## **SECTION 01 03 00.00 48**

**DESIGN SUBMISSION REQUIREMENTS AFTER AWARD**

**09/09**

**1.1 INTRODUCTION**

This section contains information needed after the successful Offeror has been selected. The information contained in this section applies to the design required for the [\_\_\_\_\_\_\_\_\_\_\_\_\_ (Project Description) at \_\_\_\_\_\_\_\_\_\_\_\_\_ (Project Location)].

 DESIGNERS OF RECORD

1.2.1 The Design/Build Contractor shall identify, for Government Acceptance, the Designer of Record for each area of work. One Designer of Record may be responsible for no more than two disciplines. All Designers of Record shall be registered Professional Engineers or Architects as required by Section 00 80 00.00 06, Clause “Registration of Designers”.

1.2.2 In addition to these requirements, the design firm shall have a Design Project Manager (PM), see Section 01 45 04.10 06 for Design PM qualifications.

1.2.3 Provide the services of a Registered Communications Distribution Designer (RCDD) to design the telecommunications system in compliance with the Army Reserve IT Manual.

1.2.4 Fire protection system Designer of Record is required to be a Registered Fire Protection Engineer. Designer of Record shall perform preliminary calculations and provide the requirements for the fire protection system on the contract drawings/specifications. The fire protection system shop drawings and hydraulic calculations shall be done by a NICET Level III or IV certified fire protection specialist or a Registered Fire Protection Engineer. Sufficient hydraulic calculation sets which will fully define the entire system sizing shall be provided.

1.2.5 The Furniture, Finishes and Equipment (FF&E) design shall be developed by the Interior Designer, who shall be a registered NCIDQ certified designer and have a minimum of two years experience in space planning, and contract furniture & panel systems specifications.

1.2.6 The D/B Contractor is required to have a LEED Accredited Professional (LEED AP) for both design and construction involved with the project and responsible for ensuring correct interpretation of LEED credit requirements, tracking overall LEED accomplishments, providing documentation, and monitoring construction aspects of each LEED credit.

1.2.7 The Designers of Record shall stamp, sign, and date each design drawing under their responsible discipline for Certified Final design documentation stage. Designers of Record shall be a Prime Contractor employee, be contracted directly by the Prime Contractor, or be an employee of a design firm that is contracted directly by the Prime Contractor. The Designer of Record shall not be an owner, employee, agent, or consultant of a construction sub-contractor hired for this project.

[Note: The following paragraph is optional, based on project size and complexity.]

[1.2.8 Designers of Record are required to make critical site visits during construction. The Architect and Civil Designer shall make at least 3 site visits; the Structural, Mechanical, Electrical Designers shall make at least 2 site visits; and the Fire Protection and Communication Designers shall make at least 1 site visit.]

**1.3 CONTRACTOR DESIGN REQUIREMENTS AFTER AWARD**

1.3.1 The Contractor must submit for Government Acceptance, a Design Quality Control Plan as required in Section 01 45 04.10 06, before design may proceed. The Design Quality Control Plan must indicate the designer’s integral role throughout design and construction. Resumes of each designer of record shall be included to demonstrate compliance with the RFP requirements. A list of designers, checkers, and independent reviewers must be included to demonstrate professional registration and three separate individuals working per discipline.

1.3.2 The Contractor must shall conduct Independent Technical Reviews, in accordance with requirements in Section 01 45 04.10 06.

1.3.3 After Award, the contractor shall provide the energy conservation strategies considered through the energy and life cycle cost analyses, and the guidelines of ASHRAE Standard 90.1. (See Section 01 02 00.00 48, Part 12.)

1.3.4 The Contractor shall design and detail a complete and usable facility before construction begins**. Fast track design and construction will be permitted on this project.** Fast-tracking includes site work, ordering long-lead materials, and mobilization. Fast-tracking is further discussed in Section 00 80 00.00 06, clause Sequence of Design/Construction (Fast Track). The Contractor shall design and construct the facility in Imperial (English) units.

1.3.5 The design shall consist of six submittals, as described in the **Army Reserve Design Process and Submittal Requirements Manual** (Attachment in this RFP). These submittals are:

1. the Charrette Design,
2. the Revised Charrette Design,
3. the Interim Design,
4. the Final Design,
5. the Corrected Final Design,
6. and the Certified Final Design.

1.3.6 The Certified Final Design shall be submitted only when ALL review comments have been addressed, incorporated into the design, and the final design has been accepted, and is ready for construction. It shall include signatures on each sheet and professional stamps from each Designer of Record.

1.3.7 The design submittals shall include specifications, drawings, design analysis, CID (FF&E, SID), permit applications, confirmation notices and submittal registers. The government will assist the contractor in finalizing the final draft DD1354, however, it is the Contractor's responsibility to provide. The complete requirements for each submittal are described in the **Army Reserve Design Process and Submittal Requirements Manual- PART C -- Design Build -- Design Submittal Requirements After Award.** This is referred to below as "DPSR Manual Part C".

1.3.8 The design shall be completed in accordance with the applicable criteria itemized in this RFP.

1.3.9 A sample design schedule is provided in Section 01 04 00.00 48.

**1.4 SUBMISSION OF DESIGN DOCUMENTS**

1.4.1 The Contractor shall submit design documents with cover letter by overnight mail in accordance with the requirements of this section. The letter shall indicate the project name, and due date for comments provided in Dr. Checks. All drawings shall be half-size, unless otherwise noted. Specifications, submittal register, design analysis and other technical information shall be bound. The CID (FF&E, SID) shall be submitted in separate binders as indicated in the CID (FF&E, SID) Submittal Requirements attached to this specification.

1.4.2 **[The Pre-Work Conference, Partnering Meetings, the Charrette, and each Design Review Meeting shall be held at a hotel conference in the project vicinity to accommodate 40 people. The contractor shall be responsible for making the arrangements and any payment for the conference room. ] or [The Predesign Meeting, Partnering Meetings, the Charrette, and each Design Review Meeting shall be held at a Reserve Center in the project vicinity.] The Design Charrette may be held at the A/E’s office if it is in the project vicinity and the firm’s conference room can accommodate 40 people.** Design review meetings will be held to discuss review comments on the Charrette, Interim, and Final submittals. The Design Project Manager is responsible for preparing and distributing meeting minutes for all meetings and conference calls during design. The meeting minutes will be distributed to the entire project delivery team within 10 days of a meeting and within 5 days of a conference call.

1.4.3 The Designers of Record are also required to hold individual meetings with the Users on their respective areas of responsibility. The Architect and Interior Designer shall hold a furniture meeting with the Users on site after the Charrette. They shall discuss each room and the furniture requirements involved. The discussions from this meeting shall be reflected in the FF&E and SID submittals. Meeting minutes will be provided to the entire project delivery team. The Communication/Electrical Designer is required to hold a separate meeting with the Users and personnel from the Army Reserve IT office. They shall discuss the IT requirements of the project. The discussions from this meeting shall be reflected in the Interim Design Submittal. Meeting minutes will be provided to the entire project delivery team. Any design issues which arise that are not addressed in the RFP shall be identified to the USACE Project Manager and the Project Engineer/Architect. A response will be furnished by USACE, and if necessary, a change order will be issued.

