US Army Corps
of Engineers ®
Fort Worth District

DEPARTMENT OF THE ARMY
FACILITIES
STANDARDIZATION
PROGRAM

UNACCOMPANIED HOUSING PERMANENT PARTY (UH PP)

STANDARD DESIGN

February 2025

SECTION 01 10 00

STATEMENT OF WORK

PART 1 GENERAL

1.1 PROJECT OBJECTIVES

1.1.1 Permanent Party Unaccompanied Housing (PP UH) Facilities

This project type is to house single soldiers and is intended to be similar both functionally and technically to similar housing in the private sector community surrounding the Installation.

Number of single personnel to be housed is «UEPH_SINGLE_PERSONNEL_HOUSED»

Maximum gross area «UEPH_MAX_GROSS_AREA» square feet.

1.1.2 Project Objective

The project objective is to design and construct facilities for the military that are consistent with the design and construction practices used for civilian sector projects that perform similar functions to the military projects. For example, a Company Operations Facility has the similar function as an office/warehouse in the civilian sector; therefore, the design and construction practices for a company operations facility should be consistent with the design and construction of an office/warehouse building.

Comparison of Military Facilities to Civilian Facilities

Military Facility	**Civilian Facility**
Permanent Party Unaccompanied Housing (PP UH)	Apartment or University Dormitory

1.1.3. Army Objective

It is the Army's objective that these buildings will have a 50-year useful life. The design and construction should provide an appropriate level of quality to ensure the continued use of the facility over that time period with the application of reasonable preventive maintenance and repairs that would be industry-acceptable to a major civilian sector project owner. The facility design should consider that the Army may repurpose the use of the facility over the 50-year life. The Army's intent is to install products and materials of good quality that meet industry standard average life that corresponds with the period of performance expected before a major renovation or repurpose. The design should be flexible and adaptable to possible future uses different than the current to the extent practical while still meeting the operational and functional requirements defined within. Flexibility is achieved through design of more flexible structural load-bearing wall and column system arrangements. The site infrastructure will have at least a 50-year life expectancy with industry-accepted

maintenance and repair cycles. Develop the project site for efficiency and to convey a sense of unity or connectivity with the adjacent buildings and with the Installation as a whole.

1.1.4 Requirements

Requirements stated in this contract are minimums. Innovative, creative, and life cycle cost effective solutions, which meet or exceed these requirements are encouraged. Further, the Offeror is encouraged to seek solutions that will expedite construction (panelization, pre-engineered, etc.) and shorten the schedule. The intent of the Government is to emphasize the placement of funds into functional/operational requirements. Materials and methods should reflect this by choosing the most economical Type of Construction allowed by code for this occupancy/project allowing the funding to be reflected in the quality of interior/exterior finishes and systems selected.

1.2 INDUSTRY CRITERIA

Applicable design and construction criteria references are listed in Table 1 below. This list is not intended to include all criteria that may apply or to restrict design and construction to only those references listed. References cited herein are not necessarily incorporated in their entirety. Refer to specific design requirements established throughout this document.

Although a specific document version or date may be indicated, use criteria from the most recent version, including any applicable addenda, unless otherwise stated in the contract, as of the date of solicitation. In the event of conflict between References and/or Applicable Military Criteria, apply the most stringent requirement, unless otherwise specifically noted in the contract.

Table 1: Industry Criteria

Air Conditioning, Heating, and Refrigeration Institute (AHRI)	
ANSI/AHRI/CSA 310/380	Standard for Packaged Terminal Air-Conditioners and Heat Pumps (CSA-C744-04)
ANSI/AHRI 430	Central Station Air Handling Units
ANSI/AHRI 440	Performance Rating of Room Fan-Coils
ANSI/AHRI 880	Performance Rating of Air Terminals, with Addendum 1
Air Movement and Control Association (AMCA)	
ANSI/AMCA 210	Laboratory Methods of Testing Fans for Certified Aerodynamic Performance Rating
ANSI/ASHRAE 51-07	
American Architectural Manufacturers Association (AAMA)	
AAMA 101/I.S.2/A440	North American Fenestration Standard/Specification for Windows, Doors, and Skylights
AAMA 507-15	Standards Practice for Determining The Thermal Performance Characteristics of Fenestration Systems in Commercial Buildings

AAMA 510-14	Voluntary Guide Specification for Blast Hazard Mitigation for Vertical Fenestration Systems
AAMA 520-12	Voluntary Specification for Rating the Severe Wind-Driven Rain Resistance of Windows, Doors, and Skylights
AAMA 605.1-75	Specification for High Performance Organic Coatings on Architectural Extrusions and Panels
	Voluntary Guide Specification, Performance Requirements, and Test Procedures for Combined Coatings of Anodic Oxide and Transparent Organic Coatings on Architectural Aluminum
AAMA 612-17a	
AAMA 611-14	Voluntary Specification for Anodized Architectural Aluminum
AAMA 711-13	Voluntary Specification for Self-Adhering Flashing Used for Installation of Exterior Wall Fenestration Products
AAMA 712-14	Voluntary Specification for Mechanically Attached Flexible Flashing
AAMA 713-08	Voluntary Test Method to Determine Chemical Compatibility of
	Sealants and Self-Adhered Flexible Flashing
AAMA 800-16	Voluntary Specifications and Test Methods for Sealants
AAMA 1503-09	Voluntary Test Methods for Thermal Transmittance and Condensation Resistance of Windows, Doors, and Glazed Wall Sections
AAMA 1504-97	Voluntary Standard for thermal Performance of Windows, Doors, and Glazed Wall Sections
American Association of State Highway and Transportation Officials (AASHTO)	
GDHS-6	A Policy of Geometric Design of Highways and Streets, 6th Edition
GDPS-4-M	Guide for Design of Pavement Structures, 4th Edition with 1998 Supplement
	Standard Specifications for Transportation Materials and Methods of Sampling and Testing, 33rd Edition and AASHTO Provisional Standards, 2013 Edition
HM-33	
LTS-6	Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 6th Edition
RSDG-4	Roadside Design Guide, 4th Edition
American Bearing Manufacturers Association (ABMA)	
AFBMA 9:1990	Load Ratings and Fatigue Life for Ball Bearings
AFBMA 11:1990	Load Ratings and Fatigue Life for Roller Bearings
American Boiler Manufacturers Association (ABMA)	

	Comparison of Fatigue Assessment Techniques for Heat Recovery Steam Generators
	Determining and Testing Boiler Efficiency for Commercial/Institutional Packages Boilers
	Specification Design Life Requirements and Implications Relative to Boilers
	Steam Source Book
American Concrete Institute	
ACI 117	Specification for Tolerances for Concrete Construction and Materials
ACI 216.1	Code Requirements for Determining Fire Resistance of Concrete and Masonry Construction Assemblies
ACI 301	Specifications for Structural Concrete
ACI 302.2R	Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials
ACI 308.1	Specification for Curing Concrete
ACI 311.7	Specification for Inspection of Concrete Construction
ACI 318 (Including all ACI Criteria references within)	Building Code Requirements for Structural Concrete and Commentary
ACI 530/530.1	Building Code Requirements and Specifications for Masonry Structures and Related Commentaries
ACI SP-66	ACI Detailing Manual
American Institute of Steel Construction (AISC)	
	Steel Construction Manual
	Seismic Design Manual
	AISC Design Guides
American Iron and Steel Institute (AISI)	
AISI S100	North American Specification for the Design of Cold-Formed Steel Structural Members
American National Standards Institute (ANSI)	
ANSI/IEEE C2	National Electrical Safety Code
ANSI Z21.10.1 / CSA 4.1	Gas Water Heaters - Volume 1, Storage Water Heaters with Input Ratings of 75,000 Btu per Hour or Less
ANSI Z21.101 / CSA 8.5	Gas Hose Connectors for Portable and Moveable Gas Appliances
ANSI Z124.3	Plastic Lavatories
ANSI Z124.6	Plastic Sinks
American Society of Civil Engineers (ASCE)	

ASCE/EWRI 45	Standard Guidelines for the Design of Urban Stormwater Systems
ASCE/EWRI 46	Standard Guidelines for the Installation of Urban Stormwater Systems
ASCE/SEI 7	Minimum Design Loads for Buildings and Other Structures
ASCE/SEI 31	Seismic Evaluation of Existing Buildings
ASCE/SEI 41	Seismic Rehabilitation of Existing Buildings
American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)	
ASHRAE Standard 15	Safety Standard for Refrigeration Systems
ASHRAE Standard 55	Thermal Environmental Conditions for Human Occupancy
ASHRAE Standard 62.1	Ventilation for Acceptable Indoor Air Quality
ASHRAE Standard 90.1 (IP)	ANSI/ASHRAE/IES 90.1, Energy Standard for Buildings Except Low- Rise Residential Buildings, IP Edition
ASHRAE 135	BACnet — A Data Communication Protocol for Building Automation and Control Networks
ASHRAE 202	Commissioning Process for Buildings and Systems
American Society of Mechanical Engineers International (ASME)	
ASME A17.1/CSA B44-2013	Safety Code for Elevators and Escalators
ASME B31 (Series)	Piping Code Series, Various Dates (Current Versions)
ASME BPVC, Section VII	Boiler and Pressure Vessel Code: Section VII, "Care of Power Boilers"
American Water Works Association (AWWA)	
	AWWA Standards: Full Set of Standards (2012 Version)
American Welding Society	
WHB	Welding Handbook, Ninth Edition Vol.1-4; Eighth Edition Vol. 3
	Welding Codes and Specifications (As Applicable)
American Wood Council (AWC)	
ANSI/AWC NDS	National Design Specification (NDS) for Wood Construction with Commentary
SDPWS	Special Design Provisions for Wind and Seismic
WFCM	Wood Frame Construction Manual
Architectural Woodwork Institute (AWI)	
AWS	Architectural Woodwork Standards, Current Edition

AWI	Architectural Woodwork Institute (AWI) 100 Standards - Submittals
AWI	Architectural Woodwork Institute (AWI) 200 Standards - Care & Storage
AWI	Architectural Woodwork Institute (AWI) 300 Standards - Materials
AWI	Architectural Woodwork Institute (AWI) 400 Standards - Finish Carpentry/Installation
Associated Air Balance Council (AABC)	
	AABC National Standards for Total System Balance 2016
	AABC Test and Balance Procedures
ASTM International	
ASTM C1060-11a	Standard Practice for Thermographic Inspection of Insulation Installations in Envelope Cavities of Frame Buildings
ASTM E779-10	Standard Test Method for Determining Air Leakage Rate by Fan Pressurization
ASTM E1827-11	Standard Test Methods for Determining Airtightness of Buildings Using an Orifice Blower Door
BACnet International (BTL)	
BTL Guide	BACnet Testing Laboratory Implementation Guidelines
Builders Hardware Manufacturers Association (BHMA)	
ANSI/BHMA A156 Series	ANSI/BHMA A156 Series Standards, Various Dates (Current Versions)
Building Industry Consulting Service International	
	Telecommunications Distribution Methods Manual, 12th Edition
	Outside Plant Design Reference Manual, 5th Edition
Code of Federal Regulations (CFR)	
49 CFR 192	Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards
10 CFR 430	Energy Conservation Program for Consumer Products
10 CFR 433	Energy Efficiency Standards for Design and Construction of New
	Federal Commercial and Multi-Family High-Rise Residential Buildings
40 CFR 247	Comprehensive Procurement Guidelines for Products Containing Recovered Materials
Consumer Electronics Association (CEA)	
CEA 709.1-D (ANSI)	Control Network Protocol Specification

CEA 709.3 (ANSI)	Free-Topology Twisted-Pair Channel Specification
CEA 852-C (ANSI)	Tunneling Device Area Network Protocols Over Internet Protocol Channels
Federal Highway Administration (FHWA)	
FHWA-NHI-10-009	Urban Drainage Design Manual, HEC-22, Third Edition
MUTCD	Manual on Uniform Traffic Control Devices for Streets and Highways, with Revisions
Illuminating Engineering Society (IES)	
ANSI/IES RP-1-12	American National Standard Practice for Office Lighting
ANSI/IES RP-8-18	Recommended Practice for Design And Maintenance Of Roadway And Parking Facility Lighting
IES DG-18-08	Light + Design: A Guide to Designing Quality Lighting for People and Buildings
Institute of Electrical and Electronics Engineers (IEEE)	
IEEE/ASTM SI_10	American National Standard for use of the international system of units (SI): The Modern Metric System.
IEEE Standard 1100	IEEE Emerald Book: IEEE Recommended Practice for Powering and Grounding Electronic Equipment
IEEE 802.3	Ethernet
International Code Council (ICC)	
IgCC	International Green Construction Code
International Code Council (IBC)	
IBC	International Building Code (IBC)
International Organization for Standardization (ISO)	
ISO 6781	Thermal Insulation — Qualitative Detection of Thermal Irregularities in Building Envelopes — Infrared Method
Internet Engineering Task Force (IETF)	
IETF RFC 4361	Node-specific Client Identifiers for Dynamic Host Configuration Protocol Version Four (DHCPv4)
IETF RFC 7465	Prohibiting RC4 Cipher Suites
LonMark International (LonMark)	
LonMark Interoperability Guide	LonMark Application-Layer Interoperability Guide and LonMark Layer 1-6 Interoperability Guide

