

3.0 <BDE_ONLY>BRIGADE HEADQUARTERS</BDE_ONLY><BN_ONLY>BATTALION HEADQUARTERS</BN_ONLY><BDE_BN>BRIGADE AND BATTALION HEADQUARTERS</BDE_BN><VER>(REV 5.1 – 31 JAN 2013)</VER>

3.1. GENERAL REQUIREMENTS

3.1.1. FACILITY DESCRIPTION: Provide <BDE_ONLY>Brigade Headquarters (HQ) Facility.</BDE_ONLY><BN_ONLY>Battalion Headquarters (HQ) Facility.</BN_ONLY> <BDE_BN>Brigade and Battalion Headquarters (HQ) Facilities.</BDE_BN> This project shall provide facilities to accommodate <BDE_ONLY>Brigade administration and command operations.</BDE_ONLY><BN_ONLY>Battalion administrative and command operations.</BN_ONLY> <BDE_BN>Brigade and Battalion administrative and command operations.</BDE_BN> It is intended to be similar to office type buildings in the private sector community. <BDE>The Brigade Headquarters and its function are more fully described in paragraph BRIGADE HEADQUARTERS – FUNCTIONAL REQUIREMENTS.</BDE><BN> The Battalion Headquarters and its function are more fully described in paragraph BATTALION HEADQUARTERS – FUNCTIONAL REQUIREMENTS.</BN> The standard Army functional layouts are depicted in the drawings included with this RFP. The extent to which the drawings represent required features and the allowable latitude for changes is as noted on the drawings.

3.1.2. FACILITY RELATIONSHIPS: <BDE_ONLY>Brigade (HQ)</BDE_ONLY><BN_ONLY>Battalion (HQ)</BN_ONLY><BDE_BN>Brigade and Battalion (HQ)</BDE_BN> Headquarters shall be located within an operations complex along with Company Operations Facilities (COF) and Tactical Equipment Maintenance Facilities (motor pools). The facilities within this complex shall be oriented to support deployment and daily operations, and should also be located within walking distance of associated community facilities such as barracks and dining facilities.

3.1.3. ACCESSIBILITY REQUIREMENTS: <BDE_ONLY>Brigade (HQ)</BDE_ONLY><BN_ONLY>Battalion (HQ)</BN_ONLY><BDE_BN>Brigade and Battalion (HQ)</BDE_BN>Headquarters are to be handicapped accessible.

3.1.4. BUILDING AREAS: Gross areas of facilities shall be computed according to subparagraphs below. Maximum gross area limits indicated in Paragraph 2.0, SCOPE, may not be exceeded. A smaller overall gross area is permissible if all established net area program requirements are met.

A. ENCLOSED SPACES: The gross area includes the total area of all floors, including basements, mezzanines, penthouses, usable attic or sloping spaces used to accommodate mechanical equipment or for storage with an average height of 6'-11" measured from the underside of the structural system and with the perimeter walls measuring a minimum of 4'-11" in height, and other enclosed spaces as determined by the effective outside dimensions of the building.

B. ONE-HALF SPACES: One-half of the area will be included in the gross area for balconies and porches; exterior covered loading platforms or facilities, either depressed, ground level, or raised; covered but not enclosed passageways or walks; covered and uncovered but open stairs; and covered ramps.

C. EXCLUDED SPACE: Crawl spaces; exterior uncovered loading platforms or facilities, either depressed, ground level, or raised; exterior insulation applied to existing buildings; open courtyards; open paved terraces'; roof overhangs and soffits for weather protection; uncovered ramps; uncovered stoops; and utility tunnels and raceways will be excluded from the gross area.

D. NET AREA REQUIREMENTS for functional spaces are included in the drawings. If net area requirements are not indicated, the space shall be sized to accommodate the required function, comply with code requirements, comply with overall gross area limitations and other requirements of the RFP (for example, area requirements for corridors, stairs, and mechanical rooms will typically be left to the discretion of the Offeror).

3.1.5. ADAPT BUILD MODEL: An Adapt-Build Model for <BDE_ONLY>Brigade (HQ)</BDE_ONLY><BN_ONLY> Battalion (HQ)</BN_ONLY> <BDE_BN>Brigade and Battalion (HQ) Facilities</BDE_BN>, which contains a fully developed design, including Building Information Model (BIM), 2-D CADD files, and specifications, can be downloaded from the following web site:

<http://mrsi.usace.army.mil/cos/savannah/SitePages/BnBde.aspx>. This design is provided as a guide that exemplifies a technically suitable product and incorporates mandatory functional/operational requirements for a similar (although perhaps not an exact) facility to be constructed under this solicitation. It will be left to the offerors' discretion if, and how, they will use the sample design provided to satisfy the requirements of this Request for Proposal. This model is not intended to modify or over-ride specific requirements of this RFP and, under all circumstances, it will be incumbent upon the successful offeror to adhere to the site specific scope and functional/operational requirements specified within the RFP. Neither this statement of work, nor the adapt-build model, are intended to diminish the offeror's responsibilities under the clauses titled "Responsibility of the Contractor for Design," "Warranty of Design," and "Construction Role During Design." The successful offeror shall be the designer-of-record and shall be responsible for the final design and construction product, including but not limited to, adherence to the installation architectural theme, building code compliance and suitability of the engineering systems provided. The government assumes no liability for the model design provided and, to the extent it is used by an offeror, the offeror will be responsible for all aspects of the design as designer-of-record.

3.2. FUNCTIONAL AND OPERATIONAL REQUIREMENTS

3.2.1. FUNCTIONAL SPACES

A. ~~BDE_NOT~~ OMITTED ~~BDE_NOT~~ ~~BDE~~ BRIGADE HEADQUARTERS - FUNCTIONAL REQUIREMENTS ~~BDE~~ ~~BDE~~

1) **General:** The Brigade Headquarters facility is comprised of administrative, special functions and secure section components as described in paragraph Functional Spaces Descriptions and Performance Requirements. Secure section components consisting of a Brigade Operations Center (BOC), Secure Compartmented Information Facility (SCIF) and Network Operations Center (NOC). In conjunction with these, each site-specific project shall include necessary site amenities such as vehicle service yards, access drives, and exterior utilities. Space will be provided for a command section, S-1, S-2, S-3, S-4, S-6, S-7, utilities and support services. Private offices will be provided for the commanding officer, executive officer, command sergeant major, S-1 officer, S-2 officer, S-3 officer, S-4 officer, S-6 officer, S-7 officers, Human Resources NCO, re-enlistment, surgeon, Legal Staff offices, Family Resource Services Administrator (FRSA), chaplain, and assistant chaplain. Space will also be provided for clerical and central files, conference room, staff duty station, message center and mail sorting, reception, secure documents room, showers, supplies and vending. A staff duty station shall be provided at primary entrances to the building, whether the brigade headquarters is located in a combined Battalion/Brigade Headquarters or as a stand-alone building. The stand-alone Brigade Headquarters facility is a two story facility with secure zone 1 spaces on the ground floor and secure zone 2 spaces on the second floor. Secure zone 3 spaces are provided on the first floor and consist of a SCIF, BOC and NOC. The secure zone 3 spaces are separated from the rest of facility with card-reader doors.

2) **Brigade Headquarters Program Requirements:** The programmatic requirements for the Brigade Headquarters are as indicated on the drawings. See the Room Size and Furnishings Chart for other room and office layout information.

a) **NOC (Network Operations Center)** The NOC shall be designed and constructed as a secure room in accordance with AR 380-5 and classified for open storage.

b) **BOC (Brigade Operations Center).** The BOC will need to accommodate Government-furnished television screens (wall of knowledge) and monitors. The BOC will be designed and constructed as a secure room in accordance with AR 380-5 and classified for open storage. The main floor (non-sloping) shall be on one level, with raised access flooring to accommodate changing the equipment and the room layout. It shall be configured in a lecture-style arrangement, with clear sight-lines to the wall of knowledge. A conference room shall be provided adjacent to the BOC. Refer to the standard design layout and furnishings chart for the required number and size of workstations.

c) **SCIF (Sensitive Compartmented Information Facility).** The SCIF shall be designed and constructed for accreditation in accordance with Office of the Director of National Intelligence – Intelligence Community Standard (ICS) 705. The SCIF shall be classified for open storage.

3) **Brigade Headquarters Adjacency Matrix**

Bde Hq Adjacency Matrix		Zone 1										Zone 2										Zone 3								
Activity or Element		COMMAND GROUP	S1 PERSONNEL	S1/PAC	S4 LOGISTICS	S8 RESOURCE MANAGEMENT	CHAPLAIN	SURGEON/MEDICAL	INSPECTOR GENERAL	PUBLIC AFFAIRS	LEGAL	SAFETY	S2 INTELLIGENCE	S3 OPERATIONS	S5 PLANS	S6 COMMUNICATIONS	S7 INFORMATION OPS	S9 CIVIL AFFAIRS	SUPPORT OPERATIONS	FIRE AND EFFECTS	AVIATION	AIR DEFENSE	CBRNE	ENGINEER	PROTECTION	SCIF	BOC	NOC		
Zone 1	COMMAND GROUP		P	A			X	X	P	P																				
	S1 PERSONNEL (note 1)	P		P																										
	S1/PAC (note 2)	A	P																											
	S4 LOGISTICS																													
	S8 RESOURCE MANAGEMENT																													
	CHAPLAIN	X																												
	SURGEON/MEDICAL																													
	INSPECTOR GENERAL	X																												
	PUBLIC AFFAIRS	P																												
	LEGAL	P																												
	SAFETY																													
Zone 2	S2 INTELLIGENCE																												P	
	S3 OPERATIONS														P	P			P	P	P	P	P	P	P			P		
	S5 PLANS (note 3)																													
	S6 COMMUNICATIONS																												P	
	S7 INFORMATION OPS																													
	S9 CIVIL AFFAIRS																								P					
	SUPPORT OPERATIONS (note 4)														P															
	FIRE AND EFFECTS														P								A	A						
	AVIATION														P								A	A						
	AIR DEFENSE														P								A	A						
	CBRNE (note 5)														P											P	P			
	ENGINEER														P										P		P			
	PROTECTION (note 7)														P										P	P				
Zone 3	SCIF (note 6) (note 8)													P																
	BOC (note 8)													P																
	NOC (note 8)															P														

A = Adjacency Required
P = Proximity Desirable
X = Separation Needed

"blank" no functional relationship or adjacency requirements

Security Zone 1	Limited access for physical and personal security purposes
Security Zone 2	Controlled access for operational and information security purposes
Security Zone 3	Restricted access

Brigade Headquarters adjacency matrix notes:

1. S-1 Personnel: Combined with S4 as a sustainment section.
2. S1/PAC: Personnel Action Center. Provides customer service. Location should avoid cross traffic with the command group.
3. S5 Plans: combined with S3.
4. Support Operations or SPO is a major separate staff element in Sustainment brigades.
5. Chemical, Biological, Radiological, Nuclear and Explosives: collocated with S3.
6. Sensitive Compartmented Information Facility (SCIF). Associated with S2. The SCIF will be adjacent to an exterior parking area for tactical SCIF vehicles. The exterior Tactical SCIF Vehicle Area (TSVA) will need

vehicle interconnectivity with the internal building SCIF. The TSVA will be in a secured, screened, fenced yard with controlled access. Allowance should be made for nine vehicles to park side-by-side within the enclosure.

7. 'Protection' is the MP section in the Combat Support Brigade (Maneuver Enhancement): collocated with S2 or S3.

