SECTION 01 10 00

STATEMENT OF WORK

NOTES:
There should not be a table of contents for this specification. The ToC should be generated at the beginning of the overall document.

PART 1 GENERAL

1.0 PROJECT OBJECTIVES

1.0.1 The primary mission of the SSA Warehouses is to provide a facility capable of storing and maintaining Army pre-positioned stocks and items required for active-duty operation. The SSA is a major deployment and sustainment operations facility with functional, operational, and spatial relationships critical to meeting unit deployed supply storage at a brigade/separate battalion level. The structural elements of a SSA are similar in purpose to a Central Issue Facility or General-Purpose Warehouse.

An SSA primary facility is composed of two functional modules: Warehouse Operations and Administrative Core. The Warehouse Operations Module (Warehouse Module) consists of the Storage Bay, Receiving/Issue Bay, and Non-Sensitive Secure Storage. The Administrative Core Module (Admin Module) consists of the Admin Core, Contractor Logistics Support area, and Multi-Purpose Room. The functional and operational characteristics of a SSA require that the design be based on the type of material being handled and stored, the volume and flow pattern through the facility and the operational readiness.

This facility will support «NUMBER» brigade sized unit or authorized separate battalion.

SSA SIZES	
Description	**Space Authorization**
SSA	Authorization for an SSA facility is based on supply functions performed by a BSB or select Separate Battalions in the Army as determined by the Facility Planning System (FPS). Basis of Allocation is as follows: One per brigade-sized unit and allocated to Distribution Company of the BSB or equivalent and sited NMT five miles from the BSB Complex. One per Separate Battalion with an organic Distribution Company or equivalent supply accountability and distribution capability Battalions stationed separate from their parent brigade shall be supported thru formal support agreements (usually provided by a Sustainment Brigade)

Primary Facility Scope and Capacity	Primary facility (building) composed of a Warehouse Module and an Admin Core Module NTE 20,640 GSF with one per brigade-sized unit or authorized separate battalion

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

Comparison of Military Facilities to Civilian Facilities

Military Facility	Civilian Facility
Supply Storage Activity (SSA)	Office Warehouse

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

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

2 PART 2 PRODUCTS - FACILITY REQUIREMENTS - SUPPLY SUPPORT ACTIVITY (SSA)

2.1 GENERAL REQUIREMENTS:

The primary mission of the Supply Storage Activity (SSA) Warehouses is to provide a facility capable of storing and maintaining Army pre-positioned stocks and items required for active duty operation. SSA facilities will include administrative paces, contractor logistics support area, a multi-purpose conference room and Architectural Barriers Act (ABA) compliant men's and women's toilets. Typical occupancy is 11 or more personnel and adequate parking must be provided. The building must be ABA compliant. Fire alarm and signal systems must be provided.

2.1.1 FACILITY DESCRIPTION

The SSA is a major deployment and sustainment operations facility with functional, operational and spatial relationships critical to meeting unit deployed supply storage at a brigade/separate battalion level. The structural elements of a SSA are similar in purpose to a Central Issue Facility or General Purpose Warehouse. The functional and operational characteristics of a SSA require that the design be based on the type of material being handled and stored, the volume and flow pattern through the facility and the operational readiness. Typical SSA for the personnel supplies at a brigade level should have a built up area of 20,640 square feet. The minimum stack height of storage units required is 16 feet. Adequate space for fork-lift movement within the storage area should must be provided and a charging station for fork lift trucks is required.

2.1.2 FACILITY RELATIONSHIPS - NOT USED

2.1.3 ACCESSIBILITY REQUIREMENTS

The SSA must comply with the. Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines (ADA and ABA Accessibility Guidelines).

2.1.4 BUILDING AREAS:

See 011000-1.2-GENERAL TECHNICAL section 1.2.4.4 COMPUTATIONS OF AREAS for instructions on computation of the square footage of facilities. A number of structures fall under the SSA category and the overall building design and configuration will vary to meet specific requirements. Values listed in the Programmed Area Space Table below are minimums for a medium facility.

2.1.5 ADAPT BUILD MODEL - NOT USED

2.2 FUNCTIONAL AND OPERATIONAL REQUIREMENTS

Gross building area must be calculated in accordance with 011000-1.2-GENERAL TECHNICAL section 1.2.4.4 COMPUTATIONS OF AREAS.

2.2.1 FUNCTIONAL SPACES

2.2.1.1 ADMINISTRATION AREA:

2.2.1.1.1 Administration Module – Core Area: The Admin Core Module consolidates administrative, open and private office workspace, production, stock control, and support space that includes a multipurpose briefing/training room, restrooms, and administrative storage space.

2.2.1.1.2 Contractor Logistics Support: Provide a private office for one person.

2.2.1.1.3 Multipurpose Room: Provide a conference type room. The room must accommodate seating for eight. The space must include 2 Classroom XXI terminals and must accommodate multiple configurations that can be easily rearranged. This room is required when the SSA facility is not adjacent to the BSB TEMF Complex.

2.2.1.1.4 Stock Control Room: Provide office for this function in the Admin Module as required.

2.2.1.1.5 Customer Service Area: Provide room space GFGI record storage located adjacent to the Stock Control Office.

2.2.1.1.6 Entrances: Provide 10’-0” long entryway systems walk-off mats at all exterior/interior building entrances.

2.2.1.1.7 Corridors: Provide as required. Corridors must have a minimum width of 72 inches.

2.2.1.1.8 Male Toilet: Provide toilet facilities to serve the administrative personnel assigned to facility and customers.

2.2.1.1.9 Female Toilet: Provide toilet facilities to serve the administrative personnel assigned to facility and customers. Women's Toilet Room include a separate room to accommodate nursing mother lactation with a compact refrigerator, power outlet, countertop, sink and seating for one (1) person. Door must be lockable from the interior with an occupancy indicator. When facility staffing does not warrant use as lactation room, space may be repurposed for facility storage

2.2.1.1.10 Janitor’s Closet: Provide a janitor’s closet. Janitor’s closet must have a 10 inch deep floor mounted stainless steel mop sink, with hot and cold service faucet, a four holder mop rack and two 18 inch deep by 48 inch long heavy duty stainless steel shelves for storage of cleaning supplies. Janitor’s closet must have space for storage of buckets and vacuum. Where hazardous gases or chemicals may be present, provide a minimum of 0.50 cfm per square foot to create negative pressure with respect to adjacent spaces when doors to Janitor’s closet(s) are closed. Provide and install self-closing doors and deck-to-deck partitions or hard-lid ceilings.

2.2.1.1.11 Programmed Administrative Area Space – SSA

SPACE	Minimum NSF
ADMINISTRATION MODULE	

SPACE	Minimum NSF
ADMIN SPACES	1,506
CONTRACTOR LOGISTICS SUPPORT	500
MULTIPURPOSE ROOM	240
MEN'S AND WOMEN'S TOILETS	280
JANITOR'S CLOSET	20
MECHANICAL, ELECTRICAL, TELECOMMUNICATIONS	259
WAREHOUSE MODULE	
WAREHOUSE OPERATIONS AREA	13,200
RECEIVING/ISSUE BAY	3,600
SECURE STORAGE	150
TURN-IN BAY	625
CUSTOMER ISSUE BAY	1,788
HAZARDOUS MATERIAL STORAGE	AS REQUIRED
EXTERIOR SPACES	
EXTERNAL COVERED HARDSTAND	7,350
LOADING/UNLOADING APRON	12,800

2.2.1.2 ISSUE/TURN-IN AREA:

2.2.1.2.1 Customer Service Area: Provide a Customer Service Area adjacent to the Stock Control Office.

2.2.1.2.2 Customer Turn-in Bay: A Turn-in bay must be provided with appropriate access to space.

2.2.1.2.3 Receiving/Issue Bay: Provide separate loading dock for Receiving and Issue operations for both commercial or military vehicle deliveries

2.2.1.3 WAREHOUSE MODULE:

2.2.1.3.1 Warehouse Office: Provide warehouse office space to accommodate workstations as allowed for facility size.

2.2.1.3.2 Secure Storage: Provide a designated conditioned space for the secure storage of non-sensitive records. The space must contain 24" inches deep steel shelving capable of supporting minimum 30-pounds per square foot along one side wall and the back wall. Enclosure construction must be in accordance with Army Regulation (AR) 190-51, Appendix B. Space must have appropriate access and physical security measures.

