

terminate contracts. The term includes specifically authorized representatives of the CO acting within the limits of their authority as delegated by the CO.

**A-36 Contracting Officer Technical Representative** -- an authorized representative with technical understanding of the project and acting under the authority delegated by the CO.

**A-37 Contractor Safety and Health Plan** -- a comprehensive written document, specific to the scope of work, and applicable to all subcontractors, explaining how the construction contractor will affirmatively and proactively assess work for hazards; comply with applicable Federal, state and local and NASA health and safety requirements; and provides controls for the specific hazards identified.

**A-38 Current Cost Estimate** -- an estimate that is the latest and best professional cost estimate for a given project at any given time during planning, design, or construction. It is the estimated cost for labor, materials, and services to complete a planned facility project. It includes an estimate for land acquisition, site work, construction, and the purchase and installation of collateral equipment. It must include a reasonable estimate for contingencies. If a construction agent will manage the project for NASA, this estimate includes the agent's contract cost.

**A-39 Current Year** -- the present fiscal year (October 1 through September 30).

**A-40 Design** -- the process of developing, planning, and communicating project requirements into workable drawings and specifications to accomplish the project within the established scope and objectives. This encompasses both the preliminary design and final design for facility projects. It also includes providing cost estimates for the planned project at each design review stage.

**A-41 Design Review** -- a formal pause in the design contract where users and technical experts verify that the design adequately addresses the project scope, objectives, and technical requirements (typically at the 30-percent, 60-percent, and 90-percent design milestones).

**A-42 Discrete Facility Project** -- a CoF project with an estimated cost of \$5 million or more.

**A-43 Drawings** -- graphic representations on either electronic media or paper that convey the intent of the project requirements.

**A-44 Emergency Repair** -- restoration of an existing facility or component(s) after a major breakdown or accident, as authorized by the NASA Space Act of 1958, as amended. HQ FERPD defines "emergency" as so urgent that it cannot wait to go through the normal budget cycle or process. For all emergency repairs, the replacement of components or materials will be of the size or character currently required to meet demands or needs.

**A-45 Environmental Analysis** -- the process of making the initial evaluation of the

environmental considerations of a proposed action including alternative proposals.

**A-46 Environmental Assessment (EA)** --one of three possible documents required for compliance with the National Environmental Policy Act (NEPA) process. The three documents in order of increasing effort and cost are a Categorical Exclusion (CATEX), an EA, and an Environmental Impact Statement (EIS). The EA is the correct path when the environmental impact is low, but does not qualify as a CATEX. For details, contact the Center Environmental Management Office.

**A-47 Environmental Impact Statement (EIS)** -- a document developed through the NEPA process when the impact to the environment is significant (e.g., a change in mission to a Center or the Agency with significant environmental ramifications--air/water quality, noise, soil contamination, or an increased risk [perceived or real] to the public). For details, contact the Center Environmental Management Office.

**A-48 Equipment/Property** -- Equipment within NASA is classified as either "personal property (other terms: noncollateral or accountable)" or "real property installed equipment (collateral)." Personal property is equipment whose maintenance, repair, and replacement are the responsibility of the NASA program owning it. All personal property equipment has attached property tags in the form of NASA bar codes. Real property installed equipment is equipment that is capitalized on the Real Property Inventory by the Center Real Property Accountability Officer.

**A-49 Facilities Maintenance** -- the recurring day-to-day work required to preserve facilities (buildings, structures, grounds, utility systems, and collateral equipment) in such condition that they can be used for their designated purpose over an intended service life. It includes the cost of labor, materials, and parts.

**A-50 Facility** -- land, buildings, structures, and other real property improvements including utility systems and collateral equipment. The term does not include operating materials, supplies, special tooling, special test equipment, or noncapitalized equipment (see Financial Management Manual (<http://www.hq.nasa.gov/fmm/9200/9250.pdf>) for criteria for capitalized equipment).

**A-51 Facility Acquisitions** -- the acquisition of an interest in land, buildings, other structures and facilities, or leasehold improvements. The normal facility acquisition methods include purchase, transfer, lease, easement, use permit, and rights of way.

**A-52 Facility Activation** -- the process of preparing or outfitting a facility for use when a Construction of Facilities project is substantially complete. This includes, but is not limited to, such activities as installation of noncollateral equipment, connection of noncollateral equipment to its interfaces, checkout of systems, and validation activities in support of operational readiness testing.

**A-53 Facility Need Date** -- the date when a facility is required for a specific purpose, such as to receive program hardware for test and checkout. First operational use of the

facility completes this milestone.

**A-54 Facility Outfitting** -- see "Outfitting."

**A-55 Facility Project** -- the consolidation of facility work items, including related collateral equipment, required to provide a complete and usable facility.

**A-56 Facility Project-Brief Project Document (NASA Form 1509)** -- a multipurpose document that must be used for all facility projects estimated to cost \$100,000 or more, regardless of location or source of funding.

**A-57 Facility Project Cost Estimate (NASA Form 1510)** -- the form in which the approved facility project cost estimate (AFPCE) is further detailed beyond the summary in NASA Form 1509.

**A-58 Facility Project Manager** -- the individual responsible for organizing, managing, and directing the activities to accomplish facility work within schedule and cost. Different individuals may fill this role at different phases of a project.

**A-59 Failure Modes and Effects Analysis (FMEA)** -- a process used to determine which parts fail, why they usually fail, and what effect their failure has on the total system. This is an element within Reliability Centered Maintenance (RCM) (see Reliability Centered Maintenance Guide for Facilities and Collateral Equipment at [http://www.hq.nasa.gov/office/codej/codejx/Assets/Docs/RCMGuide\\_Mar2000.pdf](http://www.hq.nasa.gov/office/codej/codejx/Assets/Docs/RCMGuide_Mar2000.pdf)).

**A-60 Federal Agency** -- a specific organization that the executive, legislative, or judicial branches of the U.S. Government has established.

**A-61 Fiscal Year** -- the 12-month period from October 1 through September 30 as established each year by the U.S. Government.

**A-62 Five-Year Plan** -- a list of projects by fiscal year that meet functional requirements needed to achieve a Center's assigned mission.

**A-63 Flash Bid Report (NASA Form 1579)** -- a form summarizing the results of a project bidding process.

**A-64 Fragmentation** -- the planning, development, or execution of two or more interdependent projects to circumvent the appropriate budget approval process.

**A-65 Full Disclosure Concept** -- for all stages of planning, approval, and management of a facility project, the Full Disclosure Concept requires that project documentation outline all reasonably identifiable elements of cost necessary to achieve a fully operable facility. The estimated cost of the facility project must include every associated element of real property including collateral equipment. It must also identify all other equipment required to the extent practicable (see Appendix D, Facility and Other Related Costs, for a listing of items and types to include).

**A-66 Fund** -- a sum of money authorized by law and set aside for use for specified

purposes.

**A-67 Funding** -- the issuance of funds to incur commitments and obligations and make payments within appropriations made by Congress.

**A-68 Government-Furnished Property** -- property owned by the Government and provided to a contractor for use in performance of a contract.

**A-69 Ground Support Equipment** -- nonflight equipment, implements, and devices required for handling, servicing, inspecting, testing, maintaining, aligning, adjusting, checking, repairing, and overhauling an operational end item or a subsystem or component thereof. This may include equipment required to support another item of ground support equipment as defined herein.

**A-70 Improvements** -- an addition to land, buildings, other structures, and attachments or annexations to land that is intended to remain so attached or annexed, such as sidewalks, drives, tunnels, utilities, and installed collateral equipment.

**A-71 Indirect Cost** -- a cost of labor and material not related to specific research and development projects.

**A-72 Invitation for Bids** -- the solicitation documents used to acquire a project requirement under sealed bidding rules in the FAR and NASA FAR Supplement.

**A-73 Land Acquisition** -- an acquisition of title to land including any interest therein, such as mineral and water rights, easements, rights of way, or interagency permits whether obtained by purchase or other means.

**A-74 Lease** -- an instrument conveying an interest in land, buildings, or other structures and facilities for a specified term and revocable as specified by the terms of the instrument, in consideration of payment of a rental fee.

**A-75 Life-Cycle Cost** -- an estimate of the economic impact over a selected design life of a project or project alternative. This estimate includes first cost, energy consumption, periodic replacement of equipment or materials, operations, and maintenance.

**A-76 Limitation** -- a statutory or administratively imposed restriction within an appropriation or other authorization act that establishes the maximum threshold for a specific purpose.

**A-77 Long-Lead Items** -- items that, because of their complexity of design, complicated manufacturing processes, or limited production, require an extraordinary length of time for delivery.

