MEMORANDUM FOR SEE DISTRIBUTION

FROM: NGB/A7

SUBJECT: ANG Engineering Technical Letter (ANGETL) 10-03, Air National Guard Design Objectives and Procedures

TO: SEE DISTRIBUTION

This ANGETL supersedes ANGETL 02-1.

1. Purpose: This ANGETL establishes ANG Design Objectives and Procedures for the ANG facilities program consisting of Military Construction Program (MCP) and Sustainment, Restoration, and Modernization (SRM) projects.

2. Effective Date: Immediately

3. Description and Implementation: The attached ANG Design Objectives and Procedures is intended to be referenced and made a part of any Architect-Engineer (A-E) contract for the development of design documents for ANG projects as well as for A-E services to provide post construction award oversight and assistance service. This document may be modified by addendum to suit the particular project needs in coordination with the NGB/A7O Project Manager (PM.)

4. The point of contact for this ANGETL is Mr. Stephen P. Freese, P.E., NGB/A7OT, DSN 278-8091.

WILLIAM P. ALBRO, P.E., YF-03
Director of Installations and Mission Support

Attachments:
1. Air National Guard Design Objectives and Procedures
2. Current ETL Index

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AIR NATIONAL GUARD
DESIGN OBJECTIVES AND PROCEDURES
(TAB C)

16 APRIL 2010
## AIR NATIONAL GUARD
### DESIGN OBJECTIVES AND PROCEDURES

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PURPOSE

The Air National Guard (ANG) Design Objectives and Procedures (Tab C), developed by NGB/A7O, is established to define the overall objectives in accomplishing the ANG facilities program and the procedures to be followed in achieving that end. It is intended that this document be referenced and made a part of any A-E contract for the development of design documents for ANG projects as well as for A-E services to provide post construction award oversight and assistance service. This document may be modified to suit particular project needs in coordination with the NGB/A7O Project Manager (PM).

PROCESS OUTLINE

Below is an outline of the process generally followed on Military Construction Program (MCP) projects as well as larger Sustainment, Restoration and Modernization (SRM) projects. However, each individual project may have less complex requirements requiring a somewhat abbreviated process. This is particularly true for smaller SRM projects. The PM, working with the Base Civil Engineer will determine the appropriate process to follow for each individual project and the applicable provisions of Tab C will be amended accordingly, initially in the Project Design Instruction issued to the base by the PM and further in an Addendum (see Attachment 3) prepared at a project Criteria Review Conference (CRC), attended by the A-E and ANG personnel.

- Programming Phase
  - Develop need for project
  - Resolve Real Estate and Environmental Issues
  - Develop DD Form 1391
  - Program Project into Budget
- Design Phase
  - Contract for A-E Services
  - Type A Services
    - Develop Basis of Design, Part I, Design Intent
    - Develop Project Concept
    - Perform Site Investigations
    - Perform Formal Value Engineer Study, if required
  - Type B Services
    - Develop Basis of Design, Part II, Design Narrative
    - Develop Construction Documents
    - Perform Design Commissioning Services
- Procurement Phase
  - Select Contractor
  - Award Construction Contract
- Construction Phase
  - Construct Project
  - Type C Services
    - Submittal review
• Quality Assurance Inspection
• Perform Construction Commissioning Services
  – Accept Facility
  – Project Closeout
  – Resolve Warrantee Issues
SECTION 1 – DESIGN OBJECTIVES

1.1 Facility Goals

1.1.1. The main goal of the ANG design and construction process is to provide a complete and usable facility that satisfies the Mission requirements with architecturally pleasing, yet fiscally responsible construction.

1.1.2. Facility designs shall avoid the appearance of waste or excessive cost. Architectural style and detail shall be based on sound facility design principles, while maximizing flexibility to meet future mission needs.

1.1.3. Facility designs shall comply with the current ANG Sustainable Design and Energy Conservation Strategies Engineering Technical Letter (ETL), and shall provide a low life cycle cost, energy efficient facility, that requires minimal amount of maintenance. For projects required to be certified with the USGBC, the A-E shall provide a qualified Commissioning Agent (CA), independent from the project design firm and approved by the Contracting Officer, during design and construction.

1.2. Project Scope - The project scope is defined as the maximum gross square footage, or specified quantity if the scope is defined in terms other than square footage, of the facility and shall be calculated in accordance with the Air National Guard Design Policy ANGETL (TAB D.) The project scope is indicated on the DD Form 1391 which is part of the Project Approval Package. This package will be provided to the A-E at the CRC. The project primary facility scope, as indicated for each line item in Block 9 of the DD Form 1391, shall not be exceeded without NGB/A7O approval. Furthermore, for MILCON projects, Title 10 US Code § 2853, prohibits the facility design and construction from exceeding the established project scope as shown on the approved DD Form 1391.

1.3. Cost of Construction

1.3.1. Maximum Construction Cost Limitation (MCC.) The MCC is defined as the set dollar limitation that the project bid/offer price shall not exceed. The MCC will be provided to the A-E at the CRC. The MCC is established by NGB/A7O and provided to the BCE in the project Design Instruction (DI) letter. The A-E is required under the FAR Clause 52.236-22 – “Design Within Funding Limitations” to design the project, including all additive bid items and options, whether awarded or not, so that the project may be constructed within the established MCC dollar limitation. This amount does not include any allowance for change orders or contract modifications, or for other items to be purchased with construction funds separate from the instant contract. The A-E is responsible to deliver a design that does not exceed the MCC in accordance with the requirements set below:

1.3.1.1. Additive Bid Items (ABIs) or Options are items of work that are not absolutely necessary to provide a complete and usable facility, yet are authorized for the facility. Each ABI or Option may consist of several components. For example, one ABI may
consist of vinyl wall covering, ceramic tile, and window blinds, another may consist of landscaping, irrigation systems and parking lot pavement, and a third may consist of all casework, including cabinetry, marker boards and projection screens. ABIs or Options shall amount to approximately ten percent (10%) of the MCC (base bid construction cost + ABIs or Options = MCC.) During the Concept Proposal Meeting, the Design Working Group shall assist the A-E in the development of a reasonable number of ABI’s or Option items. ABI’s or Options shall be approved by NGB/A7O and the Contracting Officer for each specific project. All MCP projects will use ABIs or Options to ensure that the basic project can be awarded if construction prices are higher than anticipated, yet allows the Government to award those items that are needed for the project, yet are not absolutely essential, if the prices are as anticipated. SRM projects will generally not have ABIs or Options since the intent of an SRM project is to fully address the minimum requirements programmed and since reprogramming, if necessary, can usually be more readily accomplished for an SRM project than for an MCP project.

1.3.1.2. Use of ABIs: ABIs must be awarded at the time of contract award. They must be listed in the order in which they are intended to be awarded based on the funds available at the time of the bid opening or negotiation.

1.3.1.3. Use of Options: Options are for items that the Government may not choose to execute or have funds to cover at initial contract award, but which may be awarded if during the prescribed execution period funds become available or the Government chooses to execute the option. In a solicitation containing options, the latest date that the Government may unilaterally exercise the option must be established. Options carry risk to the contract. In evaluating the low bidder or an offeror’s price, the Contracting Officer must evaluate inclusive of all options, whether the options are executed or not.

1.3.2. Construction cost estimates shall be provided in accordance with UFC 3-701-xx, the Historical Air Force Construction Cost Handbook (latest version.) Parametric Cost Engineering System (PACES) may be used for estimates at the Type A1 and A2 level, but will have to be transferred into Micro-Computer Aided Cost Estimating System (MCACES) for printing. Estimates at the Type B level shall be performed in MCACES format. An executive cost summary sheet shall be prepared by the A-E as shown in Attachment 13.

Regardless of the estimating system used or the source of the pricing data the A-E is ultimately responsible for the accuracy of the cost estimates used on the project. No information pertaining to all such estimates shall be disclosed by the A-E, their associates, subcontractors, or any of their employees except to the extent permitted by the Contracting Officer.

1.3.3. Construction cost estimates shall be adjusted based on the expected date the project will be solicited. This estimated date shall be established at the Criteria Review Conference based on the A-E’s estimate of construction duration.

1.3.4. The A-E shall be required to show at each design submittal stage, that the facility as designed can be constructed within the MCC limit for the project. In the event that the A-E
finds the MCC to be insufficient the A-E shall immediately notify the Contracting Officer in accordance with FAR Clause 52.236-22, “Design Within Funding Limitations” and the Contracting Officer's Technical Representative (COTR), and present those areas where cost reduction can be made without adversely affecting the facility requirements. In no instance shall the A-E develop a design that is less than the project's authorized scope due to cost considerations without written authorization from NGB/A7O and direction from the Contracting Officer.
2. **SECTION 2 – AUTHORITIES AND RESPONSIBILITIES**

2.1. **Contracting.** The Contracting Officer is the only individual who has the authority to negotiate, enter into or modify contracts, or to obligate Federal funds on a contract. While the Contracting Officer may designate a Contracting Officer’s Technical Representative (COTR), usually the Base Civil Engineer (BCE), who is given limited authority, as defined in his appointment letter, to communicate with the A-E and construction contractors. The Contracting Officer is the only individual who may modify any provision of the contract. If the A-E proceeds with the design or any changes to the design without the express authority of the Contracting Officer, they shall do so at their own risk.

2.2. **Design Management**

2.2.1. The Operations Division (NGB/A7O) of the Installations and Mission Support Directorate, Air National Guard Readiness Center, located at Andrews Air Force Base, MD, provides management oversight and approval of construction projects, including criteria, designs and project funding. NGB/A7O is the only office with authority to change or clarify design criteria. NGB/A7O is the approval authority for all submittals that are required to be submitted to NGB/A7O and they will compile and edit all other comments submitted by the base and NGB/A7OC. NGB/A7O does NOT have the authority to direct changes to the contract. If the A-E feels that any direction given by NGB/A7O is a change in contract requirements, the A-E shall immediately notify the Contracting Officer and NGB/A7O prior to taking any action.

2.2.2. The Civil Engineering Technical Services Center (CETSC), NGB/A7OC, is located in Minot, ND, which will provide project review support to the BCE as needed. NGB/A7OC has engineers in all major disciplines and technicians involved in specialty areas, including aircraft arresting systems, petroleum, oils & lubricants (POL) facilities, airfield pavements and High Expansion Foam fire suppression systems. Some projects require these specialized reviews as directed by NGB/A7O and specified in the contract. These minimum requirements are noted in Section 5.5. Additionally, other projects may require these reviews and will be established at the Criteria Review Conference by the Contracting Officer and specified in the contract. All NGB/A7OC review comments will be forwarded to the A-E via the BCE and Contracting Officer. NGB/A7OC does not have the authority to direct changes to the contract. If the A-E feels that any direction given by NGB/A7OC is a change in contract requirements, the A-E shall immediately notify the Contracting Officer and NGB/A7O prior to taking any action.

