

**3.0 UNACCOMPANIED ENLISTED PERSONNEL HOUSING (UEPH) <VER>(REV 3.1 – 30 JUN 2012)</VER>**

**3.1. GENERAL REQUIREMENTS:**

**3.1.1. FACILITY DESCRIPTION:** The Army requires an apartment complex of two-bedroom, one-bath dwelling units with kitchen (1+1E module) similar in features, standards and layout to apartment complexes in the surrounding community. Maximize the space inside the individual dwelling units versus providing additional spaces not listed in the functional requirements. Building circulation is required to be through the use of interior corridors/breezeways or garden style apartments, where circulation is minimized. Exterior egress balconies are prohibited; this does not preclude apartments designed with exterior entry landings. Predicate the choice of breezeways and exterior entry landings upon the weather criteria of the specific geographic area. Design breezeways and exterior entry landings to preclude snow and ice infiltration/accumulation. 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 00-6.0. ~~The Army requires an apartment complex of two-bedroom, one-bath dwelling units with kitchen (1+1E module) similar in features, standards and layout to apartment complexes in the surrounding community. Maximize the space inside the individual dwelling units versus providing additional spaces not listed in the functional requirements in this section. Building circulation is required to be through the use of interior corridors/breezeways or garden style apartments, where circulation is minimized. Exterior egress balconies are prohibited; this does not preclude apartments designed with exterior entry landings. Choice of breezeways and exterior entry landings shall be predicated upon the weather criteria of the specific geographic area. Breezeways and exterior entry landings shall be designed to preclude snow and ice infiltration/accumulation. 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 00-6.0.~~

**3.1.2. FACILITY RELATIONSHIPS: (NOT USED)**

**3.1.3. ACCESSIBILITY REQUIREMENTS:**

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

B. SITE PLAN DESIGN AND CONSTRUCTION

- 1) Provide ABA compliant access from the parking lot to the building.
- 2) Provide two (2) ABA compliant vehicle parking stalls for each barracks building for visitor parking.
- 3) Provide handicapped vehicle parking signage and pavement markings.

C. FACILITY DESIGN AND CONSTRUCTION

- 1) The main building entrance on the ground level and at least one emergency egress, designed per applicable code, shall be handicapped accessible. Electronic exterior door openers with push button control are required for handicapped accessibility.
- 2) Provide ABA clearances and door accesses in the building main entry/vestibule being used by visitors.
- 3) 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.:**
  - a) ~~Provide a handicapped accessible drinking fountain in the lobby.~~
  - b) ~~Provide handicapped accessible public toilet(s), which may be unisex, in the lobby area.~~

**3.1.4. BUILDING AREAS:**

A. GENERAL: The overall building gross area is based on allocating each occupant 366 gross square feet for buildings up to three stories or 388 gross square feet for buildings over three stories. For Installations in Alaska the overall building gross area is based on allocating each occupant 388 gross square feet for all barracks building, irrespective of building height. The gross square feet per occupant includes the total area of all

functional areas required in the building, including all dwelling units, common areas, canopies, and support areas, e.g. stairways, elevators, foyers, corridors, public toilets, janitor's closets, utility room spaces.

B. **GROSS AREA:** Calculate gross building area in accordance with Appendix Q, with the following exceptions in accordance with TI 800-01 Design Criteria – Appendix B, UEPH

1) **Definition:** Gross building area is measured to the outside face of exterior enclosure walls. Gross area includes floor areas, penthouses, mezzanines, and other spaces as follows:

2) **Limitations:** Maximum authorized gross building areas for each facility is included in this paragraph. Proposals that exceed authorized gross area limitations may be considered non-conforming.

C. **HALF SPACE:** ~~All stairs and elevator shafts count as half space for each floor they serve. Areas calculated as half space. Gross building area shall be calculated in accordance with Appendix Q, with the following exceptions in accordance with TI 800-01 Design Criteria – Appendix B, UEPH:~~

~~1) All stairs and elevator shafts count as half space for each floor they serve.~~

D. **EXCLUDED SPACE:** The following spaces are excluded from gross area calculations: Attic areas where average clear height does not exceed 7 feet, ~~normal roof overhangs and soffits for weather protection,~~ mechanical equipment platforms and catwalks.

E. **NET AREA :**

1) **Definition:** Net area is measured to the inside face of the room or finish walls.

2) **Net Area Requirements:** Net area requirements for programmed spaces are included in this chapter. If net area requirements are not specified, the space shall be sized to accommodate the required function and to comply with code requirements, overall gross area limitations, and any other requirement of this RFP (for example, area requirements for corridors, stairs, and mechanical rooms will typically be left to the discretion of the offeror).

### 3.1.5. ADAPT BUILD MODEL: (NOT USED)

## 3.2. FUNCTIONAL AND OPERATIONAL REQUIREMENTS:

### 3.2.1. FUNCTIONAL SPACES

#### A. PRIMARY SPACES

1) **Dwelling Units:**

a) **Bedrooms:** Each dwelling unit shall have two bedrooms, each with a minimum net area of 140 square feet and a maximum net area of 183 square feet. Bedrooms shall be equal in size and similar in configuration. ~~Provide a minimum width of 10'-0" in the living/bedroom. The recommended minimum width is 11'-0". Configure the living/bedroom area and the walk-in closet to maximum the amount of usable space in the living/bedroom area.~~ Bedroom shall be able to accommodate one bed, entertainment center, chest of drawers, nightstand, desk and chair with adequate circulation for one occupant: ~~See Section 3.19.1 Furniture List/Charts for more details. Each bedroom and~~ shall have a walk-in closet directly adjacent.

(1) **Walk-in-Closets:** ~~Provide each walk-in closet with a net area of 32 square feet, and furnish with hanger rods and shelves, see paragraph 3.5.1 Storage Shelving for more details. Furnish and install each closet door with a robe hook and full length mirror. Each walk-in closet shall have a net area of 32 square feet, and shall be furnished with hanger rods and shelves see paragraph 3.5.1 Storage Shelving for more details. Each closet door shall be furnished with a robe hook and full length mirror.~~

b) **Kitchen:** Each dwelling unit shall have a full kitchen with adequate space and circulation to accommodate a full size refrigerator 28 inches wide, ~~<UEPH\_RANGE>~~ a electric oven/range, with a built-in combination vent hood and microwave oven, centered above ~~<UEPH\_RANGE><UEPH\_TWOBURNER>~~ a built-in electric cooktop with a built-in combination vent hood and convection/microwave oven ~~<UEPH\_TWOBURNER><UEPH\_FOURBURNER>~~ a built-in electric cooktop with a built-in combination vent hood and convection/microwave oven ~~<UEPH\_FOURBURNER>~~, wall cabinet system and countertops for food

storage and preparation. Provide utility connections and casework to accommodate future installation of a dishwasher and appliances listed in 3.19.2 Residential Appliances. Provide area for recyclables receptacle and kitchen waste receptacle. ~~Provided a minimum of twelve (12) linear feet of standard height base, wall cabinet systems, and countertops for food storage and preparation, linear feet includes required sink. In addition to the twelve (12) linear feet of standard height counter, kitchen layout shall accommodate counter style seating and dining for two people, or provide space for a dining area outside of the kitchen.~~

c) **Bathroom:** Each dwelling unit shall have one full bath. Including a ~~t~~ub/shower enclosure and separate vanity with storage below. The tub/shower enclosure shall include a water closet and tub/shower combo. ~~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. When only one light fixture is provided, center the lavatory and light fixture between the two recessed mounted medicine cabinets. See 3.8 Plumbing Fixtures for details and 3.5.1 Interior Specialties for required toilet accessories.~~

d) **Dwelling Laundry:** ~~<UEPH\_LAUNDRY\_CENTRAL>Not Used</UEPH\_LAUNDRY\_CENTRAL><UEPH\_LAUNDRY\_DWELL> Provide dwelling unit laundry area in the kitchen and size to accommodate full-size residential washers and dryers. Dwelling unit laundry area shall be in the kitchen area and shall be sized to accommodate full-size residential washers and dryers as specified in 3.19.2 Residential Appliances. Provide required power, water, drain, and ventilation connections. </UEPH\_LAUNDRY\_DWELL>~~

## B. COMMON AREAS

1) **Lobby:** ~~<UEPH\_LOBBY\_NOT>Not Used</UEPH\_LOBBY\_NOT><UEPH\_LOBBY>~~Lobby shall meet the accessibility requirements stated in 3.1.3 above. ~~</UEPH\_LOBBY>~~

a) CQ Station: ~~<UEPH\_LOBBY\_NOT>Not Used</UEPH\_LOBBY\_NOT><UEPH\_LOBBY><UEPH\_CQ\_NOT>Not Used</UEPH\_CQ\_NOT><UEPH\_CQ>~~ Locate CQ station within the Lobby. Provide a net area of 70 square feet consisting of a built-in reception ABA compliant counter for visitors with space for a chair. ~~CQ station shall be located within the Lobby. CQ Station shall have a net area of 70 square feet and shall consist of a built-in reception ABA compliant counter for visitors with space for a chair.</UEPH\_CQ></UEPH\_LOBBY>~~

2) **Toilet(s):** ~~<UEPH\_LOBBY\_NOT>Not Used</UEPH\_LOBBY\_NOT><UEPH\_LOBBY>~~Public toilets, which may be a single, unisex toilet, shall be located adjacent to the ~~Lobby~~ lobby area and shall comply with the ABA accessibility requirements. If either a CQ station or a lobby is provided, a public toilet shall be included. ~~</UEPH\_LOBBY>~~

3) **Vestibule:** Provide an enclosed transition space between the exterior and the lobby or building interior. Provide a minimum of 7 feet clearance between interior and exterior doors.

4) **Corridors:** Corridors shall have a minimum width ~~th~~ no less than 5'-0".

5) **Janitor's Closet:** Provide a minimum of one Janitor's Closet per floor. ~~Each Janitor's Closet shall have, with a minimum area of 30 square feet. Provide Each each Janitor closet shall have with a mop sink, mop rack, and space for buckets, vacuum and storage for janitorial supplies. See 3.5.1 Interior Specialties for shelving details.~~

6) **Mechanical, Electrical, and Telecommunications Rooms:** Mechanical rooms shall 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 shall be performed without requiring access to the dwelling units. First floor exterior access is required for centralized mechanical and electrical rooms. ~~Mechanical rooms shall accommodate space for equipment maintenance/repair access without having to remove other equipment. Mechanical, electrical and telecommunications rooms shall be keyed separately for access by installation maintenance personnel. Filter changes and preventative maintenance shall be performed without requiring access to the dwelling units. First floor exterior access is required for centralized mechanical and electrical rooms. Telecommunications rooms shall comply with the requirements of ANSI/TIA/EIA-569-B. Refer to Mechanical and Electrical Sections for additional information.~~

7) **Mail Access Area:** Design and construct a mail access area as part of this project. ~~A mail access area shall be designed and constructed as a part of this project.~~ Mail access area shall include one USPS-approved combination lock type mailbox per resident, and a minimum of one USPS-approved two-key parcel locker parcel locker per 40 residents. ~~The the~~ numbering sequence shall be coordinated with the user.

- 8) **Vending Area:** ~~<UEPH\_VENDING\_NOT>Not Used</UEPH\_VENDING\_NOT><UEPH\_VENDING>~~  
Provide a minimum of one vending area centrally located on the ground floor of each barracks building. For barracks buildings higher than three stories, provide a minimum of one vending area centrally located on the ground floor of each barracks building, and a minimum of one vending area centrally located on every other floor above the ground floor of each barracks building. Size each Vending Area to accommodate one ice cube machine-dispenser designed for hotel type ice bucket filling and one full-size vending machine per 80 – 100 residents, or space for a minimum of three full-size vending machines, whichever is greater. Locate vending area in a central location that is easily monitored.~~Provide a minimum of one vending area centrally located on the ground floor of each barracks building. For barracks buildings higher than three stories, provide a minimum of one vending area centrally located on the ground floor of each barracks building, and a minimum of one vending area centrally located on every other floor above the ground floor of each barracks building. Each Vending Area shall be sized to accommodate one ice cube machine-dispenser designed for hotel type ice bucket filling and one full-size vending machine per 80 – 100 residents, or space for a minimum of three full-size vending machines, whichever is greater. Locate vending area in a central location that is easily monitored.</UEPH\_VENDING>~~
- 9) **Recyclables Storage:** Provide one recyclables storage per building. Locate the recyclables storage on the first floor with access to the complex trash/recyclables dumpster area. Recyclables Storage shall be fully enclosed and ventilated. Size Recyclables Storage ~~shall be sized~~ to accommodate a minimum of six (6) fifty-gallon barrel sized recyclable containers, with adequate circulation space to allow access to move each container in and out of the Recyclable Storage with a dolly, without having to move the other containers.
- 10) **Mudroom/Bootwash:** ~~<UEPH\_MUDROOM>~~ **Mudroom:** Provide an enclosed centralized location close to main building entry, with direct exterior access for soldiers to rinse mud off field gear, boots and clothing before laundering. Provide one rinsing station per 30 persons. ~~Furnish each rinsing station with a utility sink and a hoses hot and cold running water faucet. Each rinsing station shall be furnished with a utility sink and a hoses hot and cold running water faucet.</UEPH\_MUDROOM><UEPH\_BOOTWASH>~~ **Bootwash:** 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. ~~Furnish each rinsing station Each rinsing station shall be furnished~~ with a pedestal mounted, hoses cold water faucet or hydrant. Faucet or hydrant shall be non-freeze type. ~~</UEPH\_BOOTWASH>~~
- 11) **Centralized Laundry:** ~~<UEPH\_LAUNDRY\_DWELL>Not Used</UEPH\_LAUNDRY\_DWELL><UEPH\_LAUNDRY\_CENTRAL>~~ Locate a minimum of one laundry room in a centralized location, on each floor of each barracks building. Interior of laundry rooms shall 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 12 residents on each floor and one dryer per 8 residents on each floor. Fixed heavy gauge stainless steel clothes folding/hanging tables, stainless steel utility sinks and laundry supplies vending area 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.~~Locate a minimum of one laundry room in a centralized location, on each floor of each barracks building. Interior of laundry rooms shall be visible from the corridor through glazed picture windows. Laundry room entry shall provide a clear opening 36 inches wide minimum. Size self-serve laundry facilities to accommodate a combined total of no fewer than one washer per 12 residents on each floor and one dryer per 8 residents on each floor. Fixed heavy gauge stainless steel clothes folding/hanging tables, stainless steel utility sinks and laundry supplies vending area are required features of centralized laundry facilities. Provide one fixed heavy gauge stainless steel clothes folding/hanging table per 48 residents on each floor.</UEPH\_LAUNDRY\_CENTRAL>~~
- 12) **Activity Room:** ~~<UEPH\_ACTIVITY\_NOT>Not Used</UEPH\_ACTIVITY\_NOT><UEPH\_ACTIVITY>~~  
«UEPH\_ACTIVITY\_ROOM\_REQMTS» ~~</UEPH\_ACTIVITY>~~

