



**US Army Corps
of Engineers®**



Department of the Army

Facilities Standardization Program

OPERATIONAL READINESS TRAINING COMPLEX (ORTC)

Standard Design

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1.0 GENERAL STANDARD DESIGN PROGRAM INFORMATION

1.1 PURPOSE

This standard design for Operational Readiness Training Complexes provides economical, minimum essential housing, dining, admin and operational facilities to support Reserve Component Home Station Training (Annual and Weekend Transient Training), Active Component training when away from home station, and Mobilization/Demobilization. .

The Operational Training Complex Standard Design provides parameters for basic, austere but durable facilities to accommodate the following transient training functions:

- Admin and classrooms for Battalion level activities
- Billeting (open bay barracks and officer quarters)
- Dining
- Admin and supply for Company level activities
- Organizational vehicle and equipment maintenance with temporary warehouse storage
- Admin for Brigade level activities

Facility requirements are predicated on current force structure alignments established for Brigade Combat Teams (BCT), which are also adaptable for Future Combat Systems Units of Action (FCS UA). A Brigade Complex is predicated on six (6) individual battalion sets that can accommodate a population ranging from 752 (intended) to 880 (maximum capacity), and an overall BCT/UA population of 4512 (intended) to 5280 (maximum capacity).

1.2 BACKGROUND

The Army has been faced with a lack of transient training facilities. This shortage has developed since the early 1990's, when the Army began an aggressive facilities reduction program targeted at eliminating World War II wood facilities with virtually no construction to replace the capacity that was being demolished, and the training requirements placed on CONUS installations by numerous OCONUS operations/conflicts. This situation adversely impacts both the mobilizations of Army personnel and the Army concept of train-alert-deploy. Construction of ORTC facilities is intended to alleviate this shortage. The Operational Readiness Training Complexes will consist of permanently constructed, mission support facilities to accommodate transient training requirements for both active and reserve component (AC/RC) units.

1.3 CENTER OF STANDARDIZATION

This standard design was developed in accordance with guidance provided by Headquarters, Department of the Army (HQDA), including facility design team members from Army staff agencies, Office of the Assistant Chief of Staff for Installation Management (OACSIM), Installation Management Command (IMCOM), U.S. Army Reserve Command (USARCOM), U.S. Army Forces Command (FORSCOM), U.S. Army Training and Doctrine Command (TRADOC), and representatives from various National Guard Training Centers.

This standard design was monitored and approved by the facility proponent, HQDA, Deputy Chief of Staff, G-3.

This standard design package is based on requirements established for the Department of the Army Facilities Standardization Program. The Louisville District is the U.S. Army Corps of Engineers (USACE) Center of Standardization (COS) responsible for documenting and mandating ORTC standards and criteria.

The criteria presented in this standard design are applicable for ORTC facilities worldwide. The COS serves as the point of contact to review all ORTC designs for compliance with this standard.

1.4 RFP WIZARD

The standard design shall be implemented in conjunction with the RFP Wizard, which includes requirements for Antiterrorism and Force Protection (AT/FP), Unified Facilities Criteria (UFCs), building codes, and sustainable design requirements.

1.5 INSTALLATION SPECIFIC REQUIREMENTS

During development of the RFP Package, in addition to the RFP Wizard's paragraph 6 which addresses installation requirements, the following issues shall be considered and included in the RFP Package accordingly:

- A. The storage racks in the Vehicle Maintenance Shop warehouse are CFCI. The Installation will indicate what type is required in the FF&E Package.
- B. The Installation will determine the POC parking requirement for each Battalion Set in addition to the minimum parking for the Small DFAC at 42 spaces, the Large DFAC at 64 spaces, and the Officers' Quarters (Senior Leaders' Quarters) at 20 spaces. The Standard Design illustrates POV parking for 10% of the Barracks occupants.
- C. The Installation will determine whether each Barracks will accommodate the intended capacity of 160 (90 sf per person) or the surge capacity of 192 (72 sf per person) enlisted persons in the open bays. See drawing A004A.
- D. The Installation will determine if any of the open bays in the barracks are needed to be furnished for functions other than sleeping. This option is intended to accommodate company functions until other facilities are constructed or made available. Three options are proposed on A004A and A010A, one for mermite can dining service, one for administration, and one for classrooms.
- E. Verify the Installation's requirement for a Secure Communications Room to accommodate SIPRNET in the Brigade Headquarters. Also determine the requirements for an Intrusion Detection System (IDS) for the SCR room when applicable.

- F. Verify the Installation's requirement for an overhead crane in the Vehicle Maintenance Shop. If so, the crane shall support up to 10 tons and shall be integrated into the building structure to operate over the entire maintenance bay area.

1.6 ORTC FACILITY CATEGORY CODES & FLOOR AREAS

ORTC FACILITY CATEGORY CODES & FLOOR AREAS			
Facility Type	Category Code	* Standard Design Area	Notes
Battalion Headquarters Bldg: Transient Training	14184	7,075 SF	
2-Story Barracks: Transient Training (4 per Battalion)	72114	30,558 SF/ea	
4-Story Barracks: Transient Training (2 per Battalion)	72114	61,116 SF/ea	
Officers Quarters (Senior Leaders Quarters): Transient Training	72412	22,579 SF	POH is COS 2-Story
Dining Facility: Transient Training (Small)	72212	16,761 SF	NAO is COS;
Dining Facility: Transient Training (Large)	72212	20,786 SF	NAO is COS;
Company Headquarters Bldg: Transient Training	14186	19,579 SF	
Vehicle Maintenance Shop: Transient Training	21406	10,032 SF	Includes Warehouse
Motor Pool Hardstand	85210	33,000 SY	SY required excludes bldg footprints
Brigade Headquarters Bldg: Transient Training	14187	10,238 SF	Include with 6 Battalions

*See Building Drawings in Attachment A for Area Calculations

1.7 BATTALION COMPLEX SITE

The Battalion Complex Site drawing C001, illustrates an ideal Battalion Complex. Other variations are possible to accommodate specific site conditions and parameters. Alternative site layouts shall utilize the following functional site considerations imposed by the Department of the Army (DA):

- A. Battalion Complex Facilities shall be within reasonable walking distance of each other.
- B. Closely locate or consolidate the Company Headquarters Facility with the Vehicle Maintenance Shop, preferably positioning both to take advantage of the fenced tactical vehicle hardstand area.
- C. Centrally locate housing and dining facilities within the Battalion Complex.
- D. Consolidate building types whenever possible. Examples: Battalion and Brigade Headquarters or two Officers' Quarters (Senior Leaders Quarters).

In addition, for functionality of the ORTC, the site shall include the following Standard Design requirements:

- E. Avoid placing limitations on access to dining facilities for deliveries and other buildings for maintenance or dumpster access during normal threat levels by placing control gates at specific building access ways rather than POV roads
- F. The basis of design for sizing the tactical vehicle hardstand area is the Maneuver Battalion of the Armored BCT and the Tactical Equipment Maintenance Facility Standard Design. The 33,000 sy tactical vehicle hardstand excludes the footprints of the VMS and Company Headquarters.
- G. The area behind the Company Headquarters is preferred to be within a fenced area, allowing for secure circulation for forklifts to access overhead doors.
- H. Where required for building maintenance and fire truck access, sidewalks require design to accommodate the vehicles. Assure that access for fire trucks complies with fire protection requirements with access on three sides, including both long sides, of the Barracks and Officers' Quarters (Senior Leaders Quarters) within 33 feet or as determined by the Installation Fire Chief.
- I. Mechanical yard and dumpster screen walls shall be located and provided per ATFP and Installation requirements.
- J. Utilize underground utility and telecommunications distribution where feasible.
- K. Minimal landscaping shall be provided as required by the Installation. All other areas shall be seeded. Landscape with materials indigenous to the area, eliminating requirements for irrigation and minimizing maintenance.

1.8 BRIGADE COMPLEX SITE

The Brigade Complex Site illustrates a conceptual ideal Brigade Complex layout, shown on drawing C002. Other variations are possible to accommodate specific site conditions and installation parameters. Alternative site layouts shall group the following for functional site considerations and prominence imposed by the Department of the Army (DA):

- A. Command and Control Facilities (Battalion and Brigade Headquarters)
- B. Community Facilities (Housing and Dining)
- C. Operational Facilities (Vehicle Maintenance Shop and Company Headquarters)

2.0 SCOPE (REV 4.5 – 15 MARCH 2012)

2.1 OPERATIONAL READINESS TRAINING COMPLEX (ORTC)

2.1.1 BATTALION HEADQUARTERS BUILDING

Provide Battalion Headquarters to house transient battalion level administrative functions for soldiers. This facility is intended to be similar both functionally and technically to office type facilities in the private sector community.

The total gross area for the Battalion Headquarters is 7,075 square feet.

2.1.2 BARRACKS

Provide Barracks facilities to house transient soldiers in an open bay configuration and senior leaders in a 2 bed per room configuration with shared bathroom. Showers, toilets, and laundry facilities are also provided. This facility is intended to be similar both functionally and technically to college dormitory facilities in the private sector community.

Two-Story Barracks: Number of personnel to be housed is 168 per building. The total gross area for the Barracks is 30,558 square feet.

Four-Story Barracks: Number of personnel to be housed is 336 per building. The total gross area for the Barracks is 61,116 square feet.

2.1.3 OFFICERS QUARTERS

Provide Officers Quarters to house 80 persons, accommodating transient senior leaders in a 2 bed per room configuration, each with a bathroom. This facility is intended to be similar both functionally and technically to hotels in the private sector community.

The total gross area for the Officers Quarters is 22,579 square feet.

2.1.4 DINING FACILITY

Provide Dining Facilities for food preparation and service, including a seated dining area. The seated dining area shall also serve as a gathering place for group activities. This facility is intended to be similar both functionally and technically to college cafeteria facilities in the private sector community.

Provide a complete and functional Dining Facility:

Small DFAC: For feeding 720 soldiers per meal within 90 minutes, three times per day, seven days a week, 52 weeks per year. The total gross area is 16,962 square feet. Dining area's minimum seating capacity shall be 240 seats at tables.

Large DFAC: For feeding 1428 soldiers per meal within 90 minutes, three times per day, seven days a week, 52 weeks per year. The total gross area is 20,987 square feet. Dining area's minimum seating capacity shall be 510 seats at tables.

2.1.4.1 Dining Facility Staffing

Staffing is based on a 40-hour work week for menu planning, food layout, equipment operation, feeding station staffing, serving line stocking and the organization's mission support. The typical anticipated staffing for this facility is:

Small DFAC:	Total staff is 64 persons. Maximum staff for a single shift is 35 persons. (1) Manager (1) Assistant Manager (2) Administration (2) Subsistence Clerk (1) Shift Leader (2) First Cook (28) Cooks (2) Headcounter (24) Dishwasher (1) Maintenance
Large DFAC:	Total staff is 90 persons. Maximum staffing for a single shift is 50 persons. (1) Manager (1) Assistant Manager (2) Administration (2) Subsistence Clerk (1) Shift Leader (2) First Cook (40) Cooks (4) Headcounter (36) Dishwasher (1) Maintenance

2.1.4.2 Dining Facility Equipment

Refer to the floor plan and equipment schedule in the drawings for equipment requirements. Equipment noted as "Leased" in the schedule shall be identified in the design documents, provided with utility connections, and coordinated with the user of the facility. All computers and related hardware, copiers, faxes, printers, video projectors, VCRs, TVs, and Point of Sales equipment are GFGL. Coordinate with Government on GFGL item requirements providing suitable structural support, mounting brackets for projectors/VCRs/TVs, utility connections, and space with required clearances.

2.1.4.3 Dining Facility Furniture

Refer to the floor plan in the drawings for the required furniture layout. Tables and chairs shall be GFGL as part of the FF&E Package in configurations indicated in the floor plan.

2.1.5 COMPANY HEADQUARTERS BUILDING

Provide Company Headquarters to house transient company administrative operations and facilitate storage and movement of supplies. This facility type is intended to be similar both functionally and technically to office and warehouse facilities in the private sector community.

The total gross area for the Company Headquarters building is 19,579 square feet.

2.1.6 VEHICLE MAINTENANCE SHOP

Provide Vehicle Maintenance Shop for maintaining and repairing vehicles and providing temporary storage of unit supplies and equipment. This facility type is intended to be similar both functionally and technically to equipment or motor pool facilities in the private sector community.

The total gross area for the Vehicle Maintenance Shop is 10,032 square feet.

2.1.7 BRIGADE HEADQUARTERS BUILDING

Provide Brigade Headquarters to house transient brigade level administrative functions and Emergency Operations Center for command use. This facility is intended to be similar both functionally and technically to office facilities in the private sector community.

The total gross area for the Brigade Headquarters Building is 10,238 square feet.

2.2 SITE

Provide site design and construct improvements necessary to support the new building(s) and supporting facilities. Supporting facilities include, but are not limited to utilities, electric service, exterior and security lighting, fire protection and alarm systems, water, gas, sewer, parking, sidewalks, landscaping and handicap accessibility.

Approximate area available: «SITE_ACRES_AVAILABLE» acres

2.3 GOVERNMENT FURNISHED / GOVERNMENT INSTALLED (GFGI) EQUIPMENT FOR ALL BUILDINGS

Coordinate with the Installation for required GFGI items. Provide adequate structural support, (for projectors/VCRs/TVs), utility connections (including dryer ducts/vents), and space with required clearances for all GFGI items. Fire extinguishers are GFGI property, while fire extinguisher brackets and cabinets are contractor furnished and installed (CFCI). All computers and related hardware, copiers, faxes, printers, and projectors are GFGI provided by the Installation and are not part of the FF&E Package. Televisions with mounting brackets, refrigerators, washers, and dryers are GFGI and are part of the FF&E Package.

The following are also GFGI items to be coordinated: «GFGI_ITEMS»

2.4 FURNITURE REQUIREMENTS FOR ALL BUILDINGS

2.4.1 BARRACKS AND OFFICERS QUARTERS REQUIREMENTS:

A Furniture, Fixtures and Equipment design and package is NOT required for the Barracks or Officers Quarters facility types. However, Structural Interior Design (SID) is required for all facility types regardless of the requirements for the FF&E design and package. The basic space planning for the anticipated FF&E requirements in conjunction with the functional layout of the building and design issues such as life safety, privacy, acoustics, lighting, ventilation, lighting, ventilation, and accessibility is still required as part of the SID submittal, reference applicable Appendix for Preliminary FF&E Information including furniture dimensions sizes as shown in the Standard Design.

2.4.1.1 Government Furnished FF&E

- A. Paragraphs 1.1 and 1.2 of Section 01 33 16, ATTACHMENT B, FURNITURE, FIXTURES & EQUIPMENT (FF&E) REQUIREMENTS shall NOT BE USED for Barracks and Officers Quarters.
- B. The Contractor shall provide a furniture layout, for reference and coordination only to the Installation and Sub-Contractors at each submittal. Furniture shall be Government-furnished, Government-installed. The Installation shall be responsible for completing the Barracks and Officers Quarters furniture package based on the furniture layout provided by the Contractor. The furniture package shall be submitted by the Installation to Huntsville Center Furniture Team to be bid, purchased, and installed.

2.4.2 BRIGADE AND BATTALION HEADQUARTERS, DINING FACILITY, COMPANY HEADQUARTERS, AND VEHICLE MAINTENANCE SHOP REQUIREMENTS:

Provide furniture design as part of the development of the Furniture, Fixtures and Equipment Package (FF&E) as described in the appendices for all spaces listed in paragraph 3. Include any existing furniture and equipment to be re-used if identified in paragraph 3. Coordinate with the user to define requirements for furniture systems, movable furniture, storage systems, equipment, any existing items to be reused, etc. Early coordination of furniture design is required for a complete and usable facility.

The procurement and installation of furniture is NOT included in the base bid for this contract. Furniture will be provided and installed under a separate furniture vendor/installer contract. The general contractor shall accommodate that effort with allowance for entry of the furniture vendor/installer onto this project site at the appropriate time to permit completion of the furniture installation for a complete and usable facility to coincide with the Beneficial Occupancy Date (BOD) of this project. The furniture vendor/installer contract will include all electrical pre-wiring and the whips for final connection to the building electrical systems however; the general contractor shall make the final connections to the building electrical systems under this contract. Furthermore, the general contractor shall provide all Information/Technology (IT) wiring (i.e. LAN, phone, etc.) up to and including the face plate of all freestanding and/or systems furniture desk tops as applicable, the services to install the cable and face plates in the furniture, the coordination with the furniture vendor/installer to accomplish the installation at the appropriate time, and all the final IT connections to the building systems under this contract.

The Government reserves the right to change the method for procurement of and installation of Government Furnished Government Installed (GFGI) furniture to Contractor Furnished Contractor Installed (CFCI). CFCI furniture will require competitive open market procurement by the Contractor using the Furniture, Fixtures and Equipment (FF&E) package. Reference applicable appendix for Preliminary FF&E Information including furniture dimensions sizes as shown in the Standard Design.

3.0 OPERATIONAL READINESS TRAINING COMPLEX (ORTC) BUILDING FUNCTIONAL REQUIREMENTS (REV 4.5 – 15 MARCH 2012)

3.1 GENERAL REQUIREMENTS

The standard design drawings graphically integrate Army Standard requirements, including net square footage, functional adjacencies, and control zones. The designer of record shall utilize regional and climatic criteria to influence the building design.

Functional floor plans and conceptual site plans are provided for this facility in the applicable appendices. Use of these plans for the interior functional arrangement is mandatory. However, the plans may be modified to accommodate local, regulatory, engineering, architectural, life safety, and/or construction requirements at time of proposal. Additional consideration will be given for innovative, creative, or cost-saving proposals which meet or exceed the minimum requirements as established in the RFP. Floor and site plans may change after award with installation and the Center of Standardization (COS) approval to enhance design, comply with codes, or support constructability.

If a conflict exists with applicable criteria in this RFP, the more stringent criteria shall apply.

