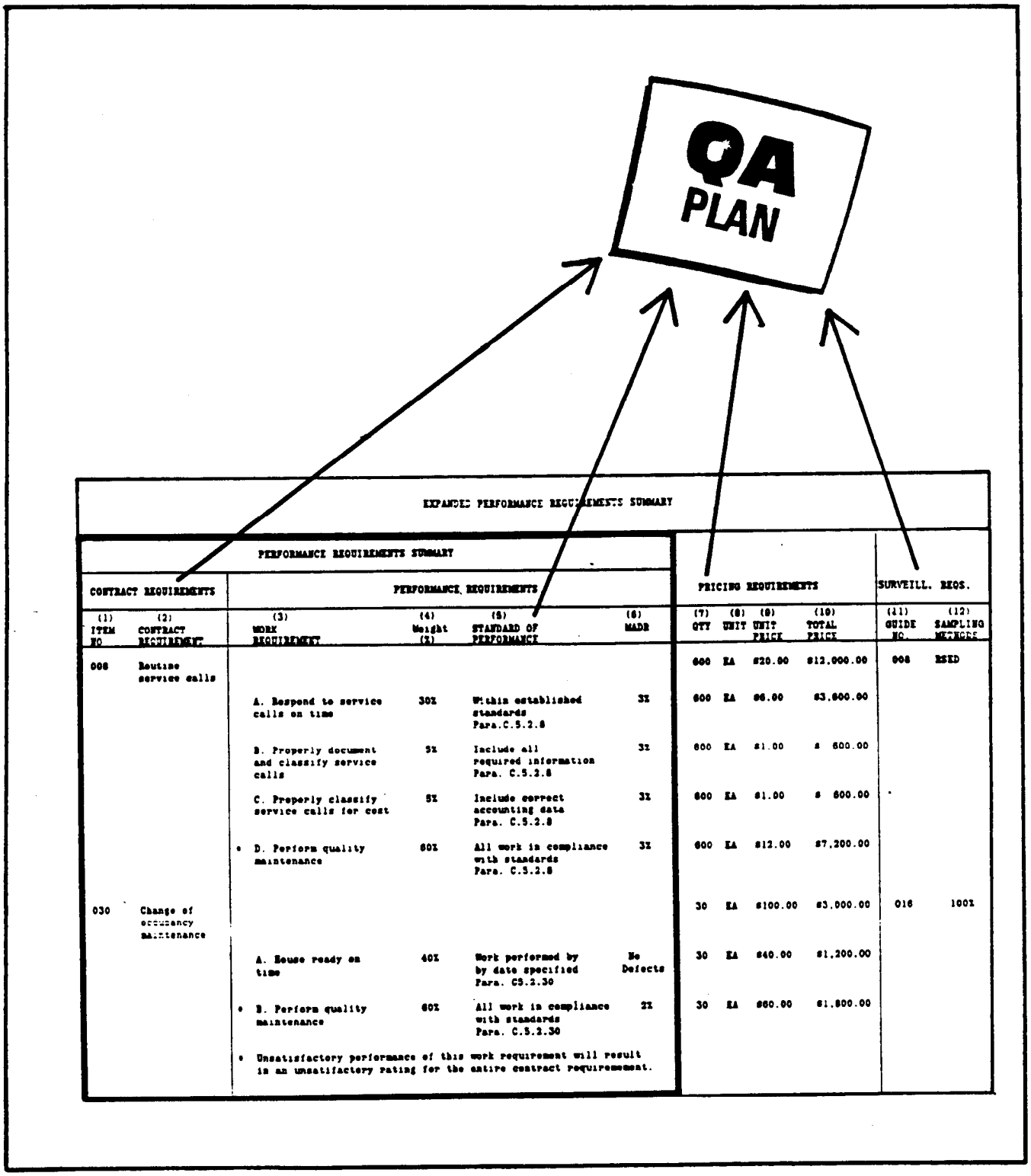
(b) QA must provide for adequate and affordable contract surveillance. The depth and detail of surveillance should be geared to the relative importance of the services monitored.

(c) QA must have the potential to support corrective action taken by the Contracting Officer when nonperformance or unsatisfactory performance occurs.

(d) The nature of the QA program will depend on whether the performance work statement (PWS) is performance oriented or procedure oriented. When the PWS is performance oriented, the focus of attention is on the contractor's output or end product. These types of outputs are expressed as "Contract Requirements," such as service calls or change of occupancy maintenance, and the actual procedures or methods required to achieve the contract requirement are left to the contractor's discretion. Although a performance oriented PWS is preferred, it may be necessary on some occasions to specify the procedures or methods the contractor must employ in achieving anoutput, in which case the QA program will focus on the contractor's adherence to the procedures and methods specified in the PWS.

(e) The contractor's compliance with the contract terms is monitored by the Government during the course of the contract. The performance requirements are summarized in the performance requirements summary section of the expanded performance requirements summary (see Figure 4-l). Each contract requirement has a subset of work requirements. These work requirements may be expressed in terms of quality of work, timeliness, and, in some cases, documentation. Alternative work requirements may be specified where appropriate. Onoccasion, no separate work requirement may be appropriate, in which case the description of the work requirement and the contract requirement would correspond. The standards of performance are referenced in the PRS to the applicable paragraphs in Section C of the specifications. The maximum allowable defect rate (MADR) for each work requirement is also specified as part of the performance requirements.

(f) When observation of the contractor's performance shows that the contractor is not performing in accordance with the performance requirements



EXPANDED PERFORMANCE REQUIREMENTS SUMMARY

PERFORMANCE REQUIREMENTS SUMMARY						PRICING REQUIREMENTS				SURVEILL. REQS.	
CONTRACT REQUIREMENTS		PERFORMANCE REQUIREMENTS									
(1) ITEM NO	(2) CONTRACT REQUIREMENT	(3) WORK REQUIREMENT	(4) Weight (%)	(5) STANDARD OF PERFORMANCE	(6) MADR	(7) QTY	(8) UNIT	(9) UNIT PRICE	(10) TOTAL PRICE	(11) GUIDE NO.	(12) SAMPLING METHODS
008	Routine service calls					600	EA	$20.00	$12,000.00	008	RSED
		A. Respond to service calls on time	30%	Within established standards Para.C.5.2.8	3%	600	EA	$6.00	$3,600.00		
		B. Properly document and classify service calls	5%	Include all required information Para. C.5.2.8	3%	600	EA	$1.00	$ 600.00		
		C. Properly classify service calls for cost	5%	Include correct accounting data Para. C.5.2.8	3%	600	EA	$1.00	$ 600.00		
		* D. Perform quality maintenance	60%	All work in compliance with standards Para. C.5.2.8	3%	600	EA	$12.00	$7,200.00		
030	Change of occupancy maintenance					30	EA	$100.00	$3,000.00	016	100%
		A. House ready on time	40%	Work performed by by date specified Para. C5.2.30	No Defects	30	EA	$40.00	$1,200.00		
		* B. Perform quality maintenance	60%	All work in compliance with standards Para. C.5.2.30	2%	30	EA	$60.00	$1,800.00		
		* Unsatisfactory performance of this work requirement will result in an unsatisfactory rating for the entire contract requirement.									

FIGURE 4-1 THE EXPANDED PERFORMANCE REQUIREMENTS SUMMARY (EPRS)

specified in the contract, the QAE attempts to identify the reasons for noncompliance. The QAE looks beyond the contract requirements in the PRS to determine if the problem is caused by the Government or the contractor. If the cause of the problem rest with the Government, corrective action must be taken through Government channels and no action is required of the contractor. If the contractor is at fault, the contractor is requested to take corrective action; payments to the contractor are reduced; a contract discrepancy report (CDR), and/or a special contractor performance evaluation may be issued, the level of surveillance may be increased, a "show cause" letter, may be issued, or other appropriate action may be taken. Refer to appointment letters of the QAE, FSCM, etc. to determine responsibility of specific actions of Government representatives. However, in general the QAE should recommend actions to be taken by the FSCM regarding the contractor's performance. Only the Contracting Officer may approve modifications to the contract that affect time and money. Refer to the Consequence of Contractor's Failure to Perform Required Services clause for specifics on how to assess the contractor's performance or to determine the amount of payment or both. See Appendix G as an example or guidance for a specific application. On the other hand if the contractor is performing excellent the QAE should recommend to the FSCM to notify the Contractor that his performance is excellent and to keep up the good work and if warranted recommend the contractor for an award.

4-230 QA Plan - Scope. The QAP generally includes a series of individual surveillance guides (SGs). The QAP also contains a copy of the performance requirements summary (PRS) for reference used by the QAE.

SGs are prepared for each contract requirement or group of contract requirements shown on the EPRS. The SG's primary focus is on the service or end result to be achieved by the contractor, rather than on the details of how the work is to be accomplished.

The contract requirement, the percentage each work requirement represents as part of a contract requirement, the standards of performance, and the MADR, are all included in the PRS section of the EPRS (see Figure 4-l). Because the PRS is a part of the contractual agreement with the contractor, these parameters cannot be changed during the performance of the contract, unless a formal modification of the contract is undertaken. The method of surveillance shown in the EPRS, being outside the PRS section, is noncontractual and may be changed without notice to the contractor.

The QAP is not a static document and is subject to change from its initial preparation concurrent with the development of the contract documents. It is revised in light of information submitted with the bid and is further revised as the contract progresses to reflect the contractor's performance. The QAP as initially developed should at a minimum contain all the information necessary to prepare a surveillance schedule. In some instances it may be necessary to defer completion of the surveillance schedule until the contract has been awarded, and

the contractor has submitted work schedules in accordance with the provisions of the contract.

4-240 Work Requirements Subject to Surveillance. In many instances a contract requirement will generate several work requirements, as shown in the PRS, Figure 4-1. Evaluating a single work requirement may on occasion provide a reliable indication of the contractor's performance of an entire contract requirement. The inspection of the work may be carried out as it is performed, or the inspection may be based on the examination of the records documenting the work.

(a) Work Performed. Inspection of all work performed is the most thorough method of evaluating performance. This requires the QAE be at the work site during performance of the work or shortly thereafter if results of work performed are visible (janitorial, grounds, etc.).

(b) Records. When it is impractical to carry out inspections concurrently with or shortly after the contractor's performance, the inspection of records such as work chits, work orders, results of inspections carried out by the contractor, and vehicle dispatch records is recommended. The inspection of documents should, wherever possible, be combined with spot checks of actual work performance.

(c) Management Information System (MIS). MISs usually collect information over a specified period of time. This information can be compared to a contract standard. On the basis of this comparison, performance can be evaluated and the performance for the specified period can be accepted orrejected.

(1) For example, the vehicle down time rate is computed every month. A simple comparison of the down time rate with that allowed in the specifications provides a basis for assessing the adequacy of the contractor's performance of maintenance of base vehicles.

(2) When a MIS is used as a basis for evaluating the contractor's work, an assessment should be made of the reliability of the MIS data and provisions made for checking the accuracy of the MIS data on an ongoing basis.

4-300 METHODS OF SURVEILLANCE.

4-310 General. A number of surveillance methods are available to assess the quality of the contractor's performance. These methods include 100 percent inspection, planned sampling, random sampling, validated customer complaints, and incidental or unscheduled inspections. Random sampling includes random sampling for extrapolated deductions (RSED) and random sampling without extrapolated deductions (RSWED).

The decision on which surveillance method to use is important, since it not only determines how the contractor's performance will be inspected, but it also has a significant impact on the amount of resources that must be devoted to the QA effort. Each method is described below.

4-320 100 Percent Inspection. 100 percent inspection requires that output from each and every work occurrence be evaluated. This method of surveillance is the most thorough method of assessing the contractor's performance. It is also the most costly.

4-330 Planned Sampling. The defect rate (DR), when planned sampling is used, is calculated by dividing the total number of observed defects (including those detected by validated customer complaints and incidental. inspections) by the total population of services.

Dividing the number of defects in the sample by the sample size gives a defect rate for the sample only, and the use of this "Observed Defect Rate" (ODR) to either assess the contractor's performance or take deductions to the contractor's price is contrary to NAVFACENGCOM policy. This is because

neither the size of the sample nor the method of sample selection are in accordance with the rules for statistical sampling techniques. As a result the extrapolation of planned sampling has no validity and the ODR may not be compared with the MADR, the MADR being defined as the defect rate in the population above which the contractor's quality control is considered unsatisfactory.

Changes in the DR from month to month, calculated on the basis of the total population, gives an indication of whether the contractor's quality control is getting better or worse, providing the same sampling procedures are carried out each month.

4-340 Random Sampling Random sampling is a surveillance method based on probability and statistical theory. Key elements of random sampling are as follows:

(a) Assesment of the contractor's performance for the entire population of services is based on the results observed from a study of only a portion or sample of the total population. Each occurrence in the sample is classified as either conforming to a performance requirement or as nonconforming. The percentage of nonconforming occurrences or defects in the sample is an estimate of the percentage of defects in the total population. This process is termed extrapolation.

(b) The size of the sample is specified for a given total population to achieve a predetermined level of statistical accuracy in accordance with standardized, population - sample size, tables (See Appendix F, Tables 1 and 2).

(c) The population - sample size tables are included as an attachment to the contract documents, providing the contractor with an opportunity to assess the methodology involved. This approach also prevents later disputes concerning the correctness of the tables, the contractor having assentedto the sample sizes by the terms of the contract.

(d) The sample of work occurrences selected for evaluation must be selected by a random process in which each occurrence has equal dance for selection.

(e) Once an evaluation schedule is established, it must be followed through the surveillance period (i.e., monthly schedules).

(f) When the random sampling is being used to extrapolate defects to the entire population, surveillance data gathered by other methods (i.e., validated customer complaints and incidental inspections) cannot be combined with data gathered by random sampling.

(g) The defect rate observed in the sample is adjusted by an "Adjustment Factor" to ensure the statistical validity of the calculations. A table of adjustment factors is shown in Appendix F, Table 3.

(h) Statements of thedefect rate (DR) for the population are stated as "The contractor's defect rate for this work requirement is X %" (where X is the observed defect rate minus an adjustment factor).

(i) Using random sampling, any occurrence of work is as likely to be monitored as any other occurrence. The QAE's bias does not affect the specific occurrences of work selected for evaluation, since all occurrences of an item of work are assumed to have the same level of importance.

(j) Random sampling can be used to serve two purposes:

(1) To determine the performance of the contractor based on a small number of samples of the total population,

(2) To determine the defects in the total population for the purpose of extrapolating deductions to the contract price.

When random sampling is used to satisfy both purposes, it is referred to as "Random Sampling for Extrapolated Deductions" or "RSED."

When nonconforming work found in the sample is not extrapolated to make deductions to the contract price, only the first purpose noted above is satisfied, and the method is referred to as "Random Sampling without Extrapolated Deductions" or RSWED."

(k) RSED is the preferred method for random sampling when random sampling is otherwise desirable. However, RSWED has particular utility when a decision is made to carry out random sampling on an ongoing contract where no provision has been made in the contract documents for RSED. RSED has only slightly more rigorous requirements than RSWED, and the time required for additional sampling is not significant. It may be argued that the calculation of deductions using RSED is somewhat complex. However, RSED computer programs greatly simplify calculations and invalidate the complexity of the calculations as an excuse for not using RSED. The computer programs are available from the EFDs.

(1) The RSED and RSWED statistical surveillance techniques have been approved by NAVFACENGCOMHQ, and alternative methods of random sampling may not be used without approval from NAVFACENGCOMHQ Code 022.

4-350 Validated Customer Complaints. Validated customer complaints constitute a surveillance method based on customer awareness. Customers familiar with the contract requirements notify the QAE of individual occurrences of unsatisfactory performance by the contractor. Upon notification, the QAE investigates the report and, if valid, documents the performance problem. In summary

(a) Formal customer complaints are a means of documenting certain kinds of service problems which might not be otherwise systematically surveyed due to limited inspection resources.

(b) Customer complaints when validated by the QAE may be used to deduct money from the contractor's invoice.,

(c) An aggressive customer complaint program, once established, needs to be explained to every organization that receives the contractor's services. An operation instruction should be given to each organization outlining the customer complaint pro ram, the format and the content of a formal customer complaint, and the action which the customer can expect to be taken with the contractor in response to the customer's complaint.

(d) Normally, each customer complaint is brought, in person or by telephone, to the QAE checking contractor performance. information concerning the complaint is entered into a customer complaint record. A recommended customer complaint form (NAVFAC 4330/47) is included in Appendix H. The record contains the following information:

(1) Date and time of complaint,
(2) Source of complaint - organization or individual,
(3) Nature of complaint (narrative description),
(4) Contract reference of complaint related services,
(5) Valid complaint (Yes or No),
(6) Date contractor informed of complaint,
(7) Action taken by contractor,
(8) Rework information.

If validated customer complaints are selected as the primary method of surveillance for a particular contract requirement, the number of complaints should be forecasted and sufficient time allowed in the monthly surveillance schedule for the validation process.

4-360 Incidental or unscheduled Inspections. The QAE may conduct impromptu avaluations of contract requirements whenever necessary. Although, this surveillance method can not be used to determine the contractor's overall level of performance, it may provide useful information as an indicator of how a contractor may be performing. Incidental inspections should not be used as the primary method of inspection. However, payment deductions should be made for all defects identified. The use of the term "incidental inspection" is encouraged rather than "unscheduled inspections", to avoid confusion with the "inspection of unscheduled services". Though similar in wording, the two phrases have entirely different meanings.

4-400 SELECTION OF THE SURVEILLANCE METHOD

4-410 General. Some contract requirements have a more significant and important impact on the mission than others. 100 percent inspection might be used for "critical" or "important" requirements; planned sampling, or random sampling for "less important requirements"; and validated customer complaints or incidental inspections for the "least important requirements". No firm guidance for method selected can be provided and each choice must be based on the totality of the circumstances.

Some general guidance on the selection of a surveillance method for a particular contract requirement is given below. A method of surveillance

should be chosen for each contract requirement shown on the EPRS, Figure 4-1, and it is not unusual to find a variety of surveillance methods in use for the inspection of any one contract.

4-420 100 Percent Inspection. 100 percent inspection is preferred when:

(a) The total number of services is small,

(b) The satisfactory performance of a work requirement is critical,

(c) The expense of 100 percent sampling can be justified.

Examples of the proper use of 100 percent inspection are: ambulance and police vehicle response time; and daily cleaning of key public rooms.

4-430 Planned Sampling. Planned sampling is preferred when:

(a) The total number of services is small.

(b) Specified contract locations must be monitored due to individual importance, for example, galley garbage containers as opposed to those in remote administrative areas. It is also useful when the contractor has performed poorly in certain defined areas.

(c) The contract requirement does not need to be as vigorously inspected as if 100 percent or random sampling was used.

(d) Special consideration is given to areas with command interest or where unsatisfactory performance has been observed during the previous evaluation period.

(e) Follow up on customer complaints and random sampling is required.

(f) Attention is focused on known problem areas, thus providing the contractor with a greater incentive to improve performance because he knows that he is being observed.

4-440 Random Sampling. Random sampling is preferred when:

(a) Inspection resources are limited,

(b) The population is large and relatively homogenous,

(c) Contract requirements occur frequently or continuously,

(d) There is a well documented audit trail of contractor activities such as completed work orders or vehicle maintenance logs to evaluate.

Examples of the proper use of random sampling includethe evaluationof repetitive tasks associated with janitorial work, building and grounds maintenance, and guard services.

4-450 Validated Customer Complaints. Validated customer complaints are preferred:

(a) As a supplement to other methods of sampling,

(b) When the customer can be relied upon to understand the scope of the contract and is willing to participate in an organized customer complaint program.

4-460 Incidental Inspections. Incidental inspections are preferred:

(a) As a supplement to other methods of sampling,

(b) For services of low importance or criticality.

4-470 Inappropriate Use of Surveillance Methods. The following is guidance on the inappropriate use of some of the surveillance methods:

(a) If a service is required, but individual occurrences are of small importance (for example, emptying a trash can), it is normally not beneficial to invest in 100 percent inspection - the most costly of the inspection methods which can be employed.

(b) If a contract requirement is continuous in nature, 100 percent inspection may not be feasible since it requires a QAE to be on site full time. Examples of continuous requirements are manning a guard post, utility operations, or manning a trouble desk.

(c) The defect rate, when planned sampling is used, is calculated by dividing the total number of defects (both within and outside the sample) by the total population. Dividing the number of defects in the sample by the sample size gives an "Observed Defect Rate" (ODR). This ODR shall not be used to either assess the contractor's performance or to take deductions to the contractor's price.

(d) If the use of random sampling is appropriate, random sampling for extrapolated deductions (RSED) should be used in preference to random sampling without deductions (RSWED). In the case of ongoing contracts where there was no provision in the contract to use statistically extrapolated surveillance techniques, consideration should be given to using RSWED.

4-500 IDENTIFICATION OF THE POPULATION

4-510 Population - Defined. The population is the total number of occurrences of an individual task or service carried out over a specified period of time For example, the population for service calls is the number of service calls performed in a month. (The tasks are listed as contract requirements in the PRS.)

When identifying the population, it is important to differentiate the number of locations at which the particular service is to be carried out from the total number of services performed.

Example: Activity X has 80 garbage containers, of which 70 are emptied weekly Wednesdays, and 10 are emptied twice a week on Tuesdays Thursdays. Then monthly population is the total number of work occurrences per month. In July 1986, there were 5 Tuesdays, Wednesdays and Thursdays. The population for July 1986 would be 70 x 5 plus 10 x 10 or 450.

Note that the population is not 80, the total number of garbage containers.

As can be seen from the above example, when the service is scheduled, the population for any particular month can be determined by reference to the schedule of services. If the schedule refers to particular days of the week, reference must be made to a calendar. The population of scheduled services must be calculated if random sampling is used. The population must also be calculated in connection with 100 percent inspection and planned sampling. When services are unscheduled and random sampling is used (RSED or RSWED), that is performed on an "as required" basis, population size must be estimated based on historical data projected into the future.

Example: The number of service calls which occurred in a contract for family housing maintenance at Activity Y for a period of twelve months were as follows:

Jan	607	Apr	572	Jul	608	Oct	605
Feb	610	May	571	Aug	599	Nov	597
Mar	570	Jun	571	Sep	588	Dec	603
						Total	7101

Both the minimum and maximum populations need to be estimated when random sampling is used. Population estimates may also be needed for planned sampling and 100 percent inspection.

The minimum monthly population is estimated by finding the historical minimum monthly population by inspection of the above monthly numbers and by arbitrarily deducting say 20%. The minimum historical monthly population was 570 - deducting 20% gives an estimated minimum population of 456. This approach is conservative, but is recommended when estimating minimum monthly populations, because failure to make a low enough estimate of the minimum monthly population will make it impossible to validly extrapolate the results of the random sampling.

The maximum monthly population is estimated by finding the historical maximum monthly population by inspection of the above monthly numbers and by adding 20%. The maximum historical monthly population was 610 -adding 20% gives an estimated maximum population of 732. An alternative approach is to find the average historical population which is 7101 divided by 12, which equals 592, and add 20% giving an estimated maximum population of 711. In most cases, the accuracy with which the minimum monthly population is estimated will nut be critical.

The minimum population over the duration of the contract may also need to be estimated in connection with the determination of sample sizes discussed

below. Assuming that the duration of the contract is twelve months, the estimated minimum total population is the estimated monthly minimum multiplied by twelve - (456 X 12) and is equal to 5472. An alternative approach is to deduct 20% from the historical population given for the twelve month period which gives an estimated minimum population of 5681.

4-520 Sequential Numbering of of the Work Locations. When activities are spread over a large area, such as is the case with housing maintenance, trash pickup, janitorial services, and grounds maintenance, careful numbering of the locations at which the work is to be performed makes the QAE's job much easier. Generally, the locations should be numbered in a sequential order corresponding to the most efficient route the QAE would follow. This numbering is recommended irrespective of the type of surveillance planned and provides a method for preserving a record of the locations actually inspected.

Consider for example that a contract requires the emptying of garbage containers. The fact that some of the containers are to be emptied once a week and others are to be emptied more frequently does not effect the numbering scheme. Beginning at a point at which inspection could be expected to begin, (close to the field office for instance) the most efficient route required to travel from container to container is determined based on the assumption that all containers are to be inspected on any particular day. The containers are numbered sequentially along the travel route. The sequential location numbers may be shown on drawings or summarized in tables (see Figure 4-2).

The failure to logically number the work locations can cause a great deal of unnecessary additional travel. When random sampling is used, this additional travel is often erroneously attributed to the cause of random sampling, when in fact, the additional travel is caused by failure to properly number the work locations.

4-600 SEQUENTIAL NUMBERING OF THE POPULATION

4-610 General. Once the population has been identified and the work locations numbered, the individual service occurrences in the population must be assigned sequential numbers so that each service occurrence in the population can be distinctly identified from the rest of the population.

Sequential numbering of population is not required for 100 percent inspection although the work location should be sequentially numbered as outlined at 4-520. Sequential numbering use of the population is essential to random sampling techniques and should be considered for use in connection with planned sampling.

The way in which the sequential numbering is carried out depends on whether the services are scheduled or unscheduled

4-620 Sequential Numbering - Scheduled Services. Scheduled services must besequentially numbered with reference to the calendar.

SEQUENTIALLY NUMBERED WORK LOCATIONS			
CONTRACT No.			
LOCATION No. SEQUENTIAL	CONTAINER NUMBER	BUILDING NUMBER	REMARKS
110	2098	247	
111	2097	249	
112	2065	257	
113	2033	259	
114	1768	267	
115	2093	268	
116	2094	269	
117	2095	270	
118	2088	271	
119	2086	272	
120	3001	280	
121	2343	254	
122	1782	256	
123	2035	245	
124	2037	244	
125	2078	243	
126	2073	242	
127	2072	241	
128	2085	239	
129	2210	238	
130	2209	235	
131	2208	237	
132	2203	236	
133	2207	234	
134	2267	233	
135	2268	232	
136	2265	231	
137	2262	230	
138	2252	229	
139	2258	227	
140	2279	228	
141	1670	225	
142	1342	226	
143	1256	224	
144	4567	223	
145	5467	220	
146	7658	221	
147	5530	222	
148	1674	217	
149	5535	219	

FIGURE 4-2. SUMMARY OF SEQUENTIALLY NUMBERED WORK LOCATIONS.