8. A variance is permitted for the desired proximity between the SCIF, BOC, and NOC and the Brigade staff sections. The intent is to allow for the consolidation of the SCIF, BOC, and NOC on the ground floor for ease of deployment and to accommodate the adjacency requirement between the SCIF, TSVA, and the NOC secure parking area and TSVA.

9. In the consolidated Battalion/Brigade HQ concept, the staff sections for each battalion headquarters shall be consolidated on a single floor, and the brigade staff sections shall be physically separated from battalion staff sections.

10. Security Zone areas shall be segregated from one another by space separation, physical barriers, or placement of spaces on separate floors of the building. </BDE>

B. <BN_NOT>OMITTED</BN_NOT><BN>BATTALION HEADQUARTERS - DESIGN REQUIREMENTS
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1) **General:** The Battalion Headquarters facility is comprised of administration, special functions, and classroom components as described in the paragraph Functional Space Descriptions and Performance Requirements. In conjunction with these, each site-specific project shall include necessary site amenities such as vehicle service yards, access drives, and exterior utilities. Space will be provided for a command section, S-1, S-2, S-3, S-4, S-6, utilities and support services. Private offices will be provided for the commanding officer, executive officer, command sergeant major, S-1 officer, S-2 officer, S-3 officer, S-4 officer, S-6 officer, Human Resources NCO, chaplain, and assistant chaplain. Space will also be provided for clerical and central files, conference room, staff duty station, Family Resource Services Administrator (FRSA) message center and mail sorting, reception, secure documents room, showers, supplies, toilet facilities, vending, recycle closet, mechanical room, electrical rooms, telecommunication rooms, and classrooms. A staff duty station shall be provided at primary entrances to the building, whether the battalion headquarters is located in a combined Battalion/Brigade HQ or as a stand-alone building. The stand-alone Battalion Headquarters facility is a two story facility with secure zone 1 spaces on the ground floor and secure zone 2 spaces on the second floor. A separate cluster of classrooms is provided on the ground floor, and is segregated from other building components to minimize disruption to normal headquarters activities.

2) **Battalion Headquarters Program Requirements:** The programmatic requirements for the Battalion Headquarters are as indicated on the drawings. Note that the Battalion Headquarters structure is similar for all army battalions and the main difference is size. See the Room Size and Furnishings Chart for other room information.

3) **Battalion Headquarters Adjacency Matrix**

Bn Hq Adjacency Matrix		Zone 1										Zone 2								
Activity or Element		COMMAND GROUP	S1 PERSONNEL	S1/PAC	S4 LOGISTICS	CHAPLAIN	SURGEON/MEDICAL	PUBLIC AFFAIRS	LEGAL	SAFETY	CLASSROOMS (note 13)	S2 INTELLIGENCE	S3 OPERATIONS	S5 PLANS	S6 COMMUNICATIONS	FIRE AND EFFECTS	AIR DEFENSE	CBRNE	ENGINEER	
Zone 1	COMMAND GROUP		P	A		X		P	P		X									
	S1 PERSONNEL (note 1)	P		P							X									
	S1/PAC (note 2)	A	P								X									
	S4 LOGISTICS										X									
	CHAPLAIN	X									X									
	SURGEON/MEDICAL										X									
	PUBLIC AFFAIRS	P									X									
	LEGAL	P									X									
	SAFETY										X									
	CLASSROOMS	X	X	X	X	X	X	X	X	X	X									
Zone 2	S2 INTELLIGENCE																			
	S3 OPERATIONS												P		P	P	P	P		
	S5 PLANS (note 3)											P								
	S6 COMMUNICATIONS																			
	FIRE AND EFFECTS												P				A			
	AIR DEFENSE												P							
	CBRNE (note 4)												P						P	
	ENGINEER												P						P	

A = Adjacency Required
P = Proximity Desirable
X = Separation Needed

"blank" no functional relationship or adjacency requirements

Security Zone 1	Limited access for physical and personal security
Security Zone 2	Controlled access for operational and information

Battalion Headquarters adjacency matrix notes:

1. S-1 Personnel: Combined with S4 as a sustainment section.
2. S1/PAC: Personnel Action Center. Provides customer service. Location should avoid cross traffic with the command group.
3. S5 Plans: combined with S3.
4. Chemical, Biological, Radiological, Nuclear and Explosives: collocated with S3.
5. In the consolidated Battalion/Brigade HQ concept, the staff sections for each battalion headquarters shall be consolidated on a single floor, and the brigade staff sections shall be physically separated from battalion staff sections.
6. Security Zone areas shall be segregated from one another by space separation, physical barriers, or placement of spaces on separate floors of the building. **</BN><CONSOLIDATE>**

C. CONSOLIDATED BRIGADE AND BATTALION HEADQUARTERS BUILDING

1) **Individual Headquarters Staff Sections.** The individual headquarters staff sections shall be consolidated within the building as if each headquarters was leased space in the large building. The brigade staff sections must be physically separated (by floors or walls) from battalion staff sections.

2) **The Brigade Operations Center (BOC), Network Operations Center (NOC) and Sensitive Compartmented Information Facility (SCIF)**. The BOC, NOC, and SCIF for the brigade headquarters shall be located on the first floor in order to make them accessible to tactical vehicles during exercises. The classrooms shall also be located on the ground floor near the BOC and SCIF to allow them to be used in support of exercises or pre-deployment activities.

3) **Battalion Classrooms**. Battalion classrooms will be consolidated and reduced in number by 50 percent since the consolidated headquarters option enables alternating use of classrooms by multiple battalions. </CONSOLIDATE>

D. **FUNCTIONAL SPACE DESCRIPTIONS AND PERFORMANCE REQUIREMENTS:**

Command Section	Zone 1	The command section corresponds to the office of the CEO of a corporation. It needs to be located away from heavy traffic activities and must provide a means for support personnel to control the flow of visitors. It also needs to be located with a proximity to the main entrance that allows visitors to have access to the reception area without moving through operational areas of the building such as the SCIF, BOC and the areas of the S-2 and S-3. The legal staff, public affairs staff and the chaplain are outside the area controlled by the commander's assistants. They need ready access to the commander on a recurring basis, but they also have their own visitors who normally should not come inside the command suite.
S-1	Zone 1	The S-1 office (Human Resources) is equivalent to the human resources department of a corporation. While the S-1 has representatives who support operational activities in the building, they serve a clientele that often does not have a requirement for access to operational areas. While it corresponds to the human resources department it generally does not provide customer service to individual soldiers. Rather, the S-1 serves human resource specialists from subordinate organizations and agencies. The S-1 section frequently provides the personnel who control access to the commander and so proximity to the command suite is recommended as long as traffic to the S-1 does not invade the privacy of the command suite.
S-2	Zone 2	The S-2 office (Intelligence Surveillance and Reconnaissance) supports the commander in the areas of opposition research, terrain analysis and weather. The activity of the S-2 section involves a variety of secure communications capabilities and much of their workspace in inside of the SCIF (Brigade Headquarters only) portion of the building and requires strict access control. They also require direct access to a secure exterior vehicle compound adjacent to the SCIF. It should be located away from areas that have customer service activities related to other sections.

S-3	Zone 2	The S-3 (Coordinating Staff Office - Operations, Plans and Training) officer's functions are similar to those of the chief operations officer of a corporation. The S-3 section is responsible for planning, coordinating and supervising the mission functions of the brigade. Because the S-3 integrates the operational functions of the other staff sections as they relate to the mission, it should be as centrally located as possible consistent with other requirements and constraints. The S-3 is responsible for managing the brigade operations center (BOC) (Brigade Headquarters only), which is a restricted area. Much of the work of the S-3 involves dealing with classified information and communications means and, as such, it should be isolated from activities that generate traffic that is not related to the operational function of that section.
S-3	Zone 2	The S-3 Special Staff Office houses a variety of staff elements that are generally autonomous from one another, but which work under the direction of the S-3 office. Each section is aligned with a special function that directly supports the operations of the brigade of battalion and which must be carefully integrated into the overall operations of the command. When the BOC is active each of these sections provides support staff inside the BOC. Within the section the aviation, fires and effects, and air defense elements are more independent of the other sections. Like the S-3 coordinating staff they should be located in a manner that isolates them from activities that generate traffic that is not related to the operational function of that section such as the S-1 and S-4.
S-4	Zone 1	The logistics operations office is responsible for the administration of the logistics, transportation and maintenance functions and programs within the brigade. It does not perform any industrial type functions. It generates traffic that should be excluded from operational areas. It does not provide direct customer service. Most of the traffic it generates will be logistics, transportation and maintenance managers from subordinate organizations.
<BDE>S-6	Zone 2	The S-6 information Management office operates the NOC (Brigade Headquarters only) with personnel assigned to the Brigade Signal Company. The S-6 is similar to the IT section of a corporation. At the brigade level, it performs policy and management functions but is not necessarily involved in the day to day operation of the networks or communications systems. Similarly it does not provide help desk or hardware and software management. Rather, it provides plans and policies for the organization as a whole and exercises staff supervision of the IT specialist who provides direct support to users. </BDE>
S-7	Zone 2	The S-7 information Operations office plans and conducts sensitive operations involving the relationship between the military and the civilian populations when the brigade is deployed. They have a high correlation to the S-3 Operations and Plans officers, the BOC and the SCIF. They should be located away from high traffic areas. The S-7 section needs to have ready access to the SCIF and the BOC. The personnel spaces in this section are from other organizations.

<p><BN>Battalion Headquarters Organizational Classrooms.</p>	<p>Zone 1</p>	<p>Classrooms (Battalion Headquarters only) shall be provided for training and other ceremonial and gathering functions for all battalions. Organizational classrooms are authorized for individual battalions when battalion HQs are built as stand-alone or consolidated with a Brigade. There will be a maximum of three classrooms per battalion. The classrooms should be built as a contiguous area with partitions to allow the facility to provide maximum flexibility. When multiple battalion classrooms are consolidated in a single building, i.e. consolidated brigade/battalion headquarters, they shall be reduced in number by 50% since the consolidated headquarters option enables alternating use of classrooms by battalions. </BN></p>
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<p><BDE>BOC</p>	<p>Zone 3</p>	<p>The brigade operations center BOC Brigade Headquarters only is similar to an emergency operations center in a local city or county. It provides a venue for interdisciplinary collaboration by specialists from the various staff elements. It is a secure area with restricted access. Only personnel on approved rosters or those who have a verified clearance and need to know are admitted to the BOC. Complimentary technological such as card access and procedural methods are used to control access. a The BOC does not normally operate at full capacity except during an exercise or during preparation for deployments. While the duration of its intense use may be limited, it is also possible that it will be the site of extended operations at full capacity as military preparations continue in anticipation of a political decision to employ military forces. It has work stations connected to all critical networks that are manned by representatives of the various staff agencies.</p> <p>Each of the representatives is "on loan" to the BOC and therefore has another permanently assigned work area. In addition to the main floor, the BOC may provide areas adjacent to the floor for smaller collaborative meetings. The BOC should be located with proximity to the S-3 and isolated from non-operational traffic to the extent possible.</p>
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<p>SCIF</p>	<p>Zone 3</p>	<p>The Sensitive Compartmented Information Facility (SCIF) (Brigade Headquarters only) is the portion of the facility that is supervised by and primarily supports the S-2 staff section. It is a restricted space that needs to have ground level access to an enclosure, <u>i.e. the Tactical SCIF Vehicle Area (TSVA)</u>, capable of containing up to 5 HMMWVs (High-Mobility Multipurpose Wheeled Vehicles) and 4 larger tactical vehicles with trailers in a controlled area. Complimentary technological and procedural methods are used to control access.</p>
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<p>NOC</p>	<p>Zone 3</p>	<p>The Network Operations Center (NOC) (Brigade Headquarters only) is the area where S-6 personnel and personnel from supporting activities perform network control operations. It includes workstations for each individual working within the area. It is a restricted access area that directly supports the SCIF and the BOC as well as providing general support to the internal communications of the rest of the headquarters building. <u>It needs to have ground level access to an adjoining exterior enclosure capable of containing up to 2 HMMWVs (High-Mobility Multipurpose Wheeled Vehicles) with trailers in a controlled area</u> Complimentary technological and procedural methods are used to control access. </BDE></p>
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3.3. SITE FUNCTIONAL REQUIREMENTS: The following site design requirements are applicable to the design of the ~~<BDE_ONLY>~~Brigade Headquarters (HQ) Facility.~~</BDE_ONLY><BN_ONLY>~~Battalion Headquarters (HQ) Facility.~~</BN_ONLY>~~ ~~<BDE_BN>~~Brigade and Battalion Headquarters (HQ) Facilities.~~</BDE_BN>~~:

A. PRIVATELY OWNED VEHICLES (POV) PARKING. ~~<HQ_POV_OTHER>~~POV parking to be provided by others. ~~</HQ_POV_OTHER><HQ_POV_GOV>~~POV parking shall be provided at a ratio of one space for 90% of the intended HQ staff capacity. ~~</HQ_POV_GOV>~~

B. EXTERIOR LIGHTING. Sidewalks, service yards and parking areas shall have exterior lighting. See Chapter 6 for additional information and requirements.