2.2.3. The BCE is the Government’s local engineering management coordinator and usually serves as the COTR on the A-E contract. The BCE is responsible for furnishing existing information of on-site conditions, including Environmental Restoration Program (ERP) sites, utility locations, etc. and is the point of contact for the A-E to meet with other base offices. The BCE shall function as the single point of contact for all design review comments for the A-E on submittals not required to be submitted to NGB/A7O. The BCE will compile, edit and submit, including NGB/A7OC comments and include these with all submittals required
to be reviewed by NGB/A7O. The BCE does not have the authority to change design criteria or to direct changes to the contract. If the A-E thinks that any direction given by the BCE is a change in contract requirements, the A-E shall immediately notify the Contracting Officer prior to taking any action.

2.2.4. The base using activity (user) will be the occupant of the facility being designed. The user, in coordination with the BCE, is responsible for providing the A-E with information on its operations and on special or unique equipment that will be in the facility. The user does not have the authority to change design criteria or to direct changes to the contract. If information supplied by the user appears to conflict with criteria provided in the contract, the A-E shall immediately notify the Contracting Officer and BCE prior to taking any action.

2.2.5. The Design Working Group (DWG) is the bases team responsible for developing requirements and desires for the intended project. The BCE serves as the DWG's chairperson. Representatives of the user(s) shall be assigned to the DWG for the duration of the project and should be available for all meetings, reviews and other design activities. Representatives of the user must have delegated authority to speak for the using activity with respect to all requirements. Other necessary base personnel representing functional areas of expertise, including fire, safety, force protection, environmental and communications all must be part of the delegated DWG team. The DWG is initially formed to develop the Government’s project requirements. The same DWG should be retained and delegated to work with the A-E’s design team and provide information and guidance throughout the development of the Basis of Design and project design process. The DWG will meet with the A-E’s design team as needed. The DWG does not have the authority to change design criteria or to direct changes to the contract. If the A-E thinks that any direction given by the DWG is a change in contract requirements, the A-E shall immediately notify the Contracting Officer prior to taking any action.
3. SECTION 3 – ARCHITECTURAL-ENGINEERING (A-E) SERVICES

3.1. Overview of the Design Process. NGB/A7O initiates the design project by authorizing the BCE to procure A-E services through the Contracting Officer for the project. The NGB/A7O PM will issue a Design Instruction establishing the project cost and scope and outlining the required A-E services for the project. Once an A-E has been selected the BCE and Contracting Officer will conduct a CRC with the selected A-E. The NGB/A7O PM may attend the CRC. Attachment 3 provides a CRC Addendum sheet to be used to track changes to Tab C defined at the CRC. This should be used along with the Checklist of A-E Services Requirements provided to the base with the Design Instruction to establish the scope of A-E services to be provided. At the CRC the Government will review the project scope and budget. The Government will define the level of services required from the A-E. The A-E will also be presented any available Government project information. Further, the Government will review in detail procedures to follow in the contract as well as all submittal requirements from the A-E. At the close of the CRC the A-E will be presented a Request for Proposal for the A-E services. Following A-E fee negotiations, legal review of the contract documents and award of the signed Contract, the design shall proceed along the following steps:

3.1.1. A-E issued Notice to Proceed (NTP) to Type A.
3.1.2. A-E prepares Part I of the Basis of Design, if required (see Attachment 1) and submits to BCE for approval prior to proceeding further with design.
3.1.3. Type A-1 Concept preparation and Type A-1 Concept Proposal Meeting; review and approval by the DWG.
3.1.4. Prepare with BCE approval a Type A-1 Certification form (see Attachment 4) to be submitted to NGB/A7O, along with a copy of the Approved Part I of the Basis of Design (see Attachment 1). This is generally for NGB/A7O awareness only and does involve a stop in the design process unless funding is only available for Type A-1 Concept Proposal services. In such case, the A-E will be notified of this at the CRC and there will be a DESIGN STOP pending NGB/A7O notification of the availability of additional funding and direction to proceed from the Contracting Officer (If project design will not proceed at this point the Contracting Officer will notify A-E within 28 days of submittal.)
3.1.5. Type A-2 Concept preparation and Type A-2 Concept Development Meeting with the DWG.
3.1.6. Prepare with BCE approval a Type A-2 Certification form (see Attachment 5) to be submitted with the Type A-2 Concept Development Submittal.
3.1.7. Type A-2 Concept Development Submittal with incorporated base comments; DESIGN STOP, await approval by NGB/A7O and direction to proceed from the Contracting Officer (If project design will not proceed at this point the Contracting Officer will notify A-E within 28 days of submittal.)
3.1.8. Perform Optional Value Engineering Service, if required in the contract and Notice to proceed is issued by the Contracting Officer.
3.1.9. A-E issued NTP to Design (Type B) Services.
3.1.10. Develop Contract Documents to the B-1 level and hold Contract Document Development Meeting with the DWG (Type B-1).
3.1.11. Prepare with BCE approval a Type B-1 Certification form (see Attachment 6) to be submitted to NGB/A7O. This is for NGB/A7O awareness and does involve a stop in the design process.

3.1.12. Forward B-1 submittal to NGB/A7OC if required by the contract. (See 3.3.2.)

3.1.13. NGB/A7OC review comments are sent to the BCE. BCE reviews comments for consistency with other direction given A-E and forwards comments to Contracting Officer who in turn forwards them to A-E.

3.1.14. Develop Contract documents to the Type B-2 level and prepare with BCE approval a Type B-2 Certification form (see Attachment 7) to be submitted to NGB/A7O with the Type B-2 Prefinal Submittal.

3.1.15. Type B-2 Prefinal Submittal with incorporated base comments; DESIGN STOP, await approval of NGB/A7O and direction from the Contracting Officer.

3.1.16. A-E issued approval to proceed to Final Design (Type B-3) Services.

3.1.17. Make any final adjustments to the design as required by the Contracting Officer and make Final Submittal (Type B-3), design complete.

3.1.18. Code and Criteria Review if required.

3.1.19. Perform Optional Contract Procurement services if required by the contract and NTP is given by the Contracting Officer.

3.1.20. Reproduction of Bid Documents, if required.

3.1.21. Construction Inspection and Testing (Type C) Services, if included in contract.

3.2. Investigative Services (Type A)

3.2.1. Type A-1 Concept Proposal: A-E shall furnish the following:

3.2.1.1. Basis of Design: If included in the A-E contract the A-E, working with the DWG, shall prepare the Basis of Design, Part I-Design Intent, as described in Attachment 1. The level of detail of the information provided to the A-E to begin the preparation of the Basis of Design phase may vary widely depending on available program information and local Civil Engineer resources. This document shall be completed and approved by the BCE prior to the A-E proceeding to development of the Concept Proposal.

3.2.1.2. Type A-1 Concept Proposal Development and Type A-1 Concept Proposal Meeting: Based on the approved Basis of Design, Part I-Design Intent, and other project information, the A-E shall develop several project concept proposals as required below. The A-E shall then meet with the DWG for the purpose of selecting from several conceptual schemes, a single scheme to investigate further, and perform the following:

3.2.1.2.1. Provide a minimum of three single line site sketches (as site allows – 1 primary and 2 alternates, may be free hand) to scale. Site sketches will be based on the A-E’s site analysis, and shall indicate, as a minimum, contours, prevailing winds, pedestrian and vehicular circulation, facility layout and orientation, relationship to adjacent facilities, Environmental Restoration Program (ERP) sites, airfield clearances as appropriate, Explosive Quantity Distances as appropriate, and all other setback or clearance requirements affecting the facility. One site sketch shall accompany each of
the floor plan sketches referenced in Para. 3.2.1.2.2. The site sketch shall be shown over existing topographic map if locally available. A separate sketch for each site will provide the details showing the application of the Antiterrorism and Force Protection (ATFP) requirements.

3.2.1.2.2. Provide a minimum of three single line floor plan sketches (as program allows – 1 primary and 2 alternates, may be free hand) drawn to scale reflecting the spatial relationships as required. Indicate on each sketch each floor space name, net area provided in each floor space, approximate dimensions of each floor space, and indicate the gross building area (not to exceed the project scope).

NGB/A7O PM through the Contracting Officer may waive the requirement for three site sketches or the requirement for three floor plans in some projects.

(NOTE: For projects with floor plan areas containing at least 1,000 square feet of contiguous administrative area, the A-E shall provide for generic layout of pre-wired workstations per ANG Design Policy ETL, Section “Architectural.” The layout shall show the number of workstations each area can support.)

3.2.1.2.3. Provide a building section based on the proposed primary site plan and floor plan.

3.2.1.2.4. Provide a narrative description of each of the proposed building systems to include the following:

A - Substructure;
B - Shell;
C - Interior;
D - Services;
E - Equipment and Furnishings;
F - Special Construction and Demolition
G - Building Sitework
Z - General

3.2.1.2.5. Provide a construction cost estimate in accordance with 1.3.2., showing details and subtotals for each major element shown above and a grand total for the project. Provide a listing of ABIs or Options. Cost estimate will detail base plus ABI’s or Options. ABI’s or Options will total a minimum of 10% of the total MCC. Base cost will total a maximum of 90% of the MCC. No information pertaining to all such estimates shall be disclosed by the A-E, their associates, subcontractors, or any of their employees except to the extent permitted by the Contracting Officer.

3.2.1.2.6. A-E prepares ANG Sustainable Design and Energy Conservation Score Sheet, identifying anticipated points, for all three concepts presented at the Type A-1 Concept Proposal meeting.
3.2.1.2.7. During Type A-1 services, the A-E shall initiate the following services as may be required to further develop the conceptual design and in support of Type A-2 and Type B services:

- Topographic surveys
- Aerial surveys
- Utility services, including hydrant flow tests
- Cathodic protection services
- Soil borings, test reports and analysis
- Environmental analysis
- Other fact-finding investigations, such as, determination of permitting requirements, clarifying user requirements, economic feasibility studies, value engineering proposals, etc.

3.2.1.3. A-E prepares with BCE a Type A-1 Certification form to be submitted to NGB/A7O (see Attachment 4). Type A-1 Certification form provides NGB/A7O with confirmation that the Type A-1 submittal meets **all budget and scope requirements without further reprogramming or cost cutting**. The BCE then submits the Type A-1 Certification to NGB/A7O.

3.2.1.3.1 See Attachment 8 for Type A-1 Concept Development Meeting Checklist. This checklist is completed by the A-E and included with the submittal. The BCE then reviews the submittal against the completed checklist to insure completeness of the submittal.

3.2.2. Type A-2 Concept Development

3.2.2.1. Type A-2 Concept Development Meeting The A-E shall meet with the DWG for the purpose of presenting further investigative development of the selected concept, and perform the following:

3.2.2.1.1. Provide a refined conceptual site plan sketch and floor plan sketch. Include a scope calculation (not to exceed the project scope). Site plan sketch shall indicate, as a minimum, the building orientation, pavements, landscaping, utility runs, contours, etc. Floor plan sketch shall indicate, as a minimum, layout of rooms, space dimensions, door and window locations, user equipment, and fixed equipment (i.e., toilets, lavatories, theater seating, etc.)