Sequential Numbering - Scheduled Services, Cont'd.

Example: Assume that five garbage containers are to be emptied twice a week, Monday and Tuesday. The containers are number& one to five in accordance with the procedures outlined above for numbering of work locations. The calendar for the month of January 1988 is as follows:

January 1988

S	M	T	W	TH	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

The population is sequentially numbered as follows, on the assumption that the population numbers commence at 101:

Population Number	Date	Container Number
101	4	1
102	4	2
103	4	3
104	4	4
105	4	5
106	7	1
107	7	2
108	7	3
109	7	4
110	7	5
111	11	1
.....	.....	.....
.....	.....	.....
121	18	1
122	18	2
123	18	3
124	18	4
125	18	5
126	21	1
127	21	2
128	21	3
129	21	4
130	21	5
131	25	1
132	25	2
133	25	3
134	25	4
135	25	5
136	28	1
137	28	2
138	28	3

Population Number	Date	Container Number
139	28	4
140	28	5

4-630 Sequential Numbering - Unscheduled Services. Unscheduled services are numbered sequentially when the service is performed.

Example: The service calls listed below were performed in January 1988, on the date indicated. The last service call for the preceding month (December 1987) was 106. The service calls are numbered sequentially as Shown below.

Sequential Numbering Unscheduled Services.

Population Number	Date
107	1
108	1
109	2
110	5
111	7
112	7
113	7
114	8
115	12
116	13
117	13
118	16
119	18
.....	
.....	
202	29
203	29
204	30

4-700 (QUALITY ASSURANCE PLAN - SURVEILLANCE GUIDES.

4-710 (General. A series of surveillance guides have been developed in outline form to assist in the preparation of SGs when 100 percent inspection, planned sampling, random sampling, or validated customer complaints are used as the method of surveillance.

4-720 100 Percent Inspection. When 100 percent inspection is used the sampling schedule corresponds to the schedule of the work as actually carried out by the contractor, with every item of work being inspected.

(a) Contract Requirement. Contract requirements together with work requirements and standards of perform are identified in the performance requirements summary (PRS), see Figure 4-1.

(b) Primary Method of Surveillance. The primary method of surveillance is 100 percent inspection.

(c) MADR. The maximum allowable defect rate (MADR) is specified in the PRS. The MADR is the defect rate in a population above which the contractor's quality control is considered unsatisfactory. MADR may be stated as percentage or as an absolute value (e.g., 3 per month) corresponding to the most efficient route the QAE would follow if all the locations inspected. (See 4-520, Sequential Numbering of Work Location.)

(d) Identification of the Population. Define a single occurrence of work, and determine the number of occurrences to be performed during the surveillance period as shown at 4-510. If the work is being carried out at several locations, the work locations may be numbered sequentially in the order corresponding to the most efficient route the QAE could follow. (See 4-520, Sequential Numbering of Work locations.)

(e) Sequential mum&x&q of services. This is not applicable.

(f) Level of Surveillance. This is not applicable.

(g) Determination of the Sample Size. By definition, the total population.

(h) Selection of the Sample from the population. This is not applicable.

(i) Evaluation procedure. List any procedures or checklists used when doing the inspection. Evaluation procedures should be in enough detail to allow other QAEs to continue the same manner of inspection using the same evaluation criteria. Evaluation procedures should include provisions for recording the successful accomplishment of rework by the contractor.

(j) Analysis of Results. Because every occurrence of the service in the population was observed, the observed defect rate (ODR) accurately reflects the true defect rate (DR) such that

$$ODR = DR = \frac{\text{Total Number of Observed Defects}}{\text{Total Population}} \times 100$$

4-730 Planned Sampling.

(a) Contract Requirement List the contract requirements together with work requirements and standards of performance from the performance requirements summary (PRS), see Figure 4-1.

(b) Primary Method of Surveillance. The primary method of surveillance is planned sampling. Validated customer complaints are a good supportive surveillance method.

(c) MADR. The Maximum Allowable Defect Rate (MADR) is specified in the PRS, the MADR is the defect rate in the population above which the contractor's quality control is considered unsatisfactory. MADR may be stated as percentage or as an absolute value (e.g., 3 per surveillance period).

(d) Identification of the Population. Define a single occurrence of work and determine the number of occurrences to be performed during the surveillance period (usually one month) as shown at 4-510. If the work is being carried out as several locations, the work locations are numbered sequentially in the order corresponding to the most efficient route the QAE would follow if all the locations were inspected. (See 4-520, Sequential Numbering of Work locations.)

(e) Sequential Numbering of the Population. Consider the desirability of sequentially numbering the services in accordance with 4-600.

(f) Level of Surveillance. Two or three levels of surveillance may be defined.

(g) Determination of the Sample Size. Determination of sample size for planned sampling is subjective and the sample size is arbitrarily determined. In order to provide consistent surveillance and provide a basis comparing trends from month to month, consistent criteria should be used in selecting the sample size.

(h) Selection of the Sample from the Population. The criteria for sample selection must be documented and applied consistently from surveillance period to surveillance period. If there is no consistency, trends in contractor performance cannot be detected.

(i) Evaluation Procedure. List any procedures or checklists used when doing inspection. Evaluation procedures should be in enough detail to allow others to continue the same manner of inspection using the same evaluation criteria. Evaluation procedures should include provisions for recording the successful accomplishment of rework by the contractor.

(j) Analysis of Results. The defect rate (DR), when planned sampling is used, is calculated by dividing the total number of observed defects (including those detected by validated customer complaints and incidental inspections) by the total population of services so that

$$DR = \frac{\text{Total Number of Observed Defects}}{\text{Total Population}} \times 100$$

Dividing the number of defects in the sample b the sample size gives a defect rate for the sample only, and the use of this "Observed Defect Rate" (ODR) to either assess the contractor's performance or take deductions to

the contractor's price is contrary to NAVFACENGCOM policy. This is because neither the size of the sample nor the method of sample selection are in accordance with the rules for statistical sampling techniques. As a result, the extrapolation of planned sampling has no validity and the ODR may not be compared with the MADR, being defined as the defect rate in the population above which the contractor's quality control is considered unsatisfactory.

Changes in the DR from month to month, calculated on the basis of the total population, gives an indication of whether the contractor's quality control is getting better or worse.

An alternate approach is to specify the MADR as a number of defects rather than as a percentage when planned sampling method of surveillance (e.g., 10 defects rather than 2% per surveillance period). This alternate approach still does not permit extrapolation of the total number of defects in the entire population of services as is done in random sampling.

4-740 Random Sampling. When random sampling for extrapolated deductions (RSED), or random sampling without extrapolated deductions (RSWED) is used, the procedures are outlined in the surveillance guide as follows:

(a) Contract Requirement. List the contract requirements together with work requirements and standards of performance from the expanded performance requirements summary (PRS), see Figure 4-1.

(b) Primary Method of Surveillance. The primary method of surveillance is random sampling. Validated customer complaints are a good supportive surveillance method.

(c) MADR. The maximum allowable defect rate (MADR) isspecified in the PRS. The MADR is the defect rate in the population above which the contractor's quality control is considered unsatisfactory. MADR is stated as a percentage.

(d) Identification of the population. The total number of work occurrences for a given function that are to be performed during the surveillance period must be known or accurately estimated as shown at 4-510. If the work is being carried out at several locations, the work locations are numbered sequentially in the order corresponding to the most efficient route the QAE would follow if all the locations were inspected. (See 4-520 Sequential Numbering of Work Locations.)

(e) Sequential Numbering of the Population. Once the population has been identified, the individual services in the population must be assigned sequential numbers so that each service in the population can be distinctly identified from the rest of the population as shown at 4-600.

(1) Scheduled services. When work is scheduled, population size is based on the monthly calendar as shown at 4-620. The population normally will be different for each month.

(2) Unscheduled services. When work is unscheduled, population size must be estimated as shown at 4-630. The number of work occurrences is determined or estimated for each billing period (usually l month) and for the contract term (usually 12 months). It is also necessary to estimate both the minimum and maximum population.

(f) Level of Surveillance. The level of surveillance is set at me of two levels referred to as the normal sampling level and the minimum sampling level in accordance with the following criteria:

(1) Sampling level for random sampling for extrapolated deductions (RSED).

(i) The sampling level at the inception of the contract is the normal sampling level.

(ii) If the contractor's performance is such that the MADR is not exceeded, surveillance may be decreased to the minimum sampling level.

(iii) If the contractor's performance is such that the MADR is exceeded, surveillance should be continued at the normal sampling level.

(2) sampling level for random sampling without extrapolated deductions (RSWED).

(i) Initial level of sampling is the minimum sampling level.

(ii) If the contractor's performance is such that the MADR is not exceeded, surveillance may be continued at the minimum sampling level.

(iii) If the contractor's performance is such that the MADR isexceeded, surveillance should be increased to the normal sampling level.

(g) Determination of the Sample Size. Sample size requirements are based on population size and the sampling level and are independent of the MADR. population - sample size tables for normal sampling levels and minimum sampling levels are in Appendix F, Table 1 and Table 2. The sample sizes can also be determined using the RSED computer program available from the EFDs.

When the services are unscheduled, the sample size for the normal sampling level is initially determined on the basis of the estimated minimum monthly population. An additional number of samples is required in anticipation of the population exceeding the estimated minimum for the period.

Example: Determine the number of samples for routine service calls Using the normal sampling level. Detailed calculations of minimum and maximum populations are shown at 4.510.

Estimated minimum monthly population = 456

Estimated maximum population = 732

The sample size from the table of sampling sizes for normal sampling levels in Appendix F, Table 1, is 147. This is the sample size for the minimum population of 456 and the number of additional samples required for the population in excess of the minimum and up to the maximum population must now be calculated.

The sampling rate = 147/456 = 32.2%

Additional number Of samples required = .322(732-456) = 89

Thus147 + 89 or a total of 236 samples, must be selected from the population.

When the duration of the contract is less than 12 months, it is possible for the sample size using minimum sampling level to be greater than the sample size using the normal sampling level. If this occurs, the sample size must be adjusted. This adjustment need only be carried out when the contract duration is less than 12 months.

The RSED computer program available from on the EFDs makes the necessary adjustments automatically, and a manual calculation is rarely necessary. The manual calculations shown below are included to demonstrate the principles involved.

Example: The following example determines sample size for services received over a three month period. A comparison is made between the sample size determined using the normal sampling level tables in Appendix F, Table 1, and the sample size using the minimum sampling level in Appendix F, Table 2, as follows:

Month	Population	NORMAL LEVEL (Table 1)	MINIMUM LEVEL (Table 2)
1	600	159	-
2	700	166	-
3	600	159	-
Total	1900	484	560

The minimum sample size is greater, and it therefore becomes necessary to prorate the Table 2 sample size for each month according to the Table1 sample sizes, rounding fractional amounts up to the next higher whole number.

Month	Sample Calculation	Sample Size Size	to use
1	$560 \times \frac{159}{484}$	183.97	184
2	$560 \times \frac{166}{484}$	192.07	193
3	$560 \times \frac{159}{484}$	183.97	184
Total		560.00	561

(h) Selecting the Sample from the Population. Having determined the size of the Sample, the sample is selected from the population. A series of random numbers equal in number to the sample size are generated either by using the RSED computer program or the random number table shown in Appendix F, Table 4. (The use of the RSED computer program is preferable to the use of the random number table. The use of the tables is discussed in Appendix F for somewhat academic reasons.) These random numbers are matched against the population numbers which were obtained when the population was sequentially numbered as shown at 4-600 to determine the population numbers to be inspected.

Example: Five garbage containers are to be emptied twice a week, Monday and Thursday. At 4-620 the population was determined to be 40 based on the January 1988 calendar with sequential numbers starting at 101 and ending with 140 assigned to each pickup. For the purpose of this example, assume we wish to select a total sample size of 5. Using the random number table in Appendix F, Table 4, five random numbers would be generated between 101 and 140. The five numbers generated were 110, 122, 130, 132, and 138. By referring to the listing of the sequentially numbered population at 4-620, the container number and the date of inspection is determined and a sampling schedule is developed as follows:

Inspection Number	Population Number	Date	Container Number
1	110	7	5
2	122	18	2
3	130	21	5
4	132	25	2
5	138	28	3

The scheduling schedules are shown in the surveillance guides for each contract requirement. A typical surveillance guide is shown in Appendix G.

(i) Evaluation Process. List any procedures or checklists used when doing the inspection. Evaluation procedures should be in enough detail to allow others to continue the same manner of inspection using the same

evaluation criteria. Evaluation procedures should include provisions for recording the successful accomplishment of rework by the contractor.

(j) Analysis of Results. Analysis for random sampling consists of calculating the Observed Defect Rate (0CR) for the surveillance period and then calculating the Defect Rate (DR) for the entire population of services. The ODR is representative of the defect rate in the sample and is calculated as follows:

$$ODR = \frac{\text{Number of Defects}}{\text{Number Evaluations Conducted (Sample Size)}} \times 100$$

The ODR is extrapolated to determine the defect rate (DR) in the population by deducting the adjustment factor (AF) given in Appendix F, Table 3 from the ODR.

$$DR = ODR - AF = \frac{\text{Number of Defects in Population}}{\text{Total Population}} \times 100$$

Defects outside the sample which may have been found through validated customer complaints or incidental inspections cannot be included in the number of defects for the purposes of this calculation.

4-750 V<u>alidated Customer Complaints.</u> A validated customer complaint is any customer complaint identifying a contract or defect that the QAE has validated by firsthand information from the site. Complaints not validated may not be used.

(a) Contract Requirement. List the contract requirements together with work requirements of perform from the expanded performance requirements summary (PRS), see Figure 4-1.

(b) Primary Method of Surveillance. The primary method of surveillance is validated customer complaints. Incidental inspections may be used as a secondary evaluation method.

(c) MADR. The Maximum Allowable Defect Rate (MADR) is specified in the PRS. The MADR is the defect rate above which the contractor's quality control is considered unsatisfactory. When the use of validated-complaints is the prime surveillance method, MADRs should be stated in terms of defects per surveillance period.

(d) Identification of the population. Define a single occurrence of work and determine the number of occurrences to be performed during the surveillance period. Sequentially number the work locations in accordance with 4-620.

(e) Sequential Numbering of the population. This is generally not applicable.

(f) Level of Surveillance. This is not applicable.

(g) Determination of the Sample Size. This is not applicable.

(h) Selecting the sample from the Population. This is not applicable.

(i) Evaluation Procedure. Document how validation of complaints is to be performed. Evaluation procedures should be in enough detail to allow others to continue the same manner of inspection using the same evaluation criteria.

(j) Analysis of Results. Determine the number of validated complaints for the past surveillance period. If there is a good customer complaint program, changes in the number of complaints per surveillance period may be useful in detecting changes in the contractor's performance. The ODR for validated complaints is

ODR = number of validated customer complaints

The ODR has no statistical relation to the defect rate for the entire population of services, and it is therefore not possible to extrapolate the number of validated customer complaints to determine the defect rate (DR) in the whole population.

4-760 Incidential Instructions. The surveillance technique of conducting incidential or unscheduled inspections may provide useful information as an indicator of how a contractor may be performing. However, incidential or unscheduled inspections can not be used to determine the contractor's overall level of performance. This surveillance method is intended to be used as a supplement to other surveillance methods. Therefore, no guidance is provided for the preparation of a surveillance guide using incidential or unscheduled inspections.

CHAPTER 5 QUALITY ASSURANCE OPERATIONS IN CONTRACTOR SELECTION

5-100 CONTRACT TYPES

5-110 General. The formation of Government contracts is governed by laws including the Armed Services Procurement Act of 1947, the Federal Property and Administrative Act of 1949, and the Competition in Contracting Act of 1984. Government contracts a real so governed by the Federal Acquisition Regulation (FAR) and supplemental regulations. In addition, the Naval Facilities Engineers Command Contracting Manual (P-68) establishes uniform policies and procedures for the command.

A wide selection of contract types is available to the Government in order to provide needed flexibility in acquiring the large variety of supplies an services. The NAVFACENGCOM Contracting Officer is responsible for selecting one of the two basic contract types: the fixed price or the cost reimbursement contract.

Fixed price and cost reimbursement contracts are distinguished by the degree of risk allocated to the contractor. In the fixed price contract, the contractor is paid a predetermined price for satisfactorily completing the work. If his costs are greater than his bid, he will suffer a loss. If his costs are lower than his bid, he will realize a profit. Under a cost reimbursement contract, a contractor is paid for all allowable costs plus a fee. If the cost of performance is greater than estimated, the Government is required to reimburse the contractor for the additional costs for completion of the work.

Since the use of some fixed price and cost reimbursement contracts requires approval at NAVFACENGCOM Headquarters, early coordination with the activity contract specialist is necessary to ensure timely receipt of approvals.

5-120 Fixed Price Contracts. The following types of fixed price contracts are used by NAVFACENGCOM.

(a) Firm Fixed Price. In a firm fixed price contract, the price is a lump sum amount and not subject to adjustment based on the costs incurred by the contractor in carrying out the work.

(b) Indefinite Delivery Contracts. Indefinite delivery contracts are of three types: definite quantity, indefinite quantity, and requirements.

(1) A definite quantity contract provides for delivery of a definite quantity of specified services for a fixed period with deliveries provided when ordered by the Government.

(2) An indefinite quantity contract provides for an indefinite quantity, within stated limits, of specific services to be furnished during a fixed period with deliveries scheduled by the Government placing orders with the contractor. To ensure that the contract is binding, the contract requires the Government to order at least a stated minimum quantity.

(3) A requirements contract operates in the same manner as an indefinite quantity contract with the Government ordering services during the course of the contract. However, a requirements contract does not require the Government to order a minimum quantity during the contract Instead, the Government makes a commitment to order all of its requirements for that particular service required at a particular location only from that contractor.

(c) Combination Firm Fixed Price and Indefinite Quantity. In this type of contract, the work is separated into two categories: Work which can be quantified in advance of contract award and work which is difficult to quantify inadvance. Work in the first category is carried out under the firm fixed price portion of the contract with no adjustment in price for work performed within the contract scope. Work in the second category is ordered by the Government as the need arises. When the combination contract is used, the Government is generally not required by the terms of the contract to order a minimum amount of work under the indefinite quantity portion of the contract. The contract specialist should be consulted to determine this requirement.

(d) Fixed Price Award Fee. This type of contract is based on definitive specifications, but the contract permits the payment of an additional fee or portions thereof for exceptional performance. The contract specifies the maximum fee which may be awarded. Anevaluation board reviews the contractor's performance and recommends the fee to be paid to the contractor based on evaluation criteria included in the contract. The fee determination official makes the final decision on the amount of the award fee.

(e) Fixed Price Incentive. A fixed price incentive contract is a contract that provides for adjusting profits and establishing the final contract price by application of a formula based on the relationship of the total final cost to total target cost. The final price is subject to a price ceiling established at the outset. There are two forms of fixed price incentives: firm targets and successive targets. These are described in detail in the FAR at 16.4.

(f) Time and Materials. A time and materials contract provides for acquiring supplies or services on the basis of (1) direct labor hours at specified hourly rates that include wages, overhead, general and administrative expenses, and profit and (2) materials at cost, including if appropriate, material handling costs as part of material costs. The use of this type of contract by NAVFACENGCOM is used mainly for equipment overhaul and repair contracts.

A detailed description and a full discussion of contracts is contained in the FAR at Part 16.

5-130 Cost Reimbursement Contracts. Cost reimbursement contracts provide for the payment of allowable incurred costs to the extent prescribed in the contract. These contracts establish an estimate of total costs for the purpose of obligating funds and establishing a ceiling that the contractor may not exceed without the approval of the Contracting Officer. This type of contract may be used only under certain limited circumstances. Among the limitations, noted in the FAR is that this type of contract should only be used when uncertainties involved in contract performance do not permit costs to be estimated with sufficient accuracy to use any type of fixedprice contract. A detailed description and a full discussion of the limitations on the use of cost reimbursement contracts is contained in the FAR at subpart 16.3.

5-200 PROCUREMENT

5-210 Responsibility for Procurement. The Contracting Officer is responsible for deciding which type of contract and which method of procurement should be employed. The activity contract specialist is responsible for coordinating this decision with the Procuring Contracts Officer (PCO) and the Administrative Contracts Officer (ACO). In many cases, the PCO and the ACO are the same person.

Due to the importance of selecting the correct contract type, method of procurement, and the different time periods required for preparation and obtaining higher level approvals, the procurement team approach to acquisition planning is highly recommended.

5-220 Procurement Methods. Under the Competition in Contracting Act (CICA), competitive procedures must be used to the greatest extent practicable. Agencies are required to use competitive procedures whether by sealed bidding or by requesting competitive proposals. Sealed bidding consists of soliciting sealed bids from contractors and making award without discussions with the contractor. Competitive proposals permit negotiation and discussion of the terms and conditions of the contract with contractors prior to award of the contract.

Two-step sealed bidding is a combination of sealed bidding and competitive proposals. Step one consists of the request for submission, evaluation, and (if necessary) discussion of a technical proposal. The technical proposal describes the approach the contractor plans to take in meeting the contract requirements. It does not address matters of contractor responsibility as discussed at 5-310. No pricing is involved at this stage. Step two involves the submission of sealed price bids by those who submitted acceptable technical proposals in step one

CICA recognized that under certain circumstances a negotiated procurement may be more advantageous to the Government than sealed bid procedures.

Specific regulations on sealed bidding and competitive proposals are contained in Parts 14 and 15 of the FAR.

5-230 Quality Considerations Proper selection of the contract type and the method of procurement are of vital importance in obtaining quality services by contract. Factors influencing the selection of contract type and the method of procurement are summarized below.

(a) Need for Specification Flexibility. Specifications used in sealed bidding must be much more precise than those used fornegotiation. This is because in sealed bidding there is no opportunity after the opening of bids to discuss possible interpretations of the contract documents to assure mutual agreement. Also, because competition in sealed bidding is usually limited to price, bidders are likely to offer the minimum quality item which will be responsive. This means that the specifications must be immune to degradation by bidders which would cause the Government to get inferior services.

(b) Need for competitive Criteria Other Than Price. The FAR states that evaluation criteria in contracts will be clearly defined and awards made only on the basis of criteria set out in the proposal or sealed bid request. In sealedbids, the contract is awarded to the bidder whose price is most advantageous considering only price and other price related factors included in the solicitation. In competitive proposals, the contract is awarded to the bidder whose proposal is most advantageous taking into consideration price and other factors included in the solicitation. Therefore, a wide range of factors including technical considerations and life cycle costs may be considered as evaluation factors when competitive proposals are used.

(c) Need for Discussions. It may not be possible to adequately describe the scope of the work. In these instances discussions with the officers concerning their understanding of the scope of the work and the means by which they plan to accomplish it are desirable prior to award of the contract. The need for discussions can be satisfied if competitive proposals are employed.

(d) Need to Provide Incentives. It may be considered desirable for the particular contract under consideration to provide for incentives to the contractor for superior performance. Quality of work, timeliness of performance, cooperation with administrators, and contractor ingenuity may suffer under firm fixed procurements. The use of the fixed price award fee contract motivates the contractor by permitting the award of additional fees to the contractor for superior performance.

(e) Need for Cost Control. Under fixed price incentive fee contracts, the contractor is motivated by costs. The distribution of the incentive fee for overruns and underruns is primarily based on cost control. By keeping the costs below a ceiling amount, the contractor shares in the underrun. Therefore, the motivation for profit is based on cost control rather than on providing quality service.

(f) Need for Technical Review. In two-step sealed bidding procedures, only those bidders whose technical proposals are acceptable after step one are solicited for bids in step two. In step two, the low bid must be accepted even though another bidder's proposal may appear more technically desirable at a slightly higher bid price.

(g) Need for Scope Flexibility. Under most time and materials contracts there is little positive profit incentive to the contractor for cost control or later efficiency. A time and materials contract may be used when it is not possible at the time of placing the contract to estimate accurately the extent or duration of the work or to anticipate costs with any reasonable degree of confidence.

(h) Need for Administration Resources. The management resources needed in the formation and administration of different types of contract must be compared with the resources available. The availability of resumes can be a significant factor in deciding on the contract type.

5-300 CONTRACTOR QUALIFICATIONS

5-310 General. Federal Acquisition Regulation (FAR) requires that contracts be awarded only to responsible prospective contractors. The qualification criterion that is most significant, in so far as the quality of service is concerned, is the finding of "responsible." The FAR at 9.104 states the general standards by which the contractor's responsibility is judged. Among these standards, the following are generally the prim considerations taken into account in determining responsibility for typical NAVFACENGCOM contracts.

To be responsible, a prospective contractor must:

(a) Have a satisfactory performance record,

(b) Have a satisfactory record of integrity and business ethics,

(c) Have the necessary organization, experience, accounting and operational controls, and technical skills, or the ability to obtain them,

(d) Have the appropriate capabilities to undertake quality control procedures during the course of the work to be performed under the contract,

(e) Have the necessary technical equipment and facilities, or the ability to obtain them,

(f) Be otherwise qualified and eligible to receive an award tier applicable laws and regulations.

In reviewing the contractor's performance record (see (a) above) the FAR states

"A prospective contractor that is or recently has been seriously deficient in contract performance shall be presumed to be

nonresponsible, unless the Contracting Officer determines that the circumstances *were properly beyond the contractor's control or that the contractor has taken appropriate corrective action. Past failure to apply sufficient tenacity and perseverance to perform acceptably* is *strong evidence of nonresponsibility. The Contracting Officer shall consider the number of contracts involved and the extent of the deficiency of each in making the evaluation."* (FAR 9.104-3(c))

In contemplating a finding of nonresponsibility based on performance record, it must be shown that the unsatisfactory performance was due to circumstances within the contractor's and that the contractor did not take adequate corrective action. It is therefore essential that contractor performance evaluations be prepared completely (see 6-400).