C. ~~<BDE>~~TACTICAL SCIF VEHICLE AREAS (TSPA) AT BRIGADE HEADQUARTERS. A parking area for 5 HMMWVs ~~vehicles~~ and 4 MRAPs shall be located in ~~the a~~ secure area ~~and~~ immediately adjacent to the interior SCIF. This area shall have an unobstructed exposure to the southwestern sky for direct satellite communication. The area shall be provided with the following features: 1) a perimeter fence consisting of a 6-foot high chain link fabric topped by a single outrigger with three-strand barbed wire designed in accordance with STD 872-90-03, FE-6, chain link security fence details. Provide organizational vehicle and personnel gates that are manually operated and manually secured. 2) Provide approximately 13,000 square feet of rigid concrete pavement designed to support HMMWV vehicles or other large tactical vehicles, as utilized by the unit, with trailers 3) A 10-foot wide zone clear of trees and shrubs is required on each side of the fence. The clear zone should require minimal maintenance, and the area 5 feet each side of the fence should be provided with gravel and treated to discourage vegetation growth. Provide 6-inch high concrete wheel stops for each parking stall 6 feet from the exterior wall of the Brigade Headquarters to prevent damage to the building by vehicle impact. No above ground transformers, generators, or mechanical equipment shall be located in this area.
~~</BDE><BDE_NOT>~~Omitted~~</BDE_NOT>~~

~~C.D. <BDE>TACTICAL NOC VEHICLE AREAS AT BRIGADE HEADQUARTERS. A parking area for 2 HMMWVs with trailers shall be located in a secure area immediately adjacent to the interior NOC. This area shall have an unobstructed exposure to the southwestern sky for direct satellite communication. The area shall be provided with the following features: 1) a perimeter fence consisting of a 6-foot high chain link fabric topped by a single outrigger with three-strand barbed wire designed in accordance with STD 872-90-03, FE-6, chain link security fence details. Provide organizational vehicle and personnel gates that are manually operated and manually secured. 2) Provide approximately 3050 square feet of rigid concrete pavement designed to support HMMWV vehicles or other large tactical vehicles, as utilized by the unit, with trailers. 3) A 10-foot wide zone clear of trees and shrubs is required on each side of the fence. The clear zone should require minimal maintenance, and the area 5 feet each side of the fence should be provided with gravel and treated to discourage vegetation growth. Provide 6-inch high concrete wheel stops for each parking stall 6 feet from the exterior wall of the Brigade Headquarters to prevent damage to the building by vehicle impact. No above ground transformers, generators, or mechanical equipment shall be located in this area. ~~</BDE><BDE NOT>~~Omitted~~</BDE NOT>~~~~

3.4. SITE AND LANDSCAPE REQUIREMENTS – NOT USED

3.5. ARCHITECTURAL REQUIREMENTS

A. EXTERIOR ARCHITECTURE. Interior and exterior architectural features of the building shall be designed in accordance with the Installation Design Guide.

B. BUILDING ENTRANCE. Provide attractive entry features such as canopies and large glass wall surfaces, ensuring compliance with Anti-Terrorism/Force Protection requirements.

C. WINDOWS: Provide windows for natural lighting in all Security Zone 1 and 2 office areas, ensuring compliance with anti-terrorism/force protection and physical security requirements. Areas where classified material (both physical and electronic format) is handled, stored, processed, or discussed shall be limited to non-operable windows. This prohibition extends to locations with components for SIPRNET and to other devices processing classified data, which includes all private offices and conference rooms. When fixed windows are provided in rooms authorized for SIPRNET, the following potential problem areas must be addressed:

- 1) Ensure TEMPEST is mitigated by using TEMPEST approved equipment and shielded or fiber optic cabling.
- 2) Provide provision for window curtains and/or blinds, or application of a one way film to the window glazing.
- 3) Provide provision for curtains that can be drawn across windows were audio from classified VTC sessions has the potential of being transmitted through window glazing.

~~BDE~~ Windows are not authorized in the Brigade Headquarters Security Zone 3 areas. ~~BDE~~

D. SOUND INSULATION. Due to the possibility of amplified audio, provide sound insulation for all classrooms and conference rooms ~~BDE~~, to include the Operations Center (OC) in Bde HQ, ~~BDE~~ to meet a minimum rating at doors, walls, and floor / ceiling assemblies of STC 50 or better. ~~BDE~~ In addition to meeting a minimum rating of STC 50 or better, SCIF Conference Rooms shall also meet Sound Group 4 performance criteria in accordance with ICS 705-1. ~~BDE~~. Provide sound insulation to meet a minimum rating at doors, walls and floor/ceiling assemblies of STC 45 at ~~BDE~~all other Security Zone 3 areas, ~~BDE~~ private offices, team rooms, A/V control rooms, and walls separating security zones. The sound insulation system shall be as defined by ASTM E413-04, Classification for Rating Sound Insulation. Compliance with STC requirements includes industry standard sound deterrence measures and sound flanking paths at HVAC ductwork and pipe penetrations, electrical boxes and similar systems. In addition to the above sound insulation requirements, all conference rooms and classrooms supporting video teleconferencing capabilities shall meet a Noise Criteria (NC) 30 rating in accordance with ASHRAE Fundamentals Handbook.

E. OFFICE AND ADMINISTRATIVE AREAS. The open office areas for staff sections (S-1, and S-2, etc.) in different security zones should be separated from one another by physical separation, walls, or floors. The intent is to provide visual separation between staff sections within a headquarters, with maximum flexibility for future change within open office areas. A similar preference exists for private offices within the staff section, with the exception that they will require doors for privacy. The command section offices shall be constructed to provide privacy and sound control in accordance with SOUND INSULATION paragraph above. The intent for the command section offices is to provide a more permanent type of construction, but still to minimize load-bearing walls so as to accommodate future reconfiguration. This same construction requirement exists for walls between headquarters in a consolidated headquarters facility. Provide centralized areas for photocopier, laser printer and fax machine with waste and paper recycling receptacles and supply cabinet for paper storage in each office area. Hours of operation are normal business hours except where indicated otherwise.

~~F. MESSAGE CENTER. Construct the Message Center / Mail Sorting Room to provide adequate security for mail storage and distribution. Structural requirements are as follows: Provide doors with suitable locks and door hinges. Lock shall be a key-operated, mortised, or rim-mounted lock; have a dead bolt throw of one inch; be of double-cylinder design; have five pin-tumbler cylinders; with two of mushroom or spool-type drive pin design; have 10,000 key changes; have no master key and contain hardened saw-resistant steel inserts if the bolt is visible when locked. The strike shall be made of steel. A high security padlock and hasp may be used in lieu of above. Mount the hinges inside to prevent their removal from the outside. Door hinges mounted on the outside shall have non-removable or spot-welded pins. Access doors shall be of sheet metal material not less than 16-gauge in thickness, or a solid wooden door covered on the outside with a steel plate not less than 12-gauge in thickness. Ground level windows shall have bars. Cover above ground level windows with wire mesh security screen. Walls and ceilings shall be constructed of material to prevent forcible entry. Minimum requirements shall be to provide expanded steel fabric behind gypsum board walls and ceiling. Provide provisions for ICIDS (Internal Commercial Intrusion Detection System) in facilities that are not operational on a 24-hour basis. AT/FP requirements for Mail Rooms as specified in UFC 4-010-01 are not applicable for the Message Center / Mail Sorting Room.~~

~~G.F. SECURE DOCUMENTS ROOM. The Secure Documents Room in the S-2 area shall be designed and constructed in accordance with AR 380-5 and classified for Open Storage. ~~BDE~~~~

~~H.G. NOC (NETWORK OPERATIONS CENTER) The NOC shall be designed and constructed as a secure room in accordance with AR 380-5 and classified for open storage.~~

~~H.H. BOC (BRIGADE OPERATIONS CENTER). The BOC will need to accommodate Government-furnished television screens (wall of knowledge) and monitors. The BOC will be designed and constructed as a secure room in accordance with AR 380-5 and classified for open storage. The main floor (non-sloping) shall be on one level,~~

with raised access flooring to accommodate changing the equipment and the room layout. It shall be configured in a lecture-style arrangement, with clear sight-lines to the wall of knowledge. A conference room shall be provided adjacent to the BOC. Refer to the standard design layout and furnishings chart for the required number and size of workstations.

3.1. **SCIF (SENSITIVE COMPARTMENTED INFORMATION FACILITY).** The SCIF shall be designed and constructed for accreditation in accordance with Office of the Director of National Intelligence – Intelligence Community Standard (ICS) 705. The SCIF shall be classified for open storage. **</BDE>**

3.5.1. FINISHES AND INTERIOR SPECIALITIES

Fire Extinguisher cabinets and brackets shall be provided when fire extinguishers are required by UFC 3-600-01 and NFPA 101. Placement of cabinets and brackets shall be in accordance with NFPA 10. Semi-recessed cabinets shall be provided in finished areas and brackets shall be provided in non-finished areas (such as utility rooms, storage rooms, shops, and vehicle bays). Fire extinguishers shall not be provided in this contract.

3.6. STRUCTURAL REQUIREMENTS

Structural Floor Load Requirement for Secure Documents Room. The floor system for the Secure Documents Room shall be designed to store up to 12 safe/file-cabinets. The empty shipping dead load of the cabinet is approximately 1021 lbs each. The live load of the safe/file-cabinet will be based on the latest approved addition of IBC for a "Heavy Storage" of 250 psf.

3.7. SEE PARAGRAPH 6.7 THERMAL PERFORMANCE – NOT USED

3.8. PLUMBING REQUIREMENTS – NOT USED

3.9. COMMUNICATIONS AND SECURITY SYSTEMS

A. **GENERAL:** See Paragraph 6 of the RFP for clarifications and additional requirements for the communication and security systems.