3.2 FUNCTIONAL AND AREA REQUIREMENTS

The following applies to all ORTC standard building designs unless otherwise indicated or not applicable:

3.2.1 BUILDING AREA REQUIREMENTS

3.2.1.1 Gross Building Area

Maximum building gross areas indicated in paragraph 2.0 SCOPE shall not be exceeded. A smaller overall gross area is allowed if all functional relationships in the floor plans and mandated net areas indicated in the building finish schedules are met. Contractor shall clearly indicate proposed overall building(s) gross area calculation, to include net areas, building gross area, and half scope areas.

3.2.1.2 Net Area

The standard floor plans mandate authorized space allowances for the functional areas as indicated on the drawings in the building finish schedules. Net area is measured to the inside face of the room finish walls. Net area requirements for programmed spaces are sized to accommodate the functional requirements, overall gross area limitations, and other recognized design principles. If net area requirements are not indicated as mandated, the space shall be sized to accommodate the required function, comply with code requirements, and comply with overall gross area.

3.2.1.3 Spaces Excluded from Gross Building Area

The following shall not be included in the gross building area: Crawl spaces; exterior uncovered loading platforms or facilities, either depressed, ground level, or raised; open paved terraces; roof overhangs and soffits for weather protection 3'-0" or less in width; uncovered ramps; uncovered stoops; and utility tunnels and raceways.

3.2.1.4 Half Scope Areas

Half scope areas shall be included in the gross area for balconies and porches; overhangs greater than 3'-0" in width, 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.

3.2.2 CIVIL DESIGN CRITERIA

3.2.2.1 POV Parking

Provide paved and striped parking for privately owned vehicles (POV) as shown in the provided site layout per the Installation's requirements. Include handicap accessible parking spaces near buildings required to be handicap accessible. Provide 64 parking spaces for employees when the large dining facility is included. Provide 42 parking spaces for employees when the small dining facility is included. Provide 20 parking spaces to accommodate occupants when the Officers' Quarters (Senior Leaders Quarters) is included. Provide bus drop-off locations near barracks.

3.2.2.2 Tactical Vehicle Road and Hardstand

- A. This area shall consist of rigid concrete pavement for mobilization and parking of organizational vehicles (wheeled and heavy and tracked), commercial vehicles (Contractor support), trailers and generators. Organizational vehicle hardstand includes building aprons, parking spaces, and circulation lanes on site. Rigid concrete pavement shall accommodate the installation's heaviest organizational vehicle(s) as indicated in Section 01 10 00, Para 6.
- B. Provide primary and secondary entrance drives with gates to connect organizational vehicle hardstand to roads and/or tank trails as shown in site plans. The primary and secondary entrance drives shall be 30 feet wide.
- C. Provide positive surface drainage with a 1-percent minimum slope in the direction of drainage. Maximum pavement slope shall be 2 percent.
- D. The COS does not dictate the layout of spaces or overall quantities of organizational vehicles due to the transient training requirement of the ORTC. Organizational vehicle requirements shall be coordinated with the installation (i.e. type and sizes).
- E. Striping of the hardstand area for parking is not suggested to ensure flexibility.

3.2.2.3 Bootwash

- A. Provide bootwash facilities at all exterior main entrance doors of all buildings. Bootwash facilities shall accommodate boot washing, drainage, and grit/dirt removal.
- B. Each boot wash facility shall include minimum two freeze-proof hose bibs, removable bar grating for sediment clean-out, mounted boot brushes, and drying rack/handrail.
- C. Coordinate location and bootwash features preferred by the Installation.

3.2.2.4 Dumpster and Recycle Enclosures

- A. The dumpster and recycle enclosures shall meet Installation construction requirements. Enclosures shall be compatible with the building's architectural theme.
- B. Locate dumpsters in accordance with AT/FP standoff distance requirements. Where top protection is required per AT/FP, assure adequate height is provided for maintenance without removal of top protection.

3.2.2.5 Equipment Enclosures

Provide mechanical equipment horizontal enclosures, sized to allow clearance for maintenance as required by the equipment manufacturer. Locate enclosures in accordance with AT/FP standoff distance requirements. Where top protection is required per AT/FP, assure adequate height is provided for maintenance without removal of top protection.

3.2.2.6 Utility Pads

Install all concrete utility pads located outside the building exterior for any mechanical or utility device needed for the building operation and function. Include all necessary piping, wiring, or utility extensions for the device to function as designed. Locate mechanical equipment next to existing or proposed sidewalks, pathways, or parking areas to eliminate the need to construct additional hard surface access.

3.2.3 ARCHITECTURAL CRITERIA

3.2.3.1 Variations Due to Construction Materials

Minor variations in the basic design forms for the buildings are permissible to accommodate modular/pre-fabricated construction processes and materials. Building durability shall not be diminished with the use of such systems as compared to the construction systems and finishes indicated within this package.

3.2.3.2 Room Finishes

Where concrete masonry units (cmu) are required as the room finish in the drawings on the building finish schedules for the Barracks and Officers Quarters, alternative high impact wall finishes may be used, including high impact gypsum board and high impact plaster coatings. Impact resistance shall be as approved by the Installation.

3.2.3.3 Windows

Where operable windows are used, insect screens shall be provided.

3.2.3.4 Restroom and Bathroom Accessories

All restroom and bathroom accessories shall be heavy duty, commercial grade, metal (stainless steel where available) to withstand heavy use.

3.2.3.5 Room Noise Criteria and Testing

In addition to designing adequate sound transmission reduction between spaces with minimums as shown on the drawings,, construction shall accommodate room noise criteria as follows:

- A. Occupancy classification establishes acceptable background sound in rooms over the frequency range of 16 Hz to 4000 Hz, particularly measuring rumbling, rattling, buzzing, hissing, and humming from building mechanical and electrical systems. Rooms shall not exceed the Room Criteria (RC) indicated below. All RC ratings shall be neutral (N). Designers of Record shall determine adequate construction requirements to achieve the following RC limits:

Open Offices:	RC 35 (N)
Private Offices:	RC 30 (N)
Conference Rooms:	RC 25 (N)
Classrooms:	RC 25 (N)
Sleeping Rooms/Bays:	RC 25 (N)
Reading Rooms:	RC 25 (N)

- B. Test all rooms with all building systems operating, including air compressors. Measure the sound pressure level in dB referenced to 20 micro Pascals. Report the results of the tests by plotting the sound pressure level in each octave band from 32-4000 Hertz on Room Criterion Curve sheets published by ASHRAE. Provide an individual plot for each room and a narrative discussion explaining the test results. Rooms exceeding the above RC shall have either systems or sound attenuation altered until the RC rating is met.

3.2.4 STRUCTURAL CRITERIA

System design and construction shall meet all applicable criteria identified herein and in 01 10 00 Para 4.0 & 5.0.

3.2.4.1 Building Category

Barracks:	II
Officers Quarters:	II
Dining Facility:	III
Company Headquarters:	II
Vehicle Maintenance Shop:	II
Brigade Headquarters:	II

3.2.4.2 Seismic Importance Factor (IE)

Barracks:	1.0
Officers Quarters:	1.0
Dining Facility:	1.25
Company Headquarters:	1.0
Vehicle Maintenance Shop:	1.0
Brigade Headquarters:	1.0

3.2.5 MECHANICAL SYSTEMS CRITERIA

System design and construction shall meet all applicable criteria identified herein and in Section 01 10 00, paragraphs 4, 5, and 6, using the most stringent in case of conflict.

3.2.5.1 Design Conditions

- A. The outdoor design temperature for comfort cooling shall be the 1% dry bulb and the corresponding wet bulb temperature for the locale, or the 1% dehumidification dewpoint temperature and the corresponding dry bulb temperature, whichever produces the greater cooling load.
- B. The outdoor design temperature for heating shall be the 99% dry bulb temperature for the locale.
- C. The indoor design temperature for comfort cooling shall be 15 degrees F less than the 1% outdoor air temperature, but will be no lower than 75 degrees F, nor any greater than 78 degrees F.
- D. The indoor design relative humidity shall be 50%.
- E. The indoor design temperature for comfort heating shall be 68 degrees F. Winter humidification shall be required where the indoor relative humidity is expected to fall below 20%.

3.2.6 PLUMBING SYSTEMS CRITERIA

System design and construction shall meet all applicable criteria identified herein and in Section 01 10 00, paragraphs 4, 5, and 6, using the most stringent in case of conflict.

3.2.6.1 Water Service

The domestic water service to the building shall enter the building in the mechanical room. The water service shall be provided with a reduced pressure backflow preventer to isolate each building from the base water system. A main shut-off valve shall be provided inside each building; coordinate location with Installation DPW.

3.2.6.2 Distribution

A horizontal water distribution system shall serve the building, with isolation valves at each branch to common areas serving two or more fixtures, and at each wall hydrant or equipment connection. Water connections for mechanical equipment systems make-up will be isolated from the domestic water system with a reduced pressure backflow preventer.

3.2.6.3 Sanitary

A sanitary drain, waste and vent system will extend from the connection to the site utility system to all fixtures and equipment requiring service. Drainage and vent stacks shall extend vertically and be vented

through the roof. Trap primers shall be provided for drains susceptible to loss of water seal by evaporation.

3.2.6.4 Floor Drains

Floor drains shall be provided in mechanical rooms, janitor rooms, vending machine areas, restrooms, laundries, and for equipment requiring drainage. All floor drains shall be automatically primed by single trap primers.

3.2.6.5 Wall Hydrants

Wall hydrants shall be provided at a maximum spacing interval of 150 feet around the perimeter of the building. Wall hydrants shall be box type, freeze-proof, with integral vacuum breaker/backflow preventer.

3.2.6.6 Water Hammer Arresters

Water hammer arresters will be provided for shock suppression. The placement of water hammer arresters shall be as referenced in the IPC.

3.2.6.7 Gas Distribution

The design and installation of interior natural gas distribution systems shall be in accordance with manufacturer's recommendations and the applicable sections of ASME B31.8, NFPA 54.

3.2.7 FIRE PROTECTION CRITERIA

System design and construction shall meet all applicable criteria identified herein and in Section 01 10 00, paragraphs 4, 5, and 6, using the most stringent in case of conflict.

3.2.7.1 Fire Pump

- A. A fire pump or fire booster pump shall be provided if required, based on the available flow and pressure. (Prior to award, contractors shall use the flow test data provided. After award, designer of record shall be responsible for performing a hydrant flow test.) Data from this test shall be used as the basis for design as indicated above for automatic sprinkler protection.
- B. When a fire pump is required, an additional room shall be created, preferably within or near the mechanical room, changing the building floor plan without adding to the total floor area. These changes shall be made during design and will require COS approval.

3.2.8 ELECTRICAL SYSTEMS CRITERIA

System design and construction shall meet all applicable criteria identified herein and in Section 01 10 00, paragraphs 4, 5, and 6, using the most stringent in case of conflict.

3.2.8.1 Interior Lighting Systems

- A. Security lighting shall be provided at service entrances and at utility rooms. Wall mounted security lighting fixtures shall be shrouded to minimize glare.
- B. Illuminated exit signs and egress/emergency lighting shall be provided by self-contained emergency battery units for all emergency exits and passageways as required by NFPA 101. Exit signs shall be LED type, letter color per Installation. If installed on a switched circuit, emergency lighting shall be configured so that the emergency lamp is illuminated regardless of the position of the control switch.
- C. Interior vacancy sensors shall be utilized for lighting control in areas such as public toilets, storage rooms, private offices, lounges, and laundry rooms.

3.2.8.2 Exterior Lighting Systems

- A. Exterior lighting systems shall be provided for sidewalks, roadways, service yards, facility aprons, open storage areas, and parking areas.
- B. Poles located within the service yards, facility aprons, and hardstand parking areas shall be located and protected to minimize damage from vehicles. Building mounted light fixtures may be used around the building perimeter to supplement pole mounted light fixtures. Coordinate the control of the exterior lighting with the Installation.

3.2.8.3 Interior Electrical Systems

- A. Transient voltage surge suppression (TVSS) shall be provided for all buildings. TVSS devices shall parallel the operating devices in providing a path to ground for an electrical surge and thereby limiting the magnitude of the transient voltage surges on the system. TVSS devices shall be mounted adjacent to or integral with the main distribution panel in accordance with the manufacturer's recommendation. TVSS devices shall be hard wired into the electrical distribution system utilizing a circuit breaker connection. TVSS units shall be tested in accordance with IEEE C62.45 using IEEE C62.41 Category B waveform. Units shall be UL 1449 listed and labeled. The modes of protection shall be the normal mode (L-N, L-L) and common mode (L-G, N-G). TVSS units shall include self-diagnostic and self-testing capabilities, a resettable transient event counter, and a local audible alarm with mute capability.
- B. Receptacles shall be provided adjacent to all CATV and data jack locations.
- C. All switchboards, panelboard, load centers, and feeders shall be designed with 15% spare capacity for future additions and changes.

3.2.8.4 Grounding

- A. For the Vehicle Maintenance Shop and the open hardstand grounding points shall be provided in each repair area and each maintenance area. Grounding points shall be provided in vehicle and equipment parking areas on 40-foot centers (maximum) and coordinated with the parking layout. Provide a minimum of one grounding point for every eight vehicles parked in a double row, and one grounding point for every four vehicles parked in a single row configuration.

3.2.8.5 Exterior Electrical Systems

- A. System design and installation shall provided in accordance with Section 01 10 00, paragraph 6.

3.2.8.6 Telecommunications Systems

- A. In the Barracks senior leaders quarters and Officers Quarters senior leaders quarters, each sleeping room shall be provided with a single 8P8C voice outlet and one CATV outlet.
- B. In the Barracks open bays, wireless data access shall be provided.
- C. Each utility space shall be provided with at least one wall phone outlet located near the entrance door.
- D. Utilize a conduit or cable tray system from the Brigade Headquarters Conference Room, Brigade Headquarters Emergency Operations Center, and the Battalion Headquarters Conference Room to the Communications Room in that building to facilitate video teleconferencing. Specific requirements for the wiring infrastructure shall be coordinated with the Installation.

3.2.8.7 Intrusion Detection System (IDS)

- A. A power and signal conduit and box system for an IDS shall be provided for the following:
- Each arms vault in the Company Headquarters.
 - SIPRNET Room in the Brigade Headquarters.
- B. The requirements for the power and signal conduit and box system shall be coordinated with the Installation IDS System Administrator.

3.2.8.8 Fire Detection and Alarm System Design

- A. Smoke detection devices in sleeping areas and rooms shall be individually monitored and addressed. Tampering with a smoke detector shall transmit a trouble signal to the Fire Department.
- B. A smoke detector with sounder shall be provided in the individual sleeping rooms and bays of the barracks and senior leaders quarters in the officers' quarters. The fire alarm system shall be programmed so that the activation of the smoke detector shall activate the sounder in the sleeping room, but shall be connected to the FACP for supervision only and shall not activate the general alarm.

3.3 BATTALION HEADQUARTERS BUILDING

3.3.1 GENERAL NOTES & CODE REQUIREMENTS

The Battalion Headquarters Facility supports command and control functions.

Fully protect building throughout with an automatic sprinkler system in accordance with NFPA and UFC documents. Accessibility for the disabled shall be provided per ABA. The facility shall be considered “primary gathering” with respect to AT/FP requirements.

Suggested Use and Occupancy Classifications:

- A. IBC: Group B
- B. NFPA 101: New Business

3.3.2 BUILDING DESCRIPTION & MATERIALS

The Battalion Headquarters consists of a single story. The function and flexibility of the facility requires large open areas and spaces without intermediate columns.

3.3.2.1 Doors

- A. All spaces shall include minimum 3'-0" wide doors.
- B. Entrances shall include vestibules with full glazed aluminum storefront doors. All other exterior doors shall be metal with metal frames.
- C. Interior rooms shall have solid-core wood doors with metal frames.

3.3.3 FLOOR PLAN REQUIREMENTS

3.3.3.1 Administration Area

- A. Provide the following private offices: Commander, CSM, Executive Officer (XO), S1 Officer, S2 Officer, S3 Officer, S4 Officer, S6 Officer, and Medical Storage.
- B. Provide open office space for 20 workstations at 6'x6' each. Include adequate circulation, file storage, and printer/copier/fax space.
- C. Provide a conference room to accommodate a minimum of 14 PN with direct access to the open office area. Provide a 4'-0" high x 8'0" wide marker board, projection screen, and power for a ceiling mounted projector.

3.3.3.2 Break area

- A. Provide a 6'-0" long solid polymer countertop with 19"x19" stainless steel sink and 6" high coved back and side splash. Include base and wall cabinets.

3.3.3.3 Soldier Service Areas

- A. Provide a private office for the Chaplain.
- B. Provide storage area for supplies.

3.3.3.4 Men's Toilet Room

- A. Provide a solid polymer countertop with two integrally molded lavatories and 6" high covered back and side splash.
- B. Provide vanity light fixtures above glass mirror for length of the vanity.
- C. Provide minimum one handicap accessible floor mounted toilet with full seat.
- D. Provide minimum of one wall hung handicap accessible urinal.
- E. Provide floor drains.
- F. Accessories shall include solid polymer toilet partitions and urinal screen, toilet tissue dispenser, soap dispensers, paper towel dispensers, and waste receptacles.

3.3.3.5 Women's Toilet Room

- A. Provide a solid polymer countertop with two integrally molded lavatories and 6" high covered back and side splash.
- B. Provide vanity light fixtures above glass mirror for length of the vanity.
- C. Provide minimum one handicap accessible floor mounted toilet with full seat and provide one standard floor mounted toilets with full seat.
- D. Provide floor drains.
- E. Accessories shall include solid polymer toilet partitions, toilet tissue dispensers, napkin disposals, soap dispensers, paper towel dispensers, and waste receptacles.