In addition to the factors listed above, consideration must be given to the capability of the contractor to carry out the contract for the amount of his bid. A difficult problem is presented when a bidder submits a sealed bid which is significantly below a reasonable price based on the Government estimate to perform the required services.

5-320 P<u>re-award Surveys</u> The Contracting Officer is required by the FAR to make an affirmative determination of responsibility prior to award of a contract. The FAR also states in part

"While it is *important that Government purchases be made at the lowest price, this does not require an award to a supplier solely* because *the supplier submits the lowest offer. A prospective contractor must affirmatively demonstrate its responsibility, including, when necessary, the responsibility of its proposed subcontractors."* (FAR 9.103(c))

A pre-award survey is normally required when the information on hand or readily available to the Contracting Officer, is not sufficient to make a determination regarding responsibility. However, if the contemplated contract is $25,000 or less, the Contracting Officer should not request a pre-award survey unless circumstances justify its cost.

The pre-award survey is carried out by the Defense Contract Administration Service Management Agency (DCASMA) as shown on the pre-award survey flow chart in Figure 5-l. The DCASMA office generally has the required expertise to analyze contractor financial data and procedural matters. However, the Contracting Officer should augment the DCASMA team with appropriate personnel. Expertise in the area of the technical specifications and quality standards is especially valuable to the team.

The pre-award survey may be limited to those bidders in the range of award.

If the contractor is designated as a small business by the Small Business Administration (SBA), the Contracting Officer does not have the authority to deny the award of the contract on the basis of a determination of contractor

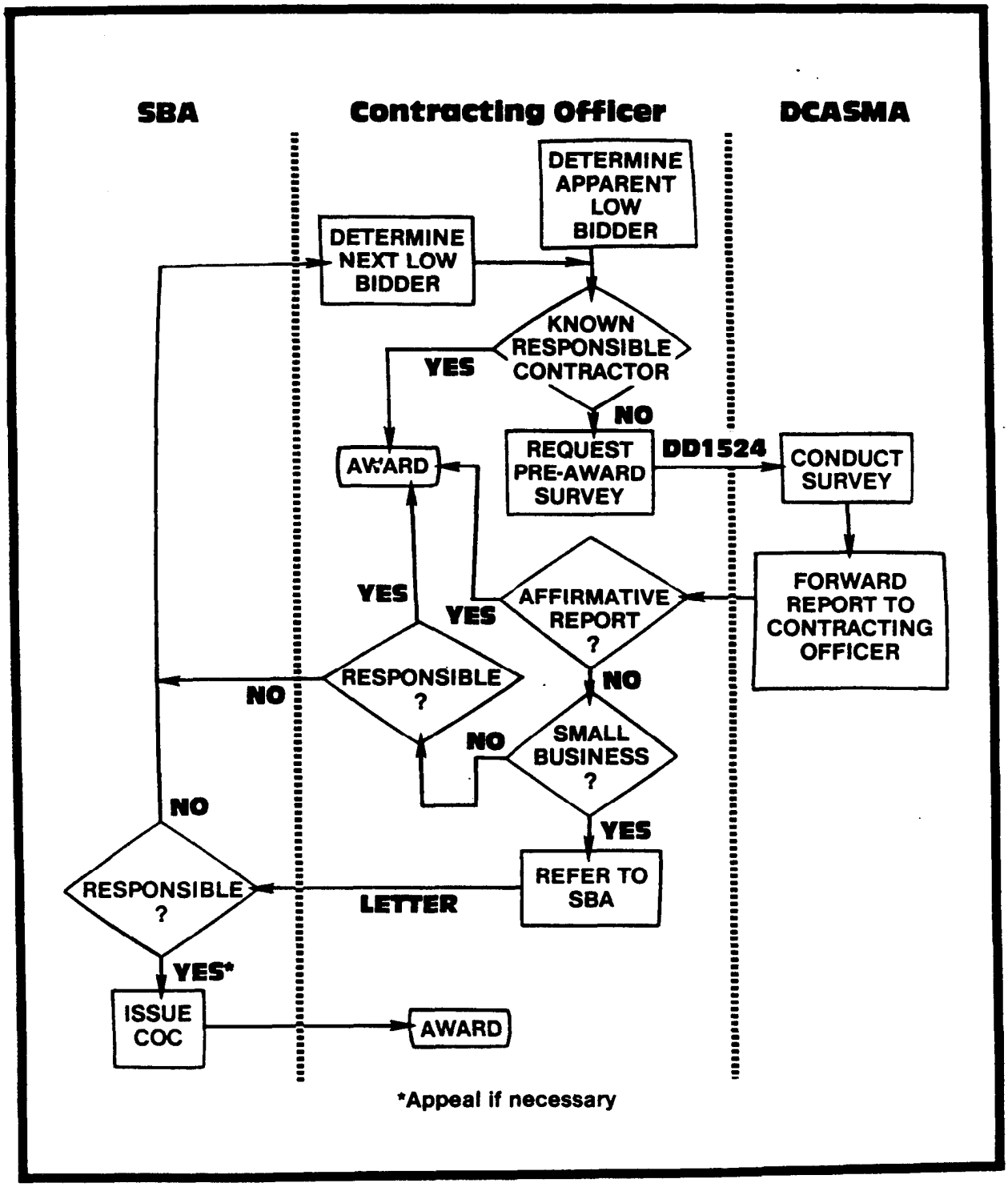


FIGURE 5-1 PRE-AWARD SURVEY FLOW CHART

nonresponsibility. As discussed in 5-340, the matter of responsibility must be referred to the SBA whose decision on responsibility is binding on the Contracting Officer.

5-330 The Small Business Administration. The Small Business Administration (SBA) was established by Congress to assist and encourage the development of small business concerns. One of the major responsibilities of SBA is to see that small business concerns obtain a fair share of the vast Government market of goods and services. SBA operates a number of programs to promote small businesses and small disadvantaged businesses. The program of particular interest to those involvedwith facility support contracting are the Set-Asides For Small Business, The 8(a) Program, and the Certificate of Competency program.

The purpose of small business set-asides is to award certain acquisitions exclusively to small business concerns. The determination to set-aside a procurement for small business can be made unilaterally by the Contracting Officer. Alternatively, it may be a joint determination made on the basis of recommendations from the SBA procurement center representative. Once the product or service has been acquired successfully by a Contracting Officer on the basis of a small business set-aside, all future requirements are, in general, acquired on the basis of a repetitive set-aside. Set-asides are described in detail in the FAR at subpart 19.5.

Section a (a) of the Small Business Act established a program that authorizes SBA to enter into contracts directly with agencies such as the Navy. The work is actually performed by contractors under subcontract to SBA. SBA's. subcontractors are referred to as "8(a) contractors." Under the program, SBA certifies to the Navy prior to award that the SBA subcontractor is competent and capable of performing the contract. The Contracting Officer is authorized at his or her discretion to award the contract to the SBA on mutually agreeable terms and conditions. The 8(a) program is discussed in detail in the FAR at subpart 19.8.

5-340 Certificate of Competency. SBA has established a Certificate of Competency (COC) program. This program is intended to assure that small businesses, especially new entrants into the federal procurement market, are afforded a fair opportunity to receive Government contracts. Under the program, if a small business offeror is to be rejected because of a finding of nonresponsibility, the Contracting Officer must refer the matter to SBA for a determination of responsibility. The award is held in abeyance while SBA is determining responsibility. During the COC review process, SBA will not conduct a new responsibility review of the prospective contractor.

After the receipt of a referral from the Contracting Officer, SBA will contact the small business to determine if it wants to appeal the negative determination concerning its responsibility by applying for a CDC. If the business applies, SBA is required within 15 working days after receipt of the referral or a longer period agreed to by the SBA and the Contracting Officer, to determine independently whether the small business is capable of performing the work in question. If SBA determines that the business is

capable of performing the contract, it will issue a COC. Upon receipt of the COC, the Contracting Officer is required to award the subject contract to the business. On the basis of SBA's favorable findings, the Contracting Officer will sometimes award the contract to the business before the SBA issues a COC. The SBA classifies such an award as a "direct award."

SBA and Department of Defense (DOD) officials apply somewhat different standards assessing prior performance as an indicator of a business's responsibility. DOD policy requires that when a firm was seriously deficient in the past to perform on schedule through no fault of the Government, the pre-award team is to make a "no award" recommendation. On the other hand, SBA in its advocacy role is more willing to give a prospective contractor the benefit of the doubt and is more lenient than DOD when judging prior poor performance. SBA gives favorable consideration to factors such as improved performance, unforeseen events causing past poor performance, and actions taken to correct past poor performance. During the COC review process, SBA will not conduct anewresponsibility review of the prospective contractor. SBA will only evaluate the responsibility elements (see 5-310) determined negatively by the Contracting Officer. The Contracting Officer should include in his/her referral to SBA, not only a record of poor past performance, but also identify those elements, such as capacity or credit, which caused the prospective contractor's poor performance. Failure to provide SBA with this information may result in SBA not having sufficient grounds to deny a COC. If there are elements in the proposed contract which NAVFACENGCOM considers critical, not only must they be clearly spelled out in the solicitation, but also must be identified in the documentation submitted by the Contracting Officer to SBA before SBA will consider them during processing of the COC. If the contract contains critical elements, but they are not a part of the reason for the finding of nonresponsibility, then SBA will not consider them

In the event of disagreement between the Contracting Officer and SBA, the Contracting Officer may request that SBA's regional office suspend action and the matter be referred for review to SBA's central office. A formal appeal may also be filled with SBA in the event of an adverse decision by SBA's central office. In any event, the final decision on the issuance of a COC rests with SBA.

Although the procurement regulations permit concurrent pre-award surveys for those bidders in the range of award, SBA will only process one COC request at a time. SBA reasons that if a COC is issued to the first prospective contractor for whom a referral is made, this contractor will be awarded the contract. Therefore, if concurrent surveys were made for the issuance of COCs, there would be an unnecessary duplication of effort. Certificates of competency are discussed in the FAR at subpart 19.6.

5-400 THE UNREALISTICALLY LOW BID

5-410 General. In sealed bid procurements, on occasion, a bid is submitted which is significantly lower than what price analysis would

indicate based on other bids, prior bids on similar work, or the Government estimate. Such a bid is referred to as an "unrealistically low bid." If the contract is awarded to the unrealistically low bidder, quality deficiencies and performance shortfalls are to be expected. An unrealistically low bid can be attributed to "buying in," to a mistake in bid preparation, or to ambiguous specifications.

5-420 Buying-in. "Buying-in" means submitting an offer below anticipated costs expecting to increase the contract amount after award (e.g. by unnecessary or excessively priced contract modifications). In sealed bidding, the Contracting Officer has no authority to reject a bid solely because it appears too low. In most cases if the contractor, after being given an opportunity, affirms his bid, the contract must be awarded to the low bidder unless of course it has been determined that the contractor is responsible as discussed at 6-300.

Buying-in can be more readily avoided when contracting by negotiation (competitive proposals) than when sealed bidding is used. When contracting by competitive negotiation, the Contracting Officer can make a provision in the solicitation requiring the prospective contractor to submit adequate pricing data. The pricing data submitted by the contractor enable the Government to perform a price realism and analysis and permits the Government to reduce the proposer's technical evaluation score when the price is unreasonably low and the proposer cannot satisfactorily demonstrate how he can perform at the price submitted. A price realism analysis consists of a summary level review of the price portion of the price proposals to determine if the overall costs proposed are realistic for the work to be *performed.* Price *realism analysis* differs from the detailed cost analysis as it minimizes the requirements for cost and pricing data and associated audit requirements.

5-430 Mistake in Bids. After the opening of sealed bids, the Contracting Officer is required by the FAR (subpart 14.406) to examine all bids for mistakes. In all cases, where the Contracting Officer has reason to believe that a mistake may have been made, the Contracting Officer is required to identify the basis for the suspected error and request a verification of the bid.

In sealed bidding, the Contracting Officer has the authority to request verification of an unrealistically low bid. However, if the contractor confirms the bid, the Contracting Officer is normally required to award the contract, unless the contractor is found to be nonresponsible. NAVFACENGCOM P-68 (subpart 14.400) provides additional detailed information about this subject. This problem is avoided to a large extent in the case of negotiated contracts by reason of the procedures involved in the negotiations, but still my occur. The Contracting Manual P-68, subpart 14.406, provides additional detailed information on mistake in bids.

5-440 Ambiguous Specifications. Ambiguous specifications are all too often the cause of an unrealistically low bid. The specification writer must, to the maximum extent possible, let the contractor clearly know in the performance work statement (PWS) what work the contractor is required to

perform, perform under what conditions he is required to perform it, and the standards by which his performance will be judged. It is NAVFACENGCOM's policy to clearly define the tasks to be performed, the performance requirements and the maximum allowable defect rate (MADR), in the performance requirements summary (PRS). This is done in the interest of eliminating ambiguities in the scope of the work required and the standards by which the work will be judged.

CHAPTER 6 QUALITY ASSURANCE CONSIDERATIONS IN CONTRACT ADMINISTRATION

6-100 PRE-AWARD CONSIDERATIONS

6-110 Team Coordination. Team coordination can have a dramatic effect on the quality and consistency of contract services. Effective and efficient satisfaction of public works support needs by contract involves close coordination between the customer activity and the field contracting office (see 2-400). The Contracting Officer is responsible for insuring effective contract administration including quality assurance, the approval of payments, and the issuance of contract modifications.

6-120 Appointment Letters. The Head of the Contracting Office (HCO), will appoint an individual to provide overall coordination during the administration phase of the contract. This individual is normally referred to as the facility support contract manager (FSCM). The HCO will assign the FSCM appropriate responsibilities and provide guidance on the administration of the contract. A sample appointment letter for an FSCM is contained in the Contracting Manual P-68 Appendix E. At activities where workload and staffing requirements permit only one FSCM, a general or blanket appointment letter may be prepared. Surveillance of facility support contracts is performed by quality assurance evaluators (QAEs), also referred to as technical representatives of the Commanding Officer (TRCOs) and similar titles. QAEs are assigned by the activity and receive their authority and guidance for surveillance of the contract from the HCO. A sample appointment letter for a QAE is contained in the Contracting Manual P-68, at Appendix E.

The facility support contract manager (FSCM) and the quality assurance evaluators (QAEs) should be identified as early as possible, preferably when the decision is first made to contract for the work. This permits participation by the FSCM and the QAE(s) in the planning for the contract including preparation of the performance requirements summary (PRS), performance work statement (PWS), and quality assurance (QA) plan. Also, early identification of these individuals will allow time for the scheduling and accomplishment of any needed training.

The Contracting Officer is required to establish controls so that the FSCM and the QAEs are performing the duties outlined in their letters of appointment and that effective administration of each contract is being accomplished. The control system must include provisions to assure that orders for work issued by the Contracting Officer are within the scope of the contract.

FSCMs and QAEs must understand that they do not have the authority to alter the terms of the contract, incur obligations on behalf of the Government or waive any required performance of the contract. Authority for these actions is reserved to the Contracting Officer.

6-130 Government Furnished Property. The Government sometimes finds it beneficial to furnish property such as equipment, materials, or facilities, to the contractor under the terms of the contract. This property is referred to as Government furnished property (GFP). Policy and guidance concerning GFP is contained in Part 45 of the Federal Acquisition Regulation (FAR) and supplementary regulations.

When the GFP is listed in the solicitation, the Government becomes obligated to furnish the property or cause such property to be acquired for the contractor's use. Failure of the Government to provide the property in accordance with the terms of the contract can lead the contractor to claim for breach of contract. In some instances the contractor's failure to perform may be excused because of the Government's failure to provide the property in accordance with the contract. The Contracting Officer, through the facility support contract manager (FSCM), must verify in advance of the commencement of the contract that the property is going to be available to the contractor in a timely manner.

Provisions must also be made to review the contractor's property control plan for Government property, arrange for the taking of inventory, and for the transfer of control of the property to the contractor.

6-140 Phase-in/Phase-out. The phase-in period occurs at the beginning of the contract. It involves the transfer of the responsibility for performing the work from Government personnel or from an incumbent contractor, to the new contractor. Advance planning is the key to a successful phase-in. The following factors should be considered at the commencement of the contract:

(a) Provision of access to the base for the contractor's personnel and equipment including access to work areas, storage and lay down areas, and parking.

(b) Security requirements including security clearances, identification badges, property passes, and vehicle registration and stickers.

(c) Transfer of Government furnished property (GFP) to the contractor.

(d) Transfer of rewards, drawings, and operations and maintenance manuals to the contractor.

(e) Provision of utilities such as gas, water, and electricity to the contractor and billing arrangements.

(f) Federal and State building and environmental permits.

(g) Provision of specific or peculiar training requirements such as boiler light-off operations or utility load shedding operations.

The phase-out period occurs towards the end of the contract. It involves the transfer of the responsibility for performing the work from the

incumbent contractor, to a new contractor or to government personnel. The following factors should be considered in planning the phase-out:

(a) Termination of access to the base for contractor's personnel and equipment including access to work areas, storage and lay down are areas and parking.

(b) Removal of a contractor owned property from the base.

(c) Cancellation of security clearances and surrender of passes.

(d) Transfer of Government furnished property (GFP) not incorporated into the work from the contractor to the Government or to a new contractor.

(e) Transfer of records, drawings, and operations and maintenance manuals to the Government or to the new contractor.

(f) Transfer of utilities to the Government or the new contractor, and final billing to the departing contractor.

(g) Transfer of contract quality control (QC) files to the Government if required by the contract.

(h) Transfer of equipment maintenance history files to the Government of the new contractor, if required by the contract.

(i) orderly transfer of watchstanding and critical service requirements, such as boiler room operations or crash/rescue response, to no loss in continuity of service.

6-200 POST-AWARD CONSIDERATIONS

6-210 Pre-performance Conference. A pre-performance conference between the Government and the contractor provides an excellent opportunity to ensure initial understanding and to identify and resolve potential problems. A mutual understanding between the contractor and government personnel on all contractual requirements is an essential key to successful contractor performance.

The pre-performance conference should be attended, on behalf of the Government, by the Contracting Officer, the facility support contract manager (FSCM), the quality assurance evaluators (QAEs), the base safety officer, the functional manager(s) of the receiving activity, and if appropriate, the security officer. The contractor should at minimum be represented by his project manager and the individual responsible for quality control (QC).

Careful consideration should be given to the contents of the agenda and a copy of the agenda should be circulated in advance. Items for inclusion in the agenda include:

(a) Any unusual requirements of the contract,
(b) Safety requirements,
(c) Contractor's quality control program,
(d) Prompt rework of deficiencies,
(f) Government furnished property,
(g) Contractor's schedules,
(h) Invoicing by the contractor,
(i) Deductions to the contract price for unsatisfactory performance,
(j) Points of contact for the Government and the contractor after regular working hours and in emergencies,
(k) Availability of emergency medical and fire services,
(l) Station fire regulations,
(m) Securityregulations,
(n) Accident reporting,
(o) Scheduling of future meetings,
(p) Review of the contractor performance evaluation procedures,
(q) Standards of conduct.

6-220 Schedule of Deductions. The term of the contract, in the case of firm fixed price contracts, generally require the contractor to submit a schedule of deductions within 15 days after the award of the contract. This schedule of deductions is used to calculate deductions in the contract price for defects in the contractor's performance. The schedule of deductions applies only to the work included in the firm fixed price portion of the contract. A schedule of deductions is not required for indefinite quantity contracts or the indefinite portion of combination firm fixed price/indefinite quantity contract since each contract requirement or task is priced by the contractor in the schedule of indefinite quantity work when the bid/proposal is submitted by the contractor. Also, a schedule of deductions is not required if line items (a schedule of prices) was used in the solicitation in preference to a schedule of deductions.

A properly completed schedule of deductions is essential for effective contract administration, and the contractor should not be permitted to commence work until theschedule is received and approved by the Contracting Officer. The reasonableness of the schedule of deductions submitted by the contractor should be assessed by comparing the estimated dollar amounts in the expanded performance requirements summary (EPRS) with the amounts in the schedule of deductions. Care should be taken to assure that the contractor submits a balanced schedule of deductions, i.e., that the prices in the schedule bear a reasonable relationship to the relative magnitude of each contract requirement. If the contractor's schedule is unacceptable, it should be returned to the contractor for revision. The Government reserves the right to unilaterally set a schedule of deductions in the event the contractor fails to submit an acceptable schedule.

It should be noted that, if as a result of the contractor's failure to perform, the work is subsequently done by the Government or by another contractor the schedule of deductions, generally, is not used to calculate deductions to the contractor's price for this work. In such cases, the Government's actual costs together with liquidated damages in accordance with the terms of the contract are deducted from the contract price. Payment calculations am discussed in detail at 6-600.

6-230 Quality Control Plan. The contractor is required to establish and maintain an inspection system acceptable to the Government in accordance with FAR 52.246-4, INSPECTION OF SERVICES - FIXED PRICE and FAR 52.246-12 INSPECTION OF A CONSTRUCTION. The Contractor will normally be required to submit a description of his inspection system together with procedures for identifying and correcting deficiencies in a quality control (QC) plan. The contractor is generally required to submit his QC plan for approval within 15 days after award of the contract. The QC plan should be carefully reviewed for conformance with contract requirements and if necessary returned to the contractor for amendment. The Quality Control Plan is essential for effective management of the contract and should be approved by the Contracting Officer prior to the commencement of work under the contract.

6-300 SURVEILLANCE

6-310 Surveillance schedules. The development of an effective surveillance schedule for use by the QAE is important to the effective implementation of QA plans. The schedule allows the QAE to plan where he/she will be on any given day of the week. The surveillance schedule serves three purposes as follows:

(a) Optimizing Time. The QAE will use his or her surveillance schedule to plan and execute the quality assurance workload. By making use of a good schedule, the QAE can optimize use of available tire.

(b) Management Control. The FSCM is provided a copy of each QAE surveillance schedule and this schedule provides the information necessary to monitor the quality assurance (QA) program.

(c) Audit. The QAE surveillance schedule, along with the completed inspection reports, provide an audit trail for contract surveillance. The established schedule as updated during execution, should reflect what was actually accomplished.

Quality assurance evaluator (QAE) surveillance schedules are based on data contained in each QA plan. The inspectionschedules for the various contract requirements are consolidated into a master schedule showing what the QAE must inspect each day of the month. An example of a QAE's schedule is shown in Figure 6-l. The example shows a six day schedule. A number of these schedules must be completed to cover the entire month. Contract surveillance must cover all hours of operation. Random observations are scheduled at night, on weekends, and on holidays when services are performed during these periods. The monthly schedule shows where and what the QAE is monitoring at all times. After preparation of the schedule, it should be marked "FOR OFFICIAL USE ONLY" and must not be shown to the contractor.

6-320 Inspecting the Work. Inspecting the work involves acting on the contents of the QA plan. The inspection is done in accordance with the QAE's schedule. The following are general guidelines on the timing of

QAE SURVEILLANCE SCHEDULE. (Sample)

QAE: Jane Doe SCHEDULE FOR WEEK OF: JUNE 19 THRU 25 1988

TIME	MON	TUE	WEN	THU	FRI	SAT
0700	INSPECT GROUNDS PARCEL #7, #108,#156	INSPECT GROUNDS PARCEL #4, #13,#201	REVISE AND UPDATE QA PLANS	INSPECT DUMPSTERS #5,#34, #168,#183	INSPECT BUILDINGS ROOMS #3, #20,#31	
0800	INSPECT DUMPSTER #5,#28,#76,	MEET WITH FSCM AND CONTRACT. OFFICER TO DISCUSS CONTRACT MODS.	INSPECT DUMSPTER #2,#23,#80, #140,#153, #176,#210, #225,#287	INSP BLDG. RMS, #14,#18, #88,#170	INSPECT DUMPSTERS #23,#78, #96,#183, #197,#218	
0900 1000	INSPECT GROUNDS CONTRACT QC FILES			INSPECT WASH RACK	REVIEW NEW SOLICTT. FOR GROUNDS MAINTEN.	
1100		INSPECT SERVICE CALLS				
1200	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	
1300 1400	INSPECT BUILDINGS ROOMS #4, #17,#23, #186,#249	INSPECT DUMPSTERS #21,#94,#97 #167,#193, #236,#256	INSPECT GROUNDS PARCEL #23,#45, #106,#110, #158,#193,	INSPECT GROUNDS PARCEL #27,#76, #187,#234, #278,#318	INSPECT GROUNDS PARCEL #29,#86, #193,#245, #307	
1500		INSPECT BUILDINGS ROOMS #87,#98, 143,#213.	INSPECT BUILDINGS ROOMS #56,#78, #93,#110, #135,#153, #215,	MEET FSCM TO DISCUSS CONTRACT. PERFORM-ANCE EVALUATION	DEVELOP QA PLAN FOR NEW REFUSE COLLECTION SOLIC.	
1600 1700	PAPER WORK IN OFFICE					

FIGURE 6-1 QAE SURVEILLANCE SCHEDULE

inspections which may be used in the absence of more specific directions in the QA Plans.

(a) When inspecting scheduled services, the inspection must be done at the date or time indicated in the surveillance schedule. Adherence to the schedule is especially important when random sampling is used.

(b) When maintenance is being performed on a piece of equipment, the QAE may have to inspect the work before the equipment is fully re-assembled.

(c) When work on the building electrical or plumbing systems is performed, the QAE will have to inspect before siding or dry wall is replaced.

(d) For daily services, such as custodial services, the QAE must conduct inspections shortly after work performance.

(e) Work such as painting, glass replacement, or tree pruning may be inspected several days after completion of the work.