2.2.1.3.3 Truck Dock: Provide a two bay truck dock overhead door for Shipping/Receiving Operations. Door must be electrically operated with manual override. Provide a reinforced concrete edge guard along the edge of the loading dock, as required. Concrete edge guard must be minimum 1 foot wide and 1 foot high. Mount guardrails on top of concrete edge guard. Loading dock must be furnished with all necessary dock accessories, including full-pit dock levelers, dock bumpers, fixed and removable safety railing, access stairs, etc. e.g. Dock height must be 48 inches.. Provide wedge type dock seals on the sides plus a top curtain. Dock bumpers 12”d x 24”w x 12”h must be installed on both sides of each truck bay in accordance with manufacturer’s specifications. Provide 6-inch diameter bollards on each side of each dock door to protect interior door jambs.

2.2.1.3.3.1 Dock Levelers: Dock levelers must be electro-hydraulic lifts with a minimum capacity of 25,000 lbs. Provide dock levelers whose ramp incline can be adjusted to suit the height of the freight carrier. Allow the loading ramp a minimum of 24 inches of vertical adjustment. Divide height adjustments 12 inches above and 12 inches below the dock level position of 48 inches, to provide coverage between 36 inches and 60 inches above grade. The non-fixed end of the dock leveler must be extendable from a retracted position behind the line of the loading dock platform bumpers to at least 12 inches beyond the forward edge of the dock platform bumpers so as to rest on the bed of the freight carrier. For out of level freight carrier bed condition (difference in elevation from side to side at the rear of the carrier bed), allow a minimum correction of one inch for each 18 inches, and maximum 4 inch correction of ramp width over the width of the ramp. Ensure the rear edge of the ramp is parallel with the rear of the frame in order to prevent tripping or be a pinching hazard. Provide sides or edges, except front and rear edges, of the ramps which rise above the surrounding loading dock with sheet carbon steel skirts or toe guards of minimum 14 gage nominal thickness. Furnish smooth faced toe guards or skirts and mount flush with the edges of the ramp surface. Ensure sufficient depth of toe guards or skirts to protect the full operating range of dock travel. Dock levelers must be of sufficient width for safe and efficient forklift operation and have features intended to prevent forklifts from driving off the dock when a truck/trailer is not present. Provide each dock leveler with a pushbutton station to activate motor, pump, and valves.

2.2.1.3.4 Classification Room: Provide a designated conditioned space for the classification of materials. The space must contain 24” inches deep steel shelving capable of supporting minimum 30-pounds per square foot along one side wall and the back wall.

2.2.1.3.5 Repair Room: Provide a designated conditioned space for the repair of materials. The space must contain 24” deep steel shelving capable of supporting minimum 30-pounds per square foot along one side wall and the back wall.

2.2.1.3.6 Forklift Access: Provide a forklift access door adjacent to the truck dock bays. The overhead coiling door must be insulated 12 feet wide x 14 feet high electrically operated with manual override.

Assume the use of 5,000-pound capacity forklifts. If a ramp is required for access, the forklift access ramp must be designed to provide required turning radius of 12-feet. Forklift access ramp must have a minimum width of 16 feet. Provide a reinforced concrete edge guard along the entire length on both sides of the ramp. Concrete edge guard must be minimum 1 foot wide and 1 foot high. Mount guardrails on top of concrete edge guard. Access ramp must be furnished with all necessary dock accessories, including fixed and removable safety railing, access stairs, e.g.

2.2.1.3.7 Recycle Storage: Provide a designated conditioned space for storage of recyclable material. Provide space allocation for mixed paper, corrugated cardboard, glass, plastic, and metals. Provide measures for safe collection, storage and disposal of batteries, mercury-containing lamps and electronic waste. Provide designated area(s) for recycled material hauler(s) pick-up and delivery activities.

2.2.1.3.8 Equipment Storage Area: Provide designated floor space adjacent to the heavy item stacking area for storage of forklifts, cherry pickers, pallet jacks, e.g. Locate the forklift charge station in this area.

2.2.1.3.9 Rack Storage Area: Provide an area for storage of goods on pallet racks. The Pallet Rack Storage System is a CFCI item. Coordinate with Government to provide suitable space, lighting and structural support for the system and to define detailed requirements.

2.2.1.3.10 Equipment Corridors: Provide as required. Corridors between the Pallet Rack System must have a minimum width of 12-feet for forklift access.

2.2.1.3.11 Mechanical, Fire Protection, Electrical, and Telecommunications Rooms/Closets: Mechanical rooms must accommodate space for equipment maintenance/repair access without having to remove other equipment. Mechanical, electrical and telecommunications rooms must be keyed separately for access by Installation maintenance personnel. All tTelecommunications rooms must be conditioned space. Telecommunications room must be provided in accordance with the latest I3A Technical Criteria. Refer to Mechanical and Electrical Sections for additional information.

2.2.1.3.12 Forklift Charging Area: Provide a charging area for forklifts. Size area to accommodate simultaneous charging of a minimum of three (3) 5,000 pound capacity forklifts in Large, Initial Entry and Medium SSAs, and two (2) 5,000 pound capacity forklifts in Small SSAs.

2.2.1.3.13 Exterior Employee Break Area: Provide a 10' x 10' concrete pad on the exterior of the building for use by employees. Pad may be used by employees that smoke and should must be located a minimum 50 feet away from the building ingress/egress, in accordance with Army and LEED regulations. Provide ‘No Smoking’ signage within 10’”-0 feet of all building entrances.

2.2.1.3.14 Exterior Storage Area: Provide a 5,000 square foot fenced concrete pad for the storage of pallets. Provide a 6’ high chain

link fence with barbed wire and a 12’ wide double swing gate. Provide lighting as specified in paragraph 2.10 ELECTRICAL REQUIREMENTS.

2.2.1.4 EXTERIOR SPACES:

2.2.1.4.1 Loading and Unloading Apron: Provide a contiguous area sized for commercial container or flatbed vehicles with an exterior laydown area on Hardstand within the security line of the SSA Facility. This area includes Hazardous Material Storage Area. Provide an offload area sized as a temporary space for deliveries using commercial or military flatbed trailers or containers as the largest requirement to be met. Provide a static load area sized for military flat track assemblies with a pre-loaded deployment configuration for movement by organic battalion assets. MHE operations must not impede access to structural bays. Night lighting and a public address system which can be heard by MHE operators must be provided.

2.2.1.4.2 Serviceable Bulk Storage: Provide a rigid pavement area or covered hardstand with a clear height of 16-feet that provides a secure area for large parts that do not require indoor storage but do require modest protection from weather and ultra-violet affects.

2.2.1.4.3 Unserviceable Bulk Storage: Provide a rigid pavement area or covered hardstand with a clear height of 16-feet located immediately adjacent to the SSA primary facility and provides a secured area with access limited to Distribution Company personnel. This area may reside under the same overhead cover as the Serviceable Bulk Storage Area and be divided by a security fence.