3.2.2.1.2. Perform a value engineering analysis of the project building systems proposed in the Concept Proposal considering alternative project building systems. (This is separate from the Formal Value Engineering study, if authorized and described later). Provide an analysis of alternative project building systems in accordance with the requirements given in ANG Design Policy ETL, Section "Economic Analysis." Discuss the alternative buildings systems considered and the
basis for the A-E’s recommended system. Summarize the economic advantages of each system that is recommended in lieu of the system identified in the Type A-1 Concept Proposal. Include the following:

- Wall and roof systems analyzed and the recommended systems;
- Building elevation sketches using recommended architectural system;
- Structural systems analyzed and the recommended system;
- Mechanical systems analyzed and the recommended system;
- Electrical systems analyzed and the recommended system;

3.2.2.1.3. Provide a complete design analysis of all required fire systems (detection and suppression) including all requirements identified in ANG Design Policy ETL (Tab D) and UFC 3-600-01. Verify fire flow capacities of water supply in the vicinity of the project site per the UFC requirements.

3.2.2.1.4. Provide a complete analysis of all applicable ATFP provisions for this project according to the building occupancy classification in compliance with UFC 4-010-01.

3.2.2.1.5. Investigate and report on any permit applications that should be filed for the project to be in compliance with any federal, state, and local requirement on the management of air, water and waste.

3.2.2.1.6. Develop and provide a construction cost estimate (using budgetary parametric estimating tools), in accordance with 1.3.2., showing subtotals for each division and a grand total for the project. Provide a listing of ABIs or Options. Cost estimate will detail base plus ABI’s or Options. ABI’s/Options will total a minimum of 10% of the total MCC. Base cost will total a maximum of 90% of the MCC. *No information pertaining to all such estimates shall be disclosed by the A-E, their associates, subcontractors, or any of their employees except to the extent permitted by the Contracting Officer.*

3.2.2.1.7. Provide a black and white perspective sketch or drawing to show proposed major design features of the facility. NGB/A7O PM, through the Contracting Officer, may waive this requirement.

3.2.2.1.8. Complete and provide ANG Sustainable Design and Energy Conservation Score Sheet and Narrative. Also, complete and provide preliminary energy modeling summary results in the Energy Conservation section of the score sheet.

3.2.2.2. Type A-2 Concept Submittal. Within 7 calendar days following the A-E’s Concept Development Meeting with the DWG, the A-E shall incorporate recommendations of the DWG and submit all the required items listed below to each office listed in Section 5, Design Review Documents Distribution.
3.2.2.2.1. Provide a separately bound Basis of Design. Included shall be Part I, Design Intent, as approved earlier and Part II, Design Narrative, a documentation of the primary thought processes and assumptions behind design decisions that were made to meet the design intent. See Attachment 1 for a description of Basis of Design. The Basis of Design, Part II, Design Narrative, describes the systems, components, conditions and methods chosen to meet the intent. Some reiterating of the design intent may be included. Include expansions on the statements given in Part I, Design Intent, and additional information collected from the A-E's fact finding investigations with the Users. Include as part of Part II, Design Narrative, Room Data Sheets, similar to those presented in Part I, Design Intent, describing each room of the facility and include details as to what is being included in each space and how the requirements defined in Part I, Design Intent are being met.

3.2.2.2.2. Provide soil boring logs, analyses and test reports, and the results of any other surveys or investigations required under Para. 3.2.1.2.7.

3.2.2.2.3. Provide the selected building features, components and systems to include the following:

- Site plan sketch (Building Orientation, Pavements, Utilities, Contours/Drainage)
- Landscape plan sketch;
- Floor plan sketch;
- Building elevations;
- Building sections;
- Scope calculations, showing total building scope and net-to-gross area percentage;
- Narrative description of each building system (to be included in Part II, Design Narrative of the Basis of Design);

3.2.2.2.4. Provide a report of the Value Engineering Analysis required under Para. 3.2.2.1.2.

3.2.2.2.5. Provide report of Fire Systems Analysis required under Para. 3.2.2.1.3.

3.2.2.2.6. Provide a summary of all ATFP measures employed in the design based on occupancy classification as required under Para. 3.2.2.1.4.

3.2.2.2.7. Provide summary of applicable permits for this project as required under Para. 3.2.2.1.5.

3.2.2.2.8. Provide an updated construction cost estimate as required under Para. 3.2.2.1.6.

3.2.2.2.9. Provide an ANG Sustainable Design and Energy Conservation Score Sheet and Narrative. Also, provide preliminary energy model summary results in the Energy Conservation section of the score sheet.
3.2.2.2.10. Provide a Notice of the Meeting for documentation of the Type A-2 Concept Development Meeting.

3.2.2.2.11. Provide an updated project design schedule showing expected DWG meeting dates and design submittals through Type B-3 Final Design (Attachment 2.)

3.2.2.2.12. A-E prepares with BCE a Type A-2 Certification form (see Attachment 5) to be submitted to NGB/A7O. Type A-2 Certification form provides NGB/A7O with confirmation that the Type A-2 submittal meets all budget and scope requirements without further reprogramming or cost cutting.

3.2.2.2.13. Provide completed “Submittal Checklist List Type A-2 Concept” (Attachment 9.)

3.3. **Design Services (Type B)** The A-E shall perform services listed below, if and when the Contracting Officer exercises this contract option by issuing a written NTP.

3.3.1. **Type B-1 Contract Documents Development Meeting (CDDM).** Based on the approved Type A services the A-E shall develop Contract Documents as required below. The A-E shall meet with the DWG to conduct an "on-board" progress meeting at approximately the midpoint of design services. For projects to be certified with the USGBC, the Commissioning Agent (CA) review must be incorporated in this meeting and the Basis of Design, drawing and specification shall be evaluated by the CA. For this meeting the A-E shall provide the following elements.

3.3.1.1. Develop and provide complete edited draft technical division specifications in a standard commercial format bound in a separate book and in MS® Word format on a CD.

3.3.1.2. Develop and provide a detailed construction cost estimate, including ABI's or Options, using unit prices and quantities for all materials and labor for the project. Include a Cost Estimate Executive Summary (Attachment 13.) Bind construction cost estimate with the Cost Estimate Executive Summary in a separate booklet. **No information pertaining to all such estimates shall be disclosed by the A-E, their associates, subcontractors, or any of their employees except to the extent permitted by the Contracting Officer.**

3.3.1.3. Develop and furnish all drawings in 65 percent detail for all disciplines of work. The A-E shall provide drawings which are created using AutoCAD® (computer aided design and drafting) in most current version.

3.3.1.4. Provide an updated ANG Sustainable Design and Energy Conservation Score Sheet and Narrative. Also, complete and provide updated energy modeling summary results.
3.3.1.5. Provide the updated Basis of Design. Part 1, Design Intent as approved shall be included as well as Part 2, Design Narrative providing information developed to the level of the current design progress.

3.3.1.6. If authorized by ANG/A7O and included in the contract, provide two (2) AutoCAD® renderings or sketches, or freehand artist renderings or sketches from different viewing points for selection of an exterior facility rendering.

3.3.1.7. Present for the BCE's signature, completed permit applications required for the project to be in compliance with applicable federal, state and local air, water and waste requirements.

3.3.1.8. Reproduce all Type A review comments with annotations describing the disposition of each comment and the location within the contract documents where the comment address was incorporated.

3.3.1.9. The A-E shall submit to the Contracting Officer and NGB/A7O.

- A notice of the CDDM meeting with the DWG.
- The construction cost estimate attaching the Cost Estimate Executive Summary (Attachment 13.)
- An updated project design schedule, noting any deviations from the contracted A-E schedule.
- Provide minutes of the CDDM, including topics discussed, Government direction provided and a narrative summary explaining any deviation from the approved Concept Submittal.

3.3.1.10. A-E prepares with BCE a Type B-1 Certification form to be submitted to NGB/A7O Type B-1 Certification form provides NGB/A7O with confirmation that the Type B-1 submittal meets all budget and scope requirements without further reprogramming or cost cutting.

3.3.1.11. See Attachment 10 for Type B-1 CDDM Checklist. The A-E is to complete the check list and forward to the BCE. The BCE shall review the checklist against the information furnished at the B-1 meeting. For those projects where a formal submittal is to be made to NGB/A7OC the completed checklist shall accompany the submittal.

3.3.2. Type B-1 Contract Document Development Submittal. (Only required if design is required to be submitted to NGB/A7OC)

3.3.2.1. The A-E shall submit to NGB/A7OC design drawings and specifications, along with an updated Basis of Design.

3.3.2.1.1 Furnish all drawings in 65 percent details.
3.3.2.1.2. Specifications shall be complete edited draft technical division specifications in a standard commercial format bound in a separate book and in MS® Word format on a CD.

3.3.2.1.3 Basis of Design, shall be separately bound, to include Part I, Design Intent and Part II, Design narrative updated to reflect current design status. The Basis of Design shall be in a standard commercial format bound in a separate book and in MS® Word format on a CD.

3.3.2.2. Provide a detailed construction cost estimate, including ABI's or Options, using unit prices and quantities for all materials and labor for the project. Include a Cost Estimate Executive Summary (Attachment 13.) Bind construction cost estimate with the Cost Estimate Executive Summary in a separate booklet.

3.3.3. Type B-2 Prefinal Submittal. The A-E shall submit the required items listed below to each office listed in Section 5, Design Review Documents Distribution.

3.3.3.1. Provide a separately bound set of all engineering design calculations and analyses for each discipline.

3.3.3.2. Provide detailed working drawings 100% complete and ready for contract acquisition, in all disciplines of work. These should be submitted per Section 5.

3.3.3.3. Provide separately bound complete final specifications, ready for contract acquisition, in a standard commercial format for prefinal review. Specifications shall include Division 1, General Requirements, (coordinated with the Contracting Officer and BCE).

3.3.3.3.1. Include in the General Provisions of the Specifications, sections providing a Summary of Work entailed with this project, the Bid Structuring, and a Construction Phasing Plan (If required for this project.)

3.3.3.3.2. Include a requirement in the General Provisions of the Specifications for the construction contractor to maintain an up-to-date set of red-marked, annotated as-built drawings to be furnished to the Government upon completion of the construction.

3.3.3.3.3. For projects estimated to cost over $1 million, include a requirement in the General Provisions of the Specifications for a contractor-prepared and contractor-maintained critical path method (CPM) construction schedule using the arrow diagramming method. State in the specifications that the CPM schedule can be used in lieu of AF Form 3064, Contract Progress Schedule, providing a mechanism is in place to validate percentage of completion for verifying payment vouchers. (This has
been coordinated with National Guard Bureau Principal Assistant Responsible for Contracting (NGB-PARC.)

3.3.3.4. Provide a separately bound final construction cost estimate, in accordance with 1.3.2, including ABI's or Options and separate line item costs, using unit prices and quantities for all materials and labor for the project. Include a Cost Estimate Executive Summary (Attachment 13.) **No information pertaining to all such estimates shall be disclosed by the A-E, their associates, subcontractors, or any of their employees except to the extent permitted by the Contracting Officer.**

3.3.3.5. Provide an updated ANG Sustainable Design and Energy Conservation Score Sheet and Narrative. Complete and provide the project energy modeling summary results.