B. **</BDE>EXTERIOR SECURITY:</BDE></BDE_NOT>OMITTED: </BDE_NOT>**

</BDE> Security Infrastructure for Tactical SCIF Vehicle Area (TSVA). Security infrastructure systems shall be installed to support Government-furnished equipment including ICIDS systems, CCTV surveillance systems, and restricted access systems. Provisions shall include dedicated power circuits, communications connections, raceways, and signal wiring for user installed devices. System requirements shall be coordinated with the installation security office. **</BDE>**

C. **EXTERIOR COMMUNICATION:**

1) **Outside Plant Telecommunications Systems.** The project's facilities shall connect to the Installation telecommunications (voice and data) system through the outside plant (OSP) underground infrastructure per I3A Criteria. Connections to the OSP cabling system shall be from each facility main cross connect located in the main telecommunications room to the closest OSP access point. Components include the physical cable plant and the supporting structures. Items included under OSP infrastructure encompass, but are not limited to, maintenance hole and duct infrastructure, copper cable, fiber optic cable, cross connects, terminations, splices, cable vaults, and copper and FO entrance facilities.

2) **</BDE>Data Connections for Tactical SCIF Vehicle Area (TSVA).** Provide underground Protective Distribution System (PDS) pathway for telecommunications connectivity from the SCIF in the main building to each TSVA vehicle. Weatherproof tactical interface boxes (TIB) are required for each vehicle. A TIB shall be provided for secure vehicle system connections, non-secure NIPRnet, Telephone, and IDS. Connectors for all systems shall be included. The TIBs shall be connected to the building SCIF via the underground pathway system. Cabling for all data networks (including NIPRnet, SIPRnet, NSAnet/TDN-2, and/or any other network required) shall be provided. Three 6-strand singlemode fiber optic cables to each TIB shall be included for secure networks unless otherwise specified. Connection points shall be designed to service and prevent damage from

the vehicles. Pathways terminating in the SCIF shall terminate in the server rooms. Connection requirements shall be coordinated with the User. **</BDE><BDE_NOT>Omitted. </BDE_NOT>**

2)3) <BDE>Data Connections for Tactical NOC Vehicle Area. Provide underground Protective Distribution System (PDS) pathway for telecommunications connectivity from the NOC in the main building to each vehicle. Weatherproof tactical interface boxes (TIB) are required for each vehicle. A TIB shall be provided for secure vehicle system connections, non-secure NIPRnet, Telephone, and IDS. Connectors for all systems shall be included. The TIBs shall be connected to the building NOC via the underground pathway system. Cabling for all data networks (including NIPRnet, SIPRnet, NSAnet/TDN-2, and/or any other network required) shall be provided. Three 6-strand singlemode fiber optic cables to each TIB shall be included for secure networks unless otherwise specified. Connection points shall be designed to service and prevent damage from the vehicles. Pathways terminating in the NOC shall terminate in the server rooms. Connection requirements shall be coordinated with the User. **</BDE><BDE_NOT>Omitted. </BDE_NOT>**

D. INTERIOR COMMUNICATIONS AND SECURITY:

1) **Telecommunications:** An acceptable building telecommunications system encompasses, but is not limited to, copper and fiber optic (FO) entrance cable, protectors, termination equipment, racks, cable management, patch panels, copper and fiber backbone cable, conduits, cable tray, cable ladder, copper and/or fiber horizontal distribution cable, outlets, grounding, and labeling. Telecommunications infrastructure shall meet the Installation Information Infrastructure Architecture (I3A) Criteria and ANSI/TIA/EIA requirements.

d) **Telecommunications Rooms (TR):** Telecommunications rooms and telecommunications entrance facilities shall be provided for the network and voice equipment, and cabling infrastructure. There shall be a minimum of one telecommunications room on each floor, located near the center of the building, and preferably stacked between floors. Additional telecommunication rooms shall be provided as necessary to insure that the horizontal copper cable length does not exceed the 295 foot limitation. The telecommunications rooms shall be designed and provisioned in accordance with I3A and ANSI/TIA/EIA-569-B. A main TR with telecommunications entrance capability shall be provided for each facility, and shall be located on the first floor. The main TR shall serve as the hub for the interior backbone single mode fiber cable and copper riser cable to each of the other TRs. Backbone cabling shall be provided in accordance with I3A. Each TR shall also have the following requirements:

- (1) Access shall be from a centralized corridor within the building: (No exterior access shall be allowed).
- (2) Door shall be three foot wide opening outward.
- (3) Room shall be a minimum of 8 feet wide to accommodate working clearances around data equipment and racks. Odd shaped TR's (e.g. "L" shaped) that decreases the useable area for backboards, racks, etc. shall be avoided.
- (4) A fire-rated A-C plywood backboard (3/4 inch thick) around interior perimeter.
- (5) Illumination shall be 50 foot-candles (average).
- (6) Dedicated power panel within the room.

<BDE_ONLY>

Brigade Headquarters				
Building Size	Main TR (1st Floor)		TR (2nd Floor)	
	Min Width (Feet)	Min Square Feet	Min Width (Feet)	Min Square Feet
Extra Small	8	125	8	100
Small	8	125	8	100
Medium	8	125	8	130
Large	8	150	8	140
Extra Large	8	295	8	150
Additional TRs (If Req'd)	8	80	8	80

</BDE_ONLY><BN_ONLY>

Battalion Headquarters				
Building	Main TR (1st Floor)		TR (2nd Floor)	
	Min Width (Feet)	Min Square Feet	Min Width (Feet)	Min Square Feet

Small	8	90	8	100
Medium	8	125	8	80
Large	8	125	8	80
Extra Large	8	125	8	80

</BN_ONLY><CONSOLIDATE>

Consolidated BDE/BN HQs		
Building Area	TR	
	Min Width (Feet)	Min Square Feet
1st Floor BN	8	125
1st Floor BDE	8	125
1st Floor Classroom	8	125
2nd Floor BN	8	125
2nd Floor BDE	8	125
Additional TRs (If Required)	8	80

</CONSOLIDATE>

Notes:

1. Width is a minimum inside edge of wall to inside edge of wall dimension inside the room. Length shall be greater than or equal to width.
2. Standard Drawings may be adjusted as needed, but the Telecommunications rooms shall not be less than the minimum width and square feet indicated above.
3. Telecommunications rooms shall be rectangular in shape.

e) **Telecommunications Outlets.** Telecommunications outlets shall be provided per I3A based on functional purpose of the various spaces with the facility as modified by user special operational requirements and herein. Each headquarters workstation shall have voice and data connection capability. Each conference room <BN> and classroom <BN> shall have voice capability (minimum one outlet per room) and data connection capability (minimum one outlet per person) in accordance with I3A. A voice/data outlet shall be provided at each copier location. A wall mounted telephone outlet with a single jack shall be provided in each mechanical, electrical, telecommunication rooms, and secure storage rooms. For controlled access areas, provide outlets for wall mounted (GFGI) phones at access points. Additional locations shall be provided based on coordination with the facility user and where required for HVAC, other equipment and as required by I3A. Additional locations shall be provided based on coordination with the facility user and where required for HVAC, other equipment and as required by I3A.

f) **Telecommunications Distribution.** Tele-Poles shall not be used. The uses of existing architectural columns or perimeter walls are the preferred method of power and telecommunications distribution to systems furniture workstations. Under-floor conduits shall be used only if no other alternative exists, and shall be designed and installed IAW TIA/EIA-569-B. Under-floor outlet boxes shall also contain a spare conduit for future expansion. <BDE>Second floor penetrations above the SCIF area shall be avoided.</BDE>

g) **Cable Trays.** Provide cable tray pathways through-out the facility to support the systems required for the construction of the facility as well as user's computer networks, video integration system, telecommunication systems and other specialized electronic systems.

h) **Raised Access Flooring.** Areas with high concentrations of cabling will have raised access flooring to accommodate flexibility and growth. Signal grounds shall be provided in a grid pattern under all raised floor areas in accordance with MIL-HDBK 419A. Minimum height of raised flooring shall be 6 inches.

2) **Secure Communications**

a) **Secure Communications Rooms.** The SIPRNET room(s) shall be designed and constructed in accordance with the open storage area requirements at secret level outlined in the Secret Internet Protocol Router Network (SIPRNET) Technical Implementation criteria. These rooms shall be separate dedicated rooms (minimum size shall be 6'X6') and shall include a communication signal ground busbar, connected to the main telecom room signal busbar via properly sized ground wire (see MIL-HDBK-419-A), and one dedicated 20-amp circuit for the SIPRNET rack/safe, in addition to convenience outlets. The connection to the main

telecommunications room will be via a single 2-inch trade size steel conduit in accordance with the I3A Criteria. A NIPRNET data outlet also shall be provided. As an alternative, the space allocated for the SIPRNET room may be incorporated into the telecommunications room if an approved SIPRNET Information Processing System Security Container (IPS) is provided within the combined SIPRNET/telecommunications room.

b) **Secret Internet Protocol Router Network (SIPRNet).** The distribution infrastructure shall be designed and constructed in accordance with the Secret Internet Protocol Router Network (SIPRNET) Technical Implementation Criteria. The word "shall" shall be substituted for the words "should" or "will" in the referenced publication NSTISSI 7003. A secure outlet drop box shall be provided in each private office, conference room, and other areas as directed. **<BDE>**SIPRNET distribution shall include the SCIF, BOC, and NOC in the Brigade Headquarters. **</BDE>** A Protective Distribution System (PDS) shall be provided in all limited and uncontrolled access areas. Specifications Section 27 05 28, Protective Distribution System (PDS) For SIPRNET Communications Systems shall be incorporated into this project. . (This section can be obtained at the link shown in Chapter 4, Paragraph 4.2.11.1). Surface mounted raceway PDS shall be used instead of the surface mounted conduit unless otherwise directed by the local NEC/DOIM. Category 6 UTP copper cables with red cable jacket shall be included and shall be terminated at both ends in accordance with the I3A Technical Criteria for data cables.

c) **Secure Video teleconferencing (VTC).** Secure VTC capability shall be provided in each conference room (but not team rooms)**<BDE>**, and in the Brigade Headquarters BOC and SCIF**</BDE>**. Provisions generally consist of a power connection and two RJ45 SIPRNET.

3) **Cable Television (CATV).** CATV shall be provided in all private offices, **<BN>** classrooms,**</BN>** and conference rooms.**<BDE>** Additionally, CATV shall be provided in the Brigade Headquarters BOC, NOC, and SCIF.**</BDE>** The cable television system shall consist of cabling, pathways, and outlets. All building CATV systems shall conform to APPLICABLE CRITERIA to include I3A Technical Criteria and the UFC 3-580-01 Telecommunications Bldg Cabling Systems Planning/Design.

4) **Audio/Visual Systems**

a) **GFGI Projectors.** Provisions (consisting of a power receptacle and conduit for signal wiring) for a GFGI projector shall be provided in each conference room**<BN>** and classroom**</BN>**.

b) **Paging systems.** A zoned paging system shall be provided throughout each facility and integrated with the telephone system.

c) **Video Teleconferencing (VTS) provisions.** Video teleconferencing (non-secure) provisions shall be provided in all conference rooms and classrooms. Provisions generally consist of a power connection and two RJ45 data outlets in a double gang outlet faceplate.