### 3.3. SITE FUNCTIONAL REQUIREMENTS

#### A. PARKING

- 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. ~~Ensure that the location of parking complies with UFC 4-010-01. See paragraph 5.2.3, "VEHICLE PAVEMENTS", for additional information. Provide POV parking spaces for 70 percent of the personnel. The Contractor shall 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. The Contractor shall ensure that the location of~~

~~parking complies with UFC 4-010-01. See paragraph 5.2.3, "VEHICLE PAVEMENTS", for additional information. Provide POV parking spaces for 70 percent of the personnel.~~

## B. ACCESS DRIVES AND LANES

- 1) ~~**Services Access Drives:** Provide service access drives to each building. Locate the drives in accordance with UFC 4-010-01. Restrict access to the drives, where applicable, as required by UFC 4-010-01. Design the pavements as required by paragraph 5.2.3, "VEHICLE PAVEMENTS". The minimum access drive width shall be 10 feet. Design and construct drives with curb and gutter when necessary for drainage purposes. The Contractor shall provide service drives to each building. Locate the drives in accordance with UFC 4-010-01. Restrict access to the drives, where applicable, as required by UFC 4-010-01. Design the pavements as required by paragraph 5.2.3, "VEHICLE PAVEMENTS". The minimum access drive width shall be 10 feet. The Contractor shall design and construct drives with curb and gutter when necessary for drainage purposes.~~
- 2) ~~**Emergency Vehicle/Fire Access Lanes:** Provide fire access lanes. Drives designed to support emergency vehicle traffic shall be a minimum of 20 feet wide per NFPA requirements. Provide access to three sides, minimum, within 33 feet of a building's entrance. Design the fire access lanes in accordance with NFPA 1, UFC-3-600-01, and the installation's requirements. The Contractor shall provide fire access lanes. Drives designed to support emergency vehicle traffic shall be a minimum of 20 feet wide per NFPA requirements. Access must be provided to three sides, minimum and must be within 33 feet of a building's entrance. Design the fire access lanes in accordance with NFPA 1, UFC-3-600-01, and the installation's requirements.~~

## 3.4. **SITE AND LANDSCAPE REQUIREMENTS**

### A. SITE STRUCTURES

- 1) ~~**Dumpster Area:** Locate, design, and construct the dumpster enclosure area(s) and screening. Dumpster screening shall be aesthetically and architecturally compatible with the building it serves and shall be designed in accordance with the Installation's guidelines. Locate the dumpster areas in accordance with UFC 4-010-01 "DoD Minimum Antiterrorism Standards for Buildings". Position the GFGI dumpsters outside of restricted areas to allow for servicing activities. The Contractor shall locate, design, and construct the dumpster enclosure area(s) and screening. Dumpster screening shall be aesthetically and architecturally compatible with the building it serves and shall be designed in accordance with the Installation's guidelines. Locate the dumpster areas in accordance with UFC 4-010-01 "DoD Minimum Antiterrorism Standards for Buildings". Position the GFGI dumpsters outside of restricted areas to allow for servicing activities.~~

### B. LANDSCAPING/HARDSCAPING

- 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 pedestrian walks within the designated construction area and connect to existing sidewalks, where applicable. 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 shall be a minimum of 6 feet wide. Restrict vehicular access to the sidewalks, as required by UFC 4-010-01.~~
- 2) ~~**Shared Troop and Vehicular Walks****Roadway Pavement:** Sidewalks designed to support emergency and service vehicle traffic will be considered roadway pavements and shall 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 shall have minimum widths as stated in 3.3 Access Drives and Lanes.~~

## 3.5. **ARCHITECTURAL REQUIREMENTS**

- A. ~~**GENERAL:** Provide durable and easily maintainable materials.~~ Do not use exterior materials that require periodic repainting or similar refinishing processes. Material exposed to weather shall be factory pre-finished, integrally colored or provided with intrinsic weathering finish.

B. WALLS:

1) **Exterior Walls:** Where Exterior Insulation and Finish Systems (EIFS), or any other material except CMU or other Masonry material is used as exterior finish material, it shall be in conjunction with a Masonry wainscot. EIFS shall be "high-impact" type and shall be "drainable" type. Masonry units shall be tested for efflorescence. Efflorescence testing shall conform to the provisions of ASTM C 67. CMU construction shall comply with the provisions of ASTM C 1400.

C. **MOLD AND MILDEW**~~Mold and Mildew:~~ The Designer of Record shall 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/or roof construction moisture analysis to verify appropriate thermal insulation and vapor permeability retardant assemblies to prevent condensation with the wall and/or roof under all foreseeable climate conditions. All gypsum board shall achieve a score of 10, the highest level of performance for mold resistance under the ASTM D 3273 test method. All gypsum board shall be transported, handled, stored and installed in accordance with the GYPSUM ASSOCIATION – Guidelines for Prevention of Mold Growth on Gypsum Board (GA-238-03).~~

D. **ROOF SYSTEMS:** For membrane roof systems provide a minimum slope of 1/4 inch per foot and roof crickets with a minimum 1/2 inch per foot slope. Membrane roof systems shall be fully adhered. Provide pitched roof systems with a minimum slope of 3 inches per foot. ~~Roof pitch shall also comply with applicable Area Design Guideline and Installation Design Guideline if conflict exists design roof in accordance with most stringent slope.~~ Structural standing seam metal roofs shall comply with the requirements of ASTM E 1592. Roof system shall be Underwriters Laboratory (UL 580 Class 90) rated or Factory Mutual Global (FM) I-90 rated and comply with applicable criteria for fire rating. ~~Minimum roof slope for membrane roof systems shall be 1/4 inch per foot. Minimum roof slope for pitched roof systems shall be 3 inches per foot. Membrane roof systems shall be fully adhered. Structural standing seam metal roofs shall comply with the requirements of ASTM E 1592. Roof system shall be Underwriters Laboratory (UL 580 Class 90) rated or Factory Mutual Global (FM) I-90 rated. Roof system shall comply with applicable criteria for fire rating.~~

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 shall be completely screened by the roof parapet ~~to a distance of 400 feet.~~

2) **Roof Access:** Roof access from building exterior is prohibited.

3) **Trim and Flashing:** Gutters, downspouts, and fascia shall be factory pre-finished metal and shall comply with SMACNA Architectural Sheet Metal Manual.

E. OPENINGS:

1) **Storefronts/Curtain Walls & Entrances:**

a) **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, subframes, transoms, sidelights, trim, applied muntins, and accessories. ~~Provide framing systems with thermal-break design. Framing systems shall have thermal-break design.~~ Storefront systems shall be capable of withstanding area wind loads, thermal and structural movement required by location and project requirements, and shall comply with applicable codes and criteria.

b) **Curtain Wall Systems:** Curtain wall systems shall be capable of withstanding area wind loads, thermal and structural movement required by location and project requirements, and shall comply with applicable codes and criteria.

2) **Windows:** Material and installation shall comply with applicable codes and criteria.

a) **Exterior Windows:** Provide insulated, high efficiency 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 window sills to discourage bird nesting. Each bedroom shall have at least one exterior window. Window shall meet egress requirements of NFPA 101 and International Building Code. Window sills shall be designed to discourage bird nesting.~~ ~~<UEPH\_OPERABLE>~~ All bedroom windows shall be operable windows. ~~Furnish operable windows with locks, and fiberglass or aluminum insect screens removable from the inside. Operable windows shall be furnished~~

~~with locks, and fiberglass or aluminum insect screens removable from the inside.~~<UEPH\_OPERABLE><UEPH\_SEALED>All bedroom windows shall be fixed windows. Windows shall not open to corridor, balcony or landing. <UEPH\_SEALED>

b) **Interior Windows:**

(1) **Centralized Laundry:** Picture window glazing shall be laminated glass. An alternate solution to provide visual monitoring of the laundry room in-lieu of using a picture window may be proposed. **Laminated Glass:**

~~(a) — **Centralized Laundry:** Picture window glazing shall be laminated glass. Design-Build Contractor may propose an alternate solution that will provide visual monitoring of the laundry room in-lieu of using a picture window.~~

2) **Doors and Frames:** ~~Fire-rated, smoke control doors and frames and non-fire-rated~~All doors and frames and installation shall comply with applicable codes, criteria and requirements of labeling authority. ~~Fire-rated and Smoke Control Doors and Frames: Comply with applicable codes, criteria and requirements of labeling authority.~~ STC ratings shall be of the sound classification required and shall include the entire door and frame assembly.

a) **Exterior Insulated Hollow Metal Doors & Frames:** Provide insulated hollow metal exterior doors for entry to all spaces other than corridors, lobbies, or reception/waiting rooms. ~~Doors and frames shall comply with applicable codes and criteria.~~ Doors shall be minimum Level 3, physical performance Level A, Model 2. Frames shall be minimum 12-gauge, with continuously welded mitered corners and seamless face joints. Doors and frames shall be A60 galvanized, shall comply with ASTM A653 and shall be factory primed. **Use tamperproof screws for the attachment of all door accessories.**~~Fire-rated openings shall comply with applicable codes, and the requirements of the labeling authority. Door and frame installation shall comply with applicable codes and criteria.~~

b) **Interior Insulated Metal Doors:** ~~Shall comply with applicable codes and criteria.~~ Doors shall be minimum Level 3, physical performance Level A, Model 2; factory primed.

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

(2) <UEPH\_ENTRYDOORS\_HM>Provide solid core insulated hollow metal doors with a wood grain finish at dwelling unit entry. <UEPH\_ENTRYDOORS\_HM><UEPH\_ENTRYDOORS\_HM\_NOT>Not Used<UEPH\_ENTRYDOORS\_HM\_NOT>

c) **Solid Core Wood Doors:** Provide flush solid core wood doors with Grade A hardwood face veneer for transparent finish. Stile edges shall be non-finger jointed hardwood compatible with face veneer.

(1) Provide flush solid core wood doors at doors within dwelling unit.

(2) <UEPH\_ENTRYDOORS\_WD>Provide flush solid core wood doors at dwelling unit entry.<UEPH\_ENTRYDOORS\_WD><UEPH\_ENTRYDOORS\_WD\_NOT>Not Used<UEPH\_ENTRYDOORS\_WD\_NOT>

d) **Interior Hollow Metal Frames:** Comply with ANSI A250.8/SDI 100. Frames shall be minimum Level 3, 16 gauge, with continuously welded mitered corners and seamless face joints; factory primed. **Contractors have the option to furnish knockdown frames for closet and bathroom doors in the dwelling units. Continuously welded frames with mitered corners and seamless face joints at closets and bathroom doors in the dwelling units shall be considered betterments.**

~~(1) — **Contractor's Option:** — Contractors have the option to furnish knockdown frames for closet and bathroom doors in the dwelling units. Continuously welded frames with mitered corners and seamless face joints at closets and bathroom doors in the dwelling units shall be considered betterments.~~

4) **Hardware:**

a) **Door Hardware:** All hardware shall be consistent and shall conform to ANSI/BMHA standards for Grade 1. Provide closers for all exterior doors, all doors opening to corridors and as required by codes. **Install Exit-exit devices shall be installed** on all building egress doors.