**A-78 Maintainability** -- the design, installation, and operational characteristics of an item used for ease of keeping it operational, e.g., designed access to a chiller's coils for easy cleaning.

- A-79 Maintenance** -- see "Facilities Maintenance."
- A-80 Major Facility Work** -- see "Discrete Facility Project."
- A-81 Major Renovation** -- a repair project on an existing facility that exceeds 50 percent of the replacement value for the space in question.
- A-82 Modification** -- a project that was not originally budgeted for a specific fiscal year.
- A-83 Negotiation** -- the method of making purchases and contracts without using sealed bidding procedures.
- A-84 New Capability** -- a facility project that is needed to support new programmatic or institutional requirements. This includes projects for the rehabilitation/modernization and repair of existing facilities when the facility supports new programmatic or institutional requirements.
- A-85 Nonappropriated Funds** -- funds not associated with an appropriation, such as funds received through international cooperation, gifts, donations, and NASA exchanges.
- A-86 Noncollateral Equipment** -- equipment other than collateral equipment that, when acquired and used in a facility or a test apparatus, can be severed and removed after erection or installation without substantial loss of value or damage to the premises where installed.
- A-87 Notice to Proceed** -- the date of direction from the CO to a contractor authorizing commencement of work.
- A-88 Obligation** -- the award of a contract or purchase order by a CO to satisfy a contractual agreement.
- A-89 Operational Readiness Review** -- the final NASA review of a facility immediately prior to placement into its intended operation.
- A-90 Operations and Maintenance Manuals** -- organized procedural information specifying methods of operating and maintaining building systems, collateral equipment, and support equipment. O&M personnel use the manuals in the performance of day to day tasks. Preferably, the manuals are in an electronic format.
- A-91 Outfitting** -- the process of equipping a facility for its intended purpose during activation.
- A-92 Option** -- a unilateral right in a contract by which, for a specified time, the Government may elect to purchase additional supplies or services called for by the contract or may elect to extend the term of the contract.
- A-93 Partnering** -- a Government contractor relationship to foster the achievement of

mutually beneficial goals (see NFS, 48 CFR, Chapter 18, Part 1836 Subpart 1836.70 (<http://www.hq.nasa.gov/office/procurement/regs/1836.doc>)).

**A-94 Past-Year** -- the fiscal year immediately prior to the current fiscal year.

**A-95 Payback** -- the amortization period defined in years calculated by dividing the total budget estimate by the total expected discounted annual savings.

**A-96 Predictive Testing & Inspection (PT&I)** -- the use of advanced technology to assess condition of equipment, utilities, and systems. When using RCM, the PT&I data obtained allows for planning and scheduling preventive maintenance or repairs prior to failure.

**A-97 Procurement** -- the purchase, rent, lease, or other acquisition of supplies, services, or facilities. It includes all functions that pertain to the acquisition of supplies and services including description, but not determination of requirements, selection, and solicitation of sources; preparation and award of contract; and all phases of contract administration.

**A-98 Program Offices** -- Headquarters organizational elements, such as the following:

- a. Space Operations Mission Directorate (<http://www.hq.nasa.gov/osf/>).
- b. Aeronautics Research Mission Directorate (<http://www.aerospace.nasa.gov/>).
- c. Exploration Systems Mission Directorate (<http://exploration.nasa.gov/>).
- d. Science Mission Directorate (<http://science.hq.nasa.gov/>).

**A-99 Progress Payment** -- a partial expenditure of funds made to a contractor as work progresses.

**A-100 Project** -- a specific investment having defined goals, objectives, requirements, life-cycle costs, a beginning, and an end. A project yields new or revised products or services that directly address NASA's strategic needs.

**A-101 Project Definition Rating Index (PDRI)** -- a Construction Industry Institute best practice tool used in front-end planning to determine how well a project is defined. This tool is used throughout project development, but is scored at the 30% design stage. The scoring system is based upon a 1000-point scale, and a low score (i.e. 200 or less) reflects a well-defined project.

**A-102 Project Scope** -- the description of a facility project limits, objectives, and planned result. The scope of a facility project typically includes a description of its location, purpose, capabilities, capacity, physical dimensions, configuration, and utilities affected.

**A-103 Project Team** -- the team responsible for organizing, managing, and directing

facility project work. It includes all project stakeholders, such as representatives from the using organization, safety, engineering, fire protection, security, environmental, acquisition, operations and maintenance, and technicians.

**A-104 Purchase Request/Purchase Order** -- a document or electronic file used to convey funds to the CO. It also describes the supplies or services required and a Government cost estimate for those supplies or services.

**A-105 Real Property** -- land, buildings, structures, utility systems, improvements, and appurtenances permanently annexed to land. The term real property also includes installed collateral equipment.

**A-106 Related Costs** -- estimated cost elements of project work that are not included in the facility project cost estimate (see Appendix D for more detailed information)

**A-107 Reliability Centered Building and Equipment Acceptance Guide** -- a technical reference

(<http://www.hq.nasa.gov/office/codej/codejx/Assets/Docs/RCB&EGuideJUL04.pdf>) for design engineers, project and program managers, construction managers and inspectors, quality control personnel, and NASA quality assurance staff to use prior to and during the equipment startup/checkout phase of new construction, repair, or rehabilitation projects. It focuses on the use of Predictive Testing and Inspection (PT&I) technologies by the contractor to detect latent manufacturing and installation defects as a normal part of the contractor's quality control program.

**A-108 Reliability Centered Maintenance (RCM)** -- a process used to determine the most effective approach to maintenance. It involves identifying actions that, when taken, will reduce the probability of failure and are the most cost effective. It seeks the optimal mix of Condition-Based Actions, other Time- or Cycle-Based actions, and a Run-to-Failure approach (see Reliability Centered Maintenance Guide for Facilities and Collateral Equipment at <http://www.hq.nasa.gov/office/codej/codejx/Assets/Docs/RCMGuideMar2000.pdf> and "Predictive Testing & Inspection").

**A-109 Renewal Rate (Yearly)** -- the Current Replacement Value (CRV) in dollars divided by the revitalization investment expressed in dollars per year.

**A-110 Renovate** -- see "Repair."

**A-111 Repair** --work required to restore a facility or component to its originally intended condition, capacity, efficiency, or capability.

**A-112 Replace** -- see "Repair."

**A-113 Resources** -- actual assets of a governmental unit, such as funds, human resources, and materials.

**A-114 Resources Authority Warrant** -- a document granting authority to initiate,

commit, obligate, and outlay funds for approved projects and activities.

**A-115 Revitalization** -- substantial renewal and upgrade work on the physical plant to meet current and future needs, thereby extending its useful life; e.g., a facility project that extends the useful service life beyond the original design life.

**A-116 Salvage** -- property that has some value in excess of its basic material content, but is in such condition that it has no reasonable prospect of use for any purpose as a unit, and its repair or rehabilitation for use as a unit is clearly impracticable.

**A-117 Site Activation Need Date** -- the date equipment/Ground Support Equipment is required to support installation and validation. Uncrating, inspecting, and handling time must be allowed for in establishing this date.

**A-118 Spare** -- an item peculiar to a system or end item held in reserve or backup.

**A-119 Specifications Kept Intact** -- the NASA standard construction specification system.

**A-120 Statutory Limitation** -- see "Limitation."

**A-121 Supervision, Inspection, and Engineering Services (SIES)** -- funding allowance used to provide the necessary controls and management during construction, and such deliverables as as built drawings and O&M manuals.

**A-122 Sustainability** -- An overarching concept incorporating appropriate sustainable design practices, maintainable design elements, building commissioning processes, safety, health and security features into facility planning, design, construction, activation, operation and maintenance, and decommissioning to enhance and balance facility life-cycle cost, environmental impact, and occupant health, safety, security, and productivity. Done properly, sustainability will optimize the facility acquisition process to ensure the "best fit" of the built environment to the natural environment. It requires a practical and balanced approach to responsible stewardship of natural, human, and financial resources.

**A-123 Sustainment** -- a parametric estimated cost to keep facilities in an acceptable condition. This is the lowest recommended funding level for facility maintenance.

**A-124 Validation** -- verification that the equipment/system meets the operational needs of the O&M user. It is part of the turnover process from the design agency to the O&M agency.

**A-125 Value Engineering** -- the systematic application of recognized techniques to determine the lowest practical overall cost of a facility consistent with the requirements of performance, reliability, and maintainability.