3.3.3.6. Provide an updated separately bound Basis of Design, Parts I and II, in both MS Word (.doc) and Portable Document Format (.pdf). Include CA review comments, if applicable.

3.3.3.7. If authorized by ANG/A7O and identified in the contract, provide one professionally prepared 24” x 36” matted and framed, fully colored, perspective rendering using an AutoCAD® generated rendering or provide same rendering requirement using free hand artist production. Size indicated above shall be for the rendering, required frame size and matting will be appropriately larger. Also provide rendering information in digital format (.JPEG) or other high-resolution format on titled CD. Provide framed rendering and digital copy on a CD to the BCE and one digital copy only to NGB/A7O.

3.3.3.8. A-E prepares with BCE a Type B-2 Certification form (see Attachment 7) to be submitted to NGB/A7O. Type B-2 Certification form provides NGB/A7O with confirmation that the Type B-2 submittal meets **all budget and scope requirements without further reprogramming or cost cutting.**

3.3.3.9. The A-E shall complete and provide Type B-2 Prefinal Submittal checklist from Attachment 11. The A-E is to complete the check list and forward to the BCE. The BCE shall review the checklist against the information furnished at the B-2 Submittal and include in submission to NGB/A7O.

3.3.4. **Type B-3 Final Submittal.** The A-E shall submit the requirements listed below to each office listed in Section 5, Design Review Documents Distribution.

3.3.4.1. Corrected final drawings.

3.3.4.2. Corrected final specifications.
3.3.4.3. Provide a separately bound final construction cost estimate, in accordance with 1.3.2, including ABI's or Options and separate line item costs, using unit prices and quantities for all materials and labor for the project. Include a Cost Estimate Executive Summary (Attachment 13.) *No information pertaining to all such estimates shall be disclosed by the A-E, their associates, subcontractors, or any of their employees except to the extent permitted by the Contracting Officer.*

3.3.4.4. Provide final ANG Sustainable Design and Energy Conservation Score Sheet (in both MS Excel (.xls) and Portable Document Format (.pdf)) and Narrative (in both MS Word (.doc) and Portable Document Format (.pdf)).

3.3.4.5. Provide an updated separately bound Basis of Design, Parts I and II, in both MS Word (.doc) and Portable Document Format (.pdf). Include CA review comments, if applicable.

3.3.4.6. Reproduce Prefinal Submittal review comments with annotations describing the disposition of each comment and the location within the contract documents where the comment address was incorporated.

3.3.4.7. See Attachment 12 for Type B-3 Final Design Submittal Checklist.

**3.4. Response to Offer Questions During Procurement:** As a part of the design services, the A-E, at the request of the Contracting Officer, shall be responsible for preparing responses to questions from contractors and if necessary, provide addenda, to clarify missing, unclear, or contradictory requirements necessary for construction. These services will be at no additional cost to the Government, whether the A-E has been retained for Type C services or not. The A-E is cautioned during the construction procurement stage not to take questions directly from contractors, but to refer them to the Contracting Officer. All responses shall be given to the Contracting Officer only. After construction award the A-E will respond to questions from the contractor as directed by the Contracting Officer.

**3.5. Code and Criteria Review**

3.5.1. When the time period between the Final (Type B) Design Submittal and January of the programmed construction year is more than eighteen (18) months, it is intended to have the A-E perform a code and criteria review of the project. This review shall be accomplished approximately six (6) months prior to January of the planned construction year.

3.5.2. If the Contracting Officer exercises this option in writing, the A-E shall provide the following indicated services.

3.5.2.1. Identify any ANGETL and Code updates relative to the project which have occurred since completion of design. Provide a brief summary stating how these codes have changed and what facets of the design are affected by these changes. If there have been no significant changes to the codes affecting the project, then so state.
3.5.2.2. Contact the BCE to determine any changes in design criteria such as site
changes, equipment changes, Government regulations, ANGETL’s, Technical Orders,
Mission Changes, etc. that may affect the final plans and specifications. Provide a brief
summary stating what areas of the design are affected due to these criteria changes.

3.5.2.3. Submit one (1) copy of these summaries to NGB/A7O, the BCE, and the
Contracting Officer. These summaries may be combined into one document.
Recommended modifications to the plans and specifications will be considered by
NGB/A7O for design modification to the A-E contract. No change to the design
documents shall be performed by the A-E unless directed in writing by the Contracting
Officer. In such cases as a design modification is determined to be required a
modification for additional services may be negotiated.

3.6. Value Engineering. (Optional Services)

3.6.1. The ANG supports a strong Value Engineering (VE) program to provide cost-effective
facilities. The goal of value engineering for all ANG projects is to reduce the cost of facility
ownership without reducing the quality. Value Engineering is an integral part of the ANG
design process and thereby a requirement of the A-E’s basic services. However, on occasion,
an additional formal value engineering study may be requested. This formal Value
Engineering study will be accomplished on the project at the completion of the Type A,
Concept review process at the state/base level. Determination as to the need for these types
of services shall be made in advance of procurement of Types A and B services and shall be
negotiated during the contract negotiations.

3.6.2. If a formal value engineering study is required as part of the Type A, Project Concept
Submittal review; the A-E will form a multi-disciplinary team, separate and distinct from the
design team, and will accomplish the study according to the Federal Acquisition Regulation
(FAR) Clause at 52.248-2, Value Engineering -- Architect-Engineer, with the team’s
objective to: investigate/analyze the Type A, Project Concept; evaluate the best and/or least
life-cycle cost alternatives; develop acceptable alternatives into fully supported
recommendations; and present the VE team’s recommendations to the Contracting Officer
and BCE.

3.6.3. If any or all of the recommendations from the VE study are accepted by the BCE, the
A-E will include these as part of the complete Type A, Concept Submittal to NGB/A7O.
During the NGB/A7O review, if any of the VE study recommendations are approved, then
these will be included in the review comments of the Contracting Officer. No change to the
concept submittal documents shall be performed by the A-E unless directed in writing by the
Contracting Officer.
3.7. Contract Procurement Services. (Optional Services)

3.7.1. If authorized by NGB/A7O, the Contracting Officer may negotiate for services of the A-E to assist with bid or proposal evaluations. A-E services for bid evaluations prove to be of significant value for design-build contracts as well as for source selection and best value contract solicitations. Determination as to the need for these types of services shall be made in advance of procurement of Types A and B services and shall be negotiated during the contract negotiations.

3.7.2. Evaluate construction contractors’ technical proposal for compliance with solicitation’s technical requirements. Review past performance for relevancy to the project and in keeping with the solicitation requirements. As directed by the Contracting Officer, make technical recommendations as to the individual offeror’s best value to the Government based on a review of the offerer’s proposals.

3.7.3. The Contracting Officer shall be responsible for all responses to questions from contractors. If the Contracting Officer or COTR requires technical assistance, or if the information contained in the Contract Documents is unclear or contradictory, the Contracting Officer shall convey such questions to the A-E. The A-E shall be responsible for preparing responses to the Contracting Officer and if necessary, provide addenda, to clarify missing, unclear, or contradictory requirements necessary for construction at no additional cost to the Government.

3.7.4. Reproduction of Bid Documents. When directed in writing by the Contracting Officer, the A-E shall reproduce and furnish a negotiated number of copies of the final drawings and specifications for the purpose of soliciting construction bids for the project. Electronic copies shall be in Portable Document Format (.pdf) digital format only on CD to be used in the solicitation. AutoCAD (.dwg) files shall not be provided to the contractors for use in bidding/pricing the project. If additional copies of Bid Documents are required beyond those included as Bid Document deliverables, they shall be provided at the pre-established unit price cost.

3.8. Construction Inspection and Testing Services (Type C).

3.8.1. If authorized by NGB/A7O and the Contracting Officer exercises the option to include Type C services, the A-E shall be required to perform some if not all the services listed below. The extent of services required will be defined during contract negotiations for Type C services.

3.8.2. Attend coordination meetings pertaining to the construction project, to include chairing, participating, and recording and distributing minutes when directed by the Contracting Officer. Progress meetings and those meetings called by the Construction Contractor will be chaired and recording and distribution of minutes shall be done by the Construction Contractor.
3.8.3. Maintain records and files of all Governmental documents, correspondence, site conference reports and records relative to this project. Also maintain copies of all submittals, addenda, change orders and supplementary drawings issued subsequent to project award.

3.8.4. Review, evaluate and make recommendations for acceptance or approval of the contractor’s construction schedule, schedule of values and submittals schedule.

3.8.5. Perform a technical review and make recommendations for approval on all shop drawings, product data, samples, etc. within the time constraints specified in the construction contract. Furnish and use a stamp approved by the Contracting Officer to process all submittals.

3.8.6. As requested by the Contracting Officer, provide timely consultation and advice to interpret or clarify the intent of the plans and specifications and answer questions that may arise during the construction of the project. Review contractor’s proposed change requests and recommend acceptance or rejection of same. Provide any supplemental drawings and specifications that may be required to assist the Contracting Officer. Under Type B services, the A-E shall be responsible to correct without additional compensation all A-E caused errors or omissions in the design. Disagreements over the cause for errors and omissions shall be presented to the Contracting Officer for resolution.

3.8.7. Assist the COTR in reviewing and recommending rejection/changes/approval to the Construction Contractor’s Application for Progress Payments and final payment.

3.8.8. Review periodic progress reports and schedules prepared by the contractor showing the progress of the construction work, report any deviation from the approved progress schedule and forward comments and recommendations to the Contracting Officer with copy to the COTR.

3.8.9. Assign qualified project representatives during the construction period whose duty and responsibility is to inspect the construction work and determine if the work is being executed in compliance with the approved contract documents. At the start of Type C services, the A-E shall submit, for approval by the Contracting Officer, an inspection plan to include the tentative schedule of inspections based on the contractor’s construction schedule and negotiated inspection visits/hours and qualifications of assigned inspectors. This plan must be updated when major changes in the construction schedule or changes in A-E personnel occur.

3.8.10. Inspections should be coordinated with the contractor so that the A-E’s project representative can attend periodic construction meetings and representatives of the various disciplines are on-site during critical stages of construction. The Contracting Officer may require the A-E to remove any inspector that the Contracting Officer deems incompetent, careless or otherwise objectionable.
3.8.11. Provide a written report for each site inspection visit to the Contracting Officer, the COTR and the BCE. A copy will be furnished to the construction contractor by the Contracting Officer as appropriate. Video or digital photographic documentation is encouraged. Include all observations of construction deficiencies in installed equipment, materials and workmanship. The A-E shall validate that the contractor is recording any changes through the use of red-line marked up drawings during his inspection visits.

3.8.12. Review all testing and lab reports, provide comments and make recommendations regarding any deviations from the contract documents.