2.2.1.4.4 Customer Turn-in Bay: Provide a turn-in bay with appropriate access to space.

2.3 SITE FUNCTIONAL REQUIREMENTS

2.3.1 GENERAL:

2.3.1.1 Walks: Provide pedestrian walks within the designated construction area and connect to existing sidewalks, where applicable. Sidewalks must be a minimum of 6 feet wide. Pedestrian sidewalks must be constructed of Portland Cement Concrete having a minimum nominal thickness of 4 inches. Design joint patterns uniformly, symmetrical, and in accordance with American Association of State Highway and Transportation Officials (AASHTO) standards. The length to width ratio must not exceed 1.25 for non-reinforced pavements.

2.3.1.2 Site Structures and Amenities: Dumpster Area: Dumpster/Recycling enclosure area(s) and screening must be located, designed and constructed by the Contractor. The Contractor is responsible for locating the dumpster areas in accordance with UFC 4-010-01 DoD Minimum Antiterrorism Standards for Buildings. The GFGI dumpsters must be located outside of restricted areas to allow for servicing activities. Dumpster pads must be sized to accommodate both trash and recycling dumpsters. Dumpster screening(s) must be aesthetically and architecturally compatible with the building it

serves and must be designed in accordance with the Installation's requirements.

2.3.1.3 Site Functional Requirements: External functional requirements include a truck dock shipping and receiving with ample concrete hardstand paving for marmusting and parking of supply trucks. See Paragraph 2.2.1.3.3 for dock requirements

2.3.2 PARKING:

2.3.2.1 Privately Owned Vehicle (POV) Parking: POV parking must be designed and constructed by the Contractor. The location of the POV parking area(s) must be designed based on the Installation's site constraints. The Contractor must Eensure that the location of parking complies with UFC 4-010-01. Refer to paragraphs 1.2.3 VEHICLE PAVEMENTS for additional requirements. See paragraph 3.3 for the minimum number of parking stalls required. Parking for physically disabled personnel must be in accordance with the current Architectural Barriers Act Accessibility Guidelines (ABAAG).

2.3.3 ACCESS DRIVES AND LANES:

2.3.3.1 Service Drives: Provide service drives to each building. The drives must be located in accordance with UFC 4-010-01. Access to the drives must be restricted as required by UFC 4-010-01. The pavement design must be as required by paragraph 1.2.3 VEHICLE PAVEMENTS. The minimum access drive width must be 10 feet. Provide curb and gutter where needed for drainage and for compliance with Antiterrorism requirements. Minimum turning radius must be designed as required for emergency vehicle access. Access to the SSA facility must be capable of accommodating heavy commercial and military vehicle traffic. Traffic patterns must avoid necessity to transit military (tactical) vehicle or POV parking areas to the maximum extent possible

2.3.3.2 Fire Access Lanes: Provide fire access lanes in accordance with UFC 3-600-01, UFC 4-010-01, NFPA 1 and the Installation's requirements.

2.3.4 SPECIAL SETBACKS AND PERIMETER CONTROLS:

2.4 SITE AND LANDSCAPE REQUIREMENTS

2.4.1 SITE STRUCTURES:

2.4.2 SITE UTILITIES:

2.4.3 LANDSCAPING\HARDSCAPING:

2.5 ARCHITECTURAL REQUIREMENTS

2.5.1 EXTERIOR DESIGN OBJECTIVES:

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

2.5.1.2 WALLS:

2.5.1.2.1 Exterior Walls: Exterior walls must be full height pre-cast or tilt-up concrete, sandwich panel construction, concrete masonry unit (CMU) construction; or insulated metal sandwich panel construction with pre-cast or tilt-up concrete, sandwich panel or CMU wainscot. Where insulated metal sandwich panel construction is used, pre-cast or tilt-up concrete, sandwich panel or CMU wainscot must be a minimum 8’-0” high around the warehouse operations area, and a minimum 4 feet high around the administration operations area. Masonry units must be tested for efflorescence. Efflorescence testing must conform to the provisions of ASTM C 67. CMU construction must comply with the provisions of ASTM C 1400.

2.5.1.2.2 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 facility. Insulation must not be installed directly on top of suspended acoustical panel ceiling systems. The insulation system must be selected and designed to meet requirements set forth in UFCs 1-200-02 and 3-101-01 and in accordance to the climate zone in which the project is located at and the proposed energy conservation requirements.

2.5.1.3 ROOFING SYSTEMS: Roof system must comply with applicable criteria for fire rating and UFC 3-110-03, except as modified herein. . Minimum roof slope for standing seam metal roof system SSMR must be 4 inch per foot.t For climate zones 1-3, roofing must be highly reflective, with a minimum solar reflective index (SRI) of 39. Provide a watertight, continuous high-temperature, self-adhering underlayment under the entire roof. Designer will evaluate the required vapor permanence of the underlayment. The roof design must be arranged to allow for drainage directly to the exterior of the building using gutters and downspouts. Downspouts must drain onto splash blocks.

2.5.1.3.1 Roof Mounted Equipment: Large and heavy loaded roof-mounted equipment is not recommended on metal roof system. If unavoidable, provide a platform with access within the roof system. Small and light loaded roof-mounted equipment, such as: exhaust hoods, can be located on the roof system.

2.5.1.3.2 Roof Access: Roof access from building exterior is prohibited. Provide a roof access hatch with a ladder and safety rails. Ladders, ladder up safety posts and safety rails must be provided in accordance with OSHA requirements.

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

2.5.1.3.4 Trim and Flashing: Gutters, downspouts, and fascias must be factory pre-finished metal and must comply with SMACNA Architectural Sheet Metal Manual.

2.5.1.3.5 Roof Insulation: Provide adequate roof insulation to reduce energy consumption. The roof insulation system must be selected and designed to meet requirements set forth in UFCs 1-200-02 and 3-101-01 and in accordance to the climate zone in which the project is located at and the proposed energy conservation requirements.

2.5.1.3.6 Skylights: Provide thermally efficient, insulated, translucent fiberglass sandwich panel skylight system.

2.5.1.4 OPENINGS:

2.5.1.4.1 Exterior Doors and Frames:

2.5.1.4.1.1 Main Entrance Doors: Provide aluminum storefront doors and frames with Architectural Class 1 anodized finish, fully glazed, with medium or wide stile at vestibules. Provide doors complete with frames, framing members, sub-frames, transoms, sidelights, trim, applied muntins, and accessories. Framing systems must have thermal-break design. Storefront systems must comply with wind-load requirements of codes and criteria.

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

2.5.1.4.1.3 Other Exterior Doors: Provide insulated hollow metal exterior doors for entry to all spaces other than corridors, lobbies, or reception/waiting rooms. Doors and frames must comply with codes and criteria. Doors must be minimum Level 3(Extra Heavy-Duty), Physical Performance Level A, Model 1 (Full Flush). Frames must be Level 4, 14 gauge, with continuously welded mitered corners and seamless face joints. Doors and frames must be constructed of non-corroding, hot-dipped zinc-iron alloy- coated galvannealed steel sheet, , minimum A60 coating weight, complying with ASTM A653, factory-primed. Fire-rated openings must comply with codes, and the requirements of the labeling authority. Door and frame installation must comply with codes and criteria. Provide metal eyebrow canopies. The canopy must extend out above each pedestrian door. Doors must have nylon brush-style weather-stripping to prevent the entry of insects and to protect against external weather conditions.

2.5.1.4.1.4 Electrically Operated Sectional Overhead Doors: Sectional overhead doors must be industrial class, high-lift sectional overhead doors, electrically operated, with auxiliary hand chain override. In the open position, the horizontal portion of the door must be aligned with the angle of the roof structural elements; and must be no more than 6 inches below the bottom of the roof structural elements. Doors must completely close the door opening in the closed position and make the full width and height of the door opening available for use in the open position. Provide a permanent label on the door indicating the name and address of the manufacturer. Door sections must be formed from hot-dipped galvanized steel and must ensure a weather tight closure and alignment for full width and height of the door. Door components and methods of installation must be

designed in accordance with DASMA 102. Minimum design wind load must be 20 psf. Maximum wind load deflection of the door must not exceed the door height in inches divided by 120 and the door width in inches divided by 120. Doors must be operable during design wind load when tested in accordance with ASTM E 330. Provide sections of height in accordance with manufacturer's standard. Door sections must be insulated and must provide a "U" factor of 0.14 or less when tested in accordance with ASTM C 1363. Interior of door sections must be covered with steel sheets of not lighter than 20 gauge to completely enclose the insulating material.