5) **Security Infrastructure (Security Equipment NIC).** The security infrastructure shall be installed to support Government-furnished equipment including ICIDS systems, CCTV surveillance systems, and restricted access systems. Provisions shall include dedicated power circuits, communications connections, raceways, and signal wiring for user installed devices. System requirements shall be coordinated with the installation security office.

a) **Intrusion Detection and Security Systems.** Provision for user provided ICIDS intrusion detection and security systems are required for secure and restricted areas including the Secure Document and the SIPRNet rooms. **<BDE>**The Brigade headquarters BOC, NOC, SCIF and TSVA shall also have provisions. As a minimum, provisions for a CCTV surveillance system shall be provided at the Brigade Headquarters SCIF corridor, and rear exit, and TSVA. **</BDE>**

b) **TEMPEST Requirements.** TEMPEST requirements shall be met on a per site basis dependent on the facility zone type and the equipment NSTISSAM level. All unclassified telecommunications systems and associated infrastructure shall be electrically and physically isolated from all classified telecommunications systems in accordance with NSTISSAM requirements.

6) **Radio Communications & Antenna.** Provide water tight antenna mounting brackets to the exterior wall (roof mounted equipment is not authorized) of the building at a location that has been coordinated with the user for FM reception from the ranges. Wall mounted structures shall not violate any manufacturer's warranty conditions. These brackets shall be designed structurally sufficient to support the equipment that is required by the user and capable of resisting the local wind loads. Optional antenna mounting locations shall be free standing poles or platforms located with proper site orientation to connect to the Duty Station of each unit. Provide two three inch conduits with weatherheads at the antenna mounting location and terminate the conduit inside the

~~headquarters building at the Duty station. If a multi-unit HQ is being designed, then this same requirement shall be provided to each unit within the building. The actual equipment will be provided and installed by the government. Provide structures to mount antennas for down range radio communications. Structures shall be exterior wall mounted or free standing; roof mounted structures are discouraged unless coordinated and agreed to by the local installation DPW. Wall mounted structures shall not violate any manufacturer's warranty conditions. Conduit pathways designed for future installation of RF feed line cables shall be provided for connection between the structures and the Duty Station. Structures shall be designed to be in compliance with all codes and criteria associated with the design of the building.~~

3.10. ELECTRICAL REQUIREMENTS

A. GENERAL: See Paragraph 6 of the RFP for clarifications and additional requirements for the electrical systems.

B. ~~<BDE>~~EXTERIOR ELECTRICAL:~~</BDE><BDE_NOT>~~OMITTED:~~</BDE_NOT><BDE>~~

- 1) **Exterior Generator (Brigade Headquarters Only)**. One automatic start-stand-by power generator to serve mission essential areas and life safety systems as defined by paragraph Stand-by Power System (Brigade Headquarters Only) shall be provided. Locate in a secure area outside of the building in a weatherproof enclosure. A fuel tank shall be provided to serve the generator for 48 hours of operation at full load.
- 2) **Power Connections for Tactical SCIF Vehicle Area (TSVA)**. Provide underground systems for power connectivity to the TSVA. Power shall be capable of accommodating user power requirements to each tactical SCIF vehicle for manned and unmanned platform support without using the platform's onboard power. Four large tactical vehicles shall each have a load of 100 amps and five smaller vehicles (HMMWV) shall each have a load of 60 amps, all at 208 volts, 3-phase, 4-wire. A general purpose 120 volt receptacle also shall be provided at each vehicle. Connection points shall be designed to service and prevent damage from the vehicles. ~~</BDE>~~

C. INTERIOR ELECTRICAL:

- 1) **Characteristics**. Select electrical characteristics of the power system to provide a safe, efficient, and economical distribution of power, based upon the size and types of loads to be served. Use distribution and utilization voltages of the highest level that is practical for the load to be served.
- 2) **Nonlinear Loads**. The effect of nonlinear loads such as computers and other electronic devices shall be considered and accommodated as necessary. These loads generate harmonics, which can overload conventionally sized conductors or equipment and thereby cause safety hazards and premature failures. Circuits serving such devices shall be equipped with a separate neutral conductor not shared with other circuits. Panelboards and any dry type transformers shall be rated accordingly.
- 3) **Transient Voltage Surge Protection**. Provide transient voltage surge protection. Design shall be in accordance with NFPA 780 and other referenced criteria.
- 4) **Receptacles**. Power receptacles shall be provided per NFPA 70 and in conjunction with the proposed equipment and furniture layouts. Provide power, data and telecommunications connectivity to each workstation. A duplex receptacle shall be accessibly located adjacent to each voice, data and CATV outlet. Power poles shall not be used. The use of furred structural columns or perimeter walls are the preferred method of power and telecommunication distribution to systems furniture workstations. Under-floor conduits shall be used only if no other alternative exists. ~~<BDE>~~Second floor penetrations above the SCIF area shall be avoided. ~~</BDE>~~
- 5) ~~<BDE>~~**Stand-by Power System (Brigade Headquarters Only)**. Stand-by generator(s) and automatic transfer switch (with internal isolation/bypass capabilities for maintenance) shall be provided. System shall serve all mission essential areas including the BOC, NOC, SCIF, TSVA Vehicles, communications rooms, SIPRNet rooms, and server rooms. (HVAC in these areas shall also be included.) In addition, system shall serve life safety and emergency loads that include, but shall not be limited to, elevator, emergency egress and exit lighting, fire alarm system, mass notification system, security systems, and other emergency circuits. ~~</BDE><BDE_NOT>~~Omitted. ~~</BDE_NOT>~~
- 6) ~~<BDE>~~**UPS Systems (Brigade Headquarters Only)**. UPS to serve the BOC, NOC, SCIF, server rooms, SIPRNET and communication rooms shall be provided. Unit(s) shall have a minimum of 5 minutes of capacity at full load to allow for generator override or orderly shut down of critical loads if the generator power fails to go on line. Unit(s) shall have isolation/bypass capabilities for maintenance and shall utilize leak proof maintenance-free sealed lead-acid batteries with suspended electrolyte. ~~</BDE><BDE_NOT>~~Omitted. ~~</BDE_NOT>~~

7) **Provide a minimum of 20% spare circuit** and load capacity at all levels of the power distribution system.

D. **LIGHTING**: Lighting and lighting controls shall comply with the recommendations of the Illumination Engineering Society of North America (IESNA) and the requirements of ASHRAE 90.1. Lighting shall be compatible with security cameras and security requirements.

1) **Interior Lighting Controls**. Automatic controls in offices, classrooms, and conference rooms **<BDE>**, and the BOC, NOC, and SCIF areas in the Brigade Headquarters **</BDE>** shall include provisions to be overridden by occupants during non-duty hours.

2) **Special Lighting Circuits**. All classrooms and conference rooms **<BDE>**, and the BOC, NOC, and SCIF areas in the Brigade Headquarters **</BDE>** shall have a dimmable circuit to provide light over the general work area without glare on audio-video displays. Dimming ballasts shall be capable of dimming to 5 percent.

E. **GROUNDING**. The ground counterpoise shall be provided around the building perimeter and shall be utilized for grounding incoming service, building steel, telephone service, piping, lightning protection, and internal grounding requirements. Ground straps shall be provided where required by function and will be connected to the building grounding system. A grounding point shall be provided under each raised access floor. Additional grounding may be provided based on project requirements. Systems shall conform to NFPA 70 National Electrical Code, local codes, and the US Army I3A Criteria.

F. **LIGHTNING PROTECTION SYSTEM**. Lightning Protection System shall be in accordance with NFPA 780 and other referenced criteria.

G. **MASS NOTIFICATION SYSTEM (MNS)**. A mass notification system shall be provided as required by UFC 4-010-01.

3.11. HEATING VENTILATING AND AIR CONDITIONING (HVAC) REQUIREMENTS

A. **<BDE>EXTERIOR EQUIPMENT**: No aboveground mechanical equipment (i.e. chillers, refrigeration equipment, condensers, air-handling equipment, etc.) and miscellaneous equipment (including transformers and generators) shall be physically located within Secure Vehicle Parking Areas. **</BDE><BDE_NOT>OMITTED:</BDE_NOT>**

B. **DESIGN DATA**: Actual internal equipment loads (i.e. heat dissipation) for finalized HVAC system sizing purposes shall be acquired from the USER or applicable point-of-contact (POC), and is the responsibility of the Design/Build Contractor. For baseline purposes, estimated internal equipment loads (i.e. heat dissipation) shall be as follows: For **<BDE>**NOC, BOC, and SCIF areas, use Table I: Equipment Loads; **</BDE>** Communication-type rooms/areas (Tele/Comm, SIPRNet, etc), use 585 watts. For administrative/office-type areas **<BN_ONLY>** with the exception of the Classroom areas, **<BN_ONLY><BDE_ONLY>** with the exception of the SCIF area, **</BDE_ONLY><BDE_BN>** with the exception of the Classroom and SCIF areas, **</BDE_BN>** it shall be assumed that each personnel/workstation area, cubicle, and office space is assigned a personal computer (desktop) for HVAC load calculation purposes. **<BN>**For the Classroom areas, it shall be assumed that each personnel is assigned a laptop computer for HVAC load calculation purposes. The overall quantity of personnel within each Classroom area shall be based on one person per 20 square feet of floor area. **</BN>** The quantity of personnel within each Conference room/area shall also be based on one person per 20 square feet of floor area.

<BDE>TABLE I: EQUIPMENT LOADS (BRIGADE ONLY)

NOC/BOC/SCIF	
Room Description	Watts/ft2
SCIF (Open Office)	5.98
Sigint	2.36
Server Rm (SCIF)	51.85
Geolnt	2.93

BOC (Open Office)	15.58
NOC (Open Office)	1.31
ISM Office (NOC)	1.17
A/V Server Rm (BOC)	39.87
Server Rm (NOC)	40.58

</BDE>

TABLE II : INDOOR DESIGN DATA

Heating	
General Indoor Design Temperature	70°F
<BDE>BOC, NOC, SCIF, </BDE> Communication Room	72°F
<BDE>*Server Room	*72°F/50%RH plus/minus 5% </BDE>
Mechanical Rooms (freeze protection)	40°F
Cooling	
General Indoor Design Temperature	75°F
<BDE>BOC, NOC, SCIF, </BDE> Communication Room	72°F
<BDE>*Server Room	*72°F/50%RH plus/minus 5% </BDE>

<BDE>* Areas in which humidity control (i.e. humidification, reheat, etc.) is required. </BDE>

C. HVAC SYSTEM REQUIREMENTS FOR CRITICAL AREAS <BN>AND CLASSROOMS</BN> <BDE>AND UPS SYSTEM</BDE>

- 1) <BDE>The Brigade Operations Center (BOC), the Network Operations Center (NOC), and the Sensitive Compartmented Information Facility (SCIF). The BOC, NOC, and SCIF will be served by an independent and dedicated air-handling system. These areas are allowed to be combined on a common system depending on the load profile and zoning requirements for each space. Equipment redundancy shall be provided per Table II Redundancy/Reliability Matrix. <BDE><BDE_NOT>Omitted. </BDE_NOT>
- 2) Communication Rooms. Communication rooms will each be served by an independent and dedicated air-handling system. Air handling unit system(s) shall not be floor-space mounted within the actual space served. <BDE> Communications rooms for the Brigade Headquarters shall be provided with equipment redundancy per Table II Redundancy/Reliability Matrix. </BDE>
- 3) <BDE>Server room(s). Server room(s) will each be served by an independent and dedicated air handling system. Air handling unit system(s) are allowed to be floor-space mounted within the actual space served. Equipment redundancy shall be provided per Table II. Computer room type air conditioning units shall be provided to condition server rooms. <BDE><BDE_NOT>Omitted. </BDE_NOT>
- 4) <BDE>The BOC, NOC, and SCIF areas are to be located on raised floors. The use of an Under Floor Air Distribution (UFAD) system for these areas is not mandatory, nor a requirement. <BDE><BDE_NOT>Omitted. </BDE_NOT>