3.8.13. The A-E shall be responsible for the professional quality, technical accuracy, and the coordination of all designs, drawings, specifications, and other services and to correct or revise any errors or deficiencies in its designs, drawings, specifications, other services, prepare change order plans, specifications, amendments, cost estimates, etc. at the direction of the Contracting Officer. In accordance with FAR Clause 52.236-23 – “Responsibility of the Architect-Engineer Contractor”, the A-E shall, without additional compensation, correct or revise any errors or deficiencies in its designs, drawings, specifications and other services. This is required as part of Type B services regardless of whether Type C services are authorized. Changes to or additions to the plans, specifications and cost estimates resulting from a change in scope shall be prepared at the direction of the Contracting Officer and any additional compensation will be negotiated accordingly.

3.8.14. For projects to be certified with the USGBC, and in accordance with the ANG Sustainable Design and Energy Conservation ETL, the A-E shall provide a qualified CA, independent from the project design firm and approved by the Contracting Officer, during design and construction. The commissioning services that are furnished during the design and solicitation are considered part of the design phase and shall be paid for with “design funds”. Post construction award services for commissioning shall be funded with project construction funds.

3.8.14.1. For projects not certified by the USGBC and where commissioning is determined not to be required, the A-E’s mechanical designer shall participate in a HVAC pretesting and balancing conference and shall be present during the testing and balancing procedures. The mechanical designer shall review the preliminary and final balancing reports and make recommendation for approval.

3.8.15. Prior to completion of the construction contract and before final payment, the A-E shall:

3.8.15.1. Participate in prefinal and final inspections and prepare a construction deficiency (punch) list. Make recommendations to the Contracting Officer regarding acceptance.

3.8.15.2. Participate in and verify and evaluate all specified acceptance, commissioning and testing to ensure compliance with specifications.
3.8.15.3. Review the operations and maintenance (O&M) manuals provided by the construction contractor for completeness. Verify that all warranties, certifications and test reports applicable are included. Pay particular attention to any extended type warranties (roofs, water heaters, A/C compressors, etc.). Verify that parts lists and synopsis/schedule of recurring maintenance are included.

3.8.15.4. Provide the BCE with a consolidation of recurring maintenance schedules for all equipment and other items of construction. Provide two copies each, in consolidated format, and in three-ring binders of mechanical, electrical and all other related schedules.

3.8.15.5. Verify that all requirements for spare parts and extra finish materials are provided by the contractor.

3.8.15.6. Prepare and furnish to the BCE a full set of record drawings in both AutoCAD® and Portable Document Format (.pdf) on CD and on reproducible Mylar's (or other medium acceptable to the BCE) based on approved contractor marked-up prints, drawings and other data furnished by the contractor. Also provide one set of annotated specifications on a CD in MS® Word format.

3.8.15.7. Complete and submit the real estate capitalization "Work Sheet for DD Form 1354" as found at Attachment 14 or as modified by the BCE and presented at the CRC. The A-E shall be responsible for collecting information from the contractor that is required to complete this form.
4. **SECTION 4 – DESIGN SUBMITTAL REVIEW PROCESS**

4.1. **General Submittal Requirements:**

4.1.1. All submittal items (analysis booklets, cost estimates, plans, specifications, etc.) shall clearly show:

- The submittal level or phase (Type A-1 Concept Proposal, Type A-2 Concept Development, Type B-1 Contract Document Development, Type B-2 Prefinal, Type B-3 Final, etc.) of the project.
- Project number A-E contract number and project title on all pages.
- The base (unit) and state.
- The current calendar date.

4.1.2. All meeting minutes, review comment responses, telephone logs, etc. must clearly show the project number, contract number and project title.

4.1.3. All "book type" submittal items, such as analyses, specifications, Basis of Design playback, etc., shall include:

- All pages numbered.
- All sections, paragraphs, etc. identified with Titles, Numbers, Letters, etc.
- Each section tabbed to clearly identify and distinguish sections from each other.
- All documents incorporated into bound documents with insert binder spine and cover sheet information. Include table of contents and tab all sections.
- All other miscellaneous smaller stand-alone documents in one aggregate bound deliverable, with insert binder spine and cover sheet information. Include table of contents and tab all sections.
- No information shall be provided loose leaf.

4.2. **Type A-2 - Concept Development Submittal.** The BCE will present the selected concept to NGB/A7O at the ANG Readiness Center. The presentation will follow the format shown in ANGETL 93-12, Attachment 3.

4.2.1. After receiving the oral presentation by the BCE, NGB/A7O will provide written comments to the Contracting Officer. The cover letter to the United States Property and Fiscal Officer (USPFO) will provide authority on whether or not to proceed with design (Type B) services.

4.2.2. If the A-E’s contract includes the requirement to provide this submittal to NGB/A7OC for review in accordance with Para. 5.5.1., any NGB/A7OC review comments will be provided to the BCE in advance of the Concept Submittal oral presentation and will be included, with any NGB/A7O edits, with the NGB/A7O written comments to the Contracting Officer.
4.2.3. The Contracting Officer will transmit comments to the A-E and provide the A-E direction on how to proceed. Deviation from the approved Type A (Concept) submittal are not permitted without notification and concurrence of NGB/A7O. Any lost design effort or redesign for failure to comply will be at no additional expense to the Government.

4.2.3. If the Government decides not to proceed with the design at this time the Contracting Officer will notify the A-E within 28 days of receipt of the submittal.

4.3. **Type B-1 Contract Documents Development Submittal.** NGB/A7OC, if required during the Criteria Review Conference, will review the submittal and return review comments to the BCE.

4.3.1. NGB/A7OC will provide written comments to the BCE. The BCE is responsible for resolving any conflicting comments between the DWG and NGB/A7OC.

4.3.2. The BCE will finalize the combined review comments and forward to the Contracting Officer.

4.3.3. The Contracting Officer will transmit comments to the A-E and provide direction on how to proceed within 21 days after submittal to NGB/A7OC.

4.3.4. On those projects where it is not required to submit designs for review to NGB/A7OC at the Type B-1 stage the A-E may proceed with design after the Type B-1 Contract Documents development meeting.

4.4. **Type B-2 - Prefinal Submittal.** The DWG and NGB/A7OC, if requested by the BCE, will review the submittal simultaneously.

4.4.1. If the A-E’s contract includes the requirement to provide this submittal to NGB/A7OC for review in accordance with Para. 5.5.3., NGB/A7OC will provide written comments to the BCE. The BCE is responsible for resolving any conflicting comments between the DWG and NGB/A7OC.

4.4.2. The BCE will finalize the combined comments and present the submittal to NGB/A7O at the ANG Readiness Center. The presentation will follow the format shown in ANGETL 93-12, Attachment 3. Upon receiving the oral presentation by the BCE, NGB/A7O will provide written comments, including all comments provided by the BCE (these may be annotated by NGB/A7O) under cover letter to the USPFO. The letter will provide direction on whether or not to proceed with Type B-3 Final submittal services.

4.4.3. The Contracting Officer will transmit comments to the A-E and provide the A-E direction on how to proceed within 21 days of receipt.
4.5. **Type B-3 - Final Submittal.** The BCE will review the submittal to verify that all previous comments have been incorporated, and will transmit any final comments and a recommendation on whether to accept the Final submittal to the Contracting Officer.

4.6. **General Notes.**

4.5.1 Regarding Submittal Review Comments, if the A-E thinks sufficient reason exists to not incorporate a comment, then the rationale must be provided in writing to both the BCE and the Contracting Officer within 10 days of receipt of the comment.

4.5.2 Submittal Presentations: Not all projects will have the level of complexity to warrant a presentation at the ANG Readiness Center or resources may not be available to support such a presentation. As such, the NGB/A7O PM may waive the requirement for a submittal presentation, reviewing the submittal based on the project Design Review Documents submitted or other presentation methods may be used, as approved by the NGB/A7O PM, such as video teleconferencing.
5. SECTION 5 – DESIGN REVIEW DOCUMENTS DISTRIBUTION

5.1. A summary of the standard distribution requirements are listed below. Submittal requirements identified elsewhere throughout this document (Tab C) but not listed in this section shall comply with the provisions of this section as well. The Contracting Officer, with the advice of the BCE may modify the requirements during the CRC. The review documents required to be provided to NGB/A7O and NGB/A7OC may not be reduced below what is indicated in this document. Each submittal shall be sent by the A-E to the appropriate offices listed by express mail/shipped with two-day service or as specified by the Contracting Officer during the CRC. When framed renderings are authorized, (see Para. 3.3.7.) the A-E shall be responsible for shipping with the proper packaging and insurance.

5.2. For each submittal described in this document the Contracting Officer will be provided with one copy of each item that is required to be submitted to any of the other parties. This includes one printed copy as well as a CD containing all documents submitted.

5.3. The BCE will be provided with those items described in the subsequent subparagraphs below as well as any other required items identified elsewhere in this document (Tab C). In addition if any document is required to be provided to other parties but not shown to be provided to the BCE then one copy of each such items will be provided to the BCE. This includes one printed copy as well as a CD containing all documents submitted. Distribution to the BCE shall be mailed to the address provided at the CRC.

5.3.1. Basis of Design (Type A-1 Services): Provide three printed copies as well as a CD of the Basis of Design, Part I, Design Intent, as described in Para. 3.2.1.1., for review and approval.

5.3.2. Concept Proposal Meeting (Type A-1 Services): Of the items described in Para. 3.2.1.2. and subsequent subparagraphs, provide three printed full size sets of drawings, three printed copies of the Basis of Design, Parts I and II, and three printed copies of other documents required. In addition provide a CD containing all of the information submitted.

5.3.3. Concept Development Meeting (Type A-2 Services): Of the items described in Para. 3.2.2.1. and subsequent subparagraphs, provide three printed full size sets of drawings, three printed copies of the Basis of Design, Parts I and II, and three printed copies of other documents required. In addition provide a CD containing all of the information submitted.

5.3.4. Concept Submittal (Type A-2 Services): Of the items described in Para. 3.2.2.2. and subsequent subparagraphs, provide three printed full size sets of drawings, three printed copies of the Basis of Design, Parts I and II, and three printed copies of other documents required. In addition provide a CD containing all of the information submitted.

5.3.5. Contract Document Development Meeting (Type B-1 Services): Of the items described in Para. 3.3.1. and subsequent subparagraphs, provide three printed full size sets of drawings,
three printed copies of the Basis of Design, Parts I and II, and three printed copies of other documents required. In addition provide a CD containing all of the information submitted.

5.3.6. Contract Document Development Submittal (Type B-1 Services): If required by the contract, provide one copy to the BCE of all submittal items required to be submitted to NGB/A7OC as described in Para. 3.3.2. and subsequent subparagraphs.

5.3.7. Prefinal Submittal (Type B-2 Services): Of the items described in Para. 3.3.3. and subsequent paragraphs, provide three printed full size sets of drawings, three printed copies of the Basis of Design, Parts I and II, and three printed copies of other documents required. In addition provide a CD containing all of the information submitted.

5.3.8. Final Submittal (Type B-3 Services): Of the items described in Para. 3.3.4. and subsequent subparagraphs, provide three printed full size sets of drawings, three printed copies of the Basis of Design, Parts I and II, and three printed copies of other documents required. In addition provide a CD containing all of the information submitted.