(1) **Finish Hardware (Master Keying System/Cores):** ~~Coordinate all requirements for hardware keying with the Contracting Officer. Provide extension of the existing Installation keying system, the Installation keying system is~~All requirements for hardware keying shall be coordinated with the Contracting Officer. ~~Extension of the existing Installation keying system shall be provided, the Installation keying system is~~ «UEPH\_KEYING\_SYSTEM». Provide key-removable type cylinder cores with not 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 shall 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. Cores shall have not less than seven pins; cylinders shall have key-removable type cores. Disassembly of knob or lockset shall not be required to remove core from lockset. Locksets for mechanical, electrical and communications rooms only shall be keyed to the existing Installation Master Keying System. HVAC terminal units that are accessed from a central corridor shall have a deadbolt to minimize protrusion into corridor. Plastic cores are unacceptable.~~

(2) **Fire and Exit Door Labeling:** ~~Install hardware for fire doors in accordance with the requirements of applicable codes. Hardware for fire doors shall be installed in accordance with the requirements of applicable codes.~~ Exit devices installed on fire doors shall have a visible label bearing the marking "Fire Exit Hardware". Other hardware installed on fire doors, such as locksets, closers, and hinges shall 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 shall be installed in accordance with applicable codes.

(3) **Auxiliary Hardware:** Provide other hardware as necessary for a complete installation.

(a) **Door Stops:** Provide wall or floor stops for all exterior doors that do not have overhead holder/stops.

(b) **Peep Holes:** ~~Furnish each dwelling unit entry door~~ Each dwelling unit entry door shall be furnished with a brass peephole door viewer with a viewing angle of 200 degrees minimum.

(c) **Door Latches:** Provide each closet door with a Function (F75), Grade 1 closet latch, and with padlock eyes so the occupant can provide his/her own padlock. One padlock eye shall be mortised into and screw attached flush with door edge on the latch side of the door and the second padlock eye shall 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 shall match door frame color. Locate padlock eye at between 4'-6" and 5'-6" AFF at the same height in all modules. ~~Each closet door shall have a Function (F75), Grade 1 closet latch, and be equipped with padlock eyes so the occupant can provide his/her own padlock. One padlock eye shall be mortised into and screw attached flush with door edge on the latch side of the door and the second padlock eye shall be mortised and welded flush into the inside face of the door frame jamb. Padlock eye shall be fabricated to accommodate padlock shackle up to 1/4" diameter. Padlock eye color shall match door frame color. Locate padlock eye at between 4'-6" and 5'-6" AFF. Location of padlock eyes shall be at the same height in all modules.~~

(d) **Thresholds & Door-sweeps:** Furnish 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 shall match door frame.

(e) **Robe Hooks:**

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

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

(b) **Electronic Key Card Access System:** A Programmable Electronic Key Card Access System shall be provided on all exterior entry/egress doors, dwelling unit doors, bedroom doors and centralized laundry doors (if centralized laundries are required by RFP). ~~<UEPH\_KEY\_NO>~~The Installation does not have a single manufacturer established for this equipment at this time ~~<UEPH\_KEY\_NO><UEPH\_KEY\_YES>~~ ~~Extension~~ Provide extension of the existing Installation key card access system shall be provided, the existing Installation key card access system is ~~«UEPH\_KEY\_MANUFACTURER»<UEPH\_KEY\_YES>~~. The minimum operability requirement is a key card access system that provides a single key card for the individual soldier, programmable to open all 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 shall install all hardware and software necessary for the operation of the Electronic Key Card Access System and program all locksets. Provide six (6) blank key cards for each personnel each building is designed to accommodate. All blank key cards shall be serially numbered and each key card shall have its number permanently inscribed on it. Furnish 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 shall provide two (2) separate 4-hour classes of training for the user on software use, programming locks, encoding cards and printing reports. Furnish each building with a complete stand-alone key card system package. System shall 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 all components and locksets. Furnish all special tools, software, connecting cables and proprietary equipment

necessary for the maintenance, testing, and reprogramming of the system. ~~The minimum operability requirement is a key card access system that provides a single key card for the individual soldier, programmable to open all 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 shall install all hardware and software necessary for the operation of the Electronic Key Card Access System and program all locksets. Provide six (6) blank key cards for each personnel each building is designed to accommodate. All blank key cards shall be serially numbered and each key card shall have its number permanently inscribed on it. The Design-Build Contractor shall furnish 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 shall provide two (2) separate 4-hour classes of training for the user on software use, programming locks, encoding cards and printing reports. Each building shall be furnished with a complete stand-alone key card system package. System shall 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 all components and locksets. All special tools, software, connecting cables and proprietary equipment necessary for the maintenance, testing, and reprogramming of the system shall be furnished to the Contracting Officer Representative.~~ <UEPH\_KEY\_YES>

(1) **Key Card Access System Accessories:** «UEPH\_KEYCARD\_DESCRIPTION» <UEPH\_KEY\_YES>

c) **Non-Destructive Emergency Access System (KNOX Box):** <UEPH\_KNOX\_NO>Not Used <UEPH\_KNOX\_NO><UEPH\_KNOX>Non-Destructive Emergency Access System «UEPH\_LOCKBOX\_DESCRIPTION» <UEPH\_KNOX>

5) **Glass and Glazing:** Material and installation shall comply with applicable codes and criteria.

a) **Mirrors:**

(1) **Walk-in Closets:** Each closet door shall have a 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. Bottom of mirror shall be located at 6 inches above finish floor.~~

6) **Louvers and Vents:**

a) **Exterior:** Exterior louvers shall have bird screens and shall be designed to exclude wind-driven rain. Exterior louvers shall be made to withstand wind loads in accordance with the applicable codes. Wall louvers shall 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 shall be factory applied.

F. **EXTERIOR SPECIALITIES:**

1) **Bird Habitat Mitigation:** ~~The Contractor shall provide~~ Provide details in the design necessary to eliminate the congregating and nesting of birds at, on, and in the facility.

G. **ELEVATORS/CONVEYING SYSTEMS:**

1) **Elevators:** ~~Elevators:~~ Provide elevators for buildings that exceed three stories. 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 shall be centrally located and shall 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 shall be based on the "STRYKER Power-PRO XT" gurney. An additional elevator as specified above shall be provided for every additional one hundred (100) persons or fraction thereof, over the first two hundred (200) persons the building is designed to accommodate, unless a traffic analysis determines otherwise. Such traffic analysis shall be included in the Design Analysis.

2) **Elevator Inspector:** ~~The~~ Elevator Inspector shall 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 shall inspect the installation of the elevator(s) to assure that the installation conforms with all contract requirements. The Elevator Inspector shall be directly employed by the Prime Contractor and shall be independent of the Elevator System Manufacturer and the Elevator System Installer. The Elevator Inspector shall witness the acceptance inspections and tests, approve all results and sign

and certify the successful results. The Elevator Inspector, after completion of the acceptance inspections and tests, shall certify in writing that the installation is in accordance with the contract requirements. The Elevator Inspector shall 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.

H. POSTAL/MAIL BOX REQUIREMENTS:

- 1) **Exterior:** ~~<UEPH\_MAIL\_EXT> Locate mail access area on an exterior wall, protected from the elements, conforming to the requirements of ATFP UFC 4-010-01. Mail access area shall be located on an exterior wall, protected from the elements and shall conform to the requirements of ATFP UFC 4-010-01.~~ ~~</UEPH\_MAIL\_EXT>~~ **<UEPH\_MAIL\_KIOSK>** Mail access area shall be a mail kiosk separated from the main building with box access on outside, and rear (or front) loading. Location of mail kiosk shall conform to the requirements of ATFP UFC 4-010-01. Protect mail kiosk from the elements and design it to be architecturally compatible with the associated barracks building. ~~Mail access area shall be a mail kiosk separated from the main building with box access on outside, and rear (or front) loading. Location of mail kiosk shall conform to the requirements of ATFP UFC 4-010-01. Mail kiosk shall be protected from the elements and shall be architecturally compatible with the associated barracks building.~~ ~~</UEPH\_MAIL\_KIOSK>~~ ~~<UEPH\_MAIL\_EXT\_NOT>~~ Not Used ~~</UEPH\_MAIL\_EXT\_NOT>~~
- 2) **Interior:** ~~<UEPH\_MAIL\_LOB> Locate mail access area in an interior lobby. Mail access area shall be located in an interior lobby (design and location shall conform to the requirements of ATFP UFC 4-010-01.~~ ~~</UEPH\_MAIL\_LOB>~~ ~~<UEPH\_MAIL\_LOB\_NOT>~~ Not Used ~~</UEPH\_MAIL\_LOB\_NOT>~~

I. 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~~ ~~Exterior walls and roof/floor/ceiling assemblies, doors, windows and interior partitions shall be designed to provide for attenuation of external noise sources such as airfields in accordance with applicable criteria, but no less than the following:~~

- 1) **Exterior Walls:** STC 49
- 2) **Interior Partitions:** STC 49
- 3) **Walls/Floors separating Module Spaces:** STC 50 / IIC 55
- 4) **Module Entry, Bedroom and Bathroom Doors:** STC 25
- 5) Sound conditions (and levels) for interior spaces, due to the operation of mechanical and electrical systems and devices, shall 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

J. THERMAL REQUIREMENTS:

- 1) **Thermal Insulation:** Provide exterior wall, floor, and roof/ceiling assemblies with thermal transmittance (U-values) required to comply with the proposed energy calculations for the facilities conservation requirements. Insulation shall not be installed directly on top of suspended acoustical panel ceiling systems.
- 2) **Building Envelope Sealing Performance Requirement:** Requirements of Paragraph 5.6.2 are fully applicable except that envelope leakage test shall be maximum of 0.15 cfm/sf for measured area." Place emphasis on providing thermal envelope performance using continuous insulation components outside of the structural elements of the facility.
  - 1) ~~**Thermal Insulation:** Provide exterior wall, floor, and roof/ceiling assemblies with thermal transmittance (U-values) required to comply with the proposed energy calculations for the facilities. Insulation shall not be installed directly on top of suspended acoustical panel ceiling systems. See Paragraph 3.12 Energy Conservation for details.~~

### 3.5.1. FINISHES AND INTERIOR SPECIALITIES

A. GENERAL: Provide sustainable materials and furnishings 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.

B. **FINISHES:** Designers are not limited to the minimum finishes listed in this paragraph and are encouraged to offer higher quality finishes.

1) **Minimum Finish Requirements:** Wall, ceiling and floor finishes shall conform to the requirements of the IBC, NFPA and UFC 3-600-01. Where code requirements conflict, the most stringent code requirement shall apply.

a) **Walls:** All wall finish shall be minimum 5/8" painted gypsum board, except where stated otherwise. Use impact resistant gypsum board in corridors, storage rooms, stairwells and activity 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. ~~All wall finish shall be minimum 5/8" painted gypsum board, except where stated otherwise. All gypsum board shall achieve a score of 10, the highest level of performance for mold resistance under the ASTM D 3273 test method. All gypsum board shall be transported, handled, stored and installed in accordance with the GYPSUM ASSOCIATION – Guidelines For Prevention Of Mold Growth On Gypsum Board (GA-238-03). Use impact resistant gypsum board in corridors, storage rooms, stairwells and activity rooms and centralized laundries (if centralized laundries are required by RFP).~~

b) **Ceilings:** All ceiling finishes shall be minimum 5/8" painted gypsum board, except where stated otherwise. ~~All gypsum board shall achieve a score of 10, the highest level of performance for mold resistance under the ASTM D 3273 test method. All gypsum board shall be transported, handled, stored and installed in accordance with the GYPSUM ASSOCIATION – Guidelines For Prevention Of Mold Growth On Gypsum Board (GA-238-03).~~

(1) **Acoustical Ceiling Tiles (ACT):** Shall be 24"x 24" Acoustical tile panels of 5/8 inch minimum thickness. Type as indicated, Class A. Light reflectance shall exceed 75 percent, color, texture and finish shall be as indicated. When not indicated provide white, fissured texture acoustical panels with a beveled tegular edge. NRC not less than 0.60, CAC not less than 35.

(2) **Ceiling Grid:** Provide a–9a 9/16" suspension system - Type as indicated. Color, texture and finish shall be as indicated. When not indicated provide white, hot-dipped galvanized steel, exposed tee grid with hold down clips for ceiling tiles.

c) **Floors:**

(1) **Resilient Flooring):** Resilient flooring shall 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. ~~Resilient flooring shall 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) ~~— **Porcelain/Quarry Tile:**~~

(3) ~~— **Ceramic Tile:**~~

(4) ~~— **Sealed Concrete:**~~

d) **Counter Tops:** Provide solid surfacing of either Solid Polymer or Solid Polyester Resin Composition 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. ~~Countertops shall have waterfall front edge. Bathroom, kitchen and public toilet countertops shall have integral coved backsplash.~~

(1) **Bathroom & Public Toilet(s):** Bathroom and public toilet (if required by RFP) vanity countertop shall be minimum ½ inch thick cast 100 percent acrylic polymer solid surfacing material with waterfall front edge and integral coved backsplash.

(2) **Kitchens:**

e) **Window Stools:** Provide solid surfacing of either Solid Polymer or Solid Polyester Resin Composition 1/2-inch minimum thickness for window stools. Must meet ANSI/NEMA LD 3 and ASTM E 84. ~~Window stools shall be minimum ½ inch thick cast 100 percent acrylic polymer solid surfacing material.~~

f) **Elevator(s) Finishes:** Elevator interior walls, ceiling, doors and fixtures shall have a satin No. 4 stainless steel finish. Floor finish shall be resilient flooring -as specified in Paragraph 3.5.1 above. All elevators shall be

furnished with removable hanging protective pads and fixed hooks to facilitate conversion to use for moving freight.