 1.4.4 Design Reviews shall not be taken as an approval and do not relieve the Contractor's responsibility for compliance with the RFP solicitation, codes, regulations, or other applicable criteria. Design reviews are considered Quality Assurance reviews, and may be performed by the A-E team which developed the RFP Solicitation package.

1.4.5 Once the Government has reviewed and accepted the contractor's final design, Contractor shall make no further changes to the accepted design without the written approval of the Contracting Officer's Representative. All costs for submitted variances, after Final Design Acceptance, shall be borne by the Contractor at no cost to the Government. For all requested design changes, complete submittals to all parties listed will be required for an additional review, in accordance with the procedures for original submittals stated above.

**1.5 GENERAL DESIGN REQUIREMENTS**

1.5.1 The Contractor is required to independently prepare and submit for Government Acceptance a complete Design. The Contractor's Design Professionals shall independently confirm and be responsible for the technical accuracy and adequacy of all aspects of the project design.

1.5.2 The project design process shall include the submittals listed in paragraph 1.3.

1.5.3 Document quantities and delivery addresses are specified at the end of this Section. Quantities and addresses apply for each submittal.

1.5.4 CADD and BIM Requirements

1.5.4.1 Prepare drawings and as-builts using MicroStation, [insert current version desired by Louisville District – verify with PE/A].

1.5.4.2 The drawings shall comply with the AEC CAD Standards. The Design Quality Control Plan shall assure all files appear identical and are error-free. Maintain the use of referencing, and do not create a single file with all of the graphics for one sheet in one file.

1.5.4.3 Use of the Army Reserve BIM data set is required. It is available for Contractor’s use in developing the proposal or project design documents located at

ftp://ftp.usace.army.mil/pub/lrl/BIM/LRL\_Dataset/>

The Army Reserve requires design documents and as-built documents that incorporate TriForma BIM technology.

1.5.4.4 Prepare documents using Building Information Management (BIM) technology as described in the Appendices of the "Army Reserve Design Process and Submittal Requirements Manual". UHS buildings are not required to be modeled in BIM.

1.5.4.5 Provide a set of Native CADD files. This set will typically use reference files for floor plans, borders, etc. Unless specifically approved, all projects must provide for all files to be placed in one directory. All unnecessary reference files shall be detached, and all files attached for 'designer information' shall be labeled as such in the description field. Where a particularly complex project makes managing all CADD files in a single directory unmanageable, the designer may request permission for use of a more complex directory structure. The designer shall propose the structure, and identify how each individual directory will be used. Where this may result in mapping reference files across directories, the design shall indicate the method for controlling this mapping to prevent loss of files because of remote attachments. It is mandatory that when such a setup is used that mapped directory paths not be used for attachments. Variables shall be used so that project configurations can be created or system variables created for future users to properly view the files. A description of each variable and mapping shall be provided with electronic file submittals.

1.5.4.6 Provide in addition a set of drawing files in PDF format that may be viewed without using CADD software. PDFs shall display for viewing in landscape format. PDF format drawings files shall include a reference or Table of Contents file, which indexes all drawings so each drawing may be accessed from the one file. The reference file shall have bookmarks to each drawings sheet. Drawings shall be to full scale, and arranged to print to a correct scale, or on 11 by 17 paper.

1.5.4.7 Index: Provide a list of all drawings in the set of project drawings together with the name of the electronic file that contains the data for each drawing.

1.5.4.8 Submitted hard copy drawings must be plotted directly from the electronic PDF file.

1.5.5 Specifications and Reports. Provide project specifications in 3-Part CSI format. The complete specification including title sheet, table of contents, and all specification sections; must be assembled into a single electronic document in PDF format. Provide reports in Microsoft Word (version 2000 or later).

1.5.5.1 Provide independent page numbering for each specification section. The page number shall incorporate the specification section number (e.g. 08 11 13.00 06-1).

1.5.5.2 Submitted hard copy documents must be printed directly from the electronic file.

1.5.5.3 Provide submittal checklist and other report documents also in PDF format.

1.5.5.4 Division 00 and Division 01specifications shall not be edited or reproduced and shall not be included with the technical specifications. Divisions 00 and 01 are contract requirements; therefore, can only be changed by contract modification

1.5.6 Electronic Data

1.5.6.1 Electronic data of all design documents must be provided at each submittal stage. Data shall be on CD ROM.

1.5.6.2 Interior signage is to be provided in Microsoft Excel spreadsheet.

1.5.6.3 Furnishings' data is to be submitted in the Government required USAR Comprehensive Interior Design Furniture Access Program.

1.5.7 Submittal Register: The contractor will be required to prepare a Submittal Register Engineering Form 4288 identifying all construction submittals. Each submittal item shall be identified and coded in accordance with Section 01 33 00. A completed Engineering Form 4288, accepted by the Contracting Officer, will be required prior to commencement of construction. The designers are required to provide a Submittal Register that is compatible with Construction Division's QCS system.

1.5.8 LEED Project Requirements:

1.5.8.1 LEED Project Registration. All projects are required to be registered with the United States Green Building Counsel (USGBC), and the Government has obtained the registration [RFP preparer must confirm that Corps or RFP preparer has obtained the registration - if not this paragraph will require editing]. After contract award, the LEED registration will be transferred to the Contractor. The Contractor’s Designer of Record (DOR) shall utilize the online LEED Letter Templates and develop the LEED Project Checklist for project documentation. The DOR shall provide additional documentation required by the LEED [2.2 or 3.0] Documentation Requirements and Submittal Checklist attached to Section 01 33 29.10 06. The additional documentation shall be uploaded in LEED Online with the applicable LEED Letter Templates. The DOR shall maintain the Project Administrator Role throughout project design and construction. [The government plans to provide a LEED team by separate contract which will verify LEED compliance for the government throughout design and construction.]

1.5.8.2 LEED Accredited Professional. A LEED Accredited Professional shall be required on the project team, and will ensure project design is in compliance with USGBC LEED requirements for the project, and be involved in the project throughout design and construction.

1.5.8.3 The DOR is responsible for editing and including LEED Documentation required by Section 01 33 29.10 06 in the design submittals. This will include a completed LEED Project Checklist, and Appendix B – LEED 2.2 Documentation Requirements (available at <http://en.sas.usace.army.mil> ). The DOR will be involved in any changes to the LEED Project Checklist during the construction.

