Design-Build Request For Proposal

Child Development Center
PN 68572, FY2008

Fort Irwin, California

W912PL-09-R-0011

VOLUME 2 of 2 –TECHNICAL SPECIFICATIONS (DIVISION 01)

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1.0 PROJECT OBJECTIVES

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
Child Development Center (CDC) (6 weeks – 5 years)	Day Care Center

It is the Army's objective that these buildings will have a 25-year useful design life before a possible re-use/re-purpose or renovation requirement, to include normal sustainment, restoration, modernization activities and a 50-year building replacement life. Therefore, 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 site infrastructure will have at least a 50-year life expectancy with industry-accepted maintenance and repair cycles.

The project site should be developed for efficiency and to convey a sense of unity or connectivity with the adjacent buildings and with the Installation as a whole.

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 lowest Type of Construction allowed by code for this occupancy/project allowing the funding to be reflected in the quality of interior/exterior finishes and systems selected.**

1.1. SECTION ORGANIZATION

This Section is organized under 6 major “paragraphs”.

(1) Paragraph 1 is intended to define the project objectives and to provide a comparison between the military facility(ies) and comparable “civilian” type buildings.

(2) Paragraph 2 describes the scope of the project.

(3) Paragraph 3 provides the functional, operational and facility specific design criteria for the specific facility type(s) included in this contract or task order.

(4) Paragraph 4 lists applicable industry and government design criteria, generally applicable to all facility types, unless otherwise indicated in the Section. It is not intended to be all-inclusive. Other industry and government standards may also be used, where necessary to produce professional designs, unless they conflict with those listed.

(5) Paragraph 5 contains Army Standard Design Criteria, generally applicable to all facility types, unless otherwise indicated in the Section.

(6) Paragraph 6 contains installation and project specific criteria supplementing the other 5 paragraphs.

2.0 SCOPE

2.1. CHILD DEVELOPMENT CENTER

Provide a Medium, 232 child capacity Child Development Center (CDC) for children ages 6 weeks through 5 years. The project is to house administrative areas, a commercial kitchen and activity areas for infants and toddlers. It is intended to be similar to a daycare facility in the private sector community.

The design shall complement and support programmatic objectives and provide a safe, secure, and age appropriate indoor and outdoor activity space. The facility shall provide staff with visual control of the entire building to aid them in facilitating programming, supervising the children, and supervising activities. It is intended to be similar to an after school program facility in the private sector community.

2.2. SITE:

Provide all site improvements necessary to support the new building facilities. Refer to Paragraph 6.

Approximate area available 10.6 acres

2.3. GOVERNMENT-FURNISHED GOVERNMENT-INSTALLED EQUIPMENT (GFGI)

The following are also GFGI items: Refer to Attachement K of Section 01 10 00.

2.4. FURNITURE REQUIREMENTS:

Furniture selection and procurement are not included in this contract. The contractor is not responsible for furniture design for this project. Also, submittal of neither the CID package nor the SID package is required.

Provide the following furniture and equipment as part of this contract: Neither design nor provision of furniture are included in this project. Refer to Attachment K of this section for kitchen equipment to be provided. The project also includes provision of playground equipment in activity areas for infants through kindergarten age children.

3.0 CHILD DEVELOPMENT CENTER

3.1. GENERAL INFORMATION

The design must comply with the Army Standards for the facility type. Army Standard for Child Development Centers (CDC) for children 6 weeks-5 years is provided in Attachment A.

3.1.1. MANDATORY REQUIREMENTS

The Army Standard for Children 6 weeks - 5 years references TI 800-01 Design Criteria as containing mandatory criteria. Applicable mandatory requirements from TI 800-01 have been included in the specification; do not refer to TI 800-01 for additional requirements.

The Army Standard floor plan for the project facility type and size is mandatory. The floor plan is provided in Attachment F

3.1.2. BETTERMENTS

(a) Plumbing - Misters: Provide misters in playground areas in hot, dry climates. Connect misters to the potable water system and provide code compliant back-flow prevention devices.

(b) HVAC Instrumentation and Controls: Provide for connection to energy monitoring and control system (EMCS) for monitoring purposes.

(c) Attachment B provides the minimum requirements for room features and finishes. Materials that provide a better functional solution may be utilized if approved for child and youth center facilities.

(d) Not Used

(e) Provide all chilled water drinking fountains with timers for the disconnection of power during non-occupancy hours.

(f) Heat Generation: For additional comfort in the infant and pre-toddler activity rooms, utilize radiant floor heating as a primary or supplemental heating source.

3.1.3. NON-AUTHORIZED BUILDING FEATURES

The following features are not authorized in CDC:

(a) Central dining rooms

(b) Combined kitchen and laundry areas

(c) Draperies

(d) Lead-based paint is not-authorized throughout (lead-based paint is defined as any paint containing more than six one-hundredths of 1 per centum (0.06 percent) lead by weight (calculated as lead metal) in total nonvolatile content of the paint, or the equivalent measure of lead in the dried film of paint already applied).

(e) Materials containing asbestos are forbidden throughout

(f) Special decorative materials, such as pictorial or high-relief tiles and carpets, are forbidden throughout

3.1.4. COORDINATION

Coordination at all stages of design development of CDC new construction projects is required with the Installation DPW (facilities engineer), IMCOM Center of Expertise, Region Child & Youth Services Program Manager Development Services (CDS CYS) Coordinator; the installation using service CYS coordinator; and FMWRC.

3.2. FUNCTIONAL AND OPERATIONAL REQUIREMENTS

The design must comply with the functional layouts and arrangements shown in the drawings. Room types, sizes and configurations, ceiling heights, and finishes are mandatory as denoted in the standard designs and as applicable Attachment B Criteria For Child Development Centers (For Children 6 Weeks – 5 Years) Any construction details, wall sections, and building elevations are purely illustrative.

3.2.1. SITE PLANNING AND DESIGN

3.2.1.1. General Site Planning and Design Criteria

ASTM F 1918 Standard Safety Performance Specification for Soft Contained Play Equipment

ASTM F 1951 Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment

ASTM F 2223 Standard Guide for ASTM Standards on Playground Surfacing

ASTM F 2373 Standard Consumer Safety Performance Specification for Public Use Playground Equipment for Children 6 Months through 23 Months

CPSC Pub No 325 (1997) Handbook for Public Playground Safety

NFPA 1 Uniform Fire Code

3.2.1.2. Circulation and Parking

Design circulation, parking areas and entrance drives to meet the safety requirements for children. Provide separation of vehicular and pedestrian circulation. Minimize pedestrian crossing of traffic lanes. It is highly desirable that after parking, users do not have to cross a traffic lane to enter the building. If the crossing of a traffic lane cannot be avoided, a crosswalk must be provided. In addition, other devices to slow traffic, such as speed humps, should be provided for traffic approaching the crosswalk. The entrance drives and parking area shall comply with NFPA 1 to allow fire truck access. Arrange all parking in accordance with UFC 4-010-01.

3.2.1.2.1. Site Traffic Impact Study

If required for the project (refer to Paragraph 6), prepare a site traffic impact study to determine the traffic patterns and the peak demand for parking. Access for fire equipment, garbage removal and other essential services must be provided.

3.2.1.2.2. Turnover

The circulation and parking demand includes the turnover for the hourly care program and the part-day care program. The entrance and exit drives should be designed to accommodate the flow of traffic generated by this demand.

3.2.1.2.3. Drop-Off Lane

Provide a drop-off lane for one bus when required by the specific project.

3.2.1.2.4. Security

The circulation and parking demand is impacted by the security requirement for the parent to drop off the child inside the facility and to pick up the child inside the facility.

3.2.1.2.5. Staff Parking

Long-term staff parking should be separate from short-term patron parking.

3.2.1.3. Outdoor Play Area

(a) The playground design shall be reviewed by the garrison CYS staff and requires approval by the FMWRC Center of Expertise (CX).

(b) Playground installation shall be in accordance with the Consumer Products Safety Commission (CPSC) and all applicable ASTM standards. Provide written documentation that the playground meets these standards and has been inspected by an independent Certified Playground Safety Inspector prior to the facility being turned over to the Government. Send a copy of the documentation of the installation and inspection to the FMWRC CX and provide the original documents to the garrison CYS staff.

(c) Poisonous plants, plants with thorns and fruit bearing plants are not permitted in the outdoor play or activity areas. Evaluate shrubs, bushes, trees, flowers, etc. used around the outdoor activity and play areas for potential hazard or toxicity using Peterson’s Field Guide to Venomous Animals and Poisonous Plants for guidance. Refer to Attachment J for more detailed requirements.

3.2.2. UTILITIES

Transformers and other above ground utilities should be made inaccessible to children. To meet child safety requirements concerning entrapment and fall attenuation, it is recommended that storm drainage inlets, utility clean outs, valve covers, and manhole covers be located outside the children's outdoor play area. Under no circumstances are the utilities to be sited within the fall zones of play equipment. In the event utilities must be located within the outdoor play area, the surface openings should be less than 5/16 inch to prevent finger entrapment in accordance with USCPSC guidelines and ASTM F 1487 Standard Consumer Safety Performance Specifications for Playground Equipment for Public Use.

3.2.3. ARCHITECTURE AND INTERIOR DESIGN

3.2.3.1. Building Exterior

3.2.3.1.1. Exterior Doors

Provide all exterior doors with vision panels. All exit door hardware shall be located 44 inches above the finished floor.

3.2.3.1.2. Exterior Signage

Although required by Paragraph 5.3.4.1 of this section, Building Numbers shall not be utilized. The facility can only be identified as a "Child Development Center". However, the installation or community name or geographic location of the facility may also be used for public identification purposes.

3.2.3.1.3. Exterior Windows

Provide exterior windows as described in Attachment B Design Criteria For Child Development Centers (For Children 6 Weeks – 5 Years) and that are in compliance with UFC 4-010-01. Furnish exterior windows with color coordinated horizontal blinds, which are operable by cord or hardware that can be adjusted in length to be out of the reach of children and shall be strangle-proof.

3.2.3.2. Building Interior

3.2.3.2.1. Space Configuration

The functional relationships of spaces as shown on the drawings in the Attachments to this section are mandatory and must be followed.

3.2.3.2.2. Toilet Facilities

Central children's toilet facilities are prohibited in the 6 week to 5 year old CDC facilities. In these, toileting facilities are provided in each activity room.

Provide adult toilet facilities, separate from the children's toilets, for the staff and general public. Toilet facilities need not be designated by sex if no more than 15 employees are in the facility at any time.

3.2.3.2.3. Interior Finishes

No stained or acid etched concrete allowed. Interior finish materials shall be as shown in the provided room finish schedules or room by room descriptions. Provide interior colors as indicated in the color scheme provided in Attachment I of this section.

3.2.3.2.4. Special Protection

Provide surface-mounted, high impact integral color rigid vinyl corner guards at all outside corners of gypsum board walls, and stainless steel corner guards at all outside corners of ceramic tile walls, especially where subject to heavy traffic. Also, consider installing chair rails in areas prone to hi-impact use, such as corridors, etc.

3.2.3.2.5. Art Sink/Food Preparation Counter – 6 Weeks Through 5 Years

Provide a solid surface food prep counter/art counter 8 feet long with upper and lower cabinets. Also, provide integral backsplash with 2 separate stainless steel sinks and GFCI electrical outlets above the backsplash.

3.2.3.2.6. Art Sink – School Age Children 6 Through 10 Years

Not applicable.

3.2.3.3. Comprehensive Interior Design (CID)

For CDC projects, a CID package is NOT required. The Contractor is not responsible for selecting or purchasing furniture.

3.2.4. FIRE PROTECTION

Requirements are based on NFPA 101 Life Safety Code for Assembly and Educational occupancy, where applicable. Provide fire detection and sprinklers throughout the entire facility.

3.2.4.1. Fire Detection and Alarm

Provide fire alarms in Compliance with NFPA 72

(a) Provide manual pull stations inside the facility at each exterior exit door.

(b) Provide a fire alarm transmitter compatible with the installation fire alarm receiving equipment to transmit fire alarm and system supervisory signals to the installation fire alarm reporting center. Consult with the installation Fire Chief or fire system maintenance activity. This may be a sole source item.

(c) Install magnetic latches to hold fire doors open in area separation wall(s) that release when the fire evacuation signal sounds. However, do not provide a magnetic hold open devices on the Laundry Room door.

(d) Provide either a graphic or alphanumeric annunciator at the front desk or vestibule.

3.2.4.2. Fire Suppression Systems

Provide complete automatic sprinkler systems according to NFPA 13 Installation of Sprinkler Systems and UFC 3-600-01 Fire Protection Engineering for Facilities for all CDCs.

3.2.4.3. Fire Extinguishers

Provide accommodations for fire extinguishers as required by NFPA 10.

3.2.5. PLUMBING

Provide plumbing in accordance with ICC IPC International Plumbing Code.

3.2.5.1. Water Temperatures

The hot water temperature in kitchen areas shall be a minimum of 140 deg F and 180 deg F for non-chemical sanitization process, in order to sanitize cooking and eating utensils in accordance with TB MED 530 Food Service Sanitation. Hot water temperatures for lavatories used by both adults and children, and in diaper changing areas shall be 80 to 95 deg F and must not exceed 110 deg F. Hot water temperature for laundries shall be 140 deg F.

3.2.5.2. Free of Lead

Extreme care is required to ensure that potable water systems "free of lead" have been installed. A thorough pre-sterilization flushing is important for removing sediment and solder/flux trash from the potable water lines. Liquid chlorine is highly corrosive and contributes to leaching lead from brass or other lead containing metals. High chlorine levels shall not be allowed to remain in the plumbing system after the required holding period. "Lead-free" may not really mean lead free. Virtually all brass plumbing parts still legally contain 5-7% lead. Care shall be taken to install lead free potable water systems as defined by the ICC IPC.

3.2.6. HEATING, VENTILATING AND AIR CONDITIONING (HVAC)

3.2.6.1. General HVAC Criteria

ICC IMC International Mechanical Code

3.2.6.2. Temperature Control

Install thermostats 54 inches above the floor with a protective covering. In CDC Facilities accommodating Children from 6 weeks - 5 years of age also provide temperature sensors mounted within 12 inches of the finished floor. These shall also have protective coverings.

3.2.6.3. Space Temperature and Humidity

Not Used

3.2.6.4. Mechanical Exhaust

Provide mechanical exhausts for all kitchens, food preparation spaces, toilets, diapering areas and laundries.

3.2.6.5. Other Special HVAC Systems and Equipment

Consider noise level, service, and efficiency when locating equipment. Do not place HVAC equipment in playground areas. Whenever possible, provide HVAC separate from the other building systems. Apart from other advantages, this will facilitate better filtration of the dust and molds that many children are particularly sensitive to. In addition to heating and cooling equipment, consider a humidifier/dehumidifier to meet required levels. Also note the following:

(a) Provide proper exhaust venting for range and clothes dryer.

(b) Install air diffusers that minimize drafts on children.

(c) HVAC Systems and equipment shall meet the requirements of UFC 4-010-01. This UFC includes specific requirements for air intakes to HVAC systems and emergency air distribution shutoff for example.

(d) In CDC facilities that will accommodate children from 6 weeks - 5 years of age provide CO2 detectors as required by National Association for the Education of Young Children (NAEYC) accreditation requirements.

3.2.7. ELECTRICAL SYSTEMS

Electrical power, lighting and telecommunications shall be provided to the facility as specified below, in accordance with APPLICABLE CRITERIA, GENERAL TECHNICAL REQUIREMENTS, all IEEE Standards (including Recommended Practice) where the scope is applicable to this design effort, all UL Standards where the UL scope is applicable to this design effort, and where itemized in the combined interdisciplinary areas cited.

(a) Perform a short circuit study as an integral part of selecting and sizing electrical distribution components (all equipment shall be fully rated; that is, do not use series-combination rated equipment).

(b) Perform a coordination study to ensure that protective device settings are appropriate for the expected range of conditions (depending on the design and construction schedule, it is acceptable to design adequate protective devices with adjustable features, followed by a coordination study required during construction to specify the correct settings.)

(c) Circuit breakers, disconnect switches, and other devices that meet the OSHA definition of energy-isolating device must be lockable.

(d) Do not exceed 5 percent combined voltage drop on feeders and branch circuits if the transformer providing service is located within the facility. If the transformer is located exterior to the facility, limit the combined voltage drop for service conductors, feeders, and branch circuits to 5 percent. Individual voltage drop on branch circuits should not exceed 3 percent. Branch circuits supplying sensitive circuits should be limited to 1 percent voltage drop.

(e) In general, to minimize sound transmission, do not install “back-to-back” outlet boxes.

(f) Locate electrical transformers and other above-ground utilities so they are outside of the fenced playground and inaccessible to children. Locate manhole covers, handhold covers outside the children’s outdoor play area.

(g) Do not install surface mounted raceways, boxes or partially-recessed enclosures in areas or passageways used by children.

(h) General use receptacles in laundry rooms shall be provided with Ground Fault Circuit Interruption (GFCI). GFCI is not required for laundry room fixed installation equipment.

3.2.7.1. Interior Electrical Power

(a) When facility electrical design includes a 480/277V power distribution system, mechanical systems and lighting systems shall generally be fed from the available 480/277V power distribution system.

(b) Provide dedicated electrical circuit for cold storage.

3.2.7.1.1. Receptacle Placement

In accordance with applicable codes, standards, referenced UFCs, and the attachments to this section. In general, provide wall duplex outlets, not less than 8 feet on center. Provide not less than one duplex outlet per wall on walls less than 9 feet long. Locate outlets to eliminate the need for extension cords. Above counter receptacles shall be mounted in the vertical wall space above the counter-top. Data, CATV, and CCTV outlets shall each be provided with an associated duplex receptacle. Provide in the child activity areas with wall duplex outlets that are at a horizontal wall spacing of no more than 6 feet from outlet to outlet. Provide duplex outlets in Child Activity Areas for items such as a small refrigerator, AV equipment, CCTV system, telephones, and computers for staff and children. Receptacles for refrigerators are to be child-safe and mounted 18 inches above the floor in a location that will be blocked by an installed refrigerator. Coordinate the location of electrical outlets with crib location and general room arrangement.

3.2.7.1.2. Mounting Height

In accordance with applicable codes, standards, referenced UFCs, and the attachments to this section.Installgeneral-use receptacles the 6 week - 5 year old CDC’s at a height of 54 inches above the finished floor in the child activity areas and the waiting room, and a height of 18 inches in all other areas.

3.2.7.1.3. Tamper Resistant

Install tamper resistant electrical outlets in areas accessible to children, including corridors.. Use tamper resistant/GFCI where GFCI is required by code.

3.2.7.2. Interior Lighting

3.2.7.2.1. General Lighting

In accordance with applicable codes, standards, referenced UFCs, and the attachments to this section. Lighting design shall consider ease of facility maintenance and minimize the lamp types and wattages used throughout the facility. Provide emergency lighting in all areas required by NFPA 101, in all child care activity rooms, and at the front desk area for desk attendant to make emergency calls and carry out other duties necessary for the safety and security of the children. Whenever possible, unless otherwise noted, incorporate the emergency lighting into the normally provided lighting fixtures. Furnish fixtures in child accessible areas with shatter-proof lenses. Use a combination of direct and indirect lighting in the child activity areas and corridors.

3.2.7.2.2. Dimming and Switching

In accordance with applicable codes, standards, referenced UFCs, and the attachments to this section. Where dimmer controls are used, provide lighting fixtures that do not oscillate visibly at low intensities. Provide dimming or multiple switching in all child activity rooms, training room, Staff Offices/Rooms, Lobby, and Corridors.

3.2.8. TELECOMMUNICATION

Telecommunications design must be performed and stamped by a Registered Communications Distribution Designer (RCDD) with 2 yrs related experience or non-RCDD person with 5 yrs related experience. The information systems designer must prepare the test plan, and witness and certify the testing of telecommunications cabling. Telecommunications must be designed in accordance with the I3A Technical Guide.

3.2.8.1. An acceptable building telecommunications cabling system encompasses, but is not limited to, copper and fiber optic (FO) entrance cable, termination equipment, copper and fiber backbone cable, copper and/or fiber horizontal distribution cable, workstation outlets, racks, cable management, patch panels, cable tray, cable ladder, grounding, and labeling. Telecommunications outlets will be provided per the I3A technical guide based on functional purpose of the various spaces within the facility as modified by user special operational requirements. Telecommunications infrastructure will meet the Installation Information Infrastructure Architecture (I3A) Guide and ANSI/TIA/EIA requirements.

3.2.8.2. Voice/data outlets shall be two 8-pin modular (RJ45 type) outlet/connector in a double gang outlet faceplate, one connector labeled voice use and one labeled data use. Copper outlet/connector must be TIA/EIA Category 6 for all projects. All connectors must be 8-pin/8-position insulation displacement terminations wired per T568A (default configuration). One Cat 6 UTP cable must be installed to each standard 8-pin modular connector provisioned at the faceplate. Copper distribution cable must be terminated at the TR on Cat 6 cabinet or rack mounted patch panels with 110-type compliant connectors on the back and 8-pin modular connecters on the front.

3.2.8.3. Outside Plant Telecommunications Systems. The project's facilities must connect to the Installation telecommunications (voice and data) system through the outside plant (OSP) underground infrastructure per I3A guidance. Connections to the OSP cabling system shall be from each facility main cross connect located in the main telecommunications room or telecommunications equipment room to the closest OSP access point. Components include the

physical cable plant and the supporting structures. Items included under OSP infrastructure encompass, but are not limited to, maintenance hole and duct infrastructure, copper cable, fiber optic cable, cross connects, terminations, splices, cable vaults, and copper and FO entrance facilities.

3.2.8.4. Telecommunications Rooms (TR). Telecommunications rooms and telecommunications entrance facilities must be provided for unclassified network and voice equipment and cabling infrastructure throughout the facilities. There shall be a minimum of one telecommunications room on each floor, located near the center of the building, and stacked between floors. The telecommunications rooms will be designed and provisioned in accordance with the I3A Guide and ANSI/EIA/TIA-569-B. One telecommunications entrance capability shall be provided for each facility. The telecommunications entrance may be collocated with the main TR for the facility.

3.2.8.5. Each utility space, such as mechanical, electrical and telecommunications rooms will be provided with at least one wall mounted telecommunications outlet, with a wall mounting lug face plate near the entrance door.

3.2.8.6. Provide a completely operational CATV cabling system including, but not limited to, all necessary raceways, cabling, terminations, jacks and faceplates will be provided. The horizontal cable for the CATV system will be RG-6 with "F" type connectors on the terminal end. The CATV cabling will be terminated on splitters in the telecommunications room, or in a location indicated by the DOIM. CATV riser cable will be RG-11 type. Splitters will be located on the CATV backboard in the telecommunications room, or in a location indicated by the DOIM. All CATV horizontal cabling will be homerun between CATV jacks and the CATV backboard. Service requirements to the building will be coordinated with the local CATV service provider. At a minimum provide one 4' empty conduit stubbed out of the building to facilitate the CATV service entrance.

3.2.9. ATTACHMENTS A THROUGH K

The Attachments represent the Army Standards at the time of award. The Standards may be updated through the course of the contract. Information provided with the project task orders will take precedence.

Attachment A – Army Standard for Child Development Centers (for Children 6 weeks - 5 years)

Attachment B – Design Criteria For Child Development Centers (For Children 6 Weeks – 5 Years)

Attachment C – Not Used

Attachment D – Not Used

Attachment E – Not Used

Attachment F - Medium, 232 CDC for Children 6 Weeks - 5 Years Floor Plan

Attachment G - Medium, 232 CDC for Children 6 Weeks - 5 Years Equipment Arrangement

Attachment H - Not Used

Attachment I –Army Child Development Center Southwest Color Schemes

Attachment J - Playground/Outdoor Play Areas

Attachment K -Kitchen Equipment

ATTACHMENT A
THE ARMY STANDARD FOR CHILD DEVELOPMENT CENTERS
(FOR CHILDREN 6 WEEKS – 5 YEARS)

Description:

Child Development Centers are required by the Army to support readiness of families by reducing the conflict between military mission workforce requirements and parental responsibilities. There are several Military unique factors which impact on the need for child development centers to include: younger families with children away from extended families; large infant and toddler populations; variety of short and long program options needed; services required 10-12 hours a day and evenings and weekends as needed. Availability of facilities, predictability of facility layout and design, and the consistency of facility standards across the Army and the Department of Defense have contributed to the Military child development programs being the model for the nation. The Army Standards define the mandatory components, functional capabilities and relationships, and features and characteristics of the facility. The Army Standards for Child Development Centers for children 6 weeks – 5 years of age are based on Army Baseline Standards, DoD requirements for certification and the National Association for the Education of Young Children requirements for accreditation.

CATEGORY CODE	DESCRIPTION
74017	Child Development Center – Under 6 Years of Age

Facilities covered in this standard are for the child development centers for children 6 weeks – 5 years of age with the following child capabilities:

- Small 126 child capacity
- Medium 232 child capacity
- Large 338 child capacity

Applicability

- The Army Standard applies to Army facilities worldwide.
- The Army Standard is mandatory for all construction projects effective in FY08 and beyond.
- All geographic districts shall incorporate the mandatory design criteria described herein in close coordination with the USACE designated Center of Standardization (COS) for Child and Youth Services.
- All Child Development Center projects must be reviewed by the COS and IMCOM Center of Expertise to ensure conformance with the Army Standard.

Waivers:

- Only the Assistant Chief of Staff for Installation Management has authority to approve exceptions to the Army Standards.
- Waivers from the Army Standard must be requested in accordance with AR 420-1 and the Army Facilities Standardization Program Charter, latest edition.
- All waiver requests to the Army Standards require COS conflict resolution prior to submission by the Garrison Commander.
- Garrison Army Standard waiver request submissions must be received in sufficient time to allow complete review by the Facility Design Team and development of recommendations or course of action for the AFSC to consider prior to implementation into project design.
- Late submissions and/or project delays are NOT sufficient stand-alone justification for accelerated review or other dispensation for not meeting the Army Standard contained herein.

THE ARMY STANDARD FOR CHILD DEVELOPMENT CENTERS
(FOR CHILDREN 6 WEEKS – 5 YEARS OF AGE)

Item	Mandatory Criteria
Central Counter/Reception Desk	Must have central counter for clerk to view/observe the flow of children, parents and visitors. Reception counter to be two tiered with no sharp edges. The lower level to be 30" above the finished floor (AFF) and the upper level at 42" AFF. Provide communication and data connectivity to include access control and central intercom system. The configuration and functional relationship between the main entry and the reception counter/desk must be maintained for access control.
Isolation Area	Must have a small space designated behind the reception desk to serve as a rest area for sick children. Area to be sized to accommodate a cot or crib and lockable area for storage of first aid supplies. Space is immediately adjacent to the reception area. Receptionist must be in the direct line of site of this area. Immediate access to bathroom facility must be provided for ill child. Locate a single occupant child height ADA compliant toilet (15" to the toilet rim) and sink (20" AFF) immediately adjacent to the isolation area. Self priming floor drain required to prevent sewer gases from occupying space.
Patron/Visitor Waiting Area (Lobby)	Must have a waiting area for parents and visitors adjacent to the central counter/reception desk**.** The configuration and functional relationships between the main entry, reception counter and public toilet shall be maintained since visual control of these areas is required.
Car Seat/Stroller Storage Area	Must provide an area for patrons to leave car seats and strollers in an area directly accessible from the corridor and waiting area. Space to include shelving for car seats and open space to park strollers.
Public Toilets	Handicapped accessible public toilet(s) for parents and visitors shall be located within view of the reception area. For medium and large facilities, a minimum of two (2) separate public toilets are required. For small facilities, one (1) unisex toilet is required.
Administrative Offices/Workstations	At a minimum, must provide a private office for the Director and Assistant Director(s). All other administrative staff to be provided with workstations. The Director's office to be adjacent to the reception counter/patron waiting area and accessible to parents and visitors. Provide communication and data connectivity.

Item	Mandatory Criteria
Staff Lounge	Must be provided in all child development centers. Allow adequate space for comfortable seating along with table/chairs for 25% of the staff. Provide a solid surface counter top with integral backsplash and single compartment sink/faucet. Provide GFCI electrical outlets above the counter for microwave and other appliances. Provide space for refrigerator and vending machine along with electrical outlets and water line to support ice making capability in freezer. Full height lockers for administrative and kitchen staff secured to the wall are to be provided. Provide communication and data connectivity.
Training Room	Must provide a training room to include a minimum of two workstation(s) for the Training and Curriculum Specialist (TACS). Provide electrical outlets, data ports and phone lines for these workstations. Include a work counter/surface to accommodate up to three (3) computers to facilitate training/distance learning by direct care staff. Provide communication and data connectivity.
Staff Toilets	Must provide staff toilets separate from the public toilets. One water closet for every 15 employees scheduled to be in the facility at any one time. Locate staff toilets near the children's activity rooms.
Central Storage and Interior Storage Closets	Must provide a central storage room near the administrative office and interior storage closets for storage of program materials.
Infant/Pre-Toddler/Toddler Activity Room	Must provide infant/pre-toddler/toddler activity rooms to accommodate up to 14 children at 35 sq ft of useable space per child. Space dual functions for eating and sleeping. A sign-in desk to be located immediately inside the entrance to the room. Provide communication and data connectivity and intercom phone connection. Storage for direct care staff's coats and lockable storage for personal items (e.g. handbags) above the sign-in desk is required. Built in diaper changing station with sink and a 6" lip to prevent infant from rolling off the table along with an unbreakable mirror installed along the back wall is required. Goose neck faucet and wrist blade handles required at sink. Provide an exhaust fan at each diaper changing station. Must provide a solid surface food preparation/art counter with upper and lower cabinets with 2 separate sinks. Provide space and electrical outlet for under-the-counter refrigerator. Room must have an exterior door to accommodate the evacuation of cribs. Door to open at least 110 degrees in the direction of exit travel to ease evacuation. Two (2) pediatric toilets (10" to the rim) with floor drain. Toilets are to be separated with a toilet partition. Toilets shall not be provided with automatic flush valve. Provide an exhaust vent located within the wall directly behind the toilet area Two (2) wall hung child size sinks (1'5" AFF) for hand washing must be provided. Wall hung unbreakable safety mirror to be placed

Item	Mandatory Criteria
	above each sink. Sinks to be opposite toilets. One (1) separate drinking fountain with guarded stream drinking head to be provided in each activity room – 1'5" AFF. Fourteen (14) cubbies to be provided for storage of children's belongings.
Infant Buggy Storage Area(s)	Must provide open area(s) designed for a place to store the "bye-bye" buggies for infants. Buggies are approximately 76" X 26". Storage area(s) to be in close proximity of the infant room(s). One (1) buggy for every 2 infant/pre-toddler/toddler classrooms to be provided. Each buggy storage to accommodate 2 buggies
Preschool/Pre-kindergarten/Kindergarten Activity Rooms	The preschool/pre-kindergarten/kindergarten room has space provided to accommodate up to 24 children. This activity room provides 35 square feet of useable program space per child. Activity space dual functions for eating and sleeping. A sign-in desk to be located immediately inside the entrance to the room. Provide communication and data connectivity and intercom phone connection. Storage for direct care staff's coats and lockable storage for personal items (e.g. handbags) above the sign-in desk is required. Must provide a solid surface food preparation/art counter with upper and lower cabinets with 2 separate sinks. Provide space and electrical outlet for under-the-counter refrigerator. Two (2) pediatric toilets (13" to the rim) with floor drain to be provided. Toilets shall not be provided with automatic flush valve. Child toilet area for this age group must meet ADA requirement. Provide an exhaust vent located within the wall directly behind the toilet area. Two (2) wall hung child size sinks (1'8" AFF) for hand washing must be provided opposite the toilet stalls. Wall hung unbreakable safety mirror to be placed above each sink. Access area to be plumed in for hot/cold water in half wall opposite children's sinks for potential future need of diaper changing table (e.g. special needs children). Cover with access panel. One (1) separate drinking fountain with guarded stream drinking head to be provided in each activity room – 1'8" AFF. Twenty four (24) cubbies to be provided for the Preschool/Pre-Kindergarten/Kindergarten Room. Provide for two (2) additional electrical outlets to accommodate children's computer workstations in each activity room. Each activity room will have a direct exit to the outdoors for play and emergency exit. Doors will swing in the direction of exit travel.

Item	Mandatory Criteria
Active Play Room	An indoor play area for children to utilize during inclement weather/temperature extremes. Space is sized for up to 24 children at a minimum of 45 sq. ft. per child. Provide for a seamless, flexible, shock absorbing flooring that can withstand trikes, skates, ball play, etc. Cased opening with area for pediatric toilet (13" to the rim) with toilet partition and sink (1'8" AFF) off the active play room. Direct access to storage for supplies and equipment needed in this space. Exit door to swing in the direction of exit travel.
Outreach/Transition Care Room	Accommodates children on a short term occasional basis such as for Family Readiness Groups (FRG), Deployment Support, Reunion Care, Respite Care, in-processing of soldiers, etc. Room size/mandatory features are the same as the Preschool/Pre-Kindergarten/ Kindergarten activity room. Diaper changing station to be installed in this room. Toilets are sized 10" and 13" to the rim; sinks are sized 1'5" and 1'8" AFF to accommodate the varying ages of children Infants-Kindergarten.
Commercial Grade Kitchen	Must provide a commercial grade kitchen. Locate the kitchen on an exterior wall adjacent to the service area with a direct service entrance. Kitchen door to swing out into the corridor for easy exit with food. Door to be provided with locking mechanism. Exterior door from the kitchen leading to the service entrance shall be equipped with an air curtain. Kitchen must include a dry storage area with shelving. Provide communication and data connectivity and intercom phone connection to support communication with the front desk and placing food orders on-line.
Janitorial Closet	A janitorial closet is required and equipped with a low mop sink, a place to store janitor's equipment and cleaning supplies, and a rack to promote hanging/air drying of mops. Door must have a locking mechanism and be designed to swing out into the corridor 180 degrees to prevent impeding on emergency egress.
Laundry Room	Must provide separate space for heavy duty commercial laundry equipment - washer(s) and dryer(s). Allocation is as follows: * Small CDC – 2 washers and 2 dryers * Medium and Large CDC – 3 washers and 3 dryers Dryer vent shall be individually and directly vented directly to the outside. Laundry room to be secured with locking mechanism. Locate laundry room on an exterior wall to allow for horizontal venting of the dryers. Provide for a laundry tub and self priming floor drain to prevent sewer gases from filtering into the facility. Provide counter for folding clothes with upper and lower cabinets for storage of laundry materials.
Vision Panels	All doors, except adult toilets, must have a vision panel. Vision panels in doors to be a minimum of half-height glass and shall be provided with a12" wide side-lite. Vision panels must also be provided in corridor walls and shall extend from normal 6'8" – 7'-0" height to 54 "above the finished floor. Vision panels are integral to

Item	Mandatory Criteria
	visual monitoring and provide an additional risk prevention measure. Tempered glass shall be utilized.
View Windows	View windows are required to provide children the opportunity to look out of or into the activity room. View window shall extend from normal 6'8" -7'0" height to within 18" or 24" above the finished floor. Safety glass shall be provided as required. All doors into activity room shall be provided with a 12" wide side lite (safety glass). Side lites shall extend the height of the door.
Exterior Windows	Exterior windows shall meet the UFC 4-010-01 requirements for ATFP. Windows to open from top only. Individual windows shall be single hung with only the top portion operable. All windows to be screened. Windows to be low enough to enable children to look outside (18"-20" AFF). Window stools to be flush with the walls and/or radiused so there are no sharp edges.
Intercom System	Must have a two-way intercom system capable of allowing program staff to communicate with the main reception desk and other areas of the building. Main reception desk to have capability to contact any and all rooms with the exception of the mechanical, communication, electrical, storage, and camera equipment room. System to enable front desk staff to contact rooms individually or all rooms simultaneously via hand held handset.
Intrusion Alarm	An audible warning device shall be provided at each exterior corridor door leading to an unfenced area with the exception of the main entry and kitchen. The audible device shall have a different sound from the fire alarm system. Alarm must be capable of being heard at the reception desk.
Video Monitoring Security System/Closed Circuit Television (CCTV)	Must have video monitoring system to deter and reduce the risk of child abuse and protect staff from unwarranted allegations of abuse. Conduits, power, and cabling are to be installed as indicated on the standard design.
Camera Equipment Room	Separate room or area will be provided store the equipment racks for the video monitoring security system. Racks are approximately 48"W x 30"D x 84" H. Special consideration for heat build up is required. Targeted temperature is 70 degrees F. Maximum temperature is 85 degrees F.
Playground / Outdoor Play Areas	Outdoor play areas (playgrounds) serve as extensions of classroom spaces and must be provided to support programming. Playground is divided into individual areas to accommodate the different age groups occupying the facility. Separate play areas are required for each age group of children: infant/pre-toddler; toddler; and preschool/pre-kindergarten/kindergarten. Area is capable of supporting 50% of the children at any given period of time at a minimum of 100 sq. ft. per child using the outdoor play space. Playgrounds must meet guidelines contained in the Consumer

Item	Mandatory Criteria
	Products Safety Commission (CPSC) Handbook for Public Playground Safety, the American Society for Testing Materials (ASTM) F-1487-93, and meet ADA guidelines for playgrounds (www.access-board.gov). Specific play areas shall be defined by several elements. Elements include circulation paths, open play areas/natural turf, age appropriate equipment, play structures, attenuation material for use zones, and fencing. Shade in the outdoor play areas is a requirement for certification. A playground safety surface shall be provided throughout all use zones and under all play equipment. Trike paths are a requirement and dual function as an evacuation route, as well as, a play element. Refer to ADA Guidelines for widths of pathways for egress. Outdoor Play Area must be fenced. Fencing will have gates between the play areas. Exit gate to be provided with adult controlled securing device to allow access for emergency and maintenance vehicles as well as egress from building to a safe, open area. Hose bibs, 18" above finished grade, are required in each age group play space and must be of the frost/freeze protective type with removable cut off handles with integral vacuum breakers. Poisonous plants, plants with thorns, and fruit bearing plants are not permitted in the outdoor play areas. Reference: A Field Guide to Venomous Animals and Poisonous Plants (1994) by Steven Foster and Roger Caras.
Exterior Storage Rooms	Must provide secured storage rooms to support the outdoor activity areas. Exterior storage rooms must be an integral part of the facility vs. non permanent structures around the playground.
Parking	Parking for patrons and staff is required. Parking Allocation: 1 parking space per each full time staff; 1 per every 4 patrons. Must provide a sidewalk that leads from the car directly to the front entry without crossing traffic lanes. Crosswalks are allowed but must be limited in their use. School buses to deliver and pick up children curbside on sidewalk that leads directly into the facility.
Exterior Lighting	Exterior lighting systems provided for parking areas, sidewalks, service yards, service drives, building entrances and perimeter.
Vehicular Circulation/Service Road/Drives	Must provide site entrances, exits, service drives and special circulation areas sized to accommodate the largest vehicle that uses the area. Service road/drive must be provided on the side of the building adjacent to the mechanical room, providing vehicular access to the kitchen service entry, mechanical yard, electrical room and storage room. All vehicular pathways must be kept away from children and pedestrian pathways and outdoor play areas.

Item	Mandatory Criteria
Controlled Entry Access	A buzzer security system, with manual override, must be installed to facilitate entry into the facility.
Communication Room	Provide separate room for communication sized to meet the minimum DOIM requirement for electrical boxes and connections.
CATV (Cable Television)	Provide empty boxes and conduits for 1 CATV in the staff lounge.
HVAC	HVAC units will provide heating and air conditioning for the entire facility excluding the Mechanical and Electrical Rooms which require only heating. Each child activity room will have a separate HVAC zone with a wall mounted tamperproof space thermostat with night and weekend set-back to accommodate variations in temperatures.
Mechanical /Electrical Room	Mechanical room to open directly to the exterior of the building with no access to the interior space or direct access to the playground. Mechanical yard must be located away from the playground area for safety, noise, and environmental considerations.
Energy Policy Act 2005 (EPACT 05) and Executive Order 13423 (E.O. 13423)	Child Development Centers shall be designed in compliance with statutory requirements for federal facilities IAW EPACT 05 and E.O. 13423.
Sustainability	Child Development Centers shall be designed to meet current sustainable development and design policy requirements as established by the Department of the Army.

GUIDANCE

Facility Capacity - Capacity could vary depending on installation requirements. Activity rooms allow for flexibility in programming and use.

Facility Site – The Child Development Center (CDC) will be evaluated for security requirements in accordance with UFC 4-010-01, DoD Minimum Antiterrorism Standards for Buildings, latest edition.

Grading – The site will be graded to drain away from the new structure to existing drainage ditches or storm drain systems.

Utilities – All utilities, except storm water, will be routed from the new structure underground to the existing source.

Landscaping – Irrigation of turf and significant landscaping may be required in geographical areas which are arid. Landscaping is an important tool in the implementation of Force Protection measures. Landscaped earth berms shall be used to provide an attractive natural barrier. Shrubs, bushes, trees, flowers, etc. used around the CDC and outdoor activity area shall be evaluated for potential hazard or toxicity. No toxic chemicals or herbicides shall be used to clear the site of unwanted irrigation.

Interior Color Scheme – Standardized interior color schemes have been developed for the Garrison to select from.

Casework – Provide for solid surfacing counter tops and high quality cabinets. Millwork is required as shown in the Standard Design. The construction of the millwork is up to the contractor, with the exception that a solid surface countertop (or better) must be provided. Materials other than solid surfacing would need IMCOM Center of Expertise approval.

Safety Features – All corners on millwork, cabinets, etc. below 48” need to be radiused so as to prevent injury to young children. Wall corners need either to be radiused or provided with cover guards to create the same safety feature. All doors accessible to children, (e.g. activity rooms, storage closets, storage rooms, outdoor storage areas) must have finger guards to prevent injury.

Interior Windows - All interior windows in the children’s activity rooms shall be tempered safety glass.

Central and Interior Storage Closets - Shelving to be finished with an appropriate durable finish that renders them smooth and easily cleanable. Storage room will be provided with a ceiling mounted automatic motion light switch and globe light. The interior of the closet to be marked with a red line 1” in width located 18” below the lowest point of the sprinkler head to prevent staff from stacking materials and supplies too close to the sprinkler heads. Door shall be fitted with a locking mechanism and lever type handle that allows the door to be opened from the inside while locked.

Children’s Activity Rooms –

- Diaper Changing Station - diaper changing station to be 35 ¾” H X 601/2” W X 24” D, with storage for 14.underneath storage trays to be integral to the diaper changing table. Retractable stairs that lock into place required. An exhaust fan at each diaper changing station to be provided exhausting 100-150 feet per minute (fpm).
- Toilet Partitions – toilet partitions to be no higher than 42” tall with a 12” clear opening at the bottom.
- Food preparation/art counter - The 8’ counter to have an integral backsplash with 2 separate stainless steel sinks and GFCI electrical outlets above backsplash.
- Exterior Doors – to have a 34”clear minimum width opening to allow for emergency crib evacuation with low threshold.
- All counter tops will have rounded/radius corners and edges.

- Pediatric toilets – Vent to exhaust 100-150 feet per minute (fpm).
- Cubbies - to be pre-manufactured and will feature a top and bottom space for hats, mittens, shoes and boots and hanging space for jackets and other personal belongings.