2) **Minimum Paint Finish Requirements:** All paints used shall 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 shall not be used on this project. All paints used shall be listed on the "Approved product list" of the Master Painters Institute, (MPI). Application criteria shall be as recommended by Master Painters Institute (MPI) guide specifications for the substrate to be painted and the environmental conditions existing at the project site.

a) **Exterior Surfaces:** Exterior paints and coating products shall be classified as containing low volatile organic compounds (VOCs) in accordance with MPI criteria. Application criteria shall be as recommended by MPI guide specifications. Provide an MPI Gloss Level 5 Finish (Semi-gloss), unless otherwise specified. Except factory pre-finished material or exterior surfaces receiving other finishes shall be painted 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 shall not be used on this project. Exterior paints and coating products shall be classified as containing low volatile organic compounds (VOCs) in accordance with MPI criteria. Application criteria shall be as recommended by MPI guide specifications. Provide an MPI Gloss Level 5 Finish (Semi-gloss), unless otherwise specified.

b) **Interior Surfaces:** Interior paints and coating products shall 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) in wet areas and an flategg-shell finish in all other areas. Except factory pre-finished material or interior surfaces receiving other finishes shall be painted 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 shall not be used on this project. Interior paints and coating products shall contain a maximum level of 150 g/l (grams per liter) of volatile organic compounds (VOCs) for non-flat coatings and 50 g/l of VOCs for flat coatings. Provide an MPI Gloss Level 5 Finish (Semi-gloss) in wet areas and a flat finish in all other areas.

3) **Excluded Finishes:** Carpet shall not be used as a floor finish in the UEPH.

4) **Finish Table:**

MINIMUM INTERIOR FINISHES														
	FLOORS					BASE			WALLS	CEILING			REMARKS	
	RESILIENT FLOORING	PORCELAIN OR QUARRY TILE	CERAMIC TILE	RECESSED ENTRY 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
<b>COMMON AREAS</b>														
LOBBY (IF REQUIRED BY RFP)		•						•	•		•	•	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)					•								-	
ACTIVITY ROOM (IF REQUIRED BY RFP)		•						•	•		•	•	9'-0"	SEE NOTE 6





~~ASTM E 2072 and ASTM E 2073. Sign shall be minimum 14-inches wide by 10-inches high, and shall be made of anodized aluminum. Lettering shall be red text on a yellow background. Lettering shall be upper case, and shall 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 shall be mounted centered on interior face of door above exit device.~~

2) **Visual Display Units/Cases:**

a) **Bulletin Boards:** ~~Bulletin board shall be 4'-0" high and 6'-0" wide with a header panel and lockable, laminated, glazed doors. Provide one bulletin board centrally located on all floors. Bulletin board shall be 4'-0" high and 6'-0" wide. Bulletin boards shall have a header panel and shall have lockable, glazed doors. Glazing shall be laminated glass.~~

3) **Toilet Accessories:** Furnish and install the items listed below and all other toilet accessories necessary for a complete and usable facility. All toilet accessories shall be Type 304 stainless steel with satin finish.

a) **Public Toilet(s):** Public Toilets (IF REQUIRED BY THE RFP): Toilet accessories shall conform to the requirements of the ABA and shall include, but are not limited to the following:

- (1) Glass mirrors on stainless steel frame and shelf – at each lavatory
- (2) Liquid soap dispenser – at each lavatory
- (3) Combination recessed mounted paper-towel dispenser/waste receptacle
- (4) Sanitary napkin disposal at each female/unisex toilet
- (5) Recessed mounted lockable double toilet paper holder – at each water closet.
- (6) Sanitary toilet seat cover dispenser – a minimum of one per toilet room
- (7) Grab bars – as required by ABA

b) **Dwelling Unit/Bedroom Toilet(s):** Shall at a minimum include:

- (1) Two heavy duty towel bars – minimum 24 inches wide each
- (2) Two recessed mounted mirrored medicine cabinets – at each lavatory.
  - (a) A minimum of 16-inches wide by 24 inches high with adjustable shelves, mounted on the back wall of the vanity.
  - (b) Medicine cabinet construction shall be heavy gauge steel, all welded, with a powder-coated finish.
  - (c) Mirror shall be ¼ inch thick select float glass in a one piece ½ inch by ½ inch by ½ inch Type 304 satin finished, stainless steel frame, with mitered corners.
- (3) Two soap dish - at tub/shower
- (4) One wall mounted retractable clothesline – across tub/shower
- (5) Two combination tumbler holder/toothbrush holder – one at each medicine cabinet
- (6) Toilet paper holder – at each water closet.
- (7) Curved shower curtain rod - extra heavy duty.
- (8) Shower curtain – white anti-bacterial nylon/vinyl fabric shower curtain.
- (9) Two soap dish – one at each medicine cabinet.

4) **Wall Protection:**

a) **Chair Rail:** ~~Install chair rails in areas prone to hi-impact use, such as corridors and lobby. Chair rails shall be installed in areas prone to hi-impact use, such as corridors and lobby.~~

b) **Corner Guards:** Provide surface mounted, high impact resistant, integral color, snap-on type resilient corner guards, extending from floor to ceiling for wall/column outside corners in high traffic areas. ~~Furnish factory fabricated end closure caps for top and bottom of surface mounted corner guards. Factory fabricated end closure caps shall be furnished for top and bottom of surface mounted corner guards.~~

5) **Storage Shelving:**

- a) **Janitor's Closet:** Provide a minimum of six linear feet of 18 inch deep, heavy duty, stainless steel shelving for storage of janitorial supplies.
- b) **Walk-in-Closets:** Closet shelf shall be capable of supporting a minimum of 30 pounds per linear foot. Closet shelf shall be 15 inches deep and top of shelf shall be set at 70 inches above closet finish floor. Closet rod and bracket system shall 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.
- 6) **Fire Extinguishers, Cabinets & Mounting Brackets:** Furnish a list of installed fire extinguisher cabinets and mounting brackets (including location, size and type) to the Contracting Office Representative. Provide a list of all required portable fire extinguishers, with descriptions (location, size, type, etc.) and total number per type. See also Section 01 33 16, Attachment D, "SAMPLE FIRE PROTECTION AND LIFE SAFETY CODE REVIEW", paragraph 1.14. ~~Fire Extinguisher Cabinets & Mounting Brackets:~~ Furnish and install fire extinguisher cabinets and fire extinguisher mounting brackets as required by applicable codes and criteria. ~~Furnish a list of installed fire extinguisher cabinets and mounting brackets (including location, size and type) to the Contracting Office Representative.~~

**3.6. STRUCTURAL REQUIREMENTS:**

A. ~~GENERAL:~~ Design and construct as a complete system in accordance with APPLICABLE CRITERIA.

B. DESIGN LOADS:

- 1) **Live Loads:** Design live loads shall be per the IBC but not lower than the following minimums.
  - a) **Elevated floors:** 60 pounds per square foot (psf) minimum
  - b) **Slab on grade:** 150 psf minimum
  - c) **Centralized laundry area (if required by RFP):** ~~<UEPH\_LAUNDRY\_DWELL>~~Not Used ~~<UEPH\_LAUNDRY\_DWELL><UEPH\_LAUNDRY\_CENTRAL>~~150 psf, (but not less than actual equipment loads) ~~<UEPH\_LAUNDRY\_CENTRAL>~~

**3.7. SEE PARAGRAPH 6.7 THERMAL PERFORMANCE – NOT USED**

**3.8. PLUMBING REQUIREMENTS:**

A. DOMESTIC WATER:

- 1) **Heating System:** ~~Size the domestic water heating system based on 20 gallons of 110 deg F hot water consumption per occupant during morning peak period. Peak period duration shall be 30 minutes (10 minute duration for shower and lavatory use per occupant per dwelling unit plus a 10 minute transition period). Base hot water storage capacity on 75% usable storage and a storage temperature of 140 deg F. Domestic hot water distribution shall be at 120 deg F from a central system mixing valve. Design domestic hot water distribution piping to handle up to 180 deg F water temperatures. Domestic water heating system shall be sized based on 20-gallons of 110-deg. F hot water consumption per occupant during morning peak period. Peak period duration shall be 30 minutes (10 minute duration for shower and lavatory use per occupant per dwelling unit plus a 10-minute transition period). Hot water storage capacity shall be based on 75% usable storage and a storage temperature of 140 deg F. Domestic hot water distribution shall be at 120 deg F from a central system mixing valve. Domestic hot water distribution piping shall be designed to handle up to 180-deg F water temperatures.~~
- 2) **Pipe Sizing:** ~~For domestic hot water pipe sizing, base peak hot water flow rate on all 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. For domestic hot water pipe sizing, peak hot water flow rate shall be based on all showers flowing simultaneously at a rate of 2.0 gpm per shower. Waste stacks, building waste drains, and lift stations (if required) shall be sized with consideration of increased flow rates as well.~~

B. FIXTURE FLOW RATES:

- 1) ~~**Water Closets:** Shall have a maximum flow rate of 1.28 gallons per flush or dual flush with an equivalent average flush volume of 1.28 gallons per flush.~~
- 2) **Shower heads:** Shall have a maximum flow rate not to exceed 1.5 gpm.

- 3) **Bathroom Sinks/faucets:** Shall have a maximum flow rate not to exceed 0.5 gpm.
- 4) **Kitchen Sinks/faucets:** Shall have a maximum flow rate not to exceed 1.0 gpm.
- 5) **Janitor-Mop Sinks:** Shall have a maximum flow rate not to exceed 2.0 gpm.

C. DRAINS, INTERCEPTORS SEPARATORS & CLEANOUTS:

1) Interceptors:

a) **Sand Interceptors:**

(1) **Mudroom/Bootwash:** ~~<UEPH\_MUDROOM>~~Provide sand interceptors in drains ~~from~~ for Mudroom and /Boot Wash areas. ~~</UEPH\_MUDROOM><UEPH\_BOOTWASH>~~Provide sand interceptors in drains from Mudroom/Boot Wash areas. ~~</UEPH\_BOOTWASH>~~

b) **Solid Interceptors:**

(1) **Centralized Laundry:** ~~<UEPH\_LAUNDRY\_DWELL>~~Not Used~~</UEPH\_LAUNDRY\_DWELL><UEPH\_LAUNDRY\_CENTRAL>~~Centralized laundry facilities shall be considered commercial laundries with respect to the IPC and shall be provided with solids interceptor in accordance with the IPC.~~</UEPH\_LAUNDRY\_CENTRAL>~~

2) Cleanouts:

a) **Centralized Laundry:** ~~<UEPH\_LAUNDRY\_DWELL>~~Not Used~~</UEPH\_LAUNDRY\_DWELL><UEPH\_LAUNDRY\_CENTRAL>~~If Dryer vents are manifolded to a common exhaust, provide an easily accessible means of cleanout.~~</UEPH\_LAUNDRY\_CENTRAL>~~

3) Drains:

a) **Vending Area:** ~~<UEPH\_VENDING\_NOT>~~Not Used~~</UEPH\_VENDING\_NOT><UEPH\_VENDING>~~Provide water and drain connections for ice cube machine-dispensers.~~</UEPH\_VENDING>~~

b) **Centralized Laundry:** ~~<UEPH\_LAUNDRY\_DWELL>~~Not Used~~</UEPH\_LAUNDRY\_DWELL><UEPH\_LAUNDRY\_CENTRAL>~~Provide water and drain connections for all washers.~~</UEPH\_LAUNDRY\_CENTRAL>~~

D. PLUMBING FIXTURES:

1) Residential Plumbing Fixtures:

a) **Kitchen Fixtures (Dwelling Unit):** Furnish and install a stainless steel kitchen sink with minimum bowl inside dimensions of 16"x16"x7" deep.

~~(1) — Sink: - Furnish and install a single bowl stainless steel kitchen sink. "Minimum bowl inside dimensions shall be 400mm x 400 mm x 180mm deep [16"x16"x7"deep]."~~

~~(2) — Faucet:~~

b) **Bathroom Fixtures (Dwelling Unit):**

(1) **Water Closet:** Furnish and install an elongated floor mounted flush tank type vitreous china water closet.