LonMark SCPT List	LonMark SCPT Master List
LonMark SNVT List	LonMark SNVT Master List
LonMark XIF Guide	LonMark External Interface File Reference Guide
Metal Building Manufacturers Association (MBMA)	
Metal Building Systems Manual	
Midwest Insulation Contractors Association (MICA)	
National Commercial and Industrial Insulation Standards Manual	
National Association of Corrosion Engineers (NACE) International	
SP0169	Control of External Corrosion on Underground or Submerged Metallic Piping Systems
SP0185	Extruded Polyolefin Resin Coating Systems with Soft Adhesives for Underground or Submerged Pipe
SP0285	Corrosion Control of Underground Storage Tank Systems by Cathodic Protection
SP0286	Electrical Isolation of Cathodically Protected Pipelines
National Environmental Balancing Bureau (NEBB)	
	New Testing, Adjusting, and Balancing Procedural Standard
National Fire Protection Association (NFPA)	
NFPA 1	Standard for Fire Code
NFPA 10	Standard for Portable Fire Extinguishers
NFPA 13	Standard for the Installation of Sprinkler Systems
NFPA 13R	Standard for the Installation of Sprinkler Systems in Low-Rise Residential Developments
NFPA 14	Standard for the Installation of Standpipe and Hose Systems
NFPA 20	Standard for the Installation of Stationary Pumps for Fire Protection
NFPA 24	Standard for the Installation of Private Fire Service Mains and Their Appurtenances
NFPA 25	Standard for the Inspection, Testing and Maintenance of Water- Based Fire Protection Systems
NFPA 30	Flammable and Combustible Liquids Code
NFPA 30A	Code for Motor Fuel Dispensing Facilities and Repair Garages
NFPA 31	Standard for the Installation of Oil-Burning Equipment
NFPA 54	National Fuel Gas Code
NFPA 58	Liquefied Petroleum Gas Code

NFPA 70	National Electrical Code
NFPA 70E	Standard for Electrical Safety in the Workplace
NFPA 72	National Fire Alarm and Signaling Code
NFPA 76	Standard for the Fire Protection of Telecommunications Facilities
NFPA 80	Standard for Fire Doors and Other Opening Protectives
NFPA 90a	Standard for the Installation of Air-Conditioning and Ventilating Systems
NFPA 96	Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations
NFPA 101	Life Safety Code
NFPA 780	Standard for the Installation of Lightning Protection Systems
National Roofing Contractors Association (NRCA)	
	The NRCA Roofing Manual — Set
National Sanitation Foundation (NSF)	
ANSI/UL Standard 73 ANSI/UL	Food Equipment Standards (Various)
Standard 197 ANSI/UL	
Standard 471 ANSI/UL	
Standard 621 ANSI/UL	
Standard 763	
CSA Standard C22.2 NO. 109	Food Equipment Standards (Various)
CSA Standard C22.2 NO. 120	
CSA Standard C22.2 NO. 195	
Occupational Safety and Health Administration (OSHA)	
29 CFR 1926	Safety and Health Regulations for Construction
Plumbing and Drainage Institute (PDI)	
PDI G101	Testing and Rating Procedure for Grease Interceptors
PDI WH201	Water Hammer Arrestors Standard
Precast Concrete Institute	
	PCI Design Handbook
Sheet Metal and Air Conditioning Contractors' National Association (SMACNA)	
SMACNA	HVAC Duct Construction Standards - Metal and Flexible
SMACNA	Architectural Sheet Metal Manual

SMACNA	HVAC Systems - Testing, Adjusting and Balancing
SMACNA	HVAC Systems Commissioning Manual
SMACNA	Indoor Air Quality (IAQ) Guidelines for Occupied Buildings Under Construction
SMACNA	Fire, Smoke and Radiation Damper Installation Guide
SMACNA	HVAC Sound and Vibration Manual
State & Local Regulations	
	State Specific Environmental Control Requirements
	State Specific Department of Transportation Standard Specifications for Highway and Bridge Construction
	State Specific Sedimentation and Erosion Control Design Requirements
	State Specific Storm Water Management Requirements
Steel Door Institute (SDI)	
ANSI/SDI A250.8	SDI-100 - Specifications for Standard Steel Doors and Frames
SDI - 108	Recommended Selection and Usage Guide for Standard Steel Doors
SDI - 110	Standard Steel Doors and Frames for Modular Masonry Construction
SDI - 111	Recommended Details for Standard Steel Doors, Frames, Accessories and Related Components
SDI - 113	Standard Practice for Determining the Steady-State Thermal Transmittance of Steel Door and Frame Assemblies
SDI - 118	Basic Fire Door, Fire Door Frame, Transom/Sidelight Frame, and Window Frame Requirements
SDI - 124	Maintenance of Standard Steel Doors and Frames
Steel Deck Institute (SDI)	
DDM	Steel Deck Institute Diaphragm Design Manual
Steel Joist Institute (SJI)	
	Standard Specifications and Load and Weight Tables for Steel Joists and Joist Girders
Steel Joist Institute (SJI)	
TIA-485	Electrical Characteristics of Generators and Receivers for Use in Balanced Digital Multipoint Systems
TIA-568 Set	Commercial Building Telecommunications Cabling Standard Set, Edition C

TIA-569	Telecommunications Pathways and Spaces, Edition C
TIA-606	Administration Standard for the Telecommunications Infrastructure, Edition B
TIA-607	Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises, Edition B with Addendum
TRIDIUM, INC (TRIDIUM)	
Niagara Framework	NiagaraAX User's Guide
Tridium Open NiCS	Understanding the NiagaraAX Compatibility Statement (NiCS)
Underwriters Laboratories (UL)	
UL 96A	Standard for Installation Requirements for Lightning Protection Systems
UL 300	Standard for Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment
UL 916	Standard for Energy Management Equipment
U.S. ACCESS BOARD	
ADA/ABAAG	Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines, Current Versions as Currently Amended Excluded are: (a) Facilities, or portions of facilities, on a military installation that are designed and constructed for use exclusively by able-bodied military personnel. (Additional information below).
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES	
	FDA Food Code
U.S. FEDERAL COMMUNICATIONS COMMISSION (FCC)	
FCC Part 15	Radio Frequency Devices (47 CFR 15)
U.S. GREEN BUILDING COUNCIL (USGBC) / GREEN BUSINESS CERTIFICATION INC. (GBCI)	
LEED	Leadership in Energy and Environmental Design (LEED) Reference Guide for Green Building Design and Construction
GBCI	Guiding Principles for Sustainable Federal Buildings

1.3 MILITARY CRITERIA

The project must conform to the following criteria. Certain design impacts and features due to these criteria are noted for the benefit of the offeror; however, all requirements of the referenced criteria will be applicable, whether noted or not, unless otherwise specified herein.

Although a specific document version or date may be indicated, use criteria from the most recent version, including any applicable addenda, unless otherwise stated in the contract, as of the date of solicitation. In the event of conflict between References and/or Applicable Military Criteria, apply the most stringent requirement, unless otherwise specifically noted in the contract.

Table 2: Military Criteria

Laws, Policies, Regulations, and Other Criteria	
EISA07 110-140	Energy Independence and Security Act of 2007
Executive Orders	All Current Executive Orders applicable to the project as published on https://www.federalregister.gov/
EPACT05	Energy Policy Act of 2005 / Public Law 109-58
ASA (IE&E)	Army Sustainable Design and Development Policy
TR No. ELIE- ISE-FH 21-10	Telecommunications Outside Plant Planning and Design Criteria
TB MED 530 Tri-Service Food Code	
DENIX	DOD Strategic Sustainability Performance Plan
Federal Acquisition Regulation (FAR)	
FAR Part 23	DOD SPC Environment, Energy and Water Efficiency, Renewable Energy Technologies, Occupational Safety, and Drug-Free Workplace
Unified Facilities Criteria (UFC)	
UFC 1-200-01	DoD Building Code (General Building Requirements) (a) References to applicable international construction codes, such as: International Building Code (IBC), International Mechanical Code (IMC), International Residential Code (IRC), International Plumbing Code (IPC), and International Energy Conservation Code, (IECC) are located within this UFC. (b) Always utilize the latest edition of this document, regardless of references in this RFP or in other publications.
UFC 1-200-02	High Performance and Sustainable Building Requirements
UFC 1-300-01	Criteria Format Standard
UFC 1-300-02	Unified Facilities Guide Specifications Format Standard
UFC 3-101-01	Architecture
UFC 3-110-03	Roofing
UFC 3-120-01	Design: Sign Standards
UFC 3-120-10	Interior Design
UFC 3-190-06	Protective Coatings and Paints
UFC 3-201-01	Civil Engineering
UFC 3-201-02	Landscape Architecture

UFC 3-210-10	Low Impact Development
UFC 3-220-01	Geotechnical Engineering
UFC 3-250-01	Pavement Design for Roads and Parking Areas
UFC 3-301-01	Structural Engineering
UFC 3-310-04	Seismic Design of Buildings
UFC 3-400-02	Design: Engineering Weather Data
UFC 3-401-01	Mechanical Engineering
UFC 3-410-01	HVAC Systems
UFC 3-410-02	Direct Digital Control for HVAC and Other Control Systems
UFC 3-410-04	Industrial Ventilation
UFC 3-420-01	Plumbing Systems
UFC 3-430-09	Exterior Mechanical Utility Distribution
UFC 3-440-01	Facility Scale Renewable Energy Systems
UFC 3-450-01	Noise and Vibration Control
UFC 3-490-06	Elevators
UFC 3-501-01	Electrical Engineering
UFC 3-520-01	Interior Electrical Systems
UFC 3-530-01	Interior and Exterior Lighting
UFC 3-540-01	Engine-Driven Generator Systems for Backup Power Applications
UFC 3-570-01	Cathodic Protection
UFC 3-575-01	Lightning and Static Electricity Protection Systems
UFC 3-580-01	Telecommunications Interior Infrastructure Planning and Design (a) Use for interior telecom requirements.
UFC 3-600-01	Fire Protection Engineering for Facilities (a) Use the latest edition of the IBC, Chapters 3, 6, 7, and 33, in coordination with this UFC. In the event of conflict, the requirements of this UFC take precedence. (b) Use this UFC in lieu of the latest edition of the IBC, Chapters 4, 8, 9, and 10.
UFC 4-010-01	DoD Minimum Antiterrorism Standards for Buildings
UFC 4-010-06	Cybersecurity of Facility – Related Control Systems
UFC 4-021-01	Design and O&M: Mass Notification Systems
UFC 4-022-03	Security Fences and Gates
UFC 4-023-03	Design of Buildings to Resist Progressive Collapse (a) Always utilize the latest edition of this document, regardless of references in this RFP or in other publications. (b) Note the option to use “tie-force” method or “alternate path” design for Occupancy Category II.

1.4 GENERAL TECHINICAL REQUIREMENTS

This contains technical requirements with general applicability to Army facilities. See also Part 2 for facility type-specific operational, functional, and technical requirements. Residential or similar grade finishes and materials are not acceptable for inclusion in these buildings, unless otherwise specifically allowed.

1.4.1 Site Planning and Design

1.4.1.1 Site Planning Objectives

Group buildings in configurations that create a sense of community and promote pedestrian use. See Part 2 for additional site planning requirements relating to building functions. The proposed building will be located within site extents shown in this document. Site plans and building footprint/shape shown in this Statement of Work are “concept only” for the purposes of RFP development and cost estimating. Site design to promote walkability, transportation efficiency and reduce vehicle distances traveled.

1.4.1.2 Enclosures and Visual Screens

Provide enclosures and or visual screening devices for Outdoor Utility such as dumpsters, emergency generators, fuel tanks, transformers, heating, ventilation, and air conditioning units from streetscape and courtyard views to limit visual impact. Enclosures must be compatible with the building they serve and accessible by the appropriate vehicle. The location of dumpsters can have a significant visual impact and should be addressed as part of an overall building design and incorporated in site planning.

1.4.1.3 Dumpster Pads
Where included in the project, dumpster pads must be concrete (minimum of 8-inches thick on 4-inch base course, unless site conditions dictate more conservative requirements) and directly accessible by way of a paved service drive or parking lot with adequate overhead clearance for collection vehicles. Provide space at dumpster areas for recycling receptacles. Coordinate with Installation on recycling receptacle types, sizes and access requirements and provide space at dumpster areas to accommodate them.

1.4.1.4 Vehicular Circulation

Provide vehicle clearances required to meet traffic safety for emergency vehicles, service vehicles, and moving vans. Provide required traffic control signage Site entrances and site drive aisles must maximize spacing between drives, incorporate right-angle turns, and limit points of conflict between traffic. Orient service drives to building entrances other than the primary pedestrian entry at the front of the building.

1.4.2 Site Engineering

1.4.2.1 Pavement Requirements

Except in Department of Energy (DOE) Climate Zones 6, 7, and 8, meet International Green Construction Code, Section 5.3.5.1. If the project is located in DOE Climate Zones 6, 7, or 8, design procedures and materials must conform to one of the following: 1) the USACE Pavement Transportation Computer Assisted Structural Engineering (PCASE) program, 2) American

Association of State Highway and Transportation Officials (AASHTO) or, 3) the applicable state Department of Transportation standards in which the project is located. The Government Geotechnical Report appended is for information purposes only. The recommendations and requirements provided in the Government Geotechnical Report must be met or exceeded. See Section 01 33 16.00 10 for required information for the Contractor's geotechnical evaluation report. The minimum flexible pavement section must consist of 2 inches of asphalt and 6 inches of base or as required by the pavement design, whichever is greater, unless specifically identified by the Government to be a gravel road. Design roads and parking areas for a life expectance of 25 years with normal maintenance. Parking area for tactical vehicles (as applicable to the project) must be Portland Cement Concrete (PCC) rigid pavement design. For concrete pavements, submit joint layout plan for review and concurrence. Design pavements for military tracked vehicles (as applicable to the project) IAW USACE PCASE. Traffic estimates for each roadway area will be as shown on the drawings or listed in Part 2. Pavement markings and traffic signage in all DOE Climate Zones must comply with the Installation requirements and with the Manual on Uniform Traffic Control Devices. Develop a Transportation Management Plan that meets the requirements of International Green Construction Code.

1.4.2.2 Sidewalks

Design the network of walks throughout the complex (where applicable) to facilitate pedestrian traffic among facilities and minimize the need to use vehicles. Incorporate sidewalks to enhance the appearance of the site development, while creating a sense of entry at the primary patron entrances to the buildings. Minimum sidewalk requirements are in Part 2, where applicable and/or Part 3 and/or site plans, where applicable.

1.4.3 Permits

The Contractor will obtain all permits (local, state, and federal) required for design and construction of all site features and utilities.

1.4.4 Architecture and Interior Design

1.4.4.1 General

Overall architectural goal is to provide a functional high-quality and visually appealing facility that meets expected usable life standards generating a source of pride for the installation and be delivered within the available budget and schedule.