1.5.8.4 Project designs (including multiple building projects and renovations) shall meet USACE Army LEED Implementation Guide paragraphs 1-4, 6, and 8. USACE Army LEED Implementation Guide ftp://ftp.usace.army.mil/pub/lrl/LEED/FINAL15JAN08\_USACE\_LEED\_Impl\_Guide.pdf. LEED certification by USGBC is not required, unless indicated in the RFP solicitation.

1.5.8.5 Meetings: The following meetings will be held to ensure LEED Compliance:

The Preconstruction Meeting (possibly discussed at the Partnering meeting instead)

The Implementation Plan Meeting

The Precloseout (Redzone) Meeting

The LEED Validation Meeting

1.5.8.6 At the Precon (or Partnering) Meeting, the DOR and LEED AP will provide a presentation to the Corps, Contractor, and Users about the requirements of the LEED Documentation Specification, and review the LEED Project Checklist the contractor is required to follow.

1.5.8.7 At the Implementation Plan Meeting, the Corps, Contractor and LEED AP shall meet to discuss the content of the Plan, to ensure compliance with the LEED requirements. The DOR shall participate by conference call.

1.5.8.8 At the Precloseout (Redzone) Meeting, all LEED credits and the LEED rating shall be discussed, and establish a plan to meet the final remaining credits. The DOR (PM and Architect) and AE LEED AP shall attend.

* + - 1. At the LEED Validation Meeting, the Corps, Contractor, and LEED AP shall meet to discuss any remaining LEED credits. An independent LEED Team provided by the government will determine the final LEED rating.

1.5.9 LEED/Energy Requirements: LEED NC (New Construction)Version [2.2or 3.0]: The LEED Minimum Energy performance prerequisite is met when the minimum requirements of ASHRAE 90.1 are met. Therefore, meeting the Energy Policy Act 2005 requirements automatically causes the LEED prerequisite to be met. The analysis used to meet the requirements for the Energy Policy Act 2005 may be used to satisfy the requirements for LEED Optimize Energy Performance credit. For compliance with the Energy Policy Act 2005, the percent energy reduction shall be calculated by subtracting the process and plug loads from the total energy usages for both the baseline and proposed buildings. The formula shall be as follows: (Baseline energy usage – Proposed energy usage)/(Baseline energy usage – (process + plug loads))**.** For determining LEED Optimize Energy Performance credit points, the percent energy reduction shall be calculated by applying the appropriate energy costs to the total energy usage for both the baseline and proposed buildings. The formula shall be as follows: (Baseline energy cost – Proposed energy cost)/(Baseline energy cost).

1.5.9.1 Summary Analysis: Provide a summary of the Energy Conservation analysis. The summary shall include the completed LEED Letter Template for LEED Optimize Energy Performance credit.

**1.6 ADDITIONAL DESIGN AND INVESTIGATION REQUIREMENTS**

1.6.1 Geotechnical Requirements and Responsibilities

1.6.1.1 The Contractor’s team shall include a licensed professional geotechnical engineer to interpret the subsurface conditions and develop earthwork and foundation requirements and design parameters on which to base the Contractor’s proposal. Subsequent to award, the Contractor is required to perform and provide a complete geotechnical exploration of the proposed site to develop the final design.

1.6.1.2 The geotechnical exploration shall be performed under the direction of a licensed professional engineer with at least 10 years experience specializing in geotechnical engineering.  This exploration shall be the full responsibility of the Contractor and detailed requirements are outlined below. It is possible that site specific subsurface conditions encountered by the Contractor will differ from those appended herein.  Therefore, it is the responsibility of the Contractor to conduct a meeting with the COR subsequent to completion and evaluation of his site specific geotechnical exploration to enumerate any differences encountered that are not consistent with the information provided herein.  Should those differences require changes in the foundation type, pavement and earthwork requirements proposed with the bid that result in more cost, those changes shall be clearly outlined for the meeting.

1.6.1.3 Geotechnical Report – General - The Contractor’s geotechnical report shall summarize the subsurface conditions and provide requirements for the design of appropriate foundations, floor slabs, retaining walls, embankments, and pavements. The report shall recommend the type of foundation system to be used, lateral load resistance capacities for foundation systems, allowable bearing elevations for footings, grade beams, slabs, etc. An assessment of post-construction settlement potential including total and differential shall be provided. Recommendations regarding lateral earth pressures (active, at-rest, passive) to be used in the design of retaining walls shall be provided. The report shall include the recommended spectral accelerations and Site Class for seismic design along with an evaluation of any seismic hazards and requirements for mitigation, if necessary. Calculations shall be included to support the recommendations for bearing capacity, settlement, and pavement sections. Supporting documentation shall be included for all design parameters such as Site Class, shear strength, earth pressure coefficients, friction factors, subgrade modulus, California Bearing Ratio (CBR), and pH tests, salinity tests, resistivity measurements, etc., required to design corrosion control and grounding systems. In addition, the report shall provide earthwork requirements, expected frost penetration, expected groundwater levels, requirements for dewatering and groundwater control, possible presence of any surface or subsurface features that may affect the construction of the project such as sinkholes, boulders, shallow rock, old fill, old structures, soft areas, or unusual soil conditions. Information shall be offered on the types of base course materials available in the area and design strengths. Also, the Contractor's geotechnical engineer shall recommend designs to account for site specific soil conditions including, but not limited to: expansive soils, shrinking soils, sinkholes, variable groundwater, seismic activity, and chemically or radiologically active soils.

1.6.1.3.1 The final geotechnical evaluation report shall be prepared by the Contractor’s licensed geotechnical engineer and submitted along with the first foundation design submittal. Requirements for the report are noted in Part 3 of Section 01 02 00.00 48. If fast track design is used, the geotechnical report shall be submitted as part of the first fast track submittal.

1.6.1.3.2 Certification: The Contractor and its professional geotechnical engineer consultant shall certify in writing that the design of the project has been developed consistent with the Contractor’s final geotechnical report. The certification shall be stamped by the consulting professional geotechnical engineer and shall be submitted with the first design submission. If revisions are made to the initial design submission, a new certification shall be provided with the final design submission.

1.6.1.4 Geotechnical Report – Field Program - As a minimum requirement, Contractor borings shall be sampled with a splitspoon sampler in accordance with ASTM D-1586, with samples visually classified at 1.5 foot intervals in accordance with the Unified Soil Classification System (ASTM D 2487). The Contractor’s geotechnical engineer shall implement alternative sampling and exploration methods as needed to develop the soil properties and design parameters required herein based on the soil and soil formations encountered. The depth to water shall be recorded. Standard Penetration Blow counts shall be recorded. A dated drilling log shall be provided for each boring drilled. Soils information obtained from field logs, laboratory tests and geologist’s logs shall be presented on the contract drawings in the form of boring plan, final boring logs and explanatory notes. See the preliminary geotechnical report in Attachment A to Section 01 02 00.00 48 for examples of format and content of boring logs.