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## Appendix B. Abbreviations and Acronyms

ADA	Americans with Disabilities Act
A-E	Architect-Engineer
AFPCE	Approved Facility Project Cost Estimate
ARC	Ames Research Center
ASHRAE	American Society of Heating, Refrigeration, and Air-Conditioning Engineers
ASTM	American Society for Testing Materials
BCA	Building Commissioning Association
BIPV	Building-Integrated Photovoltaics
BMP	Best Management Practices
BTU	British Thermal Units
BY	Budget Year
CA	Commissioning Authority
CCB	Change Control Board
CCE	Current Cost Estimate
CFO	Chief Financial Officer
CFR	Code of Federal Regulations
CII	Construction Industry Institute
CMMS	Computerized Maintenance Management System

CO	Change Order or Contract Officer
CoF	Construction of Facilities
COSS	Center Operations Support Services
COTR	Contracting Officer's Technical Representative
CPG	Comprehensive Procurement Guidelines
CPM	Critical Path Method
CSI	Construction Specification Institute
DFRC	Dryden Flight Research Center
DoD	Department of Defense
DOE	Department of Energy
DSN	Deep Space Network
EA	Environmental Assessment
EE	Engineering Estimate
EEO	Equal Employment Opportunity
EIS	Environmental Impact Statement
EMCS	Energy Management Control Systems
EO	Executive Order
EPA	Environmental Protection Agency
FAR	Federal Acquisition Regulation
FEMP	Federal Energy Management Program
FERPD	Facilities Engineering and Real Property Division
FMEA	Failure Modes and Effects Analysis
FMM	Financial Management Manual
FMP	Facilities Master Plan
FMS	Facilities Management System
FONSI	Finding of No Significant Impact

FP&D	Facility Planning and Design
FPM	Facility Project Manager
FPN	Facility Project Number
FPT	Functional Performance Tests
FRB	Facilities Review Board
FSC	Federal Supply Catalog
FY	Fiscal Year
GBA	Green Building Advisor
GFP	Government-Furnished Property
GPE	Governmentwide Point of Entry
GRC	Glenn Research Center
GSA	General Services Administration
GSE	Ground Support Equipment
GSFC	Goddard Space Flight Center
HSF	Human Space Flight
HVAC	Heating, Ventilation, and Air-Conditioning
IAQ	Indoor Air Quality
IEQ	Indoor Environmental Quality
IESNA	Illuminating Engineering Society of North America
IFB	Invitation for Bid
IPO	Institutional Program Offices
ISC	Interagency Security Committee
IST	Integrated Systems Test
JPL	Jet Propulsion Laboratory
JSC	Johnson Space Center
KSC	Kennedy Space Center

LaRC	Langley Research Center
LEED	Leadership in Energy and Environmental Design
LLIS	Lessons Learned Information System
LS	Lump Sum
MAF	Michoud Assembly Facility
MS	Mission Support
MSFC	Marshall Space Flight Center
N/A	Not Applicable
NASA	National Aeronautics and Space Administration
NEHRP	National Earthquake Hazard Reduction Program
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Association
NFS	NASA Far Supplement
NIBS	National Institute of Building Services
NIST	National Institute of Standards and Technology
NODIS	NASA Online Directives Information System
NPD	NASA Policy Directive
NPG	NASA Procedures and Guidelines
NRC	National Research Council
NSBF	National Scientific Balloon Facility
NSPE	National Society of Professional Engineers
NSS	NASA Safety Standard
NTP	Notice to Proceed
O&M	Operations and Maintenance
OMB	Office of Management and Budget
OPR	Owner's Project Requirements

OSHA	Occupational Safety and Health Administration
PBS	Plum Brook Station
PCSD	President's Council on Sustainable Development
PD	Program Direct
PDRI	Project Definition Rating Index
PER	Preliminary Engineering Report
PES	Preliminary Environmental Survey
PR	Procurement Request
PT&I	Predictive Testing & Inspection
QA	Quality Assurance
R&D	Research and Development
RCBEA	Reliability Centered Building and Equipment Acceptance
RCM	Reliability Centered Maintenance
RCRA	Resource Conservation and Recovery Act
REV	Review
RFP	Request for Proposal
RFQ	Request for Quote
ROD	Record of Decision
SBIC	Sustainable Buildings Industry Council
SF	Standard Form or Subcontractor-Furnished
SIES	Supervision, Inspection, and Engineering Services
SOW	Statement of Work
SPECSINTACT	Specifications-Kept-Intact
SPOC	Single Point-of-Contact
SS	Special Studies
SSA	Source Selection Authority

SSC	Stennis Space Center
SUB	Subcontractor
TAB	Testing, Adjusting, and Balance
TM	Technical Manual
UCS	Utilities Control System
UPN	Unique Project Number
USGBC	U.S. Green Building Council
VE	Value Engineering
WBDG	Whole Building Design Guide
WFF	Wallops Flight Facility
WSTF	White Sands Test Facility
YR	Year

# Appendix C. Forms and Instructions

Reference	Title	Form Number/Name
C.1	Facility Project--Brief Project Document	<u>NASA Form 1509</u>
C.2	Facility Project Cost Estimate	<u>NASA Form 1510</u>
C.3	Flash Bid Report	<u>NASA Form 1579</u>
C.4	Long Form Writeup	Long Form Writeup
C.5	CoF Routine Transaction Form	CoF Routine Transaction
C.6	CoF Self Assessment Metrics	CoF Self Assessment Metrics

## C.1 NASA Form 1509, Facility Project--Brief Project Document

National Aeronautics and Space Administration				Facility Project-Brief Project Document				PROJECT ID	PROJECT CODE
PROJECT TITLE				NATIONAL AERONAUTICS PROGRAM OFFICE				DATE	SUB-REV NUMBER
APPROVED FACILITY PROJECT COST ESTIMATE	ITEMS (LIST)		AMOUNT	RELATED COST DATA <small>Not Related to the Approved Facility Project Cost Estimate (not required to make the facility inquiry complete)</small>					
				RELATED COSTS: NONE, COST, USE (Amount)	FOR (Amount)	DESIGN (Amount)			
				ITEM	AMOUNT	ITEM	AMOUNT		
	TOTAL			TO BE PURCHASED		FUTURE FUNDING ACTIVATION			
CATEGORY	JUSTIFICATION	WORK		OTHER REAL ESTATE	TRANSFER OF INTEREST	OTHER REAL ESTATE			
FUND SOURCE	TYPE	IDENTIFICATION		EXISTING	OTHER (check)				
SCOPE DESCRIPTION									
BASIC NEED									
SCHEDULE DATES (YR)	IF POSSIBLE	SI	% DESIGN	SUBMITTED BY		SIGNATURE AND TITLE		DATE	
		START	COMPL.	CONCURRENCE BY		SIGNATURE AND TITLE		DATE	
	FEA			OR CONCURRENCE		SIGNATURE AND TITLE		DATE	
	DESIGN			APPROVED BY		SIGNATURE AND TITLE		DATE	
	CONSTRUCTION								
ACTIVATION									
OPERATIONAL									

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**Figure C-1a NASA Form 1509, Facility Project--Brief Project Document**

National Aeronautics and Space Administration		<b>Facility Project-Brief Project Document</b>				PROJECT ID	PROJECT CODE
PROJECT TITLE		INSTALLATION/PROGRAM OFFICE		DATE	SUB REV NUMBER		
APPROVED FACILITY PROJECT COST ESTIMATE	ITEMS (LIST)		AMOUNT	RELATED COST DATA <small>Not included in the Approved Facility Project Cost Estimate. Sub required to make the facility totally usable</small>			
				<input type="checkbox"/> NO. AMOUNT	NO. AMOUNT	NO. AMOUNT	NO. AMOUNT
				ITEM	AMOUNT	ITEM	AMOUNT
	TOTAL			TO BE PURCHASED		FUTURE FUNDING	
CATEGORY	JUSTIFICATION	TYPE		TRANSFER OF EXCESS	ACTIVATION		OTHER REAL ESTATE
FUND SOURCE	TYPE	CERTIFICATION		EXISTING			OTHER (CHECK)
COMPLETE DESCRIPTION							
BASIS OF NEED							
REVISION DATA	IF POSSIBLE	II	% Design	SUBMITTED BY	SIGNATURE AND TITLE		DATE
	REV	START	COMPL	CONCURRENCE BY	SIGNATURE AND TITLE		DATE
	DESIGN			JX CONCURRENCE	SIGNATURE AND TITLE		DATE
	CONSTRUCTION			APPROVED BY	SIGNATURE AND TITLE		DATE
	ACTIVATION						
	OPERATIONAL						

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**C.1 NASA Form 1509 (Continuation), Facility Project-Brief Project Document**

**Figure C-1b NASA Form 1509, Facility Project--Brief Project Document (Continuation)**

**C.1 Instructions for NASA Form 1509, Facility Project -- Brief Project Document** The bolded titles in the following paragraphs provide the cross references to the NASA Form 1509 shown in Figures C-1a and C-1b.