Kitchen - The all stainless steel kitchen equipment must meet the National Sanitation Foundation standards of practice. All equipment must be designed and installed IAW TB Med 530, Food Service Sanitation. Equipment that is hard wired or connected to a utility is MCA funded.

Floor Drains – All toilet and wet areas to include janitor and laundry rooms and multiple locations in the kitchen must have floor drains.

Playgrounds:

- The safety surface will be unitary or poured in place material. The swing fall attenuation material will be engineered wood fiber, with approved rubber matting at foot contact point underneath the swings. Beneath the infant swings, a unitary safety surface will be used.
- All fencing must be vinyl coated chain-link security type minimum 4' high at the perimeter and 4' high to sub-divide play areas by age group.

Exterior Storage Room - Provide a pair of 3 ft x 7 ft doors, with each leaf provided with a minimum of half-height glass panels. No astragals shall be provided. Instead, top and bottom flush bolts are to be provided. Adequate weather stripping shall be provided to prevent access by vermin.

Life Safety - The building fire protection systems, shall be designed in accordance with the applicable standards contained in the Unified Facilities Criteria (UFC) 3-600-01, Fire Protection Engineering for Facilities, TI 800-01, and National Fire Protection Association (NFPA) 101, Life Safety Code. A complete automatic sprinkler system shall be provided in accordance with UFC 3-600-01 and NFPA 13. The fire alarm system shall be designed in accordance with NFPA 72, which will provide pull stations at each exterior exit door, textual (voice) audible and visual (strobes) notification devices and smoke detectors throughout the child development center. Placement of the enunciator panel is a local fire department call. If there is no preferred location, then the panel shall be placed in the entrance of the facility. Where possible the Mass Notification System (UFC 4-021-01) shall be integrated with the fire alarm system.

Electrical Outlets – In all child activity rooms/child accessible areas and the waiting area, all electrical outlets shall be mounted 54 inches above the finished floor, and must be Hospital grade, tamper resistant safety type.

Video Monitoring Security System/Closed Circuit Television (CCTV) - AR 415-15 - Appendix L, Information Systems Support is the source of Army policy for funding of video monitoring equipment. MILCON/MCA dollars are to be used for cabling and fittings, connectors, terminal strips, and similar devices needed to install the cable up to the outlet device plate. Operating Maintenance Army (OMA) dollars are used to purchase and install monitors, cameras, parent viewing monitors, operating consoles, etc. for the video surveillance system. The equipment, external to the outlets, is considered personal property.

Accessibility – The CDC shall be designed in compliance with the Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities and meet both adult and child requirements.

Signage – The facility shall be identified as a "Child Development Center". The installation/garrison or community name or geographic location of the facility may be used for public identification purposes. The facility signage is to be in accordance with AR 608-10 and the Installation Design Guide.

Antiterrorism/Force Protection – The most current guidance (UFC 4-010-01, Force Protection) must be incorporated into the site layout and standard design using. A Mass Notification System shall also be provided using UFC 4-021-01, Design, and Operation & Maintenance for Mass Notification Systems. To

protect the facility and its occupants, consider a natural approach without degrading the visual surroundings as a method of protection.

UFC 4-740-14, Design: Child Development Center – The Unified Facilities Criteria for Child Development Centers was based on the Army's Standards and the Army Standard Designs and adapted by the other Services. The Army contributed program, design, and construction experience to define the criteria in this document. The Army will use the Department of the Army Standard Design and Army-approved standards for all CDC construction program for children 6 weeks – 5 years of age.

MINIMUM ROOM FINISH SCHEDULE REQUIREMENTS (FOR CHILDREN 6 WEEKS – 5 YEARS OF AGE)

SPACE	FLOOR	WALL	BASE (*)	CEILING (**)
ADMINISTRATION				
ENTRY	VCT	EPGB		ACT, PDT
WAITING AREA	VCT	EPGB		ACT
RECEPTION/CENTRAL COUNTER	VCT	EPGB		ACT, PDT
PRIVATE OFFICES	VCT	PTD		ACT
OPEN OFFICE	VCT	PTD		ACT
ISOLATION ROOM	SV	EPGB		ACT
ISOLATION TOILET	CT	CT		ACT
STAFF SUPPORT				
STAFF LOUNGE	VCT	EPGB		ACT
TRAINING ROOM	VCT	EPGB		ACT
PUBLIC TOILETS	CT	CT		ACT
ADULT TOILETS	CT	CT to 48" AFF/ EPGB above 48"		ACT
SUPPORT AREAS				
LAUNDRY	VCT	CT		VACT
JANITOR	QT	CT		VACT
CORRIDORS	VCT	EPGB		ACT
MECHANICAL	SC	PTD		PTD
COMMUNICATIONS	SC	PTD		PTD
ELECTRICAL	SC	PTD		PTD
KITCHEN	QT	CT to 48" AFF/ EPGB above 48"		VACT
CHILD ACTIVITY ROOM				
CHILD ACTIVITY ROOMS	SV	EPGB		ACT
CHILD TOILET AREAS	CT	CT/EPGB		ACT

LEGEND:
SV – SEAMLESS VINYL FLOORING
CT – CERAMIC TILE
QT – QUARRY TILE
VCT – VINYL COMPOSITION TILE
SC – SEALED CONCRETE
PTD – PAINTED GYPSUM WALLBOARD
EPGB – EPOXY PAINTED GYPBOARD
VACT – VINYL FACED ACOUSTICAL CEILING TILE (MOISTURE RESISTANT)
ACT – ACOUSTICAL CEILING TILE

* **Base**: Will be appropriate to the flooring. Base to be sealed with USDA approved caulk (Edible)
** **Ceiling**: 2 ft X 2 ft ACT, VACT

TOILET ACCESSORY SCHEDULE
FOR
CHILD DEVELOPMENT CENTER

FIXTURE TYPE	ADULT TOILETS	ACTIVITY ROOM CHILD TOILETS	ACTIVITY ROOM LAVATORIES (sinks)	DIAPERING STATIONS	FOOD PREPARATION	ISOLATION TOILET
Mirror+	X		X			
Paper Towel Dispenser*	X		X	X	X	X
Trash Receptacle (user provided)	X		X	X	X	X
Soap Dispenser*	X		User provide store purchase pump soap	User provide store purchase pump soap	X	X
Coat Hook	X					
Toilet Tissue Dispenser*	X	X				X
Handicap Grab Bars	X					X child height ADA

*Soap, toilet paper and paper towel dispensers – coordinate with the garrison/installation and provide in accordance with the service contract. Store-bought soap in pump bottles to be used in child activity rooms.

+Mirrors above children's sinks must be unbreakable

ATTACHMENT B

DESIGN CRITERIA FOR CHILD DEVELOPMENT CENTERS
(FOR CHILDREN 6 WEEKS – 5 YEARS)

US Army Corps of Engineers
Engineering and Support Center, Huntsville

STANDARD DESIGN CRITERIA
CHILD DEVELOPMENT CENTERS
FOR CHILDREN AGES 6 WEEKS – 5 YEARS

SMALL	126 CAPACITY
MEDIUM	232 CAPACITY
LARGE	338 CAPACITY

ROOM BY ROOM DESCRIPTIONS

JULY, 2008

(Rev 3 Nov 2008)

Standard Design Criteria
Child Development Centers
(For Children 6 Weeks – 5 Years)

General Requirements:

- The Child Development Center shall have a residential scale and feeling, but shall be of commercial construction standards.

- Unless noted otherwise in this document, all ceiling heights shall be a nominal 8'-0". Furr-down over the Central Counter may be lower than 8'-0", but no less than 7'-0".

- All exterior doors from the facility may not have a step in order to allow movement of evacuation cribs in the case of an emergency. The exterior pathways from activity room and corridor doors shall meet ADA requirements and be appropriate for crib evacuation.

- Impermeable wall finishes, such as vinyl wall covering, are not acceptable.

- Corner guards to be provided on all exterior corners of walls.

- Radius corners shall be provided on millwork.

- Unless noted otherwise, interior walls between rooms shall be provided with acoustical batt insulation, or other approved system, to obtain an STC rating of at least 40. CAC shall be a minimum of 38.

- Where exterior windows are provided the following requirements shall be met. Shall comply with ATFP requirements. Salient characteristics include easy to clean and able to withstand continuous use. Individual windows shall be single hung, with only the top portion operable. Screens shall be provided. Secure insect screens with interior metal clips to preclude children from removing the clips. Windows shall comply with the Army Standard and shall allow children to be able to look out. A minimum of 2 exterior windows shall be provided in each activity room.

- Safety glass shall be provided with a manufacturer's label indicating that the glass is safety glass.

- Mounting height of all electrical outlets will be in accordance with industry standards except as noted within this design criteria document.

- Where ceramic or quarry tile is provided, grout shall be non-staining and resistant to liquid absorption.

- In storage rooms where shelves are provided, interior shall be marked with a red line 1 inch in width and located 18 inches below the lowest point of the sprinkler head.

- All caulking used inside the building shall be USDA or NSF approved caulking.

- The maximum temperature for the hot water in child accessible areas is 110 degrees F. Water temperature in the laundry and the kitchen is required to be 140 degrees F, but the pots and pan sink and the dishwasher require 180 degrees F water.

Standard Design Criteria
Child Development Centers
(For Children 6 Weeks – 5 Years)

1. SPACE: Entry

- **FUNCTIONAL DESCRIPTION:** Minimize mechanical air transfer of high traffic doors. Flooring serves to promote cleanliness by removing excess dirt from shoes. High traffic area for patrons with strollers, etc.

- **ADJACENCIES:** Entry shall be on direct path from parking and drop-off areas. The entry shall have direct visual contact with the reception desk for access control.

- **OCCUPANTS:** CDC users.

- **MINUMUM AREA:** 63 SF, Net.

- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, durable (able to withstand wet and dirty conditions), easily repairable, and easy to maintain. Flooring shall be non-slip. A base material, appropriate for the flooring material used, is required.

- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, repairable, easy to maintain, and durable.

- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include resistance to environmental conditions, such as changes in air pressure and high humidity, and shall be durable.

- **DOORS/FRAME:** Salient characteristics include easy to clean, ability to withstand continuous use, easy to maintain and repair, and compliance to building codes. Two sets of storefront double 3 foot by 7 foot doors, with flush panic hardware, shall be provided on the outside and inside of the entry vestibule. To ensure maximum visibility, doors shall be fully glazed. Doors shall be provided with closers.

- **SPECIAL REQUIREMENTS:** Inner set of doors shall be provided with a buzzer that rings at the reception desk. Inner doors will be provided with an electronic lock that is controlled at the reception desk to allow access into the facility. The electronic lock system shall be provided with a manual override by key from the outside. Manual override shall also be able to allow the doors to remain unlocked. An intercom system shall be provided with the buzzer to allow communication with reception desk.

Standard Design Criteria
Child Development Centers
(For Children 6 Weeks – 5 Years)

2. SPACE: Waiting Area

- **FUNCTIONAL DESCRIPTION:** A waiting area for parents, children, and visitors. High traffic area for patrons with strollers, etc. Provides an area for seating.

- **ADJACENCIES:** Shall be adjacent to the central reception desk and the entry. Shall also have direct access to the public toilets.

- **OCCUPANTS:** Parents, children, and visitors.

- **MINIMUM AREA:** Small: 150 SF, Net. Medium: 260 SF, Net. Large: 260 SF, Net.

- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, durable, easily repairable, and easy to maintain. A base material, appropriate for the flooring material used, is required

- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, repairable, easy to maintain, and durable. Wall material shall have the ability to absorb pushpins. Wall surface shall be able to withstand tape peeling.

- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and shall provide an aesthetically pleasing surface, free of sags or other defects. A “designer” ceiling system may be used in this area.

- **PLUMBING:** Provide water for bi-level, ADA compliant electric water coolers.

- **ELECTRICAL:** Hospital grade, tamper resistant safety electrical outlets shall be placed at 54” above finished floor.

Standard Design Criteria
Child Development Centers
(For Children 6 Weeks – 5 Years)

3. SPACE: Central Counter/Reception Desk

- **FUNCTIONAL DISCRIPTION:** The main access control point with direct visual contact with the entry, waiting area, and public toilets. This area will view/observe the flow of children, parents, and visitors. Patrons will sign in/out. Payments are received at the desk. Location of central intercom system, along with the location of the front (entry) door buzzer and electronic lock release. The central intercom system shall be able to contact each room individually, or all rooms at one time. A duress alarm may be provided if required. The desk provides oversight of the isolation area and toilet. Area shall accommodate computers, printers, fax machine, copier, etc.

- **ADJACENCIES:** Adjacent to waiting area and entry. Shall have direct visual control of the entry. Shall have direct visual and physical access to the Isolation Area and Isolation Toilet. Shall have direct, controllable access to corridor. The desk shall have visual oversight of CCTV (video security) monitor which is located in the waiting area. A general office storage room shall be accessible from this area or from the Open Office area.

- **OCCUPANTS:** CDC Staff

- **MINUMUM AREA:** Small: 80 SF, Net. Medium: 130 SF, Net. Large: 130 SF, Net.

- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, durable, and easy to maintain and repair. A base material, appropriate for the flooring material used, is required.

- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, repairable, easy to maintain, and durable. Wall surface shall have the ability to absorb pushpins and to withstand tape peeling.

- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and shall provide an aesthetically pleasing surface, free of sags or other defects. Shall have a minimum acoustical rating of 45. A “designer” ceiling system may be used in this area.

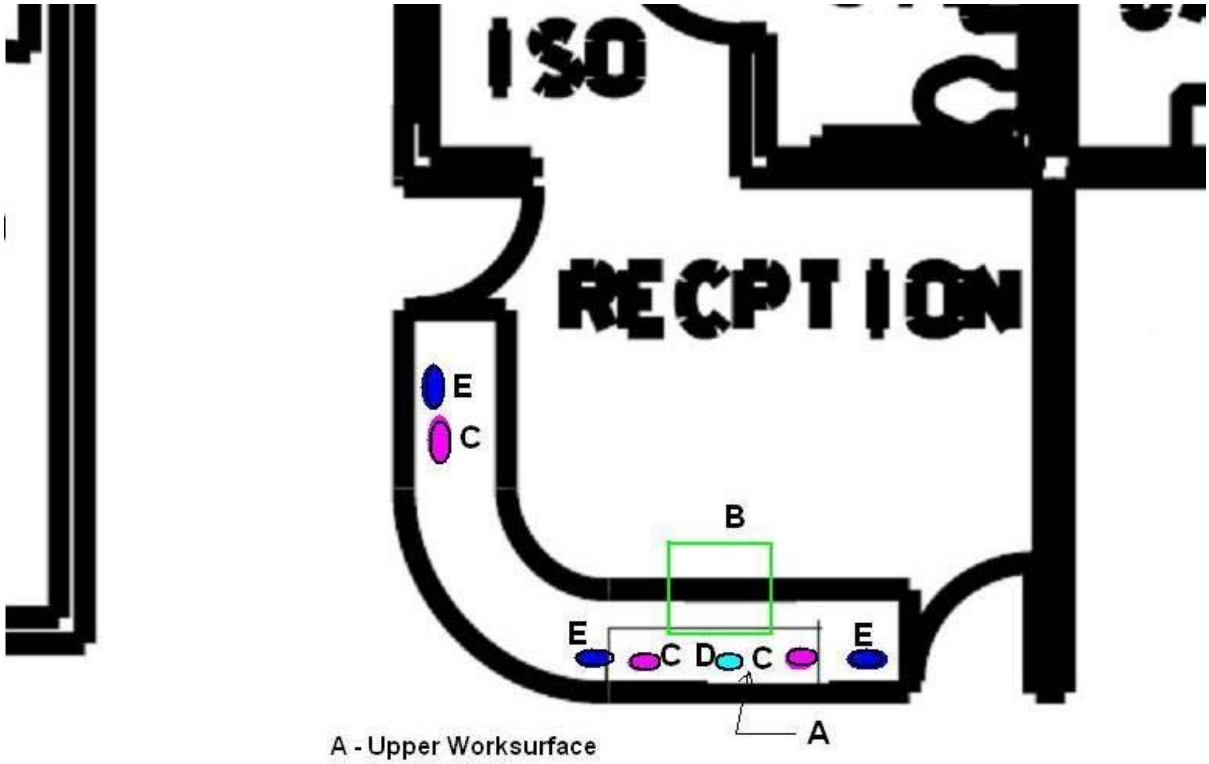
- **DOORS/FRAME:** Salient characteristics include durability. Counter height swing gates are required. Gates to match reception desk in finish and material. Swing of gate shall not interfere with corridor traffic.

- **CABINET CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, maintain and repair. Cabinets shall be durable and be able to withstand impacts from carts, strollers, buggies, etc., without showing damage. Cabinets shall be a minimum of Architectural Woodworking Institute (AWI) 400B, Custom Grade. Counter tops shall be provided at both standing height and ADA height. Work surfaces behind counter tops shall be at standard working height, and shall allow for mobile pedestals to be placed under the work surface. Do not provide built-in pedestals or drawers other than pencil drawers noted below. Countertop shall be appropriate as a writing surface. For safety, all edges, vertical and horizontal, shall be eased or rounded. No sharp edges may be provided. Two equally spaced grommets with covers shall be provided in each of the raised counter areas. Grommets with covers are to be provided in

the lower counter area directly below the grommets in the upper counter. In addition, one grommet with cover shall be provided in the lower counter on the side where no upper counter is provided. One pencil drawer shall be built-in in the small facility, and two pencil drawers shall be provided in the medium and large facility. See drawings below for recommended outlet, grommet, pencil drawer, and standing height counter locations.

- **ELECTRICAL:** A minimum of 3 quad outlets shall be provided in the small, 5 quad outlets in the medium and large. In addition, a duplex outlet shall be provided in each area with the raised counter for convenience. A minimum of 3 data outlets shall be provided in the small, and 5 in the medium and large. These electrical and data outlets shall be located evenly spaced along the reception counter, and are in addition to the wall outlets required by code. If outlets are provided on the wall opposite of the reception desk, in the public area, these outlets shall be hospital grade, tamper resistant, safety electrical outlets mounted 54" above finished floor.

- **SPECIAL REQUIREMENTS:** Reception desk shall be delineated through the use of special lighting and architectural features, such as furr-downs, etc. An intercom system shall be provided with the buzzer to allow communication with the entry vestibule.

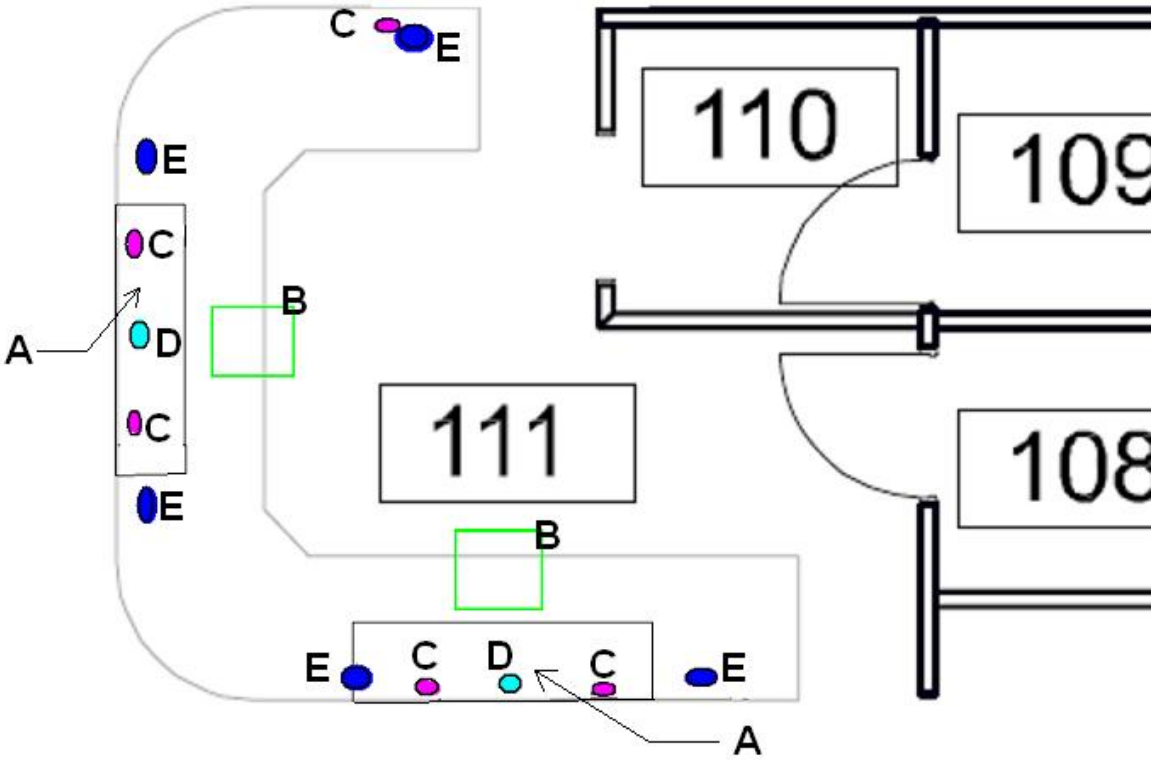


A - Upper Worksurface
B - Pencil Drawer
C - Grommets in both upper and lower worksurface (where upper worksurface is provided with grommet, align grommet in lower worksurface vertically)
D - Electrical outlet provided between upper and lower worksurface
E - Quad outlets near floor. Provide data outlets in same general area.

Recommended counter arrangement – Small facility

Standard Design Criteria
Child Development Centers
(For Children 6 Weeks – 5 Years)

A - Upper worksurface
B - Pencil Drawer
C - Grommets in both upper and lower worksurface (where upper worksurface is provided with grommet, align grommet in lower worksurface vertically).
D - Electrical outlets provided between upper and lower worksurfaces.
E - Quad outlets near floor. Provide data outlets in same general area.



Recommended counter arrangement – Medium and Large facility

Standard Design Criteria
Child Development Centers
(For Children 6 Weeks – 5 Years)

4. SPACE: Admin Storage

- **FUNCTIONAL DESCRIPTION:** General storage for office supplies and other supplies.

- **ADJACENCIES:** Located adjacent to the Reception Desk and/or Open Office Area. Other storage rooms shall be adjacent to the areas they serve (such as Training Room, etc.)

- **OCCUPANTS:** CDC Staff

- **MIMUMUM AREA:** Small: 50 SF, Net, total. Medium and Large: 75 SF, Net, total.

- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, maintain, and repair. A base material, appropriate for the flooring material used, is required.

- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to repair, easy to maintain, and durable.

- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and free of sags or other defects.

- **DOORS/FRAME:** Salient characteristics include durability. Doors, frames, and hardware shall be able to withstand constant opening and closing. Door shall be fitted with a locking mechanism and lever type handle that allows the door to be opened from the inside while locked. Doors shall be provided with self-closing device. Doors shall be a minimum of half-height glass.

- **ELECTRICAL:** The Storage Room shall contain a ceiling mounted automatic motion light switch.

- **SPECIAL REQUIREMENTS:**
  (a) A minimum of 4 adjustable shelves with heavy duty standards and brackets will be provided. Provide shelves on as many walls of the storage rooms as possible while maintaining adequate circulation space. Shelving shall be able to support 100 pounds per lineal foot.
  (b) Space for a 1.7 – 2.0 cu. ft. refrigerator for medication, with electrical outlet, is required in the storage room closest to the isolation area. Door shall be lockable.

Standard Design Criteria
Child Development Centers
(For Children 6 Weeks – 5 Years)

5. SPACE: Isolation Area

- **FUNCTIONAL DESCRIPTION:** Serves as a rest area for sick children,
- **ADJACENCIES:** Shall be adjacent to the Isolation Toilet and the Reception Desk. Shall be within direct observation of the reception area staff.
- **OCCUPANTS:** Sick child and 1 staff.
- **MIMUMUM AREA:** 45 SF, Net.
- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include seamless, easy to clean and maintain. A base material, appropriate for the flooring material used, is required. Base shall be seamless except at inside corners. Base shall be sealed to floor with USDA or NSF approved caulking.
- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, repairable, easy to maintain, and durable.
- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and free of sags or other defects.
- **SPECIAL REQUIREMENTS:** Required Items: Space for small cot and a lockable wall cabinet for first aid supplies**.**

Standard Design Criteria
Child Development Centers
(For Children 6 Weeks – 5 Years)

6. SPACE: Isolation Room Toilet

- **FUNCTIONAL DESCRIPTION:** ADA compliant toilet room for use by sick children. Surfaces will be subjected to strong disinfectants on occasion.

- **ADJACENCIES:** Shall be adjacent to the Isolation Area.

- **OCCUPANTS:** Sick child and staff.

- **MIMUMUM AREA:** 38 SF, Net.

- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include shall be easy to clean and maintain, and shall be durable. A base material, appropriate for the flooring material used, is required.

- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include shall be easy to clean and maintain, and shall be durable. On all walls, a minimum 48" tall wainscot is required that is impervious to water and be able to withstand daily sanitizing.

- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and free of sags or other defects.

- **DOORS/FRAME:** Salient characteristics include durability. Doors, frames, and hardware shall be able to withstand constant opening and closing. One 3' x 7' door is required, and door shall be fitted with a locking mechanism and lever type handle that allows the door to be opened from the inside while locked.

- **HVAC:** Local exhaust vent above toilet.

- **PLUMBING:** Provide a single occupant child height ADA wall-mounted lavatory (20" to rim) and floor-mounted water closet (15" to rim) with grab bars. Room shall be provided with a floor drain. Due to the limited use of this space, floor drain shall be self priming, or designed to prevent sewer gases from entering the occupied space by a proven and maintenance-free design.

Standard Design Criteria
Child Development Centers
(For Children 6 Weeks – 5 Years)

7. SPACE: Administrative Offices

- **FUNCTIONAL DESCRIPTION:** Offices for the CDC management staff. Includes a private office for the CDC Director, a private office for the CDC Assistant Director, and an open office area.

- **ADJACENCIES:** Shall be adjacent to the Waiting Area and Reception Desk. Private office shall open off of the Open Office area. A general office storage room shall be accessible from this area or from the Reception Desk.

- **OCCUPANTS:** CDC staff members.

- **MIMUMUM AREA:**
  Director's Office: 120 SF, Net.
  Assistant Director's Office: 90 SF, Net.
  Open Office: Small: 130 SF, Net. Medium: 300 SF, Net. Large: 300 SF, Net. (Includes circulation to the private offices.

- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, maintain, and repair. A base material, appropriate for the flooring material used, is required.

- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to repair, easy to maintain, and durable. Wall material shall have the ability to absorb pushpins. Wall surface shall be able to withstand tape peeling.

- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and shall provide an aesthetically pleasing surface, free of sags or other defects.

- **DOORS/FRAME:** Salient characteristics include durability. Doors, frames, and hardware shall be able to withstand constant opening and closing. Doors into the Director's Office and the Assistant Director's Office shall be fitted with a locking mechanism and lever type handle that allows the door to be opened from the inside while locked. Doors shall be provided with self-closing device. Doors shall be a minimum of half-height glass and shall be provided with a 12" wide sidelite.

- **ELECTRICAL:** Multiple electrical and data outlets to be provided in all administrative offices/open office area to accommodate computers and other office equipment. A CCTV (video security) monitor will also be located in the Director's office.

- **DESIGNER OPTION:** If desired by the installation, one or two more private offices, not to exceed 90 net square feet, may be provided in the open office area. The addition of these offices shall not affect the arrangement or size of any other function or space.

Standard Design Criteria
Child Development Centers
(For Children 6 Weeks – 5 Years)

8. SPACE: Infant/Pre-Tod/Toddler Activity Room

- **FUNCTIONAL DESCRIPTION:** Activity Room which functions for child care, which includes eating, sleeping, playing, and other activities.

- **ADJACENCIES:** Shall be adjacent to the corridor and shall have direct access to the exterior. Direct access to age-appropriate playground is also required. Shall have direct access to storage room.

- **OCCUPANTS:** Two Program Assistants and a maximum of 14 Children (depending upon age of children).

- **MIMUMUM AREA:** Minimum Program Area of 490 net SF. Program Area may NOT be any less than net 490 SF. See attached drawing for calculation of net Program Area. Hatched area indicates portions of room that can be included in the minimum net Program Area.

- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include seamless, easy to clean and maintain. A base material, appropriate for the flooring material used, is required. Base shall be seamless except at inside corners. Base shall be sealed to floor with USDA or NSF approved caulking.

- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, repairable, easy to maintain, and durable. Wall material shall have the ability to absorb pushpins. Wall surface shall be able to withstand tape peeling. Where drinking fountains and/or lavatories are provided within the Activity Room space, a minimum 48” tall wainscot that is impervious to water and able to withstand daily sanitizing is required. This material shall extend to the floor and at least 18” horizontally in both directions from the centerline of the equipment.

- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and shall provide an aesthetically pleasing surface, free of sags or other defects.

- **DOORS/FRAME:** Salient characteristics include durability. Doors, frames, and hardware shall be able to withstand constant opening and closing. Doors shall be provided with closers. Doors shall be provided with finger guards at the hinges up to a minimum height of 48”. Interior doors shall be a minimum of half-height glass, with a clear width opening of 34 inches and shall be provided with a 12-inch wide side lite on the latch side of the door. Exterior door shall be provided with flush panic hardware, shall have a clear width opening of 34 inches, open at least 110 degrees to ensure ease of crib emergency evacuation, and direct exiting onto the outdoor play space. Interior and exterior doors shall swing in the direction of exit travel. Door thresholds and hardware will be designed to facilitate the exit of a crib containing five infants by a single adult. The thresholds will have a low profile. Doors shall be provided with self-closing device. Exterior door shall have a hold-open device as part of the self-closing device.

- **VISION/VIEW PANELS:** Shall be in accordance with the Army Standard. Not less than 3 vision/view panels between the activity space and the corridor.

Standard Design Criteria
Child Development Centers
(For Children 6 Weeks – 5 Years)

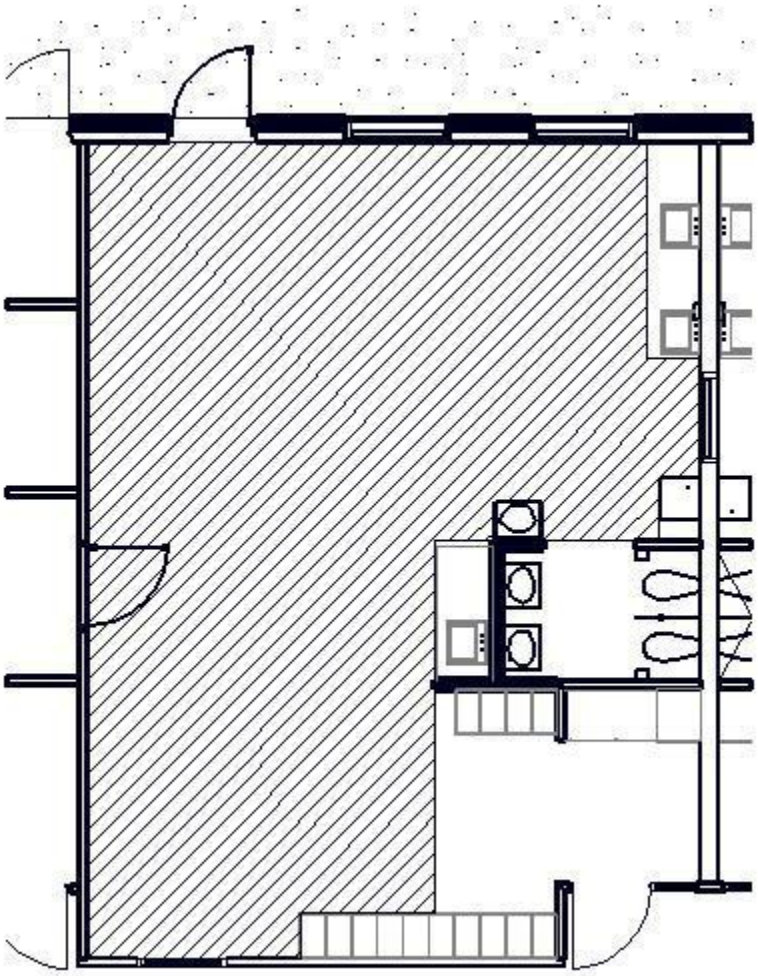
- **CABINETRY:** Salient characteristics include easy to clean, maintain, and repair. Cabinets shall be durable and be able to withstand impacts (examples: food carts, push toys, etc.), without showing damage. Cabinets shall be a minimum of Architectural Woodworking Institute (AWI) 400B, Custom Grade, High Pressure Laminate clad. Counter top shall have integral back splash, and shall be solid surfacing, solid phenolic, or better. Counter tops of cabinets will have rounded/radius corners and edges. Base cabinets shall be lockable, and may not have a protruding handle.
  (a) A 3'-6" wide sign-in desk with 6 lockable storage units in an overhead cabinet, and an adjacent 18 inch wide coat closet.
  (b) 8 foot wide base and wall cabinets with 2 stainless steel sinks separated by a standard 2 foot base cabinet. Sink bowls shall be a minimum of 21" W x 15-3/4" D x 8" H. Space shall be provided for an undercounter refrigerator.
  (c) 14-15 pre-school cubbies, 8"-12" wide x 15" deep x 46"-49" tall permanently attached to walls (pre-manufactured).
  (d) One diaper changing station approximately 2 foot wide by 5 foot long cabinet with built-in sink and retractable stairs (pre-manufactured).

- **HVAC:** One exhaust fan shall be provided directly over the diaper changing station. Room temperature shall be measured and maintained at 1 foot above finished floor. Temperature will be designed for 68 °F in the winter and for 78 °F in the summer. A minimum relative humidity of 35 percent will be maintained in CDC during the heating season to prevent drying of mucous membranes and to control the spread of diseases.

- **ELECTRICAL:** All electrical outlets, except for those mounted above countertops, shall be mounted 54 inches above the finish floor, and shall be Hospital grade, tamper resistant safety type. Outlets provided above countertops shall be located no less than 18" from the edge of the countertop. Two electrical outlets to be provided above the backsplash (food preparation/art counter/sink), one over each open counter area. Electrical outlet to be provided for under the counter refrigerator. Electrical outlet, data port and intercom phone connection at sign in desk to be provided. In addition, provide 1 data outlet in the activity area.

- **PLUMBING:** A drinking fountain (non-refrigerated, similar to Halsey Taylor model HRFG-E) is required on the wall between the toilet area and the cabinets, mounted so that top of drinking fountain is 17" above finished floor. Plumbing for toilet/lavatory area, diaper changing table, and food preparation/art counter/sink area is also required.

Standard Design Criteria
Child Development Centers
(For Children 6 Weeks – 5 Years)



Infant/Pre-Tod/Toddler Activity Room
Net Program Area

Standard Design Criteria
Child Development Centers
(For Children 6 Weeks – 5 Years)

9. SPACE: Infant/Pre-Tod/Toddler Storage Room

- **FUNCTIONAL DESCRIPTION:** Storage room to support the Infant/Pre-Tod/Toddler Activity Room.

- **ADJACENCIES:** Shall be directly accessible from the Activity Room

- **MIMUMUM AREA:** 45 SF, Net.

- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, maintain, and repair. A base material, appropriate for the flooring material used, is required.

- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, repairable, easy to maintain, and durable.

- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and free of sags or other defects.

- **DOORS/FRAME:** Salient characteristics include durability. Doors, frames, and hardware shall be able to withstand constant opening and closing. Doors shall be provided with self-closing device. Door shall be fitted with a locking mechanism and lever type handle that allows the door to be opened from the inside while locked. Doors shall be a minimum of half-height glass.

- **ELECTRICAL:** The Storage Room shall contain a ceiling mounted automatic motion light switch.

- **SPECIAL REQUIREMENTS:** A minimum of three adjustable shelves with heavy-duty standards and brackets will be provided on 3 walls. At least one 18” deep shelf and two 12” deep shelves shall be provided. Shelving shall be able to support 100 pounds per lineal foot

Standard Design Criteria
Child Development Centers
(For Children 6 Weeks – 5 Years)

10. SPACE: Infant/Pre-Tod/Toddler Toilet Area

- **FUNCTIONAL DESCRIPTION:** Toilet area for CDC children.
- **ADJACENCIES:** Shall be directly accessible from the Activity Room
- **OCCUPANTS:** CDC Children with staff assistance.
- **MIMUMUM AREA:** 38 SF, Net.
- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include shall be easy to clean and maintain, and shall be durable. A base material, appropriate for the flooring material used, is required.
- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include shall be easy to clean and maintain, and shall be durable. On all walls, a minimum 48" tall wainscot is required that is impervious to water and be able to withstand daily sanitizing.
- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and shall provide an aesthetically pleasing surface, free of sags or other defects.
- **TOILET PARTITION:** Salient characteristics include easy to clean and maintain, and shall be durable. Top of toilet partitions shall be no higher than 42" tall with 12" clear opening at bottom.
- **PLUMBING:** Two (2) pediatric floor mounted water closets (10" to rim), and two (2) child wall mounted lavatories (17" to rim) to be located opposite the water closets. A floor drain is required in this area that shall be self priming, or designed to prevent sewer gases from entering the occupied space by a proven and maintenance-free design. An additional child-height wall mounted lavatory to be provided on the other side of the wall, directly accessible from the activity area, as shown in the previous diagram.
- **HVAC:** One (1) exhaust fan over the water closet area
- **SPECIAL REQUIREMENTS:** Unbreakable lavatory mirrors required above each lavatory.

Standard Design Criteria
Child Development Centers
(For Children 6 Weeks – 5 Years)

11. SPACE: Preschool/Pre-K/Kindergarten Activity Room

- **FUNCTIONAL DESCRIPTION:** Activity Room which functions for child care, which includes eating, sleeping, playing, and other activities.

- **ADJACENCIES:** Shall be adjacent to the corridor and shall have direct access to the exterior. Direct access to age-appropriate playground is also required. Shall have direct access to storage room.

- **OCCUPANTS:** Two Program Assistants and a maximum of 24 Children (depending upon age of children).

- **MIMUMUM AREA:** Minimum Program Area of 840 net SF. Program Area may NOT be any less than 840 net SF. See attached drawing for calculation of net Program Area. Hatched area indicates portions of room that can be included in the minimum net Program Area.

- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include seamless, easy to clean and maintain. A base material, appropriate for the flooring material used, is required. Base shall be seamless except at inside corners. Base shall be sealed to floor with USDA or NSF approved caulking.

- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, repairable, easy to maintain, and durable. Wall material shall have the ability to absorb pushpins. Wall surface shall be able to withstand tape peeling. Where drinking fountains and/or lavatories are provided within the Activity Room space, a minimum 48” tall wainscot that is impervious to water and able to withstand daily sanitizing is required. This material shall extend to the floor and at least 18” horizontally in both directions from the centerline of the equipment.

- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and shall provide an aesthetically pleasing surface, free of sags or other defects.

- **DOORS/FRAME:** Salient characteristics include durability. Doors, frames, and hardware shall be able to withstand constant opening and closing. Doors shall be provided with closers. Doors shall be provided with finger guards at the hinges up to a minimum height of 48”. Interior doors shall be a minimum of half-height glass, with a clear width opening of 34 inches and shall be provided with a 12 inch wide side lite on the latch side of the door. Exterior door shall be provided with flush panic hardware, shall have a clear width opening of 34 inches, open at least 110 degrees to ensure ease of crib emergency evacuation, and direct exiting onto the outdoor play space. Interior and exterior doors shall swing in the direction of exit travel. Doors shall be provided with self-closing device.

- **VISION/VIEW PANELS:** Shall be in accordance with the Army Standard. Not less than 3 vision/view panels between the activity space and the corridor.

- **CABINETRY:** Salient characteristics include easy to clean, maintain and repair. Cabinets shall be durable and be able to withstand (example: food carts), without showing damage. Cabinets shall be a minimum of Architectural Woodworking Institute (AWI) 400B, Custom

Standard Design Criteria
Child Development Centers
(For Children 6 Weeks – 5 Years)

Grade, High Pressure Laminate clad. Counter top shall have integral back splash, and shall be appropriate solid surfacing, solid phenolic, or better. Counter tops of cabinets will have rounded/radius corners and edges. Base cabinets shall be lockable, and may not have a protruding handle.

(a) A 3'-6" wide sign-in desk with overhead with 6 lockable storage units and an adjacent 18 inch wide coat closet.

(b) 8 foot wide base and wall cabinets with 2 stainless steel sinks separated by a standard 2 foot base cabinet. Sink bowls shall be a minimum of 21" W x 15-3/4" D x 8" H. Space shall be provided for an undercounter refrigerator.

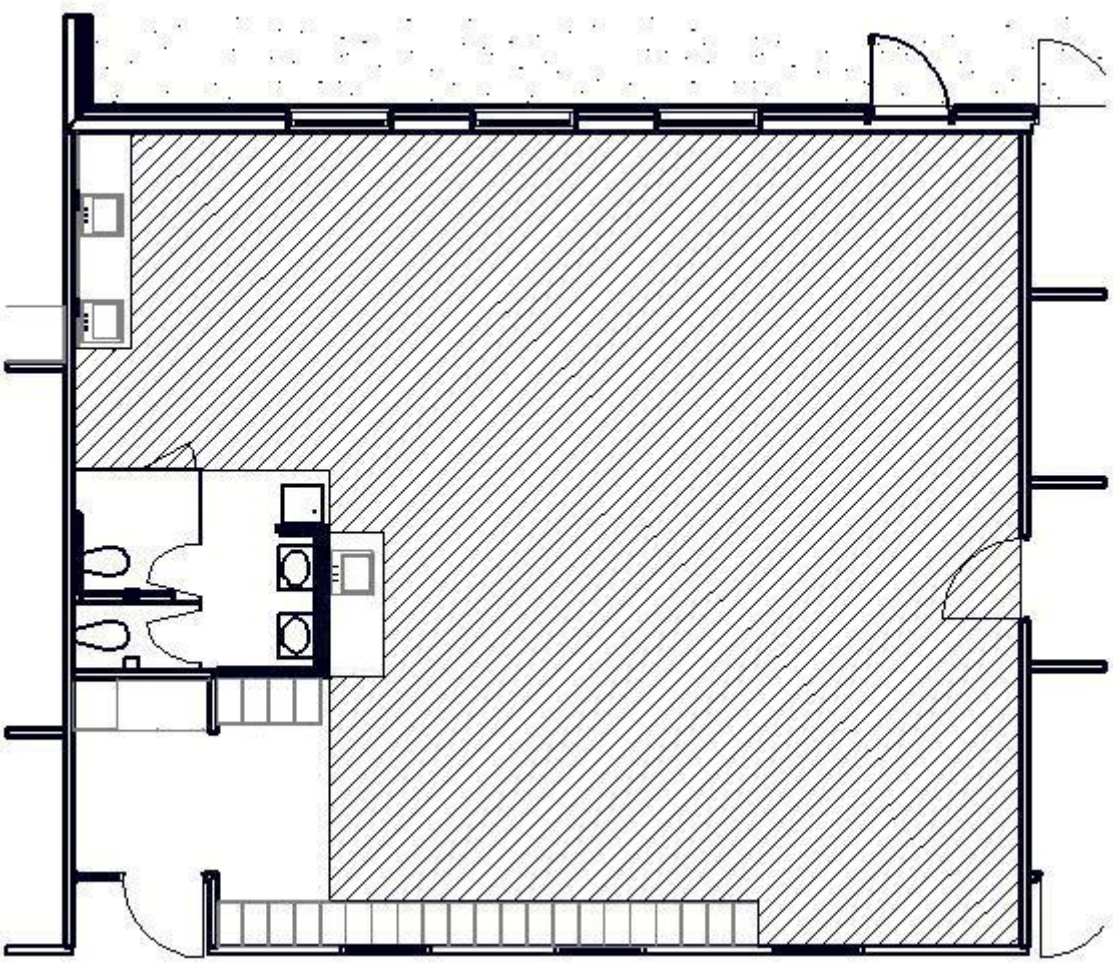
(c) 24-25 pre-school cubbies, 8"-12" wide x 15" deep x 46"-49" tall permanently attached to walls (pre-manufactured).