(2) **Tub/Shower Head:** Shall be of porcelain enameled cast-iron or enameled steel. **Spray end of shower head shall be set at 78 inches above finish height of tub drain.**

~~(3) — Vanity Fixture:~~

~~2) — Commercial Plumbing Fixtures:~~

a) **Mudroom/Bootwash:**

~~(1) — Utility Sink:~~

~~(2) — Pedestal Mounted Faucet:~~

~~(3) — Hosed Facet:~~

3.9. **COMMUNICATIONS AND SECURITY SYSTEMS:**

A. TELECOMMUNICATION SYSTEMS: Provide telecommunications outlets per the applicable criteria based on functional purpose of the space within the building. ~~Telecommunications outlets shall be provided per the applicable criteria based on functional purpose of the space within the building.~~

1) CATV: All CATV outlet boxes, connectors, cabling, and cabinets shall conform to applicable criteria unless noted otherwise. All horizontal cabling shall be homerun from the CATV outlet to the nearest telecommunications room unless indicated otherwise. ~~See paragraph 6 for possible additional requirements.~~

B. SECURITY INFRASTRUCTURE/SYSTEMS:

1) Door Status/Alarm Monitoring:

a) Stair Exit Doors: Furnish each stair exit door on the first floor with a hard-wired contact switch connected to an alarm system. Alarm system shall sound an alarm (after a thirty-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 shall be by key at the specific door and remotely at the CQ Desk. ~~Each stair exit door on the first floor shall be furnished with a hard-wired contact switch connected to an alarm system. Alarm system shall sound an alarm at the door location and the CQ Desk when a stair exit door is opened. Switching OFF activated alarm shall be by key at the specific door and remotely at the CQ Desk.~~

C. MASS NOTIFICATION SYSTEMS: ~~<UEPH\_MASS\_YES>MNS shall be integrated~~ Integrated the MNS into the installation's area wide MNS (Giant Voice). See Paragraph 6 for further requirements. ~~</UEPH\_MASS\_YES><UEPH\_MASS\_NO>Not Used</UEPH\_MASS\_NO>~~

### 3.10. ELECTRICAL REQUIREMENTS:

A. 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. The effect of nonlinear loads such as computers, other electronic equipment and electronic ballasts shall be considered and accommodated as necessary.~~ Voltage drop shall not exceed the maximum allowed per ASHRAE 90.1. ~~Provide Transient voltage surge protection shall be provided~~ on service equipment. Bedrooms shall be considered to be living and sleeping rooms, therefore they are to be considered to be part of a dwelling unit per NFPA 70 definition.

B. POWER: Provide power for all installed equipment requiring power to include convenience receptacles and government furnished government installed equipment. ~~Power shall be provided for all installed equipment requiring power to include convenience receptacles and government furnished government installed equipment.~~

1) Panels: —Panelboards located in accessible areas, shall be lockable and keyed to one master key.

2) Outlets:

a) Dwelling Unit: In addition to the requirements of NFPA 70 for dwelling units, a duplex receptacle shall be mounted adjacent to the CATV outlet.

b) Lobby: ~~<UEPH\_LOBBY\_NOT>Not Used</UEPH\_LOBBY\_NOT><UEPH\_LOBBY>~~ Provide a minimum of one 125 volt duplex receptacle in the lobby (if lobby is provided) for housekeeping purposes. ~~</UEPH\_LOBBY>~~

(1) Lobby—CQ Station: ~~<UEPH\_LOBBY\_NOT>Not Used</UEPH\_LOBBY\_NOT><UEPH\_LOBBY><UEPH\_CQ\_NOT>Not Used</UEPH\_CQ\_NOT><UEPH\_CQ>~~ Provide two (2) 125 volt, duplex receptacles for CQ workstation. Receptacles shall be on a dedicated circuit. ~~</UEPH\_CQ></UEPH\_LOBBY>~~

c) 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 shall be more than 25 feet from a receptacle.

d) 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.

e) **Vending** **Area:** ~~<UEPH\_VENDING\_NOT>~~Not Used ~~<UEPH\_VENDING\_NOT>~~~~<UEPH\_VENDING>~~Provide power receptacles for vending machines and ice cube machine-dispensers. ~~<UEPH\_VENDING>~~

f) **Centralized Laundry:** ~~<UEPH\_LAUNDRY\_DWELL>~~Not Used ~~<UEPH\_LAUNDRY\_DWELL>~~~~<UEPH\_LAUNDRY\_CENTRAL>~~Provide power receptacles for washers, dryers and laundry supplies vending machines. Provide a minimum of one convenience duplex power receptacle on each wall. ~~<UEPH\_LAUNDRY\_CENTRAL>~~

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

C. **LIGHTING LEVELS, FIXTURES & CONTROLS:** ~~Provided lighting levels shall be within +/- 10% of required lighting levels. Interior lighting controls shall be provided in accordance with ASHRAE 90.1. Electronic ballasts for linear florescent lamps shall be the high efficiency programmed start type. Provided lighting levels shall be within +/- 10% of required lighting levels.~~

1) **Dwelling Units:**

a) **Bedrooms:** Lighting level in bedrooms shall be 15 foot-candles. Lighting shall utilize compact fluorescent fixtures with automatic occupancy sensor detection switching. Switching shall be manual-ON/Automatic OFF.

~~b) **Dining:**~~

c) **Kitchen:** Lighting level in kitchen areas shall be 30 foot-candles with automatic occupancy sensor detection switching. Switching shall be manual-ON/Automatic OFF. Counter top task lighting shall be installed under cabinets utilizing fixtures with 2 foot linear T8 fluorescent lamps with manual on/off switching. Task lighting switching shall be separate from general lighting switching.

d) **Walk-in-Closet:** Provide automatic occupancy sensor detection switching in each walk-in closet. Switching shall be manual-ON/Automatic OFF.

2) **Lobby:** ~~<UEPH\_LOBBY\_NOT>~~Not Used ~~<UEPH\_LOBBY\_NOT>~~~~<UEPH\_LOBBY>~~ Lighting level in lobbies shall be 10 foot-candles. Lighting in common areas such as corridors and lobbies shall have automatic occupancy sensor detection switching. Wire sensors in corridors such that only the lighting fixtures within the activation range of a particular sensor shall turn on. ~~Lighting level in lobbies (if required by the RFP) shall be 10 foot-candles. Lighting in common areas such as corridors and lobbies shall have automatic occupancy sensor detection switching. Sensors in corridors shall be wired such that only the lighting fixtures within the activation range of a particular sensor shall turn on.~~ ~~<UEPH\_LOBBY>~~

a) **Lobby-CQ Station:** ~~<UEPH\_LOBBY\_NOT>~~Not Used ~~<UEPH\_LOBBY\_NOT>~~~~<UEPH\_LOBBY>~~~~<UEPH\_CQ\_NOT>~~Not Used ~~<UEPH\_CQ\_NOT>~~~~<UEPH\_CQ>~~Provide additional lighting over CQ station to obtain a 30-footcandle luminance level on desk top. ~~<UEPH\_CQ>~~~~<UEPH\_LOBBY>~~

3) **Centralized Laundry:** ~~<UEPH\_LAUNDRY\_DWELL>~~Not Used ~~<UEPH\_LAUNDRY\_DWELL>~~~~<UEPH\_LAUNDRY\_CENTRAL>~~Lighting level in laundry room(s) shall be 30 foot-candles. Lighting shall have automatic occupancy sensor detection switching. ~~<UEPH\_LAUNDRY\_CENTRAL>~~

4) **Mechanical, Electrical, and Telecommunication Rooms:** Lighting level in mechanical and electrical rooms shall be 30 foot-candles. Lighting shall utilize fixtures with T8 fluorescent lamps with manual on/off switching.

5) **Mail Access Area:** ~~<UEPH\_MAIL\_KIOSK>~~If mail is distributed from an exterior kiosk or through an exterior wall provide a minimum illuminance level of 5-footcandles. ~~<UEPH\_MAIL\_KIOSK>~~~~<UEPH\_MAIL\_EXT\_NOT>~~Not Used ~~<UEPH\_MAIL\_EXT\_NOT>~~

6) **Mudroom/Bootwash:** ~~<UEPH\_MUDROOM>~~Provide an luminance level of 20-footcandles and automatic occupancy sensor detection switching to control fixture(s) in the mudroom ~~(if mudroom is provided).~~ ~~<UEPH\_MUDROOM>~~~~<UEPH\_BOOTWASH>~~Not Used ~~<UEPH\_BOOTWASH>~~

**3.11. HEATING VENTILATING AND AIR CONDITIONING (HVAC) REQUIREMENTS:**

A. **HVAC DESIGN CRITERIA:**

1) **Unit Location and Access:**

a) **Dwelling Unit:** Locate all room/dwelling unit HVAC units in equipment closets accessible only through a corridor access door. Locate air filters in the equipment closet. All dwelling unit HVAC units shall have piping and duct connections that allow quick and easy removal and replacement of individual units. ~~All room/dwelling unit HVAC units shall be located in equipment closets accessible only through a corridor access door with keyed deadbolt. Corridor HVAC access doors shall be sized for ease of service and maintenance of HVAC units. Access for maintenance shall not require entry into the dwelling unit. Air filters shall be located in the equipment closet. All dwelling unit HVAC units shall have piping and duct connections that allow quick and easy removal and replacement of individual units.~~

2) **Ventilation:**

a) **Dwelling Unit:** Provide positive ventilation for each dwelling unit using dedicated outdoor air units. Dedicated outdoor air units (DOAUs) shall continuously supply dehumidified, tempered air ducted directly to each bedroom from DOAU. DOAU supply air ductwork shall not connect to dwelling unit heating/cooling unit. Supply air conditions from DOAU shall be between 68 and 75 degree F dry bulb and no greater than 48 degree F dew point. Supply quantity shall be 3045 cfm per bedroom for a total of 690 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 7545 cfm). DOAU unit shall be direct expansion (DX) type and cooling/dehumidification shall be available 24/7/365. DOAU units shall be minimum 14 SEER (3.52 COP) and equipped with hot gas reheat and auxiliary heat/ reheat coil. Each dwelling unit shall be positively ventilated using dedicated outdoor air units. ~~Dedicated outdoor air units (DOAUs) shall continuously supply dehumidified, tempered air ducted directly to each bedroom from DOAU. DOAU supply air ductwork shall not connect to dwelling unit heating/cooling unit. Supply air conditions from DOAU shall be between 68 and 75 degree F dry bulb and no greater than 48 degree F dew point. Supply quantity shall be 30 cfm per bedroom for a total of 60 cfm per dwelling unit.~~

b) **Corridors:** Ventilate corridors per ASHRAE 62.1 by supply from the dedicated outdoor air unit. ~~Corridors shall be ventilated per ASHRAE 62.1 by supply from the dedicated outdoor air unit.~~

c) **Vending Area:** ~~Area:~~ **<UEPH\_VENDING\_NOT>**Not Used ~~<UEPH\_VENDING\_NOT><UEPH\_VENDING>~~ Provide additional ventilation/exhaust to maintain vending areas temperature at levels specified for corridors. ~~<UEPH\_VENDING>~~

3) **Exhaust:**

a) **Dwelling unit:** Dwelling unit exhaust shall be 45 cfm continuous through a bathroom exhaust. ~~(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 45 cfm). DOAU unit shall be direct expansion (DX) type and cooling/dehumidification shall be available 24/7/365. DOAU units shall be minimum 14 SEER (3.52 COP) and equipped with hot gas reheat and auxiliary heat/ reheat coil. Refer to chapter 6 for site specific constraints. Dwelling unit exhaust shall be 25 cfm continuous through a bathroom exhaust and 50 cfm continuous through a kitchen exhaust. Kitchen and bathroom exhausts shall be separate and make-up air to kitchen and bathroom shall be ducted from bedrooms to kitchen and bathroom spaces. Make-up air for bathroom exhaust shall not transfer from kitchen area. The number of exhaust fans and DOAUs shall be the same, and exhaust fans and DOAUs shall be arranged for and shall 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 exhaust shall be 45 cfm continuous through a bathroom exhaust. (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 45 cfm). DOAU unit shall be direct expansion (DX) type and cooling/dehumidification shall be available 24/7/365. Refer to chapter 6 for site specific constraints. The number of exhaust fans and DOAUs shall be the same, and exhaust fans and DOAUs shall be arranged for and shall include exhaust air energy recovery. Exhaust and DOAU systems shall be provided with variable frequency drives (VFDs) and shall be provided with a control logic that provides reduced ventilation rates during periods of low interior humidity and still meet minimum ASHRAE 62.1 requirements.~~

b) **Centralized Laundry:** ~~Area:~~ **<UEPH\_LAUNDRY\_DWELL>**Not Used ~~<UEPH\_LAUNDRY\_DWELL><UEPH\_LAUNDRY\_CENTRAL>~~ Vent dryers to exterior according to all 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 all dryers. ~~Dryers shall be vented to exterior according to all applicable criteria and manufacturer's installation instructions. Dryer~~

~~exhaust vent exterior terminations shall be located no closer than 15 feet from dwelling unit bedroom windows. Provide individual vent connections for all dryers. Locate laundry rooms on exterior wall so that dryer exhaust can be vented directly to the exterior.~~</UEPH\_LAUNDRY\_CENTRAL>

4) **Ductwork:**

a) **Kitchen Range Hoods:** <UEPH\_DUCTLESS>Kitchen range hoods shall be the U.L. listed ductless type. </UEPH\_DUCTLESS><UEPH\_DUCTLESS\_NOT>Not Used</UEPH\_DUCTLESS\_NOT><UEPH\_DUCTED>Kitchen range hoods shall be the U.L. listed ducted type to building exterior</UEPH\_DUCTED><UEPH\_DUCTED\_NOT>Not Used</UEPH\_DUCTED\_NOT>