A) Operators: Provide operators of the type recommended by the door manufacturer. Electric operator must be designed so that the motor may be removed without disturbing the limit switch timing and without affecting the manual operator. The manual operator must be clutch controlled so that it may be engaged and disengaged from the floor; operation must not affect limit switch timing.

B) Disconnects: Provide an electrical or mechanical device that disconnects the motor from the operating mechanism when the manual operator is engaged. Provide a galvanized, endless chain operating over a sprocket, extend chain to within 4 feet of the floor, and mount on inside of building. The force required to operate the door must not exceed 35 pounds. Each door motor must have an enclosed, across-the-line type, magnetic reversing contactor, thermal overload and under voltage protection, solenoid-operated brake, limit switches, and control switches.

C) Control Switches: Locate control switches at least 5 feet above the floor so the operator will have complete visibility of the door at all times. Control equipment must conform to NEMA ICS 1 and NEMA ICS 2. Control enclosures must be NEMA ICS 6, Type 12 or Type 4, except that contactor enclosures may be Type 1. Each control switch station must be of the three-button type; buttons must be marked "OPEN," "CLOSE," and "STOP." The "OPEN" and "STOP" buttons must require only momentary pressure to operate. The "CLOSE" button must require constant pressure to maintain the closing motion of the door. If the door is in motion and the "STOP" button is pressed or the "CLOSE" button released, the door must stop instantly and remain in the stop position; from the stop position, the door may be operated in either direction by the "OPEN" or "CLOSE" buttons. Pushbuttons must be full-guarded to prevent accidental operation. Provide limit switches to automatically stop doors at the fully open and closed positions. Limit switch positions must be readily adjustable. Provide a safety device on the bottom edge of electrically operated doors. The device must immediately stop and reverse the door in its closing travel upon contact with an obstruction in the door opening or upon failure of the device or any component of the control system and cause the door to return to the full open position. The door-closing circuit must be automatically

locked out and the door must be operable manually until the failure or damage has been corrected. Do not use the safety device as a limit switch. Each sectional overhead door must be furnished with a “headache bar” on the interior and exterior side of the facility. Set bottom of each “headache bar” 6-inches below bottom of door head height and 4-feet from face of door. Each sectional overhead door must be furnished with a canopy on the exterior side.

D) Electronically-Operated Overhead Coiling Doors: As an option, overhead coiling doors can be used in lieu of overhead sectional doors. Provide insulated, high-efficient, industrial-class, overhead coiling doors, electrically-controlled with an auxiliary chain override. Provide curtains formed from the manufacturer’s standard shapes of interlocking slats. Slat system must be insulated and must provide an adequate "U" factor, as calculated to meet requirements of UFC 1-200-02 and ASHRAE. In addition, provide electronic operators with disconnects and control switches as described above and as recommended by the manufacturer.

2.5.1.4.1.5 Exterior Windows: Provide insulated, high efficiency window systems, with thermally broken frames complying with codes and criteria. Operable windows must be furnished with locks, and fiberglass or aluminum insect screens removable from the inside. Windowsills must be designed to discourage bird nesting.

2.5.1.4.1.6 Exterior Glass and Glazing: Material and installation must comply with applicable codes and criteria.

2.5.1.4.1.7 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 facility. Insulation must not be installed directly on top of suspended acoustical panel ceiling systems.

2.5.1.4.1.8 Exterior Louvers: Exterior louvers must have bird screens and must be designed to exclude wind-driven rain. Exterior louvers must be made to withstand wind loads in accordance with the applicable codes. Wall louvers must bear the Air Movement & Control Association (AMCA) International certified ratings program seal for air performance and water penetration in accordance with AMCA 500-D and AMCA 511. Louver finish must be factory applied.

2.5.1.4.1.9 Clerestory Windows: Provide thermally-efficient, insulating, light-transmitting, fixed, fiberglass, structural composite sandwich panel systems.

2.5.1.5 HARDWARE:

2.5.1.5.1 Non-Destructive Emergency Access System (NDEAS): Provide a Knox-Vault 3200 Series (Single Lock Model) mounted at the building exterior adjacent to the main entry.

2.5.1.5.2 Finish Hardware: Hardware must be consistent and must conform to ANSI/BMHA standards for Grade-1. Requirements for hardware must be coordinated with the Contracting Officer. Hardware finish must conform to ANSI/BHMA A156 18. Extension of the existing Installation keying system must be provided. The Installation's keying system is «SSA_KEYING» Locksets must have interchangeable cores. Cores must have minimum of seven pins; cylinders must have key-removable cores. Disassembly of locksets must not be required to remove core from lockset. Locksets and deadbolt locks must be installed in mechanical, electrical and telecommunications rooms only must be keyed to the existing Installation Master Keying System. Locksets and exit devices must accept same interchangeable cores. Plastic cores are unacceptable. Provide closers for exterior doors, and doors opening to corridors and as required by codes. Exit devices must be installed on all building egress doors.

2.5.1.5.3 Auxiliary Hardware: Provide wall or floor stops for exterior doors that do not have overhead holder/stops. Provide other hardware for a complete installation.

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

2.5.2 INTERIOR DESIGN OBJECTIVES

Provide sustainable materials and furnishings that are easily maintained and replaced. Maximize use of daylighting. Provide interior surfaces that are easy to clean and light in color. Interior spaces must be structured to allow maximum flexibility for future modifications. At least 90% percent of materials must meet the General Emissions Evaluation unless otherwise specified.

2.5.2.1 Corner Guards: Provide surface mounted, mechanically attached, high impact resistant, integral color, snap-on resilient corner guards, extending from floor to 6’ above finished floor for wall and column outside corners in high traffic areas such as corridors, waiting areas, lobbies, conference and multi-purpose rooms. Factory fabricated end closure caps must be furnished for top and bottom of surface mounted corner guards.

2.5.2.2 Chair Rail: Chair rails must be mechanically installed in areas prone to high traffic, such as corridors and waiting areas.

2.5.2.3 Window Treatment: Provide horizontal blinds at all exterior windows. Uniformity of window covering color and material must be maintained to the maximum extent possible throughout each building. Window sills must be minimum 1/2-inch thick, cast 100 percent acrylic polymer solid surfacing material.

2.5.2.4 Casework: Provide cabinets complying with AWI Quality Standards, Custom Grade. Countertops in bathrooms, break rooms and lactation

rooms must be minimum 1/2-inch thick cast 100 percent acrylic polymer solid surfacing material with integral coved backsplash and waterfall front edge.

2.5.2.5 Bollards: Provide concrete filled, steel pipe bollards at doors and installed equipment locations in the warehouse areas not protected by crash barrier/guardrail system. Steel pipe bollards must be a minimum diameter of 6-inches, and not less than ¼ inch thick. Bollards must extend a minimum of 44-inches above finish floor.

2.5.2.6 Interior Doors and Frames:

2.5.2.6.1 Insulated Hollow Metal Doors: Comply with ANSI A250.8/SDI 100 and codes and criteria. Doors must be minimum Level 3 (Extra Heavy-Duty), Physical Performance Level A, Model 2 (Seamless); factory primed. Provide insulated hollow metal doors at all interior doors in the warehouse area. Provide solid core wood doors in all offices. Doors must be constructed of non-corroding, hot-dipped, zinc-iron alloy-coated, galvannealed steel sheet, minimum A60 coating weight, complying with ASTM A653.