5.4. Distribution to NGB/A7O shall be mailed to the attention of the NGB/A7O PM, at 3500 Fetchet Ave., Joint Base Andrews, MD 20762-5157. The following items will be provided to NGB/A7O:

5.4.1. Basis of Design Submission (Type A-1 Services): Provide one “For Information Only” copy of Part I, Design Intent, as described in Para. 3.2.1.1. at the time of the first submittal to the BCE.

5.4.2. Concept Submission (Type A-2 Services): Of the items described in Para. 3.2.2.1. and subsequent subparagraphs, provide one half size drawing set, (approximately 11” x 17”), one copy of Basis of Design, Parts I and II, cost estimate, soils report, completed submittal checklist, and other required documents as well as a CD containing all of the required documents for this submittal phase.

5.4.3. Prefinal Submission (Type B-2 Services): Of the items described in Para. 3.3.3. and subsequent paragraphs, provide one half size drawing set, (approximately 11” x 17”), one set of specifications, one Basis of Design, Parts I and II, cost estimate, and other required documents as well as a CD containing all of the required documents for this submittal phase.

5.4.4. Final Submission (Type B-3 Services): Of the items described in Para. 3.3.4. and subsequent subparagraphs, provide one CD or DVD with drawings, specification, Basis of Design, cost estimate, all documents to be used for the bid package and/or for web site solicitation as well as any other required documents per contract agreement.

5.5 Distribution to NGB/A7OC shall be mailed to 3430 2nd St., Minot, ND 58703-0527. All airfield pavement, aircraft arresting systems, POL facilities, and High Expansion Foam systems designs shall be reviewed by NGB/A7OC unless waived by NGB/A7O. All other submittals will
be determined by at the CRC by the Contracting Officer with the advice of the BCE. The following items will be provided to NGB/A7OC:

5.5.1. Concept Development Submittal (Type A-2 Services): Provide if directed by Contracting Officer with the advice of the BCE during the CRC. Of the items described in Para. 3.2.2.1. and subsequent subparagraphs, provide one half size drawing set, (approximately 11” x 17”), one copy of the Basis of Design, Parts I and II, the cost estimate, soils report, completed submittal checklist, and all other required documents as well as a CD containing all of the required documents for this submittal phase.

5.5.2. Contract Documents Development Submittal (Type B-1 Services): Provide this submittal as described in Para. 3.3.2. and subsequent subparagraphs, if directed by Contracting Officer with the advice of the BCE during the CRC. Provide one half size drawing set, (approximately 11” x 17”), one set of specifications, one copy of the Basis of Design, Parts I and II, the cost estimate, completed submittal checklist, and all other required documents as well as a CD containing all of the required documents for this submittal phase. This phase of design, Contract Documents Development, typically involves an "on-board" progress meeting with the DWG at approximately the midpoint of design services. The BCE may request this submittal be provided to NGB/A7OC for the purpose of systems review prior to a formal review at the Prefinal Submittal.

5.5.3. Prefinal Submittal (Type B-2 Services): Provide this submittal as described in Para. 3.3.3. and subsequent subparagraphs, if directed by Contracting Officer with the advice of the BCE during the CRC. Provide one half size drawing set, (approximately 11” x 17”), one set of specifications, one copy of the Basis of Design, Parts I and II, the cost estimate, completed submittal checklist, and all other required documents as well as a CD containing all of the required documents for this submittal phase.

5.5.4. Final Submittal (Type B-3 Services): Provide this submittal if directed by Contracting Officer with the advice of the BCE during the CRC. Of the items described in Para. 3.3.4. and subsequent subparagraphs, provide one CD or DVD with drawings, specifications, Basis of Design, and cost estimate.

5.6 The following pertains to all submittals

5.6.1. Half sized drawings shall be sized approximately 11” by 17”.

5.6.2. Drawings are to be digital copies of each sheet of the set of bid drawings, including an index of drawing files. File names are to be named so the sheet number can be identified as part of the file name.

5.6.3. The final construction cost estimate shall be submitted separately from the bid package in both digital format on a CD, and in bound booklet form.
5.6.4. All drawings, specifications and construction cost estimates shall be delivered in Adobe® Acrobat format (.pdf). In addition, all drawings shall be submitted in AutoCAD® format with all necessary reference files, and all specifications shall be submitted in MS® Word format.

5.6.5. All information required by the Air National Guard Sustainable Design and Energy Conservation Strategies ETL, including but not limited to score sheets, energy modeling and sustainable design narrative, shall be submitted separately from the bid package in both digital format on a CD, and in bound booklet form.
Attachment 1

A-E PREPARED
BASIS OF DESIGN

Basis of Design. The Basis of Design is defined as a document, developed over the entire design process, which defines the Government’s requirements for the project as well as describing in a narrative form the principle aspects of the design solution. Part I - Design Intent is developed prior to the Construction Documents Development Phase of the facility (Type B Services) and establishes baseline criteria for the facility function, performance and maintainability and any other information required to define the project requirements. It is used to establish goals for the facility design, performance and operations. Part II - Design Narrative describes the features of the design that are used to meet objectives described in the Design Intent. It further identifies loads, capacities, clearances and other salient aspects of the design.

Part I of the Basis of Design, the Design Intent, includes six distinct sections. Tab A, defines the requirements for any buildings and structures needed. Tab B defines any site development requirements. Tab C, “ANG Design Objectives and Procedures” is included, which defines the ANG design process and the requirements of the A-E contracted to develop the design documents. Tab D, “ANG Design Policy” provides general technical requirements that are applicable to the whole range of facilities required by the ANG. Tab E contains the Project Approval Package Documents to include, as a minimum, DD Form 1391, “Military Construction Project Data”, which describes the basic need for the project and defines the authorized scope and total funding requested from Congress for the project, the MCP or SRM Certificate of Compliance, the MCP or SRM Checklist, and AF Form 813, Request for Environmental Impact Analysis. Tab F, Various Appendices as appropriate for the particular project which may include the Environmental Restoration (ERP) Appendix, Real Estate Appendix, or an Asbestos Appendix.

Part II, the Design Narrative, is prepared by the designer of record (i.e., the designer who prepares and seals the construction documents) during the concept development phase of the project and is continually updated as the design evolves to reflect the current design decisions and attributes. It is a requirement at each design submittal that the updated document be submitted. Changes to the Government’s approved Part I, Design Intent, shall not be made unless directed by the Contracting Officer in writing.

The Basis of Design shall have an 8 1/2 by 11 inch format. Any prints or drawings will be folded as near as possible to 8 1/2 by 11 inches and inserted in the Basis of Design. No artwork or special graphics are required to enhance the appearance of the Basis of Design. The accuracy, completeness and quality of the information contained in the Basis of Design are more important than the appearance of the product.

Part I of the Basis of Design shall consist of a Cover Sheet, Tabs A, B, C, D, E and F. Only the cover sheets for Tabs C and Tab D, indicating the date of publication, are required until the final submittal of the Basis of Design. However, if changes in the original requirements of these two...
Attachment 1

documents have been made the complete copy of the document must be included with the changes therein highlighted.

The Air Commander, BCE, the Using Organization Representatives, Environmental Manager, Fire Chief, Security Chief, Safety Officer, and Communications Chief, will participate as part of the DWG review. Design criteria in all manuals and Technical Orders (TOs) should be restated in the Basis of Design or otherwise specifically referenced. A copy of applicable portions of referenced manuals and TOs provided by the Government should be made a part of the Basis of Design.

1. PART 1 – DESIGN INTENT

1.1 Cover Sheet. The Cover Sheet shall include places for the signatures of The Air Commander, BCE, the Using Organization Representative, Environmental Manager, Fire Chief, Security Chief, Safety Officer, and Communications Chief. The BCE will obtain these signatures prior to submission of the Design Intent document to NGB/A7O.

1.2 Tab A. This tab will fully develop the project requirements. Information required to complete items described in Paragraphs 1.2.1. through 1.2.7. below will be provided by the BCE at the CRC. The functional requirements for each space, as described in Para. 1.2.8. below will be developed by the A-E based on information gathered by interviewing key staff members of the DWG. Paragraphs required in Tab A are described as follows:

1.2.1 Project Number (PN) and Title. Provide a brief overview of the functions performed at the facility. Include a synopsis of the scope and intent of the project.

1.2.2. Scope. Scope shall match that found on the DD Form 1391.

1.2.3. Maximum Construction Cost. The MCC is the sum of both the estimated base bid and the options/ABI’s provided by this design.

1.2.4. ANG Definitives/Facility Design Guides. These will be utilized when available provided that the applicable Definitive/Facility Design Guide adequately describes the proposed facility.

1.2.5. Floor Plan: Provide existing floor plan for alteration projects.

1.2.6. Number of Occupants. Provide the number of male, female, total weekday and unit training assembly (UTA) occupants of the facility. These numbers are used to adequately size the lavatories and parking lots.

1.2.7. Hours of Operation: Provide weekday, weekend (UTA) and night hours. These hours are useful to a mechanical engineer to provide a design energy budget calculation when required.
Attachment 1

1.2.8. Space Title, Function and Special Requirements: This paragraph and all subsequent paragraphs are used to describe each space in the facility. List each space, with title and description, starting on a separate page. (See Attachment 15 for suggested format) Space titles will reflect room function. Provide a brief functional description of each space. Subparagraphs (a) through (h) for each space are used to list special space or technical requirements. If the requirements of a space are of standard construction or are defined in Tab D, ANG Design Policy, state No Special Requirement (NSR). The subparagraphs are:

1.2.8.1. Architectural: Examples are special wall, floor or ceiling treatment; special ceiling height; special fenestration; special door types or sizes; security requirements; daily and UTA room occupancy numbers.

1.2.8.2. Structural: Examples are special floor loadings, vaults (include class), hoists, lifts.

1.2.8.3. Mechanical: List requirements for design temperature and humidity; special plumbing, heating, ventilation, air conditioning; compressed air; stripping or cleaning vats; exhaust hoods or fans; eye wash, floor drains; and oil-water separators, neutralizers, process tanks, dust collectors and hazardous wastes.

1.2.8.4. Electrical: Examples are special lighting and power requirements, special grounding, lightning protection, hazardous area classification, special security requirements, stand-by power and ground fault interrupters.

1.2.8.5. Communications: Examples are pre-wiring for telephone, intercom, public address, data automation and CCTV requirements. Include all requirements for limiting compromising emanations (TEMPEST).

1.2.8.6. Fire Protection: List additional special requirements beyond those required by the UFC and ANG Tab D.

1.2.8.7. Equipment: Examples are to identify equipment that is Government-Furnished (GFE), such as lathes or table saws, that must be considered when sizing a space (room) and providing supporting utilities.