B. **TEMPERATURE CONTROLS:**

1) **Dwelling Unit:** Dwelling unit room temperature control shall be through the direct digital control (DDC) system. Each dwelling unit shall have a heating/cooling unit with thermostat/temperature control sensor located in common area. Occupant control will 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 shall monitor each dwelling unit for sub-cooling. The DDC system shall 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 shall also include ability to select heating or cooling mode. HVAC system shall be able to provide for year round heating or cooling in individual dwelling units as selected by the occupants. Occupant controller shall not have any provisions for occupant adjustment to occupant controller beyond that stated in this paragraph. Any further adjustments beyond as described shall be by authorized personnel only.~~Dwelling unit room temperature control shall be through the direct digital control (DDC) system. Each dwelling unit shall have a heating/cooling unit with thermostat/temperature control sensor located in common area. Occupant control will 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 shall monitor each dwelling unit for sub-cooling. The DDC system shall 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 shall also include ability to select heating or cooling mode. HVAC system shall be able to provide for year round heating or cooling in individual dwelling units as selected by the occupants. Occupant controller shall not have any provisions for occupant adjustment beyond that stated in this paragraph. Any further adjustments beyond as described shall be by authorized personnel only.~~

3.12. **ENERGY CONSERVATION REQUIREMENTS:**

A. **ENERGY PERFORMANCE PERFORMANCE:** See Section 5.10.1 for energy performance requirements.</FY12> Design the building, including the building envelope, HVAC systems, service water heating, power, and lighting systems to achieve an energy consumption that is at least 40% below the consumption of a baseline building meeting the minimum requirements of ANSI/ASHRAE/IESNA Standard 90.1-2007.</FY12></FY13>The building shall meet the requirements of ASHRAE Standard 189.1-2009 with the only exception being the renewable energy components of Section 7 (Par 7.3.2 and 7.4.1.1). ASHRAE 189.1 is a comprehensive standard that covers building features beyond energy efficiency such as sustainability, water use efficiency, and indoor air quality. Design the building, including the building envelope, HVAC systems, service water heating, power, and lighting systems to achieve an energy consumption that is at least 40% below the consumption of a baseline building meeting the minimum requirements of ANSI/ASHRAE/IESNA Standard 90.1-2007.</FY13>Document compliance with the above energy performance utilizing the methodology described in ASHRAE 90.1, Appendix G as discussed in section 01-33-16 Design After Award. (see paragraph 5.9 Energy Conservation) (Note: Plug loads shall be included in building energy modeling but are subtracted in the final calculation of Energy Performance. See section "Design After Award" for additional guidance.) Gas fired boilers and water heaters shall be minimum 90% efficient at operating conditions.The building, including the building envelope, HVAC systems, service water heating, power, and lighting systems shall be designed to achieve a non-plug load energy consumption that is at least 40% below the consumption of a baseline building meeting the minimum requirements of ANSI/ASHRAE/IESNA Standard 90.1-2007 (see paragraph 5.9 Energy Conservation). (Note: Plug loads shall be included in building energy modeling but are subtracted in the final calculation of Energy Performance. See section "Design After Award" for additional guidance.)

1) ~~**Solar Water Heating:** <SOLARWATER\_HEATING\_UEPH>In addition, the building shall be designed and constructed to provide 30% of domestic hot water by use of solar hot water system.</SOLARWATER\_HEATING\_UEPH>~~

~~B. REQUIRED ENERGY CONSERVATION FEATURES & TABLES: All design features not described below will be in accordance with the minimum requirements of ANSI/ASHRAE/IESNA Standard 90.1-2007 including conformance with paragraph 5.9.2, which requires purchase of Energy Star and FEMP designated products. Additional energy conservation features may be required to meet the above energy performance. The contractor is responsible for determining and providing additional energy conservation features to meet the energy performance requirement.~~

1) Energy Conservation Features Table:

~~<UEPH\_ZONE1A>Climate Zone 1A, Energy Conservation Features Table~~

Item	Component	Minimum Requirements
<del>Roof</del>	<del>Attic-</del>	<del>R-40</del>
	<del>Surface reflectance</del>	<del>0.27</del>
<del>Walls</del>	<del>Light Weight Construction</del>	<del>R-20</del>
<del>Exposed Floors</del>	<del>Mass</del>	<del>R-5 c.i.</del>
<del>Slabs</del>	<del>Unheated</del>	<del>NR<sup>(2)</sup></del>
<del>Doors</del>	<del>Swinging</del>	<del>U-0.70</del>
	<del>Non-Swinging</del>	<del>U-1.45</del>
<del>Infiltration</del>	<del>-</del>	<del>0.25 cfm/ft<sup>2</sup> @ 75 Pa<sup>(3)</sup></del>
<del>Vertical Glazing</del>	<del>Window to Wall Ratio (WWR)</del>	<del>10% - 20%</del>
	<del>Thermal transmittance</del>	<del>U-0.45</del>
	<del>Solar heat gain coefficient (SHGC)</del>	<del>0.31</del>
<del>Interior Lighting</del>	<del>Lighting Power Density (LPD)</del>	<del>0.9 W/ft<sup>2</sup></del>
	<del>Ballast</del>	<del>Electronic ballast</del>
<del>HVAC</del>	<del>Air Conditioner</del>	<del>Energy Efficient Heating and Cooling System with Associated Heating and Reheat Coil DOAS with 14 SEER DX coil (3.52 COP), Hot Gas Reheat and Auxiliary Heat/ Reheat Coil</del>
	<del>Gas Furnace</del>	<del>none</del>
	<del>ERV</del>	<del>70% - 75% sensible effectiveness</del>
<del>Economizer</del>	<del>-</del>	<del>no</del>
<del>Ventilation</del>	<del>Outdoor Air Damper</del>	<del>Motorized control</del>
	<del>Demand Control</del>	<del>NR</del>
	<del>Laundry Room</del>	<del>Decoupled<sup>(5)</sup></del>
<del>Ducts</del>	<del>Friction Rate</del>	<del>0.08 in. w.c./100 feet</del>
	<del>Sealing</del>	<del>Seal class B</del>
	<del>Location</del>	<del>Interior only</del>
	<del>Insulation level</del>	<del>R-6<sup>(6)</sup></del>
<del>Service Water Heating</del>	<del>Gas storage</del>	<del>90%-E<sub>t</sub></del>
	<del>-</del>	<del>-</del>

~~<UEPH\_ZONE1A><UEPH\_ZONE2A>Climate Zone 2A, Energy Conservation Features Table~~

Item	Component	Minimum Requirements
Roof	Attic	R-40
	Surface-reflectance	0.27
Walls	Light-Weight Construction	R-20
Exposed-Floors	Mass	R-10 c.i.
Slabs	Unheated	NR <sup>(2)</sup>
Doors	Swinging	U-0.70
	Non-Swinging	U-1.45
Infiltration	-	0.25 cfm/ft <sup>2</sup> @ 75 Pa <sup>(3)</sup>
Vertical-Glazing	Window-to-Wall-Ratio (WWR)	10% - 20%
	Thermal transmittance	U-0.45
	Solar-heat-gain-coefficient (SHGC)	0.31
Interior-Lighting	Lighting-Power-Density (LPD)	0.9 W/ft <sup>2</sup>
	Ballast	Electronic ballast
HVAC	Air-Conditioner	Energy Efficient Heating and Cooling System with Associated Heating and Reheat Coil DOAS with 14 SEER DX coil (3.52 COP), Hot Gas Reheat and Auxiliary Heat/ Reheat Coil
	Gas-Furnace	none
	ERV	70% - 75% sensible effectiveness
Economizer	-	no
Ventilation	Outdoor Air-Damper	Motorized control
	Demand Control	NR
	Laundry-Room	Decoupled <sup>(5)</sup>
Ducts	Friction-Rate	0.08 in. w.c./100 feet
	Sealing	Seal class B
	Location	Interior-only
	Insulation-level	R-6 <sup>(6)</sup>
Service-Water-Heating	Gas-storage	90%-E <sub>t</sub>
	-	-

</UEPH\_ZONE2A><UEPH\_ZONE2B>Climate-Zone 2B, Energy Conservation Features-Table

Item	Component	Minimum Requirements
Roof	Attic	R-40
	Surface-reflectance	0.27
Walls	Light-Weight Construction	R-20
Exposed-Floors	Mass	R-10 c.i.

<b>Slabs</b>	Unheated	NR <sup>(2)</sup>
<b>Doors</b>	Swinging	U-0.70
	Non-Swinging	U-1.45
<b>Infiltration</b>	-	0.25 cfm/ft <sup>2</sup> @ 75 Pa <sup>(3)</sup>
<b>Vertical-Glazing</b>	Window to Wall Ratio (WWR)	10% - 20%
	Thermal transmittance	U-0.45
	Solar heat gain coefficient (SHGC)	0.31
<b>Interior-Lighting</b>	Lighting Power Density (LPD)	- 0.9 W/ft <sup>2</sup>
	Ballast	Electronic ballast
<b>HVAC</b>	Air Conditioner	Energy Efficient Heating and Cooling System with Associated Heating and Reheat Coil DOAS with 14 SEER DX coil (3.52 COP), Hot Gas Reheat and Auxiliary Heat/ Reheat Coil
	Gas Furnace	none
	ERV	70% - 75% sensible effectiveness
<b>Economizer</b>	-	yes
<b>Ventilation</b>	Outdoor Air Damper	Motorized control
	Demand Control	NR
	Laundry Room	Decoupled <sup>(5)</sup>
<b>Ducts</b>	Friction Rate	0.08 in. w.c./100 feet
	Sealing	Seal class B
	Location	Interior only
	Insulation level	R-6 <sup>(6)</sup>
<b>Service Water Heating</b>	Gas storage	90% E <sub>t</sub>
	-	-

</UEPH\_ZONE2B><UEPH\_ZONE3A>Climate Zone 3A, Energy Conservation Features Table

Item	Component	Minimum Requirements
<b>Roof</b>	Attic	R-40
	Surface reflectance	0.27
<b>Walls</b>	Light Weight Construction	R-20
<b>Exposed Floors</b>	Mass	R-10 c.i.
<b>Slabs</b>	Unheated	NR <sup>(2)</sup>
	Heated	U-0.15
<b>Doors</b>	Swinging	U-0.70
	Non-Swinging	U-1.45
<b>Infiltration</b>	-	0.25 cfm/ft <sup>2</sup> @ 75 Pa <sup>(3)</sup>
<b>Vertical-Glazing</b>	Window to Wall Ratio (WWR)	10% - 20%
	Thermal transmittance	U-0.45

-	Solar heat gain coefficient (SHGC)	0.31
<b>Interior Lighting</b>	Lighting Power Density (LPD)	- 0.9 W/ft <sup>2</sup>
	Ballast	Electronic ballast
<b>HVAC</b>	Air Conditioner	Energy Efficient Heating and Cooling System with Associated Heating and Reheat Coil DOAS with 14 SEER DX coil (3.52 COP), Hot Gas Reheat and Auxiliary Heat/ Reheat Coil
	Gas Furnace	none
	ERV	70% - 75% sensible effectiveness
<b>Economizer</b>	-	no
<b>Ventilation</b>	Outdoor Air Damper	Motorized control
	Demand Control	NR
	Laundry Room	Decoupled <sup>(5)</sup>
<b>Ducts</b>	Friction Rate	0.08 in. w.c./100 feet
	Sealing	Seal class B
	Location	Interior only
	Insulation level	R-6 <sup>(6)</sup>
<b>Service Water Heating</b>	Gas storage	90% E <sub>t</sub>
	-	-

</UEPH\_ZONE3A><UEPH\_ZONE3B>Climate Zone 3B, Energy Conservation Features Table

Item	Component	Minimum Requirements
<b>Roof</b>	Attic	R-40
	Surface reflectance	0.27
<b>Walls</b>	Light Weight Construction	R-20
<b>Exposed Floors</b>	Mass	R-10 c.i.
<b>Slabs</b>	Unheated	NR <sup>(2)</sup>
<b>Doors</b>	Swinging	U-0.70
	Non-Swinging	U-1.45
<b>Infiltration</b>	-	0.25 cfm/ft <sup>2</sup> @ 75 Pa <sup>(3)</sup>
<b>Vertical Glazing</b>	Window to Wall Ratio (WWR)	10% - 20%
	Thermal transmittance	U-0.45
	Solar heat gain coefficient (SHGC)	0.31
<b>Interior Lighting</b>	Lighting Power Density (LPD)	- 0.9 W/ft <sup>2</sup>
	Ballast	Electronic ballast
<b>HVAC</b>	Air Conditioner	Energy Efficient Heating and Cooling System with Associated

		Heating and Reheat Coil DOAS with 14 SEER DX coil (3.52 COP), Hot Gas Reheat and Auxiliary Heat/ Reheat Coil
	Gas Furnace	none
	ERV	70% - 75% sensible effectiveness
<b>Economizer</b>	-	yes
<b>Ventilation</b>	Outdoor Air Damper	Motorized control
	Demand Control	NR
	Laundry Room	Decoupled <sup>(5)</sup>
<b>Ducts</b>	Friction Rate	0.08 in. w.c./100 feet
	Sealing	Seal class B
	Location	Interior only
	Insulation level	R-6 <sup>(6)</sup>
<b>Service Water Heating</b>	Gas storage	90% E <sub>t</sub>
	-	-