1.6.1.5 Geotechnical Report – Pavement Section - The Contractor’s geotechnical report shall contain flexible and rigid pavement designs including design CBR and modulus of subgrade reaction, and the required compaction effort for subgrades. Information shall be offered on the types of base course materials available in the area and design strengths. Pavement designs over cohesive soil subgrades and soils with 15% or more passing the #200 sieve) require underdrain systems. Underdrains shall be provided according to analytical design analyses and applicable construction methods to collect and remove infiltration from beneath the pavement. Pavements shall be designed based on the anticipated loading frequency and vehicle types in Part 3 of Section 00 02 00.00 48.Regardless of the pavement design, a minimum flexible pavement section shall consist of [ ] inches of asphalt ([ ] inches of surface course and [ ] inches of base course) over 8 inches of aggregate base. The minimum rigid pavement section shall be [ ] inches of PCC over [ ] inches of aggregate base. The minimum base thickness can be neglected if the subgrade has a CBR greater than 30.

1.6.1.6 The Contractor’s geotechnical engineer shall determine whether slopes greater than 5% are required adjacent to building based on site shrink/swell soil characteristics.

1.6.1.7 If temporary construction dewatering is required due to a high water table, the Contractor shall prepare and present a dewatering plan. The Contractor is responsible for securing all necessary information for the design of the dewatering system.

1.6.2 Roof Design Requirements

1.6.2.1 Roof eaves shall be designed to resist wind uplift determined by ASCE 7 and snow loads; provide calculations. A C-shaped bent steel plate of minimum ¼” thickness shall be installed at the eave for attachment of gutters, eave cleats, and soffit construction.

1.6.2.2 If wood is used in a roof assembly (not allowed for metal roofs), it shall be treated, and any fasteners for or into the wood shall be stainless steel.

1.6.2.3 Metal roofs shall be designed in accordance with ASCE 7. Clip spacing and wind zone dimensions shall be determined by ASCE 7 and roof system ASTM E 1592 data, provide calculations. Lightning protection shall utilize mechanical fasteners; obtain roof manufacturer and installer verification that method of attachment will not void roof warranty. No wood is allowed in metal roof assemblies; all attachment shall be made to steel structure.

1.6.3 Lighting design - Provide emergency/egress lighting calcs which indicate minimum, average, and uniformity values for all applicable areas, to assure compliance with NFPA 101.

1.6.4 Exterior Wall Design

1.6.4.1 Exterior brick veneer walls shall have corrugated weeps installed directly above base flashing and at the top exterior course to allow thermal venting. Exterior cavity walls shall have through-wall flashing installed at all rake to high wall intersections.

1.6.4.2 Provide vapor transmission and dew point analysis to show adequate control of water vapor. Exterior walls shall have a dew point analysis stamped by a professional engineer or registered roof consultant. Vapor barrier location shall be included in the analysis if a vapor barrier is provided. Perm rating of air barrier, based on location in wall, shall be reported.

1.6.5 Energy Conservation Submittals - These paragraphs are intended to amplify the requirements in the Army Reserve Design Process and Submittal Requirements Manual.

1.6.5.1 For each facility under contract, two buildings must be modeled using building simulation software: (a) a baseline building that would meet the minimum requirements of ASHRAE Standard 90.1-2004 Appendix G and (b) a proposed building utilizing the materials and methods proposed and required by this construction contract.

1.6.5.2 The following building simulation software is acceptable for use in calculating building energy consumption: Hourly Analysis Program (HAP) by Carrier Corp., TRACE 700 by Trane Corp., DOE-2 by US Department of Energy, EnergyPlus by DOD/DOE.

1.6.5.3 The calculation methodology used for this documentation and analysis shall follow the guidelines set forth in Appendix G of ASHRAE 90.1-2004, with two exceptions:

(a) the definition of the terms in the formula for Percentage Improvement found in paragraph G1.2 are modified as follows: Baseline Building Performance shall mean the annual energy consumption calculated for a building design intended for use as a baseline meeting the minimum requirements of the energy standard, and Proposed Building Performance shall mean annual energy consumption calculated for the proposed building design intended for construction.

(b) the formula in paragraph G.1.2 is modified as follows:

Percentage Improvement = 100 x (Baseline Building Performance - Proposed Building Performance) / (Baseline Building Performance – Receptacle and Process Loads)

1.6.5.4 This calculation shall address all energy consuming systems in a single integrated methodology. Individual calculations for heating, cooling, power, lighting, power, etc. systems will not be acceptable. Laboratory fume hoods and kitchen ventilation loads are to be included in the energy calculation and are not considered process loads; rather, these loads are part of the ASHRAE-covered HVAC loads and are subject to the 30% reduction in energy consumption requirement.

1.6.5.5 At the Interim and Final Design, submittals which address energy consuming systems, (heating, cooling, service hot water, lighting, power, etc.) must include calculations which demonstrate and document compliance with the Energy Policy Act of 2005 and follow on rulings. As a minimum, to show compliance the following must be submitted:

1.6.5.5.1 A summary of the analysis shall be provided including a table indicating the energy-related features included in the design on which the performance rating is based. This table shall document all energy features that differ between the models used in the baseline building performance and proposed building performance calculations.

1.6.5.5.2 The output summary of the annual energy consumption for the baseline building performance and proposed building performance models for each facility under contract shall be presented to demonstrate compliance with these energy conservation requirements. Output summary shall breakdown the energy usage by at least the following components: lights, internal equipment loads, service water heating equipment, space heating equipment, space cooling equipment and heat rejection equipment, fans and other HVAC equipment such as pumps, and receptacle and process loads. The output reports shall also show the amount of time any loads are not met by the HVAC system for both the proposed and baseline building models.

1.6.6 OMS/AMSA/TEMF Fire Protection Criteria: The Contractor is required to meet NFPA 70, Article 511 requirements. This will require physical separation between work areas and office areas for containment of fumes, or negative mechanical pressurization. This impacts location of electrical devices (receptacles, switches, etc.) in the work areas.

**1.7 SUBMITTAL REQUIREMENTS**

1.7.1 Design Phase: All design submission requirements are defined in the **Army Reserve Design Process and Submittal Requirements Manual, PART C -- Design Build -- Design Submittal Requirements After Award.** This is referred to below as "DPSR Manual Part C". Each discipline is provided the requirements for the Charrette, Interim, Final, Corrected Final Design, and Certified Final Design Submittals. All aspects will be followed. Design the project in MicroStation matching the version of the project CD provided by the government. If no CD is provided, use the latest version of MicroStation.

1.7.2 The Pre-Work (Pre-Design) Meeting is an opportunity for the Government Project Engineer/Architect and the D/B Work design team to review the project requirements. A review of Sections 01 02 00. 00 48, 01 03 00.00 48, and 01 04 00.00 48 would assure the designers understand the requirements and expectations of the design process. This is also an opportunity for the contractor, Corps construction personnel, and the Project Manager to meet and go over project requirements. The design schedule should be discussed and the first few meeting dates need to be established.