1.2.8.8. Technical Order (TO): Refer to specific TOs.

1.3. Tab B: This tab will fully develop the project site requirements. All information required to complete items described below will be provided by the BCE at the CRC. Each paragraph of Tab B is described as follows:

1.3.1. Project Number (PN) and Title: Provide a brief summary of the major exterior work items needed that are described in further detail in subsequent paragraphs, such as access roads, parking lots and fencing.
1.3.2. Location of Project: Describe the location of the facility on the installation and any special relationship the facility may have with other facilities. Refer to any plan provided by the Government that shows the location of the facility on the installation and indicates the construction haul route and staging area. The proposed location of the facility must be in conformance with the approved master plan. Any other location must be supported with an approval from NGB/A7O.

1.3.3. Site Plan: Describe the project site area. Refer to any plan provided by the Government that outlines the property area to be used for the project site. On many ANG installations the base has electronic files on existing site features. The outlined area will define the area to be considered for a topographic survey. Identify existing site features such as whether the site is treed or cleared, has buildings to be demolished, or has pavements. Indicate the availability of existing soil boring data that may be useful to the design. Include a narrative of the requirements that a design must provide to accommodate pedestrian and vehicle traffic, privately owned vehicle and organic parking, fencing, area lighting, storage areas, etc. Include any existing ATFP studies or information provided by BCE.

1.3.4. Utility Plans. Describe what is known about each of the existing utilities needed to service the facility. Refer to the simple utility plan attached to the Basis of Design that shows the facility site plan and the location of all existing utilities including water, sanitary sewer, storm drain, gas, electric and communication lines, and fire hydrants. BCE will coordinate with the ANG installation communications officer to determine how communications cable will be provided to the building site.

1.3.5. Architectural Treatment: Describe the architectural treatment and types of construction of surrounding existing permanent facilities. New facilities shall harmonize and be compatible with existing permanent construction. Include base policy statement on color scheme or other architectural policy, if such policy exists.

1.3.6. Special Siting Criteria: Describe the constraints on locating the facility in the vicinity of adjacent structures, base property lines, runways, taxiways, aircraft parking facilities, Quantity-Distance (QD) requirements, security requirements of fences, gates, etc. Refer to the UFC, Air Force Manual or Air Force Instruction paragraphs furnished by the Government that provide the special siting criteria for the design.

1.3.7. Environmental Requirements: Describe environmental and permit requirements. Permit applications will be prepared during design by the A-E for BCE’s signature by the completion of Type B, Contract Documents Development Meeting.

1.4. Tab C: This tab consists of the ANG Design Objectives and Procedures. It includes a complete description of each phase of the design, submittal requirements and responsibilities for the design review process. It also provides formats for ANG facility design data, a design and construction schedule, review comments, and CRC addendum items as well as submittal
Attachment 1

checklists. This tab is formulated by NGB/A7O and periodically updated as an ANGETL. Submit only the coversheet of Tab C in use, unless the requirements in the published Tab C have been modified for this project. In that case provide full copy of the document.

1.5. **Tab D:** This tab consists of the ANG Design Policy. It contains design guidance affecting various aspects of an A-E’s design. Design policy is also formulated by NGB/A7O and periodically updated and issued as an ANGETL. Submit only the coversheet depicting the current version of Tab D used for the project.

1.6. **Tab E:** This tab contains the Project Approval Package, to be provided by the BCE, to include, as a minimum, the Project DD Form 1391, Military Construction Project Data (latest version available), the MCP or SRM Certificate of Compliance, the MCP or SRM Checklist, and AF Form 813, Request for Environmental Impact Analysis.

1.7. **Tab F:** This tab contains various appendices provided by the BCE, as appropriate for the particular project which may include the following, descriptions of which are found in ANGETL 93-7:

1.7.1 Real Estate Appendix – This is to ensure that all land requirements have been met to support the construction of this project. It is particularly important for MCP projects to ensure that we have no less than 25 years remaining at the time of construction. Upon receipt of the Design Intent, the NGB/A7O PM will provide a copy of this Appendix to NGB/A7AR to verify the currency of the information submitted.

1.7.2. Asbestos Appendix – The purpose of this appendix is to determine the likelihood of encountering Asbestos-Containing Materials (ACM) during the construction of this project. This may need to be addressed when projects involve the disturbance of existing construction. In this appendix, the BCE will provide available information regarding the presence and condition of ACM in the facilities impacted by this project. If ACM are anticipated to be encountered, the project design shall include provisions for appropriate asbestos abatement measures.

1.7.3 Environmental Restoration Program (ERP) Appendix – The purpose of this appendix is to ensure that the proposed construction does not conflict with an ERP site. ERP sites include Installation Restoration Program (IRP) and Military Munitions Response Program (MMRP) sites. In this appendix, the BCE will provide available information on the location and status of ERP sites in the vicinity of the project. Upon receipt of the Design Intent, the NGB/A7O PM will provide a copy of this Appendix to NGB/A7OR to verify the currency of the information submitted.
Attachment 1

2. PART II - DESIGN NARRATIVE

The Basis of Design, Part II, Design Narrative, describes the systems, components, conditions and methods chosen to meet the intent. It is a narrative and analytical document prepared by the design A-E along with design submissions to explain how the Government's project requirements are met by the proposed design. It describes the technical approach used for systems selections, integration, and sequence of operations, focusing on design features critical to overall building performance. Some reiterating of the design intent may be included. Include expansions on the statements given in Part I, Design Intent, and additional information collected from the A-E's fact finding investigations with the Users. Generally the A-E is free to choose a format suitable for the particular project. The format used to provide individual space criteria may be similar to that found in Attachment 15 showing details of what is provided in the design. Further, for all building systems denote loads and demands placed on the systems and the capacities provided in the design.

Part II Design narrative will be kept up to date as the project progresses. It is required to be submitted with the Type A-2 Concept Submittal, the Type B-1 Submittal, if required to NGB/A7OC, and with the TypeB-2, Prefinal submittal.
## DESIGN SCHEDULE

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Attachment 3

CRITERIA REVIEW CONFERENCE AND TAB C ADDENDUM

Sheet ____ of____

CRC DATE: ________________

PN: ________________ TITLE: ________________

SCOPE: ________________ MCC: ________________

PLANNED CONSTRUCTION YEAR: __________

ITEM NUMBER: __________

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Type A-1 Certification
Prepared by A-E and BCE
Submitted to NGB/A7O at completion of A-1

The purpose of this Certification is to confirm that project [Proj No] can proceed without further reprogramming, adjustment to program scope or cost cutting required to provide a complete and usable facility meeting the requirements established in the DD Form 1391. The total estimated Base Bid plus ABI’s or Options is at or below the Maximum Construction Cost.

Scope met

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Do not submit if Total CWE exceeds MCC or Scope is not met. Contact NGB/A7O to evaluate options if these cannot be met.

ATFP Addressed.

Fire Protection Water Supply meets requirements.


ANG Sustainable Design and Energy Conservation Score Sheet is attached.

________________________________________________________________________
Base Civil Engineer - Sign Date

________________________________________________________________________
Base CC – Sign Date
Attachment 5

Project Number __________________ Title ________________________________

Type A-2 Certification
Prepared by A-E and BCE
Submitted to NGB/A7O at completion of A-2

The purpose of this Certification is to confirm that project [Proj No] can proceed without further reprogramming, adjustment to program scope or cost cutting required to provide a complete and usable facility meeting the requirements established in the DD Form 1391. The total estimated Base Bid plus ABI’s or Options is at or below the Maximum Construction Cost.

Scope met

CWE

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Do not submit if Total CWE exceeds MCC or Scope is not met.
Contact NGB/A7O to evaluate options if these cannot be met.

ATFP Addressed.

Fire Protection Water Supply meets requirements.


ANG Sustainable Design and Energy Conservation Score Sheet is attached.

__________________________________________________________
Base Civil Engineer - Sign Date

__________________________________________________________
Base CC – Sign Date
Attachment 6

Project Number __________________ Title ________________________________

**Type B-1 Certification**
Prepared by A-E and BCE
Submitted to NGB/A7O at completion of B-1

The purpose of this Certification is to confirm that project [Proj No] can proceed without further reprogramming, adjustment to program scope or cost cutting required to provide a complete and usable facility meeting the requirements established in the DD Form 1391. The total estimated Base Bid plus ABI’s or Options is at or below the Maximum Construction Cost.

Scope met

CWE

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Do not submit if Total CWE exceeds MCC or Scope is not met. Contact NGB/A7O to evaluate options if these cannot be met.

ATFP Addressed.

Fire Protection Water Supply meets requirements.


ANG Sustainable Design and Energy Conservation Score Sheet is attached.

__________________________________________________
Base Civil Engineer - Sign Date

__________________________________________________
Base CC – Sign Date
Attachment 7

Project Number __________________  Title ________________________________

Type B-2 Certification
Prepared by A-E and BCE
Submitted to NGB/A7O at completion of B-2

The purpose of this Certification is to confirm that project [Proj No] can proceed without further reprogramming, adjustment to program scope or cost cutting required to provide a complete and usable facility meeting the requirements established in the DD Form 1391. The total estimated Base Bid plus ABI’s or Options is at or below the Maximum Construction Cost.

Scope met

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Do not submit if Total CWE exceeds MCC or Scope is not met.
Contact NGB/A7O to evaluate options if these cannot be met.

ATFP Addressed.

Fire Protection Water Supply meets requirements.

Meets EPAAct 2005.

ANG Sustainable Design and Energy Conservation Score Sheet is attached.

__________________________________________________  __________
Base Civil Engineer - Sign                             Date

__________________________________________________  __________
Base CC – Sign                                          Date
TYPE A-1 – CONCEPT PROPOSAL MEETING CHECKLIST

BASE________________________ STATE_______ DATE____________

PROJECT NUMBER____________________________________________________

TITLE______________________________________________________________

___ THREE SINGLE LINE SITE SKETCHES

___ THREE SINGLE LINE FLOOR PLAN SKETCHES (NGB/A7O Project Manager through Contracting Officer may waive the requirement for three site sketches or the requirement for three floor plans.)