- **HVAC:** One exhaust fan shall be provided directly over the diaper changing station. Room temperature shall be measured and maintained at 1 foot above finished floor. Temperature will be designed for 68 °F in the winter and for 78 °F in the summer. A minimum relative humidity of 35 percent will be maintained in CDC during the heating season to prevent drying of mucous membranes and to control the spread of diseases.

- **ELECTRICAL:** All electrical outlets, except for those mounted above countertops, shall be mounted 54 inches above the finish floor, and shall be Hospital grade, tamper resistant safety type. Outlets provided above countertops shall be located no less than 18" from the edge of the countertop. Two electrical outlets to be provided above the backsplash (food preparation/art counter/sink), one over each open counter area. Electrical outlet to be provided for under the counter refrigerator. Electrical outlet, data port and intercom phone connection at sign in desk to be provided. In addition, provide 2 data outlets in the activity area.

- **PLUMBING:** A drinking fountain (non-refrigerated, similar to Halsey Taylor model HRFG-E) is required on the wall between the toilet area and the cabinets, mounted so that top of drinking fountain is 17" above finished floor. Plumbing for toilet/lavatory area, diaper changing table, and food preparation/art counter/sink area is also required.

Standard Design Criteria
Child Development Centers
(For Children 6 Weeks – 5 Years)



Preschool/Pre-K/Kindergarten Activity Room
Net Program Area

Standard Design Criteria
Child Development Centers
(For Children 6 Weeks – 5 Years)

12. SPACE: Preschool/Pre-K/Kindergarten Storage Room

- **FUNCTIONAL DESCRIPTION:** Storage room to support the Preschool/Pre-K/Kindergarten Activity Room.

- **ADJACENCIES:** Shall be directly accessible from the Activity Room

- **MIMUMUM AREA:** 45 SF, Net.

- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, maintain, and repair. A base material, appropriate for the flooring material used, is required.

- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, repairable, easy to maintain, and durable.

- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and free of sags or other defects.

- **DOORS/FRAME:** Salient characteristics include durability. Doors, frames, and hardware shall be able to withstand constant opening and closing. Doors shall be provided with closers. Door shall be fitted with a locking mechanism and lever type handle that allows the door to be opened from the inside while locked. Doors shall be a minimum of half-height glass.

- **ELECTRICAL:** The Storage Room shall contain a ceiling mounted automatic motion light switch.

- **SPECIAL REQUIREMENTS:** A minimum of three adjustable shelves with heavy-duty standards and brackets will be provided on 3 walls. At least one 18” deep shelf and two 12” deep shelves shall be provided. Shelving shall be able to support 100 pounds per lineal foot.

Standard Design Criteria
Child Development Centers
(For Children 6 Weeks – 5 Years)

13. SPACE: Preschool/Pre-K/Kindergarten Toilet Area

- **FUNCTIONAL DESCRIPTION:** Toilet area for CDC children.
- **ADJACENCIES:** Shall be directly accessible from the Activity Room
- **OCCUPANTS:** CDC Children with staff assistance.
- **MIMUMUM AREA:** 65 SF, Net.
- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include shall be easy to clean and maintain, and shall be durable. A base material, appropriate for the flooring material used, is required.
- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include shall be easy to clean and maintain, and shall be durable. On all walls, a minimum 48" tall wainscot is required that is impervious to water and be able to withstand daily sanitizing.
- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and shall provide an aesthetically pleasing surface, free of sags or other defects.
- **TOILET PARTITION:** Salient characteristics include easy to clean and maintain, and shall be durable. Top of toilet partitions shall be no higher than 48" tall with 12" clear opening at bottom. Stall doors to be provided.
- **PLUMBING:** Two (2) pediatric floor mounted water closets (13" to rim), and two (2) child wall mounted lavatories (20" to rim) to be located opposite the water closets. A floor drain is required in this area that shall be self priming, or designed to prevent sewer gases from entering the occupied space by a proven and maintenance-free design. A drinking fountain (non-refrigerated, similar to Halsey Taylor model HRFG-E), mounted so that top of drinking fountain is 20" above finished floor, to be provided on the other side of the wall, directly accessible from the activity area, as shown in the previous diagram.
- **SPECIAL REQUIREMENTS:** Unbreakable lavatory mirrors required above each lavatory. One of the toilet stalls and one of the lavatories shall meet ADA requirements.
- **HVAC:** One (1) exhaust fan over the water closet area

Standard Design Criteria
Child Development Centers
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14. SPACE: Buggy Storage

- **FUNCTIONAL DESCRIPTION:** A storage area to accommodate 2 infant “bye-bye” buggies. Buggies are approximately 76 inches by 26 inches.

- **ADJACENCIES:** Shall be directly accessible from the corridor, and should be located near to the Infant/Pre-Tod/Toddler Rooms.

- **MIMUMUM AREA:** 45 SF, Net.

- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, durable, easily repairable, and easy to maintain. A base material, appropriate for the flooring material used, is required

- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, repairable, easy to maintain, and durable. In addition, vertical strips of wood, rubber, or other resilient material shall be placed 16” apart, and attached to studs, shall be provided on all walls of this area. Strips shall be 3’ tall. Strips to function as bye-bye buggy bumpers.

- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and shall provide an aesthetically pleasing surface, free of sags or other defects. Shall have a minimum acoustical rating of 45.

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15. SPACE: Public and Staff Toilets

- **FUNCTIONAL DESCRIPTION:** ADA compliant toilet area for staff, parents and visitors. A separate men's and women's toilet will be provided in the medium and large facilities.

- **ADJACENCIES:** Public toilets shall be located directly adjacent to the Waiting Area. Staff toilets shall be accessible from the corridors, and should be spread out around the facility.

- **OCCUPANTS:** 1 person.

- **MIMUMUM AREA:** 45 SF, Net.

- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include shall be easy to clean and maintain, and shall be durable. A base material, appropriate for the flooring material used, is required.

- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include shall be easy to clean and maintain, and shall be durable. On all walls, a minimum 48" tall wainscot is required that is impervious to water and be able to withstand daily sanitizing.

- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and free of sags or other defects.

- **DOORS/FRAME:** Salient characteristics include durability. Doors, frames, and hardware shall be able to withstand constant opening and closing. Door shall be fitted with a locking mechanism and lever type handle that allows the door to be opened from the inside while locked. Doors shall be provided with self-closing device.

- **PLUMBING:** 1 ADA compliance water closet, and 1 ADA compliant lavatory. A floor drain is required in this area that shall be self priming, or designed to prevent sewer gases from entering the occupied space by a proven and maintenance-free design.

- **HVAC:** Local exhaust vent above toilet. Provide one exhaust fan directly over the fold-down diaper changing station. This exhaust fan can be switched to operate only when the diaper station is opened for use.

- **ELECTRICAL:** Ensure appropriate lighting is provided above the mirror.

- **SPECIAL REQUIREMENTS:** A fold-down diaper station shall be provided in each public toilet room(s) adjacent to the Waiting Area.

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16. SPACE: Exterior Storage room

- **FUNCTIONAL DESCRIPTION:** Store playground toys and equipment. Equipment that is stored in these rooms will often times be dirty and/or wet.

- **ADJACENCIES:** Directly accessible from the exterior of the building. Shall be easily accessible from playground area. Design walls and ceiling to avoid energy loss from the surrounding conditioned spaces.

- **MIMUMUM AREA:** 40 SF, Net.

- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, durable (able to withstand wet and dirty conditions), such as sealed concrete. A base material, appropriate for the flooring material used, is required.

- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, repairable, easy to maintain, and durable. Design walls to avoid energy loss from the surrounding conditioned spaces.

- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include resistance to environmental conditions, such as changes in air pressure and high humidity, and shall be durable. Design the ceiling to avoid energy loss from the surrounding conditioned spaces.

- **DOORS/FRAME:** Salient characteristics include easy to clean, able to withstand continuous use, and easy to maintain and repair. Each room to be provided with a pair of 3 foot by 7 foot doors, with each leaf provided with minimum of half-height glass panels. No astragals shall be provided. Instead, top and bottom flush bolts are to be provided on the inactive leaf. Adequate weather-stripping shall be provided to prevent access by vermin.

- **HVAC:** Minimal conditioning of this space to be provided in extreme climates.

- **ELECTRICAL:** The Storage Room shall contain a ceiling mounted automatic motion light switch.

- **SPECIAL REQUIREMENTS:** Four adjustable shelves with heavy duty standards and brackets will be provided on the back wall. Shelves shall be a minimum of 18” deep. Shelves shall be able to support 100 pounds per lineal foot.

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17. SPACE: Janitor Closet

- **FUNCTIONAL DESCRIPTION:** Space to store janitor's equipment and cleaning supplies.
- **ADJACENCIES:** Directly accessible from the corridor.
- **MIMUMUM AREA:** 36 SF, Net.
- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include shall be easy to clean and maintain, and shall be durable. A base material, appropriate for the flooring material used, is required.
- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include shall be easy to clean and maintain, and shall be durable. Walls shall be able to withstand moving of mop buckets and other janitorial supplies, and shall be able to resist damage due to moisture.
- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and free of sags or other defects. Shall have a minimum acoustical rating of 45.
- **DOORS/FRAME:** Salient characteristics include durability. Doors, frames, and hardware shall be able to withstand constant opening and closing. Door shall be provided with minimum half-height glass. Door shall open 180 degrees into the corridor.
- **HVAC:** Local exhaust vent required.
- **PLUMBING:** A utility (mop) sink is required. Floor drain is required in this area.
- **SPECIAL REQUIREMENTS:** Adjustable with heavy duty standards and brackets shelves will be provided on at least one wall. Shelves shall be able to support 100 pounds per lineal foot.

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18. SPACE: Stroller/Car Seat Storage Area

- **FUNCTIONAL DESCRIPTION:** Space to store patron's car seats and strollers.

- **ADJACENCIES:** Directly accessible from the corridor and accessible from the waiting area.

- **MIMUMUM AREA:** Small: 50 SF, Net. Medium: 60 SF, Net. Large: 100 SF, Net

- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, durable, easily repairable, and easy to maintain. A base material, appropriate for the flooring material used, is required

- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, repairable, easy to maintain, and durable. Wall surface shall be durable so that impacts from strollers do not damage the wall.

- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and shall provide an aesthetically pleasing surface, free of sags or other defects. Shall have a minimum acoustical rating of 45.

- **DOORS/FRAME:** A 3' x 7' door shall be provided in the Large facility. Salient characteristics include durability. Doors, frames, and hardware shall be able to withstand constant opening and closing. Door shall be provided with minimum half-height glass. Door shall be self-closing with a magnetic hold-open device that is tied into the fire alarm system.

- **ELECTRICAL:** The Stroller/Car Seat Storage Area shall contain a ceiling mounted automatic motion light switch if the area is provided with a door. Otherwise, the area shall have lighting controlled by a switch located adjacent to the opening into the space.

- **SPECIAL REQUIREMENTS:** Adjustable shelves with heavy-duty standards and brackets will be provided on at least two walls for storage of car seats. Provide a rod along one wall for hanging umbrella strollers. Shelves shall be minimum of 18" deep. Standards for shelves shall be located so that the top shelf can be no closer than 4 feet from the ceiling.

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19. SPACE: Training Room

- **FUNCTIONAL DESCRIPTION:** To facilitate training/distance learning by CDC staff.
- **ADJACENCIES:** Directly accessible from the corridor.
- **OCCUPANTS:** CDC staff. Training and Curriculum Specialist(s) (TACS) will work in this space. Several workstations will be set up for others to come and train.
- **MIMUMUM AREA:** Small: 260 SF, Net. Medium: 460 SF, Net. Large: 660 SF, Net.
- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, maintain, and repair. A base material, appropriate for the flooring material used, is required.
- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to repair, easy to maintain, and durable. Wall surface shall have the ability to absorb pushpins and to withstand tape peeling.
- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and shall provide an aesthetically pleasing surface, free of sags or other defects. Shall have a minimum acoustical rating of 45.
- **DOORS/FRAME:** Salient characteristics include durability. Doors, frames, and hardware shall be able to withstand constant opening and closing. Doors shall be provided with self-closing device. Doors shall be a minimum of half-height glass.
- **WINDOWS:** Salient characteristics include easy to clean and able to withstand continuous use. Individual windows shall be single hung, with only the top portion operable. Screens shall be provided. (Applicable to Small facility only.)
- **ELECTRICAL**: Electrical outlets, data ports, phone lines and intercom connection to be provided. A minimum of 12 data ports shall be provided, evenly spaced along the walls of the room. In addition, a data port and electrical outlet shall be provided in the ceiling to support a ceiling mounted projector.

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20. SPACE: Staff Lounge

- **FUNCTIONAL DESCRIPTION:** Staff beak area.
- **ADJACENCIES:** Directly accessible from the corridor.
- **OCCUPANTS:** CDC staff.
- **MIMUMUM AREA:** Small: 300 SF, Net. Medium: 400 SF, Net. Large: 600 SF, Net.
- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, durable, easily repairable, and easy to maintain. A base material, appropriate for the flooring material used, is required
- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, repairable, easy to maintain, and durable. Wall surface shall have the ability to absorb pushpins and to withstand tape peeling.
- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and shall provide an aesthetically pleasing surface, free of sags or other defects.
- **DOORS/FRAME:** Salient characteristics include durability. Doors, frames, and hardware shall be able to withstand constant opening and closing. Doors shall be provided with self-closing device. Doors shall be a minimum of half-height glass.
- **CABINETRY:** A minimum 8 foot wide base and wall cabinets with 1 stainless steel sink with space adjacent to counter for a refrigerator (minimum 22 cu. ft. top mount refrigerator). Counter top shall have integral back splash, and shall be appropriate solid surfacing, solid phenolic, or better.
- **ELECTRICAL:** Provide outlets above backsplash for home type appliances (coffee pot, microwave, etc.). Provide outlet for refrigerator. Electrical outlets, phone lines, and intercom connection to be provided. A minimum of 4 data ports (1 per wall) shall be provided.
- **SPECIAL REQUIREMENTS:** Provide space, plumbing, and electrical for vending machines. Full height lockable wall lockers, secured to the wall, with a minimum foot print of 15” x 15”, shall be provided in this area (10 lockers in the small CDC, 14 lockers in the medium CDC, and 16 lockers in the large CDC). Provide water for icemaker in refrigerator.

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21. SPACE: Central Storage

- **FUNCTIONAL DESCRIPTION:** Space for storage of program material.
- **ADJACENCIES:** Directly accessible from the corridor.
- **MIMUMUM AREA:** Small: 42 SF, Net. Medium: 100 SF, Net. Large: 120 SF, Net.
- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, maintain, and repair. A base material, appropriate for the flooring material used, is required.
- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, repairable, easy to maintain, and durable.
- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and free of sags or other defects.
- **DOORS/FRAME:** Salient characteristics include durability. Doors, frames, and hardware shall be able to withstand constant opening and closing. Doors shall be provided with closers. Door shall be fitted with a locking mechanism and lever type handle that allows the door to be opened from the inside while locked. Doors shall be a minimum of half-height glass.
- **ELECTRICAL:** The Storage Room shall contain a ceiling mounted automatic motion light switch.
- **SPECIAL REQUIREMENTS:** Four adjustable shelves with heavy-duty standards and brackets will be provided. Two 18” deep shelves and two 12” deep shelves shall be provided on at least 2 walls. Shelving shall be able to support 100 pounds per lineal foot.

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22. SPACE: Kitchen

- **FUNCTIONAL DESCRIPTION:** Commercial grade facility designed for use by staff to meet the food service needs of children, 6 weeks to 5 years of age, in accordance with the United States Department of Agriculture and Preventive Medicine Regulations

- **ADJACENCIES:** Directly accessible from the corridor. Direct access to exterior.

- **OCCUPANTS:** CDC kitchen staff.

- **MIMUMUM AREA:** Small: 950 SF, Net. Medium and Large: 1,050 SF, Net.

- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include shall be durable, easy to clean and maintain, resist slipping, and be easy to repair. A base material, appropriate for the flooring material used, is required.

- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include durable, easy to clean and maintain, and shall be smoke tight. Wall shall be moisture resistant. A minimum of ceramic tile wainscot shall be provided.

- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, ease of accessibility to mechanical system above ceiling, one hour fire resistance, and ease of repair. Aluminum Acoustical Ceiling Grid with the size not exceeding 2 feet by 2 feet and supporting 5/8" vinyl faced gypsum panels.

- **DOORS/FRAME:** Salient characteristics include durability. Doors, frames, and hardware shall be able to withstand constant opening and closing. Doors shall be provided with closers. Door shall be fitted with a locking mechanism and lever type handle that allows the door to be opened from the inside while locked. Doors shall be a minimum of half-height glass. Door shall have self-closing device and be smoke tight. Exterior door from the kitchen leading to the service entrance shall be equipped with an air curtain.

- **HVAC:** Two ventilation exhaust hoods are required. One condensation hood over the dishwashing machine, and one over the cooking equipment. Ensure adequate make up air is provided.

- **ELECTRICAL:** In addition to electrical requirements for kitchen equipment, electrical outlet and data port to be provided to accommodate a computer in kitchen for placing food orders on-line. An intercom phone system and a Class A phone are required.

- **PLUMBING:** Hot and cold water shall be provided for 3 compartment ware washing sink, 2 compartment food preparation sink, 2 each hand washing sinks, cart washing area, dishwasher, convection steamers, 2 booster heaters, garbage grinder, and garbage disposal. Water shall be provided for a commercial icemaker. Floor drains, to include floor sinks, shall be provided. Gas may be provided for the range.

- **SPECIAL REQUIREMENTS:**
  (a) A dry storage area with shelving for food to be incorporated within the kitchen area. Requirements for dry storage include: Floor shall be seamless, easy to clean and

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maintain. A base material, appropriate for the flooring material used, is required. Base shall be seamless except at inside corners. An appropriate transition (such as bull-nose) shall be provided. Walls shall be easy to clean and maintain, and shall be durable.

(b) All storage room interiors shall be marked with a red line, 1-inch in width, located 18 inches below the lowest point of the sprinkler head.

(c) Kitchen equipment shall be commercial equipment, NSF approved. This will require compliance with all NFPA documents, to include 96.

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23. SPACE: Laundry Room

- **FUNCTIONAL DESCRIPTION:** Area to include commercial quality laundry equipment. Small facilities will have 2 washers and 2 dryers. Medium and large facilities will have 3 washers and 3 dryers. In addition, a counter for folding clothes with upper and lower cabinets for storage of laundry materials and a laundry sink shall be provided.

- **MIMUMUM PROGRAM AREA:** Small: 100 SF, Net. Medium and Large: 180 SF, Net.

- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include seamless, easy to clean and maintain, and slip resistant. Floors shall be able to withstand the warm humid environment, shall be able to withstand rolling carts, and shall be able to keep water from getting under the flooring material. A base material, appropriate for the flooring material used, is required. Base shall be seamless except at inside corners. Base shall be sealed to the flooring. A preferred option is a quarry tile floor and base.

- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, repairable, easy to maintain, and durable. Walls shall be able to withstand the warm humid environment, and shall be able to withstand being bumped by laundry carts. Minimum of Steel or Wood Studs with 5/8 inch Type “x” Drywall.

- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, ease of access to mechanical system above ceiling, one hour fire resistant, and easy to repair. Aluminum Acoustical Ceiling Grid with the size not exceeding 2 feet by 2 feet and supporting Type “X” one hour, 5/8” vinyl faced gypsum panels.

- **DOORS/FRAME:** Salient characteristics include durability. Doors, frames, and hardware shall be able to withstand constant opening and closing. Doors shall be provided with closers. Door shall be fitted with a locking mechanism and lever type handle that allows the door to be opened from the inside while locked. Doors shall be a minimum of half-height glass. Doors and hardware to have a 45 minute fire rating.

- **PLUMBING:** Plumbing for laundry tub and washers. A floor drain is required in this area that shall be self priming, or designed to prevent sewer gases from entering the occupied space by a proven and maintenance-free design.

- **SPECIAL REQUIREMENTS:** Dryer vents shall be individually and directly vented to the outside.

- **FIRE RATING:** All wall and ceiling systems shall be 1 hour rated.

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24. SPACE: Outreach/Transitional Care Room

- **FUNCTIONAL DESCRIPTION:** Activity Room which functions for child care, which includes eating, sleeping, playing, and other activities. Room accommodates children on a short term occasional basis (e.g. child care for deployment support, Family Readiness Groups, etc).

- **ADJACENCIES:** Shall be adjacent to the corridor and shall have direct access to the exterior. Direct access to age-appropriate playground is also required. Shall have direct access to storage room.

- **OCCUPANTS:** Two Program Assistants and a maximum of 24 Children (depending upon age of children).

- **MIMUMUM AREA:** Minimum Program Area of 840 net SF. Program Area may NOT be any less than 840 net SF. See attached drawing for calculation of net Program Area. Hatched area indicates portions of room that can be included in the minimum net Program Area.

- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include seamless, easy to clean and maintain. A base material, appropriate for the flooring material used, is required. Base shall be seamless except at inside corners. Base shall be sealed to floor with USDA or NSF approved caulking.

- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, repairable, easy to maintain, and durable. Wall material shall have the ability to absorb pushpins. Wall surface shall be able to withstand tape peeling. Where drinking fountains and/or lavatories are provided within the Activity Room space, a minimum 48” tall wainscot that is impervious to water and able to withstand daily sanitizing is required. This material shall extend to the floor and at least 18” horizontally in both directions from the centerline of the equipment.

- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and shall provide an aesthetically pleasing surface, free of sags or other defects.

- **DOORS/FRAME:** Salient characteristics include durability. Doors, frames, and hardware shall be able to withstand constant opening and closing. Doors shall be provided with closers. Doors shall be provided with finger guards at the hinges up to a minimum height of 48”. Interior doors shall be a minimum of half-height glass, with a clear width opening of 34 inches and shall be provided with a 12 inch wide side lite on the latch side of the door. Exterior door shall be provided with flush panic hardware, shall have a clear width opening of 34 inches, open at least 110 degrees to ensure ease of crib emergency evacuation, and direct exiting onto the outdoor play space. Interior and exterior doors shall swing in the direction of exit travel. Door thresholds and hardware will be designed to facilitate the exit of a crib containing five infants by a single adult. The thresholds will have a low profile. Doors shall be provided with self-closing device.

- **VISION/VIEW PANELS:** Shall be in accordance with the Army Standard.

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- **CABINETRY:** Salient characteristics include easy to clean, maintain and repair. Cabinets shall be durable and be able to withstand impacts (example: food carts), without showing damage. Cabinets shall be a minimum of Architectural Woodworking Institute (AWI) 400B, Custom Grade, High Pressure Laminate clad. Counter top shall have integral back splash, and shall be solid surfacing, solid phenolic, or better. Counter tops of cabinets will have rounded/radius corners and edges. Base cabinets shall be lockable, and may not have a protruding handle.
  (a) A 3'-6" wide sign-in desk with 6 lockable storage units in an overhead cabinet, and an adjacent 18 inch wide coat closet.
  (b) 8 foot wide base and wall cabinets with 2 stainless steel sinks separated by a standard 2 foot base cabinet. Sink bowls shall be a minimum of 21" W x 15-3/4" D x 8" H. Space shall be provided for an undercounter refrigerator.
  (c) 24-25 pre-school cubbies, 8"-12" wide x 15" deep x 46"-49" tall permanently attached to walls (pre-manufactured)
  (d) One diaper changing station, approximately 2 foot wide by 5 foot long cabinet with built-in sink (pre-manufactured)

- **HVAC:** Provide one exhaust fan directly over the diaper changing station. Room temperature shall be measured and maintained at 1 foot above finished floor. Temperature will be designed for 68 °F in the winter and for 78 °F in the summer. A minimum relative humidity of 35 percent will be maintained in CDC during the heating season to prevent drying of mucous membranes and to control the spread of diseases.

- **ELECTRICAL:** All electrical outlets, except for those mounted above countertops, shall be mounted 54 inches above the finish floor, and shall be hospital grade, tamper resistant safety type. Outlets provided above countertops shall be located no less than 18" from the edge of the countertop. Two electrical outlets to be provided above the backsplash (food preparation/art counter/sink), one over each open counter area. Electrical outlet to be provided for under the counter refrigerator. Electrical outlet, data port and intercom phone connection at sign in desk to be provided. In addition, provide 2 data outlets in the activity area.

- **PLUMBING:** Plumbing for toilet/lavatory area, diaper changing table, and food preparation/art counter/sink area is required.

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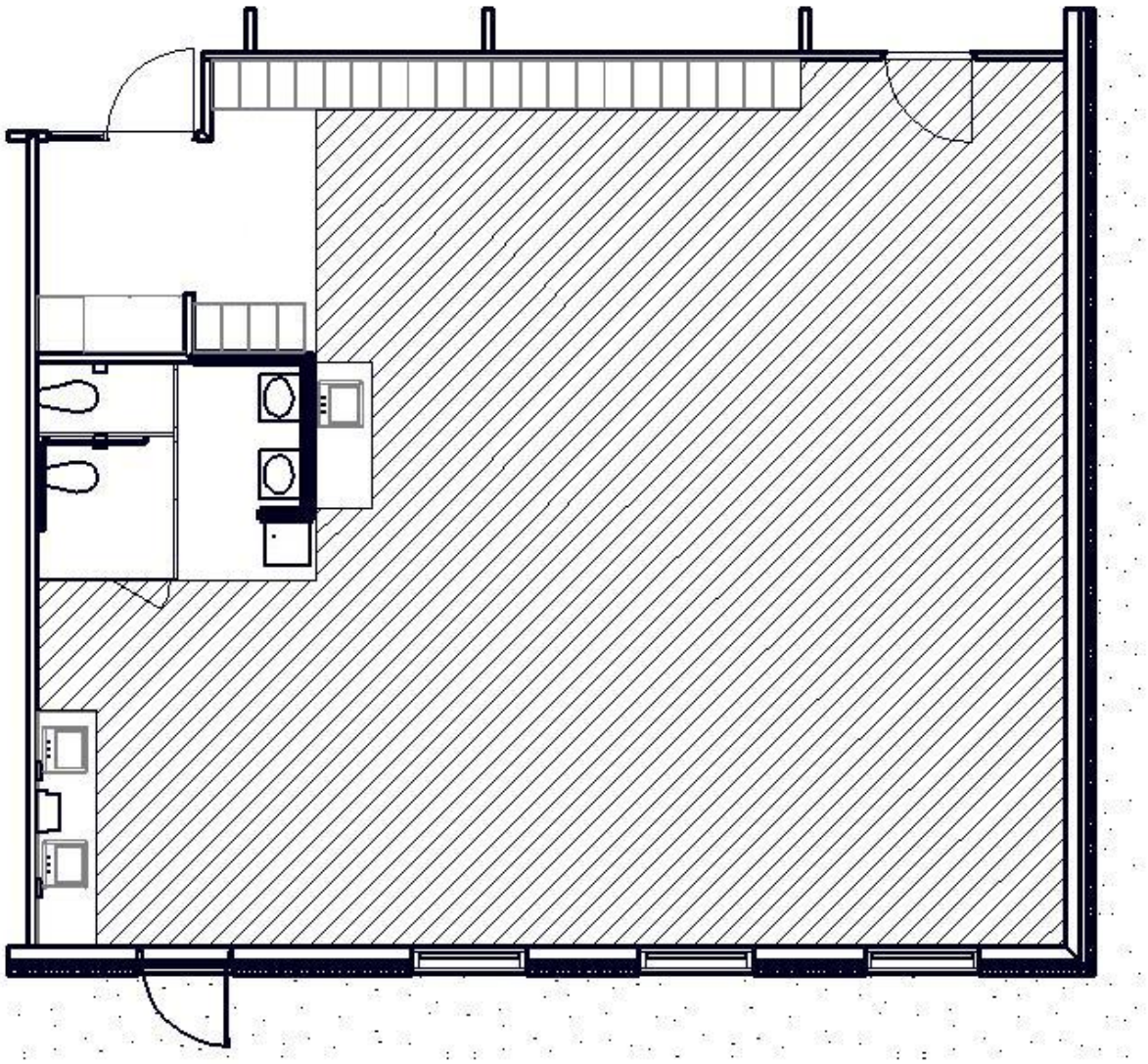

Outreach/Transitional Care Room
Net Program Area

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25. SPACE: Outreach/Transitional Care Storage Room

- **FUNCTIONAL DESCRIPTION:** Storage room to support the Outreach/Transitional Care Room.

- **ADJACENCIES:** Shall be directly accessible from the Activity Room

- **OCCUPANTS:** CDC Staff.

- **MIMUMUM AREA:** 45 SF, Net.

- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, maintain, and repair. A base material, appropriate for the flooring material used, is required.

- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, repairable, easy to maintain, and durable.

- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and free of sags or other defects.

- **DOORS/FRAME:** Salient characteristics include durability. Doors, frames, and hardware shall be able to withstand constant opening and closing. Doors shall be provided with closers. Door shall be fitted with a locking mechanism and lever type handle that allows the door to be opened from the inside while locked. Doors shall be a minimum of half-height glass.

- **ELECTRICAL:** The Storage Room shall contain a ceiling mounted automatic motion light switch.

- **SPECIAL REQUIREMENTS:** A minimum of three adjustable shelves with heavy-duty standards and brackets will be provided on 3 walls. At least one 18” deep shelf and two 12” deep shelves shall be provided. Shelving shall be able to support 100 pounds per lineal foot.

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26. SPACE: Outreach/Transitional Care Toilet Area

- **FUNCTIONAL DESCRIPTION:** Toilet area for CDC children.
- **ADJACENCIES:** Shall be directly accessible from the Outreach/Transitional Care Room
- **OCCUPANTS:** CDC Children with staff assistance.
- **MIMUMUM AREA:** 38 SF, Net.
- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include shall be easy to clean and maintain, and shall be durable. A base material, appropriate for the flooring material used, is required.
- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include shall be easy to clean and maintain, and shall be durable. On all walls, a minimum 48" tall wainscot is required that is impervious to water and be able to withstand daily sanitizing.
- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and shall provide an aesthetically pleasing surface, free of sags or other defects.
- **TOILET PARTITION:** Salient characteristics include easy to clean and maintain, and shall be durable. Top of toilet partitions shall be no higher than 48" tall with 12" clear opening at bottom.
- **PLUMBING:** Two (2) pediatric floor mounted water closets (one 10" to rim, one 13" to rim), and two (2) child wall mounted lavatories (one 17" AFF, one 20" AFF) to be located opposite the water closets. One of the partitions to have a stall door. A floor drain is required in this area that shall be self priming, or designed to prevent sewer gases from entering the occupied space by a proven and maintenance-free design. A drinking fountain (non-refrigerated, similar to Halsey Taylor model HRFG-E), mounted so that top of drinking fountain is 17" above finished floor, to be provided on the other side of the wall, directly accessible from the activity area, as shown in the previous diagram.
- **HVAC:** One (1) exhaust fan over the water closet area
- **SPECIAL REQUIREMENTS:** Unbreakable lavatory mirrors required above each lavatory.

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27. SPACE: Active Play Room

- **FUNCTIONAL DESCRIPTION:** An active indoor play area for CDC children to utilize during inclement weather/temperature extremes.

- **OCCUPANTS:** Two Program Assistants and CDC children appropriate to the specific age group to maintain proper adult/child ratio.

- **MIMUMUM AREA:** Minimum Program Area of 1080 net SF. Program Area may NOT be any less than 1080 net SF. See attached drawing for calculation of net Program Area. Hatched area indicates portions of room that can be included in the minimum net Program Area.

- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include seamless, easy to clean and maintain. A base material, appropriate for the flooring material used, is required. Base shall be seamless except at inside corners. Base shall be sealed to floor with USDA or NSF approved caulking.

- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, repairable, easy to maintain, and durable. Wall surface shall be able to withstand tape peeling. Walls shall be hardened to withstand impacts from balls, trikes, etc. Where walls of the Active Play Room are shared with other activity rooms or Training Room, they shall be designed to have a minimum STC rating of 55.

- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include durability to withstand impact from balls. In addition, ceiling shall provide acoustical control. Some portion (at least 50%) of the ceiling shall be at least 9' high.

- **DOORS/FRAME:** Salient characteristics include durability. Doors, frames, and hardware shall be able to withstand constant opening and closing. Doors shall be provided with closers. Doors shall be provided with finger guards at the hinges up to a minimum height of 48". Interior doors shall be a minimum of half-height glass, with a clear width opening of 34 inches and shall be provided with a 12 inch wide side lite on the latch side of the door. Exterior door shall be provided with flush panic hardware, shall have a clear width opening of 34 inches, open at least 110 degrees to ensure ease of crib emergency evacuation, and direct exiting onto the outdoor play space. Interior and exterior doors shall swing in the direction of exit travel. Doors shall be provided with self-closing device.

- **VISION/VIEW PANELS:** Shall be in accordance with the Army Standard.

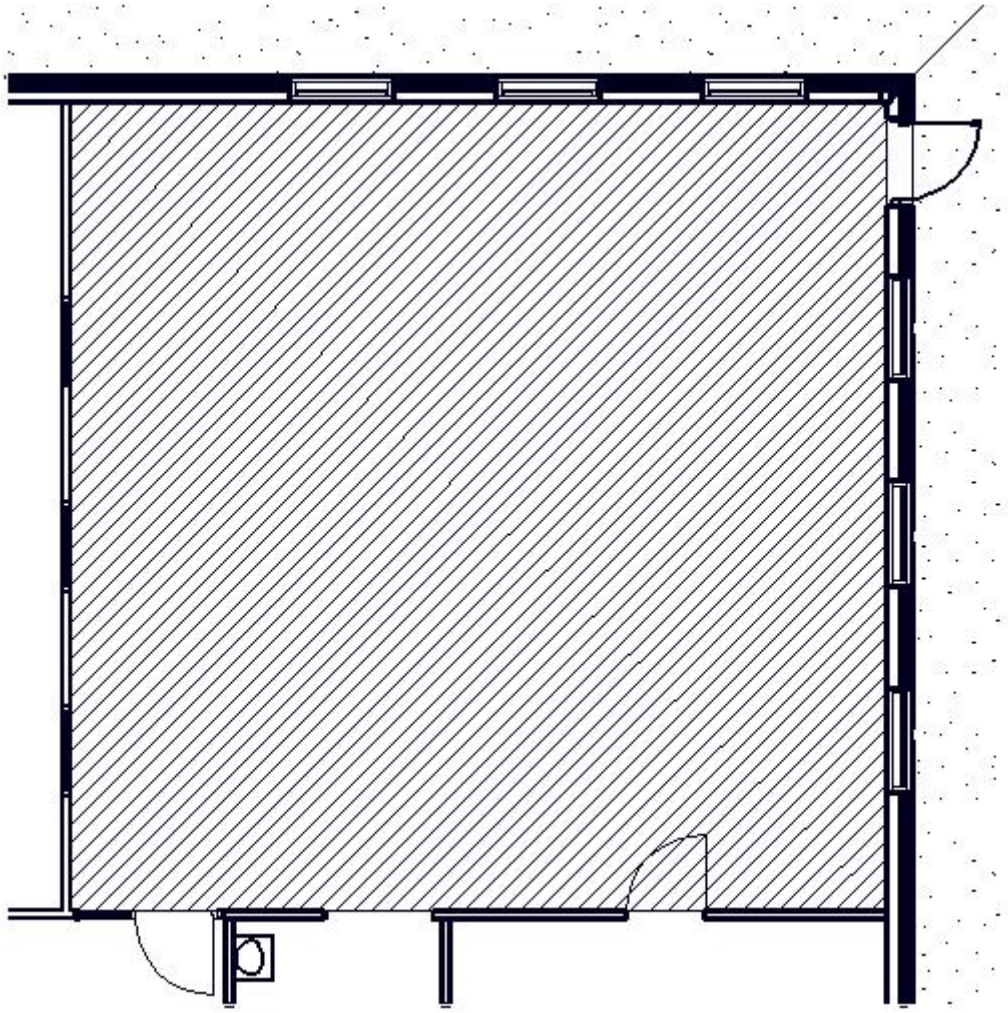
- **ELECTRICAL:** All electrical outlets shall be hospital grade tamper resistant safety electrical outlets, mounted 54 inches above the finish floor. An intercom phone connection is required.

- **HVAC:** Room temperature to be measured and maintained at 1' AFF. Temperature will be designed for 68 °F in the winter and for 78 °F in the summer. A minimum relative humidity of 35 percent will be maintained in CDC during the heating season to prevent drying of mucous membranes and to control the spread of diseases.

Standard Design Criteria
Child Development Centers
(For Children 6 Weeks – 5 Years)

- **SPECIAL REQUIREMENTS:** For safety reasons, no outside corners may occur in this space. Cased openings shall be provided with resilient corner guards or shall be rounded. Door hardware shall be designed to reduce injury from impact.

Standard Design Criteria
Child Development Centers
(For Children 6 Weeks – 5 Years)



Active Play Room
Net Program Area

Standard Design Criteria
Child Development Centers
(For Children 6 Weeks – 5 Years)

28. SPACE: Active Play Storage Room

- **FUNCTIONAL DESCRIPTION:** Storage room to support the Active Play Room.
- **ADJACENCIES:** Shall be directly accessible from the Activity Room
- **OCCUPANTS:** CDC Staff.
- **MIMUMUM AREA:** 90 SF, Net.
- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, maintain, and repair. A base material, appropriate for the flooring material used, is required.
- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, repairable, easy to maintain, and durable.
- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and free of sags or other defects.
- **DOORS/FRAME:** Salient characteristics include durability. Doors, frames, and hardware shall be able to withstand constant opening and closing. Doors shall be provided with closers. Door shall be fitted with a locking mechanism and lever type handle that allows the door to be opened from the inside while locked. Doors shall be a minimum of half-height glass. Glass shall be able to withstand impact from balls and play equipment. Hardware on the Active Play Room side of the door shall be designed to reduce injury from impact.
- **ELECTRICAL:** The Storage Room shall contain a ceiling mounted automatic motion light switch.
- **SPECIAL REQUIREMENTS:** A minimum of four adjustable shelves with heavy-duty standards and brackets will be provided on 3 walls. At least two 18” deep shelves and two 12” deep shelves shall be provided. Shelving shall be able to support 100 pounds per lineal foot.

Standard Design Criteria
Child Development Centers
(For Children 6 Weeks – 5 Years)

29. SPACE: Active Play Toilet Area

- **FUNCTIONAL DESCRIPTION:** Toilet area for CDC children.
- **ADJACENCIES:** Shall be directly accessible from the Active Play Room
- **OCCUPANTS:** CDC Children with staff assistance.
- **MIMUMUM AREA:** 45 SF, Net.
- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include shall be easy to clean and maintain, and shall be durable. A base material, appropriate for the flooring material used, is required.
- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include shall be easy to clean and maintain, and shall be durable. On all walls, a minimum 48" tall wainscot is required that is impervious to water and be able to withstand daily sanitizing.
- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and free of sags or other defects.
- **TOILET PARTITION:** Salient characteristics include easy to clean and maintain, and shall be durable. Top of toilet partitions shall be no higher than 48" tall with 12" clear opening at bottom.
- **PLUMBING:** One (1) pediatric water closet (13" to rim), and one (1) child lavatory (20" to rim). A floor drain is required in this area that shall be self priming, or designed to prevent sewer gases from entering the occupied space by a proven and maintenance-free design.
- **HVAC:** One exhaust fan in the toilet area.
- **SPECIAL REQUIREMENTS:** Unbreakable lavatory mirrors required above each lavatory.

Standard Design Criteria
Child Development Centers
(For Children 6 Weeks – 5 Years)

30. SPACE: Corridor

- **FUNCTIONAL DESCRIPTION:** Main Circulation Space

- **MINIMUM FLOOR and BASE CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, durable, easily repairable, and easy to maintain. A base material, appropriate for the flooring material used, is required

- **MINIMUM WALL CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include easy to clean, repairable, easy to maintain, and durable. Wall material shall have the ability to absorb pushpins. Wall surface shall be able to withstand tape peeling. Also, wall surface shall be durable so that impacts from buggies and carts do not damage the wall.

- **MINIMUM CEILING CONSTRUCTION/SURFACE PERFORMANCE:** Salient characteristics include ease of accessibility to mechanical system above ceiling, durable, and shall provide an aesthetically pleasing surface, free of sags or other defects. Shall have a minimum acoustical rating of 45.

- **PLUMBING:** Provide water for bi-level, ADA compliant electric water coolers.

- **SPECIAL REQUIREMENTS:** Corridor SHALL have a minimum clear width of NO LESS THAN 6'-0". To allow for bulletin boards and other projections, recommend maintaining a clear width between walls of at least 6'-2". Electric water coolers shall be provided within an ADA compliant alcove in order to maintain minimum corridor width.

- **INTRUSION ALARM:** Exit notification system with keyed manual override is required where doors do not exit into fenced area.