6-330 Record Keeping and Documentation. An accurate and complete record of all inspections performed is required. The QAE is responsible for updating the monthly schedule, completing evaluation worksheets, recording customer complaints and any other material that reflects the quality/quantity of the contractor's performance. In accordance with the "Consequences of Contractor's Failure to perform Required Services" clause, the Government is required to give the contractor prompt notice. of defects observed by the QAE in the course of his inspections. This requirement does not imply that the Government is obligated to carry out quality control inspections for the contractor, but that on discovering defects the Government will inform the contractor in detail of their location. This notice may be given by copies of daily reports. It is recommended that the contractor's representative be requested to acknowledge the receipt of the notice of the defect by initialing a copy of the daily report.

The records maintained by the QAE are the basis for taking deductions to the contract price for nonperformed or unsatisfactory work and are subject to audit. During the course of the contract, the QAE retains a copy of all surveillance schedules, evaluation worksheets, and checklists. At the end of the contract period, the QAE forwards these records for inclusion in the contract file. However, when a specific service becomes unsatisfactory during a surveillance period, a copy of the inspection documentation supporting the unsatisfactory perfomance is forwarded to the FSCM for action.

6-340 Rework. Whenever possible, the contractor should be given the opportunity to reform nonperformed or unsatisfactory work. Customers and functional managers almost without exception would prefer to receive the specified service rather than pursue a deduction to the contract price. It is therefore important to insure that the contractor be promptly notified of defects. The defects which may be reworked include all verified defects

including validated customer complaints. Some work requirements, such as timeliness or daily services, may not be possible to rework. In some instances the Government may find it advantageous to rework the defects using its own forces or have the defects reworked by another contractor. In any event, the objective is to use the "Consequences of Contractor's Failure To Perform Required Services" clause (see P-68) to maximize the benefit for the customer by obtaining reworked services whenever possible.

6-350 Notification of Inspection Results. The quality assurance evaluator (QAE) is responsible for assessing the contractor's performance in accordance with the quality assurance (QA) plan. The QAE should keep the FSCM informed of the contractor's performance so appropriate action may be taken in a timely manner in the event of poor contractor performance.

The contractor should be notified promptly of defects in performance and where appropriate, the QAE should provide a daily report to the contractor detailing the defects in the quality of the work.

This report should identify:

(a) The work requirement in which the defect was observed,

(b) The nature of the defect,

(c) The location (if applicable),

(d) The intention to allow rework (where applicable).

In addition, the report should list any deficiencies in other performance elements such as noncompliance with safety standards.

6-400 PERFORMANCE ELEMENTS

6-410 General. Surveillance of facility support contracts is undertaken to establish whether or not the contractor is performing in accordance with the contract. Surveillance is a process whereby discrete end items of service are examined in a formalized manner, using a Quality Assurance Plan (Chapter 4), to determine conformance with the performance requirements contained in the contract documents. The performance of the contractor is evaluated on the basis of a number of performance elements including:

(a) Quality of Work
(b) Quality Control
(c) Preparation of Schedules
(d) Timely Performance
(e) Effectiveness of Management
(f) Response to Requests
(g) Preparation of Reports
(h) Compliance with Safety Standards
(i) Compliance with Labor Standards

6-420 Evaluating The Quality Control of The Contractor's Work. First, it should be understood that you cannot inspect quality into the work. No amount of surveillance will produce the desired level of quality if the foundation for quality performance was nut laid during the planning and specification development phase of the procurement. Each significant contract requirement must have a clearly defined performance requirement spelled out in the specification. These performance requirements become the basis on which the offerors prepare their bids/proposals, the framework within which the successful contractor manages his work, and the criteria upon which the Government assesses performance. Evaluating the quality of the contractor's work becomes a process of making observations of the contractor's output through a regimen of inspecting and comparing those inspection results with the applicable performance requirement.

For the QAE, evaluating the quality of the contractor's work in this manner is preparing the ground work for three major contract administration responsibilities.

(a) Recommended equitable adjustments to the contract price for services not provided or provided unsatisfactorily.

(b) Assisting in the preparation of performance evaluations for the contractor.

(c) Recommending any of a number of administrative remedies as appropriate for the circumstances.

Computing payment deductions (item (a) above) is a quantitative process. All occurrences of nonperformed or unsatisfactory work are valued using the schedule of deductions, schedule of prices or other contract provisions and subtracted from the contract price as consideration for the services not provided.

Preparing formal performance evaluations and monthly summaries of performance (item (b) above), on the other hand, is a qualitative or subjectiveprocess. There are no rules or formulas that will lead you to say The custodial contractor's performance is unsatisfactory." That conclusion is reached by a subjective assessment of the available evidence of the contractor's performance.

Similarly, recommending that a contract discrepancy report (CDR) be issued or stronger administrative remedy (item (c) above) be taken is a decision reached by a subjective analysis of the inspection results and performance trends. There is no uniform trigger point for these administrative steps because there is a unique set of circumstances surrounding each activity and each contract.

6-430 Evaluating The Contractor's Quality Control. Just as the contract should contain performance requirements for each required end item of service, the contract should also contain a performance requirement for the contractor's quality control activities. That performance requirement is the maximum allowable defect rate (MADR). Since the quality of the contractor's work is a measure of the effectiveness of his quality control, MADRs are expressed in terms of the work and establish quality bench marks fore each contract requirement.

The advantages and disadvantages of a number of surveillance techniques are listed at 4-300. They will not be reviewed here, but to illustrate the process of evaluating the contractor's quality control, the following examples, using different sampling methods, have been prepared:

(a) 100 Percent Inspection. The defect rate when 100 percent inspection is used, is determined by dividing the number of defects by the total number of occurrences of the work requirement. The following example illustrates the computation.

CONTRACT REQUIREMENT: CHANGE OF OCCUPANCY
Sampling Method: 100 Percent Inspection.
Population: 30

INSPECTION RESULTS:

WORK REQUIREMENT	DEFECTS IN SAMPLE	DEFECT RATE	MADR	QUALITY CONTROL RATING
A. House ready on time	4	13.33%	0%	UNSAT
B. Quality work	5	16.66%	2%	UNSAT

Because 100 percent inspection was used, the observed defect rate (ODR) and the defect rate (DR) are the same. However, when other types of sampling are used, the ODR and the DR are not necessarily the same as shown in the examples below.

(b) Planned Sampling. When planned sampling is used, the defect rate is calculated by dividing the total number of defects (both inside and outside the sample) by the total population of services.

CONTRACT REQUIREMENT: PICK UP GARBAGE CONTAINERS

The contractor is required to pickup 600 containers at various locations at a Naval Air Station.

Sampling Method: Planned Sampling.
Population: 600 containers X 12 pickups per month = 7200
Number of Services sampled: 720 (10% of the population)
MADR: 0.2%

The pickup of garbage from 60 containers at various locations on the station was monitored on each pickup day for a period of one month. The garbage was required to be picked up before noon on the scheduled pickup days. The results of the inspection were as follows:

INSPECTION RESULTS:

WORK REQUIREMENT	DEFECTS IN SAMPLE	DEFECTS OUTSIDE SAMPLE	VALIDATED CUSTOMER COMPLAINTS
A. Response time	30	5	8

The defect rate (DR), when planned sampling is used, is calculated by dividing the total number of observed defects (including those detected by validated customer complaints and incidental inspections) by the total population of services so that

$$DR = \frac{\text{Total Number of Observed Defects}}{\text{Total Population}} \times 100$$

$$DR = \frac{43}{7200} = 0.6\%$$

Dividing the number of defects in the sample by the sample size gives a defect rate for the sample only, and the use of this "Observed Defect Rate", (ODR) to either assess the contractor's performance or take deductions to the contractor's price is contrary to NAVFACENGCOM policy. This is because neither the size of the sample nor the method of sample selection are in accordance with the rules for statistical sampling techniques. As a result the extrapolation of planned sampling has no validity and the ODR may not be compared with the MADR, the MADR being defined as the defect rate in the population above which the contractor's quality control is considered unsatisfactory.

In this particular example, the DR (0.6%) exceeds the MADR (0.2%) so the contractor's quality control can be rated as unsatisfactory.

Changes in the DR from month to month give a reliable indication of whether the contractor's quality control is getting better or worse provided the same sampling procedures are followed each month.

It is not always possible to rate the contractor's quality control using planned sampling, especially when small sample sizes and relatively high MADRs in the 5% to 10% range are used.

An alternate approach is to specify the MADR as a discrete number of defects rather than as a percentage when planned sampling is the primary method of surveillance (e.g. 15 defects per month rather than 0.2%).

(c) Validated Customer Complaints. When validated customer complaints is used as the primary sampling method, it is generally preferable to

specify the MADR as a number of defects rather than as a percentage (e.g. 10 defects rather than 2%). The following example illustrates the computation.

CONTRACT REQUIREMENT: TAXI SERVICE
Sampling Method: Validated Customer Complaints.
Population: 523 trips in a month.
Number of (Customer Complaints: 22
Number of Validated Customer Complaints: 18

INSPECTION RESULTS:

WORK REQUIREMENT	VALIDATED CUSTOMER COMPLAINTS	NUMBER DEFECTS	MADR No. of (Defects)	QUALITY CONTROL RATING
A. Response time	18	18	10	UNSATISFACTORY

(d) Random Sampling. The defect rate is calculated by deducting an adjustment factor shown in Appendix F, Table 3, from the observed defect rate (ODR). The adjustment factor improves the statistical accuracy of the results:

$$\text{Defect rate} = \frac{\text{number of defects}}{\text{number of services sampled}} - \text{Adjustment Factor}$$

The following example illustrates the computation.

CONTRACT REQUIREMENT: ROUTINE SERVICE CALLS
Sampling Method: Random Sampling.
Population: 600 Service Calls
Number of Services Sampled: 60

REQUIREMENT	DEFECTS IN SAMPLE	ODR	AF*	DR**	MADR	QC RATING
A. Response Time	6	10.00%	1.38%	8.62%	3%	UNSAT
B. Classification	5	8.33%	1.31%	7.02%	3%	UNSAT

WORK REQUIREMENT	DEFECTS IN SAMPLE	ODR	AF*	DR**	MADR	QC RATING
C. Cost accounting	4	6.66%	1.17%	5.49%	3%	UNSAT
D. Quality of work	2	3.33%	0.90%	2.43%	3%	SAT

* Adjustment factor, see Appendix F, Table 3
** Defect rate: Observed defect rate (ODR) - Adjustment Factor (AF)

Note that in computing the defect rate, only those defects occurring in the sample were counted. Defects outsidethe sample, such as validated customer complaints, are not included when calculating the defect rate. It is assumed that these defects are reflected in the results from the sample.

6-431 Corrective Action. If the contractor's defect rate (DR) exceeds the MADR, the contractor's quality control for that work requirement is considered unsatisfactory. The FSCM should be notified of all instances where this occurs. The contractor should also be notified, at least, that his quality control for that work requirement is not satisfactory, and that corrective measures should be taken.

6-440 Compliance With Safety Standards.

6-441 Applicable Laws and Regulations. The contractor is required to comply with the Occupational Safety and Health Act (OSHA). Safety rules promulgated in accordance with the act are contained 29 CFR (Code of Federal Regulations) 1926 and 29 CFR 1910. The contractor is also required to comply with the US Army, Corps of Engineers, and Safety and Health Requirements Manual EM 385-1-1.

6-442 Occupational Safety and Health (OSHA). The Department of Labor is primarily responsible for enforcement of OSHA including the issuance of citations. However, the QAE should record violations of OSHA in his reports and the contractor should be advised promptly of the violations.

6-443 OSHA Inspections and Investigations. Permission has been granted by the Chief of Naval Operations permitting federal and state occupational health and safety officials to enter Navy shore installations without delay and at reasonable times to conduct routine safety and health investigations of contractor work places. Permission also extends to safety and health investigations based on reports of unsafe conditions. OSHA officials may also investigate specific complaints of accidents or illnesses involving the contractor's employees.

The OSHA officials are required to present appropriate identifying credentials and state the purpose of their visit to the installation commander or his representative. Whether or not a security clearance is required will be determined by the installation security office before the officials are permitted to enter.

Generally, federal and state officials are not allowed to take photographs. Photographs may be taken by authorized personnel and must be submitted to the installation security office for clearance.

The OSHA officials should be accompanied on the inspections by representatives of the activity and the contractor.

6-444 Accident Prevention. The contractor should be provided with a number of copies of the US Army Corps of Engineers Safety Manual, EM 385-l-l prior to commencement of the work. The QAE should also become familiarwith the manual and pay special attention to identifying the provisions which apply to the type of work being performed under the contract. The QAE should bring safety violations and hazards to the immediate attention of the contractor. Any violations and hazards observed should also be recorded by the QAE.

6-445 Accident Reporting. The contractor is required to report accidents in accordance with the provisions of the contract. Unless specified to the contrary in the contract, the contractor has the option of reporting the accident by copy of his OSHA report, insurance report, workman's compensation report, or a government provided Standard Form 92.

6-450 Compliance With Labor Standards.

6-451 General The contractor is required to pay a prescribed minimum wage referred to as the prevailing wage rate) in accordance with either the Service Contract Act of 1965 or the Davis-Bacon Act of 1931. The Davis-Bacon Act sets minimum wage rates for those contractor employees who are engaged in a task or project which is individually valued at $2,000 or greater and involves construction, renovation, alteration or repair type work. The Service Contract Act (for contracts greater than $2,500) sets minimum wage rates for those contractor employees who are engaged in ongoing plant operation and maintenance services or construction type work where individual projects are valued at less than $2,000.

6-452 Service Contract Act. The Wage and Hour, public Contracts Division and the Office of Federal contract compliance, both under the jurisdiction of the Department of Labor, are primarily responsible for compliance and enforcement of the act. The Contracting Officer has no authority for direct enforcement of the act. The Contracting Officer is required to cooperate with the Department of Labor and is required to withhold payment from the contractor if he/she receives a written request from a representative of the department, who is at least at the level of Assistant Regional Director.

6-453 Davis-Bacon Act. The Contracting Officer has full authority and responsibility for the enforcement of the labor standard provisions of a contract which incorporates a determination based upon the Davis-Bacon Act. He/she must ensure that wage determinations are posted at the work site and that interviews of the contractor's employees are conducted to determine wage rates actually in effect.

The labor standards provisions of the contract contain a list of the wage rates in effect. A copy of the wage determination and any modifications must be kept posted at the site of the work in a location where the wage determination can be easily seen by the contractor's employees. The designated individual from the field activity organization should ensure that the contractor properly displays the wage determination.

The taking and recording of contractor employee interviews is a primary administrative function in the enforcement of the Davis-Bacon labor standards. The purpose of the interviews is to develop factual data of wages actually paid, the various classifications of employees, and to verify data shown on the contractor's payroll.

The labors standards interview form (DD Form 1567, Appendix H, Form 2) should be used in conducting employee interviews. Employees interviewed should include a representative cross section of the contractor's work force. The number of employees considered sufficient on the circumstances

The quality assurance evaluator (QAE) or other person delegated to conduct the interview should conduct the interview in relative privacy. The interview form should never be just given to the employee to be picked up later by the QAE. employee's interview statement is not to be shown to the contractor without the employee's written permission. Discussionwith the employee should be kept to a minimum, and the employee should not be informed of any apparent irregularities in his pay rate.

The QAE should understand that the employee has a right not to answer questions under the Privacy Act of 1974. However, he is required to provide the QAE with his name and the name of his employer.

If the employee refuses to answer questions, the interview form should be filled out as follows:

(a) List the employee's name.

(b) List the contract number.

(c) List the prime contractor's name.

(d) List the name of the subcontractor, if applicable; obtain from prime contractor if unknown.

(e) List the name of the employee's supervisor; obtain from prime contractor if unknown.

(f) Describe the work the employee was doing at the time of the interview.

(g) Note the fact that the employee refused to answer to questions.

The QAE should keep a record of the interviews conducted and inform the contracting Officer via the facility support contract manager (FSCN) of any suspected wage discrepancies.

6-460 Other Performance Elements.

6-461 General. In addition to evaluating the contractor's work, quality control, and compliance with labor and safety standards there may be additional performance elements depending upon the specific circumstances of the procurement. The following are examples of additional performance elements.

(a) Preparation of Schedules. The contractor may be required by the contract to submit schedules for the performance of his work. Typical examples of such schedules are schedules for garbage pickups, preventive maintenance, or janitorial services. These schedules should be analyzed for completeness and conformance with the contract. The receipt of the schedules and their acceptability must be recorded by the QAE. If schedules are unsatisfactory, they should be returned to the contractor for revision.

If problems arise in obtaining satisfactory schedules, the Contracting Officer should be informed without delay so that appropriate action may be taken.

(b) Preparation of Reports. The contractor may be required by the contract to submit reports on such items as the progress of his work, the results of inspections, or unforeseen conditions. These reports should be analyzed for completeness and for conformance with the contract. The receipt of the reports and their acceptability must be recorded by the QAE. If the reports are unsatisfactory, they should be returned to the contractor for revision. If problems arise in obtaining satisfactory reports, the Contracting Officer should be informed without delay so that appropriate action may be taken.

(c) Response to Requests. Where appropriate, a record should be maintained of the contractor's responses to requests. Examples may include requests to remedy deficiencies in performance, provide cost estimates, or provide information on problems encountered in doing the work. The records should be complete enough to be able to track the requests and the response to requests and to evaluate the adequacy of the contractor's performance in responding to requests.

6-500 PERFORMANCE EVALUATION

6-510 Monthly Summaries of Contractor Performance. Acting in accordance with locally established policies, the QA should compile and update inspection schedules, completed evaluation worksheets, customer complaint records, payment calculation worksheets, records of performance or progress meetings with the contractor, daily reports, contract discrepancy reports, or special performance evaluations and any other related material on a monthly basis. This compiled documentation represents the government's record of the contractor's performance for the month.

It is recommended that the QAE review the performance elements listed at 6-400 and on an informal basis prepare a summary rating of the contractor's performance for the month and support the assigned rating with a brief statement. This effort will prepare the Contracting Officer for the formal performance evaluation to follow.

The end of the month is not the time to inform the contractor of observed defects in contract performance. As discussed at 6-330, the Government has an obligation to inform the contractor of defects as soon as practicable after they are discovered. This also permits the Government to avail itself of the opportunity, to have rework performed. Storing up a record of defects and then communicating them to the contractor at the end of the month is unacceptable and contrary to NAVFACENGCOM policy. QAEs should inform the contractor of defects as soon as possible and continuously throughout the month by copies of evaluation worksheets, daily reports, or other means.

Finally, the QAE should look ahead to the coming month's surveillance requirements and adjust inspection frequencies or sample sizes as appropriate, given the experience of the preceding month.

6-520 Formal Performance Evaluation. Formal performance evaluations of the contractor are required by the NAVFACENGCOM Contracting Manual (P-68). Performance evaluations are prepared at the midpoint of the contract term for facility support contracts in excess of $100,000. Evaluations are also prepared at the midpoint of subsequent contract option periods and in cases where the contract is terminated for default or for the convenience of the Government.

The performance evaluation is no longer considered a task to be performed at the end of the contract but is now used as an administrative tool and provides a basis for deciding whether or not to exercise an option to renew the contract or to terminate for default Formal performance evaluations, in addition to those required by the Contracting Manual P-68, may be prepared at any time and are recommended whenever the contractor's performance is poor. These evaluations are referred to as special performance evaluations (see 6-750). A copy of the evaluation form, (NAVFAC 11300/11), is shown in Appendix H.

6-600 PAYMENT CALCULATIONS

6-610 General. Calculating deductions to the contract price for nonperformed or unsatisfactory work can be a difficult task for the QAE and is often a source of disputes with the contractor. The key to minimizing problems is a properly prepared performance requirements summary (PRS), schedule of deductions, and schedule of indefinite quantity work.

Deductions to the contract price for nonperformed or unsatisfactory work are taken in accordance with contract Clause E__, "Consequences of the Contractor's Failure to perform Required Services." In addition, liquidated damages are assessed to compensate the Government for administrative costs and other expenses incurred by the Government as a result of defects in the work. The maximum allowable defect rate is not used in establishing a threshold above which deductions are taken. Deductions are taken even when the MADR is not exceeded.

6-611 Defects. Deductions are based on the results of the QAEs field inspection. Performance of each work requirement is assessed as being either "Satisfactory" or "Unsatisfactory." If the work requirement is rated unsatisfactory, it is counted as a "defect". If the work requirement is not performed at all (nonperformed), it counts as a "defect." If a defect is, reworked by the contractor, a credit is given for the rework as discussed at 6-630. If a defect is reworked by Government personnel or by another contractor the deduction to the price is calculated as discussed at 6-640.

6-612 Unit Prices. The price of a work requirement is determined by reference to the weight given to the work requirement as a percentage of the associated contract requirement in the PRS.

If the contract requirement is included in the firm fixed price portion of the contract, the total price of the contract requirement is shown in the schedule of deductions. The unit price of the contract requirement is obtained by dividing the total price by the number of occurrences

(population) of the contract requirement in the month. If the service is scheduled, the number of occurrences is calculated on the basis of the schedule in the performance work statement. If the service is unscheduled, the population is the number of occurrences for the month.

If the contract requirement is included in the indefinite quantity part of the contract, the unit price for the contract requirement is shown as an item in the schedule of indefinite quantity work.

The price of the work requirement is determined by multiplying the percentage weight in the PRS by the unit price of the associated contract requirement as shown in the typical payment calculations at 6-680.

6-620 Deductions for Nonperformed or Unsatisfactory Work. Defects are tabulated by the QAE based on 100 percent inspection, planned sampling, random sampling, validated customer complaints, and incidental inspections of the contract requirements shown in the PRS.

When defects are based on 100 percent inspection, planned sampling, random sampling without extrapolated deductions (RSWED), validated customer complaints, or incidental inspections, deductions to the contract price are made for the total number of defects observed during surveillance.

When RSED is used, deductions for defects are based upon the number of defects found in the random sample. After an adjustment in the observed defect rate is made, the defect rate is applied to the total population to determine the number of defects in the total population. This process is called extrapolation. Only those defects observed in the random sample are taken into account in extrapolating the defect rate. Validated customer am-plaints are not included in the calculation for deductions. It is Presumed that defects noted outside the random sample are reflected by defects found in the random sample. On rare occasions, the sample may not predict as many defects as found through other inspections and validated customer complaints. However, over the contract term this will average out.

6-630 Payment for Rework by The Contractor. Rework by the contractor is the preferred way of resolving defects, and payment must be made for those defects which have been satisfactorily reworked. In general, work requirements involving the timeliness element cannot be reworked. Rework of a service found to be defective in the sample does not remove the service from the basis of extrapolation. When random sampling is used, defects are established within a given sample and the results extrapolated for the entire population of services to determine the number of defects. This means that only a limited number of the defects for which deductions are taken are individually identified to the contractor. As a result, the contractor is responsible for identifying the additional defects if he wishes to rework them. Credit is given for defects reworked, both within and without the sample, up to the maximum number of defects for which deductions were originally taken.

6-640 Deductions for Rework by Government or Others. When nonperformed or unsatisfactory work is reworked by Government personnel or by another

contractor, a deduction is made to the contract price based on the actual cost incurred by the Government. The actual costs are the amounts paid to any Government personnel (wage, retirement and fringe benefits) plus materials or the actual costs of other means by which the work was accomplished. If the rework is performed by another contractor, this other contractor's invoice will be used as representing the actual cost. If actual actual costs cannot be readily determined, the schedule of deductions will be used to establish a deduction amount.

6-650 Deductions for Liquidated Damages. When work is nonperformed or unsatisfactorily performed, additional deductions, called liquidated damages, are made to the contract price in accordance with the clause "Consequences of Contractor's Failure to Perform Required Services." These liquidated damages are to compensate the Government for administrative costs. Liquidated damages are assessed for observed defects *within and* outside the sample. When RSED is used, liquidated damages are not assessed for the extrapolated portion of defects.

In the case of nonperformmzd or unsatisfactory work, which is either reworked by the contractor or not reworked at all, the contractor is assessed 10% of the costs associated with the work.

When nonperformed or unsatisfactory work is reworked by Government personnel or by another contractor, the contractor is assessed 20% of the actual cost of the rework as liquidated damages.

On occasion, a special provision is included in facility support contracts involving "change of occupancy maintenance of Government housing in accordance with the Contracting Manual P-68, Subpart 12.2. In this case the liquidated damages are calculated on the basis of the number of days the occupancy of each unit was delayed due to the contractor's nonperformance.

When the Construction Specifications Institute (CSI) format is used for a facility support contract, the "Consequences of Contractor's Failure to Perform Required Services" clause is not used in assessingliquidated damges. Instead, liquidated damages are computed on the basis of a daily amount based on the project costs in accordance with the Contracting Manual P-68, subpart 12.2. These liquidated damages are considered as representing both the cost of the delay to the Government and the Government's additional administrative costs.

6-660 Deductions for Partially Completed Work Requirements. Partial completion of a work requirement which has not been reworked by the contractor or by the Government or by another contractor, is one of the most difficult issues with which a QAE deals. The policy on partial completion of a work requirement is as follows:

(a) First, if the PRS does not sufficiently break out that portion of the required service which was not performed the contract requirement should be reviewed and a determination made, exercising good business judgment, whether the value of the nonperformed or unsatisfactory work will

exceed the administrative cost of developing a cost estimate and computing a paymentdeduction. If the value of the service not performed is minor, relative to the administrative cost, full price is paid and corrective action is sought through communication with the contractor.

(b) Second, if the value of the service not performed is significantly greater than the administrative cost, the value of the work requirement should be compared with the value of the associated contract requirement. If exercising good business judgement, it appears to be in the Government's best interest to conclude that in the aggregate the contract requirement is substantially complete the service is accepted as performed, full price is paid and corrective action is sought through communication with the contractor.

(c) Third, if the requirement is considered not to be substantially complete and the cost of preparing an estimate does not exceed the value of the nonperformed work, a cost estimate should be prepared. This cost estimate should be prepared in accordance with established cost estimating methods available to the public. Alternatively, the Engineered Performance Standards prepared for use by the Army, Navy, and Air Force may be used, provided provision for their use has been made in the contract documents. Liquidated damages to compensate the Government for administrative costs are included in the estimate in accordance with the "Consequences of Contractor's Failure to Perform Required Services" clause.