1.7.3 The **Charrette Design** is defined in **DPSR Manual Part C. The deliverables for this phase are also described in the Manual, and also include a Design Analysis. [For projects with 365 day construction duration and an accelerated design schedule, the contractor shall submit the plans and design narrative from the awarded contract proposal to the team as the Charrette submittal.] The Charrette is an opportunity to improve the design proposal documents at no increased cost. There are areas in the building that could be rotated/shifted/move walls, which would greatly improve the functionality of the facility. The designer should provide attention to detail regarding the building entrance, lobby, restrooms, and command suite(s).**

* Capture the outcome of the Charrette Meeting in a Charrette Report consisting of minutes, revised drawings, and updated narrative and submit for the record in the time frame called for in the schedule.
* A conference call will be scheduled approximately five days after the Charrette Report to discuss the Report. A direction to proceed with subsequent design based on the agreed charrette report will be provided after the conference call.
* Provide a **Revised Charrette** Document to all parties~~.~~
* The decisions from the Revised Charrette Conference Call will be incorporated into the Interim Design Submittal.

The **Army Reserve Design Process and Submittal Requirements Manual Part C** is on the Louisville District web site at

<http://www.lrl.usace.army.mil/ed2/article.asp?id=243&MyCategory=212>

The Army Reserve Customers page is also on the Louisville District website.

<http://www.lrl.usace.army.mil/ed2/default.asp?mycategory=212>

1.7.4The **Interim Design** Phases is defined in the **DPSR Manual Part C. The deliverables for this phase are also described in the Manual.** This submittal shall incorporate the review comments from the charrette design phase. **Interim Design** Phase will include:

* Interim ("50%") Design for architecture, structural, interior design, civil, mechanical and electrical systems.
* For projects employing fast-track provide (100%) design for building site design to include: building/area site layout, final grade elevations, site electrical, mechanical and civil utilities, permits,
* Design Analyses
* Provide a list of required permits for the project; including requirements and process for obtaining each permit, associated costs, and status of permit acquisition.

1.7.5 Final Design Phase

1.7.5.1 The **Final Design** Phases is defined in the **DPSR Manual Part C. The deliverables for this phase are also described in the Manual.** This submittal shall designate what equipment manufacturers the contractor plans to use for all pieces of equipment. This submittal shall incorporate the review comments from the Interim Design phase.

1.7.5.2 The **Final Design** Phase will include:

* Corrected Final (100%) Design for building site design to include: building/area site layout, final grade elevations, utility locations, revised complex entrance, parking, and associated roadways.
* Final (100%) Design for all remaining architecture, structural, interior design, civil, mechanical and electrical systems.
* Provide a list of required permits for the project; including requirements and process for obtaining each permit, associated costs, and status of permit acquisition.

1.7.6 The Corrected Final Design Phase is defined in the **DPSR Manual Part C, The deliverables for this phase are also described in the Manual.** This submittal shall incorporate the review comments from the Final Design phase.

1.7.6.1 For the "Civil/Site Work" Corrected Final: The designer is responsible to respond to all comments and incorporate all appropriate comments (as determined by the LRL Project Engineer), generated as a result of the final review meeting. As part of the **Backcheck,** the designer shall mark three sets in red, with the reviewer's name and comment number, indicating the corrections have been made as a result of the review comment. The Louisville District Office, the RFP preparer/reviewer, and the Construction Resident Office will perform a backcheck of comments on these red-lined sets. Once all comments are satisfactorily resolved, the Certified Final Design may be distributed.

1.7.6.2 The Corrected Final design phase will include:

* Corrected Final (100%) Design for all remaining architecture, structural, interior design, civil, mechanical, and electrical systems.

1.7.6.3 The Corrected Final Design Phase is defined in the **DPSR Manual Part C. The deliverables for this phase are also described in the Manual.** This shall be considered a formal submittal to reviewers. This submittal shall incorporate the review comments in the submittal and become the final product for construction.

1.7.7 Certified Final - For the "Building" Certified Final: The designer is responsible to respond to all comments and incorporate all appropriate comments (as determined by the LRL Project Engineer), generated as a result of the final review meeting. As part of the **Backcheck,** the designer shall mark three sets in red, with the reviewer's name and comment number, indicating the corrections have been made as a result of the review comment. The Louisville District Office, the RFP preparer, and the Construction Resident Office will perform a backcheck of comments on these red-lined sets. Once all comments are satisfactorily resolved, the Certified Final Design may be distributed. If the project has been reviewed by an A-E firm (normally the A-E firm which developed the RFP), then the designer shall provide a copy of each reviewer's backcheck corrected final drawings and specifications, demonstrating the comments have been incorporated. This can be accomplished in hard copy or on CD with PDF files of the changes.

1.7.8 Comprehensive Interior Design (CID) Submittals – CID is defined in the **DPSR Manual Part C, The deliverables are also described in the Manual**.

1.7.8.1 See Attachment A following this specification section for specific furniture product specifications.

1.7.8.2 **Note: The furniture will be GFGI (government furnished-government installed). The contractor will be responsible for all power, data, and voice hookups.**

1.7.8.3 The furniture layouts provided in the RFP are notional layouts. A complete FF&E and SID are required as part of the design. It is required for the Interior Designer and the Architect to hold a separate meeting with the Users to determine actual furniture requirements. It is recommended that the selected Contractor's Interior Designer contact Barbara Pfister (502-315-6899) of the Louisville Corps of Engineers, after contract award but prior to beginning development of the FF&E, to coordinate FF&E submission requirements.  Past performance illustrates such coordination will minimize Contractor effort required to develop the FF&E.

1.7.8.4 The Interior Designer will be required to make minor changes to the FF&E around six months before furniture procurement, so Barbara Pfister has accurate and current information. Any problems with the furniture layouts (placement in front of windows, panel sizes, etc.) will be corrected at this time before the furniture order is placed. The interior designer will provide 4 sets of any corrections.

**1.8 DESIGN REVIEW**

1.8.1 Government review comments will be input into a web based system called DR CHECKS. The Contractor will be given access to this system and will be required to respond to all comments in the program. Comment responses shall be entered before each review meeting, so the Project Team can discuss open issues and non-concur comments – not each individual comment. The Contractor shall print and distribute review sets as shown on the attached list and be prepared to discuss the comments and preliminary responses at the review meeting for each part of the design. The Contractor will keepthe minutes of the meetings and forward the minutes and annotated comments to all reviewers within 14 days of the meeting. The annotations will be detailed enough to indicate exactly what the Contractor will do to comply with the comments. The contractor shall assemble the comments received into a complete package. The complete package of comments and responses shall be transmitted to all offices that received the design submitted.