ATTACHMENT C

Not Used

ATTACHMENT D

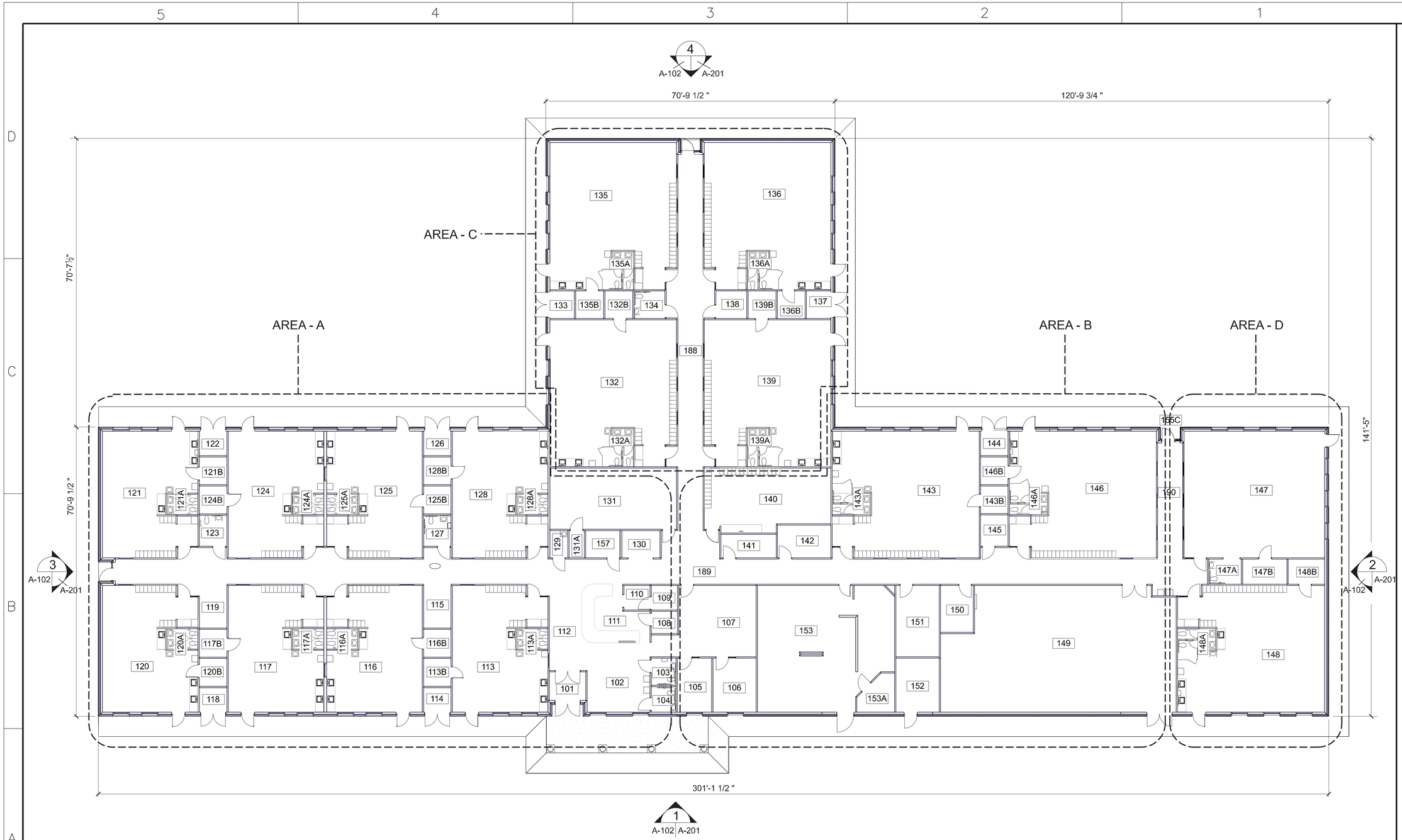
Not Used

ATTACHMENT E

Not Used

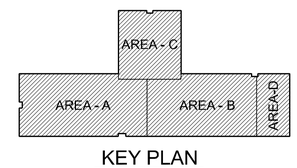
ATTACHMENT F

MEDIUM
CDC for Children
6 Weeks – 5 Years Floor Plan



PLAN SCALE: NTS

OVERALL FLOOR PLAN



US Army Corps of Engineers
Huntsville Center

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Revisions

Designed by: JAD
Drawn by: JAD
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Date:
Scale:
Drawing code:
Date
Project Engineer/Architect

OVERALL FLOOR PLAN

FORT STEWART, GA
CHILD DEVELOPMENT CENTER
MEDIUM STANDARD DESIGN
FEBRUARY 2007

CDC - MEDIUM

Sheet reference number:
A-102
Sheet 6 of 72

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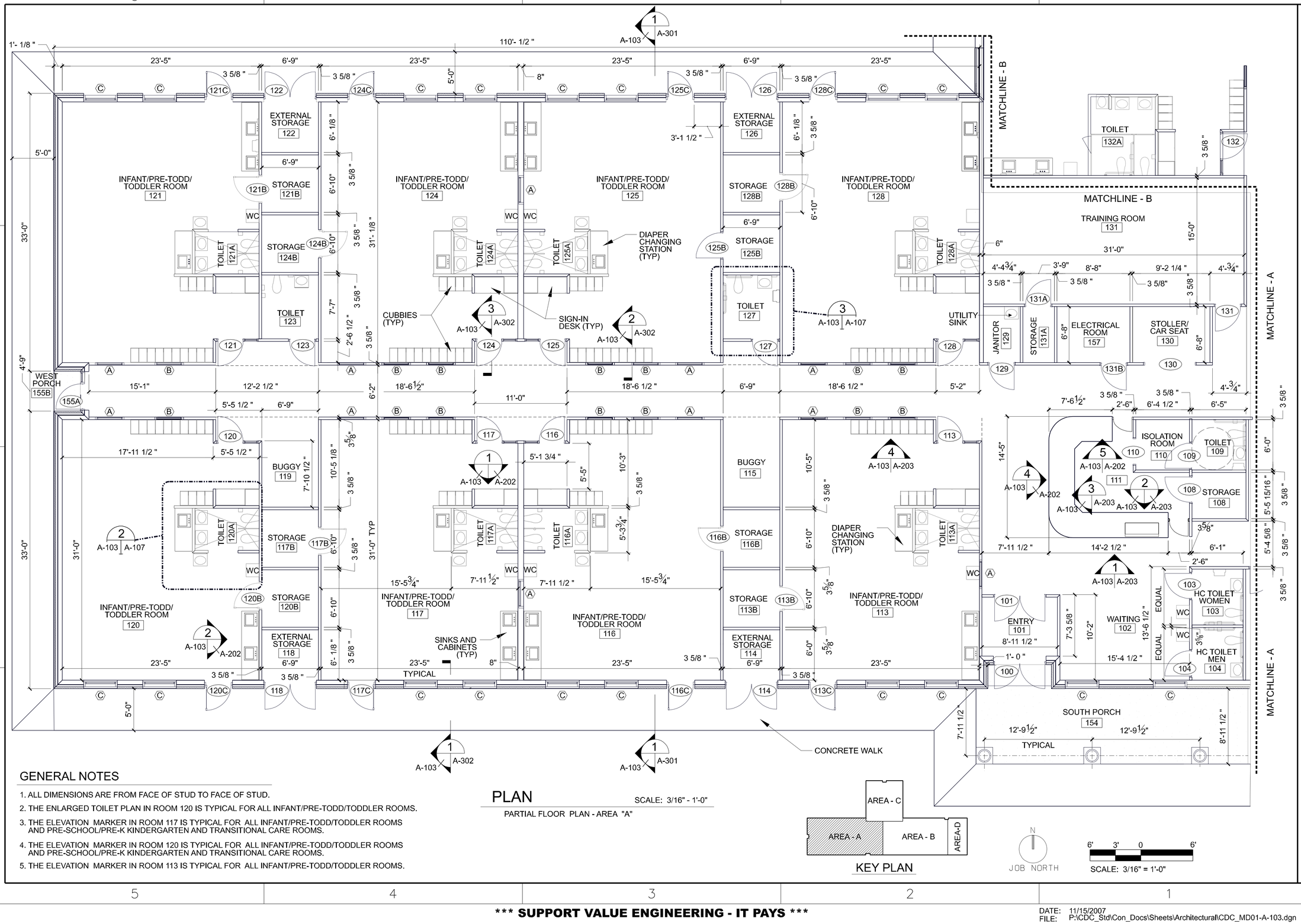
FILE: P:\CDC_Std\Con_Docs\Sheets\Architectural\CDC_MD01-A-102.dgn



GENERAL NOTES

1. ALL DIMENSIONS ARE FROM FACE OF STUD TO FACE OF STUD.
2. THE ENLARGED TOILET PLAN IN ROOM 120 IS TYPICAL FOR ALL INFANT/PRE-TODD/TODDLER ROOMS.
3. THE ELEVATION MARKER IN ROOM 117 IS TYPICAL FOR ALL INFANT/PRE-TODD/TODDLER ROOMS AND PRE-SCHOOL/PRE-K KINDERGARTEN AND TRANSITIONAL CARE ROOMS.
4. THE ELEVATION MARKER IN ROOM 120 IS TYPICAL FOR ALL INFANT/PRE-TODD/TODDLER ROOMS AND PRE-SCHOOL/PRE-K KINDERGARTEN AND TRANSITIONAL CARE ROOMS.
5. THE ELEVATION MARKER IN ROOM 113 IS TYPICAL FOR ALL INFANT/PRE-TODD/TODDLER ROOMS.

PLAN

SCALE: 3/16" - 1'-0"

PARTIAL FLOOR PLAN - AREA "A"

KEY PLAN

N
JOB NORTH

6' 3' 0 6'
SCALE: 3/16" = 1'-0"

US Army Corps of Engineers Huntsville Center

Revisions

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Date

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ENLARGED FLOOR PLAN

FORT STEWART, GA
CHILD DEVELOPMENT CENTER
MEDIUM STANDARD DESIGN
FEBRUARY 2007

CDC - MEDIUM

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A-103
Sheet 7 of 72

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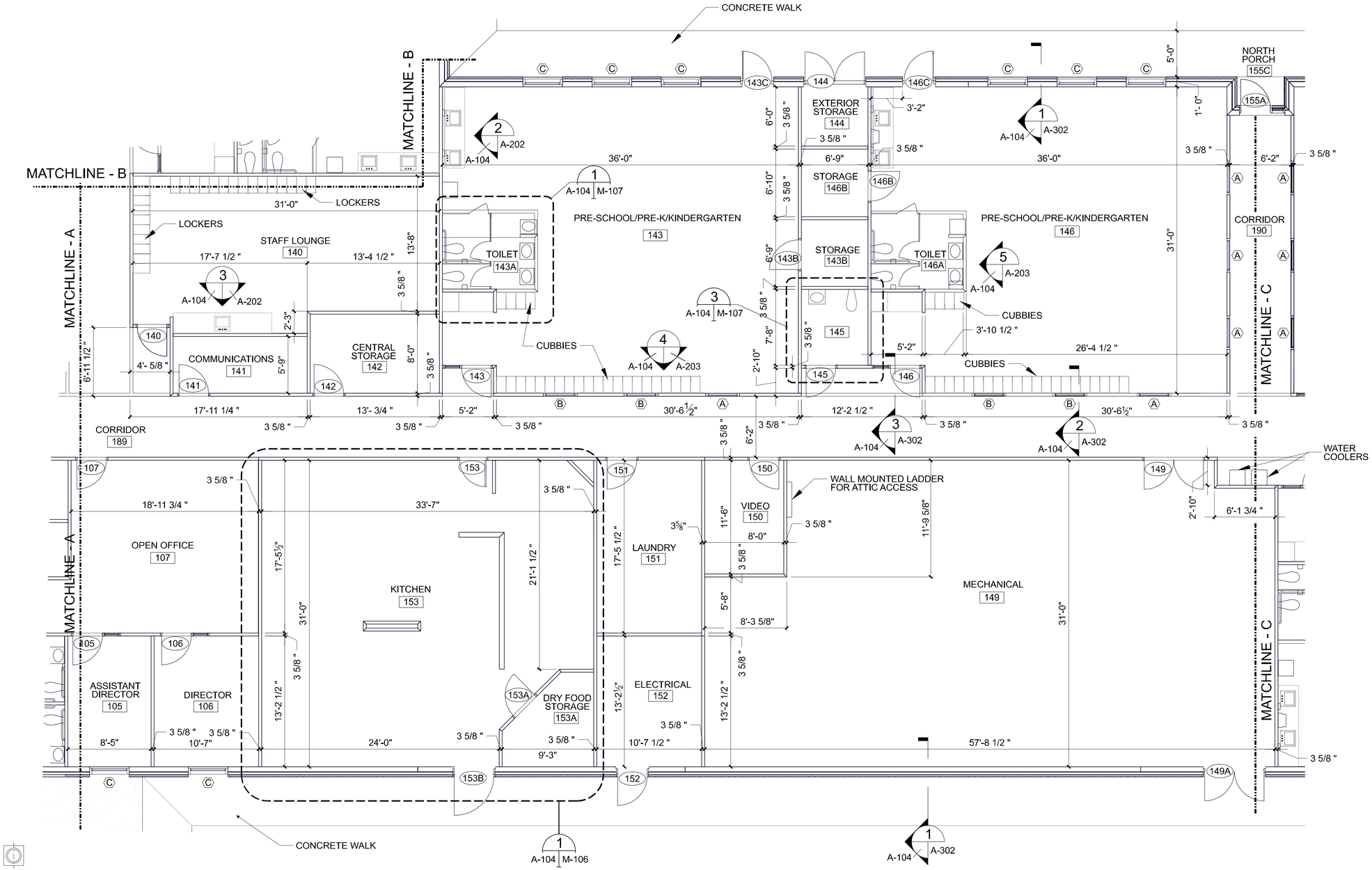
FILE: P:\CDC_Std\Con_Docs\Sheets\Architectural\CDC_MD01-A-103.dgn



GENERAL NOTES

1. ALL DIMENSIONS ARE FROM FACE OF STUD TO FACE OF STUD.
2. THE ENLARGED TOILET PLAN IN ROOM 143 IS TYPICAL FOR ALL PRE-SCHOOL / PRE-K / KINDERGARTEN..
3. THE WORK COUNTER ELEVATION MARKER IN ROOM 143 IS TYPICAL FOR ALL INFANT/PRE-TODD/TODDLER ROOMS AND PRE-SCHOOL/PRE-K KINDERGARTEN AND TRANSITIONAL CARE ROOMS.
4. THE ELEVATION MARKER IN ROOM 146 IS TYPICAL FOR PRE-SCHOOL/PRE-K KINDERGARTEN AND TRANSITIONAL CARE ROOMS.

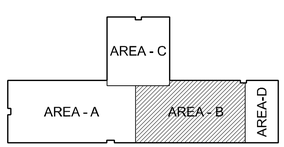
PLAN

SCALE: 3/16" - 1'-0"

PARTIAL FLOOR PLAN - AREA "B"

JOB NORTH

SCALE: 3/16" = 1'-0"



KEY PLAN

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Huntsville Center

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Date

ENLARGED FLOOR PLAN

FORT STEWART, GA
CHILD DEVELOPMENT CENTER
MEDIUM STANDARD DESIGN
FEBRUARY 2007

CDC - MEDIUM

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Sheet 8 of 72

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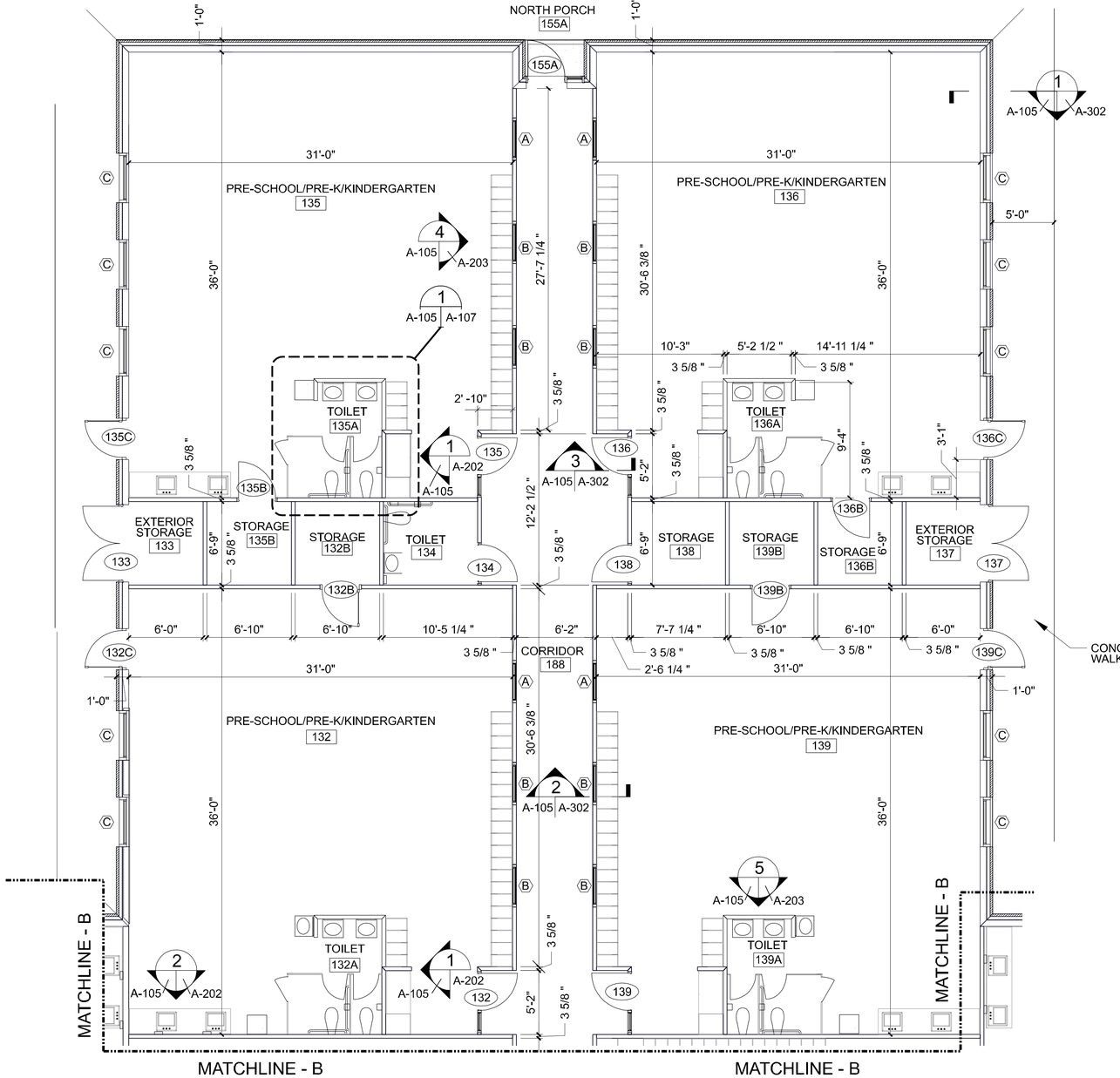
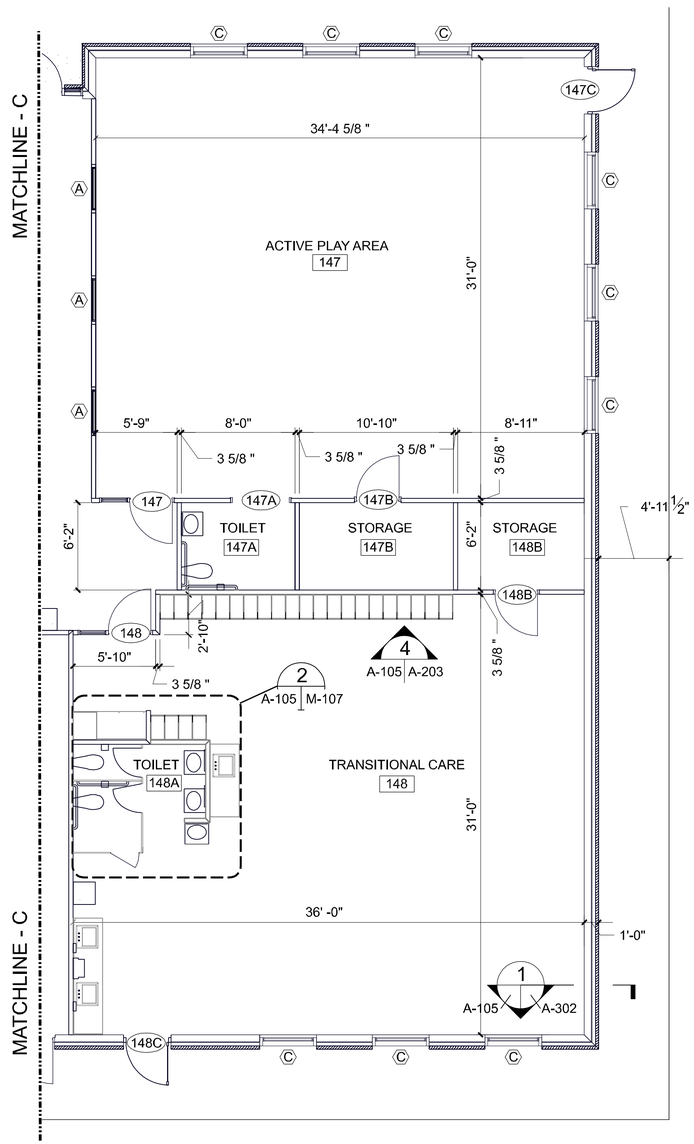


PLAN SCALE: 3/16" - 1'-0"

PARTIAL FLOOR PLAN - AREA "C"



PLAN SCALE: 3/16" - 1'-0"

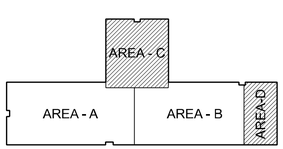
PARTIAL FLOOR PLAN - AREA "D"

GENERAL NOTES

1. ALL DIMENSIONS ARE FROM FACE OF STUD TO FACE OF STUD.
2. THE TOILET PLAN IN ROOM 135 IS TYPICAL FOR ALL PRE-SCHOOL / PRE-K / KINDERGARTEN.
3. THE ELEVATION MARKER IN ROOM 135 IS TYPICAL FOR ALL INFANT/PRE-TODD/TODDLER ROOMS AND PRE-SCHOOL/PRE-K KINDERGARTEN AND TRANSITIONAL CARE ROOMS.
4. THE ELEVATION MARKER IN ROOM 139 IS TYPICAL FOR PRE-SCHOOL/PRE-K KINDERGARTEN AND TRANSITIONAL CARE ROOMS.

JOB NORTH

SCALE: 3/16" = 1'-0"



KEY PLAN

US Army Corps of Engineers Huntsville Center

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Date

ENLARGED FLOOR PLAN

FORT STEWART, GA
CHILD DEVELOPMENT CENTER
MEDIUM STANDARD DESIGN
FEBRUARY 2007

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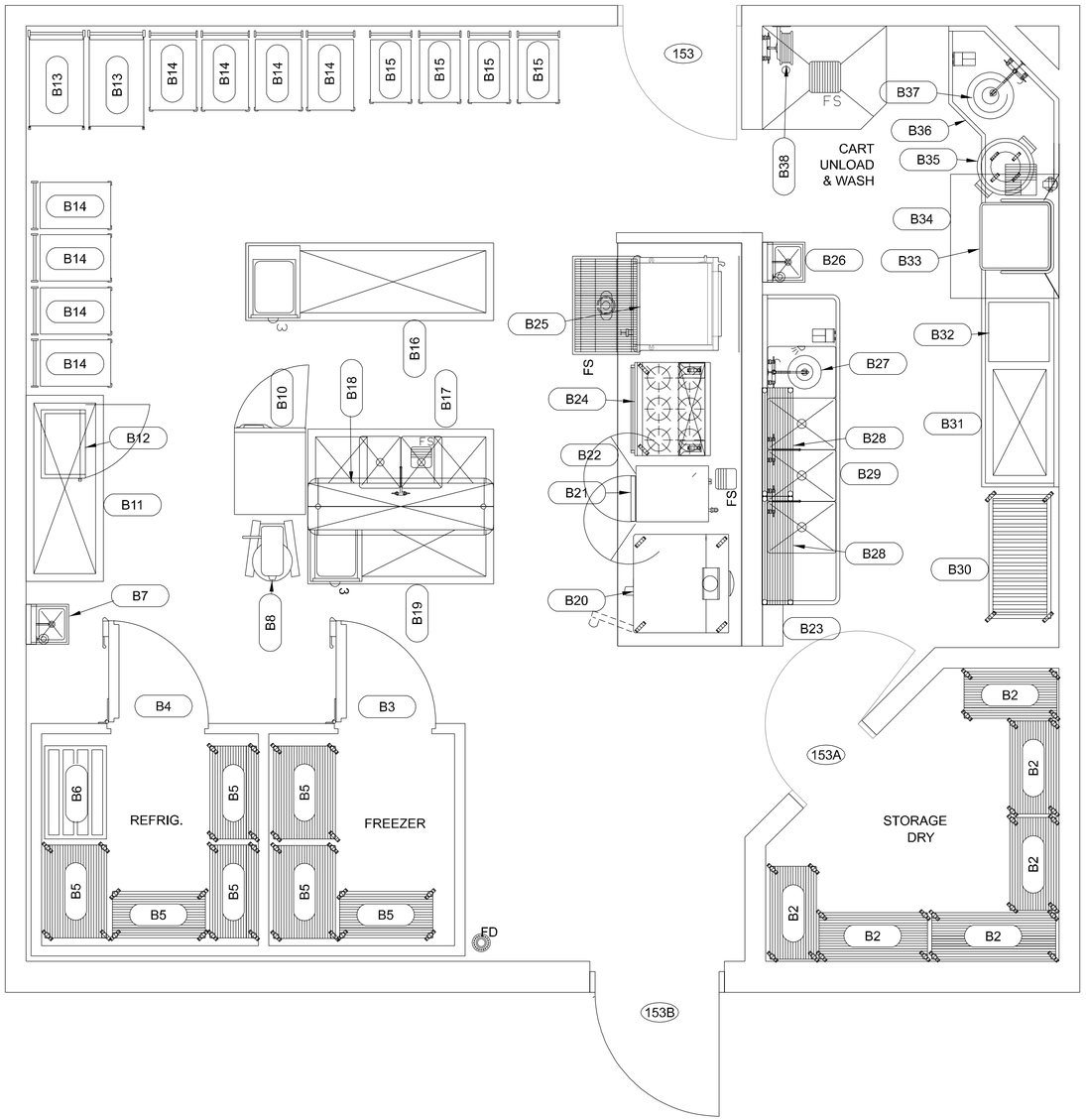

1 PLAN SCALE: 1/4" = 1' -0"
A-104 A-106 KITCHEN

4' 2' 0 4'

SCALE: ¼"= 1'-0"

EQUIPMENT LIST

ITEM NO	QTY	DESCRIPTION	REMARKS
B1	1	AIR CURTAIN, UNHEATED	
B2	3	SHELVING; CHROME WIRE	18" X 36"
B2	1	SHELVING; CHROME WIRE	18" X 42"
B2	1	SHELVING; CHROME WIRE	18" X 48"
B2	1	SHELVING; CHROME WIRE	18" X 36"
B3	1	WALK-IN REFRIGERATOR	ID=6'-0"W X 6'-10"D X 7'-6"H
B4	1	WALK-IN FREEZER	ID=7'-0"W X 6'-10"D X 7'-6"H
B5	1	SHELVING; EPOXY WIRE	24" X 36"
B5	4	SHELVING; EPOXY WIRE	18" X 36"
B5	2	SHELVING; EPOXY WIRE	24" X 36"
B6	1	DUNNAGE RACK; SNGL TIER MILK CRATE	
B7	1	HAND SINK; FOOD PREP	
B8	1	MIXER; 30 QT. FLOOR	
B9		NOT USED	
B10	1	REFRIGERATOR; 1 SECT REACH-IN	
B11	1	TABLE; WORK W/ UNDER SHELF	30"W. X 72"L. X 36"H.
B12	1	DISPENSER; DBL. BOX MILK	
B13	2	CART; (4) SHELF PRE-SCHOOL	
B14	8	CART; 3 SHELF TODDLER	
B15	4	CART; 3 SHELF INFANT	
B16	1	TABLE; WORK W/ DRW'S-U SHELF	30"D X 96"L X 36"H
B17	1	TABLE; WORK W/ DBL. SINK-U SHELF	30"D X 72"L X 36"H
B18	1	ELEV. SHELF W/ UTENSIL RACK	22"W X 72"L X 7'-6"H
B19	1	TABLE; WORK W/ DRW'S-U SHELF	30"D X 72"L X 36"H
B20	1	OVEN; GAS SINGLE CONVECTION	
B21	1	STEAMER; ELECT 1 COMPT 3 PAN	
B22	1	VENT HOOD; TYPE 1/FACE DISCHARGE	13'-0"L X 4'-0"D X 2'-0"H
B23	1	FIRE SUPPRESSION SYS.	
B24	1	RANGE; GAS 6 BURNER STD OVEN	
B25	1	BRAISING PAN; GAS 15 GALLON TILT	
B26	1	HAND SINK; WARE WASHING	
B27	1	DISPOSAL; 1.5HP WASTE & PRE-RINSE	
B28	2	WALL SHELF; S/S WIRE	
B29	1	SINK; 3 COMPARTMENT	10'-0"L X 2'-6"W X 2'-10"H
B30	1	RACK; ALUMINUM POT & PAN	
B31	1	DISH TABLE; CLEAN	30"D X 84"L X 34"H TO TOP
B32	1	BOOSTER HEATER; ELECTRIC	
B33	1	DISH MACHINE; TALL SNGL RACK	
B34	1	CONDENSATE HOOD; TYPE 11	48"W X 42"D X 24"H
B35	1	U-COUNTER WASTE BARREL	
B36	1	DISH TABLE; SOILED CORNER	40" & 50" X 30"D X 34"H
B37	1	DISPOSAL; 1.5 HP & PRE-RINSE SPRAY	
B38	1	HOSE REEL; WALL MOUNT	

US Army Corps of Engineers
Huntsville Center

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KITCHEN PLAN

FORT STEWART, GA
CHILD DEVELOPMENT CENTER
MEDIUM STANDARD DESIGN
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Sheet 10 of 72

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ATTACHMENT G

MEDIUM
CDC for Children
6 Weeks - 5 Years Equipment Arrangement

CONTRACTOR TO PROVIDE:

1. POWER FOR THE CCTV SYSTEM:
   A) CAMERA POWER SUPPLY: 80 CAMERA CAPACITY SYSTEM: TWO (2) 120VAC/20-AMP (NTSC) POWER DROPS SHALL BE SUPPLIED TO AT THIS LOCATION. ONE (1) 4'X 8'X 5/8" SHEET OF PLYWOOD, PAINTED WITH FIRE RESISTANT COATING, SHALL BE ATTACHED TO THE WALL STARTING AT THE CEILING. BOTH 120VAC/20-AMP POWER DROPS SHALL BE UN-TERMINATED IN TWO (2) 4"X 4" JUNCTION BOXES MOUNTED ON THE PLYWOOD, CENTERED, SIX (6) INCHES FROM THE CEILING (OR ABOVE DROP CEILING)

   B) CAMERAS: POWER FOR THE CCTV CAMERA SHALL BE DISTRIBUTED FROM THE POWER SUPPLY (PS) LOCATION TO EACH CAMERA LOCATION.

   C) SURVEILLANCE EQUIPMENT RACK (SER): A 120VAC/30-AMP CIRCUIT SHALL BE SUPPLIED TO THE LOCATION DESIGNATED FOR THE CCTV SER. THE CIRCUIT SHALL BE TERMINATED WITH A 3-PRONG RECEPTACLE (L5-30P3W125V) RECESS MOUNTED IN THE LOCATION DESIGNATED FOR THE SER.

   D) PARENTAL VIEWING MONITOR (PVM): A STANDARD 120 VAC (NTSC) GROUNDED RECEPTACLE SHALL BE INSTALLED AT THE LOCATION DESIGNATED FOR THE PVM. THE RECEPTACLE SHALL BE MOUNTED ABOVE THE DROP CEILING AND CAN BE TIED TO ANY CIRCUIT IN THE FACILITY.

   E) A 120 VAC (NTSC) OUTLET SHALL BE MADE AVAILABLE, AT THE RECEPTION DESK, FOR THE LOCATION DESIGNATED FOR THE REMOTE PVM KEYBOARD POWER SUPPLY/TRANSFORMER.

2. ALL EMT SHALL BE SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE BASED UPON THE TYPE, GAUGE AND QUANTITY OF CABLING AND WIRING INSTALLED WITHIN THE EMT. THE CONDUIT FILL RATE SHALL CONFORM TO THE NEC STANDARD.

3. THE CAMERA POWER CABLE SHALL BE 2-CONDUCTOR AWG 18 GAUGE STRANDED UNSHIELDED PLENUM RATED, BELDEN PN 89740 OR EQUIVALENT CABLE TYPE. THE PREFERRED WIRE IS PRE-MARKED SMARTWIRETM SECURITY ACCESS CONTROL CABLE 18 AWG.2 CONDUCTOR BARE COPPER, NON-SHIELDED PLENUM. COLOR COMBINATION TO BE DETERMINED BY CONTRACTOR AS REQUIRED.

   NOTE:
   1. UN-TERMINATED POWER CABLES SHALL BE IDENTIFIED BY EITHER THE CAMERA NUMBER, THE SPECIFIC LOCATION OF THE POWER RUN, OR IN A MANNER DETERMINED BY THE CONTRACTOR.
   2. ALL POWER CABLES SHALL BE ONE CONTINUOUS RUN. SPLICING IS NOT ACCEPTABLE.
   3. IN THE LOCATION DESIGNATED FOR THE SER LEAVE **20' EXCESS COIL** OF POWER CABLE.

4. THE CAMERA VIDEO CABLE SHALL BE RG-59U TYPE CCTV PLENUM COAX, BELDEN PN 25815 OR EQUIVALENT CABLE TYPE. THE PREFERRED CABLE IS PRE-MARKED SMARTWIRETM RG-59 VIDEO SURVEILLANCE CABLE PLENUM. COLOR COMBINATION TO BE DETERMINED BY CONTRACTOR AS REQUIRED.

   NOTE:
   1. UN-TERMINATED VIDEO CABLES SHALL BE IDENTIFIED BY EITHER THE CAMERA NUMBER, THE SPECIFIC LOCATION OF THE VIDEO RUN, OR IN A MANNER DETERMINED BY THE CONTRACTOR.
   2. ALL VIDEO CABLES SHALL BE ONE CONTINUOUS RUN. SPLICING IS NOT ACCEPTABLE.
   3. IN THE LOCATION DESIGNATED FOR THE SER LEAVE **20' EXCESS COIL** OF VIDEO CABLE.

5. IN AREAS WITH DROPPED CEILINGS: RUN CONDUIT (W/ VIDEO AND POWER CABLING) ABOVE THE CEILING TO EACH CAMERA LOCATION. LEAVE **6' EXCESS COIL** OF POWER AND VIDEO CABLE TIED UP AT THE LOCATION.

6. IN AREAS W/O DROPPED CEILINGS: RUN CONDUIT (W/ VIDEO AND POWER CABLING) ABOVE CEILING TO EACH CEILING. PROVIDE **ONE (1) SINGLE GANG RECEPTACLE BOX, RECESS MOUNTED**, ON THE WALL NO MORE THAN 12', AND NO LESS THAN 8', ABOVE THE FIXED FLOOR AT EACH CAMERA LOCATION. (THE CLOSER TO 12' IS PREFERABLE FOR GREATER FIELD OF VIEW.) ALL RECEPTACLE BOXES IN THE SAME AREA SHALL BE MOUNTED AT THE SAME DISTANCE FROM THE FIXED FLOOR.

7. IN AREAS WITH EXPOSED CONDUIT: PROVIDE ONE (1) OCTAGON BOX SURFACES MOUNTED ON THE WALL NO MORE THAN 12', AND NO LESS THAN 8', ABOVE THE FIXED FLOOR AT EACH CAMERA LOCATION. (THE CLOSER TO 12' IS PREFERABLE FOR GREATER FIELD OF VIEW.) ALL RECEPTACLE BOXES IN THE SAME AREA SHALL BE MOUNTED AT THE SAME DISTANCE FROM THE FIXED FLOOR.

8. IN AREAS WHERE CAMERAS ARE TO BE INSTALLED ON BUILDING EXTERIOR, RUN CONDUIT (W/ VIDEO AND POWER CABLING) TO THE **ADJACENT INTERIOR** LOCATION. LEAVE THE REQUESTED **6' EXCESS COIL** OF POWER AND VIDEO CABLE TIED UP AT THE LOCATION. **DO NOT PENETRATE THE WALL**. IF REQUIRED, A 4"X 4" JUNCTION BOX AND SLEEVE WILL BE INSTALLED DURING CAMERA INSTALLATION.

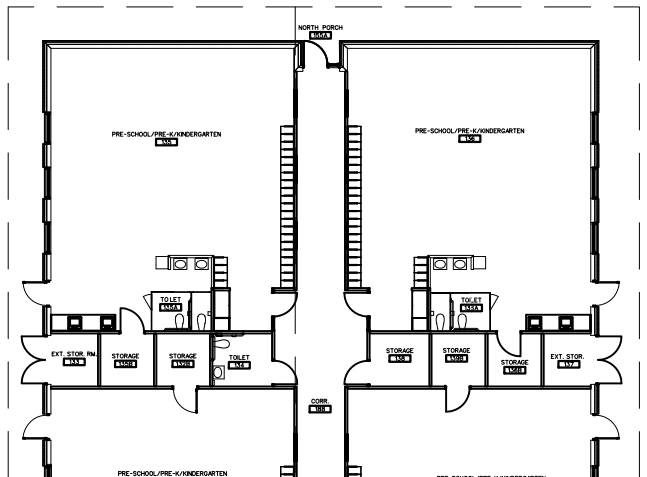
9. REQUEST A #12 SOLID GROUND WIRE AT EACH DESIGNATED EXTERIOR CAMERA LOCATION. SUGGESTED GROUNDING OPTIONS ARE 1) GROUNDING WIRES(S) TO BE ATTACHED TO A GROUNDED CONDUIT RUN, OR 2) RUN GROUNDING WIRE FROM COMM ROOM/SER LOCATION TO EXTERIOR CAMERAS. IF OPTION #2 IS THE METHOD OF GROUNDING, PROVIDE A #6 OR #8 GROUND WIRE FROM COMM ROOM/SE LOCATION TO A POWER PANEL.

10. A 10/100 BASE-T CAT-5E CIRCUIT SHALL BE PROVIDED BETWEEN THE FACILITIES ADMINISTRATOR'S OFFICE AND THE SER LOCATION. A SECOND 10/100 BASE-T CAT-5E CIRCUIT SHALL BE PROVIDED BETWEEN THE REMOTE PVM KEYBOARD LOCATION AT THE RECEPTION DESK AND THE SER. THIS SHALL INCLUDE A TERMINATED RJ-45 RECEPTACLE AT THE ADMINISTRATOR'S OFFICE AND THE REMOTE PVM KEYBOARD LOCATION. AT THE SER, BOTH CIRCUITS SHALL BE UN-TERMINATED WITH 20' EXCESS COILED IN OVERHEAD.

11. A PULL BOX SHALL BE INSTALLED AT THE PVM WITH AN EMT WIRE PATH BETWEEN IT AND THE SER. THIS PATH MAY BE SHARED WITH AN EMT CAMERA PATH TO THE SER. RG-59/U OF THE SAME TYPE AS USED FOR THE CAMERA VIDEO PATH SHALL BE USED FOR THE SIGNAL PATH BETWEEN THE PVM AND SER. THE EMT SHALL BE A MINIMUM OF ONE (1) INCH IN DIAMETER TO THE FIRST PULL BOX OF THE SHARED CAMERA PATH OR HOME RUN TO THE SER AND HAVE A PULL CORD INSTALLED WITHIN THE EMT.

12. HVAC VENT SHOULD NOT BE PLACED ABOVE LOCATION DESIGNATED FOR SER. FORCED HEAT DURING WINTER MONTHS MAY CAUSE OVER-HEATING OF EQUIPMENT.

ASSUMPTIONS (FOR CAMERA PLACEMENT ON DRAWINGS):
ALL CEILINGS ARE EIGHT (8) FEET SUSPENDED TILES UNLESS OTHERWISE NOTED.
ALL FURNITURE AND LANDSCAPE PLACEMENT WILL NOT BLOCK CAMERA VIEWS.
BUILDINGS WILL HAVE "OVERHANGS / SOFFITS" TO ACCOMMODATE EXTERIOR CAMERAS.
EXTERIOR CAMERAS ARE PLACED BASED ON EXPECTED LOCATION OF PLAYGROUNDS.