6-670 Other Adjustments. Adjustments may include payment for rework from a prior billing period. This may occur when a late customer complaint is received, and the contractor reworked it after the invoice was processed. Payment would be calculated for the rework using the unit price established in the month it was billed. This calculation should be rarely needed but is included for completeness. An example of an adjustment for rework in a prior billing period is contained in the sample calculations at 6-681.

6-680 Typical Payment Calculations.

(a) 100 Percent Inspection. The following data, contained from the performance requirements summary (PRS) and the schedule of deductions or from the performance requirements summary (PRS) and the schedule of indefinite quantity work, is used to illustrate a typical payment calculation when surveillance is by 100 percent inspection. When 100 percent inspection is used, deductions are made for all observed defects not completed (or reworked) in a satisfactory and timely manner. Liquidated damages are applied to all defects in accordance with the "Consequences" clause. Figure 6-2 lists the steps in the calculation.

100 PERCENT INSPECTION
PAYMENT CALCULATION

	WORK REQUIREMENTS	
	HOUSE READY ON TIME	QUALITY WORK
a. Price for work requirement	$1,200,000	$1,800.00
b. Population	30	30
c. Price per service (a/b)	$40.00	$60.00
d. No. of services sampled	30	30
e. No services rejected	4	5
f. Defect rate (e/d)*	13.33%	16.66%
g. Services reworked by contractor	N/A	2
h. Services reworked by Govt. or others	N/A	3
i. Net no. services to deduct at scheduled price (e-g-h)	4	0
j. Net services to deduct at scheduled price (c x i)	$160.00	$0.00
k. Deduct for Govt. rework, actual cost ** or scheduled price (c x h)	N/A N/A	$450.00 $0.00
l. Liquidated Damages on contractor rework [l0%xcx(e-h)]	$16.00	$12.00
m. Liquidate Damages on Govt. rework (20% x k)	$0.00	$90.00
n. Other adjustments	$0.00	$0.00
o. Total payment (a-j-k-l-m+n)	$1,024.00	$1,248.00

Total payment for change of occupancy = $2,272.00

* Defect rate for comparison with MADR.

** Actual costs are the amounts paid to Government personnel (wages, retirement, and fringe benefits) plus materials or the actual costs of other means by which the work is accomplished.

FIGURE 6-2 TYPICAL PAYMENT CALCULATION WHEN 100 PERCENT INSPECTION IS USED

CONTRACT REQUIREMENT: 001. Change of Occupancy Maintenance

Price from Schedule of Indefinite Quantity Work: Unit Price $100.00/Ea.
Population (Services performed): 30 EA for the month.
$100.00 x 30 = $3,000/month

WORK REQUIREMENT	% OF CONTRACT REQUIREMENT	MADR	PRICE OF WORK REQUIREMENT
A. House ready on time	40%	No defects	$1,200 (40% of $3,000)
B. Quality work	60%	2%	$1,800 (60% of $3,000)
	Total for Contract Requirement =		$3,000

INSPECTION RESULTS.
Population : 30
Number of Services Sampled (Sample Size): 30

WORK REQUIREMENT	DEFECTS IN SAMPLE	DEFECTS REWORKED BY CONTR.	DEFECTS REWORKED BY GOVT.
A. House ready on time	4*	NA	NA
B. Quality work	5	2	3

Actual cost of rework (quality work) by Government = $450.00

* NOTE: In the above example, rework on one of the houses was completed within the time-frame specified for the original work; therefore, only 4 defects are listed under work requirement A.

(b) Planned Sampling. The following data, obtained from the performance requirements summary (PRS) and the schedule of deductions or the performance requirements summary (PRS) and the schedule of indefinite quantity work, is used to illustrate a typical payment calculation when surveillance is by planned sampling.

When planned sampling is used, deductions are made for all observed defects not completed (or reworked) in a satisfactory and timely manner. Liquidated damages are applied to all defects in accordance with the contract provisions. Figure 6-3 lists the step6 in the calculation.

CONTRACT REQUIREMENT: 002. Routine Service Calls
Price from the Schedule of Deductions: $l2,OOO/month.

WORK REQUIREMENT	% OF CONTRACT REQUIREMENT	MADR	PRICE OF WORK REQUIREMENT
A. Response time	30%	3%	$3,600 (30% of $12,000)
B. Classification	5%	3%	$ 600 (5% of $12,000)
C. Cost accounting	5%	3%	$ 600 (5% of $12,000)
D. Quality work	60%	3%	$7,200 (60% of $12,000)

PLANNED
SAMPLING
PAYMENT CALCULATION

	WORK REQUIREMENTS			
	RESPONSE TIME	CLASSIF-ICATION	COST ACCTNG	QUALITY WORK
a. price for work requirement	$3,600	$600	$600	$7200
b. Population	600	600	600	600
c. Price per service (a/b)	$6	$1	$1	$12
d. No. of -ices sampled	50	50	50	50
e. No. of services rejected	3	2	1	1
f. Defects outside sample	2	2	3	2
g. Total observed defects	5	4	4	3
h. Defect rate (g/b)*	0.83%	0.66%	0.66%	0.50%
i. Services reworked by contr	N/A	0	4	0
j. Services reworked by Govt. or Others	N/A	4	0	3
k. Net no. services to deduct at scheduled price (g-i-j)	5	0	0	0
l. Net services to deduct at scheduled price (c x k)	$30.00	$ 0	$ 0	$ 0
m. Deduct for Govt. rework Actual cost**	N/A	$0.00	$0.00	$60.00
or scheduled price (c x j)	N/A	$4.00	$0.00	$0.00
n. IDs on contractor rework [10% x c x (g-j)]	$3.00	$0.00	$0.40	$0.00
o. IDs of Govt rework (20% x m)	$0.00	$0.80	$0.00	$12.00
p. Other adjustments	$0.00	$0.00	$0.00	$0.00
q. Total payment (a-l-m-n-o+p)	$3,567.00	$595.20	$599.60	$7,128.00

Total payment for routine service calls = $ 11,889.80

*The defect rate is calculated as a percentage of the total number of services. Calculating the defect rate by dividing the number of defects in the sample by the sample size is erroneous and contrary to NAVFACENGCOM policy.

** Actual costs are the amounts paid to Government personnel (wages, retirement, and fringe benefits) plus materials or the actual costs of other means by which the work is accomplished.

FIGURE 6-3 TYPICAL PAYMENT CALCULATION WHEN PLANNED SAMPLING IS USED

INSPECTION RESULTS.
Population: 600 Number of Services Sampled (Sample Size): 50

WORK REQUIREMENT	DEFECTS IN SAMPLE	VALIDATED CUSTOMER COMPLAINTS	TOTAL OBSERVED DEFECTS	DEFECTS REWORKED BY CONTR	DEFECTS REWORKED BY GOVT.
A. Response time	3	2	5	N/A	N/A
B. Classification	2	2	4	0	4
C. Cost accounting	1	3	4	4	0
D. Quality work	1	2	3	0	3

Actual cost of rework by Government (Quality Work) = $60.00

(c) Random Sampling for Extrapolation Deductions (RSED). The following data, obtained from the performance requirements summary (PRS) and the schedule of deductions or the performance requirements summary (PRS) and the schedule of indefinite quantitywork, is used to illustrate a typical payment calculation when surveillance is by RSED.

when RSED is used, the defect rate is calculated based on the defect rate observed in the sample. An adjustment factor is applied to the observed defect rats and the adjusted rate is used for extrapolation. Liquidated damages assessed for all observed defects including those outside the sample. Liquidated damages are not extrapolated. Figure 6-4 lists the steps in the calculation.

CONTRACT REQUIREMENT: 002. Routine Service Calls
Price from Schedule of Deductions: $12,000/month.

WORK REQUIREMENT	% OF CONTRACT REQUIREMENT	MADR	PRICE OF WORK REQUIREMENT
A. Response time	30%	3%	$3,600 (30% of $12,000)
B. Classification	5%	3%	$ 600 (5% of $12,000)
C. Cost accounting	5%	3%	$ 600 (5% of $12,000)
D. Quality work	60%	3%	$7,200 (60% of $12,000)

INSPECTION RESULTS.
Contract Requirement: Routine Service Calls
Population: 600 Number of Services Sampled: 60

WORK REQUIREMENT	DEFECTS IN SAMPLE	VALIDATED CUSTOMER COMPLAINTS	TOTAL OBSERVED DEFECTS	DEFECTS REWORKED BY CONTR	DEFECTS REWORKED BY GOVT.
A. Response time	6	2	8	N/A	N/A
B. Classification	5	2	7	7	0
C. Cost accounting	4	3	7	7	0
D. Quality work	2	2	4	0	4

Actual cost of rework by Government (Quality Work) = $138.00

RSED
PAYMENT
CALCULATION

	WORK REQUIREMENTS			
	RESPONSE TIME	CLASSIF-ICATION	COST ACCTNG	QUALITY WORK
a. Price for work requirement	$3600	$600	$600	$7,200
b. Population	600	600	600	600
c. Price per service (a/b)	$6	$1	$1	$12
d. No. of services sampled	60	60	60	60
e. No. in sample rejected	6	5	4	2
f. Observed defect rate (e/d)	10.00%	8.33%	6.66%	3.33;
g. Adjustment factor *	1.38%	1.31%	1.17%	0.90%
h. Defect rate (f-g) **	8.62%	7.02%	5.49%	2.43%
i. Extrapolated defects (b x h as whole number)	51	42	32	14
j. Defects obs. out&side sample	2	2	3	2
k. Rework by contractor	N/A	7	7	0
l. Rework by Govt. or Others	N/A	0	0	4
m. Net no. services to deduct at scheduled price (i-k-l)***	51	35	25	10
n. Extrapolated deduction (c x m)	$306.00	$35.00	$25.00	$120.00
o. Deduct Govt. rework Actual cost **** or	$0.00	$0.00	$0.00	$138.00
at scheduled price (c x l)	$0.00	$0.00	$0.00	$0.00
p. IDs ct rewk [10%xcx(e+j-1)]	$4.80	$0.70	$0.70	$0.00
g. ID'S Govt. rewk (20% x 0)	$0.00	$0.00	$0.00	$27.60
r. Other adjustment *****	$0.00	+ $2.70	+ $2.70	+ $32.40
s. Total payment (a-n-o--r)	$3289.20	$567.00	$577.00	$6946.80

Total payment for routine service calls = $ 11,380.00

* Adjustment factor from Appendix F, Table 3.

** Defect rate for comparison with MADR.

*** Cannot be less than zero.

**** Actual cost are the amounts paid to Government personnel (wages retirement, and fringe benefits) plus materials or the actual costs of other means by which the work is accomplished.

***** Calculation of other adjustments is shown at 6-681

FIGURE 6-4 TYPICAL PAYMENT CALCULATION WHEN RANDOM SAMPLING FOR EXTRAPOLATED DEDUCTIONS IS USED

(d) Random Sampling Without Extrapolated Deductions. Random sampling without extrapolated deductions involves the use of statistical techniques to assess the contractor's quality control but not to determine deductions to the contract price.

When random sampling without extrapolated deductions (RSWED) is used, deductions are made only for observed defects not completed (or reworked) in a satisfactory and timely manner. Observed defects consist of those found in the sample and validated customer complaints. Liquidated damages are applied to all observed defects. Certain items such as timeliness of completion are not subject to rework. The inspection results used in the example are shown below, and Figure 6-5 lists the steps in the calculation.

CONTRACT REQUIREMENT: 002. Routine Service calls
Price from Schedule of Deductions: $12,000/mnth.

WORK REQUIREMENT	% OF CONTRACT REQUIREMENT	MADR	PRICE OF WORK REQUIREMENT
A. Response time	30%	3%	$3,600 (30% of $12,000)
B. Classification	5%	3%	$ 600 (5% of $12,000)
C. Cost accounting	5%	3%	$ 600 (5% of $12,000)
D. Quality work	60%	3%	$7,200 (60% of $12,000)

INSPECTION RESULTS.
Population: 600
Number of services sampled: 60 (minimum level)

WORK REQUIREMENT	DEFECTS IN SAMPLE	VALIDATED CUSTOMER COMPLAINTS	TOTAL OBSERVED DEFECTS	DEFECTS REWORKED BY CONTR.	DEFECTS REWORKED BY GOVT.
A. Response Time	6	2	8	N/A	N/A
B. Classification	5	2	7	7	0
C. Cost accounting	4	3	7	7	0
D. Quality work	2	2	4	0	4

Actual cost of rework (Quality Work) by Government = $138.00

6-681 Other Adjustments. The following example show how the other adjustments were calculated in the example in Figure 6-4.

Adjustment for Rework from Prior Billing Period. Three (3) additional customer complaints for the previous month (RSED example above) were received and reworked after the payment was processed. The calculation for these other adjustments is shown below. (This calculation should rarely be necessary and is included here only for the sake of completeness.)

RSWED
PAYMENT
CALCULATION

		WORK REQUIREMENTS			
		RESPONSE TIME	CLASSIF-ICATION	COST ACCTNG	QUALITY WORK
a.	Price for work requirement	$3,600	$600	$600	$7,200
b.	Population	600	600	600	600
c.	Price per service (a/b)	$6	$1	$1	$12
d.	No. of services sampled	60	60	60	60
e.	No. in sample rejected	6	5	4	2
f.	Defects outside sample	2	2	3	2
g.	Total observed defects	8	7	7	4
h.	Observed defect rate (e/d)	10.00%	8.33%	6.66%	3.33%
i.	Adjustment factor *	1.38%	1.31%	1.17%	0.90%
j.	Defect rate (f-g) **	8.62%	7.02%	5.49%	2.43%
k.	Rework by contractor	N/A	7	7	0
l.	Rework by Govt. or others	N/A	0	0	4
m.	Net no. services to deduct at scheduled price (g-k-l)	8	0	0	0
n.	Net services to deduct at scheduled price (c x m)	$48.00	$0.00	$0.00	$0.00
o.	Deduct for Govt rework				
	Actual cost *** or	N/A	$0.00	$0.00	$138.00
	at scheduled price (c x 1)	N/A	$0.00	$0.00	$0.00
p.	IDs on contractor Rework [10% x c x (g-1)]	$4.80	$0.00	$0.70	$0.00
q.	IDs of Govt Rewk (20% x o)	$0.00	$0.00	$0.00	$27.60
r.	Other Adjustments	$0.00	$0.00	$0.00	$0.00
s.	Total payment (a-n-o-p-q+r)	$3547.20	$599.30	$599.30	$7,034.40

Total payment for routine service calls = $11,780.20

*Adjustment factor from Table 3, Appendix F

**Defect rate for comparison with MADR.

*** Actual cost are the amount paid to Government personnel (wage, retirement, and fringe benefits) plus materials or the actual costs of other means by which the work is accomplished.

FIGURE 6-5 TYPICAL PAYMENT CALCULATION WHEN RANDOM SAMPLING WITHOUT EXTRAPOLATED DEDUCTIONS IS USED

WORK REQUIREMENTS	VALIDATED CUSTOMER COMPLAINTS	REWORKED BY CONTRACTOR	DEDUCTIONS* MADE PREVIOUSLY
A. Response time	3	N/A	51
B. Classification	3	3	35
C. Cost accounting	3	3	25
D. Quality work	3	3	10

For work requirements B, C, and D, credit for rework is given for defects reworked. Since RSED was used, the number of defects for which credit is allowed, cannot exceed the number of new defects for which deductions were previously made. Because the number of defects is less than the number for which deductions were taken as a part of the previous calculation, there is no such limitation in the credit in this case.

* See line m of RSED payment calculation, Figure 6-4.

OTHER ADJUSTMENTS PAYMENT CALCULATION	WORK REQUIREMENTS			
	RESPONSE TIME	CLASSI-FICATION	COST ACCNTG	QUALITY WORK
Credit for no. services reworked	N/A	3	3	3
Price per service	N/A	$ 1.00	$ 1.00	$ 12.00
Credit for rework	N/A	$ 3.00	$ 3.00	$ 36.00
Deduct for liquidated damages	$ 0.00	$ 0.30	$ 0.30	$ 3.60
Credit for rework	$ 0.00	$ 2.70	$ 2.70	$ 32.40

6-682 Computer Program. A RSED computer program for calculating payments, is available from the EFDs. This computer program may be used for 100 percent inspection, planned sampling, random sampling for extrapolated deductions, and for random sampling without extrapolated deductions. The manual calculation of the typical payment calculations shown in this manual should rarely be necessary.

6-700 REMEDIES There are a number of strategies for correcting poor performance. The following actions should be initiated when unsatisfactory performance first becomes evident.

6-710 Review of the Contract Documents. The contract documents should be reviewed to determine if the unsatisfactory performance is to some degree caused by the Government's erroneous interpretation of the provisions of the contract.

(a) If the Government is requiring standards of work higher than those specified in the contract documents, either the required standards must be relaxed to conform with the standards as specified, or the contract must

be modified, and an equitable adjustment made in the contract price. A standard of work considered when the contract was written may prove inadequate when the work is underway. In such circumstances modification of the contract should be considered.

(b) In a fixed price contract the contractor can only be required to carry out the amount of work specified in the contract, unless an equitable price adjustment is granted.

(c) In an indefinite quantity contract or a requirements contract a gross disproportion between the estimated quantities and the actual quantities may entitle the contractor to an equitable price adjustment.

(d) If the Government is placing constrains on the performance of the contractor not specified in the contract, or which could not be anticipated by a site inspection, an equitable price adjustment may be justified unless the constraints are removed. Typical constraints on performance include: preventing access to certain areas during normal working hours, requiring the contractor to work outside of normal working hours, mandating the sequence in which the contractor is to perform his work, or prohibiting the use of certain types of equipment or utility services.

(e) The contractor is entitled to be paid in accordance with the terms of the contract. Holding up payment of the contractor's invoice as an incentive to improve performance is impermissible and may cause the Government to be found in breach of contract.

6-720 Deductions to the Contract Price. Deductions are routinely taken to the contract price for nonperformed or unsatisfactory work. When deductions are taken, the contractor should be informed that the deductions do not relieve him of his contract obligations and that the Government reserves the right to take other actions it, deems proper including termination for default.

6-730 Contract Discrepancy Reports. Contract discrepancy reports (CDRS) document discrepancies (defects) in performance by the contractor. The discrepancies reported by the QAE form the basis for identifying deficiencies in contractor performance. Each CDR should be signed by the Contracting Officer and forwarded to the contractor as rapidly as possible. The contractor should describe the corrective action he intends to take and return the CDR to the Contracting Officer. On return of the CDR the contractor's response should be evaluated to determine if further action is necessary. A sample CDR form is located in Appendix H.

6-740 Meetings with the Contractor. If the contractor persists in unsatisfactory performance, the Contracting Officer should call for a formal meeting with the contractor. The Contracting Officer, with the assistance of the facility support contract manager (FSCM) / quality assurance evaluators (QAEs), should prepare an agenda for the meeting and send the agenda to the participants prior to the meeting. A copy of the agenda may also

be sent to the contractor's home office. The meeting should be attended by the Contracting Officer, the FSCM, the QAE(s), the contractor's onsite project

manager, the contractor's quality control (QC) official; and others as appropriate. The minutes of the meeting, signed by the Contracting Officer, should be forwarded to the contractor for signature, and the contractor should be requested to state in writing any disagreements with the minutes.

6-750 Performance Evaluation. A special performance evaluation report should be prepared when a trend of unsatisfactory performance first begins to develop. This evaluation should be completed as outlined at 6-520. In addition to sending the evaluation to the contractor's onsite project manager, consideration should be given to sending the evaluation to the contractor's home office and to the contractor's bonding company (if any).

6-760 Decision Not to Exercise Options. If the contractor's performance evaluation at the midpoint of the contract period is unsatisfactory, serious consideration should be given to not exercising an option to renew the contract. The Government is under no legal obligation to renew a contract, and the contract should only be renewed if it is in the best interest of the Government. At a minimum, if the contractor's performance is poor, a contingency plan should be developed to seek a new contractor, and the contract documents including the performance work statement (PWS) and the performance requirements summary (PRS) should be reviewed and revised. It is inconsistent to rate a contractor unsatisfactory and at the same time exercise a full renewal option.

6-770 Termination for Default. Termination for Default is defined as the Government's contractual right to completely or partially terminate a contract bemuse of the contractor's actual or anticipated failure to perform its contractual duties (FAR 49.401). If the contractor's performance is such that it is in the best interest of the Government to terminate the contract, the termination procedures in Part 49 of Federal Acquisition Regulation (FAR) and supplementary regulations must be followed.

APPENDIX A

ABBREVIATIONS

ACO	Administrative Contracting Officer
CA	Commercial Activities Program
CCB	Construction Criteria Base
CDR	Contract Discrepancy Report
CEC	Civil Engineer Corps
CECOS	Civil Engineer Corps Officers School
CICA	Competition in Contracting Act
CNO	Chief of Naval Operations
COC	Certificate of Competency
CSI	Construction Specifications Institute
CSR	Contract Surveillance Representative
DCASMA	Defense Contract Administration Service Management
DFARS	Department of Defense Facility Acquisition Regulations Supplement
DOD	Department of Defense
DR	Defect Rate
EFD	Engineering Field Division
EPRS	Expanded Performance Requirement Summary
FAR	Federal Acquisition Regulations.
FFP/IQ	Firm Fixed Price/Indefinite Quantity Contracts
FSC	Facilities Support Contract
FSCM	Facility Support Contract Manager
GFE	Government Furnished Equipment
GFM	Government Furnished Material
GPWS	Guide Performance Work Statement
IGE	Independent Government Estimate
MADR	Maximum Allowable Defect Rate
MIS	MIS Management Information System
NAPS	Navy Acquisition Procedures Supplement
NAVFACENGCOM	Naval Facilities Engineering Command
NFCTC	Naval Facilities Contracts Training Center
NFGS	NAVFAC Guide Specifications
ODR	Observed Defect Rate
OMB	Office of Management and Budget
OSHA	Occupational Safety and Health Act
PCO	Procuring Contracts Officer
PRS	Performance Requirement Summary
PWC	Public Works Center
PWD	Public Works Department
PWO	Public Works Officer
PWS	Performance Work Statement
QA	Quality Assurance
QAE	Quality Assurance Evaluator
QAP	Quality Assurance Plan
QC	Quality Control

RSED	Random Sampling for Extrapolated Deductions
RSWED	Random Sampling Without Extrapolated Deductions
SBA	Small Business Administration
SG	Surveillance Guide
TRCO	Technical Representatives of the Commanding Officer
U C F	Uniform Contract Format
UCFG	Uniform Contract Format Guide

APPENDIX B

DEFINITIONS

Acquisition Planning - Acquisition planning is the process by which the efforts of all personnel responsible for an acquisition are coordinated and integrated through a comprehensive plan for fulfilling the agency need in a timely manner and at a reasonable cost. It includes developing the overall strategy for managing the acquisition.

Administrative Contracting Officer - Administrative contracting officer (ACO) refers to a contracting officer who is administering contracts.

Adjustment Factor - The adjustment factor refers to an amount which is deducted from the observed defect (ODR) when random sampling for extrapolated deductions (RSED) or random sampling without extrapolated deductions (RSWED) is used to calculate the defect rate (DR) for the entire population. This factor is determined from standard tables.

Certificate of Competency - A Certificate of Competency is the certificate issued by the Small Business Administration (SEA) stating that the holder is responsible (with respect to all elements of responsibility, including but not limited to capability, competency, capacity, credit, integrity, perseverance and tenacity) for the purpose of receiving and performing a specific Government contract.

Commercial Activities Cost (Comparison - Commercial activities cost comparison is a determination of whether it is more economical to acquire the needed products or services from a private commercial source or from existing or proposed Government sources. Commercial activities cost comparisons are based on procedures where the Government and interested contractors bid on the function under study. The low bidder (based on A-76 guidelines) is then awarded the work.

Commercial Activity - A commercial activity (CA) is an activity (function) operated and managed by the Navy that provides a product or service which is also obtainable from a private commercial source.

Construction Criteria Base - The construction criteria base consists of the full electronic text of construction criteria and guide specifications Prepared by NAVFACENGCOM, the Corps of Engineers, NASA, the Veterans Administration and other agencies.

Contracting Manual P-68 - The Contracting Manual P-68 is the Naval Facilities Engineering Command Contracting Manual establishing uniform contracting policies and procedures for the Naval Facilities Engineering Command (NAVFACENGCOM) including contracting offices exercising authority delegated by NAVFACENGCOM.

Contract Discrepancy Report - A contract discrepancy report is the report transmitted to the contractor by the Contracting Officer, initiated by the

facility support contract manager (FSCM), and completed by the contractor, whenever his performance is unsatisfactory.

Contract Requirement - A contract requirement represents a specific task to be performed under the contract. In the case of combination firm fixed price/indefinite quantity contracts and indefinite quantity contracts, the contract requirements for - the firm fixed price part of the contract and the indefinite quantity part are listed in the performance requirements summary (PRS). The contract requirements for the indefinite quantity work correspond to the items listed in the Schedule of Indefinite Quantity Work.

Customer Complaints - Customer complaints are complaints made by customers which if validated, may be used by the Government for the purpose of assessing the contractor's quality assurance or for taking deductions to the contract price.

Davis-Bacon Act - The Davis-Bacon Act is legislation which pertains to minimum wage rates and benefits that must be paid an Federal construction contracts.

Deduction -A deduction is money deducted from the contractor's invoice for noncompliance with contract requirements.

Defect Rate - The defect rate is the ratio expressed as a percentage, of the number of defects to the total number of occurrences in the population. Alternatively, the Defect Rate (DR) may be expressed as a whole number (e.g., 4 per month). When random sampling for extrapolated deductions (RSED) or random sampling without extrapolated deductions (RSWED) are used, the DR is determined by subtracting an adjustment factor from the ODR. Alternatively, the defect rate may be expressed as a number of defects over a specified period of time. When planned sampling is used, the defect rate is calculated by dividing the total of all defects (both within and without the sample) by the total population.