1.4.4.2 Computation of Areas

The procedures for calculation of building area measurements for compliance with the total scope limitations of Part 1 of this document must follow UFC 3-101-01, Section 2-2, Building Area Calculations. The total gross square footage in Part 1 must not be exceeded based on these calculations. The procedures for calculating building area for any other criteria must follow the procedures as defined in those criteria (e.g. building/life safety code compliance, LEED calculations, etc.). The procedures for calculation of building area measurements for specialized facilities such as Medical Facilities, Military Family Housing, or Unaccompanied Enlisted Personnel Housing are defined in their respective Unified Facility Criteria.

1.4.4.3 Building Exterior

Design buildings to enhance or compliment the visual environment of the Installation and reflect a human scale to the facility. Building entrance should be architecturally defined and easily seen. Exterior materials, roof forms, and detailing must be compatible with the surrounding development and adjacent buildings on the Installation and follow locally established architectural themes. Use durable materials that are easy to maintain. Exterior material(s) colors must conform to the Installation requirements and if brick or stone, have color that is throughout the material. See Part 3 for project specific requirements.

1.4.4.4 Building Numbers

Permanently attach exterior signage on two faces of each building indicating the assigned building number or address.

1.4.5 BUILDING INTERIOR

1.4.5.1 Surfaces and Color

1.4.5.1.1 Surfaces

Appearance retention is the top priority for building and furniture related finishes. Provide low maintenance, easily cleaned room finishes that are commercially standard for the facility occupancy specified, unless noted otherwise. In daylit zones, meet the requirements of International Green Construction Code.

1.4.5.1.2 Color

The color, texture, and pattern selections for the finishes of the building must provide an aesthetically pleasing, comfortable, easily maintainable, and functional environment for the occupants. Coordinate the building colors and finishes for a cohesive design. Select colors appropriate for the building type. Use color, texture and pattern to path or way find through the building. Trendy colors that will become dated must be limited to non-permanent finishes. Select finishes with regards to aesthetics, maintenance, durability, life safety and image. Limit the number of similar colors for each material. Use medium range colors for ceramic and porcelain tile grout help hide soiling. Plastic laminate and solid surface materials must have patterns that are mottled, flecked, or speckled. Coordinate finish colors of fire extinguisher cabinets, receptacle bodies and plates, fire alarms / warning lights, emergency lighting, and other miscellaneous items with the building interior. Match color of equipment items on ceilings (speakers, smoke detectors, grills, etc.) to the ceiling color.

1.4.5.1.3 Signage

A comprehensive interior plan must be from one manufacturer. Include the following sign types: (1) Lobby Directory, (2) Directional Signs; (3) Room Identification Signs; (4) Building Service Signs; (5) Regulatory Signs; (6) Official and Unofficial Signs (7) Visual Communication Boards (8) NO SMOKING signage that conveys building smoking policy. Use of emblems or logos may also be incorporated into the signage plan.

1.4.5.1.4 Window Treatment

All exterior windows and interior windows are to receive window treatments. Maintain uniformity of treatment color and material to the maximum extent possible within a building. See Part 2 for additional information.

1.4.6 COMPREHENSIVE INTERIOR DESIGN

1.4.6.1 SID and FF&E

Comprehensive Interior Design includes the integration of a Structural Interior Design (SID) and a Furniture, Fixtures and Equipment (FF&E) design and package. SID requires the design, selection and coordination of interior finish materials that are integral to or attached to the building structure. Completion of a SID involves the selection and specification of applied finishes for the building's interior features including, but not limited to, walls, floors, ceilings, trims, doors, windows, window treatments, built-in furnishings and installed equipment, lighting, and signage. The SID package includes finish schedules, finish samples and any supporting interior elevations, details or plans necessary to communicate the building finish design and build out. The SID also provides 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, and accessibility. See Section 01 33 16.00 10 for SID design procedures.

1.4.6.2 FF&E Package

A Furniture, Fixtures & Equipment package is required for this project.

1.4.7 STRUCTURAL DESIGN

1.4.7.1 General

The structural system must be compatible with the intended functions and components that allows for future flexibility and reconfigurations of the interior space. Do not locate columns, for instance, in rooms requiring visibility, circulation or open space, including, but not limited to entries, hallways, common areas, classrooms, etc. Select an economical structural system based upon facility size, projected load requirements and local availability of materials and labor. Base the structural design on accurate, site-specific geotechnical information and anticipated loads for the building types and geographical location. Consider climate conditions, high humidity, industrial atmosphere, saltwater exposure, or other adverse conditions when selecting the type of cement and admixtures used in concrete, the concrete cover on reinforcing steel, the coatings on structural members, expansion joints, the level of corrosion protection, and the structural systems. Analyze, design and detail each building as a complete structural system. Design structural elements to preclude damage to finishes, partitions and other frangible, non-structural elements to prevent impaired operability of moveable components; and to prevent cladding leakage and roof ponding. Limit deflections of structural members to the allowable of the applicable material standard, e.g., ACI, AISC, Brick Industry Association, etc. When prefabricated construction is used or combined with wood construction, fully coordinate, and integrate the overall structural design between the two different or interfacing construction types. Modular Construction is prohibited. Wood construction is prohibited above 4 stories. All wall and floor structural members must be constructed of non-combustible materials. There must be no load bearing walls between the exterior wall and

the interior corridor in any Unaccompanied Housing (barracks) to allow for future reconfiguration of the room modules. All wet areas, such as bathrooms, kitchens, laundry, corridors, pipe chases, etc.., must have water resistant floor and wall assemblies. If the state that the project is located in requires separate, specific licensing for structural engineers (for instance, such as in Florida, California, and others), then the structural engineer of record (SER) must be registered in that state.

1.4.7.2 Termite Treatment and Green Cleaning

Provide termite prevention treatment in accordance with Installation and local building code requirements, using licensed chemicals and licensed applicator firm.

1.4.8 Thermal Performance

1.4.8.1 Air Barrier

The air barrier must be durable to last the anticipated service life of the assembly. Provide a motorized damper in the closed position and connected to the fire alarm system to open on call and fail in the open position for any fixed open louvers at elevator shafts. Coordinate the motorized elevator hoist way vent damper(s) with the Fire Protection System design. Ensure that the damper(s) is accessible to facilitate regular inspection and maintenance.

1.4.8.2 Thermal Bridge

A Thermal Bridge (or cold bridge) occurs when a thermally conductive material (such as a metal stud, steel frame or concrete beam, slab, or column) penetrates or bypasses the exterior insulation system. Design the building envelope to align all insulating elements, i.e., the continuous wall insulation, insulated glazing, insulated doors from top of footing to bottom of roof deck. Wrap insulation around roof overhangs. Disconnect window and door sills from interior construction. Utilize thermally broken window and door frames. Provide details to eliminate or substantially reduce thermal bridges particularly at floor slabs, roof/wall intersections, relief angles, and building corners. Loose steel lintels are not thermal bridges, and through-wall flashing is not a significant thermal bridge.

1.4.8.3 Damper and Control

Close all ventilation or make-up air intakes and exhausts, etc., when leakage can occur during inactive periods. Atrium smoke exhaust and intakes must only open when activated per IBC and other applicable Fire Code requirements.

1.4.8.4 Spaces Under Negative Pressure

Compartmentalize spaces under negative pressure such as boiler rooms and provide make-up air for combustion.

1.4.9 Plumbing and Water Consuming Equipment

1.4.9.1 Precautions for Expansive Soils

Where expansive soils are present, include design features for under-slab piping systems and underground piping serving chillers, cooling towers, etc., to control forces resulting from soil heave. Possible solutions include, but are not necessarily limited to, features such as flexible expansion joints, slip joints, horizontal offsets with ball joints, or multiple bell and spigot gasketed fittings. For structurally supported slabs, suspend piping from the structure with adequate space provided below the pipe for the anticipated soil movement.

1.4.9.2 Janitor Closets

In janitor spaces/room/closets, provide at minimum, a service sink with heavy duty shelf and wall hung mop and broom rack(s).

1.4.9.3 Floor Drains

As a minimum, provide floor drains in mechanical rooms and areas, janitor spaces/rooms/closets and any other area that requires drainage from fixtures or equipment, drain downs, condensate, as necessary.

1.4.9.4 Drinking Fountains

All drinking water fountains must include water bottle filling features and it must be filtered.

1.4.9.5 Drainage Systems

Do not use engineered vent or Sovent® type drainage systems.

1.4.9.6 Pipe Location and Insulation

Where the seasonal design temperature of the cold water entering a building is below the seasonal design dew point of the indoor ambient air insulate plumbing piping with a vapor barrier type of insulation to prevent condensation. Do not locate water or drainage piping over electrical wiring or equipment unless adequate protection against water (including condensation) damage is provided. Insulation alone is not adequate protection against condensation.

1.4.9.7 Pipe Protection During Construction

Cover all drain, waste, and vent piping to prevent mortar or other debris during such construction activities.

1.4.10 Electrical and Telecommunications Systems

1.4.10.1 Materials and Equipment

Wiring for branch circuits must be copper. Motors larger than one-half horsepower must be 3-phase. All electrical systems must be pre-wired and fully operational unless otherwise indicated. Wall mounted electrical devices (power receptacles, communication outlets and CATV outlets) must have matching colors, mounting heights and faceplates.

1.4.10.2 Power Service

Primary service from the base electrical distribution system to the pad-mounted transformer and secondary service from the transformer to the building service electrical equipment room must be underground.

1.4.10.2.1 Spare Capacity

Provide a minimum of 15% spare circuit breakers and 15% spare load capacity at all levels of the distribution.

1.4.10.3 Telecommunication Service

Connect the project's facilities to the Installation telecommunications (voice and data) system through the Outside Plant (OSP) telecommunications underground infrastructure cabling system per the USAISEC OSP Design Criteria. Connect to the OSP cabling system from each facility main cross connect located in the telecommunications room.

1.4.11 Telecommunication System

1.4.11.1 Acceptable Systems

An acceptable Building telecommunication cabling systems (BCS) encompasses, but is not limited to, copper and fiber optic (FO) entrance cable, termination equipment, copper and fiber backbone cable, copper and fiber horizontal distribution cable, workstation outlets, racks, cable management, patch panels, cable tray, cable ladder, conduits, grounding, and labeling. Items included under OSP infrastructure encompass, but are not limited to, manhole and duct infrastructure, copper cable, fiber optic cable, cross connects, terminations, cable vaults, and copper and FO entrance cable.

1.4.11.2 Testing

Design, install, label, and test all telecommunications systems in accordance with the USAISEC Outside Plant Design Criteria and ANSI/TIA/EIA 568, 569, and 606 standards. A Building Industry Consulting Services International (BICSI) Registered Communications Distribution Designer (RCDD) with at least 2 yrs. related experience must develop and stamp telecommunications design, and prepare the test plan.

1.4.11.3 Installation

The installers assigned to the installation of the telecommunications system or any of its components must be regularly and professionally engaged in the business of the application, installation and testing of the specified telecommunications systems and equipment. Key personnel: i.e., supervisors and lead installers assigned to the installation of this system or any of its components must be BICSI Registered Cabling Installers, Technician Level. Submit documentation of current BICSI certification for each of the key personnel. In lieu of BICSI certification, supervisors and installers must have a minimum of 5 years of experience in the installation of the specified copper and fiber optic cable and components. They must have factory or factory approved certification from each equipment manufacturer indicating that they are qualified to install and test the provided products.

1.4.11.4 End to End Test

Perform a comprehensive end to end test of all circuits to include all copper and fiber optic cables upon completion of the BCS and prior to acceptance of the facility. Provide adequate advanced notification to the COR to allow COR and Installation personnel attendance The BCS circuits include but are not limited to all copper and fiber optic (FO) entrance cables, termination equipment, copper and fiber backbone cable, copper and fiber horizontal distribution cable, and workstation outlets. Test in accordance with ANSI/EIA/TIA 568 standards. Use test instrumentation that meets or exceeds the standard. Submit the official test report to include test procedures, parameters tested, values, discrepancies, and corrective actions in electronic format. Test and accomplish all necessary corrective actions to ensure that the government receives a fully operational, standards based, code compliant telecommunications system.

1.4.12 Fire Protection

1.4.12.1 Inspection and Testing

Inspect and test all fire suppression equipment and systems, fire pumps, fire alarm and detection systems and mass notification systems in accordance with the applicable NFPA standards. The fire protection engineer of record must witness final tests. The fire protection engineer of record must certify that the equipment and systems are fully operational and meet the contract requirements. Two weeks prior to each final test, the contractor must notify, in writing, the installation fire department and the installation public work representative of the test and invite them to witness the test.

1.4.12.2 Fire Alarm and Detection System

Required fire alarm and detection systems must be the addressable type. Fire alarm initiating devices, such as smoke detectors, heat detectors and manual pull stations must be addressable. When the system is in alarm condition, the system must annunciate the type and location of each alarm initiating device. Sprinkler water flow alarms must be zoned by building and by floor. Supervisory alarm initiating devices, such as valve supervisory switches, fire pump running alarm, low-air pressure on dry sprinkler system, etc. must be zoned by type and by room location.

PART 2 PRODUCTS – FACILITY REQUIREMENTS – PERMANENT PARTY UNACCOMPANIED HOUSING

2.1 GENERAL REQUIREMENTS

2.1.1 Facility Description

The design must comply with the Army Standard for the facility. The Army Standard Design for PP UH is provided in the appendices. The Army requires a facility of 4/2 Module layout comprised of four-bedroom, two-bath dwelling units with kitchen and living room for approximately 90% of the facility population. The remaining approximately 10% of the facility population receives a 2/1 Module layout comprised of two-bedroom, one-bath dwelling units with kitchen and living room. Industry standards apply except where military standards are required to meet specific operational needs. Use appropriate methods and materials for occupancy to achieve economy while not sacrificing durability. The facility must not exceed five-stories unless approved by the Fire Marshall having jurisdiction.

Building circulation is required to be through the use of interior corridors/breezeways, where circulation is minimized. When there is shared access to units through a single entrance and a set of hallways, building circulation must be through the use of interior corridors. Breezeways and exterior entry landings must be designed to prevent snow and ice infiltration and accumulation. Barracks must not have windows opening to an exterior corridor or landings that are accessible to common traffic areas. Exterior egress balconies are prohibited. Building spaces and areas are as indicated in the text below. Coordinate the site design with the building described in this Section. Specific site requirements that affect the design and construction of the site appear in 01 10 00 – Part 3 – Project Specific Requirements.