3.3.3.6 Janitor Closet

- A. Provide floor mop sink with 4'-0" high stainless steel, tile, or solid polymer backsplash, service faucet with hose and bracket, mop rack for three mops, minimum 6'-0" of linear stainless steel shelving capable of supporting minimum 30 lb. per linear feet, and floor drain.

3.3.3.7 Mail Distribution Room

- A. Locate on an outside wall.
- B. This room is intended for distribution by the user, not direct postal delivery, therefore ATRP mail room requirements do not apply.

3.3.3.8 Vending/Recycling Area

- A. Include space for one soft drink and one snack vending machine, which will be provided by others. Provide adequate power for vending machines.

B. Provide appropriate utilities for the ice machine which shall be GFGI, provided by the Installation.

C. Provide floor drain near ice machine.

D. Provide space for five (5) recycling bins.

3.3.3.9 Corridor

A. Minimum corridor width shall be 6'-0".

B. Provide standard and accessible electric water coolers.

3.3.3.10 Mechanical

A. Size and locate mechanical room to allow equipment removal and maintenance.

B. Provide double doors opening to exterior only.

3.3.3.11 Electrical

A. Size and locate electrical room to allow equipment removal and maintenance.

B. Provide a single out swinging interior door with panic hardware when required per code.

3.3.3.12 Telecommunications Room (TR)

A. Provide a dedicated interior room for telecommunications equipment, minimum 1.1% of the building footprint.

3.4 2-STORY BARRACKS

3.4.1 GENERAL NOTES & CODE REQUIREMENTS

The Barracks portion of the Battalion set consists of four two-story buildings. Each building has eight (8) open bays. The HVAC and other utility systems shall be zoned for each bay to operate independently, allowing unused bays to be shut down or set to minimum sustainment levels. In addition to the open bays, each building has four semi-private rooms with baths.

Each Barracks building is intended to house 160 personnel in grades E1-E6 for Options A and B shown on drawing A004A, and 8 Senior Leader personnel. A Battalion set of Barracks therefore accommodates 640 E1-E6 personnel (Options A and B) and 32 Senior Leader personnel exclusive of the Officers' Quarters building.

The facility HVAC, utility systems, and fixtures shall be designed to support a "surge" of an additional four persons in each of the E1-E6 bays, which can be achieved by double bunking four bunks in each bay, as shown on drawing A004A, Option C. This increases the total capacity of the building to 192 E1-E6

personnel and 8 Senior Leader spaces for a total of 200 persons, increasing the capacity of a Battalion set of Barracks from 672 (intended) to 800 (maximum).

The Installation will determine if any of the open bays in the barracks are needed to be furnished for functions other than sleeping. This option is intended to accommodate company functions until other facilities are constructed or made available. Three options are proposed on A004A and A010A, one for mermite can dining service, one for administration, and one for classrooms.

The Barracks shall be fully protected throughout by an automatic sprinkler system in accordance with NFPA and UFC documents. Accessibility for the disabled is not required since this facility will be occupied by able-bodied personnel only. The Barracks shall be considered "billeting" with respect to AT/FP requirements.

Suggested Use and Occupancy Classification:

- A. IBC – Group R-1 (Residential Transient)
- B. NFPA 101 – New Hotels & Dormitories

3.4.2 BUILDING DESCRIPTION & MATERIALS

The function and flexibility of the barracks requires open bays without intermediate columns. The first floor shall be slab on grade with an elevated concrete slab on the second floor.

3.4.2.1 Doors

- A. All spaces shall include minimum 3'-0" wide doors except where noted for senior leader quarters bathrooms.
- B. Entrances shall include vestibules with full glazed aluminum storefront doors. All other exterior doors shall be metal with metal frames.
- C. Interior room doors shall be solid-core wood with metal frames.

3.4.3 FLOOR PLAN REQUIREMENTS

3.4.3.1 Corridors

- A. Provide two electric water coolers on each floor.
- B. Provide a minimum 6'-0" aisle between sleeping areas in open bay.
- C. Provide space for minimum two vending machines.
- D. Provide space for (5) recycling bins to meet LEED credit requirements.

3.4.3.2 Stair

- A. Provide circulation to second floor at each end and near the front entrance.

3.4.3.3 Mechanical

- A. Size and locate one or two rooms to allow equipment removal and maintenance.
- B. Second floor mechanical room (if provided) shall include an interior access door and double exterior doors (or removable louver) for equipment replacement.

3.4.3.4 Electrical

- A. Size and locate rooms on each floor to allow for equipment removal and maintenance with main electrical room on ground level.

3.4.3.5 Telecommunications Room (TR)

- A. Provide a dedicated interior room for telecommunications equipment on each floor.
- B. First floor room shall be a minimum of 8'x10'. Second floor room shall be a minimum of 6'x8'.

3.4.3.6 Open Bays

- A. Provide minimum of 10 exterior windows per bay, coordinating wall space needed for bunks and storage cabinets. Each window shall be as large as possible, minimum of 2'-0" high x 2'-0" wide. Recommend use of translucent glazing.

3.4.3.7 Each Laundry Room

- A. Eight heavy duty clothes washers shall be provided as part of the FF&E Package which is not in this contract.
- B. Ten heavy duty clothes dryers shall be provided as part of the FF&E Package which is not in this contract.
- C. One solid polymer utility sink shall be provided with gooseneck faucet.
- D. One solid polymer built in clothes folding table shall be provided with clothes rod above.
- E. One floor drain shall be provided.

3.4.3.8 Each Latrine

- A. Four floor mounted toilets shall be provided with solid polymer toilet partitions.
- B. A continuous solid polymer vanity shall be provided with four integrally molded 16" x 12" lavatories and 6" high coved back and side splash.
- C. A glass mirror shall be provided for the length of the vanity with wall mounted light fixtures above.

D. Floor drains shall be provided.

E. Accessories shall include toilet tissue dispensers, napkin disposals, soap dispensers, paper towel dispensers, and waste receptacles.

3.4.3.9 Each Shower Room

A. Provide six shower stalls with seat in dressing area.

B. Provide a curtain and rod at each shower and at each dressing area.

C. Provide solid polymer shower partitions.

D. Provide a floor drain at each dressing area as well as in the shower room.

E. Include towel pins, clothes hooks, and soap and shampoo shelf in each shower/dressing area.

3.4.3.10 Each Janitor Closet

A. Provide floor mop sink with 4'-0" high stainless steel, tile, or solid polymer backsplash, service faucet with hose and bracket, mop rack for three mops, minimum 6'-0" of linear stainless steel shelving capable of supporting minimum 30 lb. per linear feet, and floor drain.

3.4.3.11 Each Senior Leader Quarters

A. Built-in closets shall include minimum 3'-0" wide doors and a wire shelf with hanger bar capable of supporting minimum 30 lb. per linear foot.

B. Each room shall include at least one exterior window at 3'-0" above finish floor with blinds.

3.4.3.12 Each Senior Leader Bath and Sink Area

A. Provide a minimum 3'-0" wide solid polymer countertop with integrally molded 16"x12" lavatory and 6" high coved back and side splashes on base cabinet with hinged door(s).

B. Provide a glass mirror, full width of countertop with wall mounted vanity light fixture above.

C. Provide a floor mounted toilet with full seat and seat cover.

D. Minimum 3'-0" x 3'-0" fiberglass shower unit shall be provided with integral soap shelves, curtain, and curtain rod.

E. Provide a minimum 2'-4" wide door.

F. Towel pins and toilet tissue dispensers shall be provided.

3.4.3.13 First and Second Floor Company Storage

- A. Provide space for seating minimum 14 people at a conference table and space for a wall mounted television. Assure adequate framing is provided to support a large flat screen television for training/briefings as well as entertainment. The television and mounting bracket shall not be in the contract since it will be included in the government's FF&E Package.
- B. Provide power and data/internet ports along walls, and power/cable/data connection for television.
- C. Company Storage is intended to be flexible in use, as determined by each Unit or Units occupying the building. This space may be used for administration, equipment storage, or conferencing. Weapons storage is also an option for this space, assuming proper security measures are taken by the individual units.

3.5 4-STORY BARRACKS

3.5.1 GENERAL NOTES & CODE REQUIREMENTS

The Barracks portion of the Battalion set consists of two 4-story buildings. Each building has sixteen (16) open bays. The HVAC and other utility systems shall be zoned for each bay to operate independently, allowing unused bays to be shut down or set to minimum sustainment levels. In addition to the open bays, each building has eight semi-private rooms with baths for senior leaders.

Each Barracks building is intended to house 320 personnel in grades E1-E6 for Options A and B shown on drawing A010A, and 16 Senior Leader personnel. A Battalion set of Barracks therefore provides 640 E1-E6 personnel (Options A and B) and 32 Senior Leader personnel exclusive of the Officers' Quarters building.

The facility HVAC, utility systems, and fixtures shall be designed to support a "surge" of an additional four persons in each of the E1-E6 bays, which can be achieved by double bunking four bunks in each bay, as shown on drawing A010A, Option C. This increases the total capacity of the building to 384 E1-E6 and 16 Senior Leader spaces for a total of 400 persons, increasing the capacity of a Battalion set of Barracks from 672 (intended) to 800 (maximum).

The Installation will determine if any of the open bays in the barracks are needed to be furnished for functions other than sleeping. This option is intended to accommodate company functions until other facilities are constructed or made available. Three options are proposed on A004A and A010A, one for mermite can dining service, one for administration, and one for classrooms.

The Barracks shall be fully protected throughout by an automatic sprinkler system in accordance with NFPA and UFC documents. Accessibility for the disabled is not required since this facility will be occupied by able-bodied personnel only. The Barracks shall be considered "billeting" with respect to AT/FP requirements.

Suggested Use and Occupancy Classification:

- A. IBC – Group R-1 (Residential Transient)

B. NFPA 101 – New Hotels & Dormitories

3.5.2 BUILDING DESCRIPTION & MATERIALS

The function and flexibility of the barracks requires open bays without intermediate columns. The first floor shall be slab on grade with elevated concrete slabs on the upper floors.

3.5.2.1 Doors

- A. All spaces shall include minimum 3'-0" wide doors except as noted for senior leaders quarters bathrooms.
- B. Entrances shall include vestibules with full glazed aluminum storefront doors. All other exterior doors shall be metal with metal frames.
- C. Interior room doors shall be solid-core wood with metal frames.

3.5.3 FLOOR PLAN REQUIREMENTS

3.5.3.1 Corridors

- A. Provide two electric water coolers on each floor.
- B. Provide a minimum 6'-0" aisle between sleeping areas in open bay.
- C. Provide space for minimum two vending machines.
- D. Provide space for (5) recycling bins to meet LEED credit requirements.

3.5.3.2 Stair

- A. Provide circulation to upper floors at each end and near the front entrance.

3.5.3.3 Elevator

- A. Provide one elevator with minimum 2500 lb capacity, primarily to move furnishings and to assist soldiers in reaching upper floors with assigned equipment and personal luggage. Elevator is not intended to escape fire or provide handicap accessibility.
- B. Elevator interior clear floor area shall be sized to accommodate a gurney; therefore, minimum elevator cab clear depth shall be 7'-6".
- C. Minimum elevator finishes shall include stainless steel walls and doors with paver floors and lighted ceiling. Freight pads and attachment hardware shall be provided.

3.5.3.4 Mechanical

- A. Size and arrange mechanical rooms to allow equipment removal and maintenance.

- B. Upper floor mechanical rooms shall include an interior access door and double exterior doors (or removable louvers) for equipment replacement. Double height mechanical rooms are acceptable in lieu of a mechanical room on each floor.

3.5.3.5 Electrical

- A. Size and locate rooms to allow for equipment removal and maintenance with main electrical room on ground level.

3.5.3.6 Telecommunications Room (TR)

- A. Provide a dedicated interior room for telecommunications equipment on each floor.
- B. First floor room shall be a minimum of 8'x10'. Upper floor rooms shall be a minimum of 6'x8'.

3.5.3.7 Open Bays

- A. Provide minimum of 10 exterior windows per bay, coordinating wall space needed for bunks and storage cabinets. Each window shall be as large as possible, minimum of 2'-0" high x 2'-0" wide. Recommend use of translucent glazing.

3.5.3.8 Each Laundry Room

- A. Eight heavy duty clothes washers shall be provided as part of the FF&E Package which is not in this contract.
- B. Ten heavy duty clothes dryers shall be provided as part of the FF&E Package which is not in this contract.
- C. One solid polymer utility sink shall be provided with gooseneck faucet.
- D. One solid polymer built in clothes folding table shall be provided with clothes rod above.
- E. Floor drains shall be provided.

3.5.3.9 Each Latrine

- A. Four floor mounted toilets shall be provided with solid polymer toilet partitions.
- B. A continuous solid polymer vanity shall be provided with Four integrally molded 16" x 12" lavatories and 6" high coved back and side splash.
- C. A glass mirror shall be provided for the length of the vanity with wall mounted light fixtures above.
- D. Floor drains shall be provided.

- E. Accessories shall include toilet tissue dispensers, napkin disposals, soap dispensers, paper towel dispensers, and waste receptacles.

3.5.3.10 Each Shower Room

- A. Provide Six shower stalls with seat in dressing area.
- B. Provide a curtain and rod at each shower and at each dressing area.
- C. Provide solid polymer shower partitions.
- D. Provide a floor drain at each dressing area as well as in the shower room.
- E. Include towel pins, clothes hooks, and soap and shampoo shelf in each shower/dressing area.

3.5.3.11 Each Janitor Closet

- A. Provide floor mop sink with 4'-0" high stainless steel, tile, or solid polymer backsplash, service faucet with hose and bracket, mop rack for three mops, minimum 6'-0" of linear stainless steel shelving capable of supporting minimum 30 lb. per linear feet, and floor drain.

3.5.3.12 Each Senior Leaders Quarters

- A. Built-in closets shall include minimum 3'-0" wide doors and a wire shelf with hanger bar capable of supporting minimum 30 lb. per linear foot.
- B. Each room shall include at least one exterior window at 3'-0" above finish floor with blinds.

3.5.3.13 Each Senior Leader Bath and Sink Area

- A. Provide a minimum 3'-0" wide solid polymer countertop with integrally molded 16"x12" lavatory and 6" high coved back and side splashes on base cabinet with hinged door(s).
- B. Provide a glass mirror, full width of countertop with wall mounted vanity light fixture above.
- C. Provide a floor mounted toilet with full seat and seat cover.
- D. Minimum 3'-0" x 3'-0" fiberglass shower unit shall be provided with integral soap shelves, curtain, and curtain rod.
- E. Provide a minimum 2'-4" wide door.
- F. Towel pins and toilet tissue dispensers shall be provided.

3.5.3.14 Each Company Storage

- A. Provide space for seating minimum 14 people at a conference table and space for a wall mounted television. Assure adequate framing is provided to support a large flat screen

television for training/briefings as well as entertainment. The television and mounting bracket shall not be in the contract since it will be included in the government's FF&E Package.

- B. Provide power and data/internet ports along walls and power/cable/data connection for television.
- C. Company Storage is intended to be flexible in use, as determined by each Unit or Units occupying the building. This space may be used for administration, equipment storage, or conferencing. Weapons storage is also an option for this space, assuming proper security measures are taken by the individual units.

3.6 OFFICERS QUARTERS (SENIOR LEADERS QUARTERS)

3.6.1 GENERAL NOTES & CODE REQUIREMENTS

The Officers' Quarters (Senior Leaders Quarters) is a two-story building housing up to 80 senior leaders in 40 living/sleeping rooms. The Officers' Quarters are sized to accommodate a heavy armor BCT to include the E7 and E8 personnel that cannot be housed in the semi-private Senior Leader Quarters in the Barracks.

Each living module consists of two semi-private rooms. Each room has a bathroom with shower, a sink outside the bathroom, two closets, and a space for two beds. The rooms can be assigned as double or single occupancy consistent with space authorized by grade. Laundry rooms, activity rooms, and vending are available on each floor.

If two Battalion complexes are required, and two Officers' Quarters (Senior Leaders Quarters) are required, the two buildings may be combined into a single facility. Methods for combining the buildings, including adding stories, shall meet the design criteria set forth in this Standard Design as determined by the COS.

The Officers' Quarters (Senior Leaders Quarters) shall be fully protected throughout by an automatic sprinkler system in accordance with NFPA and UFC documents. Accessibility for the disabled is not required since this facility will be occupied by able bodied personnel only. The Officers' Quarters shall be considered "billeting" with respect to AT/FP requirements.

Suggested Use and Occupancy Classification:

- A. IBC: Group R-1 (Hotel, Transient)
- B. NFPA 101: New Hotels and Dormitories

3.6.2 BUILDING DESCRIPTION & MATERIALS

The Officers' Quarters (Senior Leaders Quarters) consists of a two story structure housing senior leaders in semi-private rooms, each having separate bathrooms. The first floor shall be slab on grade with elevated concrete slab on the second floor.

3.6.2.1 Doors

- A. All spaces shall include minimum 3'-0" wide doors except as indicated for bathroom doors.
- B. Entrances shall include vestibules with full glazed aluminum storefront doors.
- C. All other exterior doors shall be metal with metal frames.
- D. Interior rooms shall include solid-core wood doors with metal frames.

3.6.3 FLOOR PLAN REQUIREMENTS

3.6.3.1 Stairs

- A. Provide circulation to second floors at the vestibule and at the opposite end of the corridor.
- B. End stairs shall either be covered or enclosed as determined by the installation and climatic conditions.

3.6.3.2 Interior Corridor

- A. Provide electric water cooler on each floor.
- B. Minimum corridor width shall be 5'-0".

3.6.3.3 Mechanical

- A. Size and locate room to allow equipment removal and maintenance
- B. Provide mechanical room on ground floor with doors opening to exterior only.
- C. Second floor mechanical room shall include an interior access door and double exterior doors (or removable louver) for equipment replacement. A double height mechanical room is acceptable in lieu of a mechanical room on each floor.