2.5.2.6.2 Wood Doors: Provide solid wood core, Type I following ANSI/WDMA I.S.1A, doors in offices.

2.5.2.6.3 Hollow Metal Frames: Comply with ANSI A250.8/SDI 100. Frames must be minimum Level 3, 16 gauge, with continuously welded mitered corners and seamless face joints; factory primed. Door frames must be constructed of non-corroding, hot-dipped, zinc-iron alloy-coated, galvannealed steel sheet, minimum A60 coating weight, complying with ASTM A653.

2.5.2.6.4 Fire-rated and Smoke Control Doors and Frames: Comply with codes, criteria and requirements of labeling authority.

2.5.2.6.5 STC ratings: Provided STC rating must be provided for the entire door and frame assembly.

2.5.3 EXTERIOR SPECIALTIES

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

2.5.3.1.1 Exterior Walls: STC 49

2.5.3.1.2 Interior Partitions: STC 49

2.5.3.1.3 Office Doors: STC 25

2.5.3.1.4 Sound conditions (and levels) for interior spaces, due to the operation of mechanical and electrical systems and devices, must not exceed levels as recommended by ASHRAE 189.1 handbook criteria. Provide acoustical treatment for drain lines and other utilities to prevent noise transmission. Project must comply with the noise-

related land use compatibility requirements in AR 200-1, Chapter 14. If in the vicinity of an airfield project must comply with DODI 4165.57, Air Installations Compatible Use Zones.

2.5.3.2 THERMAL REQUIREMENTS: 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 must not be installed directly on top of suspended acoustical panel ceiling systems. See Paragraph 2.12 Energy Conservation for details.

2.5.3.3 MOLD AND MILDEW: The Designer of Record (DOR) must provide details in the design analysis and design showing steps taken to mitigate the potential growth of mold and mildew in the facility.

2.5.3.4 BIRD HABITAT MITIGATION: The DOR must provide details in the design necessary to eliminate the congregating and nesting of birds at, on, and in the entire facility. Common bird mitigation solutions include screens on openings in ducts and vents, avoidance of exposed beam systems where birds can roost, elimination of ledges, and provision of spikes on horizontal elements. Bird netting is not an acceptable form of bird mitigation and must not be used.

2.5.3.5 LOADING DOCK CANOPIES: Provide metal eyebrow canopies to protect forklift drivers from the elements during inclement weather. Canopy to extend out above each vertical roll up door, including door provided for forklift access, at a height not to interfere with truck/trailer activity. Canopy must extend at least 4’-0” past the edge of the loading platform. Doors must have nylon brush-style weather-stripping to prevent the entry of insects and to protect against external weather conditions.

2.5.4 FINISHES AND INTERIOR SPECIALTIES

2.5.4.1 GENERAL:

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

2.5.4.2 FINISHES:

2.5.4.2.1 Paint: Paints used must be listed on the "Approved Product List" of the Master Painters Institute (MPI). Application criteria must be as recommended by MPI guide specifications for the substrate to be painted and the environmental conditions existing at the project site.

2.5.4.2.2 Exterior surfaces: Except factory pre-finished material or exterior surfaces receiving other finishes, exterior surfaces must 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 must not be used on this project. Exterior paints and coating products must be classified as containing low volatile organic compounds (VOCs) in accordance with MPI criteria. At least 90 percent by volume must comply with the General Emissions Evaluation unless otherwise specifications.

Application criteria must be as recommended by MPI guide specifications. Provide an MPI Gloss Level 5 Finish (semi-gloss), unless otherwise specifications.

2.5.4.2.3 Interior Surfaces: Except factory pre-finished material or interior surfaces receiving other finishes, interior surfaces must 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 must not be used on this project. Interior paints and coating products must contain a maximum level of 150 grams per liter (g/l) of VOCs for non-flat coatings and 50 g/l of VOCs for flat coatings. At least 90% by volume must comply with the General Emissions Evaluation unless otherwise specifications. Provide an MPI Gloss Level 5 Finish (semi-gloss) in wet areas and an egg shell finish in other areas.

2.5.4.2.4 Wall, Ceiling, Floor and Movable Partitions: Finishes must conform to the requirements of the IBC, NFPA and UFC 3-600-01 Fire Protection Engineering for Facilities. Where code requirements conflict, the most stringent code requirement must apply.

2.5.4.2.5 Carpet: Vinyl Composition Tile (VCT) must be minimum 1/8 inch thick, following ASTM F 1066, Class 2, through pattern tile, Composition 1, asbestos free, with color and pattern uniformly distributed throughout the thickness of the tile.

2.5.4.2.6 Walls: Gypsum board must achieve a score of 10, the highest level of performance for mold resistance under the ASTM D 3273 test method. Gypsum board must be transported, handled, stored and installed in accordance with the GYPSUM ASSOCIATION – Guidelines for Prevention of Mold Growth on Gypsum Board (GA-238-03). Use impact resistant gypsum board in corridors, storage rooms, stairwells and for gypsum board partitions on the warehouse side of the facility. Gypsum wallboard must not be used below 8 feet above finish floor, as interior finish of the building envelope in the warehouse area, or on the warehouse side of the demising wall between the warehouse area and the administration area. The warehouse side of other gypsum wallboard partitions must be protected by a continuous crash barrier/guardrail system set at a minimum 4’-0” from the face of the partitions, to protect the partitions, and also provide a safe pedestrian circulation area. Exposed or plastic bagged insulation is not allowed as a finish material. Use materials with recycled content, calculated on the basis of post-industrial and post-consumer percentage where appropriate for use.

2.5.4.2.7 Ceiling Finishes: Ceiling finishes must be minimum 5/8” inch thick, painted gypsum board, except where stated otherwise. Gypsum board must achieve a score of 10, the highest level of performance for mold resistance under the ASTM D 3273 test method. Gypsum board must be transported, handled, stored and installed in accordance with the GYPSUM ASSOCIATION – Guidelines for Prevention of Mold Growth on Gypsum Board (GA-238-03).

2.5.4.2.8 Resilient Flooring: Resilient flooring must be a minimum 1/8 inch thick, following ASTM F1066, Class 2, through-pattern tile,

Composition 1, asbestos free, with color and pattern uniformly distributed throughout the thickness of the tile.

2.5.4.2.9 Entrance Mat: Provide a modular tile entrance mat flooring system with a fixed metal frame at perimeter where walls are not located. Modular tiles must have square edge profile for recessed or beveled edge profile for surface application with non-skid rubber backing.

2.5.4.3 INTERIOR SPECIALTIES:

2.5.4.3.1 Toilet/Shower/Locker Accessories: Provide the items listed below and other toilet accessories necessary for a complete and usable facility. Toilet accessories must be lockable-type and constructed of Type 304 stainless steel with satin finish. Toilet accessories must include the following:

A) Glass Mirror/Shelf - 18 inch by 24 inch glass mirror on stainless steel frame with shelf at each lavatory

B) Hands Free Liquid Soap Dispenser- Provide at each lavatory;

C) Hands Free Paper Towel Dispenser: Provide adjacent to lavatory;

D) Waste Receptacle- Recess mounted at lavatory/toilet area;

E) Sanitary Napkin Disposal - Provide at each female toilet stall;

F) Toilet Paper Dispenser- Provide multi roll, toilet paper dispenser at each toilet stall;

G) Sanitary Toilet Seat Cover Dispenser- Provide at each toilet stall;

H) Grab Bars- Provide as required by ABA

I) Toilet Partitions- Provide solid phenolic, color through the core Finish 4A, floor mounted, overhead braced toilet partitions with three hinges each.

J) Urinal Screens - Provide solid phenolic, color through the core Finish 4A, wall-hung urinal screens.

2.5.4.3.2 Signage: Provide mechanically attached interior signage as required by codes and criteria and in compliance with Army Standards.