2.1.2 Facility Relationships

Not Used

2.1.3 Accessibility Requirements

Able-bodied soldiers occupy and manage PP UH facilities. The Architectural Barriers Act (ABA) requirements does not apply to PP UH facilities, except as follows:

2.1.3.1 Site Plan Design and Construction

(a) Provide ABA compliant access from the parking lot to the building.

(b) For buildings populations us to 255, provide two (2) ABA compliant vehicle parking stalls for each barracks building for visitor parking. For building populations between 256 and 512, provide four (4) ABA compliant vehicle parking stalls for each barracks building for visitor parking. For building populations greater than 512, provide a total of five (5) ABA compliant vehicle parking spaces for each barracks building.

(c) Provide handicapped vehicle parking signage and pavement markings.

2.1.3.2 Facility Design and Construction

(a) The main building entrance on the ground level and at least one emergency egress, designed in accordance with ABA requirements.

(b) Provide ABA clearances and door accesses in the building main entry/vestibule being used by visitors.

(c) If a lobby is required by the RFP, provide a handicapped accessible drinking fountain and public toilet(s), which may be unisex, in the lobby area.

2.1.4 Building Areas

Calculate building areas in accordance with 011000-Part 1- GENERAL section 1.4.4.2. Computations of Areas. Overall building gross area and gross square feet per occupant must be in accordance with the Army Standard and with section 2.2.1 FUNCTIONAL SPACES below.

2.1.5 Adapt-Build Model

Not Used

2.2 FUNCTIONAL AND OPERATIONAL REQUIREMENTS

2.2.1 Functional Spaces

2.2.1.1 Primary Spaces

2.2.1.1.1 Dwelling Units

(a) Bedroom:

4/2 Module:
4/2 Module dwelling unit must have four bedrooms, each with a minimum net area of 120 square feet. Bedrooms must be equal in size and similar in configuration. Provide a minimum width of 10’-0” in the bedroom. Configure the bedroom area and the walk-in closet to maximize the amount of usable space. Bedroom must be able to accommodate one bed, chest of drawers, nightstand, desk and chair with adequate circulation for one occupant and must have a walk-in closet directly adjacent.

2/1 Module:
2/1 Module dwelling unit must have four bedrooms, each with a minimum net area of 140 square feet. Bedrooms must be equal in size and similar in configuration. Provide a minimum width of 10’-0” in the bedroom. Configure the bedroom area and the walk-in closet to maximize the amount of usable space. Bedroom must be able to accommodate one bed, chest of drawers, nightstand, desk and chair with adequate circulation for one occupant and must have a walk-in closet directly adjacent.

(b) Walk-in-Closets: Provide each walk-in closet with a net area of 30 square feet and provide with hanger rods and shelves of solid steel or wood. Provide each closet door with a robe hook and full-length mirror. Provide mortised door hasps on closed door.

(c) Kitchen: Each dwelling unit must have a full kitchen with adequate space and circulation to accommodate a full-size refrigerator 28 inches wide, the project may include an electric oven/ induction range, with a built-in vent hood, a microwave oven on the counter or shelf or a built-in electric four burner induction cooktop with a built-in vent hood and convection microwave oven on the counter or shelf. The kitchen must have a wall cabinet system with built-in countertop lighting under cabinets and countertops for food storage and preparation. Provide utility connections and casework to accommodate appliances listed in 2.15.2.1 Residential Appliances. Provide area for recyclables receptacle and kitchen waste receptacle.

(d) Bathroom: The 4/2 Module dwelling unit must have two full bathrooms. The 2/1 Module dwelling unit must have one full bathroom. The bathroom must include a tub/shower enclosure, separate vanities with storage below, and a separate water closet area. Tub/shower walls must be solid surface material. Panels must be full width and full height, with seams occurring only at the inside corners and center of bathtub. Configure the vanity area to provide a wing wall on each side of the vanity. Provide one recessed mounted medicine cabinet on each wing wall of the vanity, and one full-width mirror on the back wall. Center the lavatory and light fixture between the two recessed mounted medicine cabinets. Provide cabinetry

storage above the water closet. Tub/shower enclosure is the default, but a shower enclosure is permitted at the discretion of the Garrison Commander.

(e) Living Room: Provide a living room for each apartment module in accordance with the required floor plans in the appendices with seating for four. Provide a minimum of 140 NSF.

2.2.1.2 Common Areas

2.2.1.2.1 Lobby

Lobby must meet the ABA Accessibility Requirements Guidelines stated in 2.1.3 above.

(a) CQ Station: Locate CQ station within the Lobby. Provide an area consisting of a built-in reception ABA compliant counter for visitors with space for two task chairs.

2.2.1.2.2 Toilet(s)

Provide a single unisex public toilet, that must be located adjacent to the lobby area and must comply with the ABA accessibility requirements.

2.2.1.2.3 Entrances

Provide 10’-0” long aluminum entryway systems walk-off mats at exterior/interior building entrances. Provide ‘No Smoking’ signage within 10’-0” of building entrances.

2.2.1.2.4 Vestibule

Provide an enclosed transition space between the exterior and the lobby or building interior. Provide a minimum of 10 feet clearance between interior and exterior doors.

2.2.1.2.5 Corridors

Corridors must have a minimum width no less than 5’-0” and a maximum of 6’-0”.

2.2.1.2.6 Janitor Closet

Provide a minimum of one Janitor Closet per floor, with a minimum area of 30 square feet. Provide each Janitor closet with a mop sink, mop rack, and space for buckets, vacuum and storage for janitorial supplies. Where hazardous gases or chemicals are present, provide a minimum of 0.50 cfm per square foot to create negative pressure with respect to adjacent spaces when doors to Janitor’s closet(s) are closed. Provide and install self-closing doors and deck-to-deck partitions or hard-lid ceilings.

2.2.1.2.7 Mechanical, Electrical, and Telecommunications Rooms

Mechanical rooms must accommodate space for equipment maintenance/repair access without having to remove other equipment. Size corridor HVAC access doors for ease of service and maintenance of HVAC units. Filter changes and preventative maintenance must be performed without requiring access to the

dwelling units. First floor exterior access is required for centralized mechanical and electrical rooms.

2.2.1.2.8 Mail Access Area

<UEPH_MAIL_NOT>Not Used </UEPH_MAIL_NOT><UEPH_OUTDOOR_MAIL_KIOSK>Design and construct a mail access area as part of this project. Mail access area must include one USPS-approved combination lock mailbox per resident, and a minimum of one USPS-approved two-key parcel locker per 40 residents. Coordinate the numbering sequence with the user for the Outdoor mail kiosk.</UEPH_OUTDOOR_MAIL_KIOSK><UEPH_INDOOR_MAIL_KIOSK>Design and construct a mail access area as part of this project. Mail access area must include one USPS-approved combination lock type mailbox per resident, and a minimum of one USPS-approved two-key parcel locker per 40 residents. Coordinate the numbering sequence with the user for the indoor mail kiosk.</UEPH_INDOOR_MAIL_KIOSK><UEPH_OUTSIDE_MAIL_CONDO>Design and construct a mail access area as part of this project. Mail access area must include one USPS-approved combination lock mailbox per resident, and a minimum of one USPS-approved two-key parcel locker per 40 residents. Coordinate the numbering sequence with the user for the outside condo style personal mailboxes.</UEPH_OUTSIDE_MAIL_CONDO><UEPH_INSIDE_MAIL_CONDO>Design and construct a mail access area as part of this project. Mail access area must include one USPS-approved combination lock mailbox per resident, and a minimum of one USPS-approved two-key parcel locker per 40 residents. Coordinate the numbering sequence with the user for the inside condo style personal mailboxes.</UEPH_INSIDE_MAIL_CONDO>

2.2.1.2.9 Enhanced Vending Area

Provide a minimum of one enhanced vending kiosk area centrally located on each floor of the facility. Size each Vending Area to accommodate two full-size vending machines per 80 – 100 residents. Locate vending area on the first floor near the CQ and on other floors in a central location that is easily monitored.

2.2.1.2.10 Recyclables Storage

Provide recyclables storage areas as required by the stated sustainability requirements in Part 1.1 References.

2.2.1.2.11 Boot Scraper/Brush Station

Provide one cast iron, dry boot scraper station at the main building entrance. The station must be equipped with three boot scrapers/brushes.

2.2.1.2.12 Provide one of the following based on installation requirements:

<UEPH_MUDROOM>Mudroom: Provide an enclosed centralized location close to main building entry, with direct exterior access for soldiers to rinse mud off TA-50 field gear, boots and clothing before laundering. Provide one rinsing station per 30 persons. Provide each rinsing station with a utility sink and a hosed hot and cold running water faucet.

</UEPH_MUDROOM><UEPH_BOOTWASH>Boot wash: Provide outdoor areas for soldiers to rinse mud off field gear, boots and clothing before laundering. Provide one rinsing station per 30 persons, or a minimum of one boot wash area close to each entrance, whichever is greater. Provide each rinsing station

with a pedestal mounted, hosed cold water faucet or hydrant. Faucet or hydrant must be non-freeze type.</UEPH_BOOTWASH>

2.2.1.2.13 Centralized Laundry

Provide centralized laundry rooms to support the facility population. Laundry rooms should be located on each floor, unless approved in advanced by the Center of Standardization. Interior of laundry rooms must be visible from the corridor through glazed picture windows. Provide laundry room entry with a clear opening of 36 inches wide minimum. Size self-serve laundry facilities to accommodate a combined total of no fewer than one washer per 8 residents on each floor and one dryer per 6 residents on each floor. Fixed heavy gauge stainless steel clothes folding/hanging tables, and stainless-steel utility sinks are required features of centralized laundry facilities. Provide one fixed heavy gauge stainless steel clothes folding/hanging table per 48 residents on each floor. Locate laundry rooms on exterior wall so that dryer exhaust can be vented directly to the exterior.

2.2.1.2.14 Day Rooms

Provide a minimum of one Day Room on the first floor. Sizing of the Day Room will be based on available gross square footage stated in Part 1.1.1 after addressing all facility area requirements. The Department of Defense requires a community kitchen area in the day room. Provide at a minimum a sink, a refrigerator, an oven and cooktop (or stove), storage cabinet and countertops for food preparation.

2.2.1.2.15 Multipurpose Space

The Department of Defense requires 8 square feet of multipurpose space per resident within the facility. Multipurpose space can include day rooms, lobby areas, CQ areas, common laundry areas, corridors, and any other space that can be communally used by the facility occupants.

2.2.1.2.16 Communal Balconies

Refer to Part 3 for Communal Balcony requirements. Any communal balcony requirement in Part 3 must be included within the gross square footage requirement.

2.3 SITE FUNCTIONAL REQUIREMENTS

2.3.1 Parking

2.3.1.1 Privately Owned Vehicle (POV) Parking

Design and construct the POV parking, within the designated construction area. Base the location and design of the POV parking area(s) on the Installation's site constraints. Provide POV parking spaces IAW UFC 3-201-01, Table A-2. ACCESS DRIVES AND LANES.

2.3.1.2 Access Drives

Provide access drives to each building with a minimum width of 10 feet. Design and construct drives with curb and gutter when necessary for drainage purposes.

2.3.1.3 Emergency Vehicle/Fire Access Lanes

Provide fire access lanes. Drives designed to support emergency vehicle traffic must be a minimum of 20 feet wide in accordance with NFPA requirements. Design the fire access lanes in accordance with NFPA 1, UFC-3-600-01, and the installation's requirements.

2.4 SITE AND LANDSCAPE REQUIREMENTS

2.4.1 Site Structures

2.4.1.1 Dumpster/Recycle Area

Locate, design, and construct the dumpster/recycle enclosure area(s) and screening. Dumpster/recycle screening must be aesthetically and architecturally compatible with the building it serves and must be designed in accordance with the Installation's guidelines. Position the Government Furnished Government Installed (GFGI) dumpsters outside of restricted areas to allow for servicing activities.

2.4.2 Landscaping/Hardscaping

2.4.2.1 Non-Vehicular Walks

Construct non-vehicular pedestrian sidewalks of Portland cement concrete having a minimum nominal thickness of 4 inches. Design joint patterns uniformly, symmetrical, and in accordance with the American Association of State Highway and Transportation Officials (AASHTO) standards. For joints, do not exceed the length to width ratio of 1.25 for non-reinforced pavements. Construct walks paralleling buildings beyond the eave drip line and at least 5 feet from the foundation.

(a) Pedestrian Sidewalks: Provide pedestrian walks within the designated construction area and connect to existing sidewalks, where applicable. Sidewalks must be a minimum of 6 feet wide. Provide pedestrian walks within the designated construction area and connect to existing sidewalks, where applicable. Sidewalks must be a minimum of 6 feet wide.

2.4.2.2 Roadway Pavement

Sidewalks designed to support emergency and service vehicle traffic must be considered roadway pavements and must be designed to meet the AASHTO standards. Construct vehicular supported walks of Portland cement concrete having a minimum nominal thickness of 7 inches. Design joints uniformly, symmetrical, and in accordance with AASHTO standards. Do not exceed the length to width ratio of 1.25 for non-reinforced pavements. Sidewalks designed to support emergency and service vehicle traffic must have minimum widths as stated in 2.3.1.2 Access Drives and Lanes.

2.5 ARCHITECTURAL REQUIREMENTS

2.5.1 General

Do not use exterior materials that require periodic repainting or similar refinishing processes. Material exposed to weather must be factory pre-finished, integrally colored or provided with intrinsic weathering finish.

2.5.2 Walls

2.5.2.1 Exterior Walls

Where Exterior Insulation and Finish Systems, or EIFS (if found life-cycle-cost-effective per UFC 3-101-01), another material except CMU, or other Masonry material is used as exterior finish material, it must be in conjunction with a Masonry wainscot. Masonry units must be tested for efflorescence. Efflorescence testing must conform to the provisions of ASTM C 67. CMU construction must comply with the provisions of ASTM C 1400.