**C.1.1 Project ID** -- an identification number assigned by the submitting organization.

**C.1.2 Project Code** -- a Center-designated project number. Center CoF Managers determine the naming convention.

**C.1.3 Project Title** -- a short representative statement of the project that must include the type of work (e.g., repair) and the function of the proposed facility. The title should include the facility name(s) as used in approved master plans and assigned facility number(s); e.g., Construction of Solar Simulator Facility (110) and Rehabilitation of Lunar Simulator Facility (130). Discrete project titles must include the type of facility work and describe the primary objective of the project. Include the function(s) of the resultant facility in the title (e.g., Administration, Laboratory, Warehouse, Aircraft Hangar, or Test Cell).

**C.1.4 Installation/Program Office** -- indicate the appropriate field installation (i.e., Center or Component) and the Headquarters organization advocating the project (e.g., GRC/ARMD or MSFC/SOMD). If the project location is different from the appropriate field installation, the installation would be indicated as shown in the following examples:



- a. "GRC/PB" for Plum Brook Station.
- b. "MSFC/MAF" for Michoud Assembly Facility.

The Headquarters Office advocates include:

- a. Aeronautics Research Mission Directorate (ARMD).
- b. Exploration Systems Mission Directorate (ESMD).
- c. Science Mission Directorate (SMD).
- d. Space Operations Mission Directorate (SOMD).

C.1.5 **Date** -- indicate the date of preparation of the form.

C.1.6 **Sub/Rev Number** -- a submission/revision number that provides a record of the submissions of the Field Installations and approvals of Headquarters.

a. **Centers** -- indicate consecutively with capital letters. The initial submission is A. Subsequent revisions are B, C, and D.

b. **Headquarters** -- indicate consecutively with numbers. First approval is 0. Subsequent approvals are 1, 2, 3... For example, the submission/revision number will be B/1 after the second submission of the project by the Field Installation and the second approval of the project by Headquarters.

C.1.7 **Approved Facility Project Cost Estimate** -- the cost estimate must fully disclose the cost of construction, including contractor services to execute the planned facility project and make it operational (excluding Related Cost Data described in C.1.12). The anticipated amounts for labor, materials, supplies, collateral equipment, land acquisition, and site development for planned work are included in the estimate. In certain instances, the planning for the execution of the facility project will include the use of engineering and construction management services provided by the contract. When applicable, the cost estimate will identify the cost for these contractual services as follows:

- a. Engineering services for review and analysis of shop drawings.
- b. Construction management services, including evaluation of work progress, preparation and maintenance of critical path method (CPM) network diagrams, resolution of problems due to unanticipated changes in scheduled work, and other similar services.
- c. The cost for the accomplishment of specialized craftwork. When it is planned that NASA civil service employees will accomplish the work, identify and show as a separate element in the estimate.

The cost estimate may be a total for the entire project or broken down into specific segments or work packages.

The cost estimate also must provide a reasonable amount for contingencies, usually 10 percent. When establishing the amount for contingencies, consideration should be given to such factors as the nature and scope of work, material availability, interfaces or dependencies with other planned work or other items that could impact the work, and schedule. A modest contingency amount should suffice when the work is to construct a standard structure. An increased contingency amount should be considered when there is the potential for encountering significant unanticipated problems, such as modifying an existing space launch complex.

If a construction agent will manage the project, the estimated cost also must include the cost of that agent. The FPM must adjust the estimated cost of each project for the geographical area involved and for known or anticipated future cost conditions. The FPM must not include related costs within the AFPCE, but on the NASA Form 1509 under related costs (paragraph (9)).

Collateral Equipment encompasses building-type equipment, built-in equipment, and large, substantially

affixed equipment/property normally acquired and installed as part of a facility project. (See Appendix A, "Collateral Equipment").

The FPM will consider a unit of equipment substantially affixed if work described under either of the following items is required and the work estimate is \$300,000 or more:

- a. Providing any special foundations, utility services, or other facilities support for a unit of equipment and to actually install the unit.
- b. Demounting the unit of equipment and performing any facility restoration work that might be involved in its removal from the NASA Form 1509, Facility Project--Brief Project Document, related building or structure.

When in doubt, the CoF Manager will request a determination on questionable (i.e., collateral or noncollateral) equipment from the Design and Construction Team of the Facilities Engineering and Real Property Division.

### C.1.8 Category

C.1.8.1 **Justification** -- the categories for justification include the following:

- a. **Cost Effective** -- work that is not program critical or institutional critical, but that, if accomplished, would result in demonstrable cost savings or other benefits over the expected life of the project (see Life-Cycle Cost Analysis as discussed in paragraph 2.2.4.12, Budget and Approval Documents).
- b. **Emergency Repair** -- work that qualifies for funding from the CoF account under the provisions of Section 310 (b), National Aeronautics and Space Act of 1958, as amended.
- c. **Energy Conservation** -- Direct Energy Projects that are principally justified to reduce energy consumption and costs, or Related Energy Projects that are justified for other purposes but do contribute to the reduction of energy consumption.
- d. **Environmental** -- work required to correct an existing condition that might pollute the environment. It includes the correction of conditions to meet current environmental regulations. All environmental projects will indicate Environmental on this line item, as the projects are dictated by environmental regulatory requirements.
- e. **Institutional Critical** -- work urgently required to correct an existing condition involving institutional facilities, such as accelerating deterioration, that requires prompt correction. It includes the improvement of utility systems that support major areas of the installation. The emphasis is on priority work that is not program related.
- f. **Institutional Routine** -- work that is clearly necessary in the future but could be deferred to a subsequent budget year if necessitated by budget constraints.
- g. **Life Critical** -- work required to correct conditions that are dangerous to the life and health of personnel, with the potential of fatal injuries if they are not corrected.
- h. **Occupational Safety and Health** -- work required to meet current standards of the Occupational Safety and Health Act of 1970. Such work is necessary to improve the working environment for employees. This category is intended to accomplish work that is clearly needed for full compliance with the law and Executive Order (EO) 12196, Occupational Safety and Health Programs for Federal Employees, as amended.
- i. **Program Critical** -- work that is urgently needed to support a specific R&D program or mission and has to be completed by a stated date for successful accomplishment of that program or mission.
- j. **Program Support** -- work required to correct deficiencies in facilities that support R&D programs or missions. It includes deterioration that limits support of tests or operations and must be corrected in the current budget year. It also includes direct program projects that do not qualify as program critical projects.

k. **Safety** -- work required to correct a safety hazard or to provide adequate fire protection for personnel, high value equipment, materials, or records that are difficult or impossible to replace and that are needed in the performance of mission or other essential tasks.

l. **Security** -- work that is required to mitigate a security risk to the Center (personnel or property) identified through NPR 1620.2, Physical Security Vulnerability Risk Assessments.

m. **Health** -- work that is required to correct a health hazard or to provide adequate protection of personnel.

**C.1.8.2 Work** -- Categories for work reflect the type of work included in the project. The predominant type must be the first word in the block ("predominant" based upon associated cost). The following terms are acceptable work categories: repair, modification, construction, and land acquisition.

For minor facility projects, when more than one category of work is involved, the project is classified in accordance with the predominant work. If a project is 51 percent repair and 49 percent construction, it is a repair project.

### C.1.9 Fund Source

**C.1.9.1 Type** -- the type of funds to be used for the facility project are indicated as Program Direct (PD) or CoF. The type of funds varies with the change in fiscal year according to the annual appropriations act approved by Congress and signed by the President. Contact the resources office for the correct input to this block for the fiscal year.

**C.1.9.2 Identification** -- the identification of funds varies with the change in fiscal year according to the annual appropriations act approved by Congress and signed by the President. Contact the resources office for the correct input to this block for the fiscal year.

**C.1.10 Related Cost Data** -- under the concept of full disclosure, all costs associated with a project execution must be shown. Since these costs are appropriated separately, they are not included in the approved facility project cost estimate (see Appendix D, Facility and Other Related Costs, paragraph D.2, Related Costs.).

**C.1.10.1 Related Costs Involved** -- check appropriate box. If "Yes," complete the following entries:

a. **Special Studies (SS) (Amount)** -- the cost to prepare special studies. Enter N/A if not required or not accomplished or "in house" if done by in house personnel.

b. **PER (Amount)** -- the cost to prepare a PER including reports, site surveys, and soil investigations. Enter N/A if not required or not accomplished or "in house" if done by in house personnel.

c. **Design (Amount)** -- the cost for the final design of the project. Enter N/A if not required or not accomplished or "in house" if done by in house personnel.