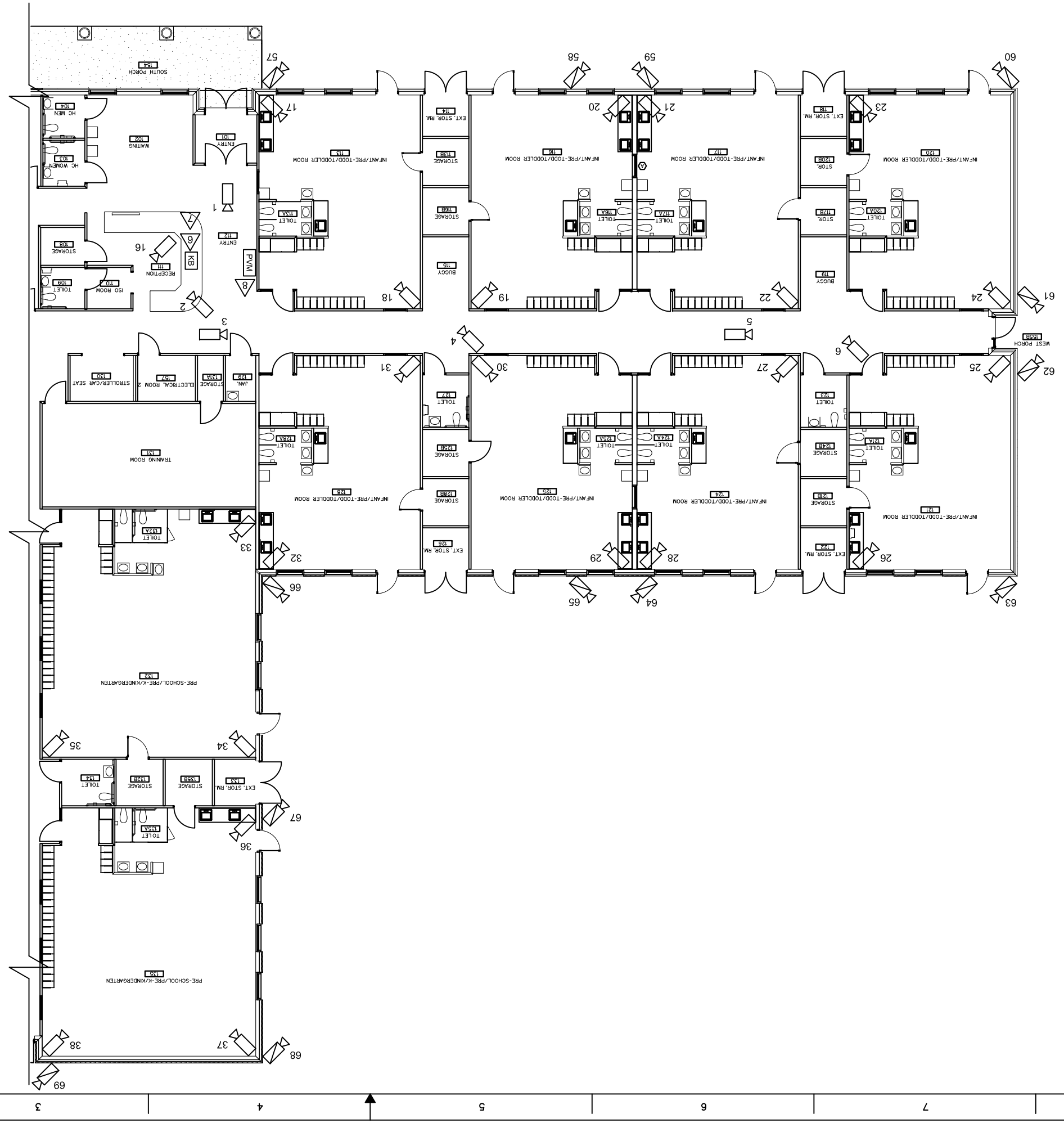
EQUIPMENT ARRANGEMENT OVERALL

STD DESIGN 232 CAPACITY

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

XXXXXX XX

SIZE	CAGE CODE	SPAWAR DRAWING NO.	REV.
D	29355	XXXXXX	—
SCALE: NONE			SHEET 1 OF 3



EQUIPMENT ARRANGEMENT
SECTION A
STD DESIGN 232 CAPACITY

XXXXXX XX

SIZE	CAGE CODE	SPAWAR DRAWING NO.	REV.
D	29355	XXXXXX	—

SCALE: NONE SHEET 2 OF 3

LEGEND:

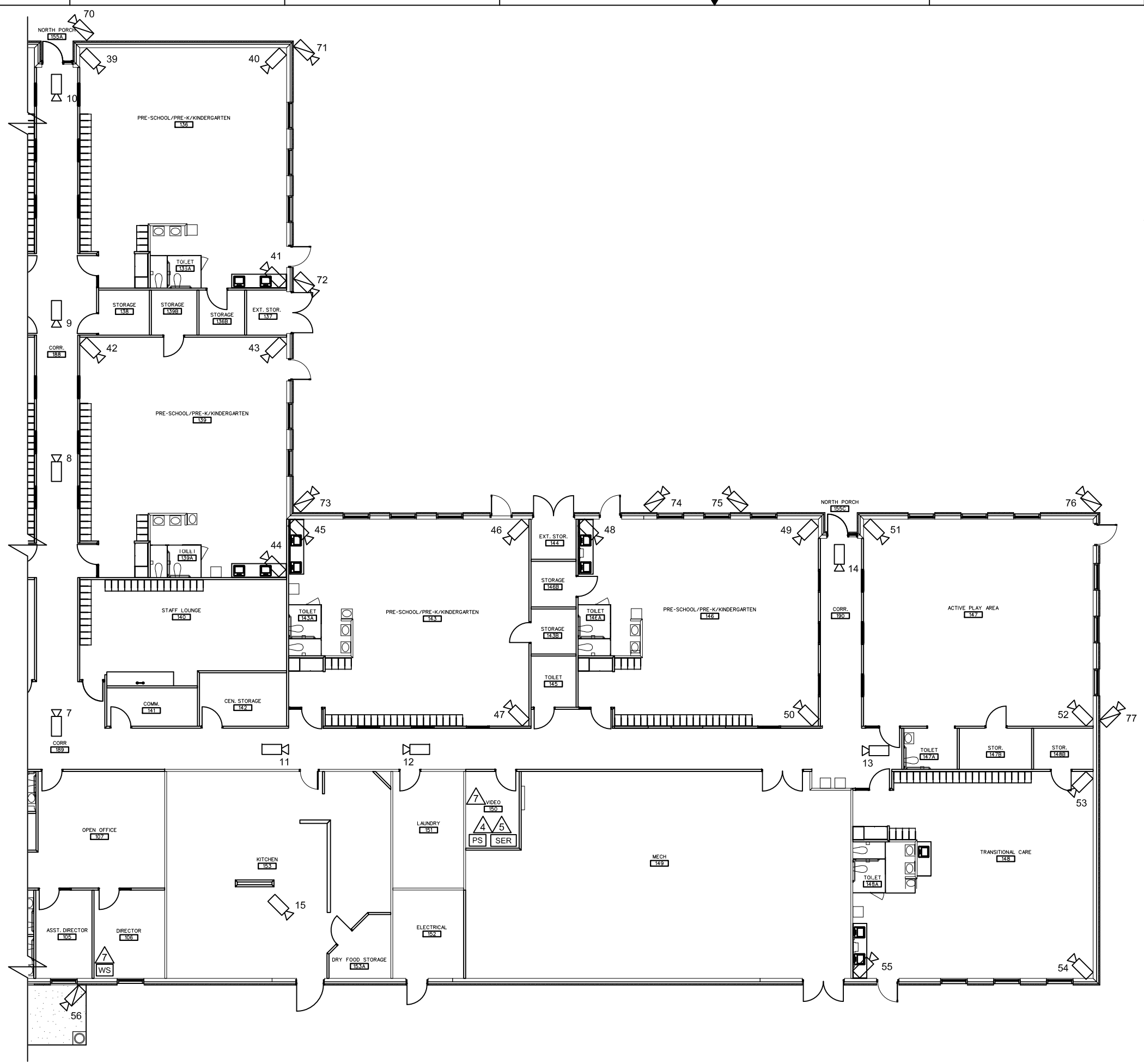
- ITEM NO. IN LIST OF EQUIPMENT
- EQUIPMENT NUMBER
- ITEM NO. IN LIST OF MATERIAL
- INTERIOR FIXED CAMERA W/ ID NO.
- EXTERIOR FIXED CAMERA W/ ID NO.
- SER — SURVEILLANCE EQUIPMENT RACK
- PVM — PARENTAL VIEWING MONITOR
- WS — WORKSTATION
- KB — KEYBOARD
- PS — POWER SUPPLY
- POWER PANEL

1. ALL INTERIOR CAMERAS SHALL HAVE A LENS SIZE OF 2-4MM UNLESS OTHERWISE NOTED.
2. ALL EXTERIOR CAMERAS SHALL HAVE A LENS SIZE OF 2-4MM UNLESS OTHERWISE NOTED.

3. EXTERIOR CAMERAS ARE TO BE INSTALLED IN ALL MULTI-PURPOSE ROOMS/GYMNASIUMS. CAMERAS SHALL HAVE A LENS SIZE OF 2-4MM UNLESS OTHERWISE NOTED.
4. CCTV POWER SUPPLIES (PS) LOCATION (SEE NOTE 1A).
5. SURVEILLANCE EQUIPMENT RACK (SER) LOCATION (SEE NOTE 1C).
6. REMOTE KEYBOARD LOCATION (SEE NOTE 1E).
7. RJ-45 LAN JACK LOCATION (SEE NOTE 10).
8. PARENTAL VIEWING MONITOR (PVM) LOCATION (SEE NOTE 11).

ZONE	REV	DESCRIPTION	DATE	APPROVED

REVISIONS



REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

1. ALL INTERIOR CAMERAS SHALL HAVE A LENS SIZE OF 2-4MM UNLESS OTHERWISE NOTED.

2. ALL EXTERIOR CAMERAS SHALL HAVE A LENS SIZE OF 2-4MM UNLESS OTHERWISE NOTED.

3. EXTERIOR CAMERAS ARE TO BE INSTALLED IN ALL MULTI-PURPOSE ROOMS/GYMNASIUMS. CAMERAS SHALL HAVE A LENS SIZE OF 2-4MM UNLESS OTHERWISE NOTED.

4. CCTV POWER SUPPLIES (PS) LOCATION (SEE NOTE 1A).

5. SURVEILLANCE EQUIPMENT RACK (SER) LOCATION (SEE NOTE 1C).

6. REMOTE KEYBOARD LOCATION (SEE NOTE 1E).

7. RJ-45 LAN JACK LOCATION (SEE NOTE 10).

8. PARENTAL VIEWING MONITOR (PVM) LOCATION (SEE NOTE 11).

LEGEND:

- ITEM NO. IN LIST OF EQUIPMENT
- EQUIPMENT NUMBER
- ITEM NO. IN LIST OF MATERIAL
- INTERIOR FIXED CAMERA W/ ID NO.
- EXTERIOR FIXED CAMERA W/ ID NO.
- SER — SURVEILLANCE EQUIPMENT RACK
- PVM — PARENTAL VIEWING MONITOR
- WS — WORKSTATION
- KB — KEYBOARD
- PS — POWER SUPPLY
- POWER PANEL

EQUIPMENT ARRANGEMENT SECTION B

STD DESIGN 232 CAPACITY

XXXXXX			XX
SIZE	CAGE CODE	SPAWAR DRAWING NO.	REV.
D	29355	XXXXXX	—
SCALE: NONE		SHEET 3 OF 3	

Final Copy - January 07, 2008

ATTACHMENT H

Not Used

ATTACHMENT I

ARMY CHILD DEVELOPMENT CENTERS
PRIMARY COLOR SCHEME

PRIMARY COLOR SCHEME
ARMY CHILD DEVELOPMENT CENTERS

Flooring for Hallways, Arts and Science Activity Room and Activity/ Eating Room

Johnsonite-Tarkett Optima 24" Tiles

#886	**Beluga**
#824	**Yellow Mustard**
# 868	**Cardinal**
# 844	**Winterlake**

Flooring for All Other Activity Rooms

Johnsonite-Tarkett Optima

#886	**Beluga**

Cove Base

Johnsonite

#37 Fog

Carpet (Anti-Static) for Computer Lab/Homework Center

Mannington, Enhanced Texture Loop

Pattern- Motivation
Color-Scrutiny

Quarry Tile for Kitchen

American Olean "Naturals"	**Dal-Tile**
N46 Shadow Gray (Abrasive Grain)	**OT03 Ashen Gray**

Grout for Kitchen Quarry Tile

Custom Building Products – "The Naturals" – 100% Solid Epoxy

#19 Pewter

Ceramic Tile for Kitchen Walls

	Laufen International		**Dal-Tile**
LWBG 301-4	**White Bright Glaze**	**0190**	**Arctic White**

Bathroom Flooring

Natura Floor Tile – "Liberty" (slip resistant)		**Dal-Tile**	
#8613	**Pewter**	**DC05**	**Ice Gray**

Bathroom – Ceramic Tile for Walls

	Laufen International		**Dal-Tile**
LWBG 301-4	**White Bright Glaze**	**0190**	**Arctic White**

SOLID SURFACE MATERIALS & COLORS

Reception Desk Top

Corian

Festival

Counter Tops – Solid Surface

Living Stone

White

PAINT COLOR CHOICES

Pittsburg Paint

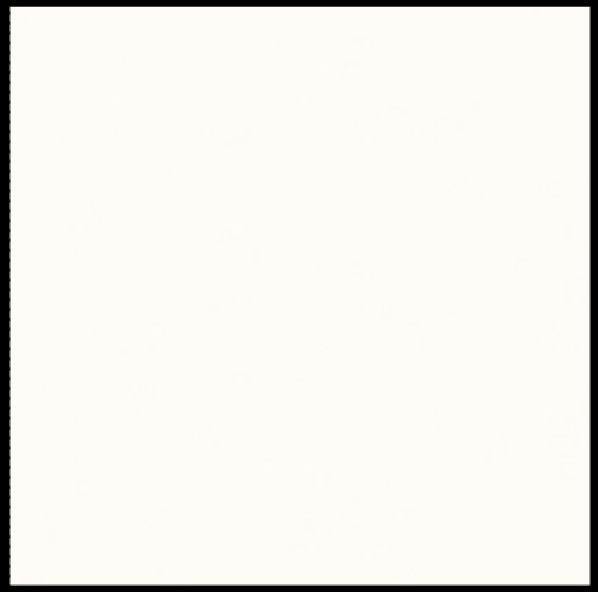
#150-1	**Ocean Breeze**	**#349-1**	**Cityscape**
#112-2	**Banana Pudding**	**#150-2**	**Niagara Falls**
#330-1	**Chantilly Lace**	**#301-1**	**Peaceful Night**
#212-2	**Golden Fleece**	**#408-2**	**Hurricane**
#149-2	**Blue Booties**	**#351-2**	**Blue Pearl**

CDC FACILITIES
PRIMARY FINISH BOARDS

WALL COLORS

PRIMARY

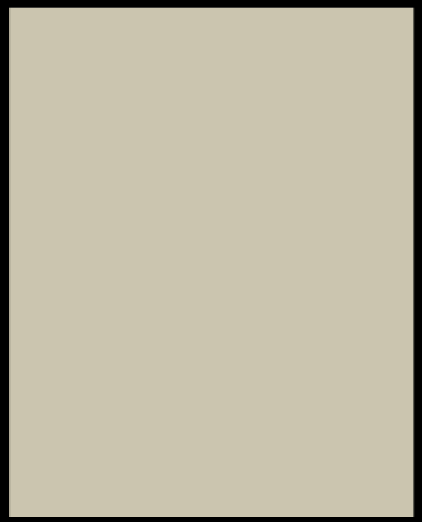
PRIMARY



CORIAN COUNTER TOPS

BATHROOM WALLS

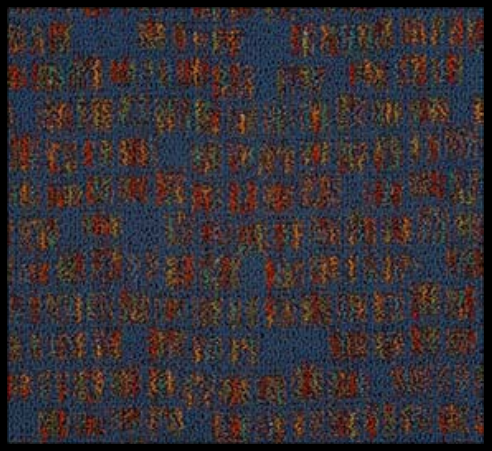
RECEPTION DESK TOP SOLID SURFACE



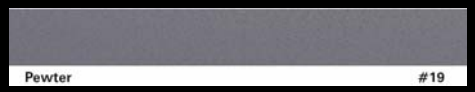
COVE BASE

PRIMARY

BATHROOM FLOORING



CARPET



GROUT FOR TILE

QUARRY TILE FOR KITCHEN

SHEET VINYL

VINYL COMPOSITION TILE

HALLWAYS, ART & SCIENCE, ACTIVITY/EATING ROOM

ATTACHMENT J

Playground/Outdoor Play Areas

Playground/Outdoor Play Areas

Outdoor play areas (playground) serve as extensions of classroom spaces and must be provided to support programming. Playground is to be divided into individual areas to accommodate the different age groups occupying the facility. Separate play areas are required for each age group of children: infant/pre-toddler/toddler and preschool/pre-kindergarten/kindergarten. Area is capable of supporting 50% of the children at any given period of time at a minimum of 100 sq. ft. per child using the outdoor play space. Playgrounds must meet guidelines contained in the Consumer Products Safety Commission (CPSC) Handbook for Public Playground Safety, the American Society for Testing Materials (ASTM) F-1487-93, and meet ADA guidelines for playgrounds (www.access-board.gov). Specific play areas may be defined by several elements. Elements include circulation paths, open play areas/natural turf, age appropriate equipment, play structures, attenuation material for use zones, and fencing. Shade in the outdoor play areas is a requirement for certification.

A playground safety surface shall be provided throughout all use zones and under all play equipment. The safety surface will be unitary or poured in place material. The swing fall attenuation material will be engineered wood fiber, with approved rubber matting at foot contact point underneath the swings. Beneath the infant swings, a unitary safety surface will be used.

Trike paths are a requirement and dual function as an evacuation route, as well as, a play element. Refer to ADA Guidelines for widths of pathways for egress.

Outdoor Play Area must be fenced. All fencing must be vinyl coated chain-link security type minimum 4’ high at the perimeter and 4’ high to sub-divide play areas by age group. Fencing will have gates between the play areas. Exit gate to be provided with adult controlled securing device to allow access for emergency and maintenance vehicles as well as egress from building to a safe, open area.

Hose bibs, 18” above finished grade, are required in each age group play space and must be of the frost/freeze protective type with removable cut off handles with integral vacuum breakers.

Poisonous plants, plants with thorns, and fruit bearing plants are not permitted in the outdoor play areas. Reference: A Field Guide to Venomous Animals and Poisonous Plants (1994)

ATTACHMENT K

Kitchen Equipment

Kitchen Equipment

Description					Equipment Count by Facility Type			Notes
Name	Service	Dimensions			CDC 0-5			
		Width	Length	Height	Small	Medium	Large	
Air Curtain, Unheated	Exterior Door	-	-	-	1	1	1	CFCI
Braising Pan; Gas, 15 Gallon Tilt		-	-	-	1	1		Deleted - Do not include in contract
Braising Pan; Gas, 21 Gallon Tilt		-	-	-	1	1	1	Deleted - Do not include in contract
Cart, Mobile; 3 Shelf		-	-	-	6	12	18	GFGI; Provide applicable space allocation
Cart, Mobile; 4 Shelf		-	-	-	1	2	3	GFGI; Provide applicable space allocation
Dish Table, Clean		?	?	?				CFCI
Dish Table, Clean		30"	84"	34"	1	1	1	CFCI
Dish Table, Soiled; Corner Design		40" & 50"	30"	34"	1	1	1	CFCI
Dish Table, Soiled; SS		?	?	?				CFCI
Dishwasher; Tall Sink Rack		-	-	-	1	1	1	CFCI
Dishwasher, Undercounter		-	-	-				CFCI
Dispenser; Double Box Milk		-	-	-	1	1	1	Deleted - Do not include in contract
Disposal; 1.5 HP, Waste & Pre-Rinse	3 Compartment Sink	-	-	-	1	1	1	CFCI
Disposal; 1.5 HP, Waste & Pre-Rinse	Dish Table, Soiled	-	-	-	1	1	1	CFCI
Dunnage Rack; Single Tier Milk Crate	Walk-In Freezers	-	-	-	1	1	1	CFCI
Exhaust Hood		?	?	?				CFCI
Exhaust Hood; Type I/Face Discharge	Range, Steamer, Oven, Braising Pan	13'-0"	4'-0"	2'-0"	1	1	1	CFCI
Exhaust Hood; Type II	Dishwasher	48"	42"	24"	1	1	1	CFCI
Freezer, Reach-In		59"	38"	85"				GFGI; Provide applicable utilities and space allocation
Freezer, Reach-In; 1 Door		-	-	-				GFGI; Provide applicable utilities and space allocation
Freezer, Reach-In; 3 Section		-	-	-	1			GFGI; Provide applicable utilities and space allocation
Freezer, Walk-In		8'-0"	7'-6"	8'-6"	1			CFCI
Freezer, Walk-In		7'-0"	6'-10"	7'-6"		1		CFCI
Freezer, Walk-In		7'-6"	6'-10"	7'-6"			1	CFCI
Hose Reel; Wall-Mounted	Cart Unload & Wash	-	-	-	1	1	1	CFCI
Ice Machine, Undercounter; SS		-	-	-				GFGI; Provide applicable utilities and space allocation
Microwave	Snack Bar	-	-	-				GFGI; Provide applicable utilities and space allocation
Mixer; 20 Quart; Floor		-	-	-	1			GFGI; Provide applicable utilities and space allocation
Mixer; 30 Quart; Floor		-	-	-		1	1	GFGI; Provide applicable utilities and space allocation
Oven/Heated Cabinet	Food Prep	-	-	-				CFCI
Oven, Electric		40"	39"	65"				CFCI
Oven; Gas, Double Convection		-	-	-			1	CFCI
Oven; Gas, Single Convection		-	-	-	1	1		CFCI
Rack; Aluminum	Pot and Pan Storage, Clean	-	-	-	1	1	1	CFCI
Range, Electric		36"	38"	36"				CFCI
Range; Gas, 6 Burner, Std Oven		-	-	-	1	1	1	CFCI
Refrigerator, Undercounter	Activity Rooms (0-5), Snack Bar (YAC), Kitchen (6-10)	-	-	-	8	15	22	GFGI; Provide applicable utilities and space allocation
Refrigerator, Reach-In; 1 Section		-	-	-	1	1	1	GFGI; Provide applicable utilities and space allocation
Refrigerator, Reach-In; 2 Vertical Doors	Food Prep	-	-	-				GFGI; Provide applicable utilities and space allocation

Kitchen Equipment

Description					Equipment Count by Facility Type			Notes
Name	Service	Dimensions			CDC 0-5			
		Width	Length	Height	Small	Medium	Large	
Refrigerator, Side-by-side or top mount, with built-in icemaker	Break Room	-	-	-	1	1	1	GFGI; Provide applicable utilities and space allocation
Refrigerator, Walk-In		5'-10"	7'-9"	7'-1"				CFCI
Refrigerator, Walk-In		6'-0"	6'-10"	7'-6"		1		CFCI
Refrigerator, Walk-In		7'-6"	6'-10"	7'-6"			1	CFCI
Shelf; Elevated, w/Utensil Rack	Food Prep	22"	72"	7'-6"	1	1	1	CFCI
Shelf	Food Prep	12"	72"	-				CFCI
Shelf		18"	96"	-				CFCI
Shelf	Dry Storage	12"	114"	-				CFCI
Shelf, Wire	Dry Storage	24"	48"	-				CFCI
Shelf, Wire	Dry Storage	24"	54"	-				CFCI
Shelf, Chrome Wire	Dry Storage	18"	36"	-	4	4	4	CFCI
Shelf, Chrome Wire	Dry Storage	18"	42"	-	1	1	1	CFCI
Shelf, Chrome Wire	Dry Storage	18"	48"	-	1	1	1	CFCI
Shelf, Epoxy Wire	Walk-In Freezers/Refrigerators	24"	36"	-	1	3	7	CFCI
Shelf, Epoxy Wire	Walk-In Freezers/Refrigerators	18"	36"	-	3	4	2	CFCI
Shelving	Dry Storage	?	?	?				CFCI
Sink, 3-Compartment		10'-0"	2'-6"	2'-10"	1	1	1	CFCI
Sink, Hand; Food Prep		-	-	-	1	1	1	CFCI
Sink, Hand; Ware Washing		-	-	-	1	1	1	CFCI
Spray Assembly, Pre-Rinse; GooseNeck		-	-	-				CFCI
Stand	Supports 20 Quart Mixer	-	-	-	1			CFCI
Steamer, Electric; 1 Compartment, 3 Pan		-	-	-	1	1	1	CFCI
Table, Work; w/Double Sinks	Food Prep	30"	72"	36"	1	1	1	CFCI
Table, Work; w/Drawers Under Shelf	Food Prep	30"	72"	36"	2	1	1	CFCI
Table, Work; w/Drawers Under Shelf	Food Prep	30"	96"	36"		1	1	CFCI
Table; w/Drawers Under Shelf	Milk Dispenser	30"	60"	36"	1			CFCI
Table; w/Drawers Under Shelf	Milk Dispenser	30"	72"	36"		1	1	CFCI
Wall Shelf; Stainless Steel Wire	3 Compartment Sink	12"	36"	-	2	2	2	CFCI
Waste Barrel	Dish Table, Soiled	-	-	-	1	1	1	GFGI; Provide space allocation

Acronyms:

CFCI Contractor Furnished, Contractor Installed
GFGI Government Furnished, Government Installed

4.0 APPLICABLE CRITERIA

4.1. INDUSTRY CRITERIA

Applicable design and construction criteria references are listed in Table 1 below. Unless a specific document version or date is indicated, criteria shall be taken from the most current references as of the date of issue of the contract. This list is not intended to include all criteria that may apply or to restrict design and construction to only those references listed. See also Paragraph 3 for additional facility-specific applicable criteria.

Table 1: Industry Criteria

Air Conditioning and Refrigeration Institute (ARI)	
ARI 310/380	Packaged Terminal Air-Conditioners and Heat Pumps
ARI 440	Room Fan-Coil and Unit Ventilator
ANSI/ARI 430-99	Central Station Air Handling Units
ARI 445	Room Air-Induction Units
ARI 880	Air Terminals
Air Movement and Control Association (AMCA)	
AMCA 210	Laboratory Methods of Testing Fans for Rating
American Architectural Manufacturers Association (AAMA)	
AAMA 605	Voluntary Specification Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels
AAMA 607.1	Voluntary Guide Specifications and Inspection Methods for Clear Anodic Finishes for Architectural Aluminum
AAMA 1503	Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors, and Glazed Wall Sections
American Association of State Highway and Transportation Officials (AASHTO)	
	Roadside Design Guide [guardrails, roadside safety devices]
	Standard Specifications for Transportation Materials and Methods of Sampling and Testing [Road Construction Materials]
	Standard Specifications for Structural Supports for Highway Signs,

	Luminaries and Traffic Signals
	Guide for Design of Pavement Structures, Volumes 1 and 2 [pavement design guide]
	A Policy of Geometric Design of Highways and Streets
American Bearing Manufacturers Association (AFBMA)	
AFBMA Std. 9	Load Ratings and Fatigue Life for Ball Bearings
AFBMA Std. 11	Load Ratings and Fatigue Life for Roller Bearings
American Boiler Manufacturers Association (ABMA)	
ABMA ISEI	Industry Standards and Engineering Information
American Concrete Institute	
ACI 318	Building Code Requirements for Structural Concrete
ACI 315	Details and Detailing of Concrete Reinforcement
ACI 530	Building Code Requirements for Masonry Structures
ADA Standards for Accessible Design	
	28 CFR Part 36
American Institute of Steel Construction (AISC)	
	Manual of Steel Construction – 13th Edition (or latest version)
American Iron and Steel Institute	
AISI/COS NASPEC 2001	North American Specification for the Design of Cold-Formed Steel Structural Members
American National Standards Institute 11 (ANSI)	
ANSI Z21.10.1	Gas Water Heaters Vol. 1, Storage water Heaters with Input Ratings of 75,000 Btu per Hour or less
ANSI Z124.3	American National Standard for Plastic Lavatories
ANSI Z124.6	Plastic Sinks

ANSI Z21.45	Flexible Connectors of Other Than All-Metal Construction for Gas Appliances
ANSI/IEEE C2-2007	National Electrical Safety Code
ANSI/AF&PA NDS-2001	National Design Specification for Wood Construction
American Society of Civil Engineers (ASCE)	
ASCE 7	Minimum Design Loads for Buildings and Other Structures
ASCE 37	Design and Construction of Sanitary and Storm Sewers, Manuals and Reports on Engineering Practice [sanitary sewer and storm drain design criteria]
ASCE/SEI 31-03	Seismic Evaluation of Existing Buildings [Existing Building Alteration/Renovation]
ASCE/SEI 41-06	Seismic Rehabilitation of Existing Buildings [Existing Building Alteration/Renovation]
American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)	
ASHRAE 90.1 - 2004	ANSI/ASHRAE/IESNA 90.1, Energy Standard for Buildings Except Low-Rise Residential Buildings
ASHRAE Guideline 1.1	The HVAC Commissioning Process
ASHRAE Hdbk-IP Handbook	Fundamentals I-P Edition
ASHRAE Standard 15	Safety Standard for Refrigeration Systems
ASHRAE Standard 62.1	Ventilation for Acceptable Indoor Air Quality
American Society of Mechanical Engineers International (ASME)	
ASME BPVC SEC VII	Boiler and Pressure Vessel Code: Section VII Recommended Guidelines for the Care of Power Boilers
ASME A17.1	Safety Code for Elevators and Escalators
ASME B 31 (Series)	Piping Codes
American Water Works Association (AWWA)	
	Standards [standards for water line materials and construction]

American Welding Society	
	Welding Handbook
	Welding Codes and Specifications (as applicable to application, see International Building Code for example)
Architectural Woodwork Institute (AWI)	
Version 1.2	AWI Quality Standards 7th Edition
Associated Air Balance Council (AABC)	
AABC MN-1	National Standards for Testing and Balancing Heating, Ventilating, and Air Conditioning Systems
	AABC Associated Air Balance Council Testing and Balance Procedures
ASTM International	
ASTM C1060-90(1997)	Standard Practice for Thermographic Inspection of Insulation Installations in Envelope Cavities of Frame Buildings
ASTM E 779 (2003)	Standard Test Method for Determining Air Leakage Rate by Fan Pressurization
ASTM E1827-96(2002)	Standard Test Methods for Determining Airtightness of Buildings Using an Orifice Blower Door
Builders Hardware Manufacturers Association (BHMA)	
ANSI/BHMA	American National Standards for Builders Hardware
Building Industry Consulting Service International	
	Telecommunications Distribution Methods Manual (TDMM)
	Customer-Owned Outside Plant Design Manual (CO-OSP)
Code of Federal Regulations (CFR)	
49 CFR 192	Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards
10 CFR 430	Energy Conservation Program for Consumer Products

Consumer Electronics Association	
CEA 709.1B	Control Network Protocol Specification
CEA 709.3	Free-Topology Twisted-Pair Channel Specification
CEA 852	Tunneling Component Network Protocols Over Internet Protocol Channels
Electronic Industries Association (EIA)	
ANSI/EIA/TIA 568-B	Structured Cabling Series
ANSI/EIA/TIA 569-B	Commercial Building Standard for Telecommunications Pathways and Spaces
J-STD EIA/TIA 607-A	Commercial Building Grounding and Bonding Requirements for Telecommunications
Federal Highway Administration (FHWA)	
	Manual on Uniform Traffic Control Devices for Streets and Highways [signage and pavement markings for streets and highways]
FHWA-NHI-01-021	Hydraulic Engineering Circular No. 22, Second Edition, URBAN DRAINAGE DESIGN MANUAL
Illuminating Engineering Society of North America (IESNA)	
IESNA RP-1	Office Lighting
IESNA RP-8	Roadway Lighting
IESNA Lighting Handbook	Reference and Application
Institute of Electrical and Electronics Engineers Inc. (IEEE)	
	Standard for Use of the International System of Units (SI): the Modern Metric System
Standard 1100	Recommended Practice for Powering and Grounding Sensitive Electronic Equipment
International Code Council (ICC)	
IBC	International Building Code

	Note: All references in the International Building Code to the International Electrical Code shall be considered to be references to NFPA 70. All references in the International Building Code to the International Fuel Gas Code shall be considered to be references to NFPA 54 and NFPA 58. All references in the International Building Code to the International Fire Code shall be considered to be references to Unified Facilities Criteria (UFC) 3-600-01.
IMC	International Mechanical Code – Note: For all references to “HEATING AND COOLING LOAD CALCULATIONS”, follow ASHRAE 90.1 Note: For all references to “VENTILATION”, follow ASHRAE 62.1
IRC	International Residential Code
IPC	International Plumbing Code
IEC	Energy Conservation Code (IEC) – Deleted DEC 2007- Refer to Paragraph 5, ENERGY CONSERVATION requirements.
IGC	International Gas Code - not applicable. Follow NFPA 54, National Fuel Gas Code and NFPA 58, Liquified Petroleum Gas Code.
International Organization for Standardization (ISO)	
ISO 6781:1983	Qualitative detection of thermal irregularities in building envelopes – infrared method
LonMark International (LonMark)	
LonMark Interoperability Guidelines	(available at www.lonmark.org), including: Application Layer Guidelines, Layer 1-6 Guidelines, and External Interface File (XIF) Reference Guide
LonMark Resource Files	(available at www.lonmark.org), including Standard Network Variable Type (SNVT) definitions
Metal Building Manufacturers Association (MBMA)	
	Metal Building Systems Manual
Midwest Insulation Contractors Association (MICA)	

	National Commercial and Industrial Insulation Standards Manual
National Association of Corrosion Engineers International (NACE)	
NACE RP0169	Control of External Corrosion on Underground or Submerged Metallic Piping Systems
NACE RP0185	Extruded, Polyolefin Resin Coating Systems with Adhesives for Underground or Submerged Pipe
NACE RP0285	Corrosion Control of Underground Storage Tank Systems by Cathodic Protection
NACE RP0286	Electrical Isolation of Cathodically Protected Pipelines
National Electrical Manufacturers Association (NEMA)	
National Environmental Balancing Bureau (NEBB)	
	Procedural Standards Procedural Standards for Testing Adjusting Balancing of Environmental Systems
National Fire Protection Association (NFPA)	
NFPA 10	Standard for Portable Fire Extinguishers
NFPA 13	Installation of Sprinkler Systems
NFPA 13R	Residential Occupancies up to and Including Four Stories in Height Sprinkler Systems
NFPA 14	Standard for the Installation of Standpipes and Hose Systems
NFPA 20	Installation of Centrifugal Fire Pumps
NFPA 24	Standard for the Installation of Private Fire Service Mains and Their Appurtenances [underground fire protection system design]
NFPA 30	Flammable and Combustible Liquids Code
NFPA 30A	Motor Fuel Dispensing Facilities and Repair Garages
NFPA 31	Installation of Oil Burning Equipment
NFPA 54	National Fuel Gas Code

NFPA 58	Liquefied Petroleum Gas Code
NFPA 70	National Electrical Code
NFPA 72	National Fire Alarm Code
NFPA 80	Standard for Fire Doors and Fire Windows
NFPA 90a	Installation of Air Conditioning and Ventilating Systems
NFPA 96	Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations
NFPA 101	Life Safety Code
NFPA 780	Standard for the Installation of Lightning Protection Systems
National Roofing Contractor's Association (NRCA)	
	Roofing and Waterproofing Manual
National Sanitation Foundation, International	
NSF/ANSI Std. 2, 3, 4, 5, 6, 7, 8, 12, 13, 18, 20, 21, 25, 29, 35, 36, 37, 51, 52, 59, 169	Food Equipment Standards
ANSI/UL Std. 73, 197, 471, 621, 763	Food Equipment Standards
CSA Std. C22.2 No. 109, 120, 195	Food Equipment Standards
Occupational Safety and Health Administration (OSHA)	
Title 29, Part 1926	OSHA Construction Industry Standards, Title 29, Code of Federal Regulations, Part 1926, Safety and Health Regulations for Construction
Plumbing and Drainage Institute (PDI)	
PDI G 101	Testing and Rating Procedure for Grease Interceptors with Appendix of Sizing and Installation Data
PDI WH201	Water Hammer Arrestors

Precast Concrete Institute	
PCI Design Handbook	Precast and Prestressed Concrete
Sheet Metal and Air Conditioning Contractor's National Association (SMACNA)	
SMACNA HVAC Duct Construction Standards	HVAC Duct Construction Standards - Metal and Flexible
SMACNA Architectural Manual	Architectural Sheet Metal Manual
SMACNA HVAC TAB	HVAC Systems - Testing, Adjusting and Balancing
State/Local Regulations	
	State Department of Transportation Standard Specifications for Highway and Bridge Construction
	Sedimentation and Erosion Control Design Requirements
	Environmental Control Requirements
	Storm Water Management Requirements
Steel Door Institute (SDI)	
ANSI A250.8/SDI 100	Standard Steel Doors and Frames
Steel Deck Institute	
	SDI Diaphragm Design Manual
Steel Joist Institute	
	Catalog of Standard Specifications and Load Tables for Steel Joists and Joist Girders
Underwriters Laboratories (UL)	
UL 96A	Installation Requirements for Lightning Protection Systems
UL 300	Standard for Safety for Fire Testing of Fire Extinguishing Systems for Protection of Restaurant Cooking Areas

Uniform Federal Accessibility Guidelines (UFAS)	
U.S. Architectural and Transportation Barriers Compliance Board	
U.S. DEPARTMENT OF HEATH AND HUMAN SERVICES	
	FDA National Food Code
U.S. GREEN BUILDING COUNCIL (USGBC)	
LEED-NC	Green Building Rating System for New Construction & Major Renovations, Version 2.2
	Application Guide for Multiple Buildings and On-Campus Building Projects

4.2. MILITARY CRITERIA

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

4.2.1. Energy Policy Act of 2005 (Public Law 109-58)

4.2.2. Executive Order 12770: Metric Usage In Federal Government

(a) Metric design and construction is required except when it increases construction cost. Offeror to determine most cost efficient system of measurement to be used for the project.

4.2.3. TB MED 530: Occupational and Environmental Health Food Sanitation

4.2.4. Unified Facilities Criteria (UFC) 3-410-01FA: Heating, Ventilating, and Air Conditioning - applicable only to the extent specified in paragraph 5, herein.

4.2.5. UFC 3-580-01 Telecommunications Bldg Cabling Systems Planning/Design

4.2.6. UFC 3-600-01 Design: Fire Protection Engineering for Facilities

4.2.7. UFC 4-010-01 DoD Minimum Antiterrorism Standards for Buildings

4.2.8. UFC 4-023-03 Design of Buildings to Resist Progressive Collapse

(a) Options to use tie force method or alternate path design

4.2.9. UFC 4-021-01 Design and O&M: Mass Notification Systems

4.2.10. Technical Guide for Installation Information Infrastructure Architecture (I3A)

(a) Email: DetrickISECI3Aguide@conus.army.mil

4.2.11. U.S. Army Information Systems Engineering Command (USAISEC) TG for the Integration of SECRET Internet Protocol (IP) Router Network (SIPRNET). See Paragraph 3 for applicability to specific facility type. May not apply to every facility.

4.3. PRECEDENCE

In the event of conflict between References and/or Applicable Military Criteria, the most stringent requirement will apply, unless otherwise specifically noted in the contract.

5.0 GENERAL TECHNICAL REQUIREMENTS

This paragraph contains general technical requirements. See also Paragraph 3 for facility-specific technical requirements. Residential or similar grade finishes and materials are not acceptable for inclusion in these buildings, unless otherwise specifically allowed.

5.1. SITE PLANNING AND DESIGN

5.1.1. STANDARDS AND CODES: The site planning and design shall conform to APPLICABLE CRITERIA and to paragraph 6, PROJECT SPECIFIC REQUIREMENTS.

5.1.2. SITE PLANNING OBJECTIVES: Group buildings in configurations that create a sense of community and promote pedestrian use. See paragraph 3 for additional site planning requirements relating to building functions.

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

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

5.1.2.3. Vehicular Circulation. Apply design vehicle templates provided by the American Association of State Highway and Transportation Officials (AASHTO) to the site design. The passenger car class includes passenger cars and light trucks, such as vans and pick-ups. The passenger car template is equivalent to the non-organizational – privately owned vehicle (POV). The truck class template includes single-unit trucks, recreation vehicles, buses, truck tractor-semi-trailer combinations, and trucks or truck tractors with semi-trailers in combination with full trailers. Provide vehicle clearances required to meet traffic safety for emergency vehicles, service vehicles, and moving vans. Provide required traffic control signage Site entrances and site drive aisles shall maximize spacing between drives, incorporate right-angle turns, and limit points of conflict between traffic. Design Services Drives to restrict access to unauthorized vehicles by removable bollards, gates, or other barriers to meet Anti-Terrorism/Force Protection (ATFP) requirements. Orient service drives to building entrances other than the primary pedestrian entry at the front of the building.

5.1.2.4. Provide Emergency Vehicle Access around the facility and shall be in accordance with AT/FP requirements. Maintain a 33-foot clear zone buffer for emergency vehicles, designed to prevent other vehicles from entering the AT/FP standoff to the building.

5.1.2.5. Clear and grub all trees and vegetation necessary for construction; but, save as many trees as possible. Protect trees to be saved during the construction process from equipment.

5.1.3. EXTERIOR SIGNAGE: Provide exterior signage in accordance with Appendix H, Exterior Signage.

5.1.4. EXISTING UTILITIES: Base utilities maps and capacities for this site are included as part of this RFP. See paragraph 6 for more detailed information.

5.2. SITE ENGINEERING

5.2.1. STANDARDS AND CODES: The site engineering shall conform to APPLICABLE CRITERIA.

5.2.2. SOILS:

5.2.2.1. A report has been prepared to characterize the subsurface conditions at the project site and is **appended to these specifications.** The report provides a general overview of the soil and geologic conditions with detailed descriptions at discrete boring locations. The Contractor's team shall include a licensed geotechnical engineer to interpret the report and develop earthwork and foundation recommendations and design parameters in which to base the contractor's design. If any additional subsurface investigation or laboratory analysis is required to better characterize the site or develop the final design, the Contractor shall perform it under the direction of a licensed geotechnical engineer. There will be no separate payment for the cost of additional tests. If differences between the Contractor's additional subsurface investigation and the government provided soils report or the reasonably expected conditions require material revisions in the design, an equitable adjustment may be made, in accordance with the provisions of the Differing Site Conditions clause. The basis for the adjustment would be the design and construction appropriate for the conditions described in the Government furnished report or the reasonably expected conditions, in comparison with any changes required by material differences in the actual conditions encountered, in accordance with the terms of contract clause Differing Site Conditions.

5.2.2.2. The contractor's licensed geotechnical engineer shall prepare a final geotechnical evaluation report, to be submitted along with the first foundation design submittal, as described in Section 01 33 16, *Design After Award*.

5.2.3. VEHICLE PAVEMENTS: (as applicable to the project)

5.2.3.1. Design procedures and materials shall conform to one of the following: 1) the USACE Pavement Transportation Computer Assisted Structural Engineering (PCASE) program, 2) American Association of State Highway and Transportation Officials (AASHTO) or, 3) the applicable state Department of Transportation standards in which the project is located. See paragraph 5.2.2.2 and Section 01 33 16 for required information for the Contractor's geotechnical evaluation report. Regardless of the pavement design, a minimum flexible pavement section shall consist of 2 inches of asphalt and 6 inches of base, unless specifically identified by the Government to be a gravel road. Design roads for a life expectance of 25 years with normal maintenance. Parking area for tactical vehicles (as applicable to the project) shall be Portland Cement Concrete (PCC) rigid pavement design. Military tracked vehicles (as applicable to the project) will be designed IAW USACE PCASE. Traffic estimates for each roadway area will be as shown on the drawings or listed in Section 01 10 00 Paragraph 6.4.1. Pavement markings and traffic signage shall comply with the Installation requirements and with the Manual on Uniform Traffic Control Devices.

5.2.3.2. Parking Requirements.

(a) All handicap POV parking lots (where applicable in the facility specific requirements) shall meet the ADA and ABA Accessibility Guidelines for accessible parking spaces.

(b) Design POV parking spaces for the type of vehicles anticipated, but shall be a minimum of 9 ft by 18 ft for POVs, except for two wheel vehicles.

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

5.2.4. CATHODIC PROTECTION: Provide cathodic protection systems for all underground metallic systems and metallic fittings/portions of non-metallic, underground systems, both inside and outside the building 5 foot line that are subject to corrosion. Coordinate final solutions with the installation to insure an approach that is consistent with installation cathodic protection programs.

5.2.5. UTILITIES: See paragraph 6.4.6 for specific information on ownership of utilities and utility requirements. Meter all utilities (gas, water, and electric, as applicable) to each facility. For Government owned utilities, install meters that are wireless data transmission capable as well as have a continuous manual reading option. All meters will be capable of at least hourly data logging and transmission and provide consumption data for gas, water, and electricity. Gas and electric meters will also provide demand readings based on consumption over a maximum of any 15 minute period. Configure all meters to transmit at least daily even if no receiver for the data is currently available at the time of project acceptance. For privatized utilities, coordinate with the privatization utility(ies) for the proper meter base and meter installation.

5.2.6. PERMITS: The CONTRACTOR shall be responsible for obtaining all permits (local, state and federal) required for design and construction of all site features and utilities.

5.3. ARCHITECTURE AND INTERIOR DESIGN:

This element will be evaluated per APPLICABLE CRITERIA under the quality focus.

5.3.1. STANDARDS AND CODES: The architecture and interior design shall conform to APPLICABLE CRITERIA.

5.3.2. GENERAL: Overall architectural goal is to provide a functional, quality, visually appealing facility that is a source of pride for the installation and delivered within the available budget and schedule.

5.3.3. COMPUTATION OF AREAS: See APPENDIX Q for how to compute gross and net areas of the facility(ies).

5.3.4. BUILDING EXTERIOR: Design buildings to enhance or compliment the visual environment of the Installation. Where appropriate, reflect a human scale to the facility. Building entrance should be architecturally defined and easily seen. When practical, exterior materials, roof forms, and detailing shall be compatible with the surrounding development and adjacent buildings on the Installation and follow locally established architectural themes. Use durable materials that are easy to maintain. Exterior colors shall conform to the Installation requirements. See paragraph 6.