2.5.3 Mold and Mildew

The Designer of Record must provide details in the design analysis and design showing steps taken to mitigate the potential growth of mold and mildew in the facility. Perform a wall and roof construction moisture analysis to verify appropriate thermal insulation and vapor permeability retardant assemblies to prevent condensation within the wall and roof under foreseeable climate conditions. Gypsum board must achieve a score of 10, the highest level of performance for mold resistance under the ASTM D 3273 test method. Gypsum board must be transported, handled, stored and installed in accordance with the GYPSUM ASSOCIATION – Guidelines for Prevention of Mold Growth on Gypsum Board (GA-238-03).

2.5.4 Roof Systems

For membrane roof systems provide a minimum slope of 1/4 inch per foot and roof crickets with a minimum ½ inch per foot slope. Membrane roof systems must be fully adhered. Provide pitched roof systems with a minimum slope of 3 inches per foot. Structural standing seam metal roofs must comply with the requirements of ASTM E 1592. Roof system must be Underwriters Laboratory (UL 580 Class 90) rated or Factory Mutual Global (FM) I-90 rated and comply with applicable criteria for fire rating.

2.5.4.1 Roof Mounted Equipment

For roof mounted equipment, provide permanent access walkways and platforms to protect roof. Roof mounted equipment on pitched roof systems is generally unacceptable; exceptions must have prior government approval. Roof mounted equipment on membrane roof systems must be completely screened by the roof parapet to a distance of 400 feet.

2.5.4.2 Roof Access

Roof access from building exterior is prohibited.

2.5.4.3 Personal Fall Arrest Systems

Fall arrest system must be required for workers servicing roof-mounted equipment. All necessary anchorages for attachment of personal fall arrest equipment must be provided in accordance with applicable codes and criteria.

2.5.4.4 Trim and Flashing

Gutters, downspouts, and fascia must be factory pre-finished metal and must comply with SMACNA Architectural Sheet Metal Manual.

2.5.5 Openings

2.5.5.1 Storefronts/Curtain Walls & Entrances

2.5.5.1.1 Storefronts (Main Entrance Doors)

Provide aluminum storefront doors and frames with Architectural Class 1 anodized finish, fully glazed, with medium or wide stile for entry into lobbies or corridors. Provide doors complete with frames, framing members, sub frames, transoms, sidelights, trim, applied muntins, and accessories. Provide framing systems with thermal-break design. Storefront systems must be capable of withstanding area wind loads, thermal and structural movement required by location and project requirements and must comply with applicable codes and criteria.

2.5.5.1.2 Curtain Wall Systems

Curtain wall systems must be capable of withstanding area wind loads, thermal and structural movement required by location and project requirements and must comply with applicable codes and criteria.

2.5.5.2 Windows

Material and installation must comply with applicable codes and criteria.

2.5.5.2.1 Exterior Windows

Provide insulated, high efficient window systems, with thermally broken frames complying with applicable codes and criteria. Provide each bedroom with at least one exterior window which meets the egress requirements of NFPA 101 and the International Building Code. Design windowsills to discourage bird nesting. Occupants must be able to open a window within the dwelling unit for air flow, subject to code compliance. These may be a smaller window opening. Operable windows are encouraged within bedrooms and living areas as well, subject to code compliance. Install heavy duty insect screens on operable windows. Windows in the sleeping room must have black-out window coverings. Windows must not open to corridor, balcony or landing.

2.5.5.2.2 Interior Windows:

2.5.5.2.2.1 Centralized Laundry

Picture window glazing must be laminated glass.

2.5.5.2.2.2 Day Room

Picture window glazing must be laminated glass.

2.5.5.3 Doors and Frames

Door and frame installation must comply with applicable codes, criteria and requirements of labeling authority. Sound Transmission Class STC ratings

must be of the sound classification required and must include the entire door and frame assembly.

2.5.5.3.1 Exterior Insulated Hollow Metal Doors & Frames

Provide insulated hollow metal exterior doors for entry to spaces other than corridors, lobbies, or reception/waiting rooms. Doors must be minimum Level 3 (Extra Heavy-Duty), Physical Performance Level A, Model 2 (Seamless). Frames must be Level 4, 14-gauge, with continuously welded mitered corners and seamless face joints. Doors and frames must be constructed of non-corroding, hot-dipped, zinc-iron alloy-coated, galvannealed steel sheet, minimum A60 coating weight, complying with ASTM A653; and factory-primed. Use tamperproof screws for the attachment of door accessories.

2.5.5.3.2 Interior Insulated Metal Doors

Comply with ANSI A250.8/SDI 100 and applicable codes and criteria. Doors must be minimum Level 3 (Extra Heavy-Duty), Physical Performance Level A, Model 2 (Seamless); factory primed. Interior insulated doors must be constructed of the same material as exterior insulated hollow metal doors.

2.5.5.3.2.1 Insulated Metal Doors

Provide insulated metal doors at utility rooms, janitor closets, and stairwell doors.

2.5.5.3.3 Dwelling Unit Entry Doors

Provide either insulated hollow metal doors with a wood grain finish or flush solid core wood doors with Grade A hardwood face veneer for transparent finish at dwelling unit entry. Stile edges must be non-finger jointed hardwood compatible with face veneer.

2.5.5.3.4 Hardware:

2.5.5.3.4.1 Door Hardware

Hardware must be consistent and must conform to ANSI/BMHA standards for Grade 1. Provide closers for exterior doors, doors opening to corridors and as required by codes. Install exit devices on building egress doors.

2.5.5.3.4.2 Finish Hardware (Master Keying System/Cores)

Coordinate requirements for hardware keying with the Contracting Officer. Provide extension of the existing Installation keying system, the Installation will provide the keying system. Provide key-removable type cylinder cores with no less than seven pins. Disassembly of knob or lockset to remove core from lockset is not permitted. Locksets for mechanical, electrical and communications rooms only must be keyed to the existing Installation Master Keying System. Provide HVAC terminal units that are accessed from a central corridor with a deadbolt to minimize protrusion into corridor.

2.5.5.3.4.3 Fire and Exit Door Labeling

Install hardware for fire doors in accordance with the requirements of applicable codes. Exit devices installed on fire doors must have a visible label bearing the marking "Fire Exit Hardware". Other hardware installed on fire doors, such as locksets, closers, and hinges must have a visible label or stamp indicating that the hardware items have been approved by an approved testing agency for installation on fire-rated doors. Hardware for smoke-control door assemblies must be installed in accordance with applicable codes.

2.5.5.3.4.3.1 Auxiliary Hardware

Provide other hardware as necessary for a complete installation.

2.5.5.3.4.3.1.1 Doorstops

Provide wall or floor stops for exterior doors that do not have overhead holder/stops. Door hinge stops are not acceptable.

2.5.5.3.4.3.1.2 Peep Holes

Provide each dwelling unit entry door with a brass peephole door viewer with a viewing angle of 200 degrees minimum.

2.5.5.3.4.3.1.3 Door Latches

Provide each closet door with a functional, Grade 1 closet latch, and with padlock eyes so the occupant can provide his/her own padlock. One padlock eye must be mortised into and screw attached flush with door edge on the latch side of the door and the second padlock eye must be mortised and welded flush into the inside face of the door frame jamb. Fabricate padlock eye to accommodate padlock shackle up to 1/4" diameter. Padlock eye color must match door frame color. Locate padlock eye at between 4’-6”’ and 5’-6” AFF at the same height in modules.

2.5.5.3.4.3.1.4 Thresholds & Door-sweeps

Provide dwelling unit entry doors and exterior doors with thresholds and aluminum/rubber door-sweeps for a tight seal between door and threshold. Provide door-sweep with an aluminum anodized finish, color must match door frame.

2.5.5.3.4.3.1.5 Door Hasps

Provide mortised door hasps on closet doors.

2.5.5.3.4.3.1.6 Robe Hooks

Closet Doors: Each closet door must have a Type 304 satin finished, stainless steel, robe hook mounted on the closet side of the door.

Dwelling Bathroom Doors: Each bathroom door must have a Type 304 satin finished; stainless steel double robe hook mounted on inside face of bathroom door.

2.5.5.3.4.3.2 Electronic Key Card Access System

A Programmable Electronic Key Card Access System must be provided on exterior entry/egress doors, dwelling unit doors, bedroom doors and centralized laundry doors. Provide extension of the existing Installation key card access system must be provided, the existing Installation key card access system will be provided by the installation. The minimum operability requirement is a key card access system that provides a single key card for the individual soldier, programmable to open exterior entry/egress doors, the laundry room (if a centralized laundry is provided), the soldier's dwelling unit door, and the soldier's bedroom door. A Programmable Electronic Key Card Access System Manufacturer's Representative must install hardware and software necessary for the operation of the Electronic Key Card Access System and program locksets. Provide six (6) blank key cards for each personnel each building is designed to accommodate. Blank key cards must be serially numbered, and each key card must have its number permanently inscribed on it. Provide in three-ring binders, one full set of the system manufacturer's system training manual, system maintenance manual, and one training video (in format provided by the system manufacturer), with each system installed. The Programmable Electronic Key Card Access System Manufacturer's Representative must provide two (2) separate 4-hour classes of training for the user on software use, programming locks, encoding cards and printing reports. Provide each building with a complete stand-alone key card system package. System must be capable of being compartmentalized so that each building has only the capability to produce key cards for that building. Provide a two (2) year warranty on the system and components and locksets. Provide special tools, software, connecting cables and proprietary equipment necessary for the maintenance, testing, and reprogramming of the system.

2.5.5.3.4.3.3 Non-Destructive Emergency Access System (KNOX Box)

Provide a Non-Destructive Emergency Access System in accordance with installation requirements.

2.5.5.3.5 Glass and Glazing

Material and installation must comply with applicable codes and criteria.

2.5.5.3.5.1 Mirrors

2.5.5.3.5.2 Walk-in Closets

Each closet door must have 16 inches wide by 70 inches high by ¼ inch thick, select float glass, full length mirror, in a one-piece ½ inch by ½ inch by ½ inch Type 304 satin finished, stainless steel frame, with mitered corners, mounted on the bedroom side of the door. Locate bottom of mirror 6 inches above finish floor.

2.5.5.3.6 Louvers and Vents

2.5.5.3.6.1 Exterior

Exterior louvers must have bird screens and must be designed to exclude wind-driven rain. Exterior louvers must be made to withstand wind loads in accordance with the applicable codes. Wall louvers must bear the Air Movement & Control Association (AMCA) International certified ratings

program seal for air performance and water penetration in accordance with AMCA 500-D and AMCA 511. Louver finish must be factory applied.

2.5.6 Exterior Specialties

2.5.6.1 Bird Habitat Mitigation

Provide details in the design necessary to eliminate the congregating and nesting of birds at, on, and in the facility.

2.5.7 Elevators/Conveying Systems

2.5.7.1 Elevators

Provide elevators for buildings four stories and above. Provide elevator system that complies with the most current editions of ASME A17.1 and ASME A17.2 in their entirety, and additional requirements specified herein. The first elevator must be centrally located and must have a minimum rated load capacity of 3500 lb (1588 kg), with center opening doors and interior dimensions sized to accommodate a fully extended Emergency Medical Services (EMS) gurney and four average size adults. Gurney size must be based on the "STRYKER Power-PRO XT" gurney. Provide elevators as shown in the table below, unless a traffic analysis determines otherwise. Such traffic analysis must be included in the Design Analysis.

Population	# of Elevators
Up to 200	1
201 - 300	2
301 - 400	3
401 - 500	4
501 - 600	5
601 - 700	6
701 - 800	7
801 - 900	8
901 - 1000	9

2.5.7.2 Elevator Inspector

Elevator Inspector must be certified in accordance with the requirements of the most current editions of ASME A17.1 and ASME QEI-1 and licensed in elevator inspection by the State where project is located. The Certified Elevator Inspector must inspect the installation of the elevator(s) to assure that the installation conforms with contract requirements. The Elevator Inspector must be directly employed by the Prime Contractor and must be independent of the Elevator System Manufacturer and the Elevator System Installer. The Elevator Inspector must witness the acceptance inspections and tests, approve results and sign and certify the successful results. The Elevator Inspector, after completion of the acceptance inspections and tests, must certify in writing that the installation is in accordance with the contract requirements. The Elevator Inspector must bring any discrepancy, including any safety related deficiencies, to the attention of the Contracting Officer in writing, no later than three working days after the discrepancy is discovered.

2.5.8 Acoustical Requirements

Design exterior walls and roof/floor/ceiling assemblies, doors, windows and interior partitions to provide for attenuation of external noise sources such as airfields in accordance with applicable criteria, but no less than the following:

2.5.8.1 Exterior Walls: STC 49

2.5.8.2 Interior Partitions: STC 49

2.5.8.3 Walls/Floors separating Module Spaces: STC 50 / IIC 55

2.5.8.4 Module Entry, Bedroom and Bathroom Doors: STC 25

Sound conditions (and levels) for interior spaces, due to the operation of mechanical and electrical systems and devices, must not exceed levels as recommended by ASHRAE handbook criteria. Provide acoustical treatment for drain lines and other utilities to prevent noise transmission into the interior of dwelling units. Facility must comply with the noise-related land use compatibility requirements in AR 200-1, Chapter 14. If in the vicinity of an airfield project must comply with DODI 4165.57, Air Installations Compatible Use Zones.

2.5.9 Thermal Requirements

2.5.9.1 Thermal Insulation

Provide exterior wall, floor, and roof/ceiling assemblies with thermal transmittance (U-values) required to comply with the proposed energy conservation requirements. Insulation must not be installed directly on top of suspended acoustical panel ceiling systems.

2.6 FINISHES AND INTERIOR SPECIALITIES

2.6.1 General

Provide sustainable materials that are easily maintained and replaced. Maximize use of day lighting. Provide interior surfaces that are easy to clean and light in color. Design barracks interior with a residential ambience.

2.6.2 Finishes

Contractors are encouraged to offer higher quality finishes within the contract cost limitation.