2.5.4.3.3 Bulletin Boards: Provide one mechanically attached bulletin board at each entry vestibule closest to the customer assistance desk. Bulletin board must be 4’-0” high and 6’-0” wide. Bulletin boards must have a header panel and must have lockable, laminated glazed doors.

2.5.4.3.4 Fire Extinguisher Cabinets and Mounting Brackets: Provide a fire extinguisher cabinets and mounting brackets as required by codes and criteria. Furnish a list of installed fire extinguisher cabinets and

mounting brackets (including location, type and size) to the Contracting Officer's Representative.

2.5.4.3.5 Crash Barrier/Guardrail System: Provide continuous, permanently fixed or removable crash barrier/guardrail system as required in the warehouse area, to protect personnel, structure and equipment from vehicular traffic. Crash barrier/guardrail system must be bolted to warehouse floor, and must be removable where necessary for equipment access. Crash barrier/guardrail system must extend a minimum 44-inches above finish floor, and must have a minimum of two rails, with the centerline of the lower rail set at 22-inches above finish floor.

2.5.4.3.6 Electric Water Coolers (EWC): Provide a minimum of one set each, of stainless steel, wall mounted, bi-level, ABA-compliant, electric water cooler with bottle filling station in the warehouse operations area and in the administration area.

2.5.4.3.7 Interior Entrance Walk-Off Mat Systems: Provide permanent entryway systems at least 10’-0” (3 meters) long in the primary direction of travel. Acceptable entryway systems include permanently installed grates, grilles, slotted systems, or roll-out mats. Warehouse(s) entryway systems are not required at doors leading from the exterior to the loading dock or garage but must be installed between these spaces and adjacent office areas.

2.5.5 ELEVATORS/CONVEYING SYSTEMS: NOT USED

2.5.6 INTERIOR FINISH REQUIREMENTS

MINIMUM INTERIOR FINISHES														
	FLOORS					BASE		WALLS			CEILING			REMARKS
	RESILIENT FLOORING	STATIC-DISSIPATIVE TILE	CERAMIC TILE	RECESSED ENTRY MAT	SEALED CONCRETE	RESILIENT BASE	SANITARY COVE CERAMIC BASE	CMU/INSULATED METAL PANEL	GYPSUM BOARD PAINT	CERAMIC	GYPSUM BOARD PAINT	ACOUSTICAL CEILING TILE	MINIMUM HEIGHT = 9’-0”	
WAREHOUSE OPERATIONS AREA					•	•		•					16’-0’	SEE NOTES 1,4
RECEIVING/ISSUE BAY					•	•		•					16’-0”	SEE NOTES 7, 8
SECURE STORAGE					•	•								SEE NOTES 7, 8
TURN-IN BAY					•	•		•					16’-0”	SEE NOTES 1, 4

MINIMUM INTERIOR FINISHES														
	FLOORS					BASE		WALLS			CEILING			REMARKS
	RESILIENT FLOORING	STATIC-DISSIPATIVE TILE	CERAMIC TILE	RECESSED ENTRY MAT	SEALED CONCRETE	RESILIENT BASE	SANITARY COVE CERAMIC BASE	CMU/INSULATED METAL PANEL	GYPSUM BOARD PAINT	CERAMIC	GYPSUM BOARD PAINT	ACOUSTICAL CEILING TILE	MINIMUM HEIGHT = 9’-0”	
CUSTOMER ISSUE BAY					•	•		•					16’-0”	SEE NOTES 1, 4
ADMIN SPACES	•					•			•			•		SEE NOTE 7
CONTRACTOR LOGISTICS SUPPORT	•					•			•			•		SEE NOTE 7
MULTIPURPOSE ROOM	•					•			•			•		SEE NOTE 7
MENS’S AND WOMENS TOILETS			•				•		•	•	•		8’-0”	SEE NOTES 2, 3, 5, 7
JANITOR’S CLOSET			•				•		•	•	•		8’-0”	SEE NOTES 2, 5
MECHANICAL, AND ELETRICAL,	•				•	•			•		•			SEE NOTE 6,
TELECOMMUNICATION		•				•			•		•		9’-0”	SEE NOTE 6, 7
EXTERNAL COVERED HARDSTAND					•								16’-0”	SEE NOTE 1
LOADIND/UNLOADING APRON					•									
1. CEILING IS OPEN TO STRUCTURE, MINIMUM UNOBSTRUCTED HEIGHT REQUIRED IS 16’-0”.														
2. WET WALLS MUST HAVE A 4'-0" HIGH CERAMIC TILE WAINSCOT.														
3. COUNTERS MUST HAVE A MINIMUM OF 4" HIGH BACKSPLASH.														
4. PAINTED STRUCTURE														
5. PROVIDE FLOOR DRAIN IN CENTER OF ROOM.														
6. CEILINGS MAY BE OPEN TO STRUCTURE IF ALLOWED BY CODES.														
7. THE WAREHOUSE SIDE OF GYPSUM WALL BOARD PARTITIONS MUST HAVE A MINIMUM 20 GAUGE METAL LINER PANEL. METAL LINER PANEL MUST EXTEND 96 INCHES ABOVE FINISH FLOOR AND MUST HAVE A CLOSURE CAP/TRIM AT TOP AND BOTTOM.														
8. WALLS AND CEILING MUST BEFABRICATED FROM MINIMUM 10 GAUGE EXPANDED METAL, DIAMOND WIRE MESH, ON MIMIMUM 10 GAUGE 1 1/2 INCH SQUARE STEEL TUBE OR STEEL ANGLE STRUCTURE. MAXIMUM MESH OPENING MUST BE 2 INCHES.														
MUST														

2.6 STRUCTURAL REQUIREMENTS

2.6.1 GENERAL: Design and construct as a complete system in accordance with CRITERIA

2.6.2 ROOF:

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

2.6.2.2 Primary roof members, exposed to work floor (in addition to the uniform load):

2.6.2.3 Single panel point on lower chord of roof trusses or point along primary structural members supporting roofs 2,000 pounds

2.6.2.4 Floor slab - Uniform load 250 psf, Fork lift with lifting capacity of 5000 lb

2.6.2.5 Pallets with average weight of 1500 lb each will be stacked 6 high in pallets storage racks with the first pallet be sitting on the floor. (Maximum pallet weight is 2500 lb). Slab must be designed for loads induced on slab by racking system.

2.6.2.6 Warehouse: The most stringent loading of the following: Administration 250 psf, Mezzanine 150 psf

2.6.2.7 Column Spacing Column spacing must not be less than 25 feet in the long direction of building and 60 feet (in warehouse) in the narrow direction. Columns are to be spaced in such a way as to allow standard industrial shelving for palletized loading. Shelving must be constructed in a back-to-back double row configuration with no interspersed single rows.

2.7 SEE PARAGRAPH 3.7 THERMAL PERFORMANCE – NOT USED

2.8 PLUMBING REQUIREMENTS

2.8.1 GENERAL:

2.8.1.1 Plumbing system: Must be designed and installed in accordance with the International Plumbing Code (IPC). Fixtures must be water saving and approved for its use in accordance with the IPC. Fixtures must specify EPA's WaterSense-labeled products or other water conserving products. Hot water must be provided for lavatories and janitor's sinks. Refer to paragraph 5 for domestic water metering requirements. The plumbing must be designed to achieve at least 20 percent indoor water reduction in water consumption below the consumption of a baseline building meeting the minimum requirements of EPAct 1992, UPC 2006, and IPC 2006 fixture performance requirements. Comply with UFC 1-200-02 requirements to achieve 30 percent hot water demand through solar domestic hot water heating if life cycle cost effective, to provide utility meters, and to provide alternative water sources such as non-potable water if life cycle cost effective.