5.3.4.1. Building Numbers: Each building shall have exterior signage permanently attached on two faces of the building indicating the assigned building number or address. Building number signage details and locations shall conform to Appendix H, Exterior Signage.

5.3.5. BUILDING INTERIOR

5.3.5.1. Space Configuration: Arrange spaces in an efficient and functional manner in accordance with area adjacency matrices.

5.3.5.2. Surfaces: Appearance retention is the top priority for building and furniture related finishes. Provide low maintenance, easily cleaned room finishes that are commercially standard for the facility occupancy specified, unless noted otherwise.

5.3.5.3. Color: The color, texture and pattern selections for the finishes of the building shall provide an aesthetically pleasing, comfortable, easily maintainable and functional environment for the occupants. Coordination of the building colors and finishes is necessary for a cohesive design. Color selections shall be appropriate for the building type. The use of color, texture and pattern shall be used to path or way find through the building. Trendy colors that will become dated shall be limited to non-permanent finishes such as carpet and paint. Finishes should be selected with regards to aesthetics, maintenance, durability, life safety and image. Limit the number of similar colors for each material. Color of Ceramic and porcelain tile grout shall be medium range color to help hide soiling. Plastic laminate and solid surface materials shall have patterns that are mottled, flecked or speckled. Finish colors of fire extinguisher cabinets, receptacle bodies and plates, fire alarms / warning lights, emergency lighting, and other miscellaneous items shall be coordinated with the building interior. Color of equipment items on ceilings (speakers, smoke detectors, grills, etc.) shall match the ceiling color.

5.3.5.4. Circulation: Circulation schemes must support easy way finding within the building.

5.3.5.5. Signage: Provide interior signage for overall way finding and life safety requirements. A comprehensive interior plans shall be from one manufacturer and shall include the flowing sign types: (1) Lobby Directory, (2) Directional Signs; (3) Room Identification Signs; (4) Building Service Signs; (5) Regulatory Signs; (6) Official and Unofficial Signs (7) Visual Communication Boards. Use of emblems or logos may also be incorporated into the signage plan.

5.3.5.6. Window Treatment: Interior window treatments with adjustable control shall be provided in all exterior window locations for control of day light coming in windows or privacy at night. Uniformity of treatment color and material shall be maintained to the maximum extent possible within a building.

5.3.6. COMPREHENSIVE INTERIOR DESIGN

5.3.6.1. Comprehensive Interior Design (CID): CID includes the Structural Interior Design (SID) and the Furniture, Fixtures and Equipment (FF&E) Design. SID requires the accommodation of required FF&E within the building and the design, selection and coordination of interior finish materials that are integral to or attached to the building structure. The SID provides basic space planning for anticipated FF&E requirements in conjunction with the functional layout of the building and design issues such as life safety, privacy, acoustics, lighting, ventilation, and accessibility. Completion of a SID involves the selection and specification of applied finishes for the building’s interior features including, but not limited to, walls, floors, ceilings, trims, doors, windows, window treatments, built-in furnishings and installed equipment, lighting, and signage. The SID package will include furniture floor plans, finish schedules, finish samples and any supporting interior elevations, details or plans necessary to communicate the building finish design and build out. The FF&E includes the design, selection, specification, color coordination and procurement documentation of the required items necessary to meet the functional, operational, sustainability, and aesthetic needs of the facility. The FF&E package will include placement plans, ordering and finish information on all freestanding furnishings and accessories, and cost estimates and will be coordinated with the Structural Interior Design (SID) interior finish materials. The selection of furniture style, function and configuration will be coordinated with the defined requirements. Examples of FF&E items are workstations, seating, files, tables, beds, wardrobes, draperies and accessories as well as markerboards, tackboards, and presentation screens. Criteria for furniture selection will include function and ergonomic considerations, maintenance, durability, sustainability, comfort and

cost. Structural Interior Design (SID) is required for all facility types. FF&E package is required as indicated in Paragraphs 2 and 3.

5.3.6.2. Color, Surface and Signage: Provide a signage package for all reception desks if not provided for in the buildings' overall signage package.

5.4. STRUCTURAL DESIGN

5.4.1. STANDARDS AND CODES: The structural design shall conform to APPLICABLE CRITERIA.

5.4.2. GENERAL: The structural system needs to be compatible with the intended functions and components that allows for future flexibility and reconfigurations of the interior space. Select an economical structural system based upon facility size, projected load requirements and local availability of materials and labor. Base the structural design on accurate, site specific geotechnical information and anticipated loads for the building types and geographical location. If the state that the project is located in requires separate, specific licensing for structural engineers (for instance, such as in Florida, California and others), then the structural engineer designer of record must be registered in that state.

5.4.3. LOADS: See paragraph 3 for facility specific (if applicable) and paragraph 6 for site and project specific structural loading criteria.

5.5. THERMAL PERFORMANCE

5.5.1. STANDARDS AND CODES: Building construction and thermal insulation for mechanical systems shall conform to APPLICABLE CRITERIA.

5.5.2. BUILDING ENVELOPE SEALING PERFORMANCE REQUIREMENT. Design and construct the building envelope for office buildings, office portions of mixed office and open space (e.g., company operations facilities), dining, barracks and instructional/training facilities with a continuous air barrier to control air leakage into, or out of, the conditioned space. Clearly identify all air barrier components of each envelope assembly on construction documents and detail the joints, interconnections and penetrations of the air barrier components. Clearly identify the boundary limits of the building air barriers, and of the zone or zones to be tested for building air tightness on the drawings.

5.5.2.1. Trace a continuous plane of air-tightness throughout the building envelope and make flexible and seal all moving joints.

5.5.2.2. The air barrier material(s) must have an air permeance not to exceed 0.004 cfm / sf at 0.3" wg [0.02 L/s.m2 @ 75 Pa] when tested in accordance with ASTM E 2178

5.5.2.3. Join and seal the air barrier material of each assembly in a flexible manner to the air barrier material of adjacent assemblies, allowing for the relative movement of these assemblies and components.

5.5.2.4. Support the air barrier so as to withstand the maximum positive and negative air pressure to be placed on the building without displacement, or damage, and transfer the load to the structure.

5.5.2.5. Seal all penetrations of the air barrier. If any unavoidable penetrations of the air barrier by electrical boxes, plumbing fixture boxes, and other assemblies are not airtight, make them airtight by sealing the assembly and the interface between the assembly and the air barrier or by extending the air barrier over the assembly.

5.5.2.6. The air barrier must be durable to last the anticipated service life of the assembly.

5.5.2.7. Do not install lighting fixtures with ventilation holes through the air barrier

5.5.2.8. Provide a motorized damper in the closed position and connected to the fire alarm system to open on call and fail in the open position for any fixed open louvers such as at elevator shafts.

5.5.2.9. Damper and control to close all ventilation or make-up air intakes and exhausts, atrium smoke exhausts and intakes, etc when leakage can occur during inactive periods.

5.5.2.10. Compartmentalize garages under buildings by providing air-tight vestibules at building access points.

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

5.5.2.12. Performance Criteria and Substantiation: Submit the qualifications and experience of the testing entity for approval. Demonstrate performance of the continuous air barrier for the opaque building envelope by the following tests:

(a) Test the completed building and demonstrate that the air leakage rate of the building envelope does not exceed 0.25cfm/ft2 at a pressure differential of 0.3” w.g.(75 Pa) in accordance with ASTM’s E 779 (2003) or E-1827-96 (2002). Accomplish tests using either pressurization or depressurization or both. Divide the volume of air leakage in cfm @ 0.3” w.g. (L/s @ 75 Pa) by the area of the pressure boundary of the building, including roof or ceiling, walls and floor to produce the air leakage rate in cfm/ft2 @ 0.3” w.g. (L/s.m2 @ 75 Pa). Do not test the building until verifying that the continuous air barrier is in place and installed without failures in accordance with installation instructions so that repairs to the continuous air barrier, if needed to comply with the required air leakage rate, can be done in a timely manner.

(b) Test the completed building using Infrared Thermography testing. Use infrared cameras with a resolution of 0.1deg C or better. Perform testing on the building envelope in accordance with ISO 6781:1983 and ASTM C1060-90(1997). Determine air leakage pathways using ASTM E 1186-03 Standard Practices for Air Leakage Site Detection in Building Envelopes and Air Barrier Systems, and perform corrective work as necessary to achieve the whole building air leakage rate specified in (a) above. (c) Notify the Government at least three working days prior to the tests to provide the Government the opportunity to witness the tests. Provide the Government written test results confirming the results of all tests.

5.6. PLUMBING

5.6.1. STANDARDS AND CODES: The plumbing system shall conform to APPLICABLE CRITERIA.

5.6.2. PRECAUTIONS FOR EXPANSIVE SOILS: Where expansive soils are present, the design for underslab piping systemsand underground piping serving chillers, cooling towers, etc, shall include features to control forces resulting from soil heave. Some possible solutionsinclude, but are not necessarilylimited to, features such as flexible expansion joints, slip joints, horizontal offsets with ball joints, or multiple bell and spigot gasketed fittings. For structurally supported slabs, piping should be suspended from the structure with adequate space provided below the pipe for the anticipated soil movement.

5.7. ELECTRICAL AND TELECOMMUNICATIONS SYSTEMS

5.7.1. STANDARDS AND CODES: The electrical systems for all facilities shall conform to APPLICABLE CRITERIA.

5.7.2. MATERIALS AND EQUIPMENT: Materials, equipment and devices shall, as a minimum, meet the requirements of Underwriters Laboratories (UL) where UL standards are established for those items. Wiring for branch circuits shall be copper. Motors larger than one-half horsepower shall be three phase. All electrical systems shall be pre-wired and fully operational unless otherwise indicated. Wall mounted electrical devices (power receptacles, communication outlets and CATV outlets) shall have matching colors, mounting heights and faceplates.

5.7.3. POWER SERVICE: Primary service from the base electrical distribution system to the pad-mounted transformer and secondary service from the transformer to the building service electrical equipment room shall be underground. See paragraph 6 for additional site electrical requirements.

5.7.3.1. Spare Capacity: Provide 10% space for future circuit breakers in all panelboards serving residential areas of buildings and 15% spaces in all other panelboards.

5.7.4. TELECOMMUNICATION SERVICE: The project's facilities must connect to the Installation telecommunications (voice and data) system through the outside plant (OSP) telecommunications underground infrastructure cabling system per I3A guidance. Connection to the OSP cabling system shall be from each facility main cross connect located in the telecommunications room.

5.7.5. LIGHTING: Lighting shall comply with the recommendations of the Illumination Engineering Society of North America (IESNA).

5.7.5.1. Interior Lighting: Interior lighting shall utilize electronic ballast and energy efficient fluorescent lamps with a Correlated Color Temperature of 4100K. Compact fluorescent fixtures shall have a Color Rendering Index of (CRI) of 82 or higher. Linear fluorescent fixtures shall have a CRI of 85 or higher. Fluorescent lamps shall be the low mercury type qualifying as non-hazardous waste upon disposal. Surface mounted fixtures shall not be used on acoustical tile ceilings. An un-switched fixture with emergency ballast shall be provided at each entrance to the building.

5.7.6. TELECOMMUNICATION SYSTEM: All building telecommunications cabling systems (BCS) and OSP telecommunications cabling system shall conform to APPLICABLE CRITERIA to include I3A Technical Guide and the UFC 3-580-01 Telecommunications Bldg Cabling Systems Planning/Design. An acceptable BCS encompasses, but is not limited to, copper and fiber optic (FO) entrance cable, termination equipment, copper and fiber backbone cable, copper and fiber horizontal distribution cable, workstation outlets, racks, cable management, patch panels, cable tray, cable ladder, conduits, grounding, and labeling.. Items included under OSP infrastructure encompass, but are not limited to, manhole and duct infrastructure, copper cable, fiber optic cable, cross connects, terminations, cable vaults, and copper and FO entrance cable.

5.7.6.1. Design, install, label and test all telecommunications systems in accordance with the I3A Guide and TIA/EIA 568, 569, and 606. A Registered Communications Distribution Designer (RCDD) with 2 yrs related experience or person with 5 yrs related experience shall develop and stamp telecommunications design, and prepare the test plan.

5.7.6.2. The installers assigned to the installation of the telecommunications system or any of its components shall be regularly and professionally engaged in the business of the application, installation and testing of the specified telecommunications systems and equipment. Key personnel; i.e., supervisors and lead installers assigned to the installation of this system or any of its components shall be Building Industry Consulting Services International (BICSI) Registered Cabling Installers, Technician Level. Submit documentation of current BICSI certification for each of the key personnel. In lieu of

BICSI certification, supervisors and installers shall have a minimum of 5 years experience in the installation of the specified copper and fiber optic cable and components. They shall have factory or factory approved certification from each equipment manufacturer indicating that they are qualified to install and test the provided products.

5.7.7. LIGHTNING PROTECTION SYSTEM: Provide a lightning protection system where recommended by the Lightning Risk Assessment of NFPA 780, Annex L.

5.8. HEATING, VENTILATING, AND AIR CONDITIONING

5.8.1. STANDARDS AND CODES: The HVAC system shall conform to APPLICABLE CRITERIA.

5.8.2. DESIGN CONDITIONS.

5.8.2.1 Outdoor and indoor design conditions shall be in accordance with UFC 3-410-01FA. Outdoor air and exhaust ventilation requirements for indoor air quality shall be in accordance with ASHRAE 62.1.

5.8.2.2 Design systems in geographical areas that meet the definition for high humidity in UFC 3-410-01FA in accordance with the special criteria for humid areas therein.

5.8.2.3 Cooling equipment may be oversized by up to 15 percent to account for recovery from night setforward. Heating equipment may be oversized by up to 30 percent to account for recovery from night setback. Design single zone systems and multi-zone systems to maintain an indoor design condition of 50% relative humidity for cooling only. For heating only where the indoor relative humidity is expected to fall below 20% for extended periods, add humidification to increase the indoor relative humidity to 30%. Where fan coil units are used, provide a non-permeable wall covering behind the unit. Provide ventilation air from a separate dedicated air handling unit. Do not condition outside air through fan coil units. Avoid the use of direct expansion cooling coils in air handling units with constant running fans that handle outside air.

5.8.3. BUILDING AUTOMATION SYSTEM. Provide a Building Automation System consisting of a building control network , and integrate the building control network into the UMCS as specified.

The building control network shall be a single complete non-proprietary Direct Digital Control (DDC) system for control of the heating, ventilating and air conditioning (HVAC) systems as specified herein. The building control network shall be an Open implementation of LonWorks® technology using ANSI/EIA 709.1B as the only communications protocol and use only LonMark Standard Network Variable Types (SNVTs), as defined in the LonMark® Resource Files, for communication between DDC Hardware devices to allow multi-vendor interoperability.

5.8.3.1. The building automation system shall be open in that it is designed and installed such that the Government or its agents are able to perform repair, replacement, upgrades, and expansions of the system without further dependence on the original Contractor. This includes, but is not limited to the following:

(a) Install hardware such that individual control equipment can be replaced by similar control equipment from other equipment manufacturers with no loss of system functionality.

(b) Necessary documentation (including rights to documentation and data), configuration information, configuration tools, programs, drivers, and other software shall be licensed to and otherwise remain with the Government such that the Government or its agents are able to perform repair, replacement, upgrades, and expansions of the system without subsequent or future dependence on the Contractor.

5.8.3.2. All DDC Hardware shall:

(a) Be connected to a TP/FT-10 ANSI/EIA 709.3 control network.

(b) Communicate over the control network via ANSI/EIA 709.1B exclusively.

(c) Communicate with other DDC hardware using only SNVTs

(d) Conform to the LonMark® Interoperability Guidelines.

(e) Be locally powered; link power (over the control network) is not acceptable.

(f) Be fully configurable via standard or user-defined configuration parameter types (SCPT or UCPT), standard network variable type (SNVT) network configuration inputs (*nci*), or hardware settings on the controller itself to support the application. All settings and parameters used by the application shall be configurable via standard or user-defined configuration parameter types (SCPT or UCPT), standard network variable type (SNVT) network configuration inputs (*nci*), or hardware settings on the controller itself

(g) Provide input and output SNVTs required to support monitoring and control (including but not limited to scheduling, alarming, trending and overrides) of the application. Required SNVTs include but are not limited to: SNVT outputs for all hardware I/O, SNVT outputs for all setpoints and SNVT inputs for override of setpoints.

(h) To the greatest extent practical, not rely on the control network to perform the application..

5.8.3.3. Controllers shall be Application Specific Controllers whenever an ASC suitable for the application exists. When an ASC suitable for the application does not exist use programmable controllers or multiple application specific controllers.

5.8.3.4. Application Specific Controllers shall be LonMark Certified whenever a LonMark Certified ASC suitable for the application exists. For example, VAV controllers must be LonMark certified.

5.8.3.5. Application Specific Controllers (ASCs) shall be configurable via an LNS plug-in whenever t an ASC with an LNS plug-in suitable for the application exists.

5.8.3.6. Each scheduled system shall accept a network variable of type SNVT_occupancy and shall use this network variable to determine the occupancy mode. If the system has not received a value to this network variable for more than 60 minutes it shall default to a configured occupancy schedule.

5.8.3.7. Gateways may be used provided that each gateway communicates with and performs protocol translation for control hardware controlling one and only one package unit.

5.8.3.8. Not Used

5.8.3.9. Perform all necessary actions needed to fully integrate the building control system. These actions include but are not limited to:

• Configure M&C Software functionality including: graphical pages for System Graphic Displays including overrides, alarm handling, scheduling, trends for critical values needing long-term or permanent monitoring via trends, and demand limiting.

• Install IP routers or ANSI/CEA-852 routers as needed to connect the building control network to the UMCS IP network. Routers shall be capable of configuration via DHCP and use of an ANSI/CEA-852 configuration server but shall not rely on these services for configuration. All communication between the UMCS and building networks shall be via the ANSI/CEA-709.1B protocol over the IP network in accordance with ANSI/CEA-852.

5.8.3.10. Provide the following to the Government for review prior to acceptance of the system:

• The latest version of all software and user manuals required to program, configure and operate the system.

• Points Schedule drawing that shows every DDC Hardware device. The Points Schedule shall contain the following information as a minimum:

o Device address and NodeID.

o Input and Output SNVTs including SNVT Name, Type and Description.

o Hardware I/O, including Type (AI, AO, BI, BO) and Description.

o Alarm information including alarm limits and SNVT information.

o Supervisory control information including SNVTs for trending and overrides.

o Configuration parameters (for devices without LNS plug-ins)

Example Points Schedules are available at https://eko.usace.army.mil/fa/besc/

• Riser diagram of the network showing all network cabling and hardware. Label hardware with ANSI.CEA-709.1 addresses, IP addresses, and network names.

• Control System Schematic diagram and Sequence of Operation for each HVAC system.

• Operation and Maintenance Instructions including procedures for system start-up, operation and shut-down, a routine maintenance checklist, and a qualified service organization list.

• LonWorks® Network Services (LNS®) database for the completed system.

• Quality Control (QC) checklist (below) completed by the Contractor's Chief Quality Control (QC) Representative

Table 5-1: QC Checklist

Instructions: Initial each item, sign and date verifying that the requirements have been met.		
#	Description	Initials
1	All DDC Hardware is installed on a TP/FT-10 local control bus.	
2	Communication between DDC Hardware is only via EIA 709.1B using SNVTs. Other protocols and network variables other than SNVTs have not been used.	
3	All sequences are performed using DDC Hardware.	
4	LNS Database is up-to-date and accurately represents the final installed system	
5	All software has been licensed to the Government	
6	M&C software monitoring displays have been created for all building systems, including all override and display points indicated on Points Schedule drawings.	
7	Final As-built Drawings accurately represent the final installed system.	
8	O&M Instructions have been completed and submitted.	
9	Connections between the UMCS IP network and ANSI/CEA-709.1B building networks are through ANSI/CEA-852 Routers.	
By signing below I verify that all requirements of the contract, including but not limited to the above, been met.		
Signature:_____ Date:_____		

5.8.3.11. Perform a Performance Verification Test (PVT) under Government supervision prior to system acceptance. During the PVT demonstrate that the system performs as specified, including but not limited to demonstrating that the system is Open and correctly performs the Sequences of Operation.

5.8.3.12. Provide a 1 year unconditional warranty on the installed system and on all service call work. The warranty shall include labor and material necessary to restore the equipment involved in the initial service call to a fully operable condition.

5.8.3.13. Provide training at the project site on the installed building system Upon completion of this training each student, using appropriate documentation, should be able to start the system, operate the system, recover the system after a failure, perform routine maintenance and describe the specific hardware, architecture and operation of the system.

5.8.4. TESTING, ADJUSTING AND BALANCING. Test and balance air and hydronic systems, using a firm certified for testing and balancing by the Associated Air Balance Council (AABC), National Environmental Balancing Bureau (NEBB), or the Testing Adjusting, and Balancing Bureau (TABB). The prime contractor shall hire the TAB firm directly, not through a subcontractor. Perform TAB in accordance with the requirements of the standard under which the TAB Firm's qualifications are approved, i.e., AABC MN-1, NEBB TABES, or SMACNA HVACTAB unless otherwise specified herein. All recommendations and suggested practices contained in the TAB Standard shall be considered mandatory. Use the provisions of the TAB Standard, including checklists, report forms, etc., as nearly as practicable to satisfy the Contract requirements. Use the TAB Standard for all aspects of TAB, including qualifications for the TAB Firm and Specialist and calibration of TAB instruments. Where the instrument manufacturer calibration recommendations are more stringent than those listed in the TAB Standard, adhere to the manufacturer's recommendations. All quality assurance provisions of the TAB Standard such as performance guarantees shall be part of this contract. For systems or system components not covered in the TAB Standard, the TAB Specialist shall develop TAB procedures. Where new procedures, requirements, etc., applicable to the Contract requirements have been published or adopted by the body responsible for the TAB Standard used (AABC, NEBB, or TABB), the requirements and recommendations contained in these procedures and requirements are mandatory.

5.8.5. COMMISSIONING: Commission all HVAC systems and equipment, including controls, and all systems requiring commissioning for LEED Fundamental commissioning, in accordance with ASHRAE Guideline 1.1 and LEED. The Contractor shall hire the Commissioning Authority, certified as a Commissioning Authority by AABC, NEBB, or TABB, as

described in Guideline 1.1 The Contracting Officer's Representative will act as the Owner's representative in performance of duties spelled out under OWNER in Annex A2 of ASHRAE Guideline 1.1

5.9. ENERGY CONSERVATION

5.9.1. The building including the building envelope, HVAC systems, service water heating, power, and lighting systems shall meet the Mandatory Provisions and the Prescriptive Path requirements of ASHRAE 90.1-2004. Substantiation requirements are defined in Section 01 33 16, Design After Award.

5.9.2. Design all building systems and elements to meet the minimum requirements of ANSI/ASHRAE/IESNA 90.1-2004. Design the buildings, including the building envelope, HVAC systems, service water heating, power, and lighting systems to achieve an energy consumption that is at least 30% below the consumption of a baseline building meeting the minimum requirements of ANSI/ASHRAE/IESNA Standard 90.1-2004. Energy calculation methodologies and substantiation requirements are defined in Section 01 33 16, Design After Award.

5.9.3. Purchase Energy Star or FEMP designated products. The term "Energy Star product" means a product that is rated for energy efficiency under an Energy Star program. The term "FEMP designated product" means a product that is designated under the Federal Energy Management Program of the Department of Energy as being among the highest 25 percent of equivalent products for energy efficiency. When selecting integral sized electric motors, choose NEMA PREMIUM type motors that conform to NEMA MG 1, minimum Class F insulation system. Motors with efficiencies lower than the NEMA PREMIUM standard may only be used in unique applications that require a high constant torque speed ratio (e.g., inverter duty or vector duty type motors that conform to NEMA MG 1, Part 30 or Part 31).

5.9.4. Solar Hot Water Heating. Provide at least 30% of the domestic hot water requirements through solar heating methodologies, unless the results of a Life Cycle Cost Analysis (LCCA) developed utilizing the Building Life Cycle Cost Program (BLCC) or the Life Cycle Cost in Design (LCCID) Program which demonstrates that the solar hot water system is not life cycle cost effective in comparison with other hot water heating systems. The type of system will be established during the contract or task order competition and award phase, including submission of an LCCA for government evaluation to justify non-selection of solar hot water heating. The LCCA uses a study period of 25 years and the Appendix K utility cost information. The LCCA shall include life cycle cost comparisons to a baseline system to provide domestic hot water without solar components, analyzing at least three different methodologies for providing solar hot water to compare against the baseline system.

5.10. FIRE PROTECTION

5.10.1. STANDARDS AND CODES The fire protection system shall conform to APPLICABLE CRITERIA.

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

5.10.3. Fire Extinguisher Cabinets: Provide fire extinguisher cabinets and locations for hanging portable fire extinguishers in accordance with NFPA 10 Standard for Portable Fire Extinguishers.

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

5.10.5. Fire Protection Engineer Qualifications: In accordance with UFC 3-600-01, FIRE PROTECTION ENGINEERING FOR FACILITIES**,** the fire protection engineer of record shall be a registered professional engineer (P.E.) who has passed the fire protection engineering written examination administered by the National Council of Examiners for Engineering and Surveys (NCEES), or a registered P.E. in a related engineering discipline with a minimum of 5 years experience, dedicated to fire protection engineering that can be verified with documentation.

5.11. SUSTAINABLE DESIGN

5.11.1. STANDARDS AND CODES: Sustainable design shall conform to APPLICABLE CRITERIA.

5.11.2. LEED RATING AND VALIDATION: Except where indicated otherwise in Paragraph PROJECT-SPECIFIC REQUIREMENTS, the following is required: The minimum requirement for the project is to achieve Silver level of Leadership in Energy and Environmental Design (LEED) rating. Each non-exempt facility (building plus sitework) must achieve this level. The project is required to be registered with the US Green Building Council (USGBC) and use the LEED Letter Templates for project documentation. The LEED-NC Application Guide for Multiple Buildings and On-Campus Building Projects applies to all projects with multiple facilities. Solutions which conserve energy, and improve livability are encouraged. See Paragraph PROJECT-SPECIFIC REQUIREMENTS for facilities that are exempt from the minimum Silver rating, for additional information on USGBC registration, for USGBC certification requirements and for other project-specific information.

5.11.3. Optimize Energy Performance: Project must earn, as a minimum, the points associated with compliance with paragraph ENERGY CONSERVATION.

5.11.4. COMMISSIONING. See paragraph 5.8.5 COMMISSIONING for commissioning requirements. USACE templates for the required Basis of Design document and Commissioning Plan documents are available at http://en.sas.usace.army.mil (click on Engineering Criteria) and may be used at Contractor’s option.

5.12. CONSTRUCTION AND DEMOLITION (C&D) WASTE MANAGEMENT: Achievement of 50% diversion, by weight, of all non-hazardous C&D waste debris is required. Reuse of excess soils, recycling of vegetation, alternative daily cover, and wood to energy are not considered diversion in this context, however the Contractor must tracked and report it. A waste management plan and waste diversion reports are required, as detailed in Section 01 57 20.00 10, ENVIRONMENTAL PROTECTION.

5.13. SECURITY (ANTI-TERRORISM STANDARDS): Unless otherwise specified in Project Specific Requirements, only the minimum protective measures as specified by the current Department of Defense Minimum Antiterrorism Standards for Buildings, UFC 4-010-01, are required for this project. The element of those standards that has the most significant impact on project planning is providing protection against explosives effects. That protection can either be achieved using conventional construction (including specific window requirements) in conjunction with establishing relatively large standoff distances to parking, roadways, and installation perimeters or through building hardening, which will allow lesser standoff distances.

Even with the latter, the minimum standoff distances cannot be encroached upon. These setbacks will establish the maximum buildable area. All standards in Appendix B of UFC 4-010-01 must be followed and as many of the recommendations in Appendix C that can reasonably be accommodated should be included. The facility requirements listed in these specifications assume that the minimum standoff distances can be met, permitting conventional construction. Lesser standoff distances (with specific minimums) are not desired, however can be provided, but will require structural hardening for the building. See Project Specific Requirements for project specific siting constraints. The following list highlights the major points but the detailed requirements as presented in Appendix B of UFC 4-010-01 must be followed.

(a) Standoff distance from roads, parking and installation perimeter; and/or structural blast mitigation

(b) Blast resistant windows and skylights, including glazing, frames, anchors, and supports

(c) Progressive collapse resistance for all facilities 3 stories or higher

(d) Mass notification system (shall also conform to UFC 4-021-01, Mass Notification Systems)

(e) For facilities with mailrooms (see paragraph 3 for applicability) – mailrooms have separate HVAC systems and are sealed from rest of building

6.0 PROJECT SPECIFIC REQUIREMENTS

6.1. GENERAL

The requirements of this paragraph augment the requirements indicated in Paragraphs 3 through 5.

6.2. APPROVED DEVIATIONS

The following are approved deviations from the requirements stated in Paragraphs 3 through 5 that only apply to this project.

6.2.1Facility Floor Plan

a.The plan for this project is a modification of the standard medium floor plan. The floor plan depicted in Appendix J is mandatory for this project inlieu of the floor plan provided in Attachment F of this section, which is provided for information only.

b.Section 01 10 00 Attachment F and G are for information only. Design CCTV/IDS requiremetns based on the army Standard and an adaptation of the camera locations depicted in the drawings in Attachment G.

6.2.2 Project Plan Notes

a. The entire facility shall be covered by a smoke detection system.

b. Do not provide the doors from the mechanical room to the corridor shown in Attachement F.

c. A braising pan is not required in the kitchen as shown in Attachment F. Minor alterations to this area of the kitchen are allowed in ordr to ensure enough space is provided for the door alcove.

d. The infant/pre-toddler/toddler rooms are 1 foot less in width than is indicated in Attachment F. The pre-school/pre-K/kindergarten rooms are 1.5 feet less width than is indicated in Attachment F.

e.Provide diaper changing tables in the pre-school/pre-K/kindergarten rooms.

6.2.3 Pavement Underdrain

Paragraph 5.2.3.1 requirement "Provide underdrain systems for pavement designs over cohesive soil subgrades", is hereby waived.

6.3. SITE PLANNING AND DESIGN

6.3.1. General:

6.3 Site Planning
6.3.1. Site Work

6.3.1.1. General

Refer to the Appendix J sheets G-101, C-101, and C-102 provided in this solicitation for the project location, project boundary and the existing utilities on the site. Unless otherwise instructed by the Contracting Officer, the Contractor shall design and construct the Child Development Facility (CDC) and its support structures within the project boundary indicated on the sheet C-101.

Provide an entrance sign at the new entrance driveway(s). The sign shall be constructed in accordance with the base standards. The sign shall be sited such that safe sight distances are maintained for cars exiting onto Barstow Road. Construction sites shall be kept neat and free of trash. Construction sites shall be screened from view by a 6 foot high chain link fence with silt fabric attached. The construction fence shall be securely locked after working hours.
The use of burning at the project site for the disposal of refuse and debris shall not be permitted. All demolition debris shall be disposed of offsite. All costs in connection with disposing of the materials shall be at the Contractor's expense. All liability of any nature resulting form the disposal of the materials shall be the responsibility of the Contractor. The Contractor shall be responsible for all disposal permits and fees associated with debris disposal.

No phase of construction shall impede access for emergency response vehicles and personnel to adjacent facilities. The Fort Irwin Fire Department and Military Police shall be notified prior to any road closure and their directives followed.

6.3.1.2 Staging Area
The Contractor shall coordinate with the Contracting Officer's Representative (COR) for laydown area, offices, parking, and storage facilities. Any damage to existing structures shall be repaired or replaced to the satisfaction of the COR at no additional cost to the Government. All Contractor POV parking areas shall be coordinated and approved in advance by the COR.

6.3.1.3 Circulation and Parking

The main entrance to the new CDC facility shall be from Barstow Road. The slope of new main entrance road/drives to the new CDC facility shall not exceed 6%. Provide separate parking areas for the staff and patron with signs designating each area. The Base Bid shall include a 46-stall staff parking area and a 58-stall patron parking area with handicapped stalls in each area. The number of handicapped parking spaces shall meet the ADA Accessibility Guidelines.

Circulation, the parking areas and entrance drives shall be designed to meet the safety requirements for children. Separation of vehicular and pedestrian circulation should be provided. Pedestrian crossing of traffic lanes shall not be allowed in the drop-off area and the patron parking area. In other areas, it is preferred that after parking, users do not have to cross a traffic lane to enter the building. If the crossing of a traffic lane is required in the parking, a crosswalk must be provided. In addition, other traffic control devices, such as speed humps, should be provided to slow the traffic approaching the crosswalk.

All pavement shall be designed for H-20 loading in accordance with the criteria listed in the RFP. Provide concrete curbs along all edges of pavement. All curb and gutter shall be 12-inch by 24-inch, 6 inches wide, 6 inches high, 6 inches below grade with an 18-inch gutter sloped 1 inch from pavement edge to face of curb. The parking stalls shall be asphalt paved and shall have concrete curb and gutter. See subparagraphs 5.2.3 and 6.4.4 of this Section 01 10 00 for additional pavement design requirements.

Parking areas shall be white paint striped, have lighting and be adequately drained. Provide parking spaces, sidewalks and ramps for handicapped individuals in accordance with the Americans with Disabilities Act (ADA). The parking spaces shall not be angled. Parking stalls shall be a minimum of 9 feet wide and 18 feet long. Handicapped stalls shall be 8 feet wide with 4 feet on each side. Markings shall be 4 inches wide. Traffic aisles shall be a minimum of 24 feet wide. The Contractor shall provide handicapped parking signs for each handicapped parking space. See the Electrical Section on lighting requirements.

Parking lot drainage shall be designed to provide adequate sheet flow drainage to an underground pipe collection system. The slopes of the surface shall be held to the minimum required for drainage and prevent ponding. For safety and to prevent loss of door control, cross slopes of parking stalls shall not exceed 1.5% side to side and 5% end to end. The Contractor shall use grate inlets throughout the parking lot areas and parking lot access lanes to capture storm water runoff. Storm water shall not be allowed to run from one row of parking to another, but shall be captured before in runs through another row of parking by grate inlets.

Irrigated, landscaped islands (not grassed) with curbs and gutters shall be used to break up and play down the massive paved areas. Design of parking lots shall conform to the AASHTO standards. The site layout for the entire site shall accommodate fire protection vehicles. The Contractor shall ensure that all radii and widths of parking lots, access drives, and channelized turn lanes shall accommodate emergency and fire fighting vehicles. All signs and markings shall conform to the Manual on Uniform Traffic Control Devices for Streets and Highways. Special care shall be exercised to minimize traffic congestion in parking areas.

Delivery Vehicle Access. Provide a delivery vehicle access drive to the kitchen area. The Contractor shall provide space for an 18-wheel truck to turn around and back up to the kitchen area or a pull-thru lane. The delivery access drive shall be wide enough to unload from the back and side of delivery truck. The truck unloading area shall be paved with concrete pavement. If required, the Contractor shall provide a 6 feet wide ramp/pathway from unloading area to the kitchen access door for wheeled delivery equipments. The maximum slope for the ramp/pathway shall not exceed 5% with flat landing areas (6’x6’ min.) not exceeding 20 feet apart. The Contractor shall ensure that no ponding of storm water will occur at the loading and unloading area and slope to drain away from the building without using a pump.

Maintenance, Fire and Emergency Vehicle Access. Provide a perimeter access drive around the new CDC building for maintenance, fire and emergency vehicles. The fire department access road shall be 20-feet wide. The access drives that are within the 82 feet antiterrorism minimum standoff distance shall have a lockable traffic control device (lockable bollards, swing gate, etc.) at the limit of standoff distance. All access drives that lead to the control gates shall be angled and designed, so that vehicles will not be capable of achieving a speed of over 10 m.p.h.

Sidewalks. All egresses shall have concrete sidewalks connected to them. Provide sidewalks at the fire escape routes/path to parking areas.
Demolition and Relocation. Any pavements to be demolished shall be sawcut to a full depth. Provide clean, even edged sawcuts at limits of pavement removal. Any road crossings must either be bored or may be filled with flowable fill. Fill

removed from the roadway will not be reused to fill the trench.

6.3.2 LANDSCAPE ARCHITECTURE

6.3.2.1 General

Provide complete landscaping consisting of groundcover, trees, shrubs, and ornamental grasses as required to provide a quality, cost-effective, functional and visually appealing landscape program that will enhance the development, while complying with all applicable anti-terrorism, force protection and physical security requirements.
Guarantee all landscaping for a period of one year after final acceptance of the project.

Provide mechanical equipment screening on four sides, one side being a non-transparent gate around new equipment.

Provide shrubs or small growing trees for screening of mechanical equipment/wall, dumpster enclosures, and other obstructions that do not present an aesthetic view from the street.

Provide all age appropriate play outdoor play ground equipment (play structures).

Provide appropriate shade structures for outdoor play areas.

Provide age appropriate, safe open space play areas that enhance learning and develop cognitive and physical skills. Provide an intriguing environment, but one devoid of overpowering colors, features and literal themes.

Respond to local conditions, climate, and regional preferences in the design, while also considering the goals of the parents and sponsoring agency.

Accommodate a child’s scale, including how they will use the space, what they will see, and what kind of experience they will have, i.e., design through the eyes of a child.

Provide durable and cost effective materials and details. A CDC is used intensely; the design must be particularly sensitive to the life cycle cost of materials. .Playgrounds will be designed to meet National Playground Institute safety standards and will pass inspection by a Certified Playground Safety Inspector.

6.3.2.5 Shade

Shade structures shall be provided throughout the play areas. Shade is a requirement for the CDC to receive DoD certification. Due to the extreme environment in which this facility is located the minimum of 30% shade coverage. Due to the high heat and wind in this area the preferred shade structure shall have a steel roof with columns that are a minimum of 3 inches wide. Follow all other shade structure criteria as set forth in ARMY STANDARD FOR CHILD DEVELOPMENT CENTERS.

6.3.2.6 Play Structure Surfacing

Provide poured-in-place resilient safety surfaces in accordance with ARMY STANDARD FOR CHILD DEVELOPMENT CENTERS.

6.3.2.7 Plumbing

Provide potable water access on the exterior of the building within the play areas. Provide plumbing in accordance with ARMY STANDARD FOR CHILD DEVELOPMENT CENTERS.
The Contractor shall obtain flow tests near the new project site to confirm the results of the flow test prior to the start of design. Water flow tests shall be conducted in accordance with NFPA 291 Recommended Practice for Fire Flow Testing and Marking of Hydrants. The Contractor shall flow an adequate number of hydrants to minimize hydraulic inefficiencies during the flow. Raw data and results of the fire flow testing shall be included in the design analysis report with calculations to support water line sizing. Fire flow results shall be indicated graphically. As soon as the test is complete, a flow report shall be provided to the COR. As necessary, retests may be required. The worst case data shall be used for design, unless the retest indicates that one of the other results appears improbable.

6.3.2.7.1 Drinking Water

Water will be provided via a cooler and single-use cups.This Post prefers not to have drinking fountains on the exterior of the building within the play areas. In their experience the fountains easily become inoperable due to sand/dirt that is put into the fountain sink.

6.3.2.7.2 Hose Bibs

Provide a minimum of one hose bib in each play area for water play.

6.3.2.7.3 Misters

Provide misters on shade shelters where picnic tables or gather areas are located.

6.3.2.7.4 Fire Protection Water.
The fire protection water mains shall be designed to supply the quantities at sufficient pressure of the fire protection system required by Paragraph “Fire Protection” of this document. The minimum residual pressure for outside fire protection (hose stream demand) is 20 psig. The hose stream demand shall be as per UFC 3-600-01. The minimum pressure requirement for the sprinkler system shall be determined during design in accordance with the Paragraph “Fire Protection”.
Valves. Service stops or gate valves shall be provided and installed near the point of connection to the main and on both the inlet and outlet sides of water meters and backflow preventors. All fire protection supply control valves shall be indicating type. All service stops and gate valves shall be provided with service boxes or valve boxes.
Post Indicator Valve. Provide post indicator valves (PIVs) on exterior fire service water lines IAW NFPA 24. PIVs shall be equipped with indicator post conforming to the requirements of NFPA 24, Private Fire Service mains and Their Appurtenances. Operation shall be by a wrench, which shall be attached to each post. PIVs for sprinkler system shall be electrically monitored.
6.3.2.7.5 Meters.
Potable water service lines shall be equipped with suitable meters. Meters shall be displacement type meters conforming to AWWA ANSI/AWWA C700 or turbine type meters conforming to AWWA C701. Meter boxes shall be of cast iron. The boxes shall be of sufficient size to completely enclose the meter and shutoff valve or service stop. The lid shall have the work “WATER” cast in it. Metering of fire service lines is not required.
6.3.2.7.6 Backflow Preventer.

Provide a backflow preventer on fire protection water service lines in accordance with AWWA Manual M14, Recommended Practice for Backflow Prevention and Cross Connection Control. Backflow preventers on fire protection supply lines shall have indicating type control valves. Backflow preventer shall be UL listed and Factory Mutual Research approved. Backflow preventers shall be installed in a pit or mounted inside the mechanical room to protect from freezing.

6.3.2.8. Plant Preparation

6.3.2.8.1. Existing Plant Material to remain

Preserve existing trees to the greatest extent possible. The Contractor shall tag trees to be saved with plastic or vinyl tape tied to the tree caliper. Existing trees to remain or to be transplanted that are unhealthy, that die, or have 20 percent or more of their crowns that die during the establishment period shall be replaced with healthy plants of the same species or variety during the appropriate planting season. During the landscape establishment period, trees, turf, shrubs, and ground cover that are damaged or destroyed during construction operations shall be replaced by the Contractor at no additional cost to the Government. The Contractor, at the direction of the Contracting Officer, shall remove the existing tree and stump and replace it with trees of the same genus and species equal to the total caliper of the existing tree. Minimum caliper of replacement trees shall be 100 mm (4 inch). Replace shrubs with 18.9 liter (5 gallon) size container, ground cover with flat containers planted at 200 mm (8 inches) on center, and turf with sod, all of the same genus and species.

6.3.2.8.2. Planting over Utilities

Trees shall not be placed within 3 meter (10 feet) of any above or below-grade utility line or structure. Within roadway sightlines, mature shrubs shall not be greater than 1 m (3 feet) in height and trees shall be limbed up a minimum of 2 m (6 feet) so their mature growth will not obstruct views from vehicle intersections or points of vehicle ingress or egress.

6.3.2 8.3. Green Waste

Green waste: Contact the Public Works Department for potential green waste collection and hauling by the Government. Green waste not collected by the Government shall be separated from construction debris and delivered to the base’s or local landfill’s green waste recycling area. Quantify and report diverted waste to the Contracting Officer.