2.6.2.1 Minimum Finish Requirements

Wall, ceiling and floor finishes must conform to the requirements of the IBC, NFPA and UFC 3-600-01. Where code requirements conflict, the most stringent code requirement must apply.

2.6.2.1.1 Walls

Wall finishes must be minimum 5/8” painted gypsum board, except where stated otherwise. Use impact resistant gypsum board in corridors, storage rooms, stairwells and day rooms and centralized laundries (if centralized laundries are required by RFP). Provide a Level 4 Finish with an orange peel texture in accordance with USG Handbook, latest edition. Gypsum board must achieve a score of 10, the highest level of performance for mold resistance under the ASTM D 3273 test method. Gypsum board must be transported, handled, stored and installed in accordance with the GYPSUM ASSOCIATION – Guidelines for Prevention of Mold Growth on Gypsum Board (GA-238-03).

2.6.2.1.2 Ceilings

Ceiling finishes must be minimum 5/8” painted gypsum board, except where stated otherwise.

2.6.2.1.2.1 Acoustical Ceiling Tiles (ACT)

Must be 24"x 24" Acoustical tile panels of 5/8 inch minimum thickness. Type as indicated, Class A. Light reflectance must exceed 75 percent, color, texture and finish must be as indicated. When not indicated provide white, fissured texture acoustical panels with a beveled tegular edge. Noise Reduction Coefficient not less than 0.60, Ceiling Attenuation Class not less than 35.

2.6.2.1.2.2 Ceiling Grid

Provide a 9/16" suspension system - Type as indicated. Color, texture and finish must be as indicated. When not indicated provide white, hot-dipped galvanized steel, exposed tee grid with hold down clips for ceiling tiles.

2.6.2.1.3 Floors

2.6.2.1.3.1 Resilient Flooring

Resilient flooring must be a minimum 1/8 inch thick, conforming to ASTM F 1066, Class 2, through-pattern tile, Composition 1, asbestos free, with color and pattern uniformly distributed throughout the thickness of the tile.

2.6.2.1.4 Counter Tops

Provide solid surfacing of cast 100 percent acrylic polymer to be used for countertops and backsplashes, 1/2-inch minimum thickness. Must meet ANSI/NEMA LD 3 and ASTM E 84. High-Pressure Laminate will not be allowed for countertops in restroom, toilet room, kitchen or break room applications. Provide countertops with waterfall front edge and integral coved backsplash, minimum 4" high.

2.6.2.1.4.1 Bathroom & Public Toilet(s)

Bathroom and public toilet vanity countertop must be minimum ½ inch thick cast 100-percent acrylic polymer solid surfacing material with waterfall front edge and integral coved backsplash.

2.6.2.1.5 Window Stools

Provide solid material surfacing of cast 100 percent acrylic polymer 1/2-inch minimum thickness for window stools. Must meet ANSI/NEMA LD 3 and ASTM E 84.

2.6.2.1.6 Elevator(s) Finishes

Elevator interior walls, ceiling, doors and fixtures must have a satin No. 4 stainless steel finish. Floor finish must be resilient flooring. Elevators must be provided with removable hanging protective pads and fixed hooks to facilitate conversion to use for moving freight.

2.6.2.2 Minimum Paint Finish Requirements

Paints used must be listed on the "Approved product list" of the Master Painters Institute, (MPI). Follow application criteria recommended by MPI guide specifications for the substrate to be painted and the environmental conditions existing at the project site. Except factory pre-finished material, provide surfaces receiving paint with a minimum of one prime coat and two finish coats. Paints having a lead content over 0.06 percent by weight of nonvolatile content are unacceptable. Paints containing zinc-chromate, strontium-chromate, mercury or
mercury compounds, confirmed or suspected human carcinogens must not be used on this project.

2.6.2.2.1 Exterior Surfaces

Exterior paints and coating products must be classified as containing low volatile organic compounds (VOCs) in accordance with MPI criteria. Provide an MPI Gloss Level 5 Finish (Semi-gloss), unless otherwise specified.

2.6.2.2.2 Interior Surfaces

Interior paints and coating products must contain a maximum level of 150 g/l (grams per liter) of VOCs for non-flat coatings and 50 g/l of VOCs for flat coatings. Provide an MPI Gloss Level 5 Finish (semi-gloss) with orange peel or egg-shell finish.

2.6.2.3 Excluded Finishes

Carpet must not be used as a floor finish in the PP UH.

2.6.2.4 Finish Table

Finish Table begins on the next page.

MINIMUM INTERIOR FINISHES														
	FLOORS					BASE			WALLS		CEILING			REMARKS
	LUXURY TILE VINYL	PORCELAIN OR QUARRY TILE	CERAMIC TILE	ALUMINUM WALKOFF MAT	SEALED CONCRETE	RESILIENT BASE	SANITARY COVE CERAMIC BASE	PORCELAIN OR QUARRY TILE	GYPSUM BOARD PAINT	CERAMIC	GYPSUM BOARD PAINT	ACOUSTICAL CEILING TILE	MINIMUM HEIGHT	
COMMON AREAS														
LOBBY		●						●	●		●	●	9'-0"	SEE NOTE 6
PUBLIC TOILET			●				●		●	●	●		8′-0″	SEE NOTES 2 & 3
VESTIBULES		●		●				●	●		●		9'-0"	
MUDROOM (IF REQUIRED BY RFP)			●				●		●	●	●		8′-0″	SEE NOTE 2
BOOT WASH (IF REQUIRED BY RFP)					●								-	
DAY ROOM									●		●	●	9′-0″	SEE NOTE 6
EXTERIOR MAIL ACCESS AREA					●								8′-0″	SEE NOTE 10
STAIRS	●				●	●			●		●		8′-0″	SEE NOTE 4
CORRIDORS	●					●			●		●	●	9'-0"	SEE NOTE 6
VENDING											●		8′-0″	SEE NOTE 1
RECYCLABLES STORAGE	●					●			●		●		8′-0″	SEE NOTE 1
JANITOR CLOSETS			●				●		●	●	●		8′-0″	SEE NOTE 2
MECHANICAL					●	●			●		●		-	SEE NOTE7
ELECTRICAL					●	●			●		●		-	
TELECOMM					●	●			●		●			SEE NOTE 8 & 12
CENTRALIZED LAUNDRY		●						●	●		●		8′-0″	

DWELLING UNITS														
KITCHEN	•					•			•		•		8′-0″	SEE NOTE 3
BATHROOM			•				•		•	•	•		8'-0"	SEE NOTES 2, 3 & 11
BEDROOM	•					•			•		•		9'-0"	SEE NOTE 9
LIVING ROOM													9'-0"	SEE NOTE 9
CLOSET	•					•			•		•		8′-0″	

1. FINISHES IN VENDING OR RECYCLABLES STORAGE AREA MUST MATCH FINISHES IN ADJACENT SPACE.

2. WET WALLS MUST HAVE A MINIMUM OF 4'-0" HIGH CERAMIC TILE WAINSCOT. THE DWELLING UNIT BATHROOM MAY USE A 4′-0″ SOLID SURFACE WAINSCOT.

3. KITCHEN AND BATHROOM COUNTERS MUST HAVE A MINIMUM OF 4" HIGH BACKSPLASH.

4. STAIR LANDING MUST BE RESILIENT FLOORING OR SEALED CONCRETE. TREADS MUST BE RESILIENT FLOORING OR SEALED CONCRETE, PROVIDE SLIP RESISTANT NOSING. RISERS MUST BE PAINTED STEEL OR RESILIENT FINISH AS REQUIRED FOR STAIR CONSTRUCTION.

5. CERAMIC TILES MUST BE A MINIMUM OF 12″ X 12″.

6. UP TO 50% OF CEILING AREA MAY BE ACOUSTICAL CEILING TILE. ACOUSTICAL CEILING TILE MUST BE INSTALLED WITH HOLD DOWN CLIPS TO PREVENT UPWARD MOVEMENT. CEILING LAYOUT MUST BE A BALANCED MIX OF GYPSUM BOARD AND ACOUSTICAL CEILING TILE, SUCH THAT ONE FINISH MATERIAL IS NOT CONCENTRATED IN OR RESTRICTED TO ONE AREA OF THE CEILING.

7. CEILING MAY BE PAINTED EXPOSED STRUCTURE IF ALLOWED BY APPLICABLE CODE AND CRITERIA. THIS NOTE DOES NOT APPLY TO DWELLING UNIT MECHANICAL CLOSETS.

8. COMPLY WITH THE REQUIREMENTS OF ANSI/TIA/EIA-569-B

9. WHERE MASONRY WALLS ARE PROPOSED AS THE BEDROOM WALL FINISH SYSTEM, THE LONGEST WALL IN EACH BEDROOM MUST BE FINISHED WITH A TACKABLE MATERIAL. TACKABLE MATERIAL MUST BE GYPSUM BOARD.

10. CEILING MUST BE PAINTED EXPOSED STRUCTURE.

11. TUB SURROUND MUST BE FIBERGLASS OR ACRYLIC.

12. STATIC DISSIPATIVE TILE MUST BE USED.

2.6.3 INTERIOR SPECIALTIES:

2.6.3.1 Signage & Directories

Signage must be mechanically attached.

2.6.3.1.1 Room Signage

a. 4/2 Module:

At each dwelling unit, provide four (two on each side of entry door) mechanically fastened dwelling unit/room number and changeable two-line message strip signage. Dwelling units must be sequentially numbered. For example, the first unit on the first floor must be “101”, first unit on the second floor must be “201”. Rooms must be designated using the letters “A and B” and “C and D”. The room designation is determined by standing in the corridor facing the entry door of the dwelling unit, the two bedrooms on the left are “A and B” and the two bedrooms on the right are “C and D”. The complete dwelling unit/room numbering must be as in this example, first unit on the second floor “201A and 201B”, “201C and 201D”. Changeable message strip signs must be of same construction as standard room signs to include a clear sleeve that must accept a paper or plastic insert with identifying changeable text. The insert must be prepared typeset message photographically enlarged to size and mounted on paper card stock.

b. 2/1 Module:

At each dwelling unit, provide two (one on each side of entry door) mechanically fastened dwelling unit/room number and changeable two-line message strip signage. Dwelling units and must be sequentially numbered. For example, the first unit on the first floor must be “101”, first unit on the second floor must be “201”. Rooms must be designated using the letters “A and B”. The room designation is determined by standing in the corridor facing the entry door of the dwelling unit, the bedroom on the left is “A” and the one on the right is “B”. The complete dwelling unit/room numbering must be as in this example, first unit on the second floor “201A and 201B”. Changeable message strip signs must be of same construction as standard room signs to include a clear sleeve that must accept a paper or plastic insert with identifying changeable text. The insert must be prepared typeset message photographically enlarged to size and mounted on paper card stock.

2.6.3.1.2 Stair Exit Door Signage

Each stair exit door on the first floor and other entry/exit doors not directly visually observable from the CQ Desk must each be provided with a hard-wired contact switch connected to an alarm system. Alarm system must sound an alarm (AFTER A THIRTY-SECOND DELAY IF DOOR IS LEFT OPEN) at the door location and the CQ Station. Switching OFF activated alarm must be by a key at the specific door and remotely at the CQ Desk. The inside face of each door must be provided with a photo-luminescent sign. Photo-luminescent signs must be manufactured and tested in accordance with the most current versions of ASTM E 2072 and ASTM E 2073. Sign must be minimum 14-inches wide by 10-inches high and must be made of anodized aluminum. Lettering must be red text on a yellow background. Lettering must be upper case and must read as follows: “EMERGENCY EXIT ONLY” (minimum 4-inches high letters) “SECURITY ALARM WILL SOUND IF DOOR IS OPENED” (minimum 3-inches high

letters). Signs must be mounted centered on interior face of each door above the exit device. For doors with glazing panels, mount sign on wall directly on the lock side of door.

2.6.3.2 Visual Display Units/Cases

2.6.3.2.1 Bulletin Boards

Bulletin board must be 4’-0” high and 6’-0” wide with a header panel and lockable, laminated, glazed doors.

2.6.3.3 Toilet Accessories

Provide the items listed below and other toilet accessories necessary for a complete and usable facility. Toilet accessories must be Type 304 stainless steel with satin finish.

2.6.3.3.1 Public Toilet(s)

Public Toilets: Toilet accessories must conform to the requirements of the ABA and must include, but are not limited to the following:

2.6.3.3.1.1 Glass Mirrors

Glass mirror on stainless steel frame and with shelf – at each lavatory;

2.6.3.3.1.2 Liquid Soap Dispenser

Provide at each lavatory.

2.6.3.3.1.3 Combination Paper Towel Dispenser/Waste Receptacle

Provide recess-mounted, adjacent to lavatory.

2.6.3.3.1.4 Sanitary Napkin Disposal

Provide at each female stall or one in unisex toilet room.

2.6.3.3.1.5 Toilet Paper Dispenser

Provide recess-mounted, multi-roll, toilet paper dispenser.

2.6.3.3.1.6 Toilet Seat Cover Dispenser

Provide at each toilet stall.

2.6.3.3.1.7 Grab bars

Provide as required by ABA Accessibility Guidelines.

2.6.3.3.1.8 Toilet Partitions

Provide solid phenolic, color through the core Finish 4A, floor mounted, overhead braced toilet partitions with three hinges if toilet stalls are required.

2.6.3.3.2 Dwelling Unit/Bedroom Toilet(s)

2.6.3.3.2.1 Towel bars

Provide two, minimum 24 inches wide, heavy-duty towel bars per tub/shower.

2.6.3.3.2.2 Medicine cabinets

Provide two, recess-mounted, mirrored medicine cabinet at each lavatory.

2.6.3.3.2.2.1 Shelves

A minimum of 16-inches wide by 24 inches high with adjustable shelves, and constructed of heavy gauge steel, welded, with a powder-coated.

2.6.3.3.2.2.2 Mirror

Mirror must be 1/4 inch thick, select float glass, set in a one piece, Type 304 satin finished, stainless steel channel frame with mitered corners;

2.6.3.3.2.3 Soap Dish

Provide two soap dishes at each tub/shower.

2.6.3.3.2.4 Toilet Paper Holder

Provide toilet paper holders at each water closet.