Delivery Order - A delivery order is an order (DD Form 1155) placed under an existing contract calling for delivery of specific materials or products or performance of specific services on a particular date or dates or within specified periods of time.

Department of Defense Federal Acquisition Regulation Supplement. Department of Defense Federal Acquisition Regulation Supplement (DFARS) establishesthe Department of Defense uniform policies and procedures implementing and supplementing the Federal Acquisition Regulation (FAR). This supplement must be read in conjunction with the Federal Acquisition Regulation, NAPS, and the contracting Manual P-68.

Engineering Field Divisions - An engineering field division (EFD) is one of the six field divisions of NAVFACENGCOM (Atlantic, Pacific, Northern, Chesapeake, Southern, and Western). When used generally, the term includes any independent Officer in Charge of Construction which report directly to COMNAVFACENGCOM.

Expanded Performance Requirements Summary - The expanded performance requirements summary (EPRS) builds on the performance requirements summary (PRS) and becomes the Master Plan for procurement. Pricing and surveillance requirements are added to the data already compiled in the performance requirements summary.

Facility Support Contract - A facility support contract (FSC) is a general category of NAVFAC contracts used to accomplish the repair, maintenance, and/or restoration of real property, vehicles and equipment to preserve facilities in a usable or operable condition. FSC includes both facility support service contracts and facility support construction contracts.

Facility Support Contract Manager - The facility support contract manager (FSCM) is the individual designated by the head of the contracting office (HCO), to provide management of a facilities support contract.

Federal Acquisition Regulation - The Federal Acquisition Regulation (FAR) is the primary regulation for use by all Federal Executiveagencies in their acquisition of supplies and services with appropriated funds. The FAR System has been developed in accordance with the requirements of the Office of Federal Procurement Policy Act of 1974, as amended by Pub. L. 96-83. The FAR is issued within applicable laws under the joint authorities of the Administratorof General services, The Secretary of Defense, and the Administrator for the National Aeronautics and Space Administration, under the broad policy guidelines of the Administrator for Federal Procurement Policy.

Firm Fixed Price - A firm fixed price is established for total requirements and is not subject to adjustment based on requirements. The total contract price is fixed.

Firm Fixed Price/Indefinite Quantity Contract- A firm fixed price/indefinite quantity contract (FFP/IQ) is a type of indefinite quantity contract which is composed of both firm fixed priced requirements and indefinite quantity requirements.

Fixed Unit Price - A fixed unit price is established for a commodity, but the amount (quantity) of the commodity that will be required is left open. The total contract price is not known but is dependent upon the quantity of that commodity ordered.

Guide Performance Work Statement - A guide performance work statement is a general performance work statement that addresses typical functional requirement.

Incidental Inspection - Incidental inspection is a unstructured surveillance method used to supplement other methods of surveillance.

Indefinite Quantity Contract - An indefinite quantity contract is a contract which provides for an indefinite quantity of specific supplies or services (including construction) to be furnished during a fixed period. Deliveries are to be scheduled by placing orders with the contractor.

Independent Government Estimate - An independent government estimate (IGE) is an estimate prepared based on the requirements specified in the contract.

Job Analysis - Job analysis is an evaluation of a jab as it is being done in-house or by a contractor to determine what actually results.

Level of Surveillance - Random sampling (RSED or RSWED) has two levels of surveillance, referred to as the normal sampling level and the minimum sampling level. "Normal" does not imply that the normal sampling level is usuallyused.

Liquidated Damages - Liquidated damages represent an advance contractual agreement as to the damages me party will suffer if the other fails to perform. The liquidated damages referred to in "Consequences of contractor's Failure to Perform Required Services Clause" are to compensate the Government for additional administrative expenses incurred, by the Government, as a result of the defects, and represents an amount additional to the price of the defects. When random sampling for extrapolated deductions (RSED) or random sampling without extrapolated deductions (RSWED) is used, liquidated damages for additional administrative costs incurred by the Government will be applied only to defects actually identified during the sampling process.

Maximum Allowable Defect Rate - The Maximum Allowable Defect Rate (MADR) is the defect rate for the population above which the contractor's quality control for a particular work requirement is unsatisfactory. MADR does not represent a threshold above which deductions are taken. Deductions to the contract price are taken for all defects (with credit for rework to the extent appropriate) irrespective of whether the MADR is exceeded or not.

Navy Acquisition Procedures Supplement - The Navy Acquisition Procedures Supplement (NAPS) establishes for the Department of the Navy uniform policies and procedures implementing and supplementing the Federal Acquisition Regulation (FAR) and the Department of Defense Federal Acquisition Regulation Supplement (DFARS). The NAPS applies to all Department of the Navy activities that purchase or contract for supplies, services, and construction using appropriated funds.

Observed Defect Rate- The observed defect rate (ODR) is the ratio of the sum of the defects identified in a sample of the population divided by the sample size expressed as a percentage. When 100 percent inspection is used the observed defect rate corresponds to the defect rate in the population. When random sampling for extrapolated deductions (RSED) or random sampling without extrapolated deductions (RSWED) is used, the ODR is the ratio of the number of defects identified in the sample divided by the sample size expressed as a percentage. When RESD or RSWED is used the defect rate in the population is determined by deducting and adjustment factor from the observed defect rate. when planned sampling is used, the ODR represents only the defect rate in the sample. The extrapolation of the ODR to the entire population for the purpose of determining the contractor's quality control or for taking deductions to the contract price is not allowed. The defect rate for validated- complaints is expressed as the actual number of defects documented. Alternatively, the ODR may be stated as a whole number (e.g., 4

per month). The use of "Extrapolated Planned Sampling" to either assess the contractors performance or to take deductions from the contract price is contrary to NAVFACENGCOM policy.

One Hundred percent (100%) - Inspection - One hundred percent inspection is a surveillance method whereby all the occurrences in the population of services is inspected.

Performance Evaluation - A performance evaluation is an evaluation of the contractors performance carried out in accordance with the Contracting Manual P-68.

Requirements Summary - The performance requirements summary (PRS) shows contract requirements the component work requirements related to each contract requirement, the price of each work requirement as a percentage of the associated contract requirement, the standard of performance, and the maximum allowable defect rate (MADR) for each work requirement.

Performance Work Statement - The performance work statement (PWS) consists of the definitive or descriptive words identify- the subject matter of the contract referred to as the specifications or work statement. When the Uniform Contract Format is used the PWS consists of Section C and the related attachments in Section J.

Planned Sampling - Planned sampling is designed to evaluate a part but not all of a contractor requirement. This is a type of sampling which a particular contract requirement (or subset of work requirements) is subjected to regular, periodic observation. The observed defect rate found during planned sampling only represents the defect rate for the sample chosen, and the observed defect rate cannot be extrapolated to give the defect rate for the entire service being performed. The extrapolation of the planned sampling to either assess the contractor's performance or to take deductions to the contract price is contrary to NAVFACENGCOM policy. The defect rate, when planned sampling is used, is calculated by dividing the total of all defects (both within and without the sample) by the total population. Alternatively, the defect rate may be expressed as the number of defects which occurred over a specified period.

Population - The population is the total number of occurrences of an individual work requirement (sub-task) or service carried out over a specific period of time. When similar occurrences differgreatly in cost or scope, they should be split into separate populations.

Population Size - The population size is the number of occurrences in the population.

Procuring Contract Officer - The Procuring Contract Officer (PCO) is responsible for the procurement of goods and services.

Quality Assurance - Quality assurance (QA) is the management of the output quality and responsiveness of a facility support contractor and starts with the early stages of quality development runs through every phase to

contract close-out. The term quality assurance is used colloquially as meaning post-award surveillance of the contractor's work.

Quality Assurance Evaluator - Quality Assurance evaluators (QAE) are individuals assigned to perform quality assurance surveillance of products or services procured, and to record and document the findings.

Quality Assurance Evaluator Schedule - A quality assurance evaluator schedule is a specific monthly plan of action for a specific quality assurance evaluator.

Quality Assurance Plan - A quality assurance plan (QAP) for a particular contract includes a series of individual surveillance guides (SGs). The QAP also contains a copy of the performance requirements summary (PRS) for reference use by the quality assurance evaluator (QAE) together with inspection and report forms as appropriate.

Random Number Table - A random number table is a table of numbers arranged in a random fashion.

Random Sample - A random sample is a sample of services which has been selected according to rules which will assure each member of the population an equal chance of being selected.

Rework - Rework is the performance of services which were found to be defective as a result of contract surveillance or other validated source.

Sample - A sample consists of one or more work requirements drawn from a population. The number of work requirements selected for evaluation is the sample size.

Service Contract Act - The Service Contract Act is legislation which pertains to minimum wage rates and benefits that must be paid on Federal contracts performed by facility support service contract personnel.

Specification Writer - The specification writer is a person charged with developing a performance work statement (PWS) and quality assurance (QA) plans.

Standard of Performance - The standard of performance is an established measure of quality for work requirements.

Surveillance - Surveillance is the process of monitoring, either by direct evaluation, observation, or other information sources, contractor performance.

Surveillance Guide - A surveillance guide (SG) is prepared for each contract requirement or group of contract requirements shown on the performance requirements summary (PRS). The SG's primary focus is on the service, or end result to be achieved by the contractor, rather than on the details of how the work is to be accomplished.

Task - Task is another name for a contract requirements

Task Analysis - Task analysis is an examination of a task to determine inputs, work, and outputs. (Part of Job Analysis).

Tree Diagram - A tree diagram is an visual representation of the major function performed by a system which shows logical parts and subparts. (Part of Job Analysis).

Uniform contract Format - The uniform contract format (UCF) is the standard format for invitations for bids, solicitation and resulting contracts as prescribed at FAR 14.202-l and FAR 15.406-l.

Uniform Contract Format Guide - The NAVFACENGCOM Uniform Contract Format (UCF) Guide contains approved clauses and provisions for use as an aid in preparing Facility Support Service Contracts over $25,000. The clauses and provisions contained in the UCF have been approved in accordance with the requirements of the Department of Defense Acquisition Regulation (DFARS) and the Navy Acquisition Procedures Supplement (NAPS). No other clause may be used unless approval is obtained from NAVFAC Code 11. The clauses and provisions are arranged in the UCF as required by the Federal Acquisition Regulations (FAR) and the sections to which they are assigned shall not be changed.

Validated Customer Complaints - Validated customer complaints constitute a surveillance method based on customer awareness. Customers familiar with the contract requirement notify the quality assurance evaluator (QAE) of individual occurrence of unsatisfactory performance by the contractor. Upon notification, the QAE investigates the report and, if valid, documents the performance problem.

Work Requirement - Work requirement are components of a contract requirement and are used to define the characteristics of that particular contract requirement. The work requirements may be specified in terms of timeliness of performance, the preparation of documentation associated with a particular contract requirement may be appropriate. In some instances, only one work requirement will have the same description as the contract requirement. A series of work requirements associated with each particular contract requirement are listed in the PRS.

APPENDIX C

TITLE
Bus Services
Custodial Services
Maintenance of Military Family Housing
Grounds Maintenance Services
Guard Services
Solid Waste Collection and Disposal
Transportation Operation and Maintenance Services
Building and Structures Maintenance (other than Family Housing)
Operation and Maintenance of Electrical Distribution and Emergency Generation System
Elevator Maintenance Services
Hazardous Waste Management Services
Central Heating Plant and Distribution System Operation, Maintenance, and Repair
HVAC, Refrigeration Plant, and Compressed Air Plant Operation, Maintenance and Repair
Pest Control Services
Rail Facilities Maintenance and Repair Services
Surfaced Areas Maintenance
Operation of Telephone/Communications Systems
Electric Power Generation, Heating Plant, and Steam Distribution Systems Operation, Maintenance, and Repair
Water Plants and Systems operation and Maintenance
Wastewater Collection Systems and Treatment Facilities Operation and Maintenance
Hospital Housekeeping Services
Fixed Fire Protection and Warning Systems Maintenance

NAVFAC Guide Performance Work Statements (GPWS)

Note: Many GPWS are still in development or planned for rewrite. The policies, criteria, and nomenclature contained in this manual supersede anything to the contrary in previously issued GPWSs. Check with the NAVFAC Engineering Field Division for availability of the GPWSs.

APPENDIX D

SAMPLE ATTACHMENT J-E__
STATISTICALLY EXTRAPOLATED SURVEILLANCE TECHNIQUES

****

NOTE: This attachment shall be included in facility support contracts when the use of statistically extrapolated surveillance techniques (RSED or RSWED) are planned. This clause should be used in conjunction with the "Consequences of Contractor's Failure to Perform Required Services", (Alternate I) in Section E.

****

In accordance with the "Consequences of Contractor's Failure to Perform Required Services" Section E, the Government may apply statistically extrapolated inspection techniques to either assess the contractor's performance or determine the amount of payment due or both.

RSED is a statistically extrapolated inspection technique used to assess both the contractor's performance and to determine the amount of payment due. RSWED is a statistically extrapolated inspection technique used to assess the contractor's performance only.

The Government will use the attached tables entitled Table of Sample Sizes for Normal Sampling Level" and Table of Sample Sizes for Minimum Sampling Level" to detemine sample sizes when either random sampling for extrapolated deductions (RSED) or random sampling without extrapolated deductions (RSWED) is used.

The Government reserves the right to start the surveillance using RSED or RSWED at any time during the contract, to discontinue the use of RSED or RSWED, and to resume the use of RSED or RSWED without notice to the contractor. When RSED is commenced or recommenced after a lapse of time, the normal sampling level will be used at the inception of the surveillance. The sample size may be reduced to the minimum level when the MADR in the previous surveillance period was not exceeded. Deductions to the contract price, based on extrapolation of the results found in the sample, will be made irrespective of whether normal or minimum sampling sizes are used. When RSWED is used the sample size at the inception of the surveillance may be the minimum sample size. The Contracting Officer may increase the size of the samples above the required minimums at his/her discretion.

The Maximum Allowable Defect Rate (MADR) is defined as the defect rate above which the contractor's quality control is unsatisfactory. The MADR for each work requirement is shown in the Performance Requirements Summary (PRS) contained in Attached JC_.

The defect rate for comparison with MADR when RSED or RSWED is used is calculated by deducting an adjustment factor taken from the attached table entitled "Table of Adjustment Factors for Random Sampling" from the observed defect rate found in the sample. This is also the defect rate used to extrapolate deductions to the contract price when RSED is used.

$$\text{Defect rate} = \frac{\text{number of defects}}{\text{number of services sampled}} - \text{Adjustment Factor}$$

The Maximum Allowable Defect Rate (MADR) does not represent a threshold above which deductions are taken. Deductions are taken for all defects (with appropriate allowance for rework) irrespective of whether the MADR was exceeded or not.

Sample Payment Calculation for Extrapolated Deductions (RSED)

The following data, obtained from the Performance Summary (PRS) and the Schedule of Deductions or the PRS and the Schedule of Indefinite Quantity work, is used to illustrate a typical payment calculation when surveillance is by RSED.

When RSED is used, the defect rate is calculated based on the defect rate &served in the sample. An adjustment factor is applied to the observed defect rate and the adjusted rate is used for extrapolation. Liquidated damages are assessed for all observed defects including those outside the sample. Liquidated damages are not extrapolated. The attached payment calculation shows the step in the calculation.

When random sampling is used, defects are established within a given sample by visual observation and the results extrapolated for the entire population of services to determine the number of total defects. This means that only a limited number of the defects for which deductions are taken are individually identified to the, contractor when random sampling is used. The contractor is responsible for identifying the additional defects if he wishes to rework them. Credit is given for defects reworked, both within and without the sample, up to the maximum number of defects for which deductions were originally taken.

****

The sample payment calculation below is an example only. The specification writer must develop a sample calculation which reflects the nature of the actual contract work, e.g., grounds maintenance, transportation operations, etc.
****

CONTRACT REQUIREMENT: 002. Routine Service Calls
Price from Schedule of Deductions: $l2,OOO/mnth.

WORK REQUIREMENT	% OF CONTRACT REQUIREMENT	MADR	PRICE OF WORK REQUIREMENT
A. Response time	30%	3%	$3,600 (30% of $12,000)
B. Classification	5%	3%	$ 600 (5% of $12,000)
C. Cost accounting	5%	3%	$ 600 (5% of $12,000)
D. Quality work	60%	3%	$7,200 (60% of $12,000)

INSPECTION RESULTS.
Contract Requirement: Routine Service Calls
Population: 600 *Number of Services Sampled: 60

REQUIREMENT	DEFECTS IN SAMPLE	VALIDATED CUSTOMER COMPLAINTS	TOTAL OBSERVED DEFECTS	DEFECTS REWORKED BY CONTR	DEFECTS REWORKED BY GOVT
A. Response time	6	2	8	N/A	N/A
B. Classification	5	2	7	7	0
C. Cost accounting	4	3	7	7	0
D. Quality work	2	2	4	0	4

Actual cost of rework by Government (Quality Work) = $138.00

* The population is the number of occurrences of the service during the month. If the service is scheduled, the population is determined from the schedule. If the service is unscheduled, the population is the actual number of occurrences of the service.

The sample payment calculation is shown on the next page.

RSED SAMPLE PAYMENT CALCULATION	WORK REQUIREMENTS RESPONSE TIME	CLASSIF-ICATION	COST ACCNTNG	QUALITY WORK
a. Price for work requirement	$3600	$600	$600	$600
b. population	$600	$600	$600	$600
c. Price per service (a/b)	$6	$1	$1	$12
d. No. of services sampled	60	60	60	60
e. No. in sample rejected	6	5	4	2
f. Observes defect rate (e/d)	10.00%	8.33%	6.66%	3.33%
g. Adjustment factor *	1.38%	1.31%	1.17%	0.90%
h. Defect rate (f-g) **	8.62%	7.02%	5.49%	2.43%
i. Extrapolated defects (b x h as whole number)	51	42	32	14
j. Defects obs. outside sample	2	2	3	2
k. Rework by contractor	N/A	7	7	0
l. Rework by Govt. or Others	N / A	0	0	4
m. Net no. services to deduct at scheduled price (i-k-l)***	51	35	25	10
n. Extrapolated deduction (c x m)	$306.00	$35.00	$25.00	$120.00
o. Deduct Govt. rework Actual cost **** or	$0.00	$0.00	$0.00	$138.00
at scheduled price (c x l)	$0.00	$0.00	$0.00	$0.00
p. IDs Ct rewk [l0%xcx(e+j-l)]	$4.80	$0.00	$0.70	$0.00
q. ID's Govt. rewk (20% x 0)	$0.00	$0.70	$0.00	$27.60
r. Other adjustment	$0.00	$0.00	$0.00	$0.00
s. Total payment (a-n-o-m-r)	$3289.20	$564.30	$574.30	$6914.40

Total payment for routine service calls = $11,342.20

* Adjustment factor from Table of Adjustment Factors attached.

** Defect rate for comparison with MADR.

*** Cannot be less than zero.

**** Actual cost are the amounts paid to Government personnel (wage, retirement, and fringe benefits) plus materials or the actual costs of other means by which the work is accomplished.

TYPICAL PAYMENT CALCULATION - RANDOM SAMPLING FOR EXTRAPOLATED DEDUCTIONS

TABLE OF SAMPLE SIZES FOR NORMAL SAMPLING LEVELS

Sample sizes are for the indicated monthly population.

Population Range	Sample Size
33-34	30
35-36	31
37-37	32
38-38	33
39-40	34
41-41	35
42-43	36
44-44	37
45-46	38
47-47	39
48-49	40
50-50	41
51-52	42
53-53	43
54-55	44
56-56	45
57-58	46
59-60	47
61-61	48
62-63	49
64-65	50
66-66	51
67-68	52
69-70	53
71-71	54
72-73	55
74-75	56
76-77	57
78-79	58
80-81	59
82-83	60
84-84	61
85-86	62
87-88	63
89-90	64
91-92	65
93-95	66
96-97	67
98-99	68
100-101	69
102-103	70
104-105	71
106-107	72
108-110	73
1ll-112	74
113-114	75
115-117	76
118-119	77
120-122	78
123-124	79
125-127	80
128-129	81
130-132	82
133-134	83
135-137	84
138-140	85
141-142	86
143-145	87
146-148	88
149-151	89
152-154	90
155-157	91
158-160	92
161-163	93
164-166	94
167-169	95
170-172	96
173-176	97
177-179	98
180-182	99
183-186	100
187-189	101
190-193	102
194-196	103
197-200	104
201-204	105
205-208	106
209-211	107
212-215	108
216-219	109
220-224	110
225-228	111
229-232	112
233-236	113
237-241	114
242-245	115
246-250	116
251-255	117
256-259	118
260-264	119
265-269	120
270-274	121
275-280	122
281-285	123
286-290	124
291-296	125

TABLE OF SAMPLE SIZES FOR NORMAL SAMPLING LEVELS

Sample sizes are for the indicated monthly population:

Population Range	Sample Size
297-302	126
303-308	127
309-313	128
314-320	129
321-326	130
327-332	131
333-339	132
340-345	133
346-352	134
353-359	135
360-366	136
367-374	137
375-381	138
382-389	139
390-397	140
398-405	141
306-414	142
415-422	143
423-431	144
432-440	145
441-450	146
451-459	147
460-469	148
470-479	149
480-490	150
491-501	151
502-512	152
513-523	153
524-535	154
536-548	155
549-560	156
561-574	157
575-587	158
588-601	159
602-616	160
617-631	161
632-646	162
647-663	163
664-680	164
681-697	165
698-716	166
717-735	167
736-754	168
755-775	169
776-796	170
797-819	171
820-842	172
843-867	173
868-893	174
894-920	175
921-948	176
949-978	177
979-1009	178
1010-1042	179
1043-1077	180
1078-1114	181
1115-1153	182
1154-1194	183
1195-1238	184
1239-1285	185
1286-1335	186
1336-1388	187
1389-1445	188
1446-1507	189
1508-1573	190
1574-1644	191
1645-1721	192
1722-1805	193
1806-1896	194
1897-1997	195
1998-2107	196
2108-2228	197
2229-2363	198
2364-2514	199
2515-2684	200
2685-2876	201
2877-3094	202
3095-3348	203
3349-3643	204
3644-3990	205
3991-4407	206
4408-4915	207
4916-5549	208
5550-6361	209
6362-7439	210
7440-8940	211
8941-11173	212
11174-14847	213
14848-22020	214
22021-42231	215
42232-465914	216
465915 and above use	217

TABLE OF SAMPLE SIZES FOR MINIMUM SAMPLING LEVELS

Sample sizes are for the indicated total contract population over the contract term. Monthly samples are determined by prorating the sample size listed to Individual monthly populations.

Population Range	Sample Size
135-141	120
142-148	125
149-155	130
156-163	135
164-170	140
171-178	145
179-185	150
186-193	155
194-201	160
202-209	165
210-217	170
218-225	175
226-233	180
234-242	185
243-251	190
252-259	195
260-268	200
269-278	205
279-287	210
288-296	215
297-306	220
307-316	225
317-326	230
327-336	235
337-346	240
347-357	245
358-367	250
368-378	255
379-389	260
390-401	265
402-412	270
413-424	275
425-436	280
437-449	285
450-461	290
462-474	295
475-487	300
488-500	305
501-514	310
515-528	315
529-542	320
543-557	325
558-571	330
572-587	335
588-602	340
603-618	345
619-634	350
635-668	360
669-703	370
704-740	380
741-779	390
780-820	400
821-864	410
865-909	420
910-958	430
959-1009	440
1010-1063	450
1064-1120	460
1121-1182	470
1183-1247	480
1248-1317	490
1318-1392	500
1393-1472	510
1473-1559	520
1560-1652	530
1653-1754	540
1755-1864	550
1865-1984	560
1985-2116	570
2117-2260	580
2261-2420	590
2421-2598	600
2599-2797	610
2798-3020	620
3021-3273	630
3274-3562	640
3563-3896	650
3897-4285	660
4286-4745	670
4746-5297	680
5298-5971	690
5972-6814	700

TABLE OF SAMPLE SIZES FOR MINIMUM SAMPLING LEVELS

Sample sizes are for the indicated total contract population over the contract term. Monthly samples are determined by prorating the sample size listed to individual monthly populations.

Population Range	Sample Size
6815-7897	710
7898-9340	720
9341-11358	730
11359-14382	740
14383-19414	750
19415-29441	760
29442-59251	770
59252-4403172	780
4403173 and above	use 781

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TABLE OF ADJUSTMENT FACTORS FOR RANDOM SAMPLING

For ODR over % - thru %	Adjustment factor %	For ODR over % - thru %	Adjustment factor %
UP TO-0.25	0.25	17.0-18.0	1.76
0.25-0.30	0.25	18.0-19.0	1.80
0.30-0.40	0.29	19.0-20.0	1.84
0.40-0.50	0.32	20.0-21.0	1.87
0.50-0.60	0.35	21.0-22.0	1.90
0.60-0.70	0.38	22.0-23.0	1.93
0.70-0.80	0.41	23.0-24.0	1.96
0.80-0.90	0.43	24.0-25.0	1.99
0.90-1.0	0.46	25.0-26.0	2.01
1.0-2.0	0.64	26.0-27.0	2.04
2.0-3.0	0.78	27.0-28.0	2.06
3.0-4.0	0.90	28.0-29.0	2.08
4.0-5.0	1.00	29.0-30.0	2.10
5.0-6.0	1.09	30.0-31.0	2.12
6.0-7.0	1.17	31.0-32.0	2.14
7.0-8.0	1.24	32.0-33.0	2.16
8.0-9.0	1.31	33.0-34.0	2.17
9.0-10.0	1.38	34.0-35.0	2.19
10.0-11.0	1.44	35.0-36.0	2.20
11.0-12.0	1.49	36.O-37.0	2.22
12.0-13.0	1.54	37.0-38.0	2.23
13.0-14.0	1.59	38.0-39.0	2.24
14.0-15.0	1.64	39.0-40.0	2.25
15.0-16.0	1.68	40.0-41.0	2.26
16.0-17.0	1.72	41.O-42.0	2.26

APPENDIX E

SECTION 09951

VINYL-COATED FABRIC WALL COVERING

****
NOTE: This guide specification covers the requirements for the provision of vinyl-mated fabric wall covering.
****

****
NOTE: See Note A located at rear of text.
****

PART 1 GENERAL

1.1 SUMMARY

****
NOTE: This article is not used by the Naval Facilities Engineering Command except in specialized cases. Delete this article when editing for project specifications.
****

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

FEDERAL SPECIFICATIONS (FS)

FS L-P-1040	(Rev. B) Plastic Sheets an Strips (Polyvinyl Fluoride)
FS CCC-W-408	(Rev.B) (Amd. 2) Wall Covering, Vinyl-Coated

1.3 SUBMITTALS

****
NOTE: In projects using the Contractor Quality Control System, add the words, "Submit to the Contracting Officer," to submittals deem& sufficiently critical or complex or aesthetically significant to merit approval by the Government.
****

Submit the following in accordance with Section 01300, "Submittals."