6.3.2.9. Plant Material

6.3.2.9.1 Plant Quantities

Provide for building periphery, parking lot and perimeter site planting, not covered by buildings or paving, with a minimum of one (1) tree per 83.6 square meter (900 square feet) of landscape area. Provide a minimum tree size of 5 gallon (1 inch) caliper, or if within an anti-terrorism zone provide a minimum size of 5 gallon (1 inch) caliper. For trees within concrete or other non-permeable paved areas, allow a minimum non-paved planting area of 1.2 m by 2.4 m (4 feet by 8 feet per tree).
A minimum of forty percent (40%) of the landscaped areas shall be planted with shrubs and groundcover so that at 50 percent (50%) plant maturity, they will form mass plantings. Utilize a minimum ratio of 60 percent (60%) 18.9 liter (5 gallon) shrubs or groundcover and 40 percent (40%) 3.79 liter (1 gallon) shrubs or groundcover. The remaining sixty percent (60%) of the landscape area may be inorganic mulch, decomposed granite, planted or a combination. For

inorganic mulch, provide 100 mm (4 inch) depth of 50 mm to 100 mm(2” to 4” inch) rock mulch, and for larger areas use 100 mm (4” inch) size rock cobble, assure complete ground surface coverage. For decomposed granite, provide 50 mm (2 inch) minimum depth. Do not use decomposed granite as a ground cover on slopes 5:1 and greater.

Plant the majority of shrubs at major entrances to buildings and at other important planting zones that are specific to each site. The overall design intent should be to plant mostly trees with shrubs and rock mulch, to reduce maintenance costs while still providing for functional planting requirements (e.g., soil stabilization, energy conservation, force protection, aesthetics, etc.).

6.3.2.9.2. Plant Quality

All plants shall comply with ANSI Z60.1 and ANSI Z133.1, current editions. All plants shall be in a healthy, disease and pest free condition.

6.2.2.9.3. Plant Selection

The reviewing Government Landscape Architect shall have final approval authority on all selected plant material. Species deemed unsuitable for planting by the Government Landscape Architect will not be allowed.

6.3.2.9.4. Plant Installation

Planting operations, including but not limited to planting soil mixes and fertilization, shall comply with local established practices and agricultural extension service recommendations. Stake newly planted trees with a minimum two stakes {2 – 63.5 mm (2 ½ inch) x 2.4 m (8 feet) hardwood}.

6.3.2.9.5. Edging Materials and Mulching Materials

Provide 100 mm (4 inch) recycled vinyl “L” shaped edging (equal or similar to “Oly-Ola” or 150 mm (6 inch) wide concrete edging dividing all shrub areas and dividing all planted and non-planted inorganic mulch areas. Mulch all planted areas with inorganic mulch a minimum of 75 mm (3-inch) depth.

6.3.2.9.5. Fertilizer

Fertilize all transplanted trees, new trees, shrubs, ground covers, and ornamental grasses as recommended by local agricultural extension services.

6.3.2.9.6. Weed Fabric and Erosion Control Fabric

Provide a biodegradable product designed specifically for erosion control on all sloped areas 3:1 and greater in slope.

6.3.2.9.7. Drainage

Provide for proper grading and drainage of planting areas. Provide sub-surface drainage where soil or other conditions do not allow surface drainage. Do not drain roof gutters into planter areas.

6.3.2.10. Irrigation systems

6.3.2.10.1 Irrigation

Provide a permanent, below-grade, low flow irrigation system. Provide pop-up heads in landscape zones when adjacent to walks, roads, parking lots, or in sparsely planted landscape areas where pedestrians may circulate. Provide pop-up heads project-wide. Verify adequate water pressure for irrigation purposes and provide booster pumps and or pressure regulation as required. Provide minimum 300 mm (12 inch) cover over PVC irrigation pipe. The Landscape Contractor shall test the entire system in the presence of the Contracting Officer and Landscape Architect-of-Record to ensure proper performance. All irrigation components shall be commercial or institutional quality. Provide rain shut-off device and watertight splices. Sprinkler heads, bodies and nozzles shall be of the same manufacturer.

6.3.2.10.2. Operation and Control

Assure systems will automatically operate on an “irrigation window” between 2130-0530. Provide compatible and fully functional control if a central control system exists on base. Otherwise, provide evapotranspiration-measuring control with flow meter and master valve with controller capable of indicating visible or auditory notification, such as a blinking light or beeping sound, of system shut-off.

6.3.2.10.3. Zoning

Provide separate control valves for differing solar exposures, for areas with differing irrigation head types or differing precipitation rates, and top and bottom of slopes. Provide a separate irrigation backflow prevention device and water meter. Provide separate valve box with id and valve ID for each valve and wire splice. Provide quick coupling valves at 30 m (100 feet) on center. Provide in-head check valves for sloped areas with 150 mm (0.5 feet) or more in elevation change.

6.3.2.10.4. Non-Potable Irrigation

Provide lavender-colored pipe, sprinkler head and quick coupler caps, valve tags, signage, and associated filtration equipment.

6.3.2.10.5 Controller Charts

Provide one chart for each new controller or existing re-sequenced controller. The chart shall be an actual plan reduced to fit inside maximum dimensions of the controller housing. Use black line print for chart and a different color to indicate each station area of coverage. After chart is completed and approved for final acceptance, seal chart between two 0.5 mm (20 mil) pieces of clear plastic. The chart shall be affixed to the inside of the controller cabinet door using approved mastic or fastening system.

6.3.2.11. Exterior Furnishings

All site furnishings shall conform to the Base Exterior Architectural Plan (BEAP) and the Installation and Appearance Guide. Provide trash receptacles, benches, recycling receptacles, playground structures, storage shelters and shade

structures.

6.3.2.13. Signage

Provide signage in accordance with the Activity’s BEAP and the Installation and Appearance Guide.

6.3.2.14. Other Site Improvements

Provide a concrete dumpster pad and enclosure that will fully enclose two 4 yard dumpsters. The dumpster area shall be designed to accommodate the standard equipment used by the Post contractor for trash and recyclable collection.

6.3.2.15. Erosion Control Measures

Comply with California Construction General Permit 99-08-DWQ found at http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/finalconstpermit.pdf A fee of $200 plus $20/acre (rounded up to the next whole number) plus 18.5% surcharge will be required. Provide a copy of payment, submitted paperwork, NOI receipt letter, inspection and sampling reports, and NOT to the COR. Prevent erosion from occurring by providing erosion control measures as required by city, state and federal requirements.

6.3.2. Site Structures and Amenities

6.3.3. Site Functional Requirements:

6.3.3.1. Stormwater Management (SWM) Systems.

6.3.3.2. Erosion and Sediment Control

6.3.3.3. Vehicular Circulation.

6.4. SITE ENGINEERING

6.4.1. Existing Topographical Conditions

6.4.1.1 Topography survey has been prepared by the Government and included as a part of this contract. The Contractor shall be responsible to perform any additional survey required for their design. It is the D/B Contractor’s responsibility to verify the Government furnished survey and it's suitability for project design and construction, and any discrepancies which are found shall be brought to the immediate attention of the Contracting Officer for clarification. See subparagraph 6.3.1 "Site Planning" for traffic and circulation and parking information.

6.4.2. Existing Geotechnical conditions: See Appendix A for a preliminary geotechnical report.

The Government has provided a Preliminary Geotechnical Report in Appendix A of this RFP, which includes an explorations location map and drawing B-101 showing the log of trench explorations performed in January 2008 at this project area. As described in subparagraph 5.2.1 of this Section 01 10 00, the Preliminary Geotechnical Report gives a general overview of Fort Irwin NTC climate, geomorphology, and seismicity as well as preliminary design recommendations. The D/B Contractor shall accept the site as is and be solely responsible for any additional

geotechnical investigations required to accommodate his/her proposed foundation and other site features (as required by D/B Contractor's Final Geotechnical Report). The furnished logs and notes of the 2008 explorations (drawing B-101) and their locations, as well as logs and locations for any additional Contractor-performed investigations, shall be included with the final set of construction drawings. See subparagraph 6.4.4 of this Section 01 10 00 for pavement engineering requirements, and subparagraph 6.6 "Structural Design" for foundation, slab on grade, and earthwork requirements.

6.4.3. Fire Flow Tests See Appendix D for results of fire flow tests to use for basis of design for fire flow and domestic water supply requirements.

Fire flow testing for this site has been done by the Government and results are included in Appendix D.

6.4.4. Pavement Engineering and Traffic Estimates:

See subparagraphs 5.2.3 and 6.3.1 of this Section 01 10 00 for pavement design and related traffic planning requirements, and subparagraphs 6.4.7 "Cut and Fill" and 6.6 "STRUCTURAL" for related earthwork requirements. In addition, see Appendix A for Preliminary Geotechnical information including climate, subsurface conditions, and frost considerations. The Contractor shall edit the Aggregate Base specifications to disallow use of recycled concrete materials for base beneath asphalt pavements.

6.4.5. Traffic Signage

6.4.6. Base Utility Information

The existing utilities at the project site and the surroundings are shown on the Civil drawing sheets included in Appendix J. The existing underground utilities shown on the sheet(s) have been plotted from available records and field survey. Their existence and/or location are not warranted. The contractor is required to field verify the depth and location of the existing utilities, by pot-holing, prior to the commencement of work. Any utilities that conflict with work required as indicated in the RFP documents shall be relocated with approval of the contracting officer, and all utility relocations shall be included in the site design.
Below is the list of point of contact (POC) for all base utilities and road works. The DB contractor shall be responsible for coordinating all new utility connections, including scheduling and approval of all necessary utility outages and road closures:
• TELEPHONE/COMMUNICATION & INTERNET
Directorate of Information Management
(760) 380-4634
• PROPANE GAS
Directorate of Public Works
Operation & Maintenance Division
(760) 380-3742 or (760) 380-2240
Contractor shall be required to provide load data to process the connect request for this type of service.
• PRIVATIZED ELECTRICAL, WATER AND SEWER SERVICES
Directorate of Public Works
Operation & Maintenance Division
(760) 380-3742 or (760) 380-2240
Contractor shall be required to provide load data to process the connect requests for each type of service required.
• DIG PERMITS

Directorate of Public Works
Engineering Plans & Services Division
(760) 380-5050 or (760) 380-3542 or (760) 380-3416
The process starts at Building 383 in Technical Support Area. Dig Permits are the Contractor's responsibility to process through the system. This process can take up to 4 days to process. Contractor will be required to provide a site map of the area that the project is taking place showing the areas that require the digging will occur.
• ROAD CLOSURES & UTILITY OUTAGES
Directorate of Public Works (DPW)
Engineering Plans & Services (EP&S) Division
(760) 380-5050 or (760) 380-3542 or (760) 380-3416
Road closures and Utility outages shall be submitted to DPW EP&S Division for Approval with the following requirements:

The contractor shall be required to submit a request, for any outages or road closures no less than 21 calendar days before the required outage or road closure is needed.
Outage information shall include, but is not limited to, the following:
Water Outage
Description: Water Outage to Hot Tap existing 6" main for new 2" water service
Date: 18 Feb 2003
Time: 0800 to 1200 Total 4 hours
Location: Approximately 150' of Base South of Fifth Street Along 'G' Avenue
Need to supply Maps and/or photos of the location.
If available Contractor shall Include:
Electrical shall include pole numbers, transformer numbers, panel board numbers, etc.
Sewer shall include Manhole Numbers, etc.
Water shall include Valve Numbers, etc.
LP Gas shall include Valve Numbers, etc.

Road Closure information shall include, but is not limited to, the following:
Road Closure
Description: Langford Lake Road Starting at 'A' Avenue to
Barstow Road
Start Date: 18 Feb 2003
Finish Date: 18 Feb 2003
Time: 0800 to 1200 Total 00 Days 04 Hours
Location: Approximately 150' of Base South of Fifth Street Along 'G' Avenue
Need to supply Traffic Plan, Maps and/or photos of the location

6.4.7. Cut and Fill

6.4.7.1 Cut and Fill: All fill including road base materials shall be placed in maximum 8-inch loose or 6-inch compacted thickness lifts, except place in maximum 6-inch loose or 4-inch compacted lifts when using hand-operated compaction equipment. See subparagraph 6.6.2 “Foundations and Slabs on Grade” for structural fill requirements beneath buildings.
6.4.7.2 Disposal: A government provided disposal area is not available. The use of burning at the project site for the disposal of refuse and debris shall not be permitted. The Contractor shall be responsible for disposing all refuse

materials and debris from the project, including inert materials such as asphalt and concrete, to an approved disposal site off the NTC property. All costs in connection with disposing of materials shall be at the Contractor's expense. All liability of any nature resulting from the disposal of the materials shall be the responsibility of the Contractor. The Contractor shall be responsible for all disposal permits and fees associated with debris disposal.

6.4.8. Borrow Material

Borrow material for engineered fill will be available from an off-site borrow source on the Irwin NTC property approximately 4 miles from the main gate of Ft. Irwin (approximately 7 to 8 miles from the proposed CDC project site), and is accessed via an 800-foot dirt road located off the main entrance road to the NTC (Camp Irwin Road). Excess borrow and/or excavated soil materials shall be returned to this off-site borrow source on NTC property and stockpiled in a manner that will properly drain and will be readily obtainable for future borrowing as approved by the COR.

6.4.9. Haul Routes

See sheet G-101 included in Appendix J.

6.4.10. Clearing and Grubbing:

Clearing and grubbing of the site shall be performed in accordance with the Contractor's Geotechnical Report and Civil design requirements, and subparagraph 5.1.2 "Site Planning Objectives". Final disposition of cleared and grubbed materials shall be in accordance with paragraph 6.4.7 "Cut and Fill", subparagraph 6.4.7.2 "Disposal".

6.4.11. Landscaping:

See Appendix I for acceptable plant list

6.4.12. Turf:

6.5. ARCHITECTURE

6.5.1. General: To the maximum extent possible within the contract cost limitation, the buildings shall conform to the look and feel of the architectural style and shall use the same colors as adjacent facilities as expressed herein. The Government will evaluate the extent to which the proposal is compatible with the architectural theme expressed in the RFP during the contract or task order competition. The first priority in order of importance is that the design provides comparable building mass, size, height, and configuration compared to the architectural theme expressed herein. The second priority is that design is providing compatible exterior skin appearance based upon façade, architectural character (period or style), exterior detailing, matching nearby and installation material/color pallets, as described herein.

6.5.2. Design

6.5.2.1. Appendix F is provided "For Information Only", to establish the desired site and architectural themes for the area. Appendix F identifies the desired project look and feel based on [not supplied]**'s** Installation Architectural Theme from existing and proposed adjacent building forms; i.e. building exterior skin, roof lines, delineation of entrances, proportions of fenestration in relation to elevations, shade and shadow effects, materials, textures, exterior color schemes, and organizational

layout.

6.5.2.2. The design should address [not supplied]’s identified preferences. Implement these preferences considering the following:

1. Achievable within the Contract Cost Limitation (CCL)

2. Meets Milestones within Maximum Performance Duration.

3. Achieves Full Scope indentified in this Solicitation

4. Best Life-Cycle Cost Design

5. Sustainability – LEED Silver

6. Complies with Energy Conservation Requirements Specified in this RFP.

6.5.2.3. Priority #1. Visual Compatibility: Facility Massing (Size, Height, Spacing, Architectural Theme, etc.) Exterior Aesthetic Considerations: The buildings massing, exterior functional aesthetics, and character shall create a comprehensive and harmonies blend of design features that are sympathetic to the style and context of the Installation. The Installation’s intent for this area is:

See Ft. Irwin Base Installtion Design Guide for architectural theme.

.

Site and Architectural conceptual drawings that meet this objective are shown in Appendix J.

6.5.2.4. Priority #2. Architectural Compatibility: Exterior Design Elements (Materials, Style, Construction Details, etc.) Roofs, Exterior Skin, and Windows & Door Fenestrations should promote a visually appealing compatibility with the desired character while not sacrificing the integrity and technical competency of building systems.

6.5.2.5. See Appendices for exterior colors that apply to Architectural character at [not supplied]. The manufacturers and materials referenced are intended to establish color only, and are not intended to limit manufacturers and material selections.

6.5.2.6. See APPENDIX H Exterior Signage with building and base signage requirements.

6.5.2.7. Additional architectural requirements:

(a) Install fall protection anchor points on all roofs with a slope greater than 2:12.

6.5.1 Building Exterior
No additional requirements.
6.5.1.1 Exterior Doors
Provide all exterior doors with vision panels. All exit door hardware
shall be located 44 inches above the finish floor. Vision Panel shall meet the glazing requirements in UFC 4-010-01.
6.5.1.2 Exterior Signage
Building Numbers shall not be utilized. The facility can only be
identified as a "Child Development Center". However, the installation or

community name or geographic location of the facility may also be used for public identification purposes.

6.5.1.3 Exterior Windows

Exterior windows will be placed at heights appropriate for use by the age of the children occupying the room. All exterior windows Shall meet the glazing requirements in UFC 4-010-01. Insect screens will be secured with interior metal clips to preclude children from removing the clips. Exterior windows shall be furnished with color coordinated horizontal blinds, which are operable by cord or hardware that can be adjusted in length to be out of the reach of children.

6.5.3Programmable Electronic Key Card Access Systems:

Not required in this project.

6.5.4 INTERIOR DESIGN

6.5.3.1 Space Configuration

The functional relationships of spaces as shown on the drawings in the Appendices to this document are mandatory and must be followed.

6.5.3.2 Toilet Facilities

Central children's toilet facilities are prohibited. Provide adult toilet facilities, separate from the children's toilets, for the staff and general public. Toilet facilities need not be designated by sex if no more than 15 employees are in the facility at any time.

6.5.3.3 Interior Finishes

No stained or acid etched concrete allowed. Interior finish materials shall be as shown in the Room Finish Schedules where provided in the appropriate CDC Standard Design. The finishes are to be selected for their durability, appropriateness to the function of the space and ease of maintenance. The finish selections will create a safe, nurturing and positive environment that has both visual and tactile experiences for the children.

6.5.3.4 Special Protection

Consider providing surface-mounted, high impact integral color rigid vinyl corner guards at all outside corners of gypsum board walls, and stainless steel corner guards at all outside corners of ceramic tile walls, especially where subject to heavy traffic. Also, consider installing chair rails in areas prone to hi-impact use, such as corridors, etc.

6.5.3.5 Art Sink/Food Preparation Counter - Provide a solid surface food prep counter/art counter 8 feet long with upper and lower cabinets. Also, provide integral backsplash with 2 separate stainless steel sinks and GFI electrical outlets above the backsplash.
6.5.3.6 Special Features: Provide a ventilation system and retractable stairs for the diaper changing tables. The cubbies need to large enough to accommodate the diaper bags.

6.5.4 Comprehensive Interior Design (CID)

For CDC projects, a CID package is NOT required. The Contractor is not responsible for selecting or purchasing furniture.

6.5.5 Non-Authorized Building Features

The following features are not authorized in CDC:
a. Central dining rooms
b. Combined kitchen and laundry areas
c. Draperies
d. Lead-based paint is not-authorized throughout (lead-based paint is defined as any paint containing more than six one-hundredths of 1 per centum (0.06 percent) lead by weight (calculated as lead metal) in total nonvolatile content of the paint, or the equivalent measure of lead in the dried film of paint already applied).
e. Materials containing asbestos are forbidden throughout
f. Special decorative materials, such as pictorial or high-relief tiles and carpets, are forbidden throughout

Interior building signage requirements:

6.5.6 Interior Signage
Interior signage is an important part of making the facility inviting to children and adults. The use of color to code different age group modules is an excellent way to create interest, identify the module and help children with a visual orientation throughtout the facility. Avoid entire walls of graphics and designs that complete with children's work or display materials. Avoid cartoon and fairytale characters. Use color, textures, and finish materials on the walls and/or floors to define circulation patterns Use signs with words and sysmbols where appropriate. Interior signage will comply with ADA requirement for the visually inpaired. Interior signage must be in upper and lower case horizontal only.

6.6. STRUCTURAL DESIGN

6.6.1. General
The building structure shall be analyzed, designed, and detailed according to these RFP requirements and the latest edition of all applicable standards, codes and criteria.

6.6.2. Applicable Standards/Codes/Criteria

The structural design shall fully comply with the following listed criteria in addition to the provisions provided in paragraph 4.0

UFC 1-200-01 Design: General Building Requirements
UFC 3-310-01 Design: Structural Load Data
UFC 4-010-01: DOD Minimum Anti-terrorism Standards for Buildings
International Building Code (IBC) – except as modified by any UFC specified in this RFP.

6.6.3. Child Development Center
6.6.3.1. General
The Structural system needs to be compatible with intended functions and components that allows for future flexibility, renovation, and reconfigurations of the interior space. The structural clear height at each floor shall be coordinated with the architectural ceiling height plus mechanical/electrical suspended equipment.

6.6.3.2. Structural System – Lateral Load Resisting System
The structure shall be designed, fabricated, and detailed as a complete structural system. Lateral loads shall be resisted by lateral load resisting system in both major directions of the structure.

6.6.3.3. Foundations and Slabs
Refer to the Preliminary Geotechnical Report in Appendix A, provided to assist the Contractor in characterizing the subsurface conditions existing in the project vicinity. The Contractor's Final Geotechnical Report, prepared in accordance with Paragraph 5 General Technical Requirements, shall include the allowable bearing pressure and soil site class per UFC 3-310-01 and the IBC as applicable, and shall explicitly state the recommended type of foundation and design parameters to best suit the soil conditions present at the site. The final design shall be based on the approved Final Geotechnical Report recommendations and the requirements herein; in the event of conflict, the more conservative/strict requirement shall prevail as approved by the Contracting Officer. Existing native materials shall be excavated to a minimum depth of 6 inches across the site prior to performing grading or placing fill. Further excavation shall be performed as necessary to place structural fill to a minimum depth of 12 inches beneath footings and building slabs. Prior to placing structural fill, the exposed surface shall be scarified to a minimum depth of 6 inches and compacted to at least 95 percent of laboratory maximum density as determined by ASTM D 1557. Structural fill comprising Caltrans aggregate base or Class 1 subbase or equivalent well-graded granular native material, shall then be placed in lifts as specified in subparagraph 6.4.7 and compacted to at least 95 percent of ASTM D1557 laboratory maximum. Regardless of structural calculations or Contractor's Final Geotechnical Report recommendations, shallow foundation systems shall utilize minimum footing widths of 18 inches for continuous footings and 24 inches for column footings. Extend bearing portions of substructure to levels below frostline, not less than 22 inches below finished exterior grade. The final drawings and specifications shall clearly indicate the building pad and foundation preparation requirements described above. See Paragraph 5 and subparagraph 6.4 “Site Engineering” for additional geotechnical requirements. For foundations constructed as specified above, an allowable soil bearing capacity of 3,000 psf may be assumed for bidding purposes. The structural foundations and slab-on-grade minimum specified concrete compressive strength shall be 4000 psi and shall utilize Type II or Type V low-alkali Portland Cement. All slab-on-grade shall be minimum 6-inch thick with minimum #4 size temperature reinforcement.

Compacted structural fill subgrades under all facility slabs and foundations shall be treated to resist subterranean and other wood destroying insects known to exist in the vicinity of the site. Such treatment shall be in accordance with environmental criteria referenced herein and as required by Irwin NTC authorities. All slab-on-grade to receive a

coating (e.g. epoxy) or to receive an overlying finish (e.g. carpet or tile), shall be underlain by a vapor barrier system comprised of a 4-inch damp sand cushion over a minimum 20-mil polyethylene membrane over compacted sandy subgrade free of debris and free of any particles larger than 3/8-inch. Exterior pads and exposed concrete slabs shall be underlain by a minimum 6-inch compacted structural fill.

6.6.3.4. Floor Framing System
The floor framing system shall be designed based on the functionality of the area and shall be compatible with the intended functions, floor live loads and allowable deflection stated in 6.6.4

6.6.3.5. Walls and Partitions
The exterior wall shall match the surrounding area and shall be as defined in comply with the Architectural narrative. Interior structural walls and other components of the primary structural system shall be clearly identified on the plans.

6.6.3.6. Roof Framing System
The roof diaphragm shall have sufficient strength and stiffness to transfer lateral loads to transverse lateral load resisting elements without imposing displacement on the longitudinal walls in excess of the limitations described in “Structural Loading” below.

6.6.3.7. Site Features – Retaining Walls/Bridges/etc.
The site features shall be provided and designed with maximum 2.5H in 1V slope (same as the earth cover), or flatter as determined by the Contractor's Geotechnical Engineer. The site features shall be designed to drain properly and shall tie into the drainage collector system. Design site features, e.g. retaining walls, culverts, bridges, in accordance with the appropriate American Association of State Highway and Transportation Officials (AASHTO) criteria. Consider operation and maintenance requirements, e.g. painting, mowing, inspecting, routine maintenance.

6.6.4. Structural Loading
Classification of this building is Occupancy Category II per UFC 3-310-01 Table 1. The structures shall be designed for self weight of all building/structure components plus allowance for miscellaneous suspended mechanical and electrical systems. The structures shall also be designed for the live loads listed below. Where the loads listed below are at variance with those of applicable codes, the most stringent loading shall apply.

6.6.4.1. Floor Live Loads
The minimum slab-on-grade live load shall be 150 psf. The minimum elevated slab live load shall be 50 psf

6.6.4.2. Roof Live Loads
The roof live load shall be 20 psf (reducible).

6.6.4.3. Snow Loads – not applicable.

6.6.4.4. Wind Loads
The minimum design wind speed is 90 mph.

6.6.4.5. Seismic Loads
The seismic design data are listed in UFC 3-310-01.

6.6.4.6. AT/FP Loads and Minimum Requirements shall be in accordance with UFC 04-010-01 Appendix B. The design loads and requirements for windows, and glazed doors and their window frames are found in section 6.5 - Architectural Design. Ensure and document that the design of glazed items includes, but is not limited to, the following items under the design loads prescribed in UFC 4-010-01:
1. Supporting members of glazed elements, e.g. window jamb, sill, header
2. Connections of glazed element to supporting members, e.g. window to header.
3. Connections of supporting members to each other, e.g. header to jamb.
4. Connections of supporting members to structural system, e.g. jamb to foundation.

6.6.5. Serviceability Criteria
Deflections of structural members shall not be greater than allowed by the applicable material standard (ACI, AISC, etc.), or the limits set forth below. Deflection limits are needed to restrict damage to ceilings, partitions, other fragile nonstructural elements. Member deflection due to live load shall not exceed the member length divided by 360. Member deflection due to live and dead load shall not exceed the member length divided by 240. Story drift shall be limited to story height divided by 600 to prevent damage to the brick masonry veneer.

6.7. THERMAL PERFORMANCE

No additional requirements.

6.8. PLUMBING

No additional requirements.

6.9. SITE ELECTRICAL SYSTEMS

6.9 Site Electrical
Electrical
Provide electrical power to the facility from an existing overhead 12.47 kv, 3 -phase distribution system (maintained by SCE) along Outer Loop Road and along Barstow Road. There is an existing power pole with a guy wire that is nearest to the intersection of Outer Loop Road and Barstow Road that is located near the general vicinity of the proposed CDC that is a possible power source for this facility.
However Contractor shall coordinate with Mr. David Canady (DPW COR) at 760-380-7605 or his representative Mr. Barney Moen @ 760-646-2861, to comply with all requirements set forth by him for outside electrical utility construction; in order to provide power to new CDC facility.
Contractor shall provide a transformer pad, location per UFC 3-600-01 (2006); with primary and secondary conduits per SCE requirements (transformer to be provided by SCE).
Contractor shall diligently minimize power outage to other users, during electrical tie-in to the existing 12.47kv base-wide system. Preferably contractor may choose to perform electrical tie-in during hours of minimum activity at the Base; in consultation with Mr. Canady or his designated person.
New electrical service shall be underground and shall have a PDM (power digital meter).

Telecommunication
Provide telecommunication service to this facility from an existing underground telecommunication infra-structure connection point, an existing manhole located approximately 5000 feet away on South Loop Road approximately west of the Command & Control Facility.

All communication infra-structure shall conform to Department of Army's Technical Guide I3A (March 2006). Infra-structure shall include Maintenance Holes (also referred as MH), Hand Holes, duct banks, fiber-mesh inner ducts, fiber optic cable and telephone cable.
Provide new Maintenance Holes [12' long X 6' wide X 7' height (inside dimensions)] @ regular 600' intervals from the existing tie-in manhole. Last maintenance hole specifically serving the project building shall be 4' x 4' x 4' Hand Hole. Provide 6-4" PVC (main run) duct bank all the way from the existing communications manhole to last new 12' x 6' x 7' Maintenance Hole. At least one duct will contain fiber-mesh inner ducts per Technical Guide I3A (March 2006). Also provide 4-4" PVC duct bank (lateral run) from last 12' x 6' x 7' Maintenance Hole to lateral Hand Hole. Provide 2-4" PVC ducts from last Handhole to Tele-communication room. At least one conduit in both 4-4" duct bank and 2-4" duct bank shall have 3-3 cell fiber-meshed tape.
Contractor shall provide both fiberoptic and copper cables in underground conduit with innerducts from the existing communications manhole to this new facility. Contractor shall coordinate installation with DOIM personnel, namely Don Wanco @ 760-380-5000.

6.10. FACILITY ELECTRICAL SYSTEMS

No additional requirements.

6.11. HEATING, VENTILATING, AND AIR CONDITIONING

Note: No existing UMCS (no integration required between the LNS-based building and UMCS).
6.11.1 Humidity Control
Humidity levels shall conform with UFC 03-410-01FA except as noted below. A minimum relative humidity of 35 percent wil be maintained in CDC child activity rooms to prevent drying of mucous membrane and to control the spread of diseases.

Integrate the control system to the installation’s existing UMCS. The existing UMCS is N/A

6.12. ENERGY CONSERVATION

No additional requirements.

6.13. FIRE PROTECTION

Fire Alarm Detection and Reporting System
Fire Alarm Detection and Reporting system shall comply with NFPA72 (2007), NFPA 101(2006), UFC 3-520-01 (2006) and UFC 3-600-01 (2006).

6.14. SUSTAINABLE DESIGN

6.14.1. LEED Minimum Rating Exempt Facilities: In addition to any facilities indicated as exempt in paragraph 3, the following facilities are exempt from the minimum Silver requirement: None.

6.14.2. Credit Validation: USGBC registration and use of the LEED Letter Templates is required. Registration and payment of registration fees will be by the Contractor. Administration of the online project will be by the Contractor. Validation of

credits will be accomplished by the Government. USGBC certification of the project by the Contractor is not required. The Government may choose to seek USGBC certification of the project, in which case the Government will pay certification fees and coordinate with the USGBC and the Contractor will furnish audit data as requested at no additional cost.

6.14.3. Commissioning: See Appendix M for Owner's Project Requirements document(s).

6.14.4. LEED Credits Coordination. The following information is provided relative to Sustainable Sites and other credits.

SS Credit 1 Site Selection:

Project site **Is Not** considered prime farmland.

Project site is five feet or more above 100-year flood elevation.

Project site contains no habitat for threatened or endangered species.

No portion of project site lies within 100 feet of any water, wetlands or areas of special concern.

Project site Was Not previously used as public parkland.

SS Credit 2 Development Density & Community Connectivity.

Project site **Does Not** meet the criteria for this credit.

SS Credit 3 Brownfield Redevelopment.

Project site **Does Not** meet the criteria for this credit.

SS Credit 4.1 Public Transportation Access.

Project site **Does Not** meet the criteria for this credit.

EA Credit 6 Green Power.

35% of the project's electricity **Will Not** be provided through an Installation renewable energy contract.

MR Credit 2 Construction Waste Management.

The Installation does not have an on-post recycling facility available for Contractor's use. <MULTI>

See LEED Strategy Table(s) for additional information.</MULTI>

6.14.5. LEED Credit Preferences, Guidance and Resources. See Appendix L LEED Project Credit Guidance for supplemental information relating to individual credits.

6.14.6. Not Used

6.14.7. Additional Information

No Additional Requirements

6.15. ENVIRONMENTAL

6.15.1 The D/B Contractor shall comply with all Federal, State, and Local environmental requirements.
6.15.2 Refer to Appendix E. Environmental for REC. D/B Contractor is responsible for coordinating with the DPW and COR to obtain the Environmental Assessment.

6.16. PERMITS

The Government has obtained no permits/licenses related to this project. It shall be the responsibility of the Contractor to obtain ALL permits/licenses required for this project. Permitted work shall be in accordance with the associated permit. Copies of the permit shall be submitted to the Contracting Officer and Fort Irwin Environmental Division and must be in sufficient time to allow for review and revision with ultimate submittal at least 10 days before NTP for the associated permitted activity. Copies of permit amendments shall also be provided to the Contracting Officer and Fort Irwin Environmental Division. Contractor shall be responsible for determining fee basis and paying all filing fees. For digging, road closure, and utility outage permit requirements, see paragraph 6.4.6 Base Utility Information.

6.17. DEMOLITION

See Appendix AA for Demolition work in Building 1322.

6.18. ADDITIONAL FACILITIES

See Appendix AA.

SECTION 01 32 01.00 10

PROJECT SCHEDULE

1.0 GENERAL

1.1 REFERENCES

1.2 QUALIFICATION

2.0 PRODUCTS (NOT APPLICABLE)

3.0 EXECUTION

3.1 GENERAL REQUIREMENTS

3.2 BASIS FOR PAYMENT AND COST LOADING

3.3 PROJECT SCHEDULE DETAILED REQUIREMENTS

3.4 PROJECT SCHEDULE SUBMISSIONS

3.5 SUBMISSION REQUIREMENTS

3.6 PERIODIC SCHEDULE UPDATE MEETINGS

3.7 REQUESTS FOR TIME EXTENSIONS

3.8 DIRECTED CHANGES

3.9 WEEKLY PROGRESS MEETINGS

3.10 OWNERSHIP OF FLOAT

3.11 TRANSFER OF SCHEDULE DATA INTO RMS/QCS

1.0 GENERAL

1.1. REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

• U.S. ARMY CORPS OF ENGINEERS (USACE) ER 1-1-11 (1995) Progress, Schedules, and Network Analysis Systems http://www.usace.army.mil/publications/eng-regs/er1-1-11/entire.pdf

• Army Corps of Engineers ECB No. 2005-10, (31 August 2005) Scheduling Requirements for Testing of Mechanical Systems in Construction http://www.wbdg.org/ccb/ARMYCOE/COEECB/ecb_2005_10.pdf

1.2. QUALIFICATIONS

The Contractor shall designate an authorized representative who shall be responsible for the preparation of the schedule and all required updating (statusing) and preparation of reports. The authorized representative shall be experienced in scheduling projects similar in nature to this project and shall be experienced in the use of the scheduling software that meets the requirements of this specification.

2.0 PRODUCTS (Not Applicable)

3.0 EXECUTION

3.1. GENERAL REQUIREMENTS

3.1.1. Submit a project schedule as specified herein for approval showing the sequence in which the Contractor proposes to perform the work and dates on which the Contractor contemplates starting and completing all schedule activities. The scheduling of the entire project, including the design and construction sequences is required. Contractor management personnel shall actively participate in its development. Designers, subcontractors and suppliers working on the project shall also contribute in developing an accurate project schedule. The schedule must be a forward planning as well as a project monitoring tool. The approved project schedule shall be used to measure the progress of the work and to aid in evaluating requests for excusable time extensions. The schedule shall be cost loaded and activity coded as specified herein. The schedule will provide the basis for all progress payments. If the Contractor fails to submit any schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments until the Contractor submits the required schedule

3.1.2. Status the schedule on at least a monthly basis, as specified herein. If in the opinion of the Contracting Officer, the Contractor falls behind the approved schedule, the Contractor shall take steps necessary to improve its progress including those that may be required by the Contracting Officer, without additional cost to the Government. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained.

3.1.3. Failure of the Contractor to comply with the requirements of the Contracting Officer shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the contract. Upon making this determination, the Contracting Officer may terminate the Contractor’s right to proceed with the work, or any separable part of it, in accordance with the default terms of the

contract.

3.2. BASIS FOR PAYMENT AND COST LOADING

The schedule shall be the basis for determining contract earnings during each update period and therefore the amount of each progress payment. Lack of an approved schedule update or qualified scheduling personnel will result in an inability of the Contracting Officer to evaluate contract earned value for the purposes of payment. Failure of the Contractor to provide all information, as specified herein will result in the disapproval of the preliminary, initial and subsequent schedule updates. In the event schedule revisions are directed by the Contracting Officer and those revisions have not been included in subsequent revisions or updates, the Contracting Officer may hold retainage up to the maximum allowed by contract, each payment period, until such revisions to the project schedule have been made. Activity cost loading shall be reasonable as determined by the Contracting Officer. The aggregate value of all activities coded to a contract CLIN as specified herein shall equal the value of the CLIN on the Schedule.

3.3. PROJECT SCHEDULE DETAILED REQUIREMENTS

The computer software system utilized to produce and update the project schedule shall be capable of meeting all requirements of this specification. Failure of the Contractor to meet the requirements of this specification will result in the disapproval of the schedule. Scheduling software that meets the activity coding structure defined in the Standard Data Exchange Format (SDEF) in ER-1-1-11(1995) referenced herein are Primavera Project Planner (P3) by Primavera, and Open Plan by Deltek.

3.3.1. Use of the Critical Path Method

Use the Critical Path Method (CPM) of network calculation to generate the project schedule. Prepare the project schedule using the Precedence Diagram Method (PDM).

3.3.2. Level of Detail Required

Develop the project schedule to an appropriate level of detail. Failure to develop the project schedule to an appropriate level of detail, as determined by the Contracting Officer, will result in its disapproval. The Contracting Officer will consider, but is not limited to, the following characteristics and requirements to determine appropriate level of detail:

3.3.2.1. Activity Durations

Reasonable activity durations are those that allow the progress of ongoing activities to be accurately determined between update periods. Less than 2 percent of all non-procurement activities shall have Original Durations (OD) greater than 20 work days or 30 calendar days. Procurement activities are defined herein.

3.3.2.2. Design and Permit Activities

Design and permit activities, including necessary conferences and follow-up actions and design package submission activities shall be included. The Contractor shall include the design schedule in the project schedule, showing the sequence of events involved in carrying out the project design tasks within the specific contract period. This shall be at a detailed level of scheduling sufficient to identify all major design tasks, including those that control the flow of work. The schedule shall include review and correction periods associated with each item.

3.3.2.3. Procurement Activities

The schedule must include activities associated with the submittal, approval, procurement, fabrication and delivery of long lead materials, equipment, fabricated assemblies and supplies. Long lead procurement activities are those with an anticipated procurement sequence of over 90 calendar days. A typical procurement sequence includes the string of activities: submit, approve, procure, fabricate, and deliver.

3.3.2.4. Mandatory Tasks

The following tasks must be included and properly scheduled:

3.3.2.4.1. Submission, review and acceptance of design packages

3.3.2.4.2. Submission of mechanical/electrical/information systems layout drawings

3.3.2.4.3. Submission and approval of O & M manuals

3.3.2.4.4. Submission and approval of as-built drawings

3.3.2.4.5. Submission and approval of 1354 data and installed equipment lists

3.3.2.4.6. Submission and approval of testing and air balance (TAB)

3.3.2.4.7. Submission of TAB specialist design review report

3.3.2.4.8. Submission and approval of fire protection specialist

3.3.2.4.9. Submission and approval of testing and balancing of HVAC plus commissioning plans and data. Develop the schedule logic associated with testing and commissioning of mechanical systems to a level of detail consistent with Engineering and Construction Bulletin (ECB) No. 2005-10 dated 31 August 2005.

3.3.2.4.10. Air and water balancing

3.3.2.4.11. HVAC commissioning

3.3.2.4.12. Controls testing plan submission

3.3.2.4.13. Controls testing

3.3.2.4.14. Performance Verification testing

3.3.2.4.15. Other systems testing, if required

3.3.2.4.16. Contractor’s pre-final inspection

3.3.2.4.17. Correction of punch list from Contractor’s pre-final inspection

3.3.2.4.18. Government’s pre-final inspection

3.3.2.4.19. Correction of punch list from Government's pre-final inspection

3.3.2.4.20. Final Inspection

3.3.2.5. Activity Responsibility Coding (RESP)

Assign Responsibility Code for all activities to the Prime Contractor, Subcontractor or Government agency responsible for performing the activity. Activities coded with a Government Responsibility code include, but are not limited to: Government approvals, Government design reviews, environmental permit approvals by State regulators, Government Furnished Equipment (GFE) and Notice to Proceed (NTP) for phasing requirements. Code all activities not coded with a Government Responsibility Code to the Prime Contractor or Subcontractor responsible to perform the work. Activities shall not have more than one Responsibility Code. Examples of acceptable activity code values are: DOR (for the designer of record); ELEC (for the electrical subcontractor); MECH (for the mechanical subcontractor); and GOVT (for USACE). Unacceptable code values are abbreviations of the names of subcontractors.

3.3.2.6. Activity Work Area Coding (AREA)

Assign Work Area code to activities based upon the work area in which the activity occurs. Define work areas based on resource constraints or space constraints that would preclude a resource, such as a particular trade or craft work crew from working in more than one work area at a time due to restraints on resources or space. Examples of Work Area Coding include different areas within a floor of a building, different floors within a building, and different buildings within a complex of buildings. Activities shall not have more than one Work Area Code. Not all activities are required to be Work Area coded. A lack of Work Area coding will indicate the activity is not resource or space constrained.

3.3.2.7. Contract Changes/Requests for Equitable Adjustment (REA) Coding (MODF)

Assign Activity code to any activity or sequence of activities added to the schedule as a result of a Contract Modification, when approved by Contracting Officer, with a Contract Changes/REA Code. Key all Code values to the Government's modification numbering system.

Any activity or sequence of activities added to the schedule as a result of alleged constructive changes made by the Government may be added to a copy of the current schedule, subject to the approval of the Contracting Officer. Assign Activity codes for these activities with a Contract Changes/REA Code. Key the code values to the Contractor's numbering system. Approval to add these activities does not necessarily mean the Government accepts responsibility and therefore liability for such activities and any associated impacts to the schedule, but rather the Government recognizes such activities are appropriately added to the schedule for the purposes of maintaining a realistic and meaningful schedule. Such activities shall not be Responsibility Coded to the Government unless approved. An activity shall not have more than one Contract Changes/REA Code

3.3.2.8. Contract Line Item (CLIN) Coding (BIDI)

Code all activities to the CLIN on the Contract Line Item Schedule to which the activity belongs. An activity shall not contain more than one CLIN Item Code. CLIN Item code all activities, even when an activity is not cost loaded.

3.3.2.9. Phase of Work Coding (PHAS)

Assign Phase of Work Code to all activities, based upon the phase of work in which the activity occurs. Code activities to either a Design Phase or a Construction Phase. Code fast track design and construction phases proposed by the Contractor to allow filtering and organizing the schedule by fast track design and construction packages. If the contract specifies construction phasing with separately defined performance periods, identify a Construction Phase Code to allow filtering and organizing the schedule accordingly. Each activity shall have only one Phase of Work code.

3.3.2.10. Category of Work Coding (CATW)

Assign Category of Work code to all Activities based upon the category of work which the activity belongs. Category of Work Code must include, but is not limited to: Design, Design Submittal, Construction Submittal, Approval, Acceptance, Procurement, Fabrication, Delivery, Weather Sensitive Installation, Non-Weather Sensitive Installation, Start Up, Test, and Turnover. Assign a Category of Work code to each activity. Each activity shall have only one Category of Work Code.