2.6.3.3.2.5 Curved shower curtain rod

Provide extra heavy duty curved shower curtain rod.

2.6.3.3.2.6 Shower curtain

Provide white anti-bacterial nylon/vinyl fabric shower curtains.

2.6.3.3.2.7 Soap Dish

Provide one soap dish at each lavatory.

2.6.3.3.2.8 Towel bars

Provide two, minimum 12-inches wide, hand towel bars or hand towel rings per lavatory.

2.6.3.4 Wall Protection:

2.6.3.4.1 Chair Rail

Install chair rails in corridors, lobby, and Day Room.

2.6.3.4.2 Corner Guards

Provide surface mounted, high impact resistant, integral color, non-snap-on resilient corner guards, extending from floor to ceiling for wall/column outside corners in high traffic areas. Provide factory fabricated end closure caps for top and bottom of surface mounted corner guards.

2.6.3.5 Storage Shelving

2.6.3.5.1 Janitor’s Closet

Provide a minimum of six linear feet of 18-inch deep, heavy-duty, stainless-steel shelving for storage of janitorial supplies.

2.6.3.5.2 Walk-in-Closets

Closet shelf must be capable of supporting a minimum of 30 pounds per linear foot. Closet shelf must be 15 inches deep and top of shelf must be set at 70 inches above closet finish floor. Closet rod and bracket system must be capable of supporting a minimum of 30 pounds per linear foot. Provide a minimum of 78 linear inches of rod and shelf with no rod and shelf being less than 48 inches long.

2.6.3.6 Fire Extinguishers, Cabinets & Mounting Brackets

Provide a list of installed fire extinguisher cabinets and mounting brackets (including location, size and type) to the Contracting Office Representative. Provide a list of required portable fire extinguishers, with descriptions (location, size, type, e.g.) and total number per type. See also Section 01 33 16, Attachment D, "SAMPLE FIRE PROTECTION AND LIFE SAFETY CODE REVIEW", paragraph 1.14.

2.6.3.7 Interior Entrance Walk-Off Mat Systems

Provide permanent entryway systems at least 10’-0” (3 meters) long in the primary direction of travel. Acceptable entryway systems include permanently installed grates, grilles, slotted systems, or roll-out mats.

2.7 STRUCTURAL REQUIREMENTS

2.7.1 Design Loads

2.7.1.1 Live Loads

Design live loads must be in accordance with the IBC but not lower than the following minimums.

2.7.1.1.1 Ground Floor

150 psf minimum

2.7.1.1.2 Centralized Laundry Area

150 psf, (but not less than actual equipment loads).

2.7.1.1.3 Elevated Floors

60 pounds per square foot (psf) minimum

2.7.1.2.1 Sustained Dead Loads

Not less than actual weight of permanent building components.

2.7.1.2.2 Collateral Dead Loads

To enable future adaptive re-use of the building, structural design must consider a uniform superimposed area load for mechanical, electrical, plumbing (MEP) and miscellaneous collateral dead loading of not less than 10 psf suspended from each elevated floor.

2.8 THERMAL PERFORMANCE

See Part 3 for additional requirements.

2.9 PLUMBING REQUIREMENTS

2.9.1 Domestic Water

2.9.1.1 Heating System

Size the domestic water heating system in accordance with UFC 3-420-01 Appendix D. Peak domestic hot water demand shall be determined using lavatory and shower head flow of 2.5 GPM. Assume a minimum of 7.5 minutes shower time per person and 2 minutes lavatory usage time per person. Assume there is no diversity in the number of occupants in the building. The peak volume of domestic hot water is calculated assuming 100 percent building occupancy.

Provide hot water storage tank sizes and recovery time in accordance with UFC 3-420-01. Heating of the storage tank must be a separate loop from the incoming water supply and flow rate sized to meet or exceed the calculated recovery time.

Water Service Temperatures

a. Storage tank water heaters shall maintain tank temperature at or above 140 deg F to prevent Legionella pneumophlia.

b. Install thermostatic mixing valve for domestic hot water line from water heater to supply 120 deg. F. water to the buildings.

c. Domestic hot water shall be provided to the fixtures at 110 deg. F. Provide ASSE 1080 mixing valves at fixtures to supply 110 deg. F. water.

Design domestic hot water distribution piping to handle up to 180 deg F water temperatures. Each water heating system will have bypass piping and universal connections in case of a system failure. This will allow for the ability to connect a portable water heater system, in the event of an emergency.

Refer to Appendix D of UFC 3-420-01 for additional information.

2.9.1.2 Pipe Sizing

For domestic hot water pipe sizing, base peak hot water flow rate on showers flowing simultaneously at a rate of 2.0 gpm per shower. Size waste stacks, building waste drains, and lift stations (if required) with consideration of increased flow rates as well.

2.9.2 Fixture Flow Rates

2.9.2.1 Shower Heads

Must have a maximum flow rate not to exceed 1.5 gallons per minute (gpm).

2.9.2.2 Bathroom Faucets

Must have a maximum flow rate not to exceed 0.5 gpm.

2.9.2.3 Kitchen Faucets

Must have a maximum flow rate not to exceed 1.0 gpm.

2.9.2.4 Mop Sinks

Must have a maximum flow rate not to exceed 2.0 gpm.

2.9.3 Drains, Interceptors, Separators and Cleanouts

2.9.3.1 Interceptors

2.9.3.1.1 Sand Interceptors

2.9.3.1.1.1 Mudroom/Boot wash

Provide sand interceptors in drains for Mudroom and Boot Wash areas.

2.9.3.2 Cleanouts

2.9.3.2.1 Dryers

If Dryers vents are manifolded to a common exhaust, provide an easily accessible means of cleanout.

2.9.3.2.2 Kitchen and Bathroom

Provide P-traps with cleanout at kitchen sinks and bathroom lavatories.

2.9.3.3 Drains

2.9.3.3.1 Vending Area

Provide water and drain connections for ice cube machine-dispensers.

2.9.3.3.2 Centralized Laundry

Provide water and drain connections for washer.

2.9.3.3.3 Room Module Laundry

Provide water and drain connections for washer.

2.9.4 Plumbing Fixtures:

2.9.4.1 Residential Plumbing Fixtures

2.9.4.1.1 Kitchen Fixtures (Dwelling Unit)

Provide a stainless-steel kitchen sink with minimum bowl inside dimensions of 16”x16”x7” deep.

2.9.4.1.2 Bathroom Fixtures (Dwelling Unit)

2.9.4.1.2.1 Water Closet

Provide an elongated floor mounted flush tank type vitreous china water closet.

2.9.4.1.2.2 Tub/Shower Head

Must be of porcelain enameled cast-iron or enameled steel. Spray end of shower head must be set at 78 inches above finish height of tub drain.

2.9.4.1.2.3 Floor Drains

Provide with a deep-seal trap consisting of a 4-inch (102 mm) seal or a trap seal primer valve.

2.10 COMMUNICATIONS AND SECURITY SYSTEMS

2.10.1 Telecommunication Systems

Provide telecommunications outlets in accordance with the applicable criteria based on functional purpose of the space within the building. Infrastructure for internet access will be provided at a minimum of one port or wireless technology capability in each bedroom and living room.

2.10.1.1 CATV

CATV outlet boxes, connectors, cabling, and cabinets must conform to applicable criteria unless noted otherwise. Horizontal cabling must be homerun from the CATV outlet to the nearest telecommunications room unless indicated otherwise.

2.10.2 Security Infrastructure/Systems

2.10.2.1 Door Status/Alarm Monitoring

2.10.2.1.1 Stair Exit Doors

Provide each stair exit door on the first floor with a hard-wired contact switch connected to an alarm system. Alarm system must sound an alarm (after a 30 second delay if door is left open) at the door location and the CQ Desk (where provide) when a stair exit door is opened. Switching OFF activated alarm must be by key at the specific door and remotely at the CQ Desk.

2.10.3 Closed Circuit Television

Provide infrastructure only for CCTV camera locations:

a. Each corner of building exterior.

b. Main entry of building exterior.

c. Stairwell entry in each corridor.

d. Each corridor end.

e. Each common area on each floor (I.e. laundry, mud room, etc.).

f. Each stairwell landing.

Infrastructure includes boxes, connectors, cabling, cable trays and cabinets that must conform to applicable criteria unless noted otherwise. Horizontal cabling must be homerun from the outlet to the nearest telecommunications room unless indicated otherwise. CCTV cameras are GFGI.

2.10.4 Mass Notification Systems (MNS)

Integrated the MNS into the installation's area wide MNS. See Part 3 for additional requirements.

2.11 ELECTRICAL REQUIREMENTS

2.11.1 General

Select electrical characteristics of the power system to provide a safe, efficient, and economical distribution of power based upon the size and types of loads to be served. Use distribution and utilization voltages of the highest level that is practical for the load to be served. Consider the effect of nonlinear loads such as computers, other electronic equipment and electronic ballasts and accommodate as necessary. Voltage drop must not exceed the maximum allowed in accordance with ASHRAE 90.1. Provide surge protective device on entrance service equipment and branch panelboard for communications and related system in accordance with UFC 3-520-01. Bedrooms must be considered to be living and sleeping rooms, therefore they are to be considered part of a dwelling unit in accordance with NFPA 70 definition. Provide individual lighting controls for 90% of individual spaces consisting of three lighting levels. Achieve illuminance levels between 300 lux and 3,000 lux for floor areas.

2.11.2 Power

Provide power for installed equipment requiring power to include convenience receptacles and government provided government installed equipment.

2.11.2.1 Panels

Panelboards located in accessible areas, must be lockable and keyed to one master key.

2.11.2.2 Outlets

2.11.2.2.1 Dwelling Unit

In addition to the requirements of NFPA 70 for dwelling units, a duplex receptacle must be mounted adjacent to the CATV outlet.

2.11.2.2.2 Lobby

Provide a minimum of one 125-volt duplex receptacle in the lobby for housekeeping purposes.

2.11.2.2.2.1 Lobby–CQ Station

Provide two (2) 125-volt, duplex receptacles for CQ workstation. Receptacles must be on a dedicated circuit.

2.11.2.2.2.2 Day Room

Provide Day Room as shown on the drawings.

2.11.2.2.3 Corridors

Provide a minimum of one 125-volt duplex receptacle per corridor for housekeeping. No point along a corridor wall at 18” above finished floor must be more than 25 feet from a receptacle.

2.11.2.2.4 Mechanical & Electrical Room

Provide a minimum of two 125-volt duplex receptacles in mechanical rooms in addition to those required by NFPA 70. This requirement does not apply to the small mechanical rooms used for individual dwelling units. In addition, provide a minimum of one 125-volt duplex receptacle in each electrical room.

2.11.2.2.5 Vending Area

Provide power receptacles for vending machines and ice cube machine-dispensers.

2.11.2.2.6 Centralized Laundry

Provide power receptacles for washers, dryers and laundry supplies vending machines. Provide a minimum of one convenience duplex power receptacle on each wall.

2.11.2.2.7 Electrical Dryers

Electrical service must be provided for electric dryers regardless of whether or not electric dryers are to be used.

2.11.2.3 Metering

Provide an electricity meter for serving the building in the standard unit of the measure. Where base-wide energy and utility monitoring and control system exist, meter must be connected using the installation’s advanced metering protocols. Meter configuration must be complied with requirements of UFC 4-010-06.

2.11.3 Lighting Levels, Fixtures and Controls

Provided lighting levels must be within +/- 10% of required lighting levels. Interior and exterior building lights must be provided with

Lighting Emitting Diode (LED) lighting fixture. LED fixtures must have a Color Rendering Index of (CRI) of 82 or higher and Luminaire Efficacy (LE) must have a minimum of 80 LPW. Minimize bulb type variations and maximize use of A19 type LED bulbs.

2.11.3.1 Dwelling Units

2.11.3.1.1 Bedrooms

Lighting level in bedrooms must be 15 foot-candles. Vacancy sensor detection switching. Switching must be manual-on/automatic off.

2.11.3.1.2 Kitchen

Lighting level in kitchen areas must be 30 foot-candles with automatic vacancy sensor detection switching. Switching must be manual-on/automatic off. Countertop task lighting must be installed under cabinets with manual on/off switching. Task lighting switching must be separate from general lighting switching.

2.11.3.1.3 Living Room

Lighting level in bedrooms must be 15 foot-candles. Vacancy sensor detection switching. Switching must be manual-on/automatic off.

2.11.3.1.4 Walk-in-closet

Provide automatic vacancy sensor detection switching in each walk-in closet. Switching must be manual-on/automatic off.

2.11.3.2 Lobby

Lighting level in lobbies must be 10 foot-candles. Lighting in common areas such as corridors and lobbies must have automatic occupancy sensor detection switching. Wire sensors in corridors such that only the lighting fixtures within the activation range of a particular sensor must turn on.

2.11.3.2.1 Lobby–CQ station

Provide additional lighting over CQ station to obtain a 30-footcandle luminance level on desktop.

2.11.3.2.2 Day Room

Lighting levels must comply with code requirements.

2.11.3.3 Centralized Laundry

Lighting level in laundry room(s) must be 30 foot-candles. Lighting must have automatic occupancy sensor detection switching.

2.11.3.4 Mechanical, Electrical, and Telecommunication Rooms: lighting level in mechanical and electrical rooms must be 20 foot-candles with manual on/off switching.

2.11.3.5 Mail Access Area

If mail is distributed from an exterior kiosk or through an exterior wall provide a minimum illuminance level of 5-footcandles.

2.11.3.6 Mudroom/Boot Wash

Provide a luminance level of 20-footcandles and automatic occupancy sensor detection switching to control fixture(s) in the mudroom.

2.11.3.7 Daylighting and Lighting Control

Provide automated lighting controls, including occupancy/vacancy sensors with manual-off capability, provided for appropriate spaces in accordance with UFC 3-530-01. Where the space having naturalize source, maximize the use of automatic dimming controls.

2.12 HEATING VENTILATING AND AIR CONDITIONING (HVAC) REQUIREMENTS

2.12.1 HVAC Design Criteria

2.12.1.1 Unit location and access

2.12.1.1.1 Dwelling Unit

Locate room/dwelling unit HVAC units in equipment closets accessible only through a corridor access door. Locate air filters in the equipment closet. Dwelling unit HVAC units must have piping and duct connections that allow quick and easy removal and replacement of individual units.