1.3.1 SD-44, Manufacturer's Instructions
a. Wall covering
b. Cap molding
c. Corner guard

[Submit to the Contracting Officer.] Submit complete procedures for an expert installation, includingpreparation of the substrate. Submit Material Safety Data Sheets (MSFDS) for all primers, sealers, and adhesives to the Contracting Officer.

1.3.2 SD-50, Samples
a. Wall covering
b. Cap molding
c. Corner guard

Submit for each type, pattern and color of wall cover. Patterned samples shall be of sufficient size to show a complete pattern.

1.3.3 SD-66, Statements
a. Contractor experienced data

Submit data as required by paragraph entitled "Contractor Experience."

1.3.4 SD-76, Certificates of Compliance
a. Wall covering
b. Primer
c. Sealer
d. Adhesive

1.3.5 SD-80, Operation and Maintenance Manuals
a. Cleaning and maintenance instructions

Submit the wall covering manufacturer's printed instructions for cleaning and maintenance [to the Contracting Officer].

1.4 CONTRACTOR EXPERIENCE

****

NOTE: The experience clause in this guide specification has been approved by a Level 1, Contracting Officer, in accordance with the requirements of NAVFAC p-68. This paragraph may be used without further approval or request for waiver.

****

The work shall be done by experienced installers under a qualified supervisor. The supervisor shall have a minimum of 5 years' experience in this area of work. Before installation of wall covering, submit data attesting that the installation supervisor has the required experience. Data shall include dates of supervisory experience, names and addresses of employers, and the names and locations of at least five installations where he has supervised this type of work.

1.5 DELIVERY AND STORAGE

Deliver the material to the site in manufacturer's original wrappings and packages and clearly labeled with the manufacturer's name, brand name, size, and other related inform&ion. Store in a safe, dry, clean, and well-ventilated area at temperatures not less than 50 degrees F and within a relative humidity range of 30 to 60 percent. Store wall covering material in a flat position and protect from damage, soiling, and moisture. Do not open containers until needed for installation, unless verification inspection is required.

1.6 ENVIRONMENTAL CONDITIONS

Minimum temperature of area to receive wall covering, before, during, and after installation, and requirements for conditioning adhesive and wall covering shall comply with the wall covering manufacturer's printed instructions. However, in no case shall the area temperature be less than 50 degrees F, 72 hours prior to, during installation, and until the adhesive is dry. Observe ventilation and safety procedures specified in the MSDS.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Wall Covering

****

NOTE: See Note B located at rear of text

****

****

NOTE: Specify minimum total weight and minimum coating weight for the wall covering Type selected using the listing below:

	Type I	Type II	Type III
Total Weight (ounces per square yard)	7	13	22
Coating Weight (ounces per square yard)	5	7	12

****

****

NOTE: Delete last sentence when PVF film is not required. (PVF) top coating is an extra cost additive to basic specificationmaterial and is designed to provide additional resistance to staining and soiling when exposed to staining reagents or chemicals or to severe soiling or abuse. Consider PVF film top coating for heavy-use areas; such as dormitories, dininghalls, cafeterias, service corridors, medical facilities, and clubs.

****

FS CCC-W-408, Type [I Light Duty)] [II Medium Duty)] [III Heavy Duty)], mildew resistant with a minimum total weight of [7] [13] [22] ounces per square yard, and a minimum coating weight of [5] [7] [12] ounces yard. [A polyvinyl fluoride (PVF) film, 0.0005-inch thick conforming to FS L-P-1040, Type I, Grade B, Class 2, shall be factory applied over the face of the wall covering.]

2.1.2 Pattern and Color

****
NOTE: See Note C located at rear of text.
****

[As directed] [Shall be pattern [ ], color [ ]].

2.1.3 Primer, Sealer, and Adhesive

Shall be mildew resistant, nonstaining to the wearing surface, and of the type supplied or recommended by the wall covering manufacturer.

2.1.4 Cap Molding

****
NOTE: Delete if cap molding is not required. A metal, plastic, or wood molding is normally required for wainscot installations. The drawings should include whether metal, plastic, or wood molding is required. If details of cap molding are shown on the drawings, this paragraph should be edited accordingly.
****

[As indicated] [Shall be 1/2-to 1-inch high, feathered at the bottom edge, 3/16-inch exposed face on the top edge, and grooved to receive the wall covering].

2.1.5 Corner Guard

****
NOTE: Plastic corner guards provide limited protection to the wall covering and should be specified for external corners subject to heavy pedestrian traffic or moderate mechanical abuse. Where functional use of a facility indicates the need for more substantial protection, the use of vinyl-coated wall covering may not be advisable or a system of wall guards and high impact resistant corner guards may be required.
****

Shall be clear acrylic plastic angle with [1 1/8] [ ]-inch legs, [4] [ ] feet long, surface mounted.

2.2 MAINTENANCE MATERIALS (EXTRA STOCK)

****

NOTE: Extra stock of wall covering may be required. If not, deletethis paragraph. Extra stock should be based on anticipated usage. In the absence of experience data, a minimum of one linear foot for each 100 linear feet installed is suggested.

****

Provide one linear foot of full-width wall covering of each pattern and color for each [100] [ ] linear feet of wall covering installed. Extra stock shall be of the same manufacture, type, pattern, Color, and lot number as the installed wall covering. Provide full rolls, packed for storage and marked with content, pattern, and color. Leave extra stock at the site, as directed.

PART 3 EXECUTION

3.1 INSPECTION

Complete painting and all trade work that penetrates the substrate, before beginning wall covering installation. Inspect rooms and areas to be covered. Test walls for moisture content with an electric moisture meter and take corrective measures if reading is more than 5 percent.

3.2 PREPARATION

Remove dirt, grease, crayon, ink, or other similar markings to prevent color stainingor bleeding through the vinyl. Coat markings, which are difficult to remove without damaging the substrate surface, with a white pigmented oil baseprimer. Remove switch and receptacle cover plates, wall mounted lighting fixtures, and similar items in contact with surfaces to receive wall covering. Fill cracks, crevices, and holes with compound recommended by the wall covering manufacturer. Sand rough spots smooth and remove residual powder using a damp cloth. Surfaces to be covered shall be thoroughly dry. Prime and seal surfaces to be covered, in accordance with the wall covering manufacturer's printed instructions, to permit ultimate removal of the wall covering without damaging the wall surface.

3.3 APPLICATION

3.3.1 Wall Covering

****

NOTE: For determination of proper quantities of all covering and adhesive necessary, the drawing must indicate the width and height of areas to receive the wall covering. If more than one wall covering type, pattern, and color is to be used, indicate each room or area number to be covered and specify the type or pattern and color as applicable.

****

The substrate and conditions in the area shall meet all requirements for a satisfactory installation. Apply adhesive and wall covering in accordance with the manufacturer's printed instructions. After hanging the first three panels obtain approval of color uniformity and pattern match. Assure that: covering is applied without horizontal joints; internal and external angles are continuous withvertical joints occurring not less than 6 inches from the internal or external corner; vertical joints are lapped and double cut or factory trimmed and butted; edges extend not less than 1/2 inch behind applied base and trim; seams and corners are securely pasted, so that no moisture or water vapor can get behind the wall covering; and wall covering extends behind edges of switch and receptacle cover plates and other surface-mounted equipment. Hang wall covering to assure that: colors are uniform; patterns are matched at the seams; and finished surfaces are free of air pockets, wrinkles, tears, and other defects.

3.3.2 Cap Molding

Finish the top edge of wainscot-high wall covering with cap molding. Install in accordance with the manufacturer's printed instructions. Assure that: joints butt neatly, arelevel, and without gaps; molding is straight; and wall covering top edge is completely enclosed.

3.3.3 Corner Guard

Install in accordance with the manufacturer's printed instructions.

3.4 CLEANING

Remove excessadhesive from each seam, in accordance with the adhesive manufacturer's recommendations, and wipe the wall covering clean. There shall be no residual film nor stain after cleaning. Reinstall switch and receptacle cover plates, wall mounted lighting fixtures, and similar items removed to permit installation of the wall covering.

End of Section --

CRITERIA NOTES:

NOTE A: The following information shall be shown on the project drawings:

1. Location and extent of work including dimensions of surfaces to receive wall covering.

2. Pattern and color. When more than one pattern or color is to be installed, identify location and extent of work for each pattern and color.

3. Location and profile of cap molding, when required.

4. Location of corner guards, when required.

NOTE B: Recommended uses or the three types of wall coverings are as follows:

Type I(Light Duty): Wall surfaces above wainscot where the wainscot extends at least to top of door openings, and for ceilings.

Type II(Medium Duty): Wall covering for areas subjected to average traffic wear and scuffing; full height on walls without wainscot or as a wainscot.

Type III(Heavy Duty): Full height on walls without wainscot or as a wainscot for areas subjected to excessive traffic wear and scuffing.

Coordinate with the "Room Finish Schedule" when more than one type is required in the project.

NOTE C: If pattern and color are not indicated on the drawings, insert the pattern and color required. Provide a generic description for the pattern and color (e.g., Pattern silky, suede, pebble, burlap weave, etc., color light green, beige, lemon yellow, etc.) or specify a manufacturer's name, pattern, and color designation for the desired wall covering. When a manufacturer's name, stock number, pattern, and color is specified, be certain that the product named conforms to this specification, as edited, and add the following note to the paragraph text: "Manufacturer's name and stock number are provided to identify the pattern, color, andtexture desired. Other manufacturers' productions, meeting the requirements specified and having similar pattern, color, and texture will be acceptable." Avoid selection of a deeply embossed pattern for use where frequent washing of the wall covering is required. Coordinate with the "Room Finish Schedule" when more than one pattern or color is required in the project.

APPENDIX F

TABLE OF SAMPLE SIZES FOR NORMAL SAMPLING LEVELS

Sample sizes are for the indicated monthly population:

Population Range	Sample Size
33-34	30
35-36	31
37-38	33
39-40	34
41-42	35
43-44	37
45-46	38
47-48	40
49-50	41
51-52	42
53-54	44
55-56	45
57-58	46
59-60	47
61-62	49
63-64	50
65-66	51
67-68	52
69-70	53
71-72	55
73-75	56
76-77	57
78-79	58
80-81	59
82-83	60
84-85	62
86-88	63
89-90	64
91-92	65
93-95	66
96-97	67
98-99	68
100-101	69
102-103	70
104-105	71
106-107	72
108-110	73
ill-112	74
113-114	75
115-117	76
118-119	77
120-122	78
123-124	79
125-127	80
128-129	81
130-132	82
133-134	83
135-137	84
138-140	85
141-142	86
143-145	87
146-148	88
149-151	89
152-154	90
155-157	91
158-160	92
161-163	93
164-166	94
167-169	95
170-172	96
173-176	97
177-179	98
180-182	99
183-186	100
187-189	101
190-193	102
194-196	103
197-200	104
201-204	105
205-208	106
209-211	107
212-215	108
216-219	109
220-224	110
225-228	111
229-232	112
233-236	113
237-241	114
242-245	115
246-250	116
251-255	117
256-259	118
260-264	119
265-269	120
270-274	121
275-280	122
281-285	123

TABLE OF SAMPLE SIZES FOR NORMAL SAMPLING LEVELS

Sample sizes are for the indicated monthly population:

Population Range	Sample Size
286-290	124
291-296	125
297-302	126
303-308	127
309-313	128
314-320	129
321-326	130
327-332	131
333-339	132
340-345	133
346-352	134
353-359	135
360-366	136
367-374	137
375-381	138
382-389	139
390-397	140
398-405	141
406-414	142
415-422	143
423-431	144
432-440	145
441-450	146
451-459	147
460-469	148
470-479	149
480-490	150
491-501	151
502-512	152
513-523	153
524-535	154
536-560	156
561-574	157
575-587	158
588-601	159
602-616	160
617-631	161
632-646	162
647-663	163
664-680	164
681-697	165
698-716	166
717-735	167
736-754	168
755-775	169
776-796	170
797-819	171
820-842	172
843-867	173
868-893	174
894-920	175
921-948	176
949-978	177
979-1009	178
1010-1042	179
1043-1077	180
1078-1114	181
1115-1153	182
1154-1194	183
1195-1238	184
1239-1285	185
1286-1335	186
1336-1388	187
1389-1445	188
1446-1507	189
1508-1573	190
1574-1644	191
1645-1721	192
1722-1805	193
1806-1896	194
1897-1997	195
1998-2107	196
2108-2228	197
2229-2363	198
2364-2514	199
2515-2684	200
2685-2876	201
2877-3094	202
3095-3348	203
3349-3643	204
3644-3990	205
3991-4407	206
4408-4915	207
4916-5549	208
5550-6361	209
6362-7439	210
7440-8940	211
8941-11173	212
11174-14847	213
14848-22020	214
22021-42231	215
42232-465914	216
465915 and above	use 217

APPENDIX F

TABLE 2 TABLE OF SAMPLE SIZES FOR MINIMUM SAMPLING LEVELS

Sample sizes are for the indicated total contract population over the contract term. Monthly samples are determined by prorating the sample size listed to individual monthly populations. See instructions for this table.

Population Range	Sample Size
135-141	120
142-148	125
149-155	130
156-163	135
164-170	140
171-178	145
179-185	150
186-193	155
194-201	160
202-209	165
210-217	170
218-225	175
226-233	180
234-242	185
243-251	190
252-259	195
260-268	200
269-278	205
279-287	210
288-296	215
297-306	220
307-316	225
317-326	230
327-336	235
337-346	240
347-357	245
358-367	250
368-378	255
379-389	260
390-401	265
402-412	270
413-424	275
425-436	280
437-449	285
450-461	290
462-474	295
475-487	300
488-500	305
501-514	310
515-528	315
529-542	320
543-557	325
558-571	330
572-587	335
588-602	340
603-618	345
619-634	350
635-668	360
669-703	370
704-740	380
741-779	390
780-820	400
821-864	410
865-909	420
910-958	430
959-1009	440
1010-1063	450
1064-1120	460
1121-1182	470
1183-1247	480
1248-1317	490
1318-1392	500
1393-1472	510
1473-1559	520
1560-1652	530
1653-1754	540
1755-1864	550
1865-1984	560
1985-2116	570
2117-2260	580
2261-2420	590
2421-2598	600
2599-2797	610
2798-3020	620
3021-3273	630
3274-3562	640
3563-3896	650
3897-4285	660
4286-4745	670
4746-5297	680
5298-5971	690
5972-6814	700
6815-7897	710
7898-9340	720
9341-11358	730
11359-14382	740
14383-19414	750
19415-29441	760
29442-59251	770
59252-4403172	780
4403173 and above	use 781

APPENDIX F

TABLE 3 TABLE OF ADJUSTMENT FACTORS FOR RANDOM SAMPLING

For ODR over % - thru %	Adjustment factor	For ODR over % - thru %	Adjustment factor%
UP TO-0.25	0.25	17.0-18.0	1.76
0.25-0.30	0.25	18.0-19.0	1.80
0.30-0.40	0.29	19.0-20.0	1.84
0.40-0.50	0.32	20.0-21.0	1.87
0.50-0.60	0.35	21.0-22.0	1.90
0.60-0.70	0.38	22.0-23.0	1.93
0.70-0.80	0.41	23.0-24.0	1.96
0.80-0.90	0.43	24.0-25.0	1.99
0.90-1.0	0.46	25.0-26.0	2.01
1.0-2.0	0.64	26.0-27.0	2.04
2.0-3.0	0.78	27.0-28.0	2.06
3.0-4.0	0.90	28.0-29.0	2.08
4.0-5.0	1.00	29.0-30.0	2.10
5.0-6.0	1.09	30.0-31.0	2.12
6.0-7.0	1.17	31.0-32.0	2.14
7.0-8.0	1.24	32.0-33.0	2.16
8.0-9.0	1.31	33.0-34.0	2.17
9.0-10.0	1.38	34.0-35.0	2.19
10.0-11.0	1.44	35.0-36.0	2.20
11.0-12.0	1.49	36.0-37.0	2.22
12.0-13.0	1.54	37.0-38.0	2.23
13.0-14.0	1.59	38.0-39.0	2.24
14.0-15.0	1.64	39.0-40.0	2.25
15.0-16.0	1.68	40.0-41.0	2.26
16.0-17.0	1.72	41.0-42.0	2.26

APPENDIX F

TABLE 4 SHORT TABLE OF RANDOM NUMBERS

Using the Random Sampling Tables.

The following pages contain a series of random numbers. Assume that we wish to randomly select a sample size of five from a population numbered sequentially from 101 to 140.

To use the tables, begin by picking a group of numbers on any page of the tables. This can be done by closing the eyes and pointing with a pencil to some initial group. The initial group pointed to in this example was 03, on the 15th line, second column of the first page of the table. The table is reproduced in part below.

		03	35	60	81	16	61	97	25	14	78	21	22	42
57	66	76	72	91	03	63	48	46	44	01	33	06	36	63
06	15	03	72	38	01	58	25	37	66	92	70	96	70	89
80	87	14	25	49	25	94	62							

Note that these are three digit numbers. Reading the table in groups of three numbers, we get a series of numbers as follows:

	033	560	811	661	972	514	782	122
425	766	767	291	036	348	348	464	401
330	636	630	615	037	238	015	825	376
692	709	670	898	087	142	549	259	462

Discarding numbers other than those between 101 and 140, the first population number identified is 122.

Continuing with this process and rearranging the numbers in order of magnitude, the five samples are identified as 110, 122, 130, 132, and 138.

Alternatively, the random numbers may be obtained by using the RSED computer programavailable from the EFDs.

APPENDIX F

TABLE 4 SHORT TABLE OF RANDOM NUMBERS

44	19	15	32	63	55	87	77	33	29	45	00	31
34	39	80	62	24	33	81	67	28	11	34	79	26
74	97	80	30	65	07	71	30	01	84	47	45	89
22	14	61	60	86	38	33	71	13	33	72	08	16
40	03	96	40	03	47	24	60	09	21	21	18	00
52	33	76	44	56	15	47	75	78	73	78	19	87
37	59	20	40	93	17	82	24	19	90	80	87	32
11	02	55	57	48	84	74	36	22	67	19	20	15
10	33	79	26	34	54	71	33	89	74	68	48	23
67	59	28	25	47	89	11	65	65	20	42	23	96
98	50	75	20	09	18	54	34	68	02	54	87	23
24	43	23	72	80	64	34	27	23	46	15	36	10
39	91	63	18	38	27	10	78	88	84	42	32	00
74	62	19	67	54	18	28	92	33	69	98	96	74
91	03	35	60	81	16	61	97	25	14	78	21	22
42	57	66	76	72	91	03	63	48	46	44	01	33
06	36	63	06	15	03	72	38	01	58	25	37	66
92	70	96	70	89	80	87	14	25	49	25	94	62
91	08	88	53	52	13	04	82	23	00	26	36	47
68	85	97	74	47	53	90	05	90	84	87	48	25
59	54	13	09	13	80	42	29	63	03	24	64	12
39	18	32	69	33	46	58	19	34	03	59	28	97
67	43	31	09	12	60	19	57	63	78	11	80	10
61	75	37	19	56	90	75	39	03	56	49	92	72
78	10	91	11	00	63	19	63	74	58	69	03	51
93	23	71	58	09	78	08	03	07	71	79	32	25
37	55	48	82	63	89	92	59	14	72	19	17	22
62	13	11	71	17	23	29	25	13	85	33	35	07
29	89	97	47	03	13	20	86	22	45	59	98	64
16	94	85	82	89	07	17	30	29	89	89	80	98
04	93	10	59	75	12	98	84	60	93	68	16	87
95	71	43	68	97	18	85	17	13	08	00	50	77
86	05	39	14	35	48	68	18	36	57	09	62	40
59	30	60	10	41	31	00	69	63	77	01	89	94
05	45	35	40	54	03	98	96	76	27	77	84	80
71	85	17	74	66	27	85	19	55	56	51	36	48
80	20	32	80	98	00	40	92	57	51	52	83	14
13	50	78	02	73	39	66	82	01	28	67	51	75
67	92	65	41	45	36	77	96	46	21	14	39	56
72	56	73	44	26	04	62	81	15	35	79	26	99
28	86	85	64	94	11	58	78	45	36	34	45	91
69	57	40	80	44	94	60	82	94	93	98	01	48
71	20	03	30	79	25	74	17'	78	34	54	45	04
89	98	55	98	22	45	12	49	82	71	57	33	28
58	74	82	81	14	02	01	05	77	94	65	57	70
50	54	73	81	91	07	81	26	25	45	49	61	22
49	33	72	90	10	20	65	28	44	63	95	86	75
11	85	01	43	65	02	85	69	56	88	34	29	64
34	22	46	41	84	74	27	02	57	77	47	93	72
42	64	64	58	22	75	81	74	91	48	46	18	34
84	05	72	90	44	27	78	22	07	62	17	35	34
23	09	94	00	80	55	31	63	27	91	70	74	13

TABLE 4 (Cont'd.)

04	90	51	27	61	34	63	87	44	13	50	56	48
51	29	48	30	93	45	66	29	05	86	52	85	40
73	73	57	68	36	33	91	06	98	47	48	02	62
03	42	05	32	55	02	74	59	84	24	49	79	17
23	75	83	42	00	92	53	37	13	75	54	89	56
73	23	39	07	17	49	18	81	05	52	85	70	05
73	11	17	41	64	20	30	89	87	64	37	93	36
96	35	05	43	36	98	29	97	93	87	08	30	92
98	63	21	59	69	76	02	62	31	62	47	60	34
97	92	00	04	94	50	05	75	82	70	80	35	35
72	11	68	25	08	95	31	79	11	79	54	05	25
47	26	37	80	39	19	06	41	02	00	53	62	28
80	59	55	05	02	16	13	17	54	48	56	19	56
41	29	28	76	49	74	39	50	78	26	15	41	39
48	75	64	69	61	06	38	44	04	08	84	80	07
44	76	51	52	41	59	01	11	05	45	11	43	15
60	40	31	84	59	43	28	10	01	65	62	07	79
83	05	59	61	31	02	65	47	47	70	39	74	17
30	22	65	97	15	70	04	89	81	78	54	84	87
83	42	95	27	52	87	47	12	52	54	62	43	23
13	38	60	36	53	56	77	06	69	03	89	91	24
19	61	04	40	33	12	06	78	91	97	88	95	51
90	20	03	64	96	60	48	01	95	44	84	69	25
68	57	92	57	11	84	44	01	33	66	53	89	64
94	81	55	87	73	81	58	56	42	36	25	36	53
02	49	14	34	03	52	09	20	60	11	50	46	56
58	45	88	72	50	46	11	50	46	92	45	26	97
21	48	22	23	08	32	28	87	08	74	79	91	08
27	12	43	32	03	60	19	02	70	88	72	33	38
88	20	60	86	08	64	60	44	34	54	24	85	20
85	77	32	92	32	44	40	47	10	38	22	52	42
29	96	55	31	99	73	23	40	07	64	54	44	99
21	66	33	97	47	58	42	44	88	09	28	58	06
36	70	15	74	43	62	69	82	30	77	28	77	57
28	22	25	94	80	62	95	48	98	23	86	38	51
10	68	36	87	81	16	77	30	19	36	50	57	69
60	77	69	60	74	22	05	77	17	77	42	59	75
78	64	99	37	03	18	03	36	69	50	59	15	09
25	79	39	42	84	18	70	39	42	48	56	84	31
59	18	70	41	74	60	88	41	20	00	15	59	93
51	60	65	65	63	78	69	24	41	65	86	10	34
10	32	00	93	35	48	15	70	11	77	83	01	34
82	91	04	02	95	63	75	74	69	69	61	34	31
92	13	05	57	23	06	26	23	08	66	16	11	75
28	81	37	78	16	05	57	12	46	22	90	97	78
67	39	23	71	15	08	82	64	87	29	01	20	46
72	05	42	67	98	41	67	44	28	71	45	08	19
47	76	05	83	03	84	32	62	83	27	48	83	09
19	84	60	46	18	41	23	74	73	51	72	90	40
52	95	32	80	64	75	91	98	09	40	64	89	29
99	46	79	86	53	77	78	06	62	37	48	82	71
00	78	45	13	23	32	01	09	46	36	43	66	37
15	35	20	60	97	48	21	41	84	22	72	77	99
81	83	67	91	44	83	43	25	56	33	28	80	99

TABLE 4 (Cont'd.)