3.6.3.4 Electrical

- A. Size and locate rooms on each floor to allow equipment removal and maintenance
- B. Locate main electrical room on ground floor.

3.6.3.5 Telecommunications Room (TR)

- A. Provide dedicated interior rooms for telecommunications equipment, minimum 8'x10' for first floor and 6'x8' for the second floor.

3.6.3.6 Each Living/Sleeping Room

- A. Provide two built-in closets including wire shelf with hanger bar capable of supporting minimum 30 lb. per linear foot.

B. Provide minimum of one exterior window with blinds.

3.6.3.7 Each Living/Sleeping Room Bath

- A. Provide 3'-0" wide solid polymer countertop with integrally molded lavatory and 6" high covered back and side splashes. Provide vanity base cabinet with hinged doors.
- B. Provide wall mounted vanity light fixture above glass mirror for full width of vanity countertop.
- C. Provide floor mounted toilet with full seat and seat cover.
- D. Provide minimum 3'-0" x 3'-0" fiberglass shower unit shall be provided with integral soap/shampoo shelves, curtain, and curtain rod.
- E. Towel pins and toilet tissue dispensers shall be provided.
- F. Provide minimum 2'-4" wide door to bathroom.

3.6.3.8 Each Common Area

- A. Provide seating area to view wall mounted television. The television and mounting bracket shall not be in the contract since it will be included in the government's FF&E Package. Also, provide adequate power, data, and cable for television.
- B. Provide space for tables with seating.
- C. Within the common area on the second floor, provide kitchenette with space for a refrigerator/freezer as part of the FF&E (which is not part of this contract), stainless steel double basin sink, and space for a microwave oven which will be provided by others. Provide base and wall cabinets, 8'-0" minimum length.
- D. The common areas shall be flexible for use as administration for the senior leaders. Provide power and data/internet ports along walls.

3.6.3.9 Each Storage Room

- A. Provide built-in shelving with capability of supporting minimum 30 lb. per linear foot in storage rooms.

3.6.3.10 Each laundry

- A. Provide four clothes washers as part of the FF&E Package which is not in this contract.
- B. Provide five clothes dryers as part of the FF&E Package which is not in this contract.
- C. Provide one solid polymer built-in clothes folding counter with clothes hanging rod above, with minimum dimension 120"x24"x36".
- D. Provide one solid polymer sink with gooseneck faucet.

E. Provide floor drain.

3.6.3.11 Each Janitor Closet

A. Provide floor mop sink with 4'-0" high stainless steel, tile, or solid polymer backsplash, service faucet with hose and bracket, mop rack for three mops, minimum 6'-0" of linear stainless steel shelving capable of supporting minimum 30 lb. per linear feet, and floor drain.

3.6.3.12 Each Vending

A. Provide location for soft drink and snack vending machines.

B. Provide appropriate utilities for the ice machine which shall be included in the FF&E Package, not in this contract.

C. Provide floor drain near ice machine.

3.7 DINING FACILITY

3.7.1 GENERAL NOTES & REQUIREMENTS

The Dining Facility is designed to feed personnel based on three 30 minute feeding periods, with two serving lines operating to assume 95% of the personnel are utilizing the facility.

Two Dining Facility floor plans are available in this standard, the Small DFAC to feed 720 personnel or one Battalion, and the Large DFAC to feed 1428 personnel or two Battalions.

Government furnished, government installed (GFGI) equipment will be delivered prior to final completion of the building. When requested, the contractor shall provide an optional bid to provide and install all GFGI equipment items. In all cases, the contractor shall plan for and coordinate installation of this equipment as well as for vendor-provided equipment, and shall provide clearances, space, power, data, water, drains, conduits, etc. as required for equipment to be operational. The contractor shall consider the heat generated by all equipment in determining cooling loads. See Attachment A for kitchen equipment plans for identification of contractor furnished, contractor installed (CFCI) items versus GFGI and Vendor furnished/installed equipment. In addition, all movable furnishings will be provided using the contractor provided FF&E Package and GFGI items unless otherwise indicated.

The Dining Facility shall be fully protected throughout by an automatic sprinkler system, including the loading dock, in accordance with NFPA and UFC documents. Accessibility for the disabled shall be provided generally throughout the building, including staff and patron restrooms, dining areas, and administrative areas. However, kitchen and serving equipment is not required to be accessible; Pathways through these equipment and serving areas shall be accessible. The Dining Facility shall be considered "primary gathering" with respect to AT/FP requirements.

Suggested Use and Occupancy Classification:

A. IBC: Group A-2 (Assembly-Restaurant)

B. NFPA 101: New Assembly (Restaurant)

3.7.2 SITE PLANNING & DESIGN

3.7.2.1 Parking

- A. Vehicular and pedestrian circulation shall include separation of staff parking areas and loading/service hardstand area.

3.7.2.2 Loading Dock

- A. Provide a 4'-0" high, minimum 15'-0" deep loading dock with 25,000 lb. dock leveler, dock bumpers, and truck restraints. Dock width shall accommodate the ramp, stair, and number of truck dock locations shown on the floor plans. Align dock leveler with receiving vestibule door. Dock leveler shall include an integral loading dock "back-up" light signal system. Loading dock platform shall be sloped at a one percent pitch away from the building. Platform surface shall have a broom finish.
- B. Provide a loading dock pedestrian stair and a loading dock ramp for wheeled carts & dollies.
- C. Provide a can wash area adjacent to the loading dock.
- D. Provide a 4'-0" overhang beyond the edge of the dock.
- E. Provide a minimum clear height of 14'-6" from hardstand to loading dock overhang.
- F. Coordinate loading dock pedestrian stair and loading dock pedestrian ramp with the location of the trash enclosure.

3.7.2.3 Dumpster Enclosure & Loading Dock Access

- A. The dumpster enclosure shall be sized to accommodate at least four front loaded dumpsters. (two for trash, one for recycle, and one for cardboard)
- B. Provide one hose bibb at each dumpster enclosure.
- C. Entire hardstand access and service area shall be concrete pavement and shall provide proper drainage. Pavement strength and maneuvering clearances shall be based on a WB-62 tractor trailer. If the hardstand also accommodates fire truck traffic, the more stringent requirements (maneuvering and vehicle weights) shall apply.

3.7.2.4 Grease Interceptor

- A. Grease interceptor shall be provided for collecting and containing grease from the waste drain line flows emanating from the kitchen food preparation and dishwashing and pot/can wash areas. The grease interceptor shall be located outside of the facility in a location that is accessible to a vacuum grease collection truck. The grease interceptor tank shall be cathodically protected.

B. The grease interceptor shall be sized as stated below except where local requirements dictate a larger size:

- 201-500 PP and 501-800 PP and 720 ORTC: 2,000 gallons
- 801-1300 PP and 1300 TNG and 1428 ORTC: 3,000 gallons
- 2600 TNG: 4,000 gallons

3.7.2.5 Solids Interceptor

A. Solid interceptor shall be provided for collecting and containing solids from the waste drain line flows emanating from the kitchen food preparation and dishwashing and pot/can wash areas. The solids interceptor shall be located outside of the facility in a location that is accessible to a vacuum solids collection truck and be in-line before the grease interceptor. The solids interceptor tank shall be cathodically protected.

B. The solids interceptor shall be sized as stated below except where local requirements dictate a larger size:

- 201-500 PP and 501-800 PP and 720 ORTC: 100 gallons
- 801-1300 PP and 1300 TNG and 1428 ORTC: 250 gallons
- 2600 TNG: 500 gallons

3.7.3 BUILDING DESCRIPTION & MATERIALS

The Dining Facility consists of a single story structure with large open areas and spaces without intermediate columns to the maximum extent possible. The roof shall be designed for roof mounted equipment with mansards or parapets for screening. Finished ceiling heights shall not exceed 14 feet except in areas where clerestories or other daylighting is incorporated to enhance sustainable design. Regardless of the ceiling features provided, no building structure or materials shall be exposed due to cleanliness requirements. All food service equipment shall be certified by the National Sanitation Foundation, International.

3.7.3.1 Signage

A. A comprehensive signage package shall be provided. Signage shall clearly define the major areas, identify different service areas and types of food served, identify food items over the kiosks, provide directional information and traffic flow where appropriate, and compliment the interior design scheme.

B. Illumination of signage is not required but is acceptable to enhance visibility. Ensure that general space lighting does not conflict or detract from the signage design.

3.7.3.2 Doors

A. All spaces shall include minimum 3'-0" wide commercial grade doors and hardware.

B. Entrances shall include vestibules with full glazed aluminum storefront doors. All other exterior doors shall be metal with metal frames.

- C. Interior rooms shall be solid-core wood with metal frames unless otherwise indicated.
- D. The doors between the Kitchen and the Servery, between the Kitchen and Receiving Vestibule and into the Dishwashing area, shall be lightweight, high impact resistant, double-swing doors with protective door plates, bumpers, pivots, and vision panels.
- E. A solid aluminum threshold shall be provided at the receiving vestibule door leading to the loading dock.
- F. Emergency "exit only" doors shall be provided with a local audible alarm.

3.7.3.3 Corner & Wall Guards

- A. 72-inch high corner guards are required for all outside corners of walls and columns throughout the facility except in toilets.
- B. Corner guards in kitchen, servery, dishwashing, and other utility/service areas shall be stainless steel.
- C. Corner guards in Dining Areas and other patron/public spaces shall be architectural type as part of the SID.

3.7.3.4 Roof Access

- A. Roof access hatches shall be a minimum of 16 square feet clear open area, with no dimension smaller than 4'-0".
- B. Equip roof hatches with lockable operating hardware. Provide a ship-type ladder to access the roof hatch.

3.7.4 FLOOR PLAN REQUIREMENTS

Functional floor plans, equipment plans, and equipment schedules are provided in Attachment A. Use of these plans and schedules for the interior functional arrangement is mandatory. However, the plans may be modified to accommodate local, regulatory, engineering, architectural, life safety, and construction requirements

3.7.4.1 Dining Area

- A. Provide two seating areas. See drawings for required seating capacity.
- B. For each seating area provide the following: hand washing, queue line area, cashiers, and food service line.
- C. The two seating areas shall share the following centrally located items: salad/self service bar, beverage dispensing area, and dish wash area.

- D. Provide a minimum of four separate television ceiling- or wall-mounted locations dispersed throughout each main Dining area. Provide power, CATV connection, and mounting bracket capable of supporting a 60-inch flat screen television.
- E. Provide chair rails and impact-resistant wainscots to protect wall surfaces.

3.7.4.2 Queuing (Exterior Entrance Canopies)

- A. Provide fully covered area which may be detached from the building having a continuous cover to the entrance doors. Provide lighting for safety and security. Construct canopies to prohibit bird nesting.
- B. Provide lighted, weather resistant daily menu display case outside main entry doors. Display case shall be a minimum of 18" x 24".

3.7.4.3 Queuing (Interior)

- A. Provide power, CATV connection, data, and mounting bracket for 60" flat panel monitor for menu display. Provide 1-1/2-inch empty conduit from monitor location to the administrative office with pull string.
- B. Provide custom-fabricated rectangular-shaped casework module to house each station including power and data receptacles at each station. Point of Sale or headcount station equipment is GFGL.

3.7.4.4 Serving

- A. All tray slides for the servery and elsewhere shall accommodate the full depth of a 14-inch deep tray.
- B. Exhaust Hoods on the serving line shall be provided with a manual on/off switch.

3.7.4.5 Patron Toilets

- A. Provide standard toilet accessories including mirrors for the full width of the vanities, combination paper towel dispenser/waste paper receptacle units, liquid soap dispensers, toilet tissue dispensers, coat hooks, and sanitary napkin disposers (women's toilet only).
- B. Toilet partitions shall be solid polymer material with a minimum 3/4-inch thickness. Partition doors shall be provided with an overlapping door option at both vertical door edges for privacy.

3.7.4.6 Staff Men's and Women's Toilet & Shower Rooms

- A. Provide one unisex handicap accessible shower room including shower unit, bench, curtain, rod, towel pins, and soap/shampoo shelf.
- B. Provide separate men and women handicap accessible toilet rooms, each with toilet, lavatory, toilet tissue dispenser, paper towel dispenser, waste receptacle, and coat hook.

3.7.4.7 Staff Locker Room

- A. Provide 12" wide x 15" deep x 72" tall, ventilated, four-tier (18" high each) lockers. Provide minimum of 42 lockers for the 720 PN DFAC and 60 lockers for the 1428 DFAC, or the maximum number that will fit in the available space, whichever is greater. Lockers shall be mounted on locker manufacturer's base and have a sloped top.
- B. Provide a 120V receptacle along with a telephone/data jack on each wall of the locker room except where the entire wall is covered by lockers.

3.7.4.8 Offices

- A. Provide a minimum of three telephone and data receptacles in each office (one telephone/data outlet centered on each wall without a door).
- B. Provide unobstructed visual monitoring of food preparation areas from each office.
- C. Provide two bulletin boards, one mounted inside administrative office and one outside administrative office door.
- D. Provide wall or floor mounted anchor for safe in administrative office.

3.7.4.9 Cold Storage

- A. Provide walk-in cold storage floors at the same elevation as the kitchen floor. Drain lines shall not intrude on the working aisles.
- B. Operating temperatures shall be as indicated in TB Med 530.
- C. Provide Slab Frost Heave Protection in addition to the insulated slab for all freezers over 225 square feet.

3.7.4.10 Dry Storage

- A. Provide one telephone receptacle, one data receptacle, and a double duplex electrical receptacle at desk location inside room.
- B. One door leaf shall be "Dutch" type with a minimum 10-inch deep shelf on the dry storage side.
- C. Provide bumpers or other protective feature to prevent wall damage from mobile racks.

3.7.4.11 Soda Room

- A. Provide two empty 6-inch conduits with pull string from the soda room to each beverage station.
- B. Provide water filters for the water to be distributed to the beverage stations.

- C. Provide three 20 amp dedicated 120V receptacles on each wall of the soda room, mounted at 48-inches AFF.

3.7.4.12 Dishwash

- A. Ceiling heights in dishwashing room shall be coordinated with the dishwashing equipment, minimum 10'-6" high.
- B. Coordinate side clearance for removal of the inspection doors on the dishwashing machines.
- C. Dishwashing room exhaust ducts shall be as short as possible with direct runs to outside of building. Ductwork shall have watertight joints and a drain line from the low point. Provide a minimum of 10 air changes per hour or 25% more than dishwasher exhaust requirement, whichever is greater.
- D. Approximately 75 percent of the room air will be exhausted thru the dishwasher, with the remainder exhausted at the ceiling. Ceiling exhaust shall run continuous while the facility is occupied.
- E. Dishwash room drains shall be directed to the solids and grease interceptors.

3.7.4.13 Can Wash

- A. Provide exterior hose bibb inside can wash.
- B. Slope floor to drain. Floor surface shall be free of curbs or other obstructions that prohibit rolling garbage cans or equipment into the space.
- C. Provide can drying racks, mop racks, and broom storage racks out of range of spray from cleaning equipment.
- D. Provide waterproof membrane behind the cement board and ceramic tile to create a continuous water barrier.

3.7.4.14 Janitor Closets

- A. Provide floor mounted stainless steel mop sink 33" x 25" x 10" high, service faucet, mop hangar, hose, and bracket.
- B. Provide one 18" deep x 60" long x 48" high four tier, heavy duty shelving unit for storage of cleaning supplies.

3.7.4.15 Mechanical

- A. Size mechanical room to allow equipment removal and maintenance.
- B. Provide double doors opening to exterior.

3.7.4.16 Electrical

- A. Size electrical room to allow equipment removal and maintenance.

3.7.4.17 Telecommunications Room (TR)

- A. Provide dedicated interior room for telecommunications equipment, minimum 1.1% of the building footprint..

3.7.5 UTILITY DESIGN REQUIREMENTS

Plumbing, HVAC, fire protection, electrical, and communications systems shall be designed to comply with the documents listed in 4.0 APPLICABLE CRITERIA. The publications are referred to in the text by basic designation only.

3.7.5.1 Plumbing Requirements

- A. Perform a water quality analysis to determine the need for water softening equipment, piping requirements, equipment filtering requirements, etc. Where the water quality analysis determines the need for a water softener system, a whole building water softener system shall be provided.
- B. Individual equipment items may also require water filtering per manufacturer's recommendations.
- C. In accordance with TB Med 530, all piping shall be concealed to the greatest extent possible. Where metallic piping cannot be concealed it shall be stainless steel or chrome-plated.
- D. In the kitchen and dishwashing areas, hot water shall be designed to provide 140 degree Fahrenheit at the equipment. General purpose, hand washing sinks, and lavatories shall be provided with 110 degree Fahrenheit hot water.
- E. All sinks shall be UL and NSF approved/certified/listed.
- F. Floor drains are required in the toilets, janitor's closets, kitchen, can wash, dishwash, serving lines, self service, and at each handwash sink. Floor drains shall be provided with trap primers.
- G. Provide tempering of the hot water drains in accordance with 4.0 APPLICABLE CRITERIA.
- H. Provide a centrally controlled low-pressure washing system with remote wall-mounted workstations in the Kitchen, Can Wash, Dishwashing Area, and Receiving Platform. Required accessories include water broom attachment, hose reel, spray nozzle and freeze-proof valves for exterior application. Install wall mounted equipment in locations away from possible damage from mobile carts.