2.12.1.2 Ventilation

2.12.1.2.1 Dwelling Unit

Provide positive ventilation for each dwelling unit using dedicated outdoor air units. Dedicated outdoor air units (DOAUS) must continuously supply dehumidified, tempered air ducted directly to each bedroom from DOAU. DOAU supply air ductwork must not connect to dwelling unit heating/cooling unit. Supply air conditions from DOAU must be between 68- and 75-degree F dry bulb and no greater than 48-degree F dew point. Supply quantity must be 45 cfm per bedroom for a total of 90 cfm per dwelling unit. (note: this exceeds ASHRAE 62.1 but provides compliance with IMC chapter 4 and maintains slight building positive pressurization with respect to dwelling unit exhaust rate of 75 cfm). DOAU unit must be direct expansion (dx) type and cooling/dehumidification must be available 24/7/365. DOAU units must be minimum 14 seer (3.52 cop) and equipped with hot gas reheat and auxiliary heat/ reheat coil. Dwelling unit laundry area must meet code requirements.

2.12.1.2.2 Corridors

Ventilate corridors in accordance with ASHRAE 62.1 by supply from the dedicated outdoor air unit.

2.12.1.2.3 Vending Area

Provide additional ventilation/exhaust to maintain vending areas temperature at levels specified for corridors.

2.12.1.2.4 Centralized Laundry

Makeup air for dryers in centralized laundries within the exterior wall insulation and air/vapor barrier must be conditioned and dehumidified or transferred from adjacent conditioned spaces.

2.12.1.3 Heating and Cooling Water Systems

Heating and Cooling waters system equipment will have bypass piping and universal connections in case of a system failure. This will allow for the ability to connect a portable heating and cooling water systems, in the event of an emergency.

2.12.1.4 Exhaust

2.12.1.4.1 Dwelling Unit

Dwelling unit exhaust must be 25 cfm continuous through a bathroom exhaust and 50 cfm continuous through a kitchen exhaust. Kitchen and bathroom exhausts must be separate and make-up air to kitchen and bathroom must be ducted from bedrooms to kitchen and bathroom spaces. Make-up air for bathroom exhaust must not transfer from kitchen area. The number of exhaust fans and DOAUS must be the same, and exhaust fans and DOAUS must be arranged for and must include exhaust air energy recovery. Provide exhaust and DOAU systems with variable frequency drives (VFDS) and a control logic that provides reduced ventilation rates during periods of low interior humidity and still meets minimum ASHRAE 62.1 requirements. Dwelling unit laundry area must meet code requirements.

2.12.1.4.2 Centralized Laundry

Vent dryer to exterior according to applicable criteria and manufacturer’s installation instructions. Locate dryer exhaust vent exterior terminations no closer than 15 feet from dwelling unit bedroom windows. Provide individual vent connections for dryers.

2.12.1.5 Ductwork

2.12.1.5.1 Kitchen Range Hoods

Kitchen range hoods must be either U.L. listed ductless type or the U.L. listed ducted type to building exterior.

2.12.2 Temperature Controls

2.12.2.1 Dwelling Unit

Dwelling unit room temperature control must be through the direct digital control (DDC) system. Each dwelling unit must have a heating/cooling unit with thermostat/temperature control sensor located in common area. Occupant control must include fan selection (on/off) and an occupant temperature set point adjustment mechanism that allows +/- 2 deg f of adjustment from the DDC programmed set points (70 deg f heating, 75 deg f cooling). Additionally, the DDC controls must monitor each dwelling unit for sub-cooling. The DDC system must record an alarm event if the space temperature drops below 71-degree f (adjustable) when the outside air is greater than 85-degree f (adjustable). Occupant control must also include ability to select heating or cooling mode. HVAC system must be able to

provide for year-round heating or cooling in individual dwelling units as selected by the occupants. Occupant controller must not have any provisions for occupant adjustment to occupant controller beyond that stated in this paragraph. Any further adjustments beyond as described must be by authorized personnel only.

2.12.2.2 Ceiling Fans

Dwelling units will include ceiling fans.

2.13 ENERGY CONSERVATION REQUIREMENTS

2.13.1 Energy Performance

Comply with UFC 1-200-02 High Performance and Sustainable Building Requirements.

2.13.2 Load and Set Point Schedules

The following facility schedules must be used in facility energy simulations for purposes of documenting compliance with energy performance requirement. The peak values indicated for each schedule must be used for the baseline energy calculation. The hourly peak fraction values for various load components for each schedule must be used for both the baseline and proposed design energy calculations.

2.13.2.1 Common Area Internal Load Schedule

Hour	**Occupancy**			**Lighting**			**Washer/Dryer Use 1**			**Washer SHW 1**		
	Week	Sat	Sun	Week	Sat	Sun	Week	Sat	Sun	Week	Sat	Sun
1-6	0.00	0.00	0.00	0.30	0.30	0.30	0.00	0.00	0.00	0.00	0.00	0.00
7-10	0.20	0.20	0.20	0.30	0.30	0.30	0.00	0.00	0.00	0.00	0.00	0.00
11-18	0.00	0.00	0.00	0.30	0.30	0.30	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.80	0.80	0.80	0.00	0.00	0.00	0.00	0.00	0.00
20-21	0.20	0.20	0.20	0.80	0.80	0.80	0.50	0.50	0.50	0.50	0.50	0.50
22-23	0.40	0.40	0.40	0.80	0.80	0.80	1.00	1.00	1.00	1.00	1.00	1.00
24	0.20	0.20	0.20	0.80	0.80	0.80	0.50	0.50	0.50	0.50	0.50	0.50
Peak	Bldg. Occupancy/12			.87W/ft^2			0.16 kW/Bldg. Occupant			1.5 gal/hr./Bldg. Occupant @ 110 F		
Notes: 1. Data in columns are only applicable when centralized laundry room are provided.												

2.13.2.2 Dwelling Unit Internal Load Schedules

Hour	**Occupancy**			**Lighting**			**Plug Loads**			**Service Hot Water**		
	Week	Sat	Sun	Week	Sat	Sun	Week	Sat	Sun	Week	Sat	Sun

Hour	Occupancy			Lighting			Plug Loads			Service Hot Water		
1-5	0.80	0.75	0.75	0.20	0.20	0.20	0.20	0.20	0.20	0.00	0.00	0.00
6	0.70	0.65	0.75	0.40	0.30	0.20	0.20	0.20	0.20	0.10	0.10	0.10
11-18	0.00	0.00	0.00	0.30	0.30	0.30	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.80	0.80	0.80	0.00	0.00	0.00	0.00	0.00	0.00
20-21	0.20	0.20	0.20	0.80	0.80	0.80	0.50	0.50	0.50	0.50	0.50	0.50
22-23	0.40	0.40	0.40	0.80	0.80	0.80	1.00	1.00	1.00	1.00	1.00	1.00
24	0.20	0.20	0.20	0.80	0.80	0.80	0.50	0.50	0.50	0.50	0.50	0.50
7	0.60	0.60	0.70	0.70	0.50	0.30	0.40	0.35	0.20	0.40 (0.3)[1]	0.40 (0.3)[1]	0.40 (0.3)[1]
8	0.50	0.50	1.00	0.50	0.50	0.50	0.40	0.40	0.40	0.20	0.20	0.20
9	0.25	0.25	0.00	0.20	0.20	0.20	0.30	0.40	0.40	0.00	0.00	0.00
10-17	0.20	0.20	0.20	0.20	0.20	0.20	0.30	0.30	0.30	0.00	0.00	0.00
18	0.30	0.30	0.30	0.50	0.50	0.50	0.50	0.50	0.50	0.10	0.10	0.10
19	0.50	0.30	0.30	0.70	0.70	0.70	0.50	0.50	0.50	0.10 (0.2)[1]	0.10 (0.2)[1]	0.10 (0.2)[1]
20	0.50	0.50	0.50	0.70	0.70	0.70	0.60	0.50	0.50	0.10	0.10	0.10
21	0.70	0.50	0.50	0.70	0.70	0.70	0.60	0.50	0.50	0.00	0.00	0.00
22	0.70	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.00	0.00	0.00
23	0.80	0.75	0.75	0.40	0.40	0.40	0.40	0.50	0.50	0.00	0.00	0.00
Peak	2 occ/unit			.87W/ft^2			1.7 W/ft^2 with common laundries 3.5 W/ft^2 with individual washer/dryers			40 gal/hr/unit @ 110 F with common laundries 63 gal/hr/unit @ 110 F with individual washers		
Notes: 1. Factors for units with individual washers.												

2.13.2.3 Dwelling Unit Internal Load Schedules

Hour	Refrigerator			Range and Oven		
	Week	Sat	Sun	Week	Sat	Sun
1-6	1.00	1.00	1.00	0.01	0. 01	0. 01
7-16	1.00	1.00	1.00	0.04	0.04	0.04

Hour	Refrigerator			Range and Oven		
17-18	1.00	1.00	1.00	0.05	0.05	0.05
19-20	1.00	1.00	1.00	0.11	0.11	0.11
21-23	1.00	1.00	1.00	0.10	0.10	0.10
24	1.00	1.00	1.00	0.03	0.03	0.03
Peak	76.36 W/unit			68.95 W/unit		

2.13.2.4 Dwelling Unit Thermostat Set-Point Schedules

Hour	Heating (F)			Cooling (F)		
>	Week	Sat	Sun	Week	Sat	Sun
1-24	68	68	68	75	75	75

2.13.2.5 Unoccupied Zones (e.g. Stairwells, Mechanical Rooms) Thermostat Set-Point Schedules

Hr	Heating (F)		
>	Wk	Sat	Sun
1-24	55	55	55

2.14 FIRE PROTECTION REQUIREMENTS

2.14.1 Fire Detection and Alarm Systems

2.14.1.1 Software: Software, software locks, special tools and any other proprietary equipment required to maintain, add devices to or delete devices from the system, or test the fire alarm system must become property of the government and be provided to the contracting officer's representative prior to final inspection of the system.

2.14.1.2 Smoke detectors: provide smoke detectors in bedrooms. <UEPH_smoke1>smoke detectors in bedrooms must be monitored. Tampering with a smoke detector must send a trouble signal. Trouble signals must be transmitted to the fire department.</UEPH_smoke1><UEPH_smoke2>smoke alarm signals must not be transmitted to the fire department.</UEPH_smoke2><UEPH_smoke3>smoke alarm signals must be transmitted as a supervisory signal to the fire department.</UEPH_smoke3><UEPH_smoke4>smoke alarm signals must be transmitted as an alarm signal to the fire department.</UEPH_smoke4>

2.15 EQUIPMENT AND FURNITURE REQUIREMENTS

2.15.1 Furnishings

2.15.1.1 Furniture List/Charts

2.15.1.1.1 Dwelling Unit

2.15.1.1.1.1 Bedrooms

Bedroom must be able to accommodate the following furniture with adequate circulation for one occupant:

2.15.1.1.1.1.1 Bed

One twin bed with headboard and footboard 40” wide x 85 long”.

2.15.1.1.1.1.2 Chest of Drawers

One chest of drawers 36” wide x 20” deep.

2.15.1.1.1.1.3 Nightstand

One nightstand 26” wide x 20” deep.

2.15.1.1.1.1.4 Desk

One desk 60” wide x 26” deep with retractable keyboard tray and overhead study carrel.

2.15.1.1.1.1.5 Desk Chair

One desk chair 19 ½” wide by 18” deep.

2.15.1.1.1.2 Kitchens

If counter seating/dining is not provided, kitchen layout must have a dining/seating space which can accommodate the Providing listed below:

2.15.1.1.1.2.1 Dining table

One dining table for four.

2.15.1.1.1.2.2 Dining Chairs

Four chairs for the dining table.

2.15.1.1.1.3 Living Room

To be developed by the designer of record.

2.15.1.1.1.4 Day Room

To be developed by the designer of record.

2.15.1.2 Casework

Provide cabinets complying with AWI Quality Standards.

2.15.1.2.1 Dwelling Unit Casework

2.15.1.2.1.1 Kitchens

Provided a minimum of 12 linear feet of base cabinet systems with 12 linear feet of standard height counter and 12 linear feet of wall cabinet systems. 12 linear feet of standard height counter includes required sink. In addition to the 12 linear feet of standard height counter, kitchen layout must accommodate a minimum of 36 linear inches of counter style seating and dining for two people or provide space for dining table outside of the

kitchen area. Provide a minimum of two 18-inch-wide drawer units in the kitchen base cabinet system.

2.15.1.3 Window Treatments

Provide horizontal mini blinds at exterior windows. Uniformity of window covering color and material must be maintained to the maximum extent possible throughout each building. Blinds in barracks bedrooms must be room darkening mini blinds.

2.15.2 Equipment

2.15.2.1 Residential Appliances

2.15.2.1.1 Kitchen Appliances

Each dwelling unit must have a full kitchen with adequate space and circulation to accommodate:

2.15.2.1.1.1 Refrigerator

Refrigerator will be a GFGI full-size refrigerator 28 inches wide.

2.15.2.1.1.2 Range/Cooktop

If a range is included it will be GFGI electric oven/induction range 30-inches wide, with a Contractor Furnish, Contractor Installed (CFCI) built-in 30-inch-wide vent hood. If an induction cooktop is provided, it must be CFCI built-in four-burner electric cooktop with a CFCI built-in vent hood and room for a separate convection microwave oven.

2.15.2.2 Commercial Equipment

2.15.2.2.1 Laundry Equipment

2.15.2.2.1.1 Washer

Washer will be GFGI commercial grade.

2.15.2.2.1.2 Dryers

Dryer will be GFGI commercial grade.

2.15.2.2.1.3 Fixed Tables

Each CFCI fixed heavy gauge stainless steel clothes folding/hanging table must be 2'-0" deep by 5'-0" wide.

2.15.2.2.1.4 Utility Sink

Utility sink must be CFCI.

2.15.2.2.2 Vending Equipment

2.15.2.2.2.1 Vending Machines

Vending Machines will be full-size and will be GFGI.