53	27	86	50	76	93	86	35	68	45	37	83	47
44	92	66	73	38	38	23	36	10	95	16	01	10
01	59	55	11	50	29	17	73	97	04	20	39	20
22	71	23	54	33	87	92	92	04	49	73	96	57
53	57	41	48	67	79	44	57	40	29	10	34	58
63	51	03	97	71	72	43	27	36	24	59	88	82
87	26	90	24	83	48	07	41	56	68	11	14	77
75	58	98	98	97	42	27	11	80	51	13	13	03
42	91	74	20	94	21	49	96	51	69	99	85	43
76	55	94	67	48	87	11	84	00	85	93	56	43
99	21	58	18	84	82	71	23	66	33	19	25	65
17	90	31	47	28	24	88	49	28	69	78	62	23
45	53	45	62	31	06	70	92	73	27	83	57	15
64	40	31	49	87	12	27	41	07	91	72	64	63
42	06	69	37	22	23	46	10	75	83	62	94	44
65	46	93	67	21	56	98	42	52	53	14	86	24
70	25	77	56	18	37	01	32	20	18	70	79	20
85	77	37	07	47	79	60	75	24	15	31	63	25
93	27	72	08	71	01	73	46	39	60	37	58	22
25	20	55	22	48	46	72	50	14	24	47	67	84
37	32	69	24	98	90	70	29	34	25	33	23	12
69	90	01	86	77	18	21	91	66	11	84	65	48
75	26	51	40	94	06	80	61	34	28	46	28	11
48	48	58	78	02	85	80	29	67	27	44	07	67
23	20	33	75	88	51	00	33	56	15	84	34	28
50	16	58	60	37	45	62	09	95	93	16	59	35
22	91	72	13	12	95	32	87	99	32	83	65	40
17	92	22	21	13	16	10	52	57	71	40	49	95
25	55	97	94	83	67	90	68	74	88	17	22	38
01	04	09	03	68	53	63	29	27	31	66	53	39
34	88	29	95	61	42	65	05	72	27	28	18	09
85	24	81	96	78	90	47	41	28	36	33	95	05
90	26	44	62	20	81	21	57	57	85	00	47	26
10	87	68	91	12	15	08	02	18	74	56	79	21
53	63	29	33	77	60	29	09	25	09	42	28	07
15	40	54	13	39	19	29	64	97	73	71	61	78
03	24	75	16	85	64	64	93	85	68	08	84	15
41	57	36	47	17	08	79	03	92	85	18	42	95
48	27	29	61	08	21	91	23	76	72	84	98	26
23	66	56	14	62	82	45	65	80	36	02	76	55
63	06	63	60	51	02	07	16	75	12	90	41	16
80	19	27	47	15	76	51	58	67	06	80	54	30
26	72	33	69	92	51	95	23	26	80	76	90	20
20	50	87	74	93	51	62	10	23	30	41	20	89
48	98	27	38	81	33	83	82	94	35	69	91	50
73	75	92	90	56	82	93	24	21	65	65	88	45
82	44	78	93	22	78	09	04	88	79	83	53	19
13	91	59	81	81	87	30	46	15	90	26	51	73
66	34	99	40	60	56	19	80	76	32	53	95	07
53	09	61	98	57	66	59	64	16	48	39	26	94
54	66	40	71	55	99	24	88	31	41	00	73	13
80	62	11	43	00	15	10	12	35	09	11	00	89
05	08	93	09	69	87	83	07	46	39	50	37	85
18	07	41	02	39	79	14	40	68	10	01	61	31
11	44	28	58	99	47	83	21	35	22	88	68	08

TABLE 4 (Cont'd.)

13	89	63	87	00	06	18	63	21	91	68	08	90
89	63	87	00	06	18	63	21	91	14	51	22	15
48	67	52	09	40	34	60	85	81	36	11	88	68
32	43	08	14	78	05	34	74	84	13	56	41	90
96	30	04	19	68	73	84	24	91	75	36	14	83
86	22	70	86	89	38	78	65	87	44	91	93	91
62	76	09	20	57	56	54	42	35	40	93	55	82
08	78	87	66	82	71	28	36	45	31	99	01	03
35	76	23	65	71	69	20	89	12	16	56	61	70
41	18	23	23	56	24	03	86	11	06	46	10	23
89	28	17	77	15	52	47	15	30	35	12	75	66
19	53	52	49	98	45	12	12	06	00	32	84	30
02	03	62	68	58	38	04	06	89	94	84	82	64
97	13	69	86	20	09	80	46	75	50	38	93	84
32	28	96	03	65	70	90	12	94	51	40	51	53
36	39	77	69	06	25	07	94	60	65	06	63	71
06	19	35	05	32	56	28	22	62	97	59	62	13
41	72	70	71	07	65	12	81	56	43	54	14	63
37	74	97	59	78	04	97	98	80	20	04	38	93
13	92	30	57	22	68	98	79	16	23	53	56	56
07	47	36	95	57	25	25	77	05	38	05	62	57
77	33	49	38	47	57	61	87	15	39	43	87	00
87	04	35	80	69	52	74	99	16	52	01	65	59
46	03	91	55	38	62	51	71	47	37	38	72	85
23	23	30	70	51	56	93	23	84	80	22	45	72
03	51	75	23	38	38	56	77	97	41	77	15	07
39	87	11	19	25	62	19	30	67	56	29	58	75'
84	06	19	54	31	16	53	02	93	86	69	76	74
28	08	98	84	08	23	84	45	11	70	13	17	60
47	80	10	13	00	37	99	98	81	94	44	72	06
95	42	31	17	54	86	88	95	14	82	57	17	99
16	28	99	03	46	38	56	84	81	20	89	68	52
45	41	01	74	12	14	57	26	12	48	83	67	04
88	69	05	08	23	73	51	23	92	93	05	54	32
84	46	61	99	21	30	24	79	30	18	06	96	20
62	06	47	96	82	59	39	23	22	20	95	72	00
24	85	63	62	16	18	23	64	50	90	57	50	54
04	96	09	21	40	82	41	45	41	41	89	46	18
55	86	94	13	83	48	82	60	78	96	30	57	13
40	28	10	29	65	33	93	92	99	26	01	86	11
85	42	48	17	49	05	12	13	53	01	98	80	17
83	35	38	14	36	47	29	15	14	22	27	62	93
15	60	43	78	09	76	61	07	48	31	27	48	28
96	11	26	83	17	94	26	39	01	48	68	56	97
05	76	82	87	12	89	46	85	58	09	94	39	92
09	08	76	44	30	30	40	85	96	34	99	87	03
93	03	00	54	56	85	50	81	32	42	53	60	36
98	03	65	65	99	30	88	88	44	91	22	50	72
61	95	90	55	56	01	94	09	94	02	71	85	10
27	20	51	55	78	63	40	50	16	20	17	73	02
76	09	62	83	78	98	57	23	38	95	61	06	58
28	98	26	38	81	23	83	82	26	35	69	96	50
73	75	92	90	56	23	93	24	24	57	07	99	47
82	34	76	93	22	78	34	04	84	29	93	53	19
35	42	28	57	49	45	56	14	48	01	23	88	27

SAMPLE QUALITY ASSURANCE PLAN
SPACE CLEANING CONTRACT N61234-94-D-5678

1. Contract Requirement. Space Cleaning

Work Requirements	Standards of Performance
a. Sweeping/Dust Mopping and/or Vacuuming	Quality Standards, Section C (C.7.a(1)(a) & (b))
b. Emptying Waste Containers	Quality Standards. Section C (C.7.a(1)(c))
C. Low Dusting/Cleaning	Quality Standards, Section C (C.7.a(1)(d))
d. Cleaning Walk-Off Mats	Quality Standards, Section C (C.7.a(1)(e))

2. Primary Method of Surveillance. Random sampling !CHOOSE EITHER "WITH" OR "WITHOUT"! extrapolated deductions supported by validated customer complaints and unscheduled inspections.

3. Maximum Allowable Defect Rate (MADR). The MADR for all work requirements

Quantity of Work. The actual quantity of work per month will vary depending on the number of space cleaning services Fo be performed during the upcoming month. For example, assume there are 500 spaces to receive dai ly space cleaning services during the work week. In November 1990, there were 19 working da s, excluding weekends and holidays. Therefore, the quantity of work was 19 days X 500 spaces = 9,500 space cleanings for the month o f November 1990.

5. Level of Surveillance. The normal level of surveillance will be used at the start of the contract. The minimum level ma be used if the observed defect rates (ODRs) for all four work requirements are less than their MADRs for two consecutive months, and if approved by the Contracting Officer. If at the minimum level the ODR exceeds the MADR for any work requirement for any given month, consider returning to the normal level.

6. Sample Size Determine the sample size based on the level of surveillance and the quantity of work for the evaluation period Sample sizes may be obtained from the sample size tables in Appendix D of NAVFAC MO-327 For example using the quantity in paragraph 4 above (9,500 space cleanings) the sample sizes would be as follows:

Normal Sampling - 212
Minimum Sampling - 65 *

* Based on an average of 9,500 services per month for a 12 month contract term.

7. Sampling Procedures. Prior to the beginning of the evaluation period the QAE will randomly select the appropriate number of samples based on the level of surveillance which will be used. 212 random numbers in the range between 1 and 9,500 would be chosen for the previous example using the table of random numbers

in NAVFAC MO-327 or by use of a calculator or computer which has the capacity to generate random numbers. In order to determine to which specific space cleanings the randomly selected numbers correspond, a number matrix may be used which assigns a specific number to each space cleaning to be performed during the evaluation period. As the date and location of each space cleaning is taken from the matrix, it will be recorded on the QAE's inspection schedule for the evaluation period.

8. Evaluation Procedures. During the evaluation period the QAE will utilize the inspection schedule to determine the date and location of the work to be evaluated. A visit will be made to the approriate location as soon after the work has been performed as possible in order to insure the evaluation isn't biased by changed conditions. A pre-printed EVALUATION WORK SHEET (example attached) will be completed at the time of the evaluation of the service.

Validated Customer Complaints. All customers (building monitors) will be given a telephone number through which they can promptly report complaints. When a complaint is received, it will be recorded on a customer complaint record form with the following information:

(1) Date and time of receipt of complaint.
(2) Customer's name and telephone number.
(3) Location and nature of complaint.

The QAE will notify the Contractor of complaints received or make arrangements for the Contractor to pick up copies of complaints at a prescribed location and time. The QAE will assume the work has been satisfactorily completed if the building monitor hasn't called back by a prescribed time. If the building monitor reports that the Contractor still hasn't performed satisfactorily. the QAE will:

(4) Evaluate the complaint.
(5) Determine the reason for any defective work.
(6) Report the results of the evaluation on the customer complaint record form.
(7) Report the results of the evaluation to the customer.
(8) Inform the Contractor of any corrective action necessary.
(9) Record any corrective action on customer complaint record form.

Occasionally, the QAE may need to validate complaints as soon as possible after they are received to insure that daily operations have not affected site conditions.

b. Unscheduled Inspections. If defective conditions are discovered which are not part of the randomly selected inspections, a separate EVALUATION WORK SHEET willbe annotated with the same information as a regular work sheet, noting this is an unscheduled inspection. When a trend in defects is noted during the course of regular scheduled inspections. unscheduled inspections may also be used to determine the magnitude of the defects for this specific work item.

9. Analysis of Results. At the end of the month the QAE will summarize the results of the month's inspections and calculate ODRs and recommended payment deductions on a MONTHLY PAYMENT ANALYSIS FORM. An example MONTHLY PAYMENT ANALYSIS FORM is attached.

a. If the ODR for a work requirement is equal to or less than the MADR,

performance of that requirement (Contractor's Rating) is satisfactory. If the ODR is less than l/2 of the MADR the QAE should recommend to the FSCM to notify the Contractor that performance is excellent and to keep up the good work. Consider whether or not to change the level of surveillance based on the criteria in paragraph 5 above. Payment deductions will be made for all documented defects, as calculated on the MONTHLY PAYMENT ANALYSIS FORM.

b. If the ODR for a work requirement is greater than the MADR, performance of that requirement is unsatisfactory and the QAE should recommend Fo the FSCM that a ODR be issued to the Contractor, or that stronger action be taken. Retain or return to the normal level of surveillance during the coming evaluation period (see paragraph 5 above). Payment deductions will be made as calculated on the MONTHLY PAYMENT ANALYSIS FORM.

EVALUATION WORK SHEET

QA PLAN #1
SPACE CLEANING

Contract_____ Inspection Date_____

S = Satisfactory U = Unsatisfactory

Service Location	Random Number	Work Requirements: Sweep/Dust Mop and/or Vacuum		Emptying Waste Containers		Low Dusting/ Cleaning		Cleaning Walk-Off Mats		Remarks
		S	U	S	U	S	U	S	U	
TOTALS										

CONTRACTOR'S SIGNATURE_____ DATE_____ QAE'S SIGNATURE_____ DATE_____

EXAMPLE
RANDOM SAMPLING WITHOUT EXTRAPOLATED DEDUCTIONS

MONTHLY PAYMENT ANALYSIS FORM
QA PLAN #1 SPACE CLEANING

CONTRACT_____

SUMMARY FOR THE PERIOD 1 NOV 94 THROUGH 30 NOV 94	Sweep/Dust Mop and/or Vacuum	Emptying Containers	Low Dusting/ Cleaning	Cleaning Walk-off Mats
A. Relative Value of Services (from PRS)	50%	50%	20%	10%
B. Cost of Services (Schedule of Deductions, Item 1 x A/100)	$ 3,500.00	$ 1,400.00	$ 1,400.00	$ 700.00
C. Number Scheduled for Completion	9,500	9,500	9,500	9,500
D. Cost per Service (B/C)	$ .368	$ .147	$ .147	$ .074
E. Sample Size (Normal)	212	212	212	212
F. Number in Sample Observed Unsat	21	17	29	13
G. Observed Defect Rate (ODR) (F/E x 100)	9.91%	8.02%	13.68%	6.13%
H. Validated Customer Complaints (# Unsat)	0	10	0	7
I. Unscheduled Inspections (# Unsat)	0	0	0	2
J. Value of Unsat Performed Work ((F + H + I) x D)	$ 7.73	$ 3.96	$ 4.26	$ 1.62
K. Deduct for Liquidated Damages (J x .1)	$ .77	$ .39	$ .42	$ .16
L. Number of Services Reworked				
(1) Sampled Services	0	0	0	1
(2) Customer Complaints	0	0	0	7
(3) Unscheduled Inspections	0	0	0	1
M. Payment for Rework ((L(1) + L(2) + L(3)) x D)	$ 0	$ 1.47	$ 0	$ .66
N. Other Adjustments (" - " indicates a deduction)	$ 0	$ 0	$ 0	$ 0
O. Total Deductions (J + K - M + N)	$ 8.50	$ 2.88	$ 4.68	$ 1.12

TOTAL PAYMENT DEDUCTIONS = $ 17.18

AUTHORIZED SIGNATURE DATE

EXAMPLE
RANDOM SAMPLING WITH EXTRAPOLATED DEDUCTIONS

MONTHLY PAYMENT ANALYSIS FORM
QA PLAN #1 SPACE CLEANING

CONTRACT_____

SUMMARY FOR THE PERIOD
1 NOV 94 THROUGH 30 NOV 94

		Sweep/Dust Mop and/or Vacuum	Emptying Containers	Low Dusting Cleaning	Cleaning Walk-off Mats
A.	Relative Value of Services (from PRS)	50%	20%	20%	10%
B.	Cost of Services (Schedule of Deductions, Item 1 x A/100)	$ 3,500.00	$ 1,400.00	$1,400.00	% 700.00
C.	Number Scheduled for Completion	9,500	9,500	9,500	9,500
D.	Cost per Service (B/C)	$ .368	% .147	$ .147	$ .074
E.	Sample Size (Normal)	212	212	212	212
F.	Number in Sample Observed Unsat	21	17	29	13
G.	Observed Defect Rate (ODR) (F/E x 100)	9.91%	8.02%	13.68%	6.13%
H.	Adjustment Factor (from table)	1.38%	1.31%	1.59%	1.17%
I.	Defect Rate (G - H)	8.53%	6.71%	12.09%	4.96%
J.	Extrapolated Number of Defects ((C x I)/100) [round down to whole number]	810	637	1,148	471
K.	Value of Unsat Performed Work (J x D)	$ 298.08	$ 93.63	$ 168.75	$ 34.85
L.	Validated Customer Complaints (# Unsat)	0	10	0	7
M.	Unscheduled Inspections (# Unsat)	0	0	0	2
N.	Deduct for Liquidated Damages ((F + L + M) x D x .1)	$ .77	$ .39	$ .42	$ .16
O.	Number of Services Reworked				
	(1) Sampled Services	O	O	O	1
	(2) Customer Complaints	0	10	0	7
	(3) Unscheduled Inspections	0	0	0	1
P.	Payment for Rework ((O(1) + O(2) + O(3)) x D)	$ 0	$ 1.47	$ 0	$ .66
Q.	Other Adjustments (" - ") indicates a deduction)	$ 0	$ 0	$ 0	$ 0
R.	Total Deductions (K + N - P + Q)	$ 298.85	$ 92.55	$ 169.17	$ 34.35

TOTAL PAYMENT DEDUCTIONS = $ 594.92

AUTHORIZED SIGNATURE DATE

NAVFAC 4330/46 (11-87)

EXPANDED PERFORMANCE REQUIREMENTS SUMMARY

PERFORMANCE REQUIREMENTS SUMMARY

CONTRACT REQUIREMENTS		PERFORMANCE REQUIREMENTS				PRICING REQUIREMENTS				SURVEILLANCE RQMTS.	
(1) ITEM NO.	(2) CONTRACT REQUIREMENT	(3) WORK REQUIREMENT	(4) WEIGHT (%)	(5) STANDARD OF PERFORMANCE	(6) MADR	(7) QTY.	(8) UNIT	(9) UNIT PRICE/ GOVT. EST.	(10) PRICE OF CONT. RQMT.	(11) GUIDE NO.	(12) METHOD OF SAMPLING
		A.									
		B.									
		C.									
		D.									
		A.									
		B.									
		C.									
		D.									
		A.									
		B.									
		C.									
		D.									

☐ SERVICE CONTRACT ACT RQMTS ☐ DAVIS-BACON ACT RQMTS ☐ SCHEDULED SERVICES ☐ UNSCHEDULED SERVICES SHEET ___ OF ___

LABOR STANDARDS INTERVIEW

FORM APPROVED
OMB NO. 0704-0158

CONTRACT NUMBER	EMPLOYEE'S NAME *(Last, First, M.I.)*
NAME OF PRIME CONTRACTOR	EMPLOYEE'S ADDRESS *(Street, City, State, ZIP Code)*
NAME OF EMPLOYER	WORK CLASSIFICATION / WAGE RATE
	SUPERVISOR'S NAME *(Last, First, M.I.)*

	(Check Below) YES	NO
DO YOU WORK OVER 8 HOURS PER DAY?		
DO YOU WORK OVER 40 HOURS PER WEEK?		
ARE YOU PAID AT LEAST TIME AND A HALF FOR OVERTIME HOURS?		
ARE YOU RECEIVING ANY CASH PAYMENTS FOR FRINGE BENEFITS REQUIRED BY THE POSTED WAGE DETERMINATION DECISION?		

WHAT DEDUCTIONS OTHER THAN TAXES AND SOCIAL SECURITY ARE MADE FROM YOUR PAY?

HOW MANY HOURS DID YOU WORK ON YOUR LAST WORK DAY BEFORE THIS INTERVIEW?

HOURS	WHAT DATE *(YYMMDD)* WAS THAT?

WHAT TOOLS DO YOU USE?

WHEN DID YOU BEGIN WORK ON THIS PROJECT *(YYMMDD)*?

I HAVE READ THE ABOVE AND CERTIFY IT TO BE CORRECT TO THE BEST OF MY KNOWLEDGE.

EMPLOYEE'S SIGNATURE	DATE *(YYMMDD)*
INTERVIEWER'S SIGNATURE	DATE *(YYMMDD)*

INTERVIEWER'S COMMENTS

WORK EMPLOYEE WAS DOING WHEN INTERVIEWED

IS EMPLOYEE PROPERLY CLASSIFIED AND PAID? *(If additional space is needed, use comments section)*

☐ YES ☐ NO

ARE WAGE RATES AND POSTERS DISPLAYED?

☐ YES ☐ NO

FOR USE BY PAYROLL CHECKER

IS ABOVE INFORMATION IN AGREEMENT WITH PAYROLL DATA?

☐ YES ☐ NO

COMMENTS

DATE OF CHECK *(YYMMDD)*	NAME OF CHECKER *(Last, First, M.I.)*	JOB TITLE	SIGNATURE

DD FORM 1567 89 JUN

EDITION OF OCT 72 IS OBSOLETE.

NAVFAC 4330/47 (9-89)

CUSTOMER COMPLAINT RECORD

1. CONTRACT NUMBER

2. FIRST INFORMED OF COMPLAINT

DATE TIME RECEIVED BY

3. SOURCE OF COMPLAINT

ORGANIZATION:

INDIVIDUAL: PHONE:

4. DETAILS OF COMPLAINT *(Attach continuation sheet if necessary)*

5. CONTRACT REFERENCE

6. COMPLAINT VALIDATED

DATE: TIME: BY:

7. CONTRACTOR INFORMED OF COMPLAINT

DATE: TIME: BY:

8. ACTION PLANNED/TAKEN BY CONTRACTOR

9. WORK INSPECTED/REINSPECTED

DATE: TIME: BY:

10. RESULTS OF INSPECTION *(satisfactory, unsatisfactory, actions)*

11. SIGNATURE OF AUTHORIZED INDIVIDUAL

12. DATE

13. SIGNATURE OF REVIEWING OFFICIAL *(As Applicable)*

14. DATE

FOR OFFICIAL USE ONLY
(WHEN COMPLETED)

PERFORMANCE EVALUATION FACILITY SUPPORT CONTRACTS	1. Contract Number

IMPORTANT: Be sure to complete Performance section on reverse. If additional space is necessary for any item, use Remarks section on reverse.

PART 1-GENERAL CONTRACT DATA

2. DATE OF INITIAL AWARD

3. DATE OF EVALUATION

4. A. ☐ INITIAL CONTRACT ☐ 1st OPTION ☐ 2nd OPTION ☐ 3rd OPTION ☐ 4th OPTION

4 B TERMINATION: ☐ DEFAULT ☐ CONVENIENCE ☐ N/A

5. CONTRACTOR *(Name, address, and ZIP code)*	6. TYPE OF CONTRACT	
	7. A. AMOUNT OF INITIAL AWARD $	7.B. AMOUNT PAID TO DATE $

8. DESCRIPTION AND LOCATION

PART II — PERFORMANCE EVALUATION OF CONTRACTOR *(Check appropriate box).*

9 PERFORMANCE ELEMENTS	OUTSTANDING	SATISFACTORY	UNSATISFACTORY
A. QUALITY OF WORK			
B. QUALITY CONTROL PROGRAM			
C. PREPARATION OF SCHEDULES			
D TIMELY PERFORMANCE			
E EFFECTIVENESS OF MANAGEMENT			
F RESPONSE TO REQUESTS			
G. REPORTS REQUIRED BY CONTRACT			
H. COMPLIANCE WITH SAFETY STANDARDS			
I COMPLIANCE WITH LABOR STANDARDS			

10. **OVERALL EVALUATION**

☐ OUTSTANDING *(Explain in Item 13, on reverse)* ☐ SATISFACTORY ☐ UNSATISFACTORY *(Explain in Item 14, on reverse)*

11 EVALUATED BY

A ORGANIZATION *(Type or print)*

B NAME AND TITLE *(Type or print)*	C SIGNATURE	D DATE

12. EVALUATION REVIEW BY

A ORGANIZATION *(Type or print)*

B NAME AND TITLE *(Type or print)*	C SIGNATURE	D DATE

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(WHEN COMPLETED)

FOR OFFICIAL USE ONLY
(WHEN COMPLETED)

13. REMARKS ON OUTSTANDING PERFORMANCE-AS INDICATED BY THE CONTRACTOR'S PERFORMANCE ON THIS CONTRACT. IF YOU CONSIDER THE CONTRACTOR TO BE OUTSTANDING, SET FORTH FACTUAL DATA SUPPORTING THIS OBSERVATION. THESE DATA MUST BE IN SUFFICIENT DETAIL TO ASSIST CONTRACTING OFFICERS IN SELECTING CONTRACTORS THAT HAVE DEMONSTRATED OUTSTANDING QUALITY OF WORK AND RELIABILITY *(Continue on separate sheet if needed.)*

14. EXPLANATION OF UNSATIFACTORY EVALUATION FOR EACH UNSATISFACTORY ELEMENT. PROVIDES FACTS CONCERNING SPECIFIC EVENTS OR ACTIONS TO JUSTIFY THE EVALUATION — THESE DATA MUST BE IN SUFFICIENT DETAIL TO ASSIST CONTRACTING OFFICERS IN DETERMINING THE CONTRACTOR'S RESPONSIBILITY. *(Continue on separate sheet, if needed.)*

FOR OFFICIAL USE ONLY
(WHEN COMPLETED)

NAVFAC11300/11 (1-87) BACK

NAVFAC 4330/48 (9-89)

CONTRACT DISCREPANCY REPORT

1. CONTRACT NUMBER

GOVERNMENT ACTION

2. TO: *(Contractor and Manager Name)*

3. FROM: *(Name of Government Representative)*

4. DISCREPANCY OR PROBLEM *(Describe in Detail. Include reference in specification. Attach continuation sheet if necessary.)*

5. CONTRACTOR NOTIFIED *(Date, Time, Contact point)*

6. SIGNATURE OF CONTRACTING OFFICER

7. DATE

CONTRACTING ACTION

8. TO: *(Contracting Officer)*

9. FROM: *(Contractor)*

10. Contractor response as to cause, corrective action and actions to prevent recurrence *(Attach continuation sheet if necessary.)*

11. SIGNATURE OF CONTRACTOR REPRESENTATIVE

12. DATE

GOVERNMENT CLOSE OUT

13. GOVERNMENT EVALUATION *(Acceptance, partial acceptance, rejection attach continuation sheet if necessary)*

14. GOVERNMENT ACTIONS *(Payment deduction, cure notice, show cause, other.)*

15. SIGNATURE OF CONTRACTING OFFICER

16. DATE

17. SIGNATURE OF REVIEWING OFFICIAL *(As Applicable)*

18. DATE