1.8.1.1 The Government's review is not to be considered a quality control review; the contractor shall provide his own internal quality control as required by contractor Design Quality Controls Plan before the design is submitted to the Government. It is very important the Contractor's entire team agrees with the design before it is submitted to the Government. The Government's review or acceptance does not relieve the contractor of his responsibility to provide a safe, functional project in accordance with the terms of the contract. All final drawings shall be signed and sealed by the Design Professional. Quality control procedures shall consist of design and/or checking by registered professionals and a review completed by a separate professional. Complete names of designers, checkers, and reviewers shall appear in the drawing title block. The Contractor shall submit the Design Quality Checklist from the Louisville District AE Design Guide with their Final Design Phase submissions.

1.8.1.2 The Government's review will likely result in a significant number of comments. The Contractor shall respond to each comment with a response that clearly indicates what action will be taken in Dr. Checks. Comments that, in the Contractor's opinion, require effort outside the scope of the contract will be clearly indicated as such by the Contractor. The Contractor shall not proceed with work outside the contract until a modification to the contract is properly executed.

**1.9 CONSTRUCTION PHASE**

1.9.1 The construction phase will begin with a Letter of Design Completion, and release for construction will be issued upon completion and acceptance of the corrected final design submittal. This will provide authorization begin onsite construction efforts.

1.9.2 The first item of work during the construction phase, the Contractor shall furnish to the Government 15 half-size sets and 5 full size sets of the certified final drawings, 15 sets of the accepted specifications, and 20 CDs for its use during construction. The PE/A will finalize this list and provide the actual list of personnel to receive this material when it is time to be reproduced. The Construction CD's will include 5 file folders – one folder containing native MicroStation drawing files, one folder containing native specification section files, one folder containing PDF drawing files, one folder containing one large PDF file of the specifications, and one folder containing one large PDF file of the Design Analysis.

1.9.3 No construction will be allowed on work for which the design has not been reviewed and accepted.

1.9.4 The Contractor shall provide artistic renderings of the project, as specified in the attachment, no later than 90 days after design completion.

**EXAMPLE OF**

**LIST OF ADDRESSES FOR REVIEWS**

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |

| **ORGANIZATION** | **ABBREVIATION** | **COPIES** |
| --- | --- | --- |
|  |  | **(1)** | **FF&E** | **SID** |
|  |  |  |  |  |
| Army Corps of Engr, LouisvilleATTN: Project Engineer, ED-MR600 Dr. M. L. King Jr. PlaceLouisville, KY 40202 | CELRL-ED-MR | 6 | 1 – 2 at cert final | 1 - 2 at cert final |
| ACSIM-ARATTN: Project Officer DEPARTMENT OF THE ARMYDAIM-ODR (TB3E22)2530 CRYSTAL DRIVEARLINGTON, VA 22202 | ACSIM-AR | 1CD only | 0 | 0 |
| Al Frye or Lyle Bonham(address provided by Project Engineer After award)  | ACSIM-AR | 1CD only | 0 | 0 |
| \_\_\_\_\_\_\_ RRCNAME:  \_\_\_RRC,ATTN: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_MAILING ADDRESS:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_RRC | 4 | 1 | 1 |
| NAME:   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ORGANIZATION:  Unit(s)MAILING ADDRESS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Unit(s) | 4 | 1 | 1 |
| U.S. Army Corps of EngineersResident OfficeATTN:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_MAILING ADDRESS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Unit(s) | 3 | 1 | 1 |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_POSITION:  Const District PMORGANIZATION:MAILING ADDRESS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | CE-\_\_\_\_\_\_\_\_\_\_\_ | 2 | 0 | 0 |
| RFP Preparer performing Compliance ReviewORGANIZATION:MAILING ADDRESS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | A/E Firm | 8 | 1 | 1 |
| NAME:   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ORGANIZATION:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_MAILING ADDRESS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Installation | 4 | 0 | 0 |
| NAME: POSITION: Environmental SpecialistORGANIZATION: IMCOM-AR(Address to be provided by Project/Engineer after award) | IMCOM-AR | 1CD only | 0 | 0 |
| NAME:  Gerry WestORGANIZATION:  U.S. Army Reserve CommandATTN: Gerry West, G2/G6 Office1401 Deshler Street SWFort McPherson, GA 30330-2000\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | G6 | 1 | 0 | 0 |
| NAME: George GaffneyORGANIZATION: U.S. Army Information Systems Engineering CommandFort Detrick Engineering DirectorateATTN: AMSEL-IE-DE-IN-CO (GAFFNEY)1435 Porter Street, Suite 200Fort Detrick, MD 21702-5047 | ISEC | 1 | 0 | 0 |
|  |  |  |  |  |
|  |  |  |  |  |

1**. All addressees shall receive the following documents:**

Charrette Design Submittal, Revised Charrette Documents (drawings only), Interim Design Submittal, and Final Design Submittal. All document sets shall be printed plans, specifications, and design analyses; and electronic files of the complete submittal also provided on CD in the quantity identified. Each document set shall include

(a) A CD with all design files. (Specs in one PDF file, DA in one PDF file, and drawings in a third file in full-size PDF format). The beginning of each section of the DA shall be bookmarked. The start of each spec section shall be bookmarked. Each drawing sheet shall be bookmarked.

(b) Printed half size plans.

2. The original certified final will be submitted to Louisville District, with signatures and stamps, as required. Copies as indicated in Part 3 paragraph "SUBMITTAL REQUIREMENTS" , subparagraph "Construction Phase" above will be distributed to the government design team and field office, by overnight mail.

|  |
| --- |
| **Project:****For Design/Build Projects****Final Design and Certified Final Design Checklist***(Edit as needed)* |
| 1. GENERAL:  |
| 1. Have all documents been prepared in accordance with the Design QC Plan?
 |  |
| 1. Have drawings and specifications been coordinated between engineering disciplines?
 |  |
| 1. Have drawings and specifications been checked; and have drawings been initialed by reviewer and designer?
 |  |
| 1. Have drawings and specifications been reviewed by a qualified engineer to assure fire protection engineering is in conformance with applicable portions of NFPA regulations and national, state, and local building codes?
 |  |
| 1. Are drawings, design analyses, etc., signed and dated?
 |  |
| 1. Are Government review comments on the charrette and interim design submittals annotated and incorporated into final drawings and specifications?
 |  |
| 1. Are annotated review comments included in each design analysis package
 |  |
| 1. ITR certification sheets signed and included?
 |  |
| 1. Have the energy conservation strategies considered through the energy and life cycle cost analyses been provided in the design analysis (spec 010300.0048, par. 3.1.3)? (Applies to building design only)
 |  |
| 2. DRAWINGS:  |  |
| 1. Has CADD quality been checked to assure legible reproduction?
 |  |
| 1. Does location plan include location of borrow pits, disposal areas, areas for contractor's office and storage, haul routes, location of Resident/Area Engineer and DEH office?
 |  |
| 1. Have signature blocks been properly prepared?
 |  |
| 1. Has Quality Control Procedures been performed to assure that translated files are fully useable, complete and represent the design
 |  |
| 3. SPECIFICATIONS:  |
| 1. Were latest guide specifications used?
 |  |
| 1. Are specifications prepared in accordance with the RFP?
 |  |
|  1. Name of person supervising specifications preparation:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 4. MISCELLANEOUS:  |
| 1. Have construction permits been applied for as required by the Clean Air Act and Clean Water Act Amendments?
 |  |
| 1. Has the Certified Final submittal been made in accordance with every requirement of the RFP?