3.7.5.2 Electrical Requirements

- A. Provide general area lighting as well as task and decorative lighting in service and public areas. The use of a variety of fixtures – pendant, surface, sconce, direct, and/or indirect – is encouraged. See TB MED 530 for specific lighting requirements including, but not limited to intensity and protective shielding.
- B. In addition to other required receptacles, provide 120 volt duplex wall receptacles in all spaces. The maximum receptacle spacing in offices shall be 12 feet with at least one receptacle on each wall. The maximum spacing between receptacles in other locations shall be 25 feet.
- C. In addition to receptacles required for specified pieces of equipment along the serving and salad bar lines and soda stations, provide 3-20 amp dedicated 120V spare receptacles at each soda station and 2-20 amp dedicated 120V spare receptacles along each serving and salad bar line.
- D. Provide an electrical disconnect and a mechanical/electrical interlock on the service entrance disconnect for a portable generator to support the full building load. Generator will be provided by others when needed for emergency use.
- E. Provide 15% spare electrical load capacity throughout the building electrical system. This shall include capacity for switchboards, feeders, panelboards, transformers, branch circuits, etc.
- F. Provide transient voltage surge suppressors (TVSS) at service entrance panels, and panels supporting electronic equipment.
- G. In the food service areas, where mobile equipment requires electrical power, and the equipment is not next to a fixed wall where a receptacle can be provided, provide a retractable drop cord from the ceiling in lieu of a floor mounted box.

3.7.5.3 Communications Requirements

- A. Data receptacles shall be included in the Offices, Interior Queuing Module, Dry Storage, Locker, Mechanical, Electrical, and Telecommunications Rooms.
- B. Telephone receptacles shall be included in the Offices, Dry Storage, Locker, Mechanical, Electrical, and Telecommunications Rooms.
- C. Provide a building-wide, zoned paging/intercom system with announcement and music (plug-in) capabilities from the Administrative Office over multiple zones including Kitchen, Dishwashing, Serving, Carryout, Dining, etc. This paging/intercom system may be integrated with the building mass notification system.
- D. Provide a mass notification system with point of origin microphone in the Administrative Office. The mass notification system shall tie into an existing base-wide giant voice system or as coordinated with the Installation.

3.7.5.4 Cable Television Requirements

- A. The facility shall include a cable television system.
- B. Where not indicated otherwise, Contractor shall provide all power, cable and mounting hardware suitable for minimum 60-inch flat panel televisions.

3.7.5.5 Heating, Ventilating, and Air Conditioning (HVAC) Requirements

- A. The facility shall be air conditioned except for the storage and service areas which may be ventilated and heated as required by code. The Kitchen, Dishwash, Pot/Pan Washing shall be cooled to not exceed 85 degrees Fahrenheit and heated to maintain temperature no less than 68 degrees Fahrenheit. The Kitchen, Dishwash, Pot/Pan Washing, service spaces, and Restrooms shall maintain a negative pressure while the Dining and Interior Queuing areas shall have a positive pressure.
- B. Locate thermostats and other wall mounted equipment to minimize damage from mobile carts, coordinating location to not be behind equipment or furniture.
- C. Air curtain fans shall be provided over frequently used openings such as personnel entry/exit doors and receiving vestibule doors, but not over exit only doors or utility room access doors. Air curtain fans shall be full width of opening, mounted on the interior side immediately above the opening. Air curtain fans shall be NSF rated and meet the velocity requirements of TB MED 530. See floor plans and equipment schedules in Attachment A.
- D. Kitchen hood systems shall be stainless steel all welded construction and shall include lights, filters, grease troughs and fire protection systems. Hoods shall be UL and NSF approved/certified/listed. Hoods shall be certified to meet the International Mechanical Code required velocities for the service application. If face discharge hoods are utilized, they shall be provided with tempered makeup air. Makeup air shall be tempered to 85 degrees Fahrenheit for cooling and 60 degrees for heating. Indicate kitchen hood functions by designating "Type II Condensate Laden Air Hood" and "Type I Grease Laden Air Hood" in the hood schedule. Kitchen hood systems shall be designed and installed in compliance with NFPA 96. Kitchen hoods shall be UL rated in accordance with UL 710.

3.7.5.6 Energy Conservation

- A. The building, including the building envelope, HVAC systems, service water heating, power, and lighting systems shall meet the mandatory provisions and the prescriptive path requirements of ASHRAE 90.1. Substantiation requirements are defined in Section 01 33 16, Design After Award.
- B. Design the building, including the building envelope, HVAC systems, service water heating, power, and lighting systems to achieve a non-plug load energy performance that is at least 40% below the consumption of a baseline building meeting the minimum requirements of ANSI/ASHRAE/IESNA 90.1-2007. Plug/Process loads shall be included in the building energy modeling but are subtracted in the final calculation for Energy Performance (Examples of Plug or Process loads are computers, elevators, and food service equipment). See Section 01 33 16, Design After Award for more guidance.

3.8 COMPANY HEADQUARTERS

3.8.1 GENERAL NOTES & CODE REQUIREMENTS

The Company Headquarters is a single story building for both training exercises and mobilization. Because Battalions vary in size, the Company Headquarters may be built in either four or six company configurations. The Company Headquarters consists of four or six company modules and a utility core. Each module has an administrative suite and a logistics suite. The administrative suite consists of offices for the Commander, First Sergeant, Executive Officer, open office area, and conference room. The logistics suite includes an arms vault.

The Company Headquarters shall be fully protected throughout by an automatic sprinkler system in accordance with NFPA and UFC documents. Only able-bodied personnel will utilize this facility, so design for accessibility for the disabled is not required. The Company Headquarters shall be considered "primary gathering" for AT/FP requirements.

Suggested Use and Occupancy Classification:

- A. IBC: Group B Business (Offices)
- B. NFPA 101: New Business Occupancies (Offices)

3.8.2 BUILDING DESCRIPTION AND MATERIALS

The function of the Company Headquarters is temporary storage and mobilization, therefore an open and efficient pre-engineered metal type building with concrete slab on grade is acceptable. Interior columns shall not be used.

3.8.2.1 Doors

- A. All spaces shall include minimum 3'-0" wide doors.
- B. Front admin entry doors shall be full glazed aluminum.
- C. Office area doors shall be solid-core wood with metal frames.
- D. All other doors shall be metal with metal frames.

3.8.2.2 Bollards

- A. Provide 6-inch diameter by 5-foot high, concrete-filled, schedule 80 galvanized steel pipe bollards, painted safety yellow at overhead motorized coiling/roll-up or sectional doors and adjacent to the service yards where frequent vehicle movement increases the risk of damage by vehicle impact.
- B. Provide bollards 5 feet from the edge of electrical and mechanical equipment. Protect the corners of the building with bollards.

- C. Bollards shall include concrete footings designed to withstand organizational vehicular impact. Minimum required bollards are shown in plan.

3.8.3 FLOOR PLAN REQUIREMENTS

3.8.3.1 Exterior Building Requirements

- A. Provide lighting at doors, hose bibs along the exterior wall for periodical washing of the adjacent hardstand, and grounding points for power generators.

3.8.3.2 Each Company Office Module

- A. Provide private offices for the Company Commander (CO CDR), First Sergeant (1SG), and Executive Officer (XO).
- B. Provide an open office space and a conference room. Provide marker board, projection screen, and power for ceiling mounted projector in the conference room.

3.8.3.3 Each Logistics Area

- A. Provide Men's and Women's Toilets, each with one wall hung lavatory, a glass mirror, a wall mounted light fixture above mirror, one wall mounted toilet with full seat, and one floor drain per toilet room. Include toilet tissue dispenser, paper towel dispenser, soap dispenser, and waste receptacle in each toilet room.
- B. Janitor's closet shall include floor mop sink with 4'-0" high stainless steel, tile, or solid polymer backsplash, service faucet with hose and bracket, mop rack for three mops, minimum 6'-0" of linear stainless steel shelving capable of supporting minimum 30 lb. per linear feet, and floor drain.
- C. Provide NBC storage, Communications storage, and unit storage areas, defined with caging rather than constructed walls, with 3'-0" wide gates. Design floor slab in storage areas to accommodate fork lift use.
- D. Provide company storage room with 8'-0" wide x 8'-0" high overhead motorized coiling/roll-up or sectional door and a 3'-0" wide door to the exterior.
- E. Provide a weapons vault for storage of arms, ammunition and explosives designed in accordance with AR 190-11, including intrusion detection system (IDS). Vault may be a modular type weapons vault that complies with the requirements of UL 608 Class "M" vault (forced entry delay time of 15 minutes). Modular vaults will be used if expected to be expanded/relocated. Provide vault entry door complete with day gate. Provide minimum two electrical outlets and one floor drain within the vault .

3.8.3.4 Service Module

- A. Mechanical Room shall be sized and located to allow equipment removal and maintenance. Adjust room size based on the number of company modules used. Doors shall open on the front side of the building, not toward the hardstand.

- B. Electrical Room shall be sized and located to allow equipment removal and maintenance.
- C. Telecommunications Room (TR) shall have an interior door and shall be dedicated for telecommunications equipment, sized minimum 1.1% of the building footprint.

3.9 VEHICLE MAINTENANCE SHOP

3.9.1 GENERAL NOTES & CODE REQUIREMENTS

The Vehicle Maintenance Shop is designed to support unit vehicle and equipment maintenance and repair activities and temporary storage of unit supplies and equipment.

Note: This facility is for transient training, therefore has different criteria than a Tactical Equipment Maintenance Facility (TEMF).

Building shall be fully protected throughout by an automatic sprinkler system in accordance with NFPA and UFC documents. Only able-bodied personnel will use this facility, so design for accessibility for the disabled is not required. The Vehicle Maintenance Shop shall be considered “inhabited” with respect to AT/FP requirements.

Suggested Use and Occupancy Classification:

- A. IBC: Group S-1 (Moderate Hazard Storage – Repair Garage)
- B. NFPA 101: Industrial Occupancy (Special Purpose Industrial – Repair Shop)
Storage Occupancy (Warehouse)

3.9.2 BUILDING DESCRIPTION AND MATERIALS

The Vehicle Maintenance Shop consists of a single story open structure. The function of the facility is temporary storage and maintenance, therefore an open and efficient pre-engineered metal type building with concrete slab on grade is acceptable. Interior columns shall not be used.

3.9.2.1 Doors

- A. All doors and frames shall be heavy duty steel, minimum 3'-0" door width.

3.9.2.2 Bollards

- A. Provide 12-inch diameter by 5-foot high, concrete-filled, schedule 80 galvanized steel pipe bollards, painted safety yellow at overhead motorized coiling/roll-up or sectional doors and interior wall corners where frequent vehicle access/egress occurs.
- B. Provide bollards 5 feet from the edge of electrical and mechanical equipment where frequent vehicle movement increases the risk of damage by vehicle impact.
- C. Bollards shall include concrete footings designed to withstand organizational vehicular impact. Minimum required bollards are shown in plan in Attachment A.

3.9.3 FLOOR PLAN REQUIREMENTS

3.9.3.1 Work Bench Area

- A. Provide an area open to the service bays to accommodate approximately 120 linear feet of work benches for use by vehicle maintenance personnel and also for weapons and equipment cleaning. Ceiling height shall be a minimum of 10 feet high with adequate task lighting mounted below a metal liner ceiling.
- B. Provide workbenches similar to that shown, heavy duty steel, in work bench area as part of the FF&E Package which is not in this contract.
- C. Provide power outlets at least every 6 feet along the perimeter walls.
- D. Provide a minimum of 4 compressed air outlets, spaced along the back wall.
- E. A ventilation hood or other mechanical adjustment shall be provided to prevent the dispersion of solvent vapors throughout the facility. The exhaust rate of the system shall be designed to ensure that the occupants are not exposed to concentrations of cleaning solutions that exceed established threshold limits.
- F. Provide minimum 6 data points along the perimeter walls.

3.9.3.2 Vehicle Maintenance Area

- A. Provide two 32'x64' drive through service bays with floors sloping to trench drains minimum 1/8-inch per foot. Design floor slab to accommodate the installations heaviest organizational vehicle(s) as indicated in Section 01 10 00, Para 6.
- B. Provide a 24' wide x 20' high overhead motorized coiling/roll-up or sectional door at each end of both bays.
- C. Provide an Overhead Crane capable of supporting 10-tons with a minimum overall hook height of 20 feet to service both bays. Crane shall be designed and constructed to CMAA 70 (Class C) or CMAA 74 (moderate requirements) for operation with hoist in accordance with ASME HST-1 or HST-4.

Rated load speeds shall consist of (plus or minus 15 percent):

- Hoist - 20 fpm
 - Trolley - 65 fpm
 - Bridge - 125 fpm
- D. Provide an office with windows into the service bays. Office shall have data and phone connection.
 - E. A vehicle exhaust evacuation system for wheeled vehicles shall be provided in the vehicle maintenance shop with a minimum of one "snorkel" per work bay allowing for capture of

exhaust fumes from stationary vehicles. Size and locate the exhaust lines as required to service vehicles and equipment within each of the two work bays. Lines shall not interfere with maintenance operations or obstruct equipment such as the traveling bridge crane. The exhaust hose system shall be retractable when not in use. 50% duty cycle of the total available capacity of vehicle exhaust shall be considered. The using service is responsible for providing transition connectors between the vehicle exhaust and the vehicle exhaust system installed in the building. All system components must be compatible with the vehicle exhaust temperatures. Design exhaust outlets for 1400 cfm and 700 degrees F. Ventilation in the work bays shall be as a minimum per ASHRAE 62.1. Furnish the system complete, as the product of a single manufacturer. Additional makeup air may be needed to compensate for the exhaust requirements.

- F. Provide data and phone connection to each service bay.
- G. Provide trench drains with oil/water separator at interior of overhead motorized coiling/roll-up or sectional service bay doors for removal of oil, lubricants, floatables, and grit from contaminated water sources. Oil/water separators shall be designed in accordance with local codes and standard industry practice for the specific waste stream to be treated. Minimize maintenance requirements and locate oil/water separators to minimize pipe runs, provide vehicular access, and built out of circulation areas.
- H. Provide eyewash points. Installed emergency eyewash, hand held drench hose and shower station at each circulation bay that is adjacent to a core area and provide additional emergency eye wash, hand held drench hose and shower stations in other bays as required per OSHA standard 1910.151(c) and ANSI Z358.1. Locate emergency wash stations in accordance with OSHA standard 1910.151(c) and ANSI Z358.1. Per OSHA 1910.151(c) emergency eyewash/shower units should be located such that a worker can reach one in 10 seconds. ANSI Z358.1 gives a guideline of 55 feet to meet this requirement.
- I. Provide hose bibs between overhead motorized coiling/roll-up or sectional service bay doors.
- J. Provide a compressed air distribution system, including the air compressor to serve the two vehicle maintenance bays with a minimum of two compressed air outlets in each bay. Also include an outlet in two places in the maintenance pit. Each outlet shall provide 4 cfm and a hose reel shall be provided at each compressed air outlet. Compressed air shall be provided at a maximum 120 psi and a minimum of 90 psi at the outlets. Assume that 66% of all air outlets are in use at the same time.
- K. Provide one 48-foot long x 3'-6" wide concrete maintenance pit in the central vehicle corridor portion maintenance area within the core with stair access. Due to inside clearance for some vehicles, the maximum 3'-6" width is critical for the pit and curbing. Pit shall have non-sparking, non-slip removable floor grating approximately 4'-4" below finish floor elevation, with concrete pit floor below sloping to sump. Provide sump pump. Provide exhaust system for pit area, ducted with explosion proof fans. When not in use, pit shall be provided with removable cover capable of supporting pedestrian traffic. Provide minimum 4-inch high steel angle curb surrounding pit opening. Pit cover panels' weight and size shall be removable by a maximum of two persons.

L. Provide minimum two each, 208V, 1 phase and 3 phase power receptacles in each service bay area to accommodate a hydraulic lift and a tire changing machine.

M. Provide ground buses for each service bay area.

3.9.3.3 Men's and Women's Latrines

A. Provide a minimum of two wall hung lavatories in the women's latrine and two wall lavatories in the men's latrine.

B. Include a glass mirror at each lavatory and wall mounted vanity light fixture above each mirror.

C. Provide minimum two wall mounted toilets with full seat in the women's latrine and a minimum of two in the men's latrine. Provide minimum two wall hung urinals in the Men's Latrine.

D. Provide minimum one floor drain in each latrine.

3.9.3.4 Janitor's Closet

A. Provide floor mop sink with 4'-0" high stainless steel, tile, or solid polymer backsplash, service faucet with hose and bracket, mop rack for three mops, minimum 6'-0" of linear stainless steel shelving capable of supporting minimum 30 lb. per linear feet, and floor drain.

3.9.3.5 Tool Room

A. Open tool and parts storage area with 6'-0" door opening into the service bays and 3'-0" doors to the exterior to access each Standard Automotive Tool Set (SATS).

B. Accommodate storage for minimal volumes of weapons cleaning supplies and petroleum/oil/lubricants (POL). Hazardous materials and battery storage, if needed, will be accommodated by other Installation facilities or unit mil-vans outside the building.

C. Provide data and phone connection in the tool room.

3.9.3.6 Battalion Warehouse

A. Provide a minimum clear height of 14'-0".

B. Provide a minimum 30'-0" long x 4'-0" high loading dock. Depending on existing site conditions and Installation preference, loading dock may be either raised (Battalion Warehouse finish floor 4'-0" above finish grade) or recessed. (Battalion Warehouse finish floor equal to finish grade.)

C. Provide stairs from the loading dock to finished grade.

D. Provide a roof for the loading dock.

- E. Provide a minimum 16'-0" wide x 12'-0" high and 10' wide x 12' high overhead motorized coiling/roll-up or sectional doors at loading dock.
- F. Provide electrical, data, and phone connection for one workspace within the warehouse.
- G. Storage racks shall be provided by others (provided by training units or Installation) and are not in the contract.
- H. Design floor slab to accommodate storage racks and fork lift use. Provide a power point to charge forklift batteries.

3.9.3.7 Mechanical Room

- A. Size and locate room to allow equipment removal and maintenance with doors opening to exterior.

3.9.3.8 Electrical Room

- A. Size and locate room to allow equipment removal and maintenance.

3.9.3.9 Telecommunications Room (TR)

- A. Room shall be dedicated for telecommunications equipment on interior of the building, sized minimum 1.1% of the building footprint.