5) **<BN>Classrooms**. Each classroom area shall be individually temperature-controlled by the DDC System. Temperature setpoint adjustment shall be accomplished via DDC System by authorized personnel.
 </BN><BN_NOT>Omitted</BN_NOT>

6) **<BDE>UPS system**. An UPS system to serve the BOC, NOC, SCIF, server rooms, and communications rooms is required to be provided (see electrical requirements). HVAC system(s) shall be designed and provided to maintain appropriate interior environmental conditions (i.e. temperature, humidity, pressure, etc.), and to limit hydrogen gas accumulation to less than an explosive mixture. Design of HVAC system(s) shall meet the system manufacturer's requirements and applicable code requirements such as OSHA, NFPA 1, NFPA 111, NFPA 70, etc. Ventilation/exhaust system shall be provided as required and shall be an independent and dedicated system which is separate from all other building systems. Air recirculation within the battery area is not allowed, and where required, mechanical components of the ventilation system shall be explosion-proof. Appropriate alarms and automatic controls shall be provided to automatically detect and sound audible(s) alarm upon malfunction of ventilation system. A malfunction of ventilation system shall prevent the battery charging system from operating. Design features of the battery area/room shall address all requirements such as ventilation, fire protection, hazardous material reporting and disposal, and spill control. </BDE><BDE_NOT>Omitted. </BDE_NOT><BDE>

TABLE III : REDUNDANCY/RELIABILITY MATRIX (BRIGADE ONLY)

Category	Area Served	Emergency Power	Requirement
<BDE_NOHEAT>Heating/<BDE_NOHEAT>Cooling Equipment and Associated Controls	BOC, NOC, SCIF, Server Rooms, and Communications Rooms	Yes	100% Dedicated redundancy required for<BDE_NOHEAT> heating and<BDE_NOHEAT> cooling equipment.
Air-handling Equipment and Associated Controls	BOC, NOC, SCIF, Server Rooms, and Communications Rooms	Yes	100% Dedicated redundancy is required
Piping	BOC, NOC, SCIF, Server Rooms, and Communications Rooms	Yes	Provide 100% redundant cooling and heating piping feeds from the cooling <BDE_NOHEAT> and heating <BDE_NOHEAT> source equipment to the air-handling equipment serving these areas
Notes:			
<ol style="list-style-type: none"> 1. Provide all required equipment, components, controls, and other appurtenances on emergency power such that 100% cooling <BDE_NOHEAT> and heating <BDE_NOHEAT> capacity is available and provided to the BOC, NOC, SCIF, Server Rooms, and Communication Rooms. 2. Where redundancy requirements dictate the use of packaged equipment for an area or combination of areas, two (2) separate sets of packaged equipment, each at 100% capacity, are required to be provided. 3. The above categorized equipment requiring emergency power is not required to be on UPS. 4. For equipment requiring emergency power, controls must have battery back-up or non-volatile memory to facilitate automatic re-start upon restoration of emergency or normal power. 5. Where centralized underground piping distribution system is utilized as a cooling <BDE_NOHEAT> and heating <BDE_NOHEAT> fuel source, it must be available year-round, 24-hrs/day, 7-days/week, and an additional and separate cooling <BDE_NOHEAT> and heating <BDE_NOHEAT> system shall be provided to serve as the required 100% capacity backup. 6. System redundancy requirements for the BOC, NOC, SCIF, Server and Communication Rooms include the capability of automatic monitoring and automatic system switch-over in the event of a system operational failure or malfunction, and also to equalize systems run time. System operational failure or malfunction shall produce an audible and visual alarm for the occupants. <BDE_NOHEAT>7. Redundant heating piping feeds are not required to be extended to the individual air terminal units (i.e. VAV boxes) in VAV air handling systems.</BDE_NOHEAT> 			

</BDE>

D. **HVAC SYSTEM REQUIREMENTS FOR ADMINISTRATIVE AREAS:** The capability of extending the regularly-scheduled operating hours of the HVAC systems (Administrative and Classroom areas) shall be provided. A pass-word protected control device (i.e. control panel) located within the staff duty station is the preferred design approach and arrangement. A separate, dedicated HVAC unit independent of the main building HVAC system shall be provided for the staff duty station, and shall be scheduled for after-normal hour operation only. Administrative areas shall be temperature-controlled by the DDC System. Temperature set-point adjustment shall be accomplished via DDC System by authorized personnel.

3.12. ENERGY CONSERVATION REQUIREMENTS

A. **GENERAL.** Energy conservation shall be in accordance with Paragraph 5, GENERAL TECHNICAL REQUIREMENTS, of the RFP Statement of Work (SOW), subparagraph ENERGY CONSERVATION. An energy efficiency and sustainability study, jointly conducted by the U.S. Army Corps of Engineers and the Department of Energy, was recently completed and the summary report is available at http://mrsi.usace.army.mil/sustain/Documents/2011_EISA_Study.pdf. Designers are encouraged to make use of the summary report as a reference tool to aid in meeting energy conservation mandates and targets. Measures that exceed the requirements of ASHRAE 189.1 shall be justified by a life cycle cost analysis.

B. **SCHEDULES.** The following facility load schedules shall be used in energy simulations for purposes of documenting compliance with energy performance requirements.

1) **Battalion and Brigade Headquarters Internal Load Schedules**

Hr	Occupancy			Lighting			Plug Loads			Service Hot Water		
	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun
1	0.00	0.00	0.00	0.05	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
2	0.00	0.00	0.00	0.05	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
3	0.00	0.00	0.00	0.05	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
4	0.00	0.00	0.00	0.05	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
5	0.00	0.00	0.00	0.05	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
6	0.00	0.00	0.00	0.05	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
7	0.00	0.00	0.00	0.10	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
8	0.20	0.00	0.00	0.30	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
9	0.95	0.00	0.00	0.90	0.05	0.05	0.90	0.30	0.30	0.00	0.00	0.00
10	0.95	0.00	0.00	0.90	0.05	0.05	0.90	0.30	0.30	0.00	0.00	0.00
11	0.95	0.00	0.00	0.90	0.05	0.05	0.90	0.30	0.30	0.00	0.00	0.00
12	0.95	0.00	0.00	0.90	0.05	0.05	0.90	0.30	0.30	0.00	0.00	0.00
13	0.50	0.00	0.00	0.90	0.05	0.05	0.80	0.30	0.30	0.00	0.00	0.00
14	0.95	0.00	0.00	0.90	0.05	0.05	0.90	0.30	0.30	0.00	0.00	0.00
15	0.95	0.00	0.00	0.90	0.05	0.05	0.90	0.30	0.30	0.00	0.00	0.00
16	0.95	0.00	0.00	0.90	0.05	0.05	0.90	0.30	0.30	0.00	0.00	0.00
17	0.95	0.00	0.00	0.90	0.05	0.05	0.90	0.30	0.30	0.00	0.00	0.00
18	0.30	0.00	0.00	0.50	0.05	0.05	0.50	0.30	0.30	0.00	0.00	0.00
19	0.00	0.00	0.00	0.30	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
20	0.00	0.00	0.00	0.30	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
21	0.00	0.00	0.00	0.20	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
22	0.00	0.00	0.00	0.20	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
23	0.00	0.00	0.00	0.10	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
24	0.00	0.00	0.00	0.05	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
Peak	See Note 1 Below for occupancy info			1.0 W/ft ² (10.8 W/m ²)			0.75 W/ft ² (8.1 W/m ²)			0 gal/hr (0 L/hr)		

Note 1: See "Standard Design Program Areas & Unit costs" table at the COS Website for staff (i.e. occupancy quantities) based on applicable facility sizes.

2) **Battalion Headquarters Internal Load Schedules (Duty Office & Main Entry Area - 2 occupants continuously)**

Hr	Occupancy			Lighting			Plug Loads			Service Hot Water		
	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun
1	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.00	0.00	0.00
2	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.00	0.00	0.00
3	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.00	0.00	0.00
4	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.00	0.00	0.00
5	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.00	0.00	0.00
6	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.10	0.10	0.10
7	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.40	0.40	0.40
8	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.20	0.20	0.20
9	0.95	0.417	0.417	0.90	0.50	0.50	0.90	0.30	0.30	0.00	0.00	0.00
10	0.95	0.417	0.417	0.90	0.50	0.50	0.90	0.30	0.30	0.00	0.00	0.00
11	0.95	0.417	0.417	0.90	0.50	0.50	0.90	0.30	0.30	0.00	0.00	0.00
12	0.95	0.417	0.417	0.90	0.50	0.50	0.90	0.30	0.30	0.00	0.00	0.00
13	0.50	0.417	0.417	0.90	0.50	0.50	0.80	0.30	0.30	0.00	0.00	0.00
14	0.95	0.417	0.417	0.90	0.50	0.50	0.90	0.30	0.30	0.00	0.00	0.00
15	0.95	0.417	0.417	0.90	0.50	0.50	0.90	0.30	0.30	0.00	0.00	0.00
16	0.95	0.417	0.417	0.90	0.50	0.50	0.90	0.30	0.30	0.00	0.00	0.00
17	0.95	0.417	0.417	0.90	0.50	0.50	0.90	0.30	0.30	0.00	0.00	0.00
18	0.417	0.417	0.417	0.50	0.50	0.50	0.50	0.30	0.30	0.10	0.10	0.10
19	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.10	0.10	0.10
20	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.10	0.10	0.10
21	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.00	0.00	0.00
22	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.00	0.00	0.00
23	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.00	0.00	0.00
24	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.00	0.00	0.00
Peak	5 occupants			1.0 W/ft ² (10.8 W/m ²)			0.75 W/ft ² (8.1 W/m ²)			6.4 gal/hr (24 L/hr)		

3.13. FIRE PROTECTION REQUIREMENTS

A. **STANDARDS AND CODES.** All fire protection and life safety features shall be in accordance with UFC 3-600-01 and the criteria referenced therein. **<BDE_ONLY>**Brigade Headquarters (HQ) Facility. **<BDE_ONLY><BN_ONLY>**Battalion Headquarters (HQ) Facility. **</BN_ONLY> <BDE_BN>**Brigade and Battalion Headquarters (HQ) Facilities. **</BDE_BN>**shall be classified as mission essential and shall be provided with complete sprinkler protection.

B. **FIRE PROTECTION AND LIFE SAFETY ANALYSIS.** A fire protection and life safety design analysis shall be provided for all buildings in the project. The analysis shall be submitted with the interim design submittal. The analysis shall include classification of occupancy (both per the IBC and NFPA 101); type of construction; height and area limitations (include calculations for allowable area increases); life safety provisions (exit travel distances, common path distances, dead end distances, exit unit width required and provided); building separation or exposure protection; specific compliance with NFPA codes and the IBC; requirements for fire-rated walls, doors, fire dampers, etc.; analysis of automatic suppression systems and protected areas; water supplies; smoke control systems; fire alarm system, including connection to the base-wide system; fire detection system; standpipe systems; fire extinguishers; interior finish ratings; and other pertinent fire protection data. The submittal shall include a life safety floor plan for all buildings in the project showing occupant loading, occupancy classifications and construction type, egress travel distances, exit capacities, areas with sprinkler protection, fire extinguisher locations, ratings of fire-resistive assemblies, and other data necessary to exhibit compliance with life safety code requirements.