 (If not, explain deviations on a separate sheet attached to this form.) |  |
| 1. Has the CID/SID been completed? Were full size drawings and the required native CADD files provided with the binders? (Applies to building design only)
 |  |
|   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ SIGNATURE AND DATE |

**RENDERING FORM**

**PROJECT TITLE**\_\_\_ **[Complete with project title from DD1391 ]**

Each rendering will be matted, mounted, labeled, and framed with non-glare glass ready for hanging and to be shipped/delivered. Artistic renderings are preferred, however, high quality computerized renderings may be accepted. A/E shall provide a sample rendering of past projects to determine if the computerized rendering will be acceptable. A pdf file of a concept rendering(s) will be emailed to the PE/A and ACSIM-AR Project Officer for approval prior to proceeding to a final rendering.

1. QUANTITY/DISTRIBUTION

Original Full Size Color Framed Copy

 1 Project Location \_\_\_1\_\_ RRC Headquarters (Ft Dix,

 Ft Jackson, Ft McCoy, or Moreno Valley)

 \_\_\_1\_\_ ACSIM-AR Engineering office

 (Attn: ACSIM-AR, Project Officer)

\_\_\_1\_\_ CELRL-ED-MR (for PM-RST)

1. PARTICULARS:
2. Size, approximated. (Check one of the following)

\_\_\_\_\_ 36" x 36" **\_\_X\_\_ 30" x 24"** \_\_\_\_\_ 24" x 24"

\_\_\_\_\_ 36" x 30" \_\_\_\_\_ 30" x 20" \_\_\_\_\_ 24" x 18"

\_\_\_\_\_36" x 24"

 b. Orientation: \_\_\_\_\_ Front \_\_\_\_\_ Left

 **\_**\_\_**X**\_ **Aerial**  \_\_\_\_\_ Right

1. Labeling/Title:
2. USAR Center Dedication Name or DDForm 1391 Project Title

(2) Location (City/ State)

(3) Description (i.e. 600 Member USARC/OMS)

(4) Label/Title Location: \_\_\_**X**\_\_ **bottom center**

(5) Frame Material: \_\_\_\_\_ wood \_\_\_**X**\_\_ aluminum \_\_\_\_\_ plastic

 **\_X\_\_ black metal (with non-glare glass)**

 (6) Matte\_\_\_\_\_ light gray \_\_\_\_\_taupe \_\_\_\_\_ white \_\_\_\_\_ off white \_\_\_\_\_

 \_\_**X**\_\_\_ **color selected by renderer to match colors**

(7) Other Reprographics (indicate quantity)

\_\_\_8\_\_ color photograph (8 x 10), framed

\_\_\_3\_\_ CD’s containing the digital photograph in pdf**.**

Note: Include flagpole, if provided in project. Include military personnel and two to three pieces of military equipment from the project equipment list.

**Small renderings and CD’s shall be submitted to CELRL-ED-MR, unless noted otherwise.**

**ATTACHMENT A**

**COMPREHENSIVE INTERIOR DESIGN (CID)**

**FURNITURE, FIXTURES & EQUIPMENT (FF&E)**

**14 NOVEMBER 2008**

**FURNITURE PRODUCT SPECIFICATIONS**

All furniture is Government Furnished, Government Installed (GFGI) for the Army Reserve projects. At the beginning of the project, the main furniture manufacturer is determined to establish quality, color and product information to coordinate with all disciplines concerning furniture layout and power/data hook-ups. The project panel system workstations, and private and shared office metal desking units are designed according to FPI/UNICOR or Knoll, Incorporated with specific product specifications listed below. Refer to PART 6 Architectural and Interior Design, 6.6 Furniture and Equipment for specific manufacturer to be specified for this project. Louisville District performs the furniture market research for all furniture procured through the Louisville District at the time of the furniture procurement.

1. **FPI/UNICOR Designated Furniture Project**

The following guidance is being provided for projects being designed for procurement from FPI/UNICOR. It is not necessary that the Designer of record specify a complete Bill of Material for the UNICOR Classic XXI Systems or the Bravo metal desking units. The Designer is responsible for the fit of furniture, life safety, selection of all finishes and fabrics, panel and componentry sizes, power/data locations, and panel location dimensions. No COM fabric is to be specified.

* 1. UNICOR Classic XXI 8-Wire Systems furniture will be specified for all Unit Common office areas. Specifying only circuits 1, 2 and 3.
		+ - All systems furniture workstations are to be panel hung in lieu of wall hung.
			- Extended Raceway Acoustical Panels (ERP) are to be specified for all applications.
			- Lateral and vertical files, bookcases, and storage cabinets are to be specified from the UNICOR Opus catalog.
			- Unit Common area part-time workstation typical panel heights are to be 36" high except along the spine where the tackboard is placed the panel height should be 52" high. All full-time workstation typical panel heights are to be 66” high.
			- Three duplex outlets per part-time workstation and four duplex outlets per full-time workstation.
	2. UNICOR Bravo metal desking furniture will be used for private and shared offices, including matching Opus bookcases, lateral files and storage cabinets. Specify the "D" top for all "U" shaped Bravo metal desking units with keyboard, center drawer, overheads, shelf dividers, and electronic ballast tasklight. Specify full modesty panels for all "L" shaped Bravo metal desking units when the desk unit is not placed against the wall. Privacy screens/tackboards are to be specified to fill the space between the desk top and the overhead only. Lateral and vertical files, bookcases, wardrobes and storage cabinets are to be specified from the UNICOR Opus catalog.
	3. Specify the 18" deep bookcase when placed next to any lateral files in private and shared offices, and in the open offices areas with panel systems if bookcases are required, 15" deep bookcases may be specified when used in stand alone areas.
	4. UNICOR Legacy I task chairs, mid and high backs, and the Chorale sled base with flared arms side chairs will be the standard office seating products. The UNICOR Minuet series is to be specified for sofas and lounge seating. No COM fabrics are to be specified. Task chair upholstery selections shall have a minimum Wyzenbeck rating of 100,000 double rubs.
1. **KNOLL Designated Furniture Project**

The following guidance is being provided for projects being designed for procurement from Knoll. It is not necessary that the Designer of record specify a complete Bill of Material for the Knoll Morrison Panel Systems or the Morrison Network metal desking units. The Designer is responsible for the fit of furniture, life safety, selection of all finishes and fabrics, panel and componentry sizes, power/data locations, and panel location dimensions. No COM fabric is to be specified.