3.9.3.10 Standard Automotive Tool Set (SATS)

- A. The SATS is a unit-owned (i.e. GF/GI) containerized tool system with the dimensions of 8' x 20' x 8' high.
- B. An exterior hardstand area adjacent to the Tool Room shall be provided for two SATS containers. Connectivity for the SATS to the building and installation network is required. SATS are accessed from the end.
- C. Provide wall mounted awning with minimum 14-foot clear height and 3'-0" overhang above tool room doors for weather protected entry into SATS containers.
- D. The technical manual for SATS is TM 9-4910-783-13&P.

3.9.4 UTILITY DESIGN REQUIREMENTS

3.9.4.1 HVAC

- A. Provide heating and ventilation for all spaces, including in the warehouse area. Provide air conditioning only in the office, restrooms, and telecommunications room. See Section 01 10 00, paragraph 6 for additional climate determined cooling requirements.
- B. Provide general exhaust in maintenance bays. Exhaust fans shall be non-sparking. Exhaust duct openings shall be located to effectively remove vapor accumulations at floor

level from all parts of the floor area including the pit. Exhaust systems shall be in accordance with NFPA 30 and 30A. Energy recovery from exhaust air shall be used in climate zones 3 through 8.

- C. Ventilation Supply system for the maintenance bays shall be designed to provide 100% of outdoor air with no recirculation and sized for minimum of 1.5 cfm per square foot per ASHRAE 62.1. The ventilation air shall be tempered to 55 degrees (F). CO and NOx sensors shall be provided throughout the maintenance bays. If the sensors register concentrations above acceptable levels, sensors shall initiate an alarm both locally and at the Building Automation System. The general exhaust system's fan shall be equipped with a VFD to adjust the exhaust airflow rate based on the operation of the vehicle exhaust systems. The maintenance bays shall be maintained at negative pressure with respect to the air conditioned areas.
- D. The warehouse, tool storage, air compressor, mechanical, and electrical rooms shall have a ventilation rate that maintains the spaces at a maximum of 10 degrees (F) above ambient conditions.
- E. Air supplied into the air conditioned areas shall be cascaded into adjacent areas for pressurization and to prevent polluted air from entering the air conditioned areas.

3.9.4.2 HVAC System Selection

- A. Maintenance bays and the work bench area shall be heated to 55 degrees F. by some form of radiant heating; over head gas infrared, in-floor hydronic, or some combination thereof. The warehouse and tool storage shall be heated to 40 degrees F for freeze protection.
- B. Office and restrooms shall be heated and cooled in accordance with Paragraph 5 of Section 01 10 00. Consider packaged equipment, split systems.
- C. Return air plenum systems are not acceptable.
- D. Telecommunications Room shall 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. Room shall be maintained at 72 degrees F and 50 percent relative humidity year-round. Assume 1941 Watts for communications room. Contractor shall verify this load during the design stage.

3.9.4.3 Electrical Systems

- A. Vehicle Maintenance Shop shall be designed as Class I, Division 2 hazardous locations in accordance with the requirements of NEC Article 511.

3.10 BRIGADE HEADQUARTERS

3.10.1 GENERAL NOTES & CODE REQUIREMENTS

The Brigade Headquarters Facility shall be provided after or in conjunction with the construction of the fourth Battalion Complex. The facility supports the Command and Control functions for the Brigade.

Fully protect building throughout by an automatic sprinkler system in accordance with NFPA and UFC documents. Accessibility for the disabled shall be provided per ABA. The facility shall be considered "primary gathering" with respect to AT/FP requirements.

Suggested Use and Occupancy Classifications:

- A. IBC: Group B (Business - Offices)
- B. NFPA 101: New Business Occupancy (Offices)

3.10.2 BUILDING DESCRIPTION AND MATERIALS

The Brigade Headquarters consists of a single story structure. The function and flexibility of the facility requires open areas and spaces without intermediate columns. All spaces shall include minimum 3'-0" doors. Entrances shall include vestibules with full glazed doors.

3.10.2.1 Doors

- A. All spaces shall include minimum 3'-0" wide doors.
- B. Entrances shall include vestibules with full glazed aluminum storefront doors. All other exterior doors shall be metal with metal frames.
- C. Interior rooms shall be solid-core wood with metal frames.

3.10.3 FLOOR PLAN REQUIREMENTS

3.10.3.1 Administration Area

- A. Provide private offices for the Commander, Executive Officer (XO), Sergeant Major (SGM), S1, S2, S3, S1/S4, S4, S6, and Brigade Surgeon.
- B. Provide an emergency operations center (EOC) to seat minimum 16 PN. Include wall mounted video teleconferencing capability. Provide 4'H x 8'W marker board, projection screen, and power for ceiling mounted projector.
- C. Provide a conference room to seat minimum 12 PN. Provide 4'H x 8'W marker board, projection screen, and power for ceiling mounted projector.
- D. Provide a storage room to serve the conference and EOC rooms.
- E. Provide open office space for 48 workstations at 6'x6' each. Include adequate circulation, file storage, and printer/fax/copier space.

3.10.3.2 Break Area

- A. Provide 7'-0" long solid polymer countertop with 19"x19" stainless steel sink and 6" high coved back and side splash. Include base and wall cabinets.

3.10.3.3 Soldier Services

- A. Provide private offices for the Chaplain and Assistant Chaplain.
- B. Provide storage area for supply storage.

3.10.3.4 Men's Latrine

- A. Provide minimum 4'-6" wide solid polymer countertop with two integrally molded 16"x12" lavatories and 6" high coved back and side splash.
- B. Provide wall mounted vanity light fixture above glass mirror for length of vanity.
- C. Provide minimum one handicap accessible floor mounted toilet with full seat.
- D. Provide minimum of one handicap accessible wall hung urinal.
- E. Provide minimum of one floor drain.
- F. Accessories shall include solid polymer toilet partitions and urinal screens, toilet tissue dispensers, soap dispensers, paper towel dispensers, and waste receptacles.

3.10.3.5 Women's Latrine

- A. Provide minimum 4'-6" wide solid polymer countertop with two integrally molded 16"x12" lavatories and 6" high coved back and side splash.
- B. Provide wall mounted vanity light fixture above glass mirror for length of vanity.
- C. Provide minimum one handicap accessible and one standard floor mounted toilet with full seats.
- D. Provide minimum of one floor drain.
- E. Accessories shall include solid polymer toilet partitions, toilet tissue dispensers, soap dispensers, paper towel dispensers, and waste receptacles.

3.10.3.6 Janitor

- A. Provide floor mop sink with 4'-0" high stainless steel, tile, or solid polymer backsplash, service faucet with hose and bracket, mop rack for three mops, minimum 6'-0" of linear stainless steel shelving capable of supporting minimum 30 lb. per linear feet, and floor drain.

3.10.3.7 Vending/Recycling Area

- A. Provide space for soft drink and snack vending machine.

B. Provide appropriate utilities for the ice machine which shall be GFGI by the Installation .

C. Provide floor drain near ice machine.

D. Provide space for five recycling bins.

3.10.3.8 Corridor

A. Minimum corridor width shall be 6'-0".

B. Provide standard and accessible electric water coolers.

3.10.3.9 Mechanical

A. Size and locate room to allow equipment removal and maintenance.

B. Provide doors opening to exterior only.

3.10.3.10 Electrical

A. Size and locate room to allow equipment removal and maintenance.

3.10.3.11 Telecommunications Room

A. Provide a dedicated interior room for telecommunications equipment, minimum 1.1% of the building footprint..

3.10.3.12 SIPRNET Room

A. Provide a dedicated interior room for SIPRNET equipment, sized minimum 6'-6" x 8'-6'. Room shall accommodate one SIPRNET rack and two persons at a briefing table to access the SIPRNET, therefore not requiring secure communications lines to run to individual offices.

4.0 ATTACHMENT A: ARMY STANDARD DESIGN DRAWINGS

All Drawings are in compliance with Army Standard (AS) and the USACE A/E/C CADD Standards.

BATTALION HEADQUARTERS BUILDING: TRANSIENT TRAINING

A001 BATTALION HEADQUARTERS BUILDING FLOOR PLAN
A002 BATTALION HEADQUARTERS BUILDING ELEVATIONS

2- STORY BARRACKS: TRANSIENT TRAINING

A003 BARRACKS FIRST FLOOR PLAN: (2-STORY)
A004 BARRACKS SECOND FLOOR PLAN: (2-STORY)
A004A BARRACKS OPTIONAL FURNITURE LAYOUTS: (2-STORY)
A005 BARRACKS ENLARGED FLOOR PLANS: (2-STORY)
A006 BARRACKS ELEVATIONS: (2-STORY)

4- STORY BARRACKS: TRANSIENT TRAINING

A007 BARRACKS FIRST FLOOR PLAN: (4-STORY)
A008 BARRACKS SECOND FLOOR PLAN: (4-STORY)
A009 BARRACKS THIRD FLOOR PLAN: (4-STORY)
A010 BARRACKS FOURTH FLOOR PLAN: (4-STORY)
A010A BARRACKS OPTIONAL FURNITURE LAYOUTS: (4-STORY)
A011 BARRACKS ENLARGED FLOOR PLANS: (4-STORY)
A012 BARRACKS ELEVATIONS: (4-STORY)

OFFICERS QUARTERS: TRANSIENT TRAINING

A013 OFFICERS QUARTERS FLOOR PLANS
A014 OFFICERS QUARTERS ENLARGED FLOOR PLANS
A015 OFFICERS QUARTERS ELEVATIONS

DINING FACILITY: TRANSIENT TRAINING

A016 DINING FACILITY FLOOR PLAN: (SMALL)
A016A DINING FACILITY ELEVATION: (SMALL)
A017 DINING FACILITY FLOOR PLAN: (LARGE)
A017A DINING FACILITY ELEVATION: (LARGE)
A018 DINING FACILITY EQUIPMENT SCHEDULE

COMPANY HEADQUARTERS BUILDING: TRANSIENT TRAINING

A019 COMPANY HEADQUARTERS BUILDING FLOOR PLAN
A020 COMPANY HEADQUARTERS BUILDING ENLARGED PLANS
A021 COMPANY HEADQUARTERS BUILDING ELEVATIONS

VEHICLE MAINTENANCE SHOP: TRANSIENT TRAINING

A022 VEHICLE MAINTENANCE SHOP FLOOR PLAN
A023 VEHICLE MAINTENANCE SHOP ELEVATIONS

BRIGADE HEADQUARTERS BUILDING: TRANSIENT TRAINING

A024 BRIGADE HEADQUARTERS BUILDING FLOOR PLAN
A025 BRIGADE HEADQUARTERS BUILDING ELEVATIONS



DEPARTMENT OF THE ARMY

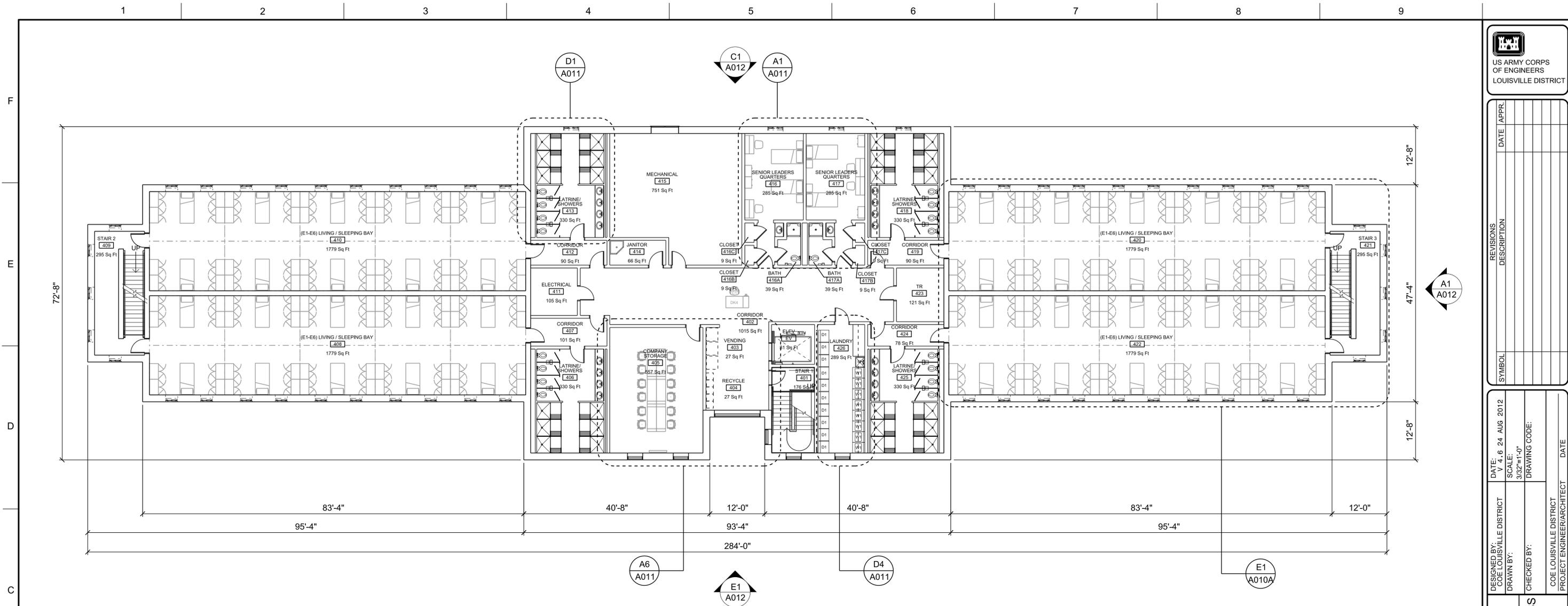


FACILITIES STANDARDIZATION PROGRAM

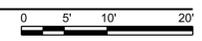
OPERATIONAL READINESS TRAINING COMPLEX

(ORTC) STANDARD DESIGN

INDEX OF DRAWINGS			ADAPTATION OF THE STANDARD DESIGN:	
GENERAL:	4-STORY BARRACKS: TRANSIENT TRAINING	COMPANY HEADQUARTERS BUILDING: TRANSIENT TRAINING	<p>THE GENERAL ARRANGEMENT OF SPACES AND THE RELATIONSHIP OF FUNCTIONAL GROUPS TO ONE ANOTHER ARE MANDATORY. MINOR VARIATIONS IN THE BASIC DESIGN FORMS FOR THE BUILDINGS SHOWN IN THIS STANDARD ARE PERMISSIBLE AS DETERMINED BY THE CENTER OF STANDARDIZATION (COS), TO ACCOMMODATE MODULAR/PRE-FABRICATED CONSTRUCTION PROCESSES AND MATERIALS.</p> <p>MODULAR/PRE-FABRICATED CONSTRUCTION PROCESSES AND MATERIALS ARE ENCOURAGED; HOWEVER, THERE SHALL BE NO LOSS IN DURABILITY DUE TO THE USE OF THESE SYSTEMS AS DETERMINED BY THE COS AND AS COMPARED TO THE TYPICAL CONSTRUCTION SYSTEMS AND FINISHES INDICATED WITHIN THIS PACKAGE.</p> <p>MATERIAL SELECTIONS, EXTERIOR/INTERIOR DESIGN DETAILS, MECHANICAL, ELECTRICAL, AND STRUCTURAL SYSTEM DESIGN MAY VARY IN RESPONSE TO LOCAL CLIMATIC AND GEOGRAPHICAL CONDITIONS, LOCAL CONSTRUCTION PRACTICES, AVAILABILITY OF CONSTRUCTION MATERIALS, AND OTHER ECONOMIC CONSIDERATIONS.</p> <p>THE STANDARD DESIGN REQUIREMENTS AND THE INSTALLATION ARCHITECTURAL THEME MUST BE ANALYZED BY THE INSTALLATION IN CONJUNCTION WITH THE DESIGN AGENT TO ASSURE CONFORMANCE.</p> <p>BUILDING ELEVATIONS SHOWN ILLUSTRATE POSSIBLE DESIGN SOLUTIONS AND ARE NOT MANDATED. THE INTENT IS TO ALLOW DESIGNERS FLEXIBILITY CONSISTENT WITH THE INSTALLATION DESIGN GUIDE, WHILE MANDATING FUNCTIONAL REQUIREMENTS FOR THE FACILITY TYPES.</p> <p>THE BATTALION HEADQUARTERS, BRIGADE HEADQUARTERS, AND DINING FACILITY SHALL BE ACCESSIBLE TO PHYSICALLY DISABLED PERSONS, IN ACCORDANCE WITH THE ARCHITECTURAL BARRIERS ACT (ABA). ALL OTHER FACILITIES ARE INTENDED FOR USE BY ABLE BODIED MILITARY PERSONNEL ONLY AND, ARE NOT REQUIRED TO MEET HANDICAPPED ACCESSIBILITY CODE REQUIREMENTS.</p>	
G000 COVER SHEET	A007 BARRACKS FIRST FLOOR PLAN: (4-STORY)	A019 COMPANY HEADQUARTERS BUILDING FLOOR PLAN		
CIVIL:	A008 BARRACKS SECOND FLOOR PLAN: (4-STORY)	A020 COMPANY HEADQUARTERS BUILDING ENLARGED PLANS		
C001 BATTALION COMPLEX SITE PLAN	A009 BARRACKS THIRD FLOOR PLAN: (4-STORY)	A021 COMPANY HEADQUARTERS BUILDING ELEVATIONS		
C002 BRIGADE COMPLEX SITE PLAN	A010 BARRACKS FOURTH FLOOR PLAN: (4-STORY)			
	A010A BARRACKS OPTIONAL FURNITURE LAYOUTS: (4-STORY)			
	A011 BARRACKS ENLARGED FLOOR PLANS: (4-STORY)			
	A012 BARRACKS ELEVATIONS: (4-STORY)			
BATTALION HEADQUARTERS BUILDING: TRANSIENT TRAINING	OFFICERS QUARTERS: TRANSIENT TRAINING	VEHICLE MAINTENANCE SHOP: TRANSIENT TRAINING		
A001 BATTALION HEADQUARTERS BUILDING FLOOR PLAN	A013 OFFICERS QUARTERS FLOOR PLANS	A022 VEHICLE MAINTENANCE SHOP FLOOR PLAN		
A002 BATTALION HEADQUARTERS BUILDING ELEVATIONS	A014 OFFICERS QUARTERS ENLARGE FLOOR PLANS	A023 VEHICLE MAINTENANCE SHOP ELEVATIONS		
	A015 OFFICERS QUARTERS ELEVATIONS			
2-STORY BARRACKS: TRANSIENT TRAINING	DINING FACILITY: TRANSIENT TRAINING	BRIGADE HEADQUARTERS BUILDING: TRANSIENT TRAINING		
A003 BARRACKS FIRST FLOOR PLAN: (2-STORY)	A016 DINING FACILITY FLOOR PLAN: (SMALL)	A024 BRIGADE HEADQUARTERS BUILDING FLOOR PLAN		
A004 BARRACKS SECOND FLOOR PLAN: (2-STORY)	A016A DINING FACILITY ELEVATION: (SMALL)	A025 BRIGADE HEADQUARTERS BUILDING ELEVATIONS		
A004A BARRACKS OPTIONAL FURNITURE LAYOUTS: (2-STORY)	A017 DINING FACILITY FLOOR PLAN: (LARGE)			
A005 BARRACKS ENLARGED FLOOR PLANS: (2-STORY)	A017A DINING FACILITY ELEVATION: (LARGE)			
A006 BARRACKS ELEVATIONS: (2-STORY)	A018 DINING FACILITY EQUIPMENT SCHEDULE			
			DATED: V 4.6 24 AUG 2012	
			DRAWING DISCLAIMER:	
			THE CONCEPTUAL PLANS INCLUDED IN THIS PACKAGE ARE SUBJECT TO CHANGE WITHOUT NOTICE. DESIGNERS AND OTHER STAKEHOLDERS ARE HEREBY DIRECTED TO ENSURE THEY HOLD THE LATEST UPDATE. CONTACT THE LOUISVILLE DISTRICT CENTER OF STANDARDIZATION (COS) FOR ANY INFORMATION REGARDING THE STANDARDS. SEE WEBSITE HTTP://MRSI.USACE.ARMY.MIL/COS/LOUISVILLE/SITEPAGES/ORTC.ASPX .	