C. **SPRINKLER SYSTEM.** The Facility shall be fully protected with automatic sprinkler systems. All floors and all areas of the facilities shall be protected. The sprinkler system design shall be in accordance with UFC 3-600-01 and NFPA 13. The sprinkler hazard classifications shall be in accordance with UFC 3-600-01, NFPA 13, and other applicable criteria. Design densities, design areas and exterior hose streams shall be in accordance with UFC 3-600-01. The sprinkler systems shall be designed and all piping sized with computer generated hydraulic calculations. The exterior hose stream demand shall be included in the hydraulic calculations. A complete sprinkler system design, including sprinklers, branch lines, floor mains and risers, shall be shown on the drawings. The sprinkler system plans shall include node and pipe identification used in the hydraulic calculations. All sprinkler system drains, including main drains, test drains, and auxiliary drains, shall be routed to a 2-foot by 2-foot splash block at exterior grade.

- 1) **Sprinkler Service Main and Riser.** The sprinkler service main shall be a dedicated line from the distribution main. Sprinkler service and domestic service shall not be combined. The sprinkler service main shall be provided with an exterior post indicator valve with tamper switch reporting to the fire alarm control panel (FACP) The ground floor entry penetration shall be sleeved per NFPA 13 requirements for seismic protection. The sprinkler system shall include an indicating control valve for each sprinkler system riser, a flow switch reporting to the FACP, and an exterior alarm bell. All control valves shall be OS&Y gate type and shall be provided with tamper switches connected to the FACP. Facilities with multiple floors shall be provided with floor control valves for each floor. The floor control valve assembly shall be in accordance with UFC 3-600-01, Figure 4-1.
- 2) **Exterior Hose Stream.** Exterior hose stream demand shall be in accordance with UFC 3-600-01. Exterior hose stream demand shall be included in the sprinkler system hydraulic calculations.
- 3) **Backflow Preventer.** At minimum, a double check backflow preventer shall be provided on the fire water main serving each building. This shall be located within the building unless otherwise required by the installation or private water utilities management contractor. An exterior test header (preferably wall-mounted) with at least two hose connections shall be provided to allow testing of the backflow preventer at design flow, as required by NFPA 13. The test header piping shall be connected to the service riser upstream of the alarm check valve. Flow to the test header shall be controlled by an OS&Y valve with a tamper switch connected to the FACP.
- 4) **Fire Department Connection.** A fire department connection shall be provided for each building with sprinkler protection. These shall be located so as to be directly accessible to the fire department. Whether wall-mounted or free-standing, the F.D.C must be no further than 150 feet from the nearest fire hydrant.

D. **ELEVATORS.** The fire protection features of elevators, hoist ways, machine rooms and lobbies shall be in accordance with UFC 3-600-01, ASME A17.1, NFPA 13 and NFPA 72.

E. **SYSTEM COMPONENTS AND HARDWARE.** Materials for the sprinkler system, fire pump system, and hose standpipe system shall be in accordance with NFPA 13 and NFPA 20.

F. **PROTECTION OF PIPING AGAINST EARTHQUAKE DAMAGE.** Sprinkler and fire pump piping systems shall be protected against damage from earthquakes. Seismic protection shall include flexible and rigid couplings, sway bracing, seismic separation assemblies where piping crosses building seismic separation joints, and other features as required by NFPA 13 for protection of piping against damage from earthquakes.

G. **FIRE WATER SUPPLY.** Fire flow test data is provided in Appendix D.

H. **FIRE PUMP.** The requirement for a fire pump installation shall be determined by the Contractor based on fire flow test data from the project site and fire protection system design requirements for the project. If required a complete fire pump installation shall be provided for the facility. It shall comply with the requirements of UFC 3-600-01, NFPA 13 and NFPA 20. The Contractor shall submit fire pump design analysis and drawings in the design requirements.

I. **FIRE DETECTION AND ALARM**

- 1) **Fire Alarm and Detection System.** A fire alarm and detection system shall be provided for this facility. It shall comply with the requirements of UFC 3-600-01 and NFPA 72. The system shall be addressable and fully compatible with and integrated with the local installation wide central monitoring system.
- 2) **Server Rooms.** Server rooms are the only areas of the facility which house MISSION CRITICAL electronic equipment installations as identified in section 6-8 of UFC 3-600-01, and are the only areas considered

to be "information technology areas" as defined by NFPA 75. Server rooms are to be protected as information technology areas in accordance with NFPA 75, except as modified by UFC 3-600-01 and herein. In server rooms with raised floors, under-floor detectors shall be provided and shall be connected to the fire alarm system. The smoke detectors shall be wired so as to immediately shut down power to the electronic equipment in the protected room upon activation. Shutdown devices shall be supervised by the fire alarm control panel in accordance with NFPA 75.

- 3) All initiating devices shall be connected to signal line circuits (SLC), utilizing Class A, Style 6 wiring. All alarm appliances shall be connected to notification appliance circuits (NAC), Class A. A looped conduit system shall be provided so that if the conduit and all conductors within are severed at any point, all NAC and SLC shall remain functional.
- 4) Break-glass pull stations shall not be used.
- 5) Over-voltage and surge protection shall be provided at the input power of all panels.

J. **BUILDING CONSTRUCTION.** Construction shall comply with requirements of UFC 3-600-01, the International Building Code, NFPA 101 and NFPA 75.

- 1) **Interior Wall and Ceiling Finishes.** Interior wall and ceiling finishes and movable partitions shall conform to the requirements of UFC 3-600-01 and NFPA 101.
- 2) **Server Rooms.** Server Rooms house MISSION CRITICAL electronic equipment installations (as defined in section 6-8 of UFC 3-600-01), and shall be separated from surrounding occupancies by fire-resistance rated construction in accordance with NFPA 75.
- 3) The requirement of NFPA 75 to incorporate provisions for drainage and a leak detection system under raised-floor installations shall be modified as follows: Provisions for drainage and a leak detection system shall only be required under raised-floors in Server Rooms since they are the only areas that house MISSION CRITICAL electronic equipment installations (as defined in section 6-8 of UFC 3-600-01).

3.14. SEE PARAGRAPH 6.14 SUSTAINABLE DESIGN – NOT USED

3.15. SEE PARAGRAPH 6.15 ENVIRONMENTAL – NOT USED

3.16. SEE PARAGRAPH 6.16 PERMITS – NOT USED

3.17. SEE PARAGRAPH 6.17 DEMOLITION – NOT USED

3.18. SEE PARAGRAPH 6.18 ADDITIONAL FACILITIES – NOT USED

3.19. EQUIPMENT AND FURNITURE REQUIREMENTS

3.19.1. FURNISHINGS - **<BDE_ONLY>**BRIGADE HEADQUARTERS (HQ) BUILDING**</BDE_ONLY><BN_ONLY>**BATTALION HEADQUARTERS (HQ) BUILDING**</BN_ONLY><BDE_BN>**BRIGADE AND BATTALION HEADQUARTERS (HQ) BUILDING**</BDE_BN>**

A. **THE CRITERION CONTAINED** on the following pages describes the furnishing requirements for all room types and for all headquarters building(s). Furnishings, other than installed equipment, are to be GFGI unless otherwise specified in this document. The following furnishings list is provided for coordination of room and office layouts to ensure suitability for their intended function. Large interior spaces such as open office areas can be subdivided into smaller areas by using office partitions, storage units and file cabinets or similar devices. In general, the interior design shall provide a comfortable, efficient and flexible work environment. All open office workstations in the headquarters are predicated on 6-foot by 8-foot cubicles.

B. **ROOM SIZE AND FURNISHINGS CHART**

Room Size and Furnishings Chart			
ROOM TYPE	MIN. SF	COMMENTS	FURNITURE REQUIRED

Senior Executive Office	200	Private Office	U-shaped desk unit executive single pedestal desk w/ center drawer, box/box/file pedestal, full modesty panel; executive bridge 42" min.; credenza unit w/ two drawer lateral file and hutch unit w/ door storage, 4-drawer lateral files, one conference table, four conference chairs, two guest chairs, one executive chair.
Executive Office	150	Private Office	L-shaped executive desk unit with single pedestal desk w/ center drawer and storage pedestal w/ box/box/file configuration, full modesty panel; executive return with storage pedestal box/box/file configuration, two 4-drawer lateral files, two guest chairs, one executive chair.
Office	110	Private Office	L-shaped executive desk unit with single pedestal desk w/ center drawer and storage pedestal w/ box/box/file configuration, full modesty panel; executive return with storage pedestal box/box/file configuration, one 4-drawer lateral file, one guest chairs, one task chair.
Open Workstation	48	Open Workstation	Systems furniture workstation, approx. 48 SF, with work surfaces, file drawers and overhead storage.
Brigade Command Conference Room	600		Conference table with 18 chairs and 18 side chairs.
Battalion Command Conference Room	330		Conference table with 14 chairs and 8 side chairs.
Medium Conference Room	300 - 200		Conference table with 12 chairs and 4 side chairs.
Small Conference Room	180 - 110		Conference table with 8 chairs and 2 side chairs.
Reception Area	Varies	Executive Reception Area	Systems furniture open office area for one staff member and 5 visitors (5 guest chairs).
Classroom	Varies		1 desk and chair for each 20 SF. Provide movable partitions to divide large classroom space into three equally-sized spaces.
Lobby	Varies	Building Reception Area	Lounge seating if space allows. Provide one recessed building directory near each main entrance, and in a multiple-story building, provide one recessed building directory near elevator doors above the first floor. Provide one 4'-0" x 6'-0" wall mounted bulletin board for each headquarters unit. Provide one glass front 4'-0" wide min. built in display cabinet for unit memorabilia, awards, trophies, etc.
Message Center	Varies		Provide 24" deep counter equivalent to the length of the room.
File Room	Varies		Minimum of 1 linear foot of 4-drawer lateral file cabinet for every 4 SF of room (250 SF room = min 62.5 LF 4-drawer horizontal base files; (1) 36" (w), 4-drawer file cabinet = 12 LF).

Break Room	Varies		Contractor furnished, contractor installed minimum 20 LF base and wall cabinets, dishwasher and space for a full size refrigerator with ice-maker. Note that in BG HQ- S-1 Break Room also supports Command group. Provide recessed space for two vending machines per building (machines are not in the contract) not in view of the lobby.
Shower	Varies		Contractor furnished, contractor installed lockers with benches will be provided on a 3:1 ration of lockers/shower. Minimum locker size shall be 12"(w) x 18"(d) x 36"(h).
Secured Documents Room	Varies	Secure Documents Room conforming to requirements in AR 380-5	2 four drawer safes per authorized company within each battalion secure document room. 2 four drawer safes per coordinating staff section within each battalion and/or brigade secure documents room, not to exceed a total of 12 safes per the battalion document room.
BOC	Varies	Brigade Operations Center	Provision for Government-Furnished, Government-Installed television monitors (wall of knowledge). Systems furniture workstations, 30"D x 60"W, with 42"-48"H powered panels, and one stationary box/box/file pedestal and task chair per workstation as indicated on standard floor plans. Modular conference tables and chairs for 10 persons (with side chairs as space allows) at conference room. Contractor furnished, contractor installed raised flooring.
SCIF	Varies	Sensitive Compartmented Information Facility conforming to Office of the Director of National Intelligence – DRAFT Intelligence Community Standard (ICS) 705	50 - 52 total systems furniture workstations, 30"D x 60"W, with 42"-48"H powered panels, and one stationary box/box/file pedestal and task chair per workstation as indicated on standard floor plans. Modular conference tables and chairs for 12 persons (with side chairs as space allows) at conference room. Contractor furnished, contractor installed raised flooring to accommodate weight of 7 four drawer safes. Primary entry vestibule (interior) shall accommodate (1) 24" D x 36" W standing height table. Provide (1) cell phone storage locker to accommodate 50 individual phones adjacent to primary SCIF entry at corridor side.
NOC	Varies	Network Operations Center	Systems furniture workstation, approx. 48 SF, with work surfaces, file drawers and overhead storage as indicated on standard floor plans. Space for GFGI communication racks, equipment, and 3 each work benches in server room. Contractor furnished, contractor installed raised flooring.