</UEPH\_ZONE3B><UEPH\_ZONE3C>Climate Zone 3C, Energy Conservation Features Table

Item	Component	Minimum Requirements
<b>Roof</b>	Attic	R-40
	Surface reflectance	0.27
<b>Walls</b>	Light Weight Construction	R-20
<b>Exposed Floors</b>	Mass	R-10 c.i.
<b>Slabs</b>	Unheated	NR <sup>(2)</sup>
<b>Doors</b>	Swinging	U-0.70
	Non-Swinging	U-1.45
<b>Infiltration</b>	-	0.25 cfm/ft <sup>2</sup> @ 75 Pa <sup>(3)</sup>
<b>Vertical Glazing</b>	Window to Wall Ratio (WWR)	10% - 20%
	Thermal transmittance	U-0.45
	Solar heat gain coefficient (SHGC)	0.31
<b>Interior Lighting</b>	Lighting Power Density (LPD)	- 0.9 W/ft <sup>2</sup>
	Ballast	Electronic ballast
<b>HVAC</b>	Air Conditioner	Energy Efficient Heating and Cooling System with Associated Heating and Reheat Coil DOAS with 14 SEER DX coil (3.52 COP), Hot Gas Reheat and Auxiliary Heat/ Reheat Coil
	Gas Furnace	none
	ERV	70% - 75% sensible effectiveness
<b>Economizer</b>	-	yes

<b>Ventilation</b>	Outdoor Air Damper	Motorized control
	Demand Control	NR
	Laundry Room	Decoupled <sup>(5)</sup>
<b>Ducts</b>	Friction Rate	0.08 in. w.c./100 feet
	Sealing	Seal class B
	Location	Interior only
	Insulation level	R-6 <sup>(6)</sup>
<b>Service Water Heating</b>	Gas storage	90%-E <sub>t</sub>
	-	-

</UEPH\_ZONE3C><UEPH\_ZONE4A>Climate Zone 4A, Energy Conservation Features Table

Item	Component	Minimum Requirements
<b>Roof</b>	Attic	R-50
	Surface reflectance	0.27
<b>Walls</b>	Light Weight Construction	R-20
<b>Exposed Floors</b>	Mass	R-20
<b>Slabs</b>	Unheated	NR <sup>(2)</sup>
<b>Doors</b>	Swinging	U-0.70
	Non-Swinging	U-1.45
<b>Infiltration</b>	-	0.25 cfm/ft <sup>2</sup> @ 75 Pa <sup>(3)</sup>
<b>Vertical Glazing</b>	Window to Wall Ratio (WWR)	10% - 20%
	Thermal transmittance	U-0.45
	Solar heat gain coefficient (SHGC)	0.31
<b>Interior Lighting</b>	Lighting Power Density (LPD)	- 0.9 W/ft <sup>2</sup>
	Ballast	Electronic ballast
<b>HVAC</b>	Air Conditioner	Energy Efficient Heating and Cooling System with Associated Heating and Reheat Coil DOAS with 14 SEER DX coil (3.52 COP), Hot Gas Reheat and Auxiliary Heat/ Reheat Coil
	Gas Furnace	none
	ERV	70% - 75% sensible effectiveness
<b>Economizer</b>	-	no
<b>Ventilation</b>	Outdoor Air Damper	Motorized control
	Demand Control	NR
	Laundry Room	Decoupled <sup>(5)</sup>
<b>Ducts</b>	Friction Rate	0.08 in. w.c./100 feet
	Sealing	Seal class B
	Location	Interior only
	Insulation level	R-6 <sup>(6)</sup>

<b>Service- Water Heating</b>	Gas-storage -	90% E <sub>t</sub> -
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**</UEPH\_ZONE4A><UEPH\_ZONE4B>Climate Zone 4B, Energy Conservation Features Table**

<b>Item</b>	<b>Component</b>	<b>Minimum Requirements</b>
<b>Roof</b>	Attic	R-50
	Surface reflectance	0.27
<b>Walls</b>	Light-Weight Construction	R-25
<b>Exposed-Floors</b>	Mass	R-20
<b>Slabs</b>	Unheated	NR <sup>(2)</sup>
<b>Doors</b>	Swinging	U-0.70
	Non-Swinging	U-1.45
<b>Infiltration</b>	-	0.25 cfm/ft <sup>2</sup> @ 75 Pa <sup>(3)</sup>
<b>Vertical-Glazing</b>	Window to Wall Ratio (WWR)	10% - 20%
	Thermal transmittance	U-0.42
	Solar heat gain coefficient (SHGC)	0.46
<b>Interior-Lighting</b>	Lighting Power Density (LPD)	- 0.9 W/ft <sup>2</sup>
	Ballast	Electronic ballast
<b>HVAC</b>	Air Conditioner	Energy Efficient Heating and Cooling System with Associated Heating and Reheat Coil DOAS with 14 SEER DX coil (3.52 COP), Hot Gas Reheat and Auxiliary Heat/ Reheat Coil
	Gas Furnace	none
	ERV	70% - 75% sensible effectiveness
<b>Economizer</b>	-	yes
<b>Ventilation</b>	Outdoor Air Damper	Motorized control
	Demand Control	NR
	Laundry Room	Decoupled <sup>(5)</sup>
<b>Ducts</b>	Friction Rate	0.08 in. w.c./100 feet
	Sealing	Seal class B
	Location	Interior only
	Insulation level	R-6 <sup>(6)</sup>
<b>Service- Water Heating</b>	Gas-storage -	90% E <sub>t</sub> -

**</UEPH\_ZONE4B><UEPH\_ZONE4C>Climate Zone 4C, Energy Conservation Features Table**

Item	Component	Minimum Requirements
Roof	Attic	R-50
	Surface reflectance	0.27
Walls	Light Weight Construction	R-25
Exposed-Floors	Mass	R-20
Slabs	Unheated	NR <sup>(2)</sup>
Doors	Swinging	U-0.70
	Non-Swinging	U-1.45
Infiltration	-	0.25 cfm/ft <sup>2</sup> @ 75 Pa <sup>(3)</sup>
Vertical-Glazing	Window to Wall Ratio (WWR)	10% - 20%
	Thermal transmittance	U-0.42
	Solar heat gain coefficient (SHGC)	0.46
Interior-Lighting	Lighting Power Density (LPD)	0.9 W/ft <sup>2</sup>
	Ballast	Electronic ballast
HVAC	Air Conditioner	Energy Efficient Heating and Cooling System with Associated Heating and Reheat Coil DOAS with 14 SEER DX coil (3.52 COP), Hot Gas Reheat and Auxiliary Heat/ Reheat Coil
	Gas Furnace	none
	ERV	70% - 75% sensible effectiveness
Economizer	-	yes
Ventilation	Outdoor Air Damper	Motorized control
	Demand Control	NR
	Laundry Room	Decoupled <sup>(5)</sup>
Ducts	Friction Rate	0.08 in. w.c./100 feet
	Sealing	Seal class B
	Location	Interior only
	Insulation level	R-6 <sup>(6)</sup>
Service Water Heating	Gas storage	90% E <sub>t</sub>
	-	-

</UEPH\_ZONE4C><UEPH\_ZONE5A>Climate Zone 5A, Energy Conservation Features Table

Item	Component	Minimum Requirements
Roof	Attic	R-50
	Surface reflectance	0.27
Walls	Light Weight Construction	R-25
Exposed-Floors	Mass	R-20

<b>Slabs</b>	Unheated	NR <sup>(2)</sup>
<b>Doors</b>	Swinging	U-0.70
	Non-Swinging	U-1.45
<b>Infiltration</b>	-	0.25 cfm/ft <sup>2</sup> @ 75 Pa <sup>(3)</sup>
<b>Vertical-Glazing</b>	Window to Wall Ratio (WWR)	10% - 20%
	Thermal transmittance	U-0.42
	Solar heat gain coefficient (SHGC)	0.46
<b>Interior-Lighting</b>	Lighting Power Density (LPD)	- 0.9 W/ft <sup>2</sup>
	Ballast	Electronic ballast
<b>HVAC</b>	Air Conditioner	Energy Efficient Heating and Cooling System with Associated Heating and Reheat Coil DOAS with 14 SEER DX coil (3.52 COP), Hot Gas Reheat and Auxiliary Heat/ Reheat Coil
	Gas Furnace	none
	ERV	70% - 75% sensible effectiveness
<b>Economizer</b>	-	yes
<b>Ventilation</b>	Outdoor Air Damper	Motorized control
	Demand Control	NR
	Laundry Room	Decoupled <sup>(5)</sup>
<b>Ducts</b>	Friction Rate	0.08 in. w.c./100 feet
	Sealing	Seal class B
	Location	Interior only
	Insulation level	R-6 <sup>(6)</sup>
<b>Service Water Heating</b>	Gas storage	90% E <sub>t</sub>
	-	-

</UEPH\_ZONE5A><UEPH\_ZONE5B>Climate Zone 5B, Energy Conservation Features Table

Item	Component	Minimum Requirements
<b>Roof</b>	Attic	R-50
	Surface reflectance	0.27
<b>Walls</b>	Light Weight Construction	R-25
<b>Exposed Floors</b>	Mass	R-20
<b>Slabs</b>	Unheated	NR <sup>(2)</sup>
	Heated	U-0.15
<b>Doors</b>	Swinging	U-0.70
	Non-Swinging	U-1.45
<b>Infiltration</b>	-	0.25 cfm/ft <sup>2</sup> @ 75 Pa <sup>(3)</sup>
<b>Vertical-Glazing</b>	Window to Wall Ratio (WWR)	10% - 20%
	Thermal transmittance	U-0.42

-	Solar heat gain coefficient (SHGC)	0.46
<b>Interior Lighting</b>	Lighting Power Density (LPD)	- 0.9 W/ft <sup>2</sup>
	Ballast	Electronic ballast
<b>HVAC</b>	Air Conditioner	Energy Efficient Heating and Cooling System with Associated Heating and Reheat Coil DOAS with 14 SEER DX coil (3.52 COP), Hot Gas Reheat and Auxiliary Heat/ Reheat Coil
	Gas Furnace	none
	ERV	70% - 75% sensible effectiveness
<b>Economizer</b>	-	yes
<b>Ventilation</b>	Outdoor Air Damper	Motorized control
	Demand Control	NR
	Laundry Room	Decoupled <sup>(5)</sup>
<b>Ducts</b>	Friction Rate	0.08 in. w.c./100 feet
	Sealing	Seal class B
	Location	Interior only
	Insulation level	R-6 <sup>(6)</sup>
<b>Service Water Heating</b>	Gas storage	90% E <sub>t</sub>
	-	-

</UEPH\_ZONE5B><UEPH\_ZONE6A>Climate Zone 6A, Energy Conservation Features Table

Item	Component	Minimum Requirements
<b>Roof</b>	Attic	R-60
	Surface reflectance	0.27
<b>Walls</b>	Light Weight Construction	R-30
<b>Exposed Floors</b>	Mass	
<b>Slabs</b>	Unheated	NR <sup>(2)</sup>
<b>Doors</b>	Swinging	U-0.70
	Non-Swinging	U-1.45
<b>Infiltration</b>	-	0.25 cfm/ft <sup>2</sup> @ 75 Pa <sup>(3)</sup>
<b>Vertical Glazing</b>	Window to Wall Ratio (WWR)	10% - 20%
	Thermal transmittance	U-0.42
	Solar heat gain coefficient (SHGC)	0.46
<b>Interior Lighting</b>	Lighting Power Density (LPD)	- 0.9 W/ft <sup>2</sup>
	Ballast	Electronic ballast
<b>HVAC</b>	Air Conditioner	Energy Efficient Heating and Cooling System with Associated

		Heating and Reheat Coil DOAS with 14 SEER DX coil (3.52 COP), Hot Gas Reheat and Auxiliary Heat/ Reheat Coil
	Gas Furnace	none
	ERV	70% - 75% sensible effectiveness
<b>Economizer</b>	-	yes
<b>Ventilation</b>	Outdoor Air Damper	Motorized control
	Demand Control	NR
	Laundry Room	Decoupled <sup>(5)</sup>
<b>Ducts</b>	Friction Rate	0.08 in. w.c./100 feet
	Sealing	Seal class B
	Location	Interior only
	Insulation level	R-6 <sup>(6)</sup>
<b>Service Water Heating</b>	Gas storage	90% E <sub>t</sub>
	-	-

</UEPH\_ZONE6A><UEPH\_ZONE6B>Climate Zone 6B, Energy Conservation Features Table

Item	Component	Minimum Requirements
<b>Roof</b>	Attic	R-60
	Surface reflectance	0.27
<b>Walls</b>	Light Weight Construction	R-30
<b>Exposed Floors</b>	Mass	R-30
<b>Slabs</b>	Unheated	NR <sup>(2)</sup>
<b>Doors</b>	Swinging	U-0.70
	Non-Swinging	U-0.50
<b>Infiltration</b>	-	0.25 cfm/ft <sup>2</sup> @ 75 Pa <sup>(3)</sup>
<b>Vertical Glazing</b>	Window to Wall Ratio (WWR)	10% - 20%
	Thermal transmittance	U-0.42
	Solar heat gain coefficient (SHGC)	0.46
<b>Interior Lighting</b>	Lighting Power Density (LPD)	- 0.9 W/ft <sup>2</sup>
	Ballast	Electronic ballast
<b>HVAC</b>	Air Conditioner	Energy Efficient Heating and Cooling System with Associated Heating and Reheat Coil DOAS with 14 SEER DX coil (3.52 COP), Hot Gas Reheat and Auxiliary Heat/ Reheat Coil
	Gas Furnace	none
	ERV	70% - 75% sensible effectiveness
<b>Economizer</b>	-	yes