**C.1.10.2 Other Related Equipment** -- if equipment (other than collateral equipment--collateral equipment costs are included in the AFPCE), including office furniture, is required to make the facility initially operable, the following information is required:

a. **To Be Purchased** -- the total estimated cost for procurement, transportation, and installation of noncollateral equipment to be purchased under program appropriations.

b. **Transfer of Excess** -- the total book value of the excess equipment (collateral and noncollateral) to be transferred from another NASA Field Installation or Government agency. Estimated costs for transportation and installation of noncollateral equipment are included. For collateral equipment to be obtained by transfer of excess, however, the estimated out of pocket transportation, installation, and rehabilitation costs must be included in the approved facility project cost estimate.

c. **Existing** -- the estimated total value of equipment and real property improvements on hand at the Field Installation that can be utilized for the project.

- d. **Future Funding** -- show the planned future funding for any subsequent related requirement.
- e. **Activation** -- indicate the estimated costs associated with the installation of noncollateral (ground support) equipment, checkout, and initial operation of the facility that are funded as part of the operational costs (e.g., the installation of ground support equipment, the integration and checkout of combined facility and equipment systems, and the demonstration and acceptance of an operable facility). Enter "in house" if to be accomplished by in house personnel.
- f. **Other Real Estate** -- indicate the estimated rental costs if applicable. The purchase of land, easements, and rights of way must be part of the facility project and is not included in this entry.
- g. **Other (Specify)** -- other related costs not included above.

C.1.11. **Scope/Description** -- Describe the project's physical size, capacities, and characteristics. Quantify the extent of the project to the maximum extent possible (e.g., gross area, net usable area, capacity, health, fire and safety features, and special features). Attach a sketch, drawing, or site plan if it helps to describe the project. Provide a statement indicating completion of the environmental review process and the type of documentation prepared (i.e., Categorical Exclusion, Environmental Assessment, or an Environmental Impact Statement). Attach an explanation if the environmental process is not complete or normal documentation has not been prepared.

C.1.12 **Basis of Need** -- State the justification for the project and include the impact if the project is not accomplished. State the missions supported by this project and any known program schedule requirement that the project must meet. Identify any supporting engineering studies, economic evaluations, trade studies, or other considerations outlining the need for the project. For projects justified by Federal, State, or local regulations, cite the regulation.

The justification should be concise, complete, and factual. Whenever possible, it should specifically refer to related mission or program requirements and to the role of the proposed facility in the mission or program. Attach any known program milestones, schedules, flight schedules, or any other type of data that supports the justification. For projects replacing an existing capability, state the existing conditions and why they are unacceptable.

Support facilities, such as libraries, auditoriums, and cafeterias, must be justified separately and specifically. State any known specific project benefits. State known natural hazards, such as floods or earthquakes, that are unacceptable risks to mission. Briefly explain the unacceptable risks or cite the study that led to identification of the need for the requirement(s).

C.1.13. **PDRI** -- enter the projects' PDRI score, total possible score, and the percentage of design completion when the scoring occurred.



C.1.14. **Schedule Dates** -- indicate the schedule dates for PER, design, construction (execution), activation start, and the date the facility must be operational, if appropriate.

C.1.15. **Submitted** -- the signature and title of the Field Installation Director of the originating installation or designee is required on the project submitted to Headquarters for approval.

C.1.16. **Concurrence and Approval** -- to be completed at the Headquarters level for projects submitted for approval. These blocks also are available for locally approved projects.

C.1.17. **1509 Continuation Sheet** -- use for any additional supporting data required for the project beyond what is listed in Form 1509 (see Figure C.1-b).

## C.2 NASA Form 1510, Facility Project Cost Estimate

 National Aeronautics and Space Administration		<h2>Facility Project Cost Estimate</h2>			
INSTALLATION PROGRAM OFFICE		DATE			
PROJECT TITLE		SUBMISSION REVISION			
		PROJECT CODE			
BASIS OF COST ESTIMATE		PROJECT ID			
I. SUMMARY OF COST ESTIMATE					
DESCRIPTION		AMOUNT	PERCENT		
1. ENGINEERING ESTIMATE					
2. COST ADJUSTMENT (Enter percentage of item 1a to right in col. 2b):					
3. SUBTOTAL (1+2)					
4. CONTINGENCIES (Enter percentage of item 3 to right in col. 4b):					
5. SUPERVISORY, INSPECTION AND ENGINEERING SERVICES (Enter percentage of items 3a and 4a to right in col. 5b):					
6. OTHER BURDEN COSTS					
7. TOTAL BUDGET ESTIMATE (1+4+5+6)					
8. IDENTIFICATION OF COST ADJUSTMENT (Item 2. Above), AND OTHER BURDEN COSTS (Item 6. Above)					
II. PLANNING AND DESIGN					
DESCRIPTION	STATUS				COST
	NEEDED	IN WORK	COMPLETE	IN-HOUSE AS	
1. PRELIMINARY ENGINEERING REPORT					
2. SPECIAL STUDIES (Specify)					
3. FINAL DESIGN					
4. SUPERVISION AND ADMINISTRATION OF DESIGN SERVICES					
5. TOTAL PLANNING AND DESIGN COST 					
III. RELATED COST DATA (Not included in this Approved Facility Cost Estimate, but required to make the facility ready operable.)					
1. RELATED COSTS INVOLVED		2. PER. AMOUNT		3. DESIGN (AMOUNT)	
<input type="checkbox"/> a. YES (Identify in Items 3 through 15) <input type="checkbox"/> b. NONE					
OTHER RELATED EQUIPMENT	4. TO BE PURCHASED	AMOUNT	8. ACTIVATION		
	5. TRANSFER TO EXCESS		9. OTHER REAL ESTATE		
	6. EXISTING		10. OTHER (Specify):		
	7. FUTURE FUNDING				

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Figure C-2a NASA Form 1510, Facility Project Cost Estimate

C.2 NASA Form 1510 (Continuation) -- Facility Project Cost Estimate

DESCRIPTION		UNIT OF MEASURE 1)	QUANTITY 2)	UNIT COST		TOTAL COST	
				ENGNG 3)	BUDGET 4)	ENGNG 5)	BUDGET 6)

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**Figure C-2b NASA Form 1510, Facility Project Cost Estimate (Continuation)**

**C.2 Instructions for NASA Form 1510, Facility Project Cost Estimate**

The bolded titles in the following paragraphs provide the cross references to NASA Form 1510 shown in Figures C-2a and C-2b.

**C.2.1 Installation/Program Office, Project Title, Date, Submission/Revision Number, Project Code, Project ID** -- provide the same information as shown on NASA Form 1509.

**C.2.2 Basis of Cost Estimate** -- Indicate the basis of the cost estimate as follows:

- a. Criteria and concepts only.
- b. Preliminary engineering report.
- c. Partially complete design (approved 30-percent, 60-percent, or 90-percent),
- d. Completed final design.

e. Contractor's proposal.

f. Other (explain).

Also indicate the date and originator of the estimated costs (i.e., June 2006 in house estimate or June 2006 ABC Architect Engineer Company). To provide a uniform base for estimating costs for budget year estimates, the best available local or area experience as of the beginning of the past year should be used. In addition, the estimated local factor for increased costs should be applied to provide for cost increases (actual and anticipated) from the prior year base point and compounded annually to the project midpoint of construction. The basis of any such factor should be indicated (e.g., Engineering News-Record, March 2006). These costs will be reflected as a percentage added to the engineering estimate and will be included in the space provided under the Summary of Estimate.

**C.2.3 I. Summary of Estimate** -- the amount and percentage of the total estimated cost for the items listed below will be indicated in the appropriate entry blocks.

**C.2.3.1 1. Engineering Estimate (EE)** -- the total engineering cost estimate, which includes the costs for materials, labor, real estate actions, and services including contractor overhead and profit. Adequate design contingencies must be included. The EE will include all labor and material costs for all items including collateral equipment that would normally be furnished by a contractor and installed as permanent in the facility. When applicable, the cost to install GFP will be included. The EE does not include escalation, construction contingencies, or SIES. Estimates must identify funding requirements by fiscal year(s) and amount(s). The EE includes unit costs (i.e., units of measure and quantities for each significant item) instead of lump sum estimates.

**C.2.3.2 2. Cost Adjustment** -- the increase over the base cost used to cover anticipated cost increases compounded annually to the midpoint of the proposed construction period. Headquarters Facilities Engineering Division determines the percentage used. If higher rates for cost growth are needed to reflect local conditions, they must be supported by a special rationale establishing the uniqueness of the local conditions for the project.