3.3.2.11. Definable Features of Work Coding (FOW1, FOW2, FOW3)

Assign a Definable Feature of Work Code to appropriate activities based on the definable feature of work to which the activity belongs. Definable Feature of Work is defined in Specification Section 01 45 04.00 10, Contractor Quality Control. An activity shall not have more than one Definable Feature of Work Code. Not all activities are required to be Definable Feature of Work Coded.

3.3.3. Scheduled Project Completion and Activity Calendars

The schedule interval shall extend from NTP date to the required contract completion date. The contract completion activity (End Project) shall finish based on the required contract duration in the accepted contract proposal, as adjusted for any approved contract time extensions. The first scheduled work period shall be the day after NTP is acknowledged by the Contractor. Schedule activities on a calendar to which the activity logically belongs. Activities may be assigned to a 7 day calendar when the contract assigns calendar day durations for the activity such as a Government Acceptance activity. If the Contractor intends to perform physical work less than seven days per week, schedule the associated activities on a calendar with non-work periods identified including weekends and holidays. Assign the Category of Work Code - Weather Sensitive Installation to those activities that are weather sensitive. Original durations must account for anticipated normal adverse weather. The Government will interpret all work periods not identified as non-work periods on each calendar as meaning the Contractor intends to perform work during those periods.

3.3.3.1. Project Start Date

The schedule shall start no earlier than the date on which the NTP was acknowledged. Include as the first activity in the project schedule an activity called "Start Project" or “NTP”. The "Start Project" activity shall have an "ES" constraint date equal to the date that the NTP was acknowledged, with a zero day duration.

3.3.3.2. Schedule Constraints and Open Ended Logic

Constrain completion of the last activity in the schedule by the contract completion date. Schedule calculations shall result in negative float when the calculated early finish date of the last activity is later than the contract completion date. Include as the last activity in the project schedule an activity called "End Project". The "End Project" activity shall have an "LF" constraint date equal to the contract completion date for the project, and with a zero day duration or by using the “project must finish by” date in the scheduling software. The schedule shall have no constrained dates other than those specified in the contract.

The use of artificial float constraints such as “zero fee float” or “zero total float” are typically prohibited. There shall only be 2 open ended activities: Start Project (or NTP) with no predecessor logic and End Project with no successor logic.

3.3.3.3. Early Project Completion

In the event the Preliminary or Initial project schedule calculates an early completion date of the last activity prior to the contract completion date, the Contractor shall identify those activities that it intends to accelerate and/or those activities that are scheduled in parallel to support the Contractor's "early" completion. The last activity shall have a late finish constraint equal to the contract completion date and the schedule will calculate positive float. The Government will not approve an early completion schedule with zero float on the longest path. The Government is under no obligation to accelerate activities for which it is responsible to support a proposed early contract completion.

3.3.4. Interim Completion Dates

Constrain contractually specified interim completion dates to show negative float when the calculated early finish date of the last activity in that phase is later than the specified interim completion date.

3.3.4.1. Start Phase

Include as the first activity for a project phase an activity called "Start Phase X" where "X" refers to the phase of work. The “Start Phase X" activity shall have an "ES" constraint date equal to the date on which the NTP was acknowledged, and a zero day duration.

3.3.4.2. End Phase

Include as the last activity for a project phase an activity called "End Phase X" where "X" refers to the phase of work. The "End Phase X" activity shall have an "LF" constraint date equal to the specified completion date for that phase and a zero day duration.

3.3.4.3. Phase “X” Hammock

Include a hammock type activity for each project phase called "Phase X" where "X" refers to the phase of work. The "Phase X" hammock activity shall be logically tied to the earliest and latest activities in the phase.

3.3.5. Default Progress Data Disallowed

Do not automatically update Actual Start and Finish dates with default mechanisms that may be included in the scheduling software. Activity Actual Start (AS) and Actual Finish (AF) dates assigned during the updating process shall match those dates provided from Contractor Quality Control Reports. Failure of the Contractor to document the AS and AF dates on the Daily Quality Control report for every in-progress or completed activity, and failure to ensure that the data contained on the Daily Quality Control reports is the sole basis for schedule updating shall result in the disapproval of the Contractor's updated schedule and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes. Updating of the percent complete and the remaining duration of any activity shall be independent functions. Disable program features which calculate one of these parameters from the other.

3.3.6. Out-of-Sequence Progress

Activities that have progressed before all preceding logic has been satisfied (Out-of-Sequence Progress) will be allowed only on a case-by-case basis subject to approval by the Contracting Officer. Propose logic corrections to eliminate all out of sequence progress or justify not changing the sequencing for approval prior to submitting an updated project schedule. Correct out of sequence progress that continues for more than two update cycles by logic revision, as approved by the Contracting Officer.

3.3.7. Negative Lags and Start to Finish Relationships

Lag durations contained in the project schedule shall not have a negative value. Do not use Start to Finish relationships (SF).

3.3.8. Calculation Mode

Schedule calculations shall retain the logic between predecessors and successors even when the successor activity starts and the predecessor activity has not finished. Software features that in effect sever the tie between predecessor and successor activities when the successor has started and the predecessor logic is not satisfied (“progress override”) will not be allowed.

3.3.9. Milestones

The schedule must include milestone activities for each significant project event including but not limited to: milestone activities for each fast track design package released for construction; design complete; foundation/substructure construction complete; superstructure construction complete; building dry-in or enclosure complete to allow the initiation of finish activities; permanent power complete; and building systems commissioning complete.

3.4. PROJECT SCHEDULE SUBMISSIONS

Provide the submissions as described below. The data CD, reports, and network diagrams required for each submission are contained in paragraph SUBMISSION REQUIREMENTS.

3.4.1. Preliminary Project Schedule Submission

Submit the Preliminary Project Schedule, defining the Contractor's planned operations for the first 90 calendar days for approval within 15 calendar days after the NTP is acknowledged. The approved Preliminary Project Schedule will be used for payment purposes not to exceed 90 calendar days after NTP. Completely cost load the Preliminary Project Schedule to balance the contract award CLINS shown on the Price Schedule. Detail it for the first 90 calendar days. It may be summary in nature for the remaining performance period. It must be early start and late finish constrained and logically tied as previously specified. The Preliminary Project Schedule forms the basis for the Initial Project Schedule specified herein and must include all of the required Plan and Program preparations, submissions and approvals identified in the contract (for example, Quality Control Plan, Safety Plan, and Environmental Protection Plan) as well as design activities, the planned submissions of all early design packages, permitting activities, design review conference activities and other non-construction activities intended to occur within the first 90 calendar days. Schedule any construction activities planned for the first 90 calendar days after NTP. Constrain planned construction activities by Government acceptance of the associated design package(s) and all other specified Program and Plan approvals. Activity code any activities that are summary in nature after the first 90 calendar days with Responsibility Code (RESP) and Feature of Work code (FOW1, FOW2, FOW3)

3.4.2. Initial Project Schedule Submission

Submit the Initial Project Schedule for approval within 42 calendar days after NTP. The schedule shall demonstrate a reasonable and realistic sequence of activities which represent all work through the entire contract performance period. The Initial Schedule shall be at a reasonable level of detail as determined by the Contracting Officer. The schedule shall include detailed design and permitting activities, including but not limited to identification of individual design packages, design submission, reviews and conferences; permit submissions and any required Government actions; and long lead procurement activities required prior to design completion. The Initial Project Schedule shall include the entire construction sequence and all fast track construction activities, with as much detail as is known at the time but, as a minimum, shall include all construction start and completion milestone activities, and detailed construction activities through the dry-in milestone, including all activity coding and cost loading. Include the remaining construction, including cost loading, but it may be scheduled summary in nature. As the design proceeds and design packages are developed, fully detail the remaining construction activities concurrent with the monthly schedule updating process. Constrain construction activities by Government acceptance of associated designs. When the design is complete, incorporate into the then approved schedule update all remaining detailed construction activities that are planned to occur after the dry-in milestone.

3.4.3. Design Package Schedule Submission:

With each design package submitted to the Government, submit a frag-net schedule extracted from the then current Preliminary, Initial or Updated schedule which covers the activities associated with that Design Package including construction, procurement and permitting activities.

3.4.4. Periodic Schedule Updates

Based on the result of the meeting specified in PERIODIC SCHEDULE UPDATE MEETINGS, submit periodic schedule updates. These submissions shall enable the Contracting Officer to assess Contractor's progress. If the Contractor fails or refuses to furnish the information and project schedule data, which in the judgment of the Contracting Officer or authorized representative is necessary for verifying the Contractor's progress, the Contractor shall be deemed not to have provided an estimate upon which progress payment may be made. Update the schedule to include detailed procurement and construction activities as the design progresses, but not later than the submission of the final, un-reviewed design submission for each separate design package. The Contracting Officer may require submission of detailed schedule activities for any distinct construction that is started prior to submission of a final design submission, if such activity is authorized.

3.4.5. Standard Activity Coding Dictionary

Use the activity coding structure defined in the Standard Data Exchange Format (SDEF) in ER 1-1-11, Appendix A. This exact structure is mandatory, even if some fields are not used. A template SDEF compatible schedule backup file (sdef.prx) is available on the QCS website: www.rmssupport.com. The SDEF format is as follows:

Field	Activity Code	Length	Description
1	WRKP	3	Workers per Day
2	RESP	4	Responsible Party (e.g. GC, subcontractor, USACE)
3	AREA	4	Area of Work

4	MODF	6	Modification or REA number
5	BIDI	6	Bid Item (CLIN)
6	PHAS	2	Phase of Work
7	CATW	1	Category of Work
8	FOW1	10	Feature of Work (used up to 10 characters in length)
9	FOW2	10	Feature of Work (used up to 20 characters in length)
10	FOW3	10	Feature of Work (used up to 30 characters in length)

3.5. SUBMISSION REQUIREMENTS

Submit the following items for the Preliminary Schedule, Initial Schedule, and every Periodic Schedule Update throughout the life of the project:

3.5.1. Data CD’s

Provide two sets of data CD’s containing the project schedule in the backup format. Each CD shall also contain all previous update backup files. File medium shall be CD. Label each CD, indicating the type of schedule (Preliminary, Initial, Update), full contract number, Data Date and file names. Each schedule shall have a unique file name as determined by the Contractor.

3.5.2. Narrative Report

Provide a Narrative Report with the Preliminary, Initial, and each Periodic Update of the project schedule, as the basis of the progress payment request. The Narrative Report shall include: a description of activities along the 2 most critical paths where the total float is less than or equal to 20 work days, a description of current and anticipated problem areas or delaying factors and their impact, and an explanation of corrective actions taken or required to be taken. The narrative report is expected to communicate to the Government, the Contractor's thorough analysis of the schedule output and its plans to compensate for any problems, either current or potential, which are revealed through its analysis. Identify and explain why any activities that, based their calculated late dates, should have either started or finished during the update period but did not.

3.5.3. Approved Changes Verification

Include only those project schedule changes in the schedule submission that have been previously approved by the Contracting Officer. The Narrative Report shall specifically reference, on an activity by activity basis, all changes made since the previous period and relate each change to documented, approved schedule changes.

3.5.4. Schedule Reports

The format, filtering, organizing and sorting for each schedule report shall be as directed by the Contracting Officer. Typically reports shall contain: Activity Numbers, Activity Description, Original Duration, Remaining Duration, Early Start

Date, Early Finish Date, Late Start Date, Late Finish Date Total Float, Actual Start Date, Actual Finish Date, and Percent Complete. The following lists typical reports that will be requested. One or all of these reports may be requested for each schedule submission.

3.5.4.1. Activity Report

A list of all activities sorted according to activity number.

3.5.4.2. Logic Report

A list of detailed predecessor and successor activities for every activity in ascending order sorted by activity number.

3.5.4.3. Total Float Report

A list of all incomplete activities sorted in ascending order of total float. List activities which have the same amount of total float in ascending order of Early Start Dates. Do not show completed activities on this report.

3.5.4.4. Earnings Report by CLIN

A compilation of the Contractor's Total Earnings on the project from the NTP to the data date. This report shall reflect the earnings of specific activities based on the agreements made in the schedule update meeting defined herein. Provided that the Contractor has provided a complete schedule update, this report shall serve as the basis of determining progress payments. Group activities by CLIN Item number and sort by activity number. This report shall: sum all activities coded to a particular CLIN and provide a CLIN Item percent earned value; and complete and sum CLIN items to provide a total project percent complete. The printed report shall contain, for each activity: the Activity Number, Activity Description, Original Budgeted Amount, Quantity to Date, Percent Complete (based on cost), and Earnings to Date.

3.5.5. Network Diagram

The network diagram is required for the Preliminary, Initial and Periodic Updates. The network diagram shall depict and display the order and interdependence of activities and the sequence in which the work is to be accomplished. The Contracting Officer will use, but is not limited to, the following conditions to review compliance with this paragraph:

3.5.5.1. Continuous Flow

Diagrams shall show a continuous flow from left to right with no arrows from right to left. Show the activity number, description, duration, and estimated earned value on the diagram.

3.5.5.2. Project Milestone Dates

Show dates on the diagram for start of project, any contract required interim completion dates, and contract completion dates.

3.5.5.3. Critical Path

Clearly show the critical path.

3.5.5.4. Banding

Organize activities as directed to assist in the understanding of the activity sequence. Typically, this flow will group activities by category of work, work area and/or responsibility.

3.5.5.5. S-Curves

Earnings curves showing projected early and late earnings and earnings to date.

3.6. PERIODIC SCHEDULE UPDATE MEETINGS

Conduct periodic schedule update meetings for the purposes of reviewing the Contractor's proposed out of sequence corrections, determining causes for delay, correcting logic, maintaining schedule accuracy and determining earned value. Meetings shall occur at least monthly within five days of the proposed schedule data date and after the Contractor has updated the schedule with Government concurrence respecting actual start dates, actual finish dates, remaining durations and percent complete for each activity it intend to status. . Provide a computer with the scheduling software loaded and a projector during the meeting which allows all meeting participants to view the proposed schedule update during the meeting. The meeting and resultant approvable schedule update shall be a condition precedent to a formal submission of the update as described in SUBMISSION REQUIREMENTS and to the submission of an invoice for payment. The meeting will be a working interactive exchange which will allow the Government and the Contractor the opportunity review the updated schedule on a real time and interactive basis. The Contractor's authorized scheduling representative will organize, sort, filter and schedule the update as requested by the Government. The meeting will last no longer than 8 hours. A rough draft of the proposed activity logic corrections and narrative report shall be provided to the Government 48 hours in advance of the meeting. The Contractor's Project Manager and Authorized Scheduler shall attend the meeting with the Authorized Representative of the Contracting Officer.

3.6.1. Update Submission Following Progress Meeting

Submit a complete update of the project schedule containing all approved progress, revisions, and adjustments, pursuant to paragraph SUBMISSION REQUIREMENTS not later than 4 working days after the periodic schedule update meeting, reflecting only those changes made during the previous update meeting.

3.6.2. Activity Statusing

Statusing information, including Actual Start Dates (AS), Actual Finish Dates (AF), Remaining Durations (RD) and Percent Complete shall be subject to the approval of the Government prior to the meeting. As a minimum, address the following items on an activity by activity basis during each progress meeting:

3.6.2.1. Actual Start and Finish Dates

Accurately status the AS and/or AF dates for each activity currently in-progress or completed since the last update The Government may allow an AF date to be assigned with the percent complete less than 100% to account for the value of work remaining but not restraining successor activities. Only assign AS dates when actual progress occurs on an activity.

3.6.2.2. Remaining Duration

Update the estimated RD for all incomplete activities independent of Percent Complete. Remaining durations may exceed the activity OD or may exceed the activity's prior update RD if the Government considers the current OD or RD to be understated based on current progress, insufficient work crews actually manning the job, unrealistic OD or deficiencies

thatmust be corrected that restrain successor activities.

3.6.2.3. Percent Complete

Update the percent complete for each activity started, based on the realistic assessment of earned value. Activities which are complete but for remaining minor punch list work and which do not restrain the initiation of successor activities may be statused 100 percent complete. To allow for proper schedule management, cost load the correction of punch list from Government pre-final inspection activity(ies) not less than 1% of the total contract value, which activity(ies) may be statused 100 percent complete upon completion and correction of all punch list work identified during Government pre-final inspection(s).

3.6.2.4. Logic Changes

Specifically identify and discuss all logic changes pertaining to NTP on change orders, change orders to be incorporated into the schedule, contractor proposed changes in work sequence, corrections to schedule logic for out-of-sequence progress, and other changes that have been made pursuant to contract provisions. The Government will only approve logic revisions for the purpose of keeping the schedule valid in terms of its usefulness in calculating a realistic completion date, correcting erroneous logic ties, and accurately sequencing the work.

3.6.2.5. Other Changes

Other changes required due to delays in completion of any activity or group of activities include: 1) delays beyond the Contractor's control, such as strikes and unusual weather. 2) delays encountered due to submittals, Government Activities, deliveries or work stoppages which make re-planning the work necessary. 3) Changes required to correct a schedule that does not represent the actual or planned prosecution and progress of the work.

3.7. REQUESTS FOR TIME EXTENSIONS

In the event the Contractor believes it is entitled to an extension of the contract performance period, completion date, or any interim milestone date, furnish the following for a determination by the Contracting Officer: justification, project schedule data, and supporting evidence as the Contracting Officer may deem necessary. Submission of proof of excusable delay, based on revised activity logic, duration, and costs (updated to the specific date that the delay occurred) is a condition precedent to any approvals by the Government. In response to each Request For Proposal issued by the Government, the Contractor shall submit a schedule impact analysis demonstrating whether or not the change contemplated by the Government impacts the critical path.

3.7.1. Justification of Delay

The project schedule shall clearly display that the Contractor has used, in full, all the float time available for the work involved with its request. The Contracting Officer's determination as to the number of allowable days of contract extension shall be based upon the project schedule updates in effect for the time period in question, and other factual information.

Actual delays that are found to be caused by the Contractor's own actions, which result in a calculated schedule delay, will not be a cause for an extension to the performance period, completion date, or any interim milestone date.

3.7.2. Submission Requirements

Submit a justification for each request for a change in the contract completion date of less than 2 weeks based upon the most recent schedule update at the time of the NTP or constructive direction issued for the change. Such a request shall be in accordance with the requirements of other appropriate Contract Clauses and shall include, as a minimum:

3.7.2.1. A list of affected activities, with their associated project schedule activity number.

3.7.2.2. A brief explanation of the causes of the change

3.7.2.3. An analysis of the overall impact of the changes proposed.

3.7.2.4. A sub-network of the affected area

Identify activities impacted in each justification for change by a unique activity code contained in the required data file.

3.7.3. Additional Submission Requirements

The Contracting Officer may request an interim update with revised activities for any requested time extension of over 2 weeks. Provide this disk within 4 days of the Contracting Officer's request.

3.8. DIRECTED CHANGES

If the NTP is issued for changes prior to settlement of price and/or time, submit proposed schedule revisions to the Contracting Officer within 2 weeks of the NTP being issued. The Contracting Officer will approve proposed revisions to the schedule prior to inclusion of those changes within the project schedule. If the Contractor fails to submit the proposed revisions, the Contracting Officer may furnish the Contractor with suggested revisions to the project schedule. The Contractor shall include these revisions in the project schedule until revisions are submitted and final changes and impacts have been negotiated. If the Contractor has any objections to the revisions furnished by the Contracting Officer, advise the Contracting Officer within 2 weeks of receipt of the revisions. Regardless of the objections, the Contractor shall continue to update the schedule with the Contracting Officer's revisions until a mutual agreement in the revisions is reached. If the Contractor fails to submit alternative revisions within 2 weeks of receipt of the Contracting Officer's proposed revisions, the Contractor will be deemed to have concurred with the Contracting Officer's proposed revisions. The proposed revisions will then be the basis for an equitable adjustment for performance of the work.

3.9. WEEKLY PROGRESS MEETINGS

3.9.1. The Government and the Contractor shall meet weekly (or as otherwise mutually agreed to) between the meetings described in paragraph PERIODIC SCHEDULE UPDATE MEETINGS for the purpose of jointly reviewing the actual progress of the project as compared to the as planned progress and to review planned activities for the upcoming two weeks. The then current and approved schedule update shall be used for the purposes of this meeting and for the production and review of reports. The Contractor’s Project Manager and the Authorized Representative of the Contracting Officer shall attend. The weekly progress meeting will address the status of RFI’s, RFP’s and Submittals.

3.9.2. Provide a bar chart produced by the scheduling software, organized by Total Float and Sorted by Early Start Date, and a two week “look-ahead” schedule by filtering all schedule activities to show only current ongoing activities and activities schedule to start during the upcoming two weeks, organized by Work Area Code (AREA) and sorted by Early Start Date.

3.9.3. The Government and the Contractor shall jointly review the reports. If it appears that activities on the longest path(s) which are currently driving the calculated completion date (driving activities), are not progressing satisfactorily and therefore could jeopardize timely project completion, corrective action must be taken immediately. Corrective action includes but is not limited to: increasing the number of work crews; increasing the number of work shifts; increasing the number of hours worked per shift; and determining if Government responsibility coded activities require Government corrective action.

3.10. OWNERSHIP OF FLOAT

Float available in the schedule, at any time, shall not be considered for the exclusive use of either the Government or the Contractor.

3.11. TRANSFER OF SCHEDULE DATA INTO RMS/QCS

The Contractor shall download and upload the schedule data into the Resident Management System (RMS) prior to RMS databases being transferred to the Government and is considered to be additional supporting data in a form and detail required by the Contracting Officer pursuant to FAR 52.232-5 - Payments under Fixed-Price Construction Contracts. The receipt of a proper payment request pursuant to FAR 52.232-27 - Prompt Payment for Construction Contracts is contingent upon the Government receiving both acceptable and approvable hard copies and electronic export from QCS of the application for progress payment.

SECTION 01 33 00

SUBMITTAL PROCEDURES

1.0 GENERAL

1.1 DEFINITIONS

1.2 NOT USED

1.3 SUBMITTAL CLASSIFICATION

1.4 APPROVED OR CONCURRED WITH SUBMITTALS

1.5 DISAPPROVED SUBMITTALS

1.6 WITHHOLDING OF PAYMENT

1.7 GENERAL

1.8 SUBMITTAL REGISTER

1.9 SCHEDULING

1.10 TRANSMITTAL FORM (ENG FORM 4025)

1.11 SUBMITTAL PROCEDURES

1.12 CONTROL OF SUBMITTALS

1.13 GOVERNMENT APPROVED SUBMITTALS

1.14 INFORMATION ONLY SUBMITTALS

1.15 STAMPS

ATTACHMENT A SAMPLE PRELIMINARY SUBMITTAL REGISTER INPUT FORM

1.0 GENERAL

1.1. DEFINITIONS

1.1.1. Submittal

Contract Clauses "FAR 52.236-5, Material and Workmanship," paragraph (b) and "FAR 52.236-21, Specifications and Drawings for Construction," paragraphs (d), (e), and (f) apply to all "submittals."

1.1.2. Submittal Descriptions (SD)

Submittals requirements are specified in the technical sections. Submittals are identified by SD numbers and titles as follows.

SD-01 Preconstruction Submittals

- Certificates of insurance.
- Surety bonds.
- List of proposed subcontractors.
- List of proposed products.
- Construction Progress Schedule.
- Submittal register.
- Schedule of prices.
- Accident Prevention Plan.
- Work plan.
- Quality control plan.
- Environmental protection plan.

SD-02 Shop Drawings

- Drawings, diagrams and schedules specifically prepared to illustrate some portion of the work.
- Diagrams and instructions from a manufacturer or fabricator for use in producing the product and as aids to the Contractor for integrating the product or system into the project.
- Drawings prepared by or for the Contractor to show how multiple systems and interdisciplinary work will be coordinated.

SD-03 Product Data

- Catalog cuts, illustrations, schedules, diagrams, performance charts, instructions and brochures illustrating size, physical appearance and other characteristics of materials or equipment for some portion of the work.

• Samples of warranty language when the contract requires extended product warranties.

SD-04 Samples

• Physical examples of materials, equipment or workmanship that illustrate functional and aesthetic characteristics of a material or product and establish standards by which the work can be judged.

• Color samples from the manufacturer's standard line (or custom color samples if specified) to be used in selecting or approving colors for the project.

• Field samples and mock-ups constructed on the project site establish standards by which the ensuring work can be judged. Includes assemblies or portions of assemblies that are to be incorporated into the project and those which will be removed at conclusion of the work.

SD-05 Design Data

• Calculations, mix designs, analyses or other data pertaining to a part of work.

• Design submittals, design substantiation submittals and extensions of design submittals.

SD-06 Test Reports

• Report signed by authorized official of testing laboratory that a material, product or system identical to the material, product or system to be provided has been tested in accord with specified requirements. (Testing must have been within three years of date of contract award for the project.)

• Report which includes findings of a test required to be performed by the Contractor on an actual portion of the work or prototype prepared for the project before shipment to job site.

• Report which includes finding of a test made at the job site or on sample taken from the job site, on portion of work during or after installation.

• Investigation reports.

• Daily checklists.

• Final acceptance test and operational test procedure.

SD-07 Certificates

• Statements printed on the manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements. Must be dated after award of project contract and clearly name the project.

• Document required of Contractor, or of a supplier, installer or subcontractor through Contractor, the purpose of which is to further quality of orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel qualifications.

• Confined space entry permits.

• Text of posted operating instructions.

SD-08 Manufacturer's Instructions

• Preprinted material describing installation of a product, system or material, including special notices and Material Safety Data sheets concerning impedances, hazards and safety precautions.

SD-09 Manufacturer's Field Reports

• Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.

• Factory test reports.

SD-10 Operation and Maintenance Data

• Data that is furnished by the manufacturer, or the system provider, to the equipment operating and maintenance personnel. This data is needed by operating and maintenance personnel for the safe and efficient operation, maintenance and repair of the item.

SD-11 Closeout Submittals

• Documentation to record compliance with technical or administrative requirements or to establish an administrative mechanism.

1.1.3. Approving Authority

Office authorized to approve submittal.

1.1.4. Work

As used in this section, on- and off-site construction required by contract documents, including labor necessary to produce submittals, construction, materials, products, equipment, and systems incorporated or to be incorporated in such construction.

1.2. Not Used

1.3. SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.3.1. Designer of Record Approved (DA)

1.3.1.1. Designer of Record (DOR) approval is required for all extensions of design, critical materials, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction", they are considered to be "shop drawings". The Contractor shall provide the Government the number of copies designated hereinafter of all DOR approved submittals, after the DOR has taken appropriate action. The DOR shall ensure that submittals conform to the Solicitation, the

Accepted Proposal and the completed design, however see below for those submittals proposing a deviation to the contract or a substitution of a material, system, or piece of equipment that was identified by manufacturer, brand name or model description in the accepted contract proposal.

1.3.1.2 The DOR shall ensure that the submittals comply with all applicable Buy American Act and Trade Agreement Act clauses in the contract. The DOR may confer with the Contracting Officer's Representative for advice and interpretation of those clauses, as necessary.

1.3.1.3 The Government may, but is not required to, review any or all DOR approved submittals for conformance to the solicitation, accepted proposal and the completed design. Except for submittals designated as deviating from the Solicitation, the Accepted Proposal or completed design, the Contractor may proceed with acquisition and installation upon DOR approval. Government Approved (GA)

1.3.2 Government Approved (GA)

Government approval is required for any item specifically designated as requiring Government approval in the Solicitation, for internal and external color finish selections and other items as designated by the Contracting Officer. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction," they are considered to be "shop drawings."

1.3.3 Government Conformance Review of Design (CR)

The Government will review all intermediate and final design submittals for conformance with the technical requirements of the solicitation. Section 01 33 16 DESIGN AFTER AWARD covers the design submittal and review process in detail. Review will be only for conformance with the applicable codes, standards and contract requirements. Design data includes the design documents described in Section 01 33 16 DESIGN AFTER AWARD. Generally, design submittals should be identified as SD-05 Design Data submittals.

1.3.4 Designer of Record Approved/Government Conformance Review (DA/CR)

1.3.4.1 Deviations to the Accepted Design. Designer of Record approval and the Government’s concurrence are required for any proposed deviation from the accepted design which still complies with the contract (the Solicitation and Accepted Proposal) before the Contractor is authorized to proceed with material acquisition or installation. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction", they are considered to be "shop drawings.” If necessary to facilitate the project schedule, the Contractor and the DOR may discuss a submittal proposing a deviation with the Contracting Officer's Representative prior to officially submitting it to the Government. However, the Government reserves the right to review the submittal before providing an opinion, if it deems it necessary. In any case, the Government will not formally agree to or provide a preliminary opinion on any deviation without the DOR's approval or recommended approval. The Government reserves the right to non-concur with any deviation from the design, which may impact furniture, furnishings, equipment selections or operations decisions that were made, based on the reviewed and concurred design.

1.3.4.2 Substitutions. Unless prohibited or provided for otherwise elsewhere in the Contract, where the accepted contract proposal named products, systems, materials or equipment by manufacturer, brand name and/or by model number or other specific identification, and the Contractor desires to substitute manufacturer or model after award, the Contractor shall submit a requested substitution for Government concurrence. The submittal shall include substantiation, identifying information and the DOR’s approval, as meeting the contract requirements and that it is equal in function, performance, quality and salient features to that in the accepted contract proposal.

1.3.5 Designer of Record Approved/Government Approved (DA/GA)

In addition to the above stated requirements for proposed deviations to the accepted design, both Designer of Record and Government Approval and, where applicable, a contract modification are required before the Contractor is authorized to proceed with material acquisition or installation for any proposed deviation to the contract (the solicitation and/or the accepted proposal), which constitutes a change to the contract terms. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction", they are considered to be "shop drawings". The Government reserves the right to accept or reject any such proposed deviation at its discretion.

1.3.6. Information Only

All submittals not requiring Designer of Record or Government approval will be for information only. The Contractor shall provide the Government “For Information Only” copies of all submittals not requiring Government approval or concurrence, after the Designer of Record has taken the appropriate action.

1.4. APPROVED OR CONCURRED WITH SUBMITTALS

The Contracting Officer's approval of or concurrence with submittals shall not be construed as a complete check, but will indicate only that design, general method of construction, materials, detailing and other information appear to meet the Solicitation and Accepted Proposal. Approval or concurrence will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the Contractor Quality Control (CQC) requirements of this contract is responsible for design, dimensions, all design extensions, such as the design of adequate connections and details, etc., and the satisfactory construction of all work. After submittals have been approved by the Contracting Officer, no re-submittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.5. DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer, obtain the Designer of Record's approval when applicable, and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. Any "information only" submittal found to contain errors or unapproved deviations from the Solicitation or Accepted Proposal shall be resubmitted as one requiring "approval" action, requiring both Designer of Record and Government approval. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the Contract Clause "Changes" shall be given promptly to the Contracting Officer.

1.6. WITHHOLDING OF PAYMENT

No payment for materials incorporated in the work will be made if all required Designer of Record or required Government approvals have not been obtained. No payment will be made for any materials incorporated into the work for any conformance review submittals or information only submittals found to contain errors or deviations from the Solicitation or Accepted Proposal.

1.7. GENERAL

The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units

of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked, approved, stamped, signed, and dated by the Contractor's Quality Control (CQC) System Manager and the Designer of Record, if applicable, indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

1.8. SUBMITTAL REGISTER (GA)

The Contractor shall develop a complete list of submittals, including each separate design package submittal. The Contractor shall submit the initial submittal register within 15 days after Notice to Proceed, including, as a minimum, the design packages and other initial submittals required elsewhere in the contract. The Designer of Record shall identify required submittals in the specifications, and use the list to prepare the Submittal Register, utilizing the government-provided software, QCS (see Section 01 45 01.10), to create the ENG Form 4288. Attachment A, herein, is a sample preliminary submittal register input form for use with the Quality Management System and the Resident Office Management System (QCS and RMS). The Government will provide the Contractor the actual Excel Spreadsheet version of this sample input form after award to modify and to use for input into QCS. The Excel Spreadsheet is not totally inputable into QCS, so additional keystroke input will be necessary. The sample input form is not all-inclusive. In addition, additional submittals may be required by other parts of the contract. After award, the parties will meet to discuss contract specific (or task order specific for a task order contract) distribution for the submittals all-inclusive and additional submittals may be required by other parts of the contract. The Contractor shall develop and complete the submittal register as the design is completed. The Contractor shall submit it to the Contracting Officer with the un-reviewed final design package submission or as soon as the design specifications are completed, if before the final design submission. When applicable, if the Contractor elects to fast track design and construction, using multiple design package submissions, the submittal register shall be updated to reflect the submittals associated with each design submission, clearly denoting all revisions to the previous submission. The submittal register will serve as a scheduling document for submittals and will be used to control submittal actions throughout the contract period. The submit dates and need dates used in the submittal register shall be coordinated with dates in the Contractor prepared progress schedule. Updates to the submittal register showing the Contractor action codes and actual dates with Government action codes and actual dates shall be submitted monthly or until all submittals have been satisfactorily completed. When the progress schedule is revised, the submittal register shall also be revised and submitted.

1.9. SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 15 calendar days exclusive of mailing time) shall be allowed and shown on the register for those items requiring Government approval or concurrence. No delay damages or time extensions will be allowed for time lost in late submittals by the Contractor.

1.10. TRANSMITTAL FORM (ENG FORM 4025)

Use the transmittal form (ENG Form 4025) for submitting submittals in accordance with the instructions on the reverse side of the form. These forms will be furnished to the Contractor or are included in the QCS software if the Contractor is required to use QCS for this contract. Use a separate transmittal form for each specification section Complete this form by filling out all the heading blank spaces and identify each item submitted. Exercise special care to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

1.11. SUBMITTAL PROCEDURES

Submittals shall be made as follows:

1.11.1. Procedures

The Government will further discuss detailed submittal procedures with the Contractor at the Post-Award Conference.

1.11.2. Deviations

For submittals which include proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025 shall be checked. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

1.12. CONTROL OF SUBMITTALS

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

1.13. GOVERNMENT APPROVED OR CONCURRED WITH SUBMITTALS

Upon completion of review of submittals requiring Government approval or concurrence, the submittals will be identified as having received approval by being so stamped and dated. One (1) copies of the submittal will be retained by the Contracting Officer and Two (2) copy(ies) copy of the submittal will be returned to the Contractor.

1.14. INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

1.15. STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

	CONTRACTOR	
	(FIRM NAME)	
	Approved	
	Approved with corrections as noted on submittal data and/or attached sheet(s)	
Signature:		
Title:		
Date:		

For design-build construction, both the Contractor Quality Control System Manager and the Designer of Record shall stamp and sign to certify that the submittal meets contract requirements.

ATTACHMENT A SAMPLE PRELIMINARY SUBMITTAL REGISTER INPUT FORM

RMS SUBMITTAL REGISTER INPUT FORM

CONTRACT NUMBER

DELIVERY ORDER

TITLE AND LOCATION

Button <-----Right click for Instructions

			TYPE OF SUBMITTAL											CLASSIFICATION						REVIEWING OFFICE					
SECTION	PARAGRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	01 - PRECON SUBMITTALS	02 - SHOP DRAWINGS	03 - PRODUCT DATA	04 - SAMPLES	05 - DESIGN DATA	06 - TEST REPORTS	07 - CERTIFICATES	08 - MFRS INSTRUCTIONS	09 - MFRS FIELD REPORT	10 - O&M DATA	11 - CLOSEOUT SUBMITTALS	FIO - FOR INFORMATION ONLY	GA - GOVERNMENT APPROVED	DA - DESIGNER OF RECORD APPROVAL	CR - CONFORMANCE REVIEW	DA / CR	DA / GA	DO - DISTRICT OFFICE	AO - AREA OFFICE	RO - RESIDENT OFFICE	PO - PROJECT OFFICE	DR - DESIGNER OF RECORD	AE - ARCHITECT / ENGINEER
00 72 00	52.236-13	Accident Prevention Plan	X														X				X				
00 73 00	1.11	Dev. From Accept. Design. No Deviation from Contract					X											X			X				X	
00 73 00	1.11	Dev. From Accepted Design - Deviates from Contract					X												X		X				X	
00 73 00	1.17	Supplemental Price Breakdown	X											X							X					
00 73 00	1.18	SSHO Qualifications	X												X						X					
01 10 00	5.5.2	Building Envelope Sealing Performance Testing						X						X							X					
01 10 10	***	Tests as Req by Codes - DOR Develops Test Program						X						X							X				X	
01 10 00	5.8.3	BAS Review Information		X														X			X	X			X	
01 10 00	5.8.3	BAS Performance Verification Test						X						X							X				X	
01 10 00	5.8.4	Testing Adjusting and Balancing						X						X							X				X	
01 10 00	5.8.5	Commissioning						X						X							X				X	
01 10 00	6.15	Environmental As Required for Site Specific					X										X				X				X	
01 10 00	6.16	Permits as required for Site specific					X										X				X				X	
01 10 00	5.10.2	Fire Protection Tests						X	X					X							X				X	
01 32 01.00 10	3.4.1	Preliminary Project Schedule	X												X						X					
01 32 01.00 10	3.4.2	Initial Project Schedule	X												X						X					
01 32 01.00 10	3.4.3	Design Package Schedule	X												X						X					
01 32 01.00 10	3.6.1	Periodic schedule updates from the Contractor	X												X						X					
01 32 01.00 10	3.7	Time Extension Request (Schedule)	X												X						X					
01 33 00	1.8	Submittal Register - DOR Input Required	X												X						X				X	
01 33 00	1.8	Submittal Register Updates (Design Packages, etc.)	X												X						X				X	
01 33 00	1.3.1	Substitution of Manuf or Model Named in Proposal		X	X														X		X				X	
01 33 16	1.2	Identify Designer(s) of Record	X												X						X					
01 33 16	1.1.2 / 3.2.4	Fast Track Design Package(s)					X											X			X	X				
01 33 16	1.2	Identification of all Designers of Record	X															X				X				
01 33 16	3.2.1	Site and Utility Des Package, incl. Substantiation					X											X			X	X				
01 33 16	3.2.2/3.5	Interim Des Subm Package(s), incl. Substantiation					X											X			X	X				
01 33 16	3.5.1	Drawings					X											X			X	X				
01 33 16	3.5.2.2	Sitework Design Analyses					X											X			X	X				
01 33 16	3.5.2.3	Structural Design Analyses					X											X			X	X				
01 33 16	3.5.2.4	Security Design Analyses					X											X			X	X				
01 33 16	3.5.2.5	Architectural Design Analyses					X											X			X	X				
01 33 16	3.5.2.6	Mechanical Design Analyses					X											X			X	X				
01 33 16	3.5.2.7	Life Safety Design Analyses					X											X			X	X				
01 33 16	3.5.2.8	Plumbing Design Analyses					X											X			X	X				
01 33 16	3.5.2.9	Elevator Design Analyses (as Applicable)					X											X			X	X				
01 33 16	3.5.2.10	Electrical Design Analyses					X											X			X	X				
01 33 16	3.5.2.11	Telecommunications Design Analyses					X											X			X	X				
01 33 16	3.5.2.12	Cathodic Protection Design Analyses					X											X			X	X				
01 33 16	3.5.3	Geotechnical Investigations and Reports					X											X			X	X				
01 33 16	3.5.4	LEED Documentation					X											X			X	X				
01 33 16	3.5.5	Energy Conservation Documentation					X											X			X	X				
01 33 16	3.5.6	Specifications					X											X			X	X				
01 33 16	3.5.7	Building Rendering					X											X			X	X				
01 33 16	3.2.4/3.7	Final Des Submittal Package(s), incl. Substantiation					X											X			X	X				
01 33 16	3.7.5	DD Form 1354 (Transfer of Real Property)											X					X				X				
01 33 16	3.2.5/3.8	Design Complete Submittal Package(s)					X											X			X	X				
01 33 16	3.3.3	Design and Code Review Checklists					X											X			X	X				
01 33 16	A-2.0	SID - Interim and Final (as applicable)			X	X	X								X							X				
01 33 16	B-2.0	FFE (as Applicable)					X								X							X				
01 45 04.00 10	3.2	Design and Construction QC Plan	X															X				X				
01 57 20.00.10	1.2	Environmental Protection Plan	X															X				X				
01 78 02.00 10	1.2.1	Final as-Built Drawings											X		X											
01 78 02.00 10	1.2.7	Provide final as-built CADD and BIM Model files											X		X							X				
01 78 02.00 10	1.2.9	Provide scans of all other docs in Adobe.pdf format											X		X							X				
01 78 02.00 10	1.3.1	Equip-in-Place list of all installed equip and cost											X		X							X				
01 78 02.00 10	1.3.2	Data on equip not addressed in O&M manuals											X		X							X				
01 78 02.00 10	1.3.3	Final as-built specs - electronic files											X		X							X				
01 78 02.00 10	1.4.2.1	Warranty management plan - FAR 52.246-21											X		X							X				
01 78 02.00 10	1.4.2.1	Certificates of Warranty for extended warranty items											X		X							X				
01 78 02.00 10	1.4.2.1	Contractor's POCs for implementing warranty process											X		X							X				
01 78 02.00 10	1.4.2.1	List of each warranted equip, item, feature or system											X		X							X				
01 78 02.00 10	1.5	See also Section 01 10 00 par. 5.8.4 and 5.8.5											X		X							X				
01 78 02.00 10	1.6.1.2	Equipment O&M Manuals - 1 electronic / 2 hard copies											X		X							X				
01 78 02.00 10	1.10	List of Completed Cleanup Items											X					X				X				

RMS INPUT FORM 4288A

Export to RMS in CSV(MS-DOS) (*.csv) Format

Note: Reviewing Office Optional

SECTION 01 33 16

DESIGN AFTER AWARD

1.0 GENERAL INFORMATION

1.1 INTRODUCTION

1.2 DESIGNER OF RECORD

2.0 PRODUCTS (Not Applicable)

3.0 EXECUTION

3.1 PRE-WORK ACTIVIES & CONFERENCES

3.1.1 Design Quality Control Plan

3.1.2 Post Award Conference

3.1.3 Partnering & Project Progress Processes

3.1.4 Initial Design Conference

3.1.5 Pre-Construction Conference

3.2 STAGES OF DESIGN SUBMITTALS AND OVER THE SHOULDER PROGRESS REVIEWS

3.2.1 Site/Utilities

3.2.2 Interim Design Submittals

3.2.3 Over-the-Shoulder Progress Reviews

3.2.4 Final Design Submissions

3.2.5 Design Complete Submittals

3.2.6 Holiday Periods for Government Review or Actions

3.2.7 Late Submittals and Reviews

3.3 DESIGN CONFIGURATION MANAGEMENT

3.3.1 Procedures

3.3.2 Tracking Design Review Comments

3.3.3 Design and Code Checklists

3.4 INTERIM DESIGN REVIEWS AND CONFERENCES

3.4.1 General

3.4.2 Procedures

3.4.3 Conference Documentation

3.5 INTERIM DESIGN REQUIREMENTS

3.5.1 Drawings

3.5.2 Design Analyses

3.5.3 Geotechnical Investigations and Reports

3.5.4 LEED Documentation

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1.0 GENERAL INFORMATION

1.1. INTRODUCTION