C1 BARRACKS FOURTH FLOOR PLAN: (4-STORY)
SCALE: 3/32" = 1'-0"



AREA CALCULATIONS	
<p>FORTH FLOOR GROSS AREA CALCS</p>	
4TH FLOOR FULL VALUE:	
⑥ INTERIOR SPACE	15,279 SF
4TH FLOOR TOTAL: 15,279 SF	
1ST FLOOR TOTAL: 15,279 SF	
2ND FLOOR TOTAL: 15,279 SF	
3RD FLOOR TOTAL: 15,279 SF	
4TH FLOOR TOTAL: 15,279 SF	
BUILDING TOTAL: 61,116 SF	

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

REVISIONS	DATE	APPR.

DESIGNED BY: COE LOUISVILLE DISTRICT	DATE: V 4.6 24 AUG 2012
DRAWN BY:	SCALE: 3/32"=1'-0"
CHECKED BY:	DRAWING CODE:
COE LOUISVILLE DISTRICT PROJECT ENGINEER/ARCHITECT	DATE

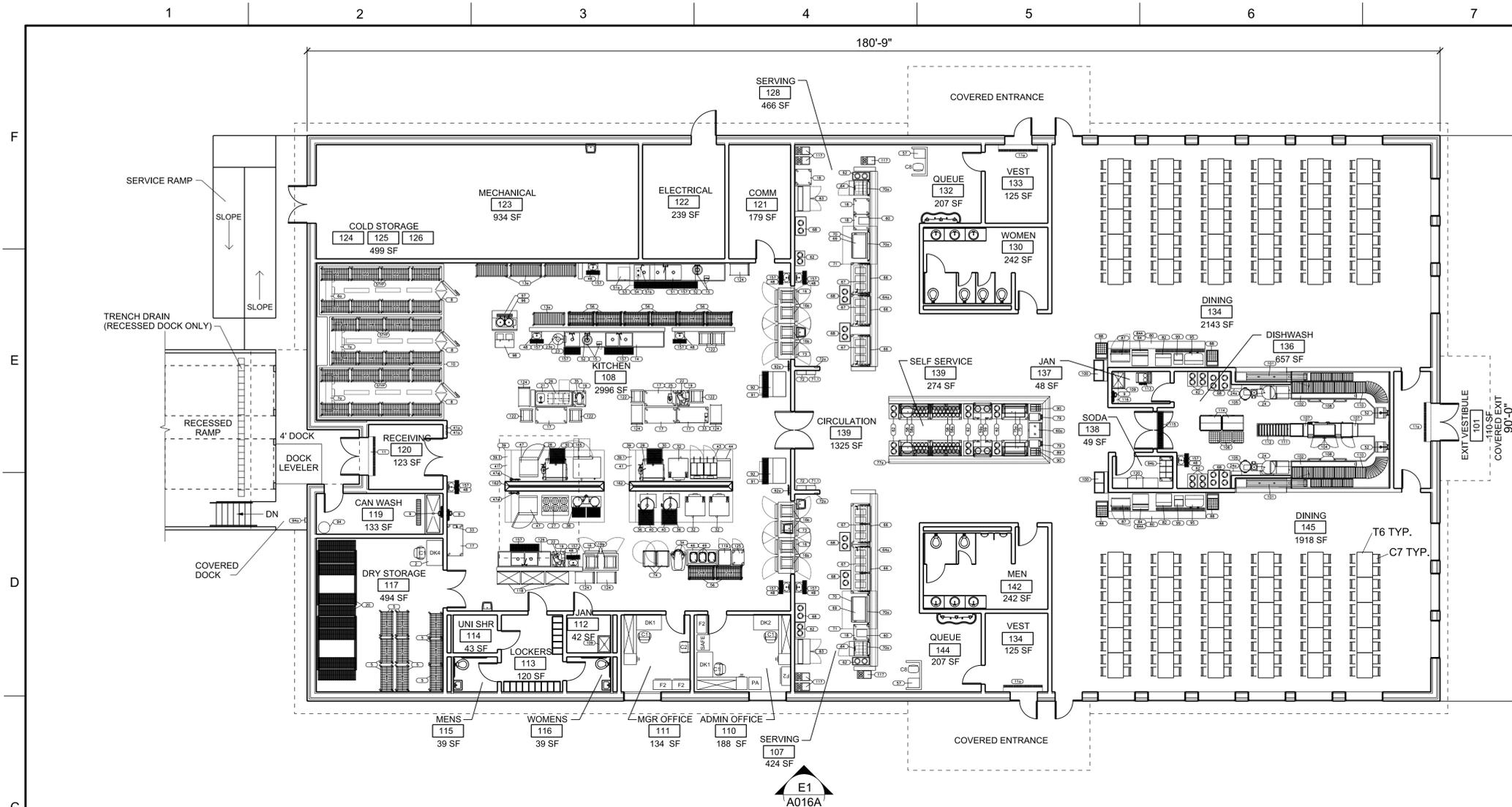
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
LOUISVILLE, KENTUCKY

**OPERATIONAL READINESS
TRAINING COMPLEX
STANDARD DESIGN**

DEPARTMENT OF THE ARMY
FACILITY STANDARDIZATION PROGRAM

**BARRACKS
FOURTH FLOOR PLAN:
(4-STORY)**

SHEET REF NUMBER:
A010
SHEET 14 OF 32



GENERAL SHEET NOTES

- SEE SHEET A018 FOR EQUIPMENT SCHEDULE.
- MINIMUM SEATING CAPACITY SHALL BE AS SHOWN
- PROVIDE A SERVICE RAMP FOR HAND TRUCK AND GARBAGE CAN ACCESS UP TO THE LOADING DOCK. THE RAMP SHALL ALSO BE HANDICAP ACCESSIBLE FOR EMPLOYEE USE. RAMP SHOWN IS FOR ILLUSTRATION ONLY AND SHALL BE DESIGNED TO SITE SPECIFIC CONDITIONS.

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

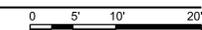
REVISIONS	DATE	APPR.

DESIGNED BY: COE LOUISVILLE DISTRICT	DATE: V 4.6 24 AUG 2012
DRAWN BY:	SCALE: 3/32"=1'-0"
CHECKED BY:	DRAWING CODE:
COE LOUISVILLE DISTRICT PROJECT ENGINEER/ARCHITECT	DATE

C1 DINING FACILITY FLOOR PLAN: (SMALL)
SCALE: 3/32" = 1'-0"

DINING FACILITY: STANDARD (720 PN) - FINISH SCHEDULE								
ROOM NO.	ROOM NAME	FLOOR	FINISH			MIN. CLNG HEIGHT	NET SF	NOTES
			BASE	WALL	CLNG			
DINING AREA								
101	EXIT VESTIBULE	PT	PT	CTW/GWB	GWB	9'-0"	110 SF	
134	DINING	PT	PT	GWB	ACT	9'-0"	2143 SF	
145	DINING	PT	PT	GWB	ACT	9'-0"	1918 SF	
132/144	QUEUE	PT	PT	CT	ACT	9'-0"	207 SF (ea)	
133/134	ENTRY VESTIBULE	PT	PT	GWB	GWB	9'-0"	125 SF (ea)	
128	SERVING	QT	QT	CT	WACT	9'-0"	466 SF	
107	SERVING	QT	QT	CT	WACT	9'-0"	424 SF	
139	SELF SERVICE	QT	QT	CT	ACT	9'-0"	274 SF	
136	DISHWASH	QT	QT	CT	WACT	10'-6"	657 SF	
138	SODA	QT	QT	CT	WACT	9'-0"	49 SF	
142	MENS	PT	PT	CT	MRG	8'-0"	242 SF	
130	WOMENS	PT	PT	CT	MRG	8'-0"	242 SF	
137	JANITOR	QT	QT	CT	MRG	8'-0"	48 SF	
140	CIRCULATION	PT	PT	CT	ACT	9'-0"	1325 SF	
KITCHEN AREA								
108	KITCHEN	QT	QT	CT	WACT	9'-0"	2996 SF	
124/125/126	COLD STORAGE	CONC	PREFAB PANELS			9'-0"	499 SF	
117	DRY STORAGE	QT	QT	GWB	GWB	9'-0"	494 SF	
110	ADMIN OFFICE	VCT	RB	GWB	ACT	9'-0"	188 SF	
111	MNGR OFFICE	VCT	RB	GWB	ACT	9'-0"	134 SF	
113	LOCKER	PT	PT	CT	ACT	9'-0"	120 SF	
114	UNISEX SHOWER	PT	PT	CT	MRG	9'-0"	43 SF	
115	MENS TOILET	PT	PT	CT	MRG	9'-0"	39 SF	
116	WOMENS TOILET	PT	PT	CT	MRG	9'-0"	39 SF	
120	RECEIVING	QT	QT	CT	MRG/EP	9'-0"	123 SF	
119	CAN WASH	QT	QT	CT/EMG	MRG/EP	8'-0"	133 SF	
112	JANITOR	QT	QT	CT/EMG	MRG/EP	8'-0"	42 SF	

DINING FACILITY: STANDARD (720 PN) - FINISH SCHEDULE								
ROOM NO.	ROOM NAME	FLOOR	FINISH			MIN. CLNG HEIGHT	NET SF	NOTES
			BASE	WALL	CLNG			
SERVICE								
123	MECHANICAL	CONC	RB	GWB	EXP	9'-0"	934 SF	
122	ELECTRICAL	CONC	RB	GWB	EXP	9'-0"	239 SF	
121	COMM	CONC	RB	GWB	GWB	9'-0"	179 SF	MIN RM=1.1% OF BLDG AREA
CONC - SMOOTH, SEALED CONCRETE								
RB - RUBBER BASE								
CMU - PAINTED CMU								
GWB - PAINTED GYPSUM WALL BOARD								
EP - EPOXY PAINT								
QT - QUARRY TILE								
CT - CERAMIC TILE								
CTW - CERAMIC TILE WAINSCOT, 4'-0" AFF								
EMG - EPOXY MORTAR & GROUT								
PT - PORCELAIN OR STONE TILE								
ACT - 2'-0" X 2'-0" ACOUSTICAL TILE CEILING								
EXP - EXPOSED, PAINTED STRUCTURE & DECK								
MRG - MOISTURE RESISTANT GYPSUM BOARD, PAINTED								
WACT - 2'-0" X 2'-0" ACT W/ WASHABLE & SCRUBBABLE SURFACE MEETING USDA/FSIS GUIDELINES FOR FOOD PROCESSING USE.								
NOTES:								
1. MINIMUM ROOM FINISHES SHOWN.								
2. PROPOSED NET SF SHOWN IS AS REFLECTED IN THE STANDARD FLOOR PLAN. FLOOR AREAS MAY CHANGE TO ALLOW FOR ADJUSTMENTS DUE TO STRUCTURAL, UTILITIES, & CODE REQUIREMENTS, WITHOUT AFFECTING FUNCTION.								
3. SEE APPLICABLE APPENDIX, "PRELIMINARY FF&E INFORMATION" FOR FURNITURE AND EQUIPMENT SYMBOLS & TAGS SHOWN ON THE FLOOR PLAN.								



AREA CALCULATIONS

FLOOR PLAN GROSS AREA CALCS

1	BUILDING AREA AT FULL VALUE:	16,195 SF
EXTERIOR COVERED AREA AT HALF VALUE:		
2	EXIT COVERED AREA	(159 x 1/2) = 81 SF
3	LOADING DOCK	(391 x 1/2) = 165 SF
4	COVERED QUEUEING	[(418 x 2) x 1/2] = 320 SF
EXTERIOR COVERED SUBTOTAL:		694 SF
BUILDING TOTAL GROSS AREA:		16,761 SF

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
LOUISVILLE, KENTUCKY

OPERATIONAL READINESS
TRAINING COMPLEX
STANDARD DESIGN

DEPARTMENT OF THE ARMY
FACILITY STANDARDIZATION PROGRAM

DINING FACILITY
FLOOR PLAN
STANDARD (SMALL)

SHEET REF NUMBER:
A016
SHEET 21 OF 32

ELEVATION DESIGN NOTES:



US ARMY CORPS OF ENGINEERS LOUISVILLE DISTRICT

- 1. THE EXTERIOR ELEVATIONS ILLUSTRATE MASSING, NOT MANDATING A PARTICULAR ARCHITECTURAL THEME OR ANY SPECIFIC MATERIALS. THE SELECTION OF MATERIALS FOR THE EXTERIOR ENVELOPE SHALL BE GUIDED BY LOCAL CLIMATIC AND GEOGRAPHIC CONDITIONS, LOCAL CONSTRUCTION MATERIALS, AND OTHER ECONOMIC CONSIDERATIONS. THE EXTERIOR ENVELOPE MUST BE ANALYZED & FURTHER DEVELOPED BY THE DOR TO CONFORM WITH THE INSTALLATION ARCHITECTURAL THEME AS DESCRIBED IN THE INSTALLATION DESIGN GUIDE AND OTHER DESIGN REQUIREMENTS.
- 2. THE INTENT IS TO ALLOW DESIGNERS THE FLEXIBILITY IN AESTHETIC DESIGN WHILE MANDATING FUNCTIONAL REQUIREMENTS FOR THE BUILDING PLAN. THERMAL PROTECTION ALONG WITH DURABLE INTERIOR AND EXTERIOR WALL SURFACES WITH APPROPRIATE AESTHETIC QUALITIES SHALL BE GIVEN PRIORITY TO CREATE SUSTAINABLE AND FUNCTIONAL ARCHITECTURE.
- 3. BUILDING HEIGHTS SHOWN ON THE ELEVATIONS ARE FOR ILLUSTRATION ONLY. BUILDING HEIGHTS SHALL BE DETERMINED BY THE DESIGNER, MAINTAINING MINIMUM CEILING AND CLEAR HEIGHTS INDICATED IN THE FINISH SCHEDULES IN THE DRAWINGS, AND TO PROVIDE ADEQUATE SPACE FOR UTILITIES AND STRUCTURE ABOVE FINISH CEILINGS AND ABOVE REQUIRED CLEAR HEIGHTS WHERE STRUCTURE IS EXPOSED.
- 4. SEE APPENDIX F IN THE RFP FOR INSTALLATION'S ARCHITECTURAL INCLUDING EXTERIOR COLORS AND MATERIALS.
- 5. WINDOWS SHOWN ARE THE MINIMUM REQUIRED. DOR SHALL DETERMINE LARGEST POSSIBLE WINDOW CONSIDERING CLIMATE, DAY LIGHTING, AND AESTHETICS.