**C.2.3.3 3. Subtotal (of Engineering Estimate + Cost Adjustment)** -- represents the project cost without contingencies, supervision, inspection, engineering services (SIES), or other burden costs.

**C.2.3.4 4. Contingencies** -- indicate normal construction contingencies estimated for changed conditions and essential change orders. Generally, it is 10 percent of the subtotal above.

**C.2.3.5 5. Supervision, Inspection, and Engineering Services (SIES)** -- the amount for the supervision and administration of the construction contract by a construction manager. Generally, it is 5 to 10 percent.

**C.2.3.6 6. Other Burden Costs** -- any other burden costs such as GFP refurbishment or transportation of equipment that might be included in the project.

**C.2.3.7 7. Total Budget Estimate** -- total estimated cost to provide an initially operable facility or total project as set forth in the scope and description of the facility project.

**C.2.3.8 8. Identification of Cost Adjustment** -- provide a description of the elements that constitute these factors.

**C.2.4 II. Planning and Design** -- provide data for the entries below:

**C.2.4.1 1. Preliminary Engineering Report (PER)** -- indicate the actual or estimated cost for the preparation of the PER for the project, normally 1-1/2 to 2 percent, its status, and method of accomplishment in the appropriate blocks.

**C.2.4.2 2. Special Studies** -- indicate the actual or estimated cost for any required special studies, normally two percent, that are not conceptual studies, such as soil borings or structural analyses. Describe the specific studies, their status, and method of accomplishment.

C.2.4.3 3. **Final Design** -- enter the actual or estimated cost for the preparation of final design, including contractual plans and specifications, and the status and method of accomplishment.

C.2.4.4 4. **Supervision and Administration of Design Services** -- the amount for supervision and administration of design by the construction agency.

C.2.4.5 5. **Total Planning and Design Costs** -- the summary of the items in column e.

C.2.5 III. **Related Cost Data** -- provide a breakout and description of related cost data as specified in instructions for NASA Form 1509. See Appendix D, Facility and Other Related Costs, paragraph D.2 Related Costs for a partial listing of related cost items and type items to be included.

C.2.6 IV. **Facility Project Cost Estimate** -- The Field Installation must submit this information in considerable detail by each fiscal year for which funds have been provided or will be requested. See paragraph 3.5.3.1 for engineering estimate details and Appendix A, Definitions "Current Cost Estimate."

The unit of measure, quantity, unit cost, and total cost must be shown for each item that can be reasonably identified and quantified. The use of lump sum (LS) should be avoided as much as possible if meaningful quantities and unit costs can be applied. Any item estimated to cost more than 20 percent of the total project cost estimate shall be subdivided to show components and associated costs. The following are minimum breakdown items as applicable:

- a. Interest in Real Estate -- if the project includes land acquisition or other interests in real estate, identify land and easement costs.
- b. Site Development and Utilities Outside 5 Foot Line -- enter costs normally associated with developing the site, such as site clearance and demolition, earthwork and landscaping, storm and sanitary sewers, mechanical and electrical utilities, roads, bridges, marine facilities, and airfield pavements. Also identify construction costs associated with testing, excavation, removal, and treatment and disposal of hazardous contaminated soil, water, or groundwater.
- c. Building/Structure Within 5-Foot Line -- includes construction costs for architectural/structural, mechanical, and electrical work; and, the associated collateral equipment. These items are listed in as many procurement packages as necessary to optimize procurement strategy and project control. The specific packaging should be compatible with the standard divisions of labor and contractual disciplines of the construction industry to avoid conflicts, overlaps, and other contractual complications. Each package should be numbered (e.g., First -- Addition to Building; Second -- Modification of Second Floor; Third -- Air Conditioning). Include in each package further breakouts of the following information:
  1. Architectural/structural -- costs normally associated with foundations, structural framing, walls, roofing, finishes, and specialties.
  2. Mechanical -- costs normally associated with mechanical building equipment, such as HVAC and plumbing, should be included. Built in, nonseverable mechanical equipment.
  3. Electrical -- costs normally associated with electrical building equipment, such as transformers, motor starters and control centers, lighting fixtures, communications, distribution systems, and wiring, should be entered. Built-in nonseverable electrical equipment.
  4. Fire protection/safety -- costs normally associated with fire protection/safety equipment and systems, such as sprinkler heads, detectors, alarms.
  5. Environmental -- construction costs normally associated with testing, decontamination/ cleanup, and removal and disposal of hazardous contaminated materials within a building. This includes asbestos demolition work, such as testing; removal and disposal of the asbestos; building and material decontamination activities; and other such costs necessary in support of the facility project.
  6. Other -- any other construction costs.
  7. Collateral Equipment Not Included Above -- costs for collateral equipment not shown above.




8. Special Features -- include any significant special items, such as fallout shelters, flood control, medical facilities, environmental air controls, water/groundwater pollution control, special water/groundwater or sewage treatment, noise controls, and any secondary functions necessary to meet community needs or interfaces with other agencies or organizations.

C.2.6.1 Source of Cost Data -- identify source of the cost data (e.g., PER, contractor quotation, quantity take off, recent procurement history) in this block.

C.2.6.2 Totals -- Enter sum of the total costs for the Engineering and Budget columns of the form.

C.2.7 V. Related Items/Actions -- Explain related items (e.g., additional procurement, program activity, trade studies, or facility projects) that are not included under Part III -- Related Cost Data.

**C.3 NASA Form 1579 Flash Bid Report**

		<b>Flash Bid Report</b>			
National Aeronautics and Space Administration		Facility Project Contract Bid Opening and Award Data			
<b>PROJECT DATA</b>					
1. PROJECT TITLE					
2. LOCATION		3. PROJECT NUMBER	4. DATE		
5. FISCAL YEAR	6. CATEGORY	7. APOFF			
<b>CURRENT COST ESTIMATE (CCE) Prior to Bid Opening</b>					
8. ALL PRIOR BID PACKAGES					
9. THIS BID PACKAGE					
10. ALL REMAINING BID PACKAGES					
11. TOTAL CCE (8 + 9 + 10)					
<b>THIS BID PACKAGE</b>					
12. DESCRIPTION OF WORK					
13. GOVERNMENT BID ESTIMATE		14. BID OPENING DATE	15. NO. OF BIDS RECEIVED		
<b>16. BID INFORMATION</b>					
BID	CONTRACTOR, CITY STATE	BASIC	ALT #1	ALT #2	ALT #3
LOW					
NEXT LOW					
HIGH					
17. ANTICIPATED AWARD AMOUNT					
18. REVISED CCE BASED ON LOW BID					
19. REVISED TOTAL CCE (8 + 10 + 18)					
20. AWARD DATE		20a. NOTICE-TO-PROCEED INTR. DATE	20b. COMPLETION DATE		
21. REMARKS					

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**Figure C-3a NASA Form 1579, Flash Bid Report**

### C.3 Instructions for NASA Form 1579, Flash Bid Report

#### INSTRUCTIONS

##### PROJECT DATA

(1) **Project Title** - Use the same title as shown on the approved NASA FORM 1509 Facility Project - Brief Project Document.

(2) **Location** - Indicate the cognizant Field Installation, Component Installation, or other location

(3) **Project Number** - List the unique four-digit facility project number as shown in the IDENTIFICATION block of NASA FORM 1509

(4) **Date** - Show the date of form preparation.

(5) **Fiscal Year** - Show the fiscal year as shown in the WORK block of NASA FORM 1509. If multi-year funding is involved, list each year

(6) **Category** - Indicate the category as shown in the WORK block of NASA FORM 1509

For CoF environmental projects, this line entry will identify the type of work to be performed following the WORK entry block of NASA FORM 1509. Identify the environmental project category as follows:

- a. Environmental CoF - Construction and Modification
- b. Environmental CoF - Remediation
- c. Environmental CoF - Projectized Study

(7) **Approved Facility Project Cost Estimate (AFPCE)** - Indicate the AFPCE as shown on NASA FORM 1509

##### CURRENT COST ESTIMATE (CCE) Prior to Bid Opening

(8) **All Prior Bid Packages** - List the CCE of all awarded contracts for this project.

(9) **This Bid Package** - Show the CCE from this bid package

(10) **All Remaining Bid Packages** - Show the total CCE for all planned bid packages.

(11) **Total CCE** - Show the CCE based on the sum of items 8, 9, and 10

##### THIS BID PACKAGE

(12) **Description of Work** - Describe the work included in this bid package.

(13) **Government Bid Estimate** - Include the engineering estimate developed by the Government or an A-E adjusted to the midpoint of construction. Does not include contingencies, SIES, or other burden cost

(14) **Bid Opening Date** - Provide bid opening date.

(15) **No. of Bids Received** - Show the bid quantity received.