2.8.1.2 Emergency eyewash stations Locate in accordance with OSHA standards 1910 and 1926. Water must be heated and a thermostatic tempering valve employed to provide water at the OSHA-required temperature. Provide a floor drain with a secondary waterless trap (similar to Trap Guard system or equal). Emergency eyewash system must be provided with audible alarm with blinking light to indicate that the unit is in operation.

2.8.1.3 Floor drains Provide floor drains in restrooms, fire riser room, and mechanical room to facilitate proper maintenance.

2.8.2 DOMESTIC WATER:

2.8.2.1 Heating System: Size the domestic water heating system based on ASHRAE HVAC Applications for Hot water heater sizing on an office building. The summation of hot water fixtures with corresponding gallon per hour (GPH) values can be used to size the water heater for the building.

2.8.2.2 Pipe Sizing: Must be designed and installed in accordance with the International plumbing code.

2.8.3 FIXTURE FLOW RATES:

2.8.3.1 Water Closet: Must have a maximum flow rate not to exceed 1.28 gpf.

2.8.3.2 Urinal: Must have a maximum flow rate not to exceed 0.125 gpf.

2.8.3.3 Lavatory: Must have a maximum flow rate not to exceed 0.35 gpf.

2.8.4 PLUMBING FIXTURES:

2.9 COMMUNICATIONS AND SECURITY SYSTEMS

2.9.1 GENERAL:

Telecommunication outlets must be provided in accordance with the criteria based on functional purpose of the space within the building and in accordance with other provisions of this RFP.

2.9.2 TELECOMMUNICATION SYSTEMS:

2.9.2.1 Voice and data connection: Provide voice and data connection capability to all workstations with one voice and two data connection. Provide data connection capability at projector locations located in the multi-purpose room.

2.9.2.2 Cable TV (CATV) All CATV outlet boxes, connectors, cabling, and cabinets must conform to I3A Technical Criteria, unless noted otherwise. Horizontal cabling must be homerun from the CATV outlet to the nearest telecommunications room. Provide 2 CATV outlets in Queuing/Orientation Hall and 1 CATV outlet in Employee Break room.

2.9.2.3 Paging System: A zoned paging system must be provided throughout the facility and integrated with the telephone system. System may utilize mass notification amplifiers and speakers, but must be overridden by the mass notification system if mass notification system is activated while the paging system is being utilized. System must have a minimum capacity of eight zones. Facility must be zoned in accordance with user requirements.

2.9.2.4 Intrusion Detection System (IDS): The IDS must include empty conduits with pull wires and junction boxes at the control panels, balanced magnetic switches, and motion sensors. An empty conduit with pull wire must be installed from each IDS control panel to the

main communication room. Design Build Contractor must coordinate with the Installation Physical Security Officer during design for the locations and connection points of IDS devices. The IDS control panels, balanced magnetic switches, and motion sensors will be GFGI.

2.9.2.5 Grounding: Grounding must be provided in accordance with NFPA 70 and the UFC 3-580-01 Telecommunications Bldg Cabling Systems Planning/Design.

2.10 ELECTRICAL REQUIREMENTS

2.10.1 GENERAL: Select electrical characteristics of the power system to provide a safe, efficient, and economical distribution of power based upon the size and types of loads to be served. Use distribution and utilization voltages of the highest level that is practical for the load to be served. Consider the effect of nonlinear loads such as computers, other electronic equipment and electronic ballasts and accommodate. Voltage drop must not exceed the maximum allowed in accordance with ASHRAE 90.1. Provide surge protective device on service entrance equipment and branch panelboard for communications and related system per UFC 3-520-01

2.10.2 POWER:

2.10.2.1 Power Must be provided for installed equipment requiring power including Government Furnished Contractor Installed (GFCI) equipment and Government Furnished Government Installed (GFGI) equipment. Power poles are not allowed. The following must also be provided.

2.10.2.2 Duplex Receptacles Provide 125-volt duplex receptacles in accordance with NFPA 70, in conjunction with the proposed equipment and furniture layouts, and as in accordance with other stated requirements elsewhere in the RFP.

2.10.2.3 125-volt duplex In addition to receptacles required elsewhere in the RFP provide one 125-volt duplex receptacle per wall in all normally occupied spaces.

2.10.2.4 125-volt duplex For housekeeping purposes provide a minimum of one 125-volt duplex receptacle per corridor. No point along the corridor must be more than 25 feet from a receptacle.

2.10.2.5 125-volt duplex Provide 125-volt duplex receptacles mounted adjacent to lavatories. Provide a minimum of one for every two adjacent lavatories. Each single lavatory must also be provided a receptacle.

2.10.2.6 125-volt duplex Provide a minimum of two 125-volt duplex receptacles in each mechanical room in addition to NFPA 70 requirements. In addition, provide a minimum of one 125-volt duplex receptacle in each electrical room.

2.10.2.7 125-volt duplex Provide 125-volt duplex receptacles within the warehouse area. No point along perimeter walls in the warehouse must be more than 25 feet from a receptacle. Install receptacles on columns.

2.10.2.8 125-volt duplex Provide a 125-volt duplex receptacle on the exterior wall near each entrance door of the building.

2.10.2.9 Dedicated Circuit Provide a dedicated circuit with disconnect switch for each forklift battery charging station. See paragraph 3.10 FACILITY ELECTRICAL AND TELECOMMUNICATIONS SYSTEMS for additional information and requirements. Battery chargers are GFGI.

2.10.2.10 125-volt duplex Provide 125-volt duplex receptacles within the Queuing/Orientation Hall. No point along perimeter walls in the Queuing/Orientation Hall must be more than 25 feet from a receptacle.

2.10.2.11 125-volt duplex Provide a 125-volt quadraplex receptacle for each Issue/Turn-in station.

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

2.10.3 LIGHTING LEVELS, FIXTURES AND CONTROL: Provided lighting levels must be within plus or minus 10 percent of required lighting levels. Interior and exterior building lights must be provided with Lighting Emitting Diode (LED) lighting fixture. LED fixtures must have a Color Rendering Index of (CRI) of 82 or higher and Luminaire Efficacy (LE) must have a minimum of 80 LPW. Provide individual lighting controls for 90 percent of individual spaces consisting of three lighting levels. Provide individual thermal controls for at least 50 percent of occupant spaces. Achieve illuminance levels between 300 lux and 3,000 lux for floor areas. Interior lighting quality requirements must comply with ASHRAE 189.1-2014, Section 8.3.5.

2.10.3.1 Warehouse storage area must be illuminated with LED lighting fixtures to a level of 15 foot-candles. The lighting fixtures must be mounted at the bottom of the roof frame about 1-6 inches.

2.10.3.2 Issue stations must be illuminated to a level of 30 foot-candles.

2.10.3.3 Covered Shakedown/Hardstand area must be illuminated to a level of 15 foot-candles. Lighting fixtures must be provided with wet location LED lighting fixtures. Manual light switch with photocell override-off must be provided to control the lighting in this area. The photocell override-off is to ensure the lighting fixtures in this area could not be on during the daylight.

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

2.11 HEATING VENTILATING AND AIR CONDITIONING (HVAC) REQUIREMENTS

2.11.1 GENERAL:

Offices (including warehouse offices), Issue/Turn-In Areas, Classification, Repair Area, Secure Storage and public spaces must be heated and air-conditioned. The user must be provided with adjustable controls of plus or minus 2 degrees F with a set point of 78 degrees F for cooling and 68 degrees F for heating. Installation must be in accordance with the International Mechanical Code (IMC). Toilets must be continuously exhausted in accordance with ASHRAE 62.1 minimum exhaust rates during occupied hours. Air conditioning for communications room must remain active at all times. Communication rooms must be maintained at 72 deg F 40% RH at all times. Comply with UFC 1-200-02 requirements to confirm commissioning requirements, to provide LCCA's such as whole building and on-site renewable energy, and to provide efficient products.