REVISIONS	DATE	APPR.
SYMBOL		

DESIGNED BY: COE LOUISVILLE DISTRICT	DATE: V 4.6 24 AUG 2012
DRAWN BY:	SCALE: 3/32"=1'-0"
CHECKED BY:	DRAWING CODE:
COE LOUISVILLE DISTRICT PROJECT ENGINEER/ARCHITECT	DATE

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
LOUISVILLE, KENTUCKY

OPERATIONAL READINESS
TRAINING COMPLEX
STANDARD DESIGN

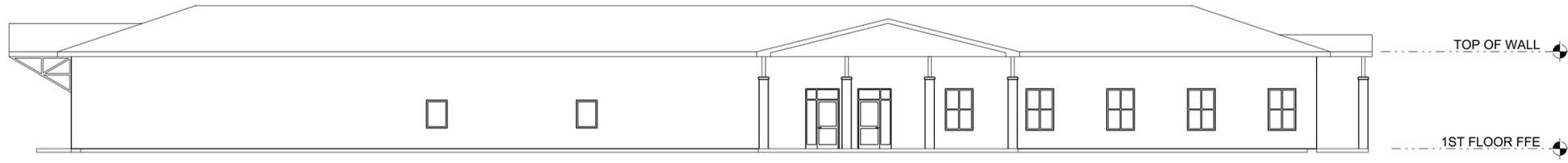
DEPARTMENT OF THE ARMY
FACILITY STANDARDIZATION PROGRAM

DINING FACILITY
ELEVATIONS
STANDARD (SMALL)

SHEET REF NUMBER:
A016A
SHEET 22 OF 32

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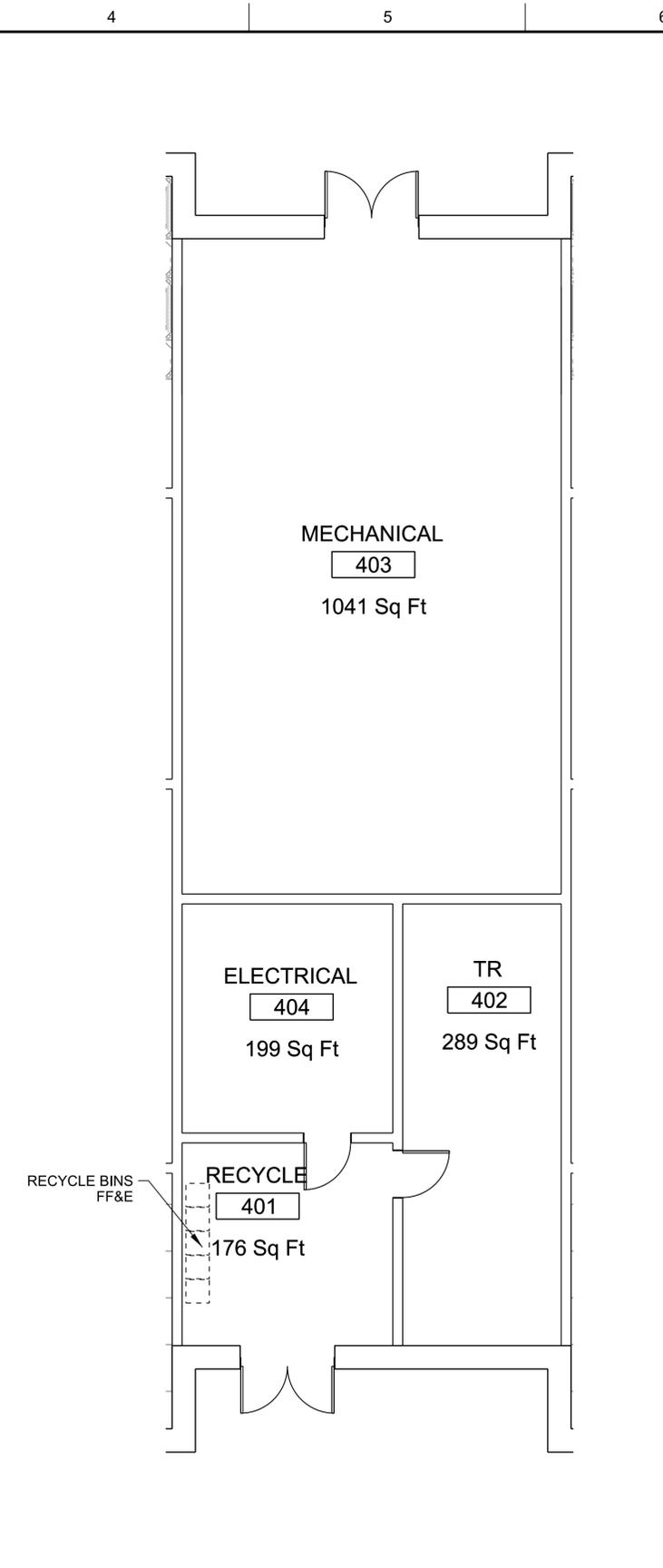
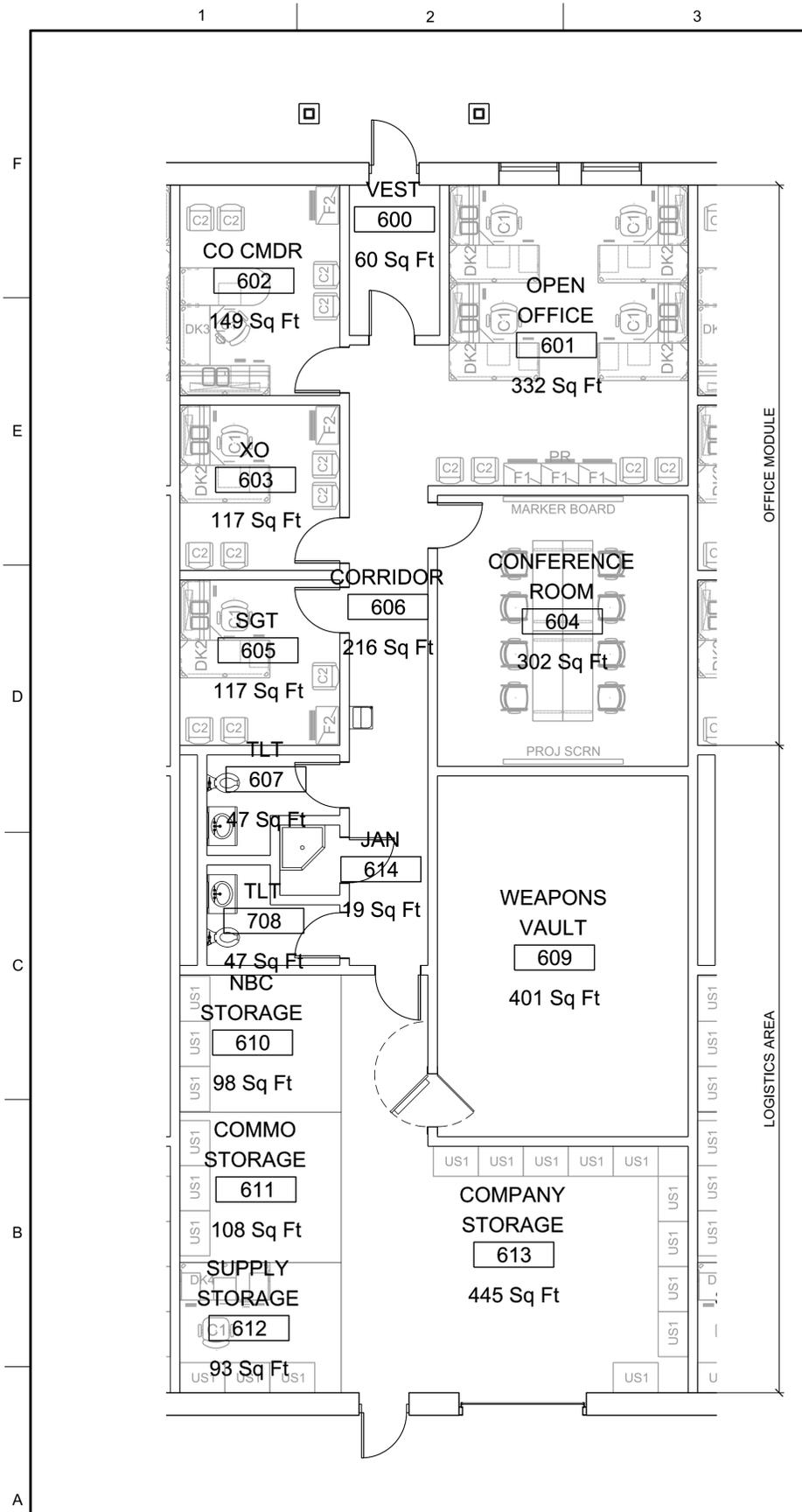
F
E
D
C
B
A



E1 DINING FACILITY ELEVATION: (SMALL)
SCALE: 3/32" = 1'-0"



C1 DINING FACILITY ELEVATION: STANDARD (SMALL)
SCALE: 3/32" = 1'-0"



COMPANY HEADQUARTERS - FINISH SCHEDULE								
ROOM NAME	FINISH				MIN. CLNG HEIGHT	MIN. STC	NET SF	NOTES
	FLOOR	BASE	WALL	CLNG				
COMMAND SUITE								
COMPANY COMMANDER (CO CDR)	CONC	RB	GWB	ACT	9'-0"	45	149 SF	
FIRST SERGEANT (1SG)	CONC	RB	GWB	ACT	9'-0"	45	117 SF	
EXECUTIVE OFFICER (XO)	CONC	RB	GWB	ACT	9'-0"	45	117 SF	
OPEN OFFICE	CONC	RB	GWB	ACT	9'-0"	45	332 SF	
CONFERENCE ROOM	CONC	RB	GWB	ACT	9'-0"	45	302 SF	
MEN	CONC	RB	MRG	MRG	8'-0"	45	47 SF	
WOMEN	CONC	RB	MRG	MRG	8'-0"	45	47 SF	
JANITOR CLOSET (JAN)	CONC	RB	MRG	MRG	8'-0"	~	19 SF	
CORRIDOR	CONC	RB	GWB	ACT	9'-0"	~	216 SF	
VESTIBULE	CONC	RB	GWB	ACT	9'-0"	~	60 SF	
SOLDIER SERVICES								
COMPANY STORAGE	CONC	~	CMU	EXP	10'-0"	-	445 SF	
ARMS VAULT	CONC	~	**	**	9'-0"	-	401 SF	DESIGN PER AR 190-11, **
NBC STORAGE	CONC	~	CMU	EXP	10'-0"	~	98 SF	
COMMO STORAGE	CONC	~	CMU	EXP	10'-0"	~	108 SF	
SUPPLY STORAGE	CONC	~	CMU	EXP	10'-0"	~	93 SF	
SERVICE								
MECHANICAL	CONC	~	CMU	EXP	9'-0"	~	1041 SF	
ELECTRICAL	CONC	~	CMU	EXP	9'-0"	~	199 SF	
TELECOMM ROOM (TR)	CONC	~	CMU	GWB	9'-0"	~	289 SF	MIN RM SIZE=1.1% OF BLDG GROSS AREA
RECYCLE	CONC	~	CMU	MRG	9'-0"	~	176 SF	
FINISH LEGEND								
CONC - SEALED CONCRETE								
RB - RUBBER BASE								
CMU - PAINTED CMU								
GWB - PAINTED GYPSUM WALL BOARD								
ACT - 2'-0"X2'-0" ACOUSTICAL TILE CEILING								
EXP - EXPOSED, PAINTED STRUCTURE AND DECK								
MRG - MOISTURE RESISTANT GYPSUM BOARD, PAINTED								
NOTES								
1. ROOM FINISHES SHOWN ARE MINIMUM REQUIRED.								
2. PROPOSED NET SF SHOWN IS AS REFLECTED IN THE STANDARD FLOOR PLAN. FLOOR AREAS MAY CHANGE TO ALLOW FOR ADJUSTMENTS DUE TO STRUCTURAL, UTILITIES, & CODE REQUIREMENTS, WITHOUT AFFECTING FUNCTION.								
3. WHERE WIRE MESH PARTITIONS ARE REQUIRED, PROVIDE SECURE ENCLOSURE BY EITHER ATTACHING TO BUILDING STRUCTURE OR ADJACENT WALLS/CEILING.								
4. SEE APPLICABLE APPENDIX, "PRELIMINARY FF&E INFORMATION" FOR FURNITURE AND EQUIPMENT SYMBOLS & TAGS SHOWN ON THE FLOOR PLAN.								

US ARMY CORPS OF ENGINEERS LOUISVILLE DISTRICT

DESIGNED BY: COE LOUISVILLE DISTRICT
DRAWN BY: []
CHECKED BY: []
DATE: V 4.6 24 AUG 2012
SCALE: 3/32"=1'-0"
DRAWING CODE: []

U.S. ARMY ENGINEER DISTRICT LOUISVILLE, KENTUCKY
OPERATIONAL READINESS TRAINING COMPLEX STANDARD DESIGN

DEPARTMENT OF THE ARMY FACILITY STANDARDIZATION PROGRAM
COMPANY HEADQUARTERS BLDG ENLARGED PLANS

SHEET REF NUMBER: A020
SHEET 27 OF 32

A1 COMPANY HEADQUARTERS - OFFICE MODULE
3/16" = 1'-0"
0 4 8 12

A4 COMPANY HEADQUARTERS - SERVICE MODULE
3/16" = 1'-0"
0 4 8 12

1 2 3 4 5 6 7 8 9

ELEVATION DESIGN NOTES:

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US ARMY CORPS
OF ENGINEERS
LOUISVILLE DISTRICT

REVISIONS	DATE	APPR.
SYMBOL		
DESCRIPTION		

DESIGNED BY: COE LOUISVILLE DISTRICT	DATE: V 4.6 24 AUG 2012
DRAWN BY:	SCALE: 3/32"=1'-0"
CHECKED BY:	DRAWING CODE:
COE LOUISVILLE DISTRICT PROJECT ENGINEER/ARCHITECT	DATE

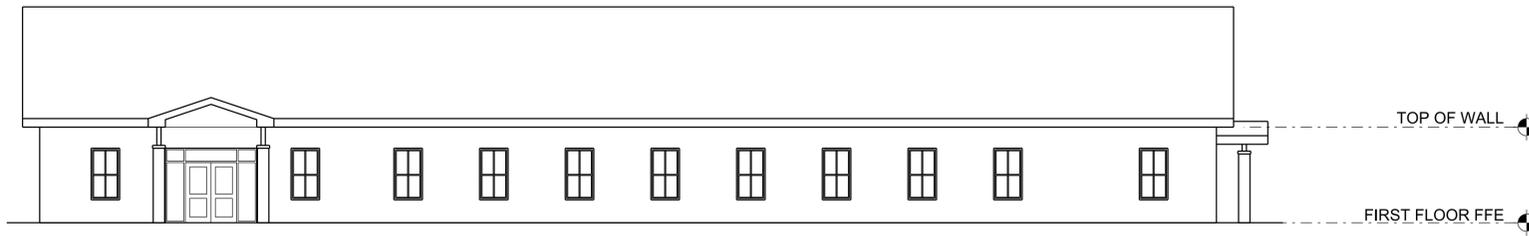
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
LOUISVILLE, KENTUCKY

**OPERATIONAL READINESS
TRAINING COMPLEX
STANDARD DESIGN**

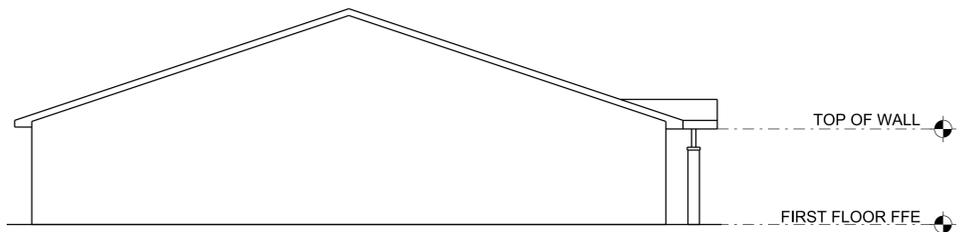
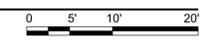
DEPARTMENT OF THE ARMY
FACILITY STANDARDIZATION PROGRAM

**BRIGADE
HEADQUARTERS
ELEVATIONS**

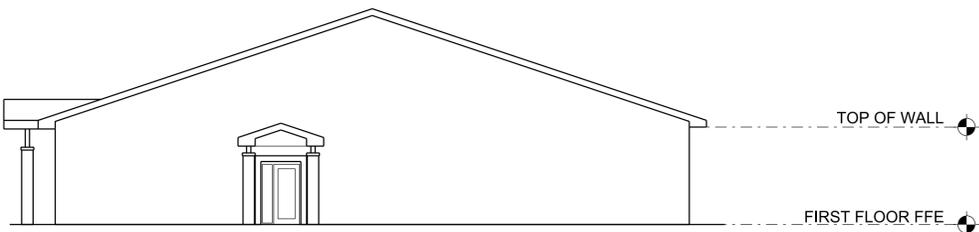
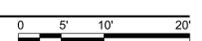
SHEET REF NUMBER:
A025
SHEET 32 OF 32



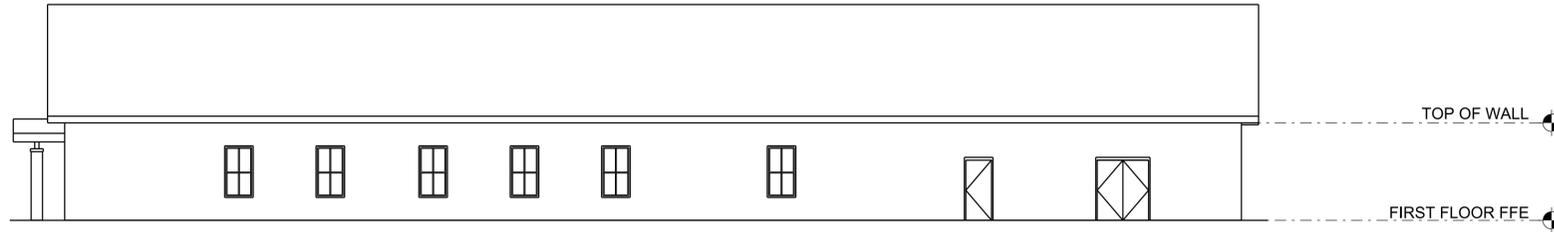
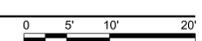
E1 BRIGADE HEADQUARTERS BUILDING ELEVATION
3/32"=1'-0"



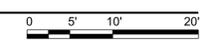
C1 BRIGADE HEADQUARTERS BUILDING ELEVATION
3/32"=1'-0"



C5 BRIGADE HEADQUARTERS BUILDING ELEVATION
3/32"=1'-0"



A1 BRIGADE HEADQUARTERS BUILDING ELEVATION
3/32"=1'-0"



\$\$\$FILENAME
\$\$\$DATE