(16) **Bid Information** - Provide bidder related data

(17) **Anticipated Award Amount** - Include base award and rejected alternates.

(18) **Revised CCE Based on Low Bid** - Show CCE for this bid package (item 17 plus contingencies, SIES, and other burden cost).

(19) **Revised Total CCE** - Show the CCE based on the sum of items 8, 10, and 18

(20) **Dates** - Provide the best estimate of the scheduled award, notice-to-proceed, and completion date.

(21) **Remarks** - Provide the relative narrative remarks as necessary.

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Figure C-3a NASA Form 1579, Flash Bid Report Instructions

### C.4 Long Form Writeup

PROJECT TITLE: \_\_\_\_\_ INSTALLATION: \_\_\_\_\_  
MISSION DIRECTORATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_

FY XX COST ESTIMATE (Thousand of Dollars) \$ \_\_\_\_\_ PRIOR YEARS FUNDING \$ \_\_\_\_\_

Project Elements: Construction \$ \_\_\_\_\_ Facility Planning and Design \$ \_\_\_\_\_

Element #1 \$ \_\_\_\_\_  
Element #2 \$ \_\_\_\_\_  
Element #3 \$ \_\_\_\_\_

**PROJECT DESCRIPTION:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**PROJECT JUSTIFICATION:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**IMPACT OF DELAY:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Figure C-4 Long Form Writeup**

**C.4 Instructions for Long Form Writeup**

The Long Form Writeup will be no longer than one page. It is used to describe discrete Construction of Facilities (CoF) projects in the Agency's budget submissions to the Office of Management and Budget (OMB) and the Congress.

**C.4.1 Project Title** --the same as the NASA Form 1509 project title.

**C.4.2 Installation** --the full name of the Center or Field Installation where the work is to be performed.

**C.4.3 Cognizant Office** --the responsible program office or other Headquarters office that advocates the project.

**C.4.4 Location** -- the place, city, county, state, or foreign country as appropriate. When the project includes work in separated locations, the phrase "Various Locations" is recommended.

**C.4.5 FY XX Cost Estimate (Thousand of Dollars)** --the major cost elements supporting the project as specified in paragraph 3.5.3, Section III: Engineering, Budget and Other Estimates.

**C.4.6 Prior Years Funding** -- identify funds used or intended for use for planning, design, and construction of the project from prior years' programs.

**C.4.7 Project Description** -- will be the same or equivalent to that on the NASA Form 1509 for the project, but written as a budget narrative suitable for Presidential and Congressional review.

**C.4.8 Project Justification** -- will be the same or equivalent as the Basis of Need section of the NASA Form 1509 for the project, but written as a budget narrative suitable for Presidential and Congressional review. Exception, impacts to mission should be stated in the next section.

### C.4.9 Impact of Delay -- provide impacts if the project is not implemented.

### C.5 CoF Routine Transaction Form

CoF Routine Transaction		
<b>TO:</b> [Name] Address [HQ-FERPD SC67] Phone XXX-XXX-XXXX FAX XXX-XXX-XXXX	<b>FROM:</b> [Name] Address [Center/Division/Mail Stop] Phone XXX-XXX-XXXX FAX XXX-XXX-XXXX	<b>DATE:</b> [Month/Day/Year]
FY	Project Title	CCE (\$M)
[ ]	[ ]	[ ]
<b>CENTER REQUEST:</b>          		
<b>ENCLOSURES:</b> [List enclosures, i.e. 1100s and 1110s]		
Approved: _____ Date: _____		
<b>To:</b> [Center/Division/Mail Stop Name] <b>FROM:</b> [HQ-FERPD SC67 Name] <b>cc:</b> [Center/Division/Mail Stop Name]		
<b>Headquarters Response:</b> <input type="checkbox"/> Electronic funds transfer \$ _____ <input type="checkbox"/> Authority to Advertise <input type="checkbox"/> Approved Summary Brief Project Document/Project Approval Document attached <input type="checkbox"/> Approved Brief Project Document (Form 1109) attached		
<b>NOTES:</b>          		
Approved Name/Title: _____ Date: _____		

Figure C-5 CoF Routine Transaction Form

### C.6 CoF Self Assessment Metrics -- Page 1

CoF Self Assessment Metrics

Fiscal Year: XXXX		Center:		Scorecard Indicator		
#	Description	Input*	Score*	Red	Yellow	Green
<b>1 Percent of Projects Designed Before Start of Fiscal Year</b>						
1a	Total Discrete Designs completed by the Beginning of the Fiscal Year (FY) of Construction (BOFYOC)	NI				
1b	Total Discrete Projects authorized for Design in FY					
1.1	Key Performance Indicator (KPI) = Total Discrete Designs complete/total authorized		NI	< .75	.80 - .89	.90 - 1.00
1c	Total Minor Designs completed by BOFYOC	NI				
1d	Total Minor Projects authorized for FY					
1.2	KPI = (Total Minor Designs complete) / (total designs authorized)		NI	< .75	.80 - .89	.90 - 1.00
* Note: Input - if there is no data to input, type NA in the cell with "NI" in it. The Score is a calculated field, do not put data in this field.						
KPI 1.1 & 1.2 measure the readiness for entering into the FY. Were the projects that were authorized for this FY ready for advertisement (i.e. 100% designed) by the beginning of this fiscal year? The data required for this calculation are the number of designs for the measurement period (fiscal year under review) ready for advertisement (1a and 1c, respectively) divided by the number of authorized projects (1b and 1d, respectively)						
<b>2 Percent Construction Contracts Awarded Before the End of the Fiscal Year</b>						
2a	Total Discrete Construction contracts awarded by the End of the Fiscal Year (EOFY)	NI				
2b	Total Discrete Projects Approved for Construction in FY					
2.1	KPI = (Total Discrete Projects awarded) / (total projects approved)		NI	< .75	.80 - .89	.90 - 1.00
2c	Total Minor Construction contracts awarded by EOFY	NI				
2d	Total Minor Projects Approved for Construction in FY					
2.2	KPI = (Total Minor Projects awarded) / (total approved)		NI	< .75	.80 - .89	.90 - 1.00
KPI 2.1 and 2.2 measure the percent of authorized projects awarded within the period fiscal year. How many projects planned for construction during this fiscal year were awarded (i.e. obligated) by the end of the fiscal year? The data required for the calculation is the number of projects awarded (2a and 2c) and the number of projects authorized (2b and 2d)						

Figure C-6 CoF Self Assessment Metrics

C.6 CoF Self Assessment Metrics (continued) -- Page 2

CoF Self Assessment Metrics

Fiscal Year: XXXX		Center:		Scorecard Indicator		
ID	Description	Input*	Score*	Red	Yellow	Green
<b>3 Percent Construction Funds Obligated Before End of the Fiscal Year:</b>						
3a	Total CoF funds (discrete & minor) obligated during the FY	NI				
3b	Total CoF funds (discrete & minor) provided for construction for this FY					
3.1	KPI = (Total funds obligated) / (total funds provided)		NI	0.70	0.80 - 0.89	0.90 - 1.00
KPI 3.1 measures the percent of CoF funds obligated during this fiscal year (includes only the projects authorized for this fiscal year). How well did your Center obligate funds provided for this FY? The data required is the amount of funds obligated (3a) divided by the total funds provided for construction (3b).						
<b>4 Percent Cost Growth for Projects Completed During the Fiscal Year:</b>						
4a	Total final cost of Discrete projects completed in FY	NI				
4b	Total Approved Facility Project Cost Estimate(s) (AFPCE) at award for discrete projects completed in FY					
4.1	KPI = ((Final Discrete construction cost) / AFPCE at contract award) - 1)		NI	> 0.05	0.01 - 0.05	< 0.05
KPI 4.1 measures the percent cost growth for discrete projects completed* during this FY (from any fiscal year) (4a) divided by the total AFPCE of discrete projects at time of award (4b) FY minus 1. How well did you estimate the cost of the project vs. the actual cost?						
4c	Total final cost of Minor Program projects completed in FY (\$000)	NI				
4d	Total CCE at award for Minor Program projects completed in FY (\$000)					
4.2	KPI = ((Final Minor construction cost) / AFPCE at contract award) - 1)		NI	> 0.05	0.01 - 0.05	< 0.05
KPI 4.2 measures the percent cost growth for minor program projects completed* during this FY (from any fiscal year) (4c) divided by the total AFPCE of discrete projects at time of award (4d) FY minus 1. How well did you estimate the cost of the project vs. the actual cost?						
**NOTE: Project completion is defined per NPR 8820.2E as the date on which the Government accepts all contract deliverables is the contract completion date. Contract close out, a procurement function is not considered in this metric. The additional time required to achieve contract close out would adversely impact the value of this metric.						