2.11.2 HVAC DESIGN CRITERIA:

2.11.2.1 Warehouse and storage areas Warehouse and storage areas must be heated and ventilated separate from the offices (including warehouse offices), Issue/Turn-In Areas, Classification, Repair Area, Secure Storage and public spaces. During cold weather, warehouse and storage areas must be maintained at a minimum of 55 degrees F when occupied. During non-occupied hours, the temperature must be maintained at a minimum of 40 degrees F for freeze protection. Air conditioning is not allowed in warehouse and storage areas. Installation must be in accordance with the IMC. Only freeze protection is required in the fire riser room.

2.11.2.2 Split system air handling units (if used) must be located in a mechanical room. Mechanical rooms must be sized for ease of service, maintenance, and replacement of HVAC equipment. Design must be such that equipment is not "trapped" in the space. Rooftop-mounted package equipment (if used) must be accessible by means of a fully caged roof ladder located in a mechanical room as described above. Provide a lockable, full size roof hatch for the ladder.

2.11.2.3 Air conditioned space zoning must be based on exterior envelope exposures. Where VAV systems are used, limit individual zones to a maximum of 2,500 cfm.

2.11.2.4 Air handling units must run continuously during occupied hours. Similarly, outdoor ventilation air required by ASHRAE 62.1 must be continuous during occupied hours.

2.11.2.5 Equipment located outside (on the ground) must be enclosed in a security-screened equipment yard. Sound/noise must be a consideration in the selection of equipment.

2.11.3 TEMPERATURE CONTROLS:

2.11.3.1 Refer to Paragraph 1.2 for temperature control information.

2.11.3.2 Thermostatically controlled warehouse ventilation system Provide a thermostatically controlled warehouse ventilation system capable of exhausting stratified hot, stale air trapped below the roofline at a minimum rate of 4 cfm per square foot of under-roof-area open to the warehouse. Cfm rating must be at no less than 0.125 inch of static pressure. Limit noise level (per exhaust ventilator) to 50 fan sones (measured at 5 feet in accordance with AMCA Standard 301,

installation A, tested at zero static pressure). Fixed exhaust volume (per ventilator fan) must fall between 23,000 cfm minimum and 45,000 cfm maximum at 0.125 inch of static pressure.

Ventilators must have a cfm to sone ratio of at least 800 (cfm/sones = 800+). Ventilator ratings, e.g. must come from regularly published data provided by the equipment manufacturer. Locate ventilators to maximize the sweep of fresh air through the warehouse and prevent short-circuiting of air between intake and exhaust points. Provide separate thermostat on/off control for each ventilator at a convenient single location.

For purposes of night cool down provide low-wall, rain-resistant, air intake, wall louvers with motorized dampers. Louvers must be sized for three air changes per hour (based on warehouse under-roof volume only) to produce a net free area velocity of no more than 500 fpm. If excess airflow is necessary (because of fan sizing) to meet the minimum airflow requirement then louvers must be sized so as to not exceed the 500 fpm maximum. Locate the louvers so as to promote balanced airflow and prevent short-circuiting. Interlock fans/dampers so that operation of a single fan or combination of fans will open of the dampers. With fans operating (and all dock doors and dampers open) the velocity through the free area of louvers and dock doors must not exceed 500 fpm.

To prevent back drafting of gas-fired appliances interlock ventilators to heating units so that they will not fire if ventilators are energized. Heating unit interlocks are not required for appliances whose combustion air supply does not communicate with the warehouse space.

2.11.3.3 Thermostatically Controlled Administration system- Provide a thermostatically controlled administrative HVAC system capable of thermal comfort control in accordance with ASHRAE 55. Provide individual thermal comfort controls for at least 50 percent of individual occupant spaces. Provide group thermal comfort controls for shared multi-occupant spaces.

2.11.3.4 Diffusion and ventilation In accordance with 29 CFR 1910 and other criteria provide for sufficient diffusion and ventilation of gases from forklift storage batteries to prevent the accumulation of explosive mixtures. Batteries will be charged “in place”.

2.12 ENERGY CONSERVATION REQUIREMENTS

2.12.1 GENERAL

The building, including the building envelope, HVAC systems, service water heating, power, and lighting systems must be designed to achieve a non-plug load energy consumption that is at least 30 percent below the consumption of a baseline building meeting the minimum requirements of ANSI/ASHRAE/IESNA Standard 90.1 2007 (see paragraph 1.2.9 Energy Conservation) (Note: Plug loads must be included in building energy modeling but are subtracted in the final calculation of Energy Performance. See section “Design After Award” for additional guidance.) If the building is not designed to achieve a non-plug load energy

consumption of at least 30 percent below the baseline, a life-cycle cost analysis must be provided to justify system selection and to achieve a maximum level of energy efficiency. If life-cycle cost effective, the building must be designed and constructed to provide 30 percent of domestic hot water by use of solar hot water system.

2.12.2 ON-SITE RENEWABLE ENERGY

Life-cycle cost assessments must be provided to find renewable energy generation projects effectiveness. When life-cycle cost effective, renewable energy projects must be installed which are not limited to solar photovoltaic, purple piping/reclaimed water, e.g.

2.13 FIRE PROTECTION REQUIREMENTS

2.13.1 GENERAL

2.13.2 FIRE SUPPRESSION SYSTEMS:

2.13.2.1 Fire suppression systems must be designed in accordance with the latest edition of UFC 3-600-01. Warehouse and storage areas must be protected utilizing Early Suppression Fast Response (ESFR) sprinklers. ESFR must be designed and installed in accordance with NFPA 13. ESFR system must be on a separate fire riser from the rest of the building. (Note: maximum roof slope for ESFR is 2/12.)

2.13.2.2 Fire pumps: Fire pumps must be installed in accordance with NFPA 20. Fire pumps must be installed in a separate room with access from the exterior. Fire pump room must have one hour separation from the rest of the building.

2.13.2.3 Water storage tanks, if required, must meet the requirements of UFC 3-600-01 and NFPA 22. Water tanks must be supervised by the building's fire alarm system.

2.13.2.4 Department Connection: Department Connection (FDC) must be provided in accordance with NFPA requirements.

2.13.2.5 Post Indicator Valve: Post Indicator Valve (PIV) must be provided in accordance with NFPA requirements. PIV must be supervised by the building fire alarm system.

2.13.3 FIRE DETECTION AND ALARM SYSTEMS:

2.13.3.1 Complete System: There must be one complete supervised addressable fire alarm system for the building. This system must consist of a fire alarm panel, a communication device, initiating devices and notification devices.

2.13.3.2 Software: Software, software locks, special tools and any other proprietary equipment required to maintain, add devices to or delete devices from the system, or test the fire alarm system must become property of the Government and be furnished to the Contracting Officer’s Representative prior to final inspection of the system.

2.13.3.3 Fire alarm system: The fire alarm system must be designed by a registered Fire Protection Engineer and installation must be supervised by a National Institute for Certification of Engineering Technologies (NICET) level-3 (minimum) technician.

2.14 SEE PARAGRAPHS 51.2.12 AND 3.14 SUSTAINABLE DESIGN – NOT USED

2.15 SEE PARAGRAPH 3.15 ENVIRONMENTAL – NOT USED

2.16 SEE PARAGRAPH 3.16 PERMITS – NOT USED

2.17 SEE PARAGRAPH 3.17 DEMOLITION – NOT USED`

2.18 SEE PARAGRAPH 3.18 ADDITIONAL FACILITIES – NOT USED

2.19 EQUIPMENT AND FURNITURE REQUIREMENTS

2.19.1 FURNISHINGS – NOT USED

2.19.2 EQUIPMENT – NOT USED

2.20 FACILITY SPECIFIC REFERENCES: NOT USED