<b>Ventilation</b>	Outdoor Air Damper	Motorized control
	Demand Control	NR
	Laundry Room	Decoupled <sup>(5)</sup>
<b>Ducts</b>	Friction Rate	0.08 in. w.c./100 feet
	Sealing	Seal class B
	Location	Interior only
	Insulation level	R-6 <sup>(6)</sup>
<b>Service- Water Heating</b>	Gas storage	90%-E <sub>t</sub>
	-	-

</UEPH\_ZONE6B><UEPH\_ZONE7A>Climate Zone 7A, Energy Conservation Features Table

Item	Component	Minimum Requirements
<b>Roof</b>	Attic	R-60
	Surface reflectance	0.27
<b>Walls</b>	Light Weight Construction	R-30
<b>Exposed Floors</b>	Mass	R-30:
<b>Slabs</b>	Unheated	NR <sup>(2)</sup>
<b>Doors</b>	Swinging	U-0.70
	Non-Swinging	U-0.50
<b>Infiltration</b>	-	0.25 cfm/ft <sup>2</sup> @ 75 Pa <sup>(3)</sup>
<b>Vertical Glazing</b>	Window to Wall Ratio (WWR)	10% - 20%
	Thermal transmittance	U-0.33
	Solar heat gain coefficient (SHGC)	NR
<b>Interior Lighting</b>	Lighting Power Density (LPD)	- 0.9 W/ft <sup>2</sup>
	Ballast	Electronic ballast
<b>HVAC</b>	Air Conditioner	Energy Efficient Heating and Cooling System with Associated Heating and Reheat Coil DOAS with 14 SEER DX coil (3.52 COP), Hot Gas Reheat and Auxiliary Heat/ Reheat Coil
	Gas Furnace	none
	ERV	70% - 75% sensible effectiveness
<b>Economizer</b>	-	yes
<b>Ventilation</b>	Outdoor Air Damper	Motorized control
	Demand Control	NR
	Laundry Room	Decoupled <sup>(5)</sup>
<b>Ducts</b>	Friction Rate	0.08 in. w.c./100 feet
	Sealing	Seal class B
	Location	Interior only

	Insulation level	R-6 <sup>(6)</sup>
Service- Water Heating	Gas storage	90% E <sub>t</sub>
	-	-

</UEPH\_ZONE7A><UEPH\_ZONE8A>Climate Zone 8A, Energy Conservation Features Table

Item	Component	Minimum Requirements
Roof	Attic	R-60
	Surface reflectance	0.27
Walls	Light Weight Construction	R-30
Exposed Floors	Mass	R-30
Slabs	Unheated	10
Doors	Swinging	U-0.70
	Non-Swinging	U-0.50
Infiltration	-	0.25 cfm/ft <sup>2</sup> @ 75 Pa <sup>(3)</sup>
Vertical Glazing	Window to Wall Ratio (WWR)	10% - 20%
	Thermal transmittance	U-0.33
	Solar heat gain coefficient (SHGC)	0.31
Interior Lighting	Lighting Power Density (LPD)	- 0.9 W/ft <sup>2</sup>
	Ballast	Electronic ballast
HVAC	Air Conditioner	Energy Efficient Heating and Cooling System with Associated Heating and Reheat Coil DOAS with 14 SEER DX coil (3.52 COP), Hot Gas Reheat and Auxiliary Heat/ Reheat Coil
	Gas Furnace	none
	ERV	70% - 75% sensible effectiveness
Economizer	-	yes
Ventilation	Outdoor Air Damper	Motorized control
	Demand Control	NR
	Laundry Room	Decoupled <sup>(5)</sup>
Ducts	Friction Rate	0.08 in. w.c./100 feet
	Sealing	Seal class B
	Location	Interior only
	Insulation level	R-6 <sup>(6)</sup>
Service- Water Heating	Gas storage	90% E <sub>t</sub>

</UEPH\_ZONE8A>

2) Table Notes:-



Hr	Occupancy			Lighting			Washer/Dryer Use 1			Washer SHW 1		
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	5 occ/floor			1.0 W/ft <sup>2</sup> (10.8 W/m <sup>2</sup> )			8.4 kW/floor			53.3 gal/hr/flr (202-L/hr/flr)		

2) UEPH Apartment Unit Internal Load Schedules

Hr	Occupancy			Lighting			Plug Loads			Service Hot Water		
	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun
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
7	0.60	0.60	0.70	0.70	0.50	0.30	0.40	0.35	0.20	0.40 (0.3) <sup>1</sup>	0.40 (0.3) <sup>1</sup>	0.40 (0.3) <sup>1</sup>
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) <sup>1</sup>	0.10 (0.2) <sup>1</sup>	0.10 (0.2) <sup>1</sup>
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
24	0.80	0.75	0.75	0.20	0.20	0.20	0.20	0.20	0.20	0.00	0.00	0.00
Peak	2 occ/unit			1.1 W/ft <sup>2</sup>			1.7 W/ft <sup>2</sup> with common laundries 53.5 W/ft <sup>2</sup> 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.

Hr	Occupancy			Lighting			Plug Loads			Service Hot Water		
	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun
-												
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
7	0.60	0.60	0.70	0.70	0.50	0.30	0.40	0.35	0.20	0.40	0.40	0.40
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	0.10	0.10
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
24	0.80	0.75	0.75	0.20	0.20	0.20	0.20	0.20	0.20	0.00	0.00	0.00
Peak	2 occ/unit			1.1 W/ft <sup>2</sup> (10.8 W/m <sup>2</sup> )			1.7 W/ft <sup>2</sup> (18 W/m <sup>2</sup> )			40 gal/hr/person (114-L/hr/person)		

3) UEPH Apartment Unit Internal Load Schedules

Hr	Refrigerator			Range and Oven		
	Wk	Sat	Sun	Wk	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
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		

4) UEPH Apartment Unit Thermostat Set-Point Schedules

Hr	Heating (°F)			Cooling (°F)		
	Wk	Sat	Sun	Wk	Sat	Sun
>						
1-24	68	68	68	75	75	75

Hr	Heating (°F)			Heating (°C)			Cooling (°F)			Cooling (°C)		
	Wk	Sat	Sun									
>												
1-24	68	68	68	20	20	20	75	75	75	24	24	24

5) UEPH Unoccupied Zones (ie stairwells, mechanical rooms) Thermostat Set-Point Schedules

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

  

Hr	Heating (°F)			Heating (°C)		
	Wk	Sat	Sun	Wk	Sat	Sun
>						
1-24	55	55	55	12.8	12.8	12.8

3.13. FIRE PROTECTION REQUIREMENTS

A. FIRE DETECTION AND ALARM SYSTEMS: A National Institute for Certification of Engineering Technologies (NICET) Level 3 (minimum) technician shall supervise the fire alarm system installation. The fire alarm system installation shall be supervised by a National Institute for Certification of Engineering Technologies (NICET) Level 3 (minimum) technician.

1) **Software:** All 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 shall become property of the Government and be furnished to the Contracting Officer's Representative prior to final inspection of the system. All 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 shall become property of the Government and be furnished to the Contracting Officer's Representative prior to final inspection of the system.

2) **Smoke Detectors:** Provide smoke detectors in all bedrooms. Smoke detectors shall be provided in all bedrooms. <UEPH\_SMOKE1>Smoke detectors in bedrooms shall be monitored. Tampering with a smoke detector shall send a trouble signal. Trouble signals shall be transmitted to the fire department. </UEPH\_SMOKE1><UEPH\_SMOKE2>Smoke alarm signals shall not be transmitted to the fire department. </UEPH\_SMOKE2><UEPH\_SMOKE3>Smoke alarm signals shall be transmitted as a supervisory signal to the fire department. </UEPH\_SMOKE3><UEPH\_SMOKE4>Smoke alarm signals shall be transmitted as an alarm signal to the fire department. </UEPH\_SMOKE4>

3.14. SEE PARAGRAPH 6.14 SUSTAINABLE DESIGN – NOT USED

3.15. SEE PARAGRAPH 6.15 ENVIRONMENTAL – NOT USED

3.16. SEE PARAGRAPH 6.16 PERMITS – NOT USED

3.17. SEE PARAGRAPH 6.17 DEMOLITION – NOT USED

3.18. SEE PARAGRAPH 6.18 ADDITIONAL FACILITIEIS – NOT USED

3.19. EQUIPMENT AND FURNITURE REQUIREMENTS

3.19.1. FURNISHINGS

A. FURNITURE LIST/CHARTS:

1) Dwelling Unit Furniture:

a) **Bedrooms:** Bedroom shall be able to accommodate the following furniture with adequate circulation for one occupant:

- (1) One twin bed with headboard and footboard 40" wide x 85 long".
- (2) One entertainment center 36" wide x 25" deep x 76" high.
- (3) One chest of drawers 36" wide x 20" deep.
- (4) One nightstand 26" wide x 20" deep.
- (5) One desk 60" wide x 26" deep with retractable keyboard tray and overhead study carrel.
- (6) One desk chair 19 ½" wide by 18" deep.

b) **Kitchens:** If counter seating/dining is not provided, kitchen layout shall have a dining/seating space which can accommodate the furnishing listed below:

- (1) One 36 inch diameter dining table.
- (2) Two chairs for the dining table.

B. CASEWORK: Provide cabinets complying with AWI Quality Standards.

1) Dwelling Unit Casework:

a) **Kitchens:** Provided a minimum of twelve (12) linear feet of base cabinet systems with twelve (12) linear feet of standard height counter and twelve (12) linear feet of wall cabinet systems. Twelve (12) linear feet of standard height counter includes required sink. In addition to the twelve (12) linear feet of standard height counter, kitchen layout shall 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 inches wide drawer units in the kitchen base cabinet system. ~~Furnish Future-future dishwasher space shall be furnished~~ with a removable built-in full width shelf dividing it into two equal spaces, and a pair of removable swing doors matching the rest of the kitchen cabinetry.

~~b) **Vanities:**~~

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

3.19.2. EQUIPMENT

A. RESIDENTIAL APPLIANCES:

1) Kitchen Appliances: Each dwelling unit shall have a full kitchen with adequate space and circulation to accommodate:

a) **Refrigerator:** A full size refrigerator 28 inches wide.

b) **Range/Cooktop:** ~~<UEPH\_RANGE>~~Range shall be GFGI electric oven/range 30 inches wide, with a CFCI built-in combination 30 inch wide vent hood and microwave oven. ~~</UEPH\_RANGE>~~  
~~<UEPH\_TWOBURNER>~~Cooktop shall be CFCI built-in two-burner electric cooktop with a CFCI built-in

combination vent hood and convection/microwave oven. </UEPH\_TWOBURNER><UEPH\_FOURBURNER>Cooktop shall be CFCI built-in four-burner electric cooktop with a CFCI built-in combination vent hood and convection/microwave oven. </UEPH\_FOURBURNER>

c) ~~—— **Cooktop:**— Cooktop shall be CFCI built-in two-burner electric cooktop with a CFCI built-in combination vent hood and convection/microwave oven. Cooktop shall be CFCI built-in four-burner electric cooktop with a CFCI built-in combination vent hood and convection/microwave oven. <UEPH\_DISPOSER>~~

d) **Garbage Disposer:** Furnish and install a garbage disposer at the kitchen sink. </UEPH\_DISPOSER>

2) **Dwelling Laundry:** <UEPH\_LAUNDRY\_CENTRAL>Not Used </UEPH\_LAUNDRY\_CENTRAL><UEPH\_LAUNDRY\_DWELL> Washer and dryer shall be GFGI full-size heavy duty residential side by side or stackable type. </UEPH\_LAUNDRY\_DWELL>

B. COMMERCIAL EQUIPMENT:

1) **Laundry Equipment:** <UEPH\_LAUNDRY\_DWELL>Not Used </UEPH\_LAUNDRY\_DWELL><UEPH\_LAUNDRY\_CENTRAL>

a) **Washer:** Washers shall be GFGI commercial grade.

b) **Dryers:** Dryers shall be GFGI commercial grade.

c) **Fixed Tables:** Each CFCI fixed heavy gauge stainless steel clothes folding/hanging table shall be 2'-0" deep by 5'-0" wide.

d) **Utility Sinks:** Utility sinks shall be CFCI. <UEPH\_LAUNDRY\_CENTRAL>

2) **Vending and Ice Machine Equipment:** <UEPH\_VENDING\_NOT>Not Used </UEPH\_VENDING\_NOT><UEPH\_VENDING>

a) **Vending Machines:** Vending Machines shall be full-size and shall be GFGI.

b) **Ice Machines:** Ice cube machine-dispenser shall be capable of producing a minimum 250 pounds of regular ice cubes in 24 hours, with 180 pound storage capacity and shall be GFGI </UEPH\_VENDING>

3.20. **FACILITY SPECIFIC REFERENCES: (NOT USED)**

SAMPLE