C.6 CoF Self Assessment Metrics (continued) -- Page 3

**CoF Self Assessment Metrics**

Fiscal Year: XXXX		Center:		Scorecard Indicator		
#	Description	Input*	Score*	Red	Yellow	Green
<b>5 Percent Schedule Growth for Projects Completed During the Fiscal Year:</b>						
5a	Actual Discrete project contract duration days for all projects completed** during this FY	NI				
5b	Estimated discrete project planned days on original on approved Form 1509 (at the time of initial award)					
5.1	KPI = ((Actual contract duration days) (Original estimated days (on 1509)) duration) - 1)		NI	> .20	.16 - .20	< .15
KPI 5.1 measures the percent schedule growth for discrete projects completed** during this FY. It is calculated by dividing the total actual number of construction contract days [5a] by the total estimated construction contract days [5b] minus 1. How well did we estimate the project schedule?						
5c	Actual Minor Program project contract duration days for all projects completed** during this FY	NI				
5d	Estimated Minor Program project planned days on original on approved Form 1509 (at the time of initial award)					
5.2	KPI = ((Actual contract duration days) (Original estimated days (on 1509)) duration) - 1)		NI	> .20	.16 - .20	< .15
KPI 5.2 measures the percent schedule growth for minor projects completed** during this FY, divided by the total estimated duration in days minus 1						
<b>6 Safety Metrics for Construction Projects During the Fiscal Year:</b>						
6.1	KPI = RIR, Reportable Incident Rate during FY for construction contracts	NI	NI	> 3.0	2 ≤ 3.0	≤ 2.0
KPI 6.1 data is for all active construction projects during the rating period FY (regardless of project FY)						
RIR = (Total annual # of injuries incurred by sample firms x 200,000) / (Total annual # of hours worked by sample firms employees)						
6.2	KPI = DART, Days Away, Restricted, or Transferred rate during FY for construction contracts	NI	NI	> 3.0	1 ≤ 3.0	≤ 1.0
KPI 6.2 data is for all active construction projects (regardless of the project FY) during the rating period FY at your Center.						
DART: This includes cases involving days away from work, restricted work activity, and transfers to another job and is calculated based on (N/EH) x (200,000) where N is the number of cases involving days away and/or job transfer or restriction, EH is the total number of hours worked by all employees during the calendar year, and 200,000 is the base for 100 full-time equivalent employees.						

**C.6 CoF Self Assessment Metrics (continued) -- Page 4**

CoF Self Assessment Metrics

Fiscal Year: XXXX		Center:		Scorecard Indicator		
#	Description	Input*	Score*	Red	Yellow	Green
<b>7 Percent of Mission Essential Security Projects Awarded During the Fiscal Year:</b>						
7a	Number of Mission Essential Security (MES) projects executed for this FY	NI				
7b	Number of Mission Essential Security projects planned for this FY					
7.1	KPI = (MES executed/MES planned)	NI	NI	9 - 95	95	95
<p>Note: A Mission Essential Security project is defined as security work on a Mission Essential Infrastructure real property asset as a project with a justification for the project is based upon a security requirement. (CoF projects only do not include "locally approved" projects.)</p>						
<b>8 Sustainability - Percent of Projects Registered for LEED During the Fiscal Year</b>						
8a	Total number of eligible construction projects registered for LEED certification	NI				
8b	Total number of eligible construction projects authorized for design in this FY year					
8.1	KPI = (# LEED Registered / Total # Projects eligible)	NI	NI	35 - 49	49	50
<p>KPI measures the percent of registered projects for LEED. It is calculated by dividing the total number of registered projects by the total number of projects that are LEED eligible** (projects with LEED certification granted under the FFKPD are not included).</p> <p>**NOTE: Eligible projects are either a major renovation project (i.e., the cost of the project exceeds 50% of the replacement cost for that type construction) or a new construction project. Projects that construct additions to a building are "eligible".</p> <p>LEED = Leadership in Energy and Environmental Design certification by the US Green Bldg. Council</p>						

C.6 CoF Self Assessment Metrics (continued) -- Page 5

CoF Self Assessment Metrics

Fiscal Year: XXXX		Center:		Scorecard Indicator		
#	Description	Input*	Score*	Red	Yellow	Green
<b>9 Quality Ratings for Projects Completed During the Fiscal Year:</b>						
9a	Sum of quality survey scores addressing Mission Requirements	NI				
9b	Number of quality survey elements scored addressing Mission Requirements					
9.1	KPI = (sum of scores) / (total number of elements receiving a score) Survey questions: A.3 and 6; B.1, 4, 7, and 8.	NI	NI	2.5 - 4	4	4
9c	Sum of quality survey scores addressing construction	NI				
9d	Number of quality survey elements scored addressing construction					
9.2	KPI = (sum of scores) / (total number of elements receiving a score) 9.2 - average quality scores from quality survey	NI	NI	2.5 - 4	4	4
9e	Sum of quality survey scores addressing mission schedule	NI				
9f	Number of quality survey elements scored addressing mission schedule					
9.3	KPI = (sum of scores) / (total number of elements receiving a score) 9.3 - average quality scores from quality survey	NI	NI	2.5 - 4	4	4
9g	Sum of quality survey scores addressing budget	NI				
9h	Number of quality survey elements scored addressing budget					
9.4	KPI = (sum of scores) / (total number of elements receiving a score) 9.4 - average quality scores from quality survey	NI	NI	2.5 - 4	4	4



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## Appendix D. Facility and Other Related Costs

**D.1 Typical Facility Cost.** The Current Cost Estimate (CCE) included on Forms 1510 and 1509 for a typical facility project includes the current local cost of the following:

- a. Land acquisition.
- b. Site preparation, utilities, sidewalks, and access roads.
- c. Construction materials and labor.
- d. Material and equipment tests performed at the construction site or at an offsite location.
- e. Construction management services including network diagrams.
- f. Environmental protection.
- g. Collateral equipment.
- h. Subcontractor and general contractor cost, overhead, and profit.
- i. General conditions, bonds, and taxes.

**D.2 Related Costs.** The following is a partial list of items that are normally funded from funding accounts other than CoF. The Director, Facilities Engineering and Real Property Division, can approve exceptions.

- a. Planning/studies documentation, such as the following:
  1. Environmental Assessments (EA) and Environmental Impact Statements (EIS).
  2. Permit actions (e.g., environmental, stormwater, dredging) unless directly related to the construction contracting effort.
  3. Pre-PER studies (i.e., concept studies and/or requirements document).
- b. Design-related activities other than SIES, such as the following:
  1. Independent design analysis.
  2. Third-party review.
  3. Health and Safety analysis.
  4. Engineering support.
  5. Reliability and quality assurance support.
  6. Software quality assurance support.
  7. Program scheduling.

## 8. Documentation and control.

## c. Outfitting items, such as the following:

1. Research, checkout, and assembly hardware/equipment.
2. Test support and ground support equipment.
3. Cleaning equipment.
4. Furniture.
5. Telephones, modems, switching equipment, and associated wiring (see Note 1).
6. Communications equipment (voice/data) and associated wiring (see Note 1).
7. Electronic security systems hardware (see Note 1).
8. Paging and area warning systems hardware (see Note 1).
9. Process/support equipment (see Note 1).
10. Replacing carpet and installation (initial carpet or carpet tile installation when used as the primary floor covering can be included in the CCE).
11. Window and door treatments (e.g., blinds, glare controls, and drapes, except where blinds are an integral part of the window or door unit and, thus, the initial purchase can be included in the CCE).
12. Lockers, unless built in.
13. Clocks.
14. Video equipment.
15. Computer hardware.
16. Automatic data processing equipment (including cables, fiber optics, and network connections).

## d. Services, such as the following:

1. Building/vehicle maintenance.
2. Janitorial services.
3. Storage costs for noncollateral equipment.
4. Security personnel.
5. Spare parts.
6. Warranties (except when associated with equipment or structural members that are an integral part of the facility).
7. Operator certification and training programs.
8. Operational readiness reviews.
9. Integrated systems testing, health, and safety reviews.

## e. Other expenses, such as the following:

1. Relocation/move-in expenses.
2. Acquisition process.
3. Personal and other health and safety protection.
4. Temporary housing.
5. Utility consumption.
6. Facility calibration.
7. Facility dedication.
8. Personnel travel.
9. Training (except for collateral equipment).

Note 1: In general, items that are permanently affixed, such as conduits, raceways, cable trays, ductwork, wall penetrations, terminal rooms, and junction and terminal boxes, are included in the CCE of the facility project.