* 1. Knoll Morrison 3+3 ten-wire Systems furniture will be specified for all Unit Commons office areas. Specifying only circuits A, B and C.
* All systems furniture workstations are to be panel hung in lieu of wall hung.
* Lateral and vertical files, bookcases, and storage cabinets are to be specified from the Calibre catalog.
* Unit Common area workstation typical panel heights are to be 30" high except along the spine where the tackboard is placed the panel height should be 48" high. All full-time workstation typical panel heights are to be 64” high.
* Three duplex outlets per part-time workstation and four duplex outlets per full-time workstation.
	1. Knoll Morrison Network metal desking furniture will be used for private and shared offices, including matching Calibre bookcases, lateral files and storage cabinets. Specify the "D" top for all "U" shaped Network metal desking units with keyboard, center drawer, overheads, shelf dividers, and electronic ballast tasklight. Specify full modesty panels for all "L" shaped Network metal desking units when the desk unit is not placed against the wall. Privacy screens/tackboards are to be specified to fill the space between the desk top and the Reuter overhead only. Calibre lateral files, bookcases, storage cabinets and wardrobe units should be specified with metallic paint finish.
	2. Specify the 18" deep bookcase when placed next to any lateral files in private and shared offices, and in the open offices areas with panel systems if bookcases are required. Calibre 15" deep bookcases may be specified when used in stand alone areas.
	3. UNICOR Legacy I task chairs, mid and high backs, and the Chorale sled base with flared arms side chairs will be the standard office seating products. The UNICOR Minuet series is to be specified for sofas and lounge seating. No COM fabrics are to be specified.
1. **General Electrical/Communication Installation for Panel Systems Furniture Workstations**

Panel system furniture workstations in common office areas shall have all power and communications outlets located in the base of the acoustic panels. All electrical and communications utilities are to be fed from either flush floor boxes, poke through boxes or wall boxes with the exception of renovation projects that may be fed from overhead (power poles). The communications cables shall be fed in conduit and boxes separate from electrical power.

1. **Electrical Requirements**
* A minimum of one twenty amp circuit is to be provided for every two panel system furniture workstations.
* A maximum of three twenty amp circuits are to be provided for each panel system furniture electrical infeed.
* A multi-pole breaker shall be utilized to protect all circuits supplying power to each individual infeed. This will insure that all circuits are de-energized when servicing the electrical system components within the panel system furniture workstations.
* A 5-wire electrical system using a three pole/20 amp circuit breaker, 3-#12 AWG wires (L1-L2-L3), 1-#10 AWG neutral wire and 1-12 AWG ground wire shall be specified for the typical six workstation cluster. Single pole and two pole circuit breakers are to be specified for two workstation and four workstation clusters respectively. Wire sizes are minimum requirements, but may be increased as necessary to compensate for voltage drop.
* Power is to be fed from a dedicated electric panel supplied by a clean power “K” rated transformer of adequate size for the anticipated harmonic load.
* The designer is to specify three duplex receptacles for each part-time workstation and four duplex receptacles for each full-time workstation. Receptacles shall not be located behind drawer pedestals.
* Base feeds are to be used to power all panel system furniture workstations in new construction. Top feeds (power poles) may be used on renovation projects for workstations that cannot be fed from junction boxes located in walls or columns.
* The general contractor is to cut the Government furnished electrical base feed whip to the appropriate length and connect to the building's power per the furniture manufacturer's wiring schematic. (Knoll Morrison circuits A, B and C. UNICOR/FPI Classic XXI and Kimball Cetra circuits 1, 2 and 3.) The general contractor is to provide liquid-tight flexible metal conduit fittings, electrical connectors and cover plate necessary to complete the connection to the power source.
* All panel system furniture electrical components installed as part of the Government Furnished Government Installed (GFGI) furniture package include; power infeeds and rails, connectors, jumpers, receptacles and raceway covers.
1. **Communications Requirements**
* The general contractor shall provide, terminate and test all telephone and data cables within the raceways provided at the base of the panel system furniture acoustic panels.
* The general contractor shall provide a minimum of one 1-1/4” conduit from the floor or wall box to an accessible ceiling space adjacent to the communications cable tray for each group of up to six workstations.
* The general contractor is to provide 1-1/4” liquid-tight flexible metal conduit and fittings necessary to connect each floor box or wall box to the acoustic panel raceway
* One RJ-45 telephone jack and one RJ-45 data jack are to be provided for each panel system furniture workstation.
* The general contractor shall provide and install all conduit, fittings, cables, faceplates and jacks necessary to complete the communications system installation within the panel system furniture workstations. Upon completion of the communications system installation, all cable, connections and jacks are to be tested and, if necessary, repaired to assure satisfactory service to the customer.
* The Government Furnished Government Installed (GFGI) furniture package will only provide communication raceways at the base of each acoustic panel for routing communications cables and raceway covers to accept communication jacks and faceplates furnished by the general contractor.

 **Connection Photos**

1. **Miscellaneous Furniture Products**

Manufacturers referenced below are intended to establish quality, color and finish only, and are not intended to limit selections from other manufacturers.

1. Display cases – Peter Pepper Products
2. Lecterns – Peter Pepper Products
3. Audiovisual carts and cabinets - Bretford Manufacturing
4. Computer and printer stands – Bretford Manufacturing
5. Various magazine and pamphlet racks - Peter Pepper Products
6. Mobile folding cafeteria tables – KI Uniframe Tables
7. Training/Conference tables – KI Furniture Barron Lightweight Folding Tables
8. Workbenches - Lyon Workspace Products
9. Drawing tables and plan files - Mayline Company
10. Wood Traditional Commander's Furniture – Kimball President Series, Muirfield Desk Chair, Collage Guest Chair, Stature Conference Room Chair
11. Trash Receptacles - Rubbermaid
12. Plastic Stack Chair - American Seating Acton Stacker Plastic Shell with arms in Break Rooms and Assembly, if chairs are required. American Seating Acton Stacker Upholstered Plastic Shell with arms in Classrooms and Training Rooms. Classroom and Training Room chair upholstery selections shall have a minimum Wyzenbeck rating of 100,000 double rubs.
13. Treadmill, Elliptical Crosstrainer, Stair Climber, Recumbent Cycle – Precor USA, Inc
14. Multi-Station Gym, Benches, Racks w/Dumbbells, Power Cage – Cybex International, Inc
15. Gym Floor Mats – FlagHouse, Inc

If any additional information or assistance is required regarding the specification of the furniture for the Army Reserve program, please contact Barbara Pfister @ 502-315-6899 or Bob Harris @ 502-315-6850.