___ BUILDING SECTION BASED ON SITE AND FLOOR PLANS

___ NARRATIVE FOR PROPOSED BUILDING SYSTEMS:

___ SUBSTRUCTURE
___ SHELL
___ INTERIOR
___ SERVICES
___ EQUIPMENT AND FURNISHINGS
___ SPECIAL CONSTRUCTION AND DEMOLITION
___ BUILDING SITWORK
___ GENERAL

___ PARAMETRIC CONSTRUCTION COST ESTIMATE

___ ANG SUSTAINABLE DESIGN AND ENERGY CONSERVATION SCORE SHEET FOR ALL THREE CONCEPTS
Attachment 9

TYPE A-2 – CONCEPT DEVELOPMENT DESIGN SUBMITTAL
CHECKLIST

BASE______________________________ STATE______ DATE____________
PROJECT NUMBER__________________________________________________
TITLE____________________________________________________________

___ PLAYBACK OF BASIS OF DESIGN
___ SOIL BORING LOGS, TEST REPORTS AND ANALYSES
___ SITE PLAN SKETCH
     ___ BUILDING ORIENTATION
     ___ PAVEMENTS
     ___ UTILITIES
     ___ CONTOURS/DRAINAGE
___ LANDSCAPE PLAN SKETCH
___ FLOOR PLAN SKETCH
___ BUILDING ELEVATIONS
___ BUILDING SECTIONS
___ SCOPE CALCULATIONS
___ NARRATIVE DESCRIPTION OF EACH BUILDING SYSTEM
___ VALUE ENGINEERING STUDY (IF REQUIRED)
___ FIRE SYSTEMS ANALYSIS
___ SUMMARY OF APPLICABLE ATFP MEASURES
___ SUMMARY OF APPLICABLE PERMITS
___ PRELIMINARY COST ESTIMATE AND ABI's or BID OPTIONS LIST
___ UPDATED PROJECT SCHEDULE
___ SUSTAINABLE DESIGN AND ENERGY CONSERVATION SCORE SHEET
Attachment 10

TYPE B-1 – CONTRACT DOCUMENTS DEVELOPMENT MEETING
CHECKLIST

BASE______________________________ STATE_______ DATE____________

PROJECT NUMBER______________________________________________

TITLE________________________________________________________

___ EDITED DRAFT TECHNICAL SPECIFICATIONS
___ DETAILED CONSTRUCTION COST ESTIMATE
___ ALL DRAWINGS IN 65% DETAIL
___ UPDATED ANG SUSTAINABLE DESIGN AND ENERGY CONSERVATION
   SCORE SHEET AND NARRATIVE
___ UPDATED BASIS OF DESIGN, PARTS I AND II
___ TWO PERSPECTIVE SKETCHES FOR EXTERIOR OF FACILITY (IF
   AUTHORIZED BY NGB/A7O PROJECT MANAGER)
___ PERMIT APPLICATIONS FOR BCE SIGNATURE
___ COPY OF TYPE A-2 REVIEW COMMENTS AND DISPOSITIONS
Attachment 11

TYPE B-2 – PREFINAL DESIGN SUBMITTAL
CHECKLIST

BASE __________________________ STATE _______ DATE ___________

PROJECT NUMBER __________________________________________

TITLE ______________________________________________________

___ ENGINEERING CALCULATIONS AND ANALYSES

___ 100% DETAILED DRAWINGS FOR ALL DISCIPLINES

___ FINAL SPECIFICATIONS INCLUDING DIVISION I – GENERAL
PROVISIONS, INCLUDING SUMMARY OF WORK, BID STRUCTURING,
AND CONSTRUCTION PHASING PLAN (If required for this project.)

___ FINAL DETAILED CONSTRUCTION COST ESTIMATE INCLUDING
ABI’s or BID OPTIONS

___ UPDATED PROJECT SCHEDULE

___ UPDATED ANG SUSTAINABLE DESIGN AND ENERGY CONSERVATION
SCORE SHEET AND NARRATIVE

___ RENDERING (when authorized by NGB/A7O)

___ UPDATED BASIS OF DESIGN, PARTS I AND II
Attachment 12

TYPE B-3 – FINAL DESIGN SUBMITTAL
CHECKLIST

BASE______________________________ STATE_______ DATE__________

PROJECT NUMBER______________________________________________________

TITLE______________________________________________________________

___ CORRECTED FINAL DRAWINGS FOR ALL DISCIPLINES

___ FINAL SPECIFICATIONS INCLUDING DIVISION I – GENERAL PROVISIONS, INCLUDING SUMMARY OF WORK, BID STRUCTURING, AND CONSTRUCTION PHASING PLAN (If required for this project.)

___ CORRECTED FINAL DETAILED CONSTRUCTION COST ESTIMATE INCLUDING ABI's or BID OPTIONS

___ FINAL ANG SUSTAINABLE DESIGN AND ENERGY CONSERVATION SCORE SHEET AND NARRATIVE

___ UPDATED BASIS OF DESIGN, PARTS I AND II

___ PREVIOUS REVIEW COMMENTS WITH A-E DISPOSITION
COST ESTIMATE EXECUTIVE SUMMARY

SUBMITTAL STAGE ______________

BASE ______________________________ STATE _____ DATE ____________

PROJECT NUMBER ________________

TITLE ____________________________________________________________

ASSUMED BID OPENING DATE __________

MCC $ ____________

90% MCC $ ____________

BASE BID (Exclude Contingency & SIOH) $ ____________

ADDITIVE BID ITEMS or BID OPTIONS

1 _____________________________________________________________ $ ________

2 _____________________________________________________________ $ ________

3 _____________________________________________________________ $ ________

4 _____________________________________________________________ $ ________

TOTAL ABI’S / BID OPTIONS $ ____________

TOTAL (BASE BID PLUS ABI’S / BID OPTIONS $ ____________

SEPARATE CONTRACT COSTS
(e.g. prewired workstations, utility connections, etc.) $ ____________

TOTAL ESTIMATE $ ____________
This work sheet identifies typical items that need to be broken out on the DD Form 1354 and entered into the real property database. The work sheet does not include all possible items. The BCE will provide additional guidance as required.

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<td>CONTRACT#</td>
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<th>&amp; CATEGORY</th>
<th>TOTAL DESIGN $</th>
<th>TOTAL PROJECT $</th>
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<th>BUILDING SYSTEMS</th>
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<th>A. HEATING SYSTEMS:</th>
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<th>NOMENCLATURE</th>
<th>UNIT OF</th>
<th>UOM</th>
<th>AREA CODE</th>
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| HTG FL OIL STOR       | GA      |     | X 821-112 |
| HTG FR CEN PLT        | SF      |     | X 821-113 |
| HTG PLANT             | MB      |     | X 821-115 |
| HTG FCLTY BLDG        | MB      |     | X 821-117 |
| ELEC PWR GEN PLT      | KW      |     | X 811-145 |
| ELEC E/PWR GEN PLT    | KW      |     | X 811-147 |
| MISC STOR TANK        | BL      |     | X 890-171 |
| GAS MAINS             | LF      |     | E 824-964 |
# REAL PROPERTY ACCOUNTABILITY
## DD 1354
### WORK SHEET

**Your ANG Wing**

**Project Title & ANG Project Number**

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<thead>
<tr>
<th>NOMENCLATURE</th>
<th>UNIT OF MEASURE</th>
<th>AREA</th>
<th>CATEGORY</th>
<th>AMOUNT</th>
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<td>A/C PLT 5 TO 25 TN</td>
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<td>CLOSED HEAD AUTO SPRINKLER</td>
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<td>OPEN HEAD DELUGE SYSTEM</td>
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<td>PIPELINE, LF</td>
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## E. BASE INFRASTRUCTURE/SYSTEMS:

### ELECTRIC
- **PRIM DISTR LINE (OVERHEAD)**
  - Unit of Measure: LF
  - Code: E 812-223
- **PRIM DISTR LINE (UNDERGROUND)**
  - Unit of Measure: LF
  - Code: E 812-225
- **SEC DIST LINE (OVER HEAD)**
  - Unit of Measure: LF
  - Code: E 812-224
- **SEC DIST LINE (UNDERGROUND)**
  - Unit of Measure: LF
  - Code: E 812-226
- **EXTERIOR AREA LIGHTING**
  - Unit of Measure: EA
  - Code: E 812-926
- **UTILITY LINE DUCTS**
  - Unit of Measure: LF
  - Code: E 890-181
- **TRAFFIC LIGHTS**
  - Unit of Measure: EA
  - Code: E 812-928

### TELEPHONE
- **TELEPHONE DUCT FACILITY**
  - Unit of Measure: LF
  - Code: E 135-583
- **TELEPHONE POLE FACILITY**
  - Unit of Measure: LF
  - Code: E 135-586

### WATER
- **SAN SEWAGE MAIN**
  - Unit of Measure: LF
  - Code: E 832-266
- **HOT WTR MAINS**
  - Unit of Measure: LF
  - Code: E 822-245
- **WTR SUP MAINS**
  - Unit of Measure: LF
  - Code: E 841-161
- **WTR DISTR MAINS**
  - Unit of Measure: LF
  - Code: E 842-245
- **FIRE PROTECT WTR MAIN**
  - Unit of Measure: LF
  - Code: E 843-314
- **FIRE HYDRANT**
  - Unit of Measure: EA
  - Code: E 843-315
- **STORM DRAIN DSPL**
  - Unit of Measure: LF
  - Code: E 871-183
- **CATHODIC PROTECTION SYSTEM**
  - Unit of Measure: EA
  - Code: E 890-269
- **SEWAGE SEPTIC TANK**
  - Unit of Measure: KG
  - Code: E 831-169
- **IND WST MAIN**
  - Unit of Measure: LF
  - Code: E 832-255
- **WATER WELL**
  - Unit of Measure: KG
  - Code: E 841-166

### SIDEWALK
- **SIDEWALK**
  - Unit of Measure: SY
  - Code: E 852-289
- **CURBS & GUTTERS**
  - Unit of Measure: LF
  - Code: E 851-143
- **PAD, EQUIPMENT**
  - Unit of Measure: SY
  - Code: E 132-123
- **SPT STRU**
  - Unit of Measure: EA
  - Code: E 890-161
## REAL PROPERTY ACCOUNTABILITY
### DD 1354
#### WORK SHEET

Your ANG Wing

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<th>NOMENCLATURE</th>
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<td>E 872-248</td>
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## REAL PROPERTY ACCOUNTABILITY
### DD 1354
#### WORK SHEET

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<td>Roof</td>
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**SIGNATURE**

**DATE:**

**TITLE OF PREPARER**

---

ANG Design Objectives and Procedures (TAB C) 16 APR 10
### Attachment 15

**INDIVIDUAL SPACE CRITERIA DATA SHEET**

This data sheet is used to record the criteria for individual spaces within an ANG project. It includes sections for architectural, structural, HVAC, plumbing, fire protection, electrical, and equipment requirements.

#### Space:

<table>
<thead>
<tr>
<th>Size (s.f.)</th>
<th>Occupancy</th>
<th>Function</th>
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</thead>
<tbody>
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#### Architectural

- **Finishes:**
- **Floor:**
- **Walls:**
- **Ceiling:**
- **Clear Ceiling Height:**
- **Windows:**
- **Doors:**
- **Adjacencies:**
- **Features:**
- **Furnishing:**

#### Structural

- **Floor:**
- **Walls:**
- **Ceiling:**
- **Features:**

#### HVAC

- **Air Conditioning:**
- **Ventilation:**
- **Heating:**
- **Temperature:**
- **Special Requirements:**

#### Plumbing

- **Fixtures:**
- **Equipment Air:**
- **Floor Drains:**
- **Shop Air:**
- **Natural Gas:**
- **Other:**

#### Fire Protection

- **System Type:**
- **Hazard Classification:**
- **Detection:**

#### Electrical

- **LAN:**
- **PA:**
- **Telephone:**
- **Lighting:**
- **Special Requirements:**
- **Security:**

#### Equipment

- **Cranes & Hoists:**
- **Other:**
- **GFGI:**

#### OTHER COMMENTS (Add Continuation Sheets)
## ANGETL INDEX

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<td>18 Jun 91</td>
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<td>Criteria for Testing Halon Fire Suppression Systems</td>
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