3.19.2. EQUIPMENT – NOT USED

3.20. FACILITY SPECIFIC REFERENCES:

A. APPLICABLE INDUSTRY CRITERIA

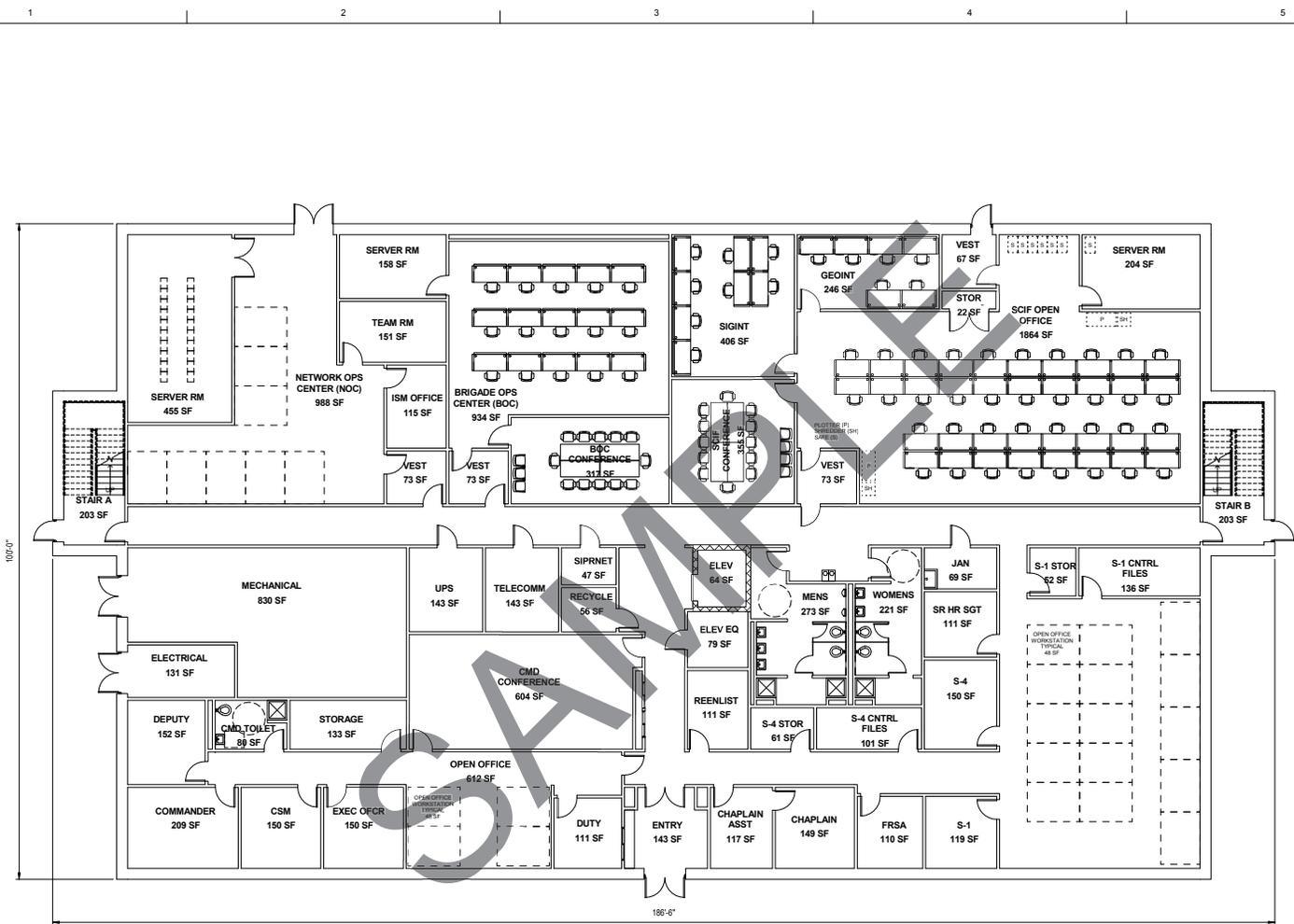
- 1) American National Standards Institute (ANSI/Telecommunications Industry Association (TIA/Electronic Industry Association (EIA)

- a) ANSI/EIA/TIA 568A Commercial Building Telecommunications Cabling Standard and all applicable Addendums)
- b) EIA/TIA 568-B Commercial Building Telecommunications Cabling Standards (Addendums 561-B.1, 568-B.2, 568-B.2-1)
- c) ANSI/EIA/TIA 606A Administration Standard for Commercial Telecommunications Infrastructure
- 2) ASHRAE
 - a) ASHRAE 55 Thermal Environmental Conditions for Human Occupancy
 - b) ASHRAE Hdbk-IP Handbook, Refrigeration I-P Edition
 - c) ASHRAE Hdbk-IP Handbook, HVAC Applications I-P Edition
 - d) ASHRAE Hdbk-IP Handbook, HVAC Systems and Equipment I-P Edition
 - e) ASHRAE Underfloor Air Distribution (UFAD) Design Guide, 2003
- 3) ASME B31.1 Power Piping
- 4) ASTM E413-04, Classification for Rating Sound Insulation
- 5) Clean Air Act Amendment of 1990
- 6) Discount Factors for Life-Cycle Cost Analysis, Annual Supplement to NIST Handbook 135
- 7) Memorandum of Agreement (MOA) on Criteria/Standards for Economic Analyses/Life Cycle
- 8) Costing for MILCON Design (March 1996)
- 9) NIST Handbook 135 (with the annual supplement of discount factors)
- 10) **<BDE>**National Electrical Manufacturers Association (NEMA) PE 1 Uninterruptible Power Systems**</BDE><BDE_NOT>**Omitted. **</BDE_NOT>**
- 11) **<BDE>**National Fire Protection Association (NFPA) 110 Emergency and Standby Power Systems**</BDE><BDE_NOT>**Omitted. **</BDE_NOT>**
- 12) SMACNA Seismic Restraint Manual: Guidelines for Mechanical Systems
- 13) Testing and Balancing Bureau (TABB)
- 14) Underwriters Laboratories (UL)
 - a) **<BDE>**UL 1008 Transfer Switch Equipment**</BDE><BDE_NOT>**Omitted. **</BDE_NOT>**
 - b) UL 1440 Transient Voltage Surge Suppressors
 - c) **<BDE>**UL 1778 Uninterruptible Power Systems**</BDE><BDE_NOT>**Omitted. **</BDE_NOT>**
- B. APPLICABLE MILITARY CRITERIA
 - 1) Army Regulation (AR)
 - a) AR 190-51, Security of Unclassified Army Property (Sensitive and Non-sensitive), 30 September 1993
 - b) AR 380-381 Special Access Programs (SAPS) and Sensitive Activities
 - c) AR 380-5, Information Security Program
 - 2) Department Of Defense (DOD)
 - a) DOD MIL-HDBK-419A Grounding, Bonding, and Shielding for Electronic Equipment and Facilities
 - b) **<BDE>**DOD 5105.21-M-1 Sensitive Compartmented Information Administrative Security Manual**</BDE><BDE_NOT>**Omitted. **</BDE_NOT>**
 - c) DoD Regulation 5200.1-R, Information Security Program, dated January 1997, Appendix 7 –Physical Security for Vault and Secure Room Construction Standards
 - 3) National Security Telecommunications and Information Systems Security (NSTISS)
 - a) NSTISSAM Tempest 2-95 Red/Black Installation Guidance

- b) NSTISSI 7003 Protective Distribution Systems (PDS)
- 4) Office of the Director of National Intelligence
- a) Intelligence Community Directive Number 705 Sensitive Compartmented Information Facilities
- b) **<BDE>**Intelligence Community Standard (ICS) 705-1 Physical and Technical Standards for Sensitive Compartmented Information Facilities. **</BDE><BDE_NOT>**Omitted. **</BDE_NOT>**
- c) **<BDE>**Intelligence Community Standard (ICS) 705-2 Standards For Accreditation And Reciprocal Use Of Sensitive Compartmented Information**</BDE><BDE_NOT>**Omitted. **</BDE_NOT>**
- d) **<BDE>**IC Tech Spec-for ICD/ICS 705 Technical Specifications For Construction And Management Of Sensitive Compartmented Information Facilities**</BDE><BDE_NOT>**Omitted. **</BDE_NOT>**
- 5) Unified Facilities Criteria UFC
- a) UFC 3-580-01 Telecommunications Bldg Cabling Systems Planning/Design Manual 22 June 2007
- b) UFC 4-140-01, Brigade Operations Complex, Brigade and Battalion Headquarters

SAMPLE

<REV>



SMALL BRIGADE FIRST FLOOR PLAN
 1/8" = 1'-0"

SCALE: 1/8"=1'-0"

THE FLOOR PLANS INDICATE THE ARMY STANDARD SOLUTION IN SCHEMATIC FORM. THE DESIGNER-OF-RECORD (D-O-R) IS ALLOWED TO MAKE ADJUSTMENTS FOR THE EXTERIOR FACADE ARCHITECTURE, THESE ADJUSTMENTS TO ACCOMMODATE SPECIFIC BUILDING ENGINEERING SYSTEMS (STRUCTURAL, MECHANICAL, ELECTRICAL, FIRE PROTECTION, SUSTAINABLE DESIGN, ETC.). THESE ADJUSTMENTS SHALL BE EVALUATED BY THE DESIGNER OF STRUCTURATION LOSS DURING ITS COMPLIANCE REVIEW.

THE OVERALL BUILDING DIMENSIONS AND THE VALUES FOR THE GROSS AREAS INDICATED ARE FOR THE STANDARD LAYOUTS SHOWN AND ARE PRECISED ON AN ASSUMED EXTERIOR WALL THICKNESS OF 20 INCHES. IT IS UNDERSTOOD THAT THE ACTUAL GROSS BUILDING AREA WILL VARY DEPENDING ON THE WALL SYSTEM MATERIALS SELECTED FOR A SPECIFIC PROJECT. A REDUCED OVERALL GROSS AREA IS PERMISSIBLE IF ALL NET PROGRAM REQUIREMENTS AND ADJACENCIES ARE SATISFIED, BUT IN NO CASE MAY THE MAXIMUM GROSS AREA FOR THE FACILITY BE EXCEEDED.

FIRST FLOOR	17,191.80 GSF
SECOND FLOOR	17,191.80 GSF
TOTAL SF SHOWN	34,383.60 GSF
MAX ALLOWABLE	34,400 GSF

US ARMY CORPS OF ENGINEERS

DATE	DESIGNER	SCHEMATIC	CONTRACT NO.	PROJECT NO.	PROJECT NAME	PROJECT LOCATION	PROJECT NUMBER	PROJECT DATE	PROJECT STATUS

SMALL BRIGADE HEADQUARTERS

FIRST FLOOR PLAN

STANDARD DESIGN

SHEET	A-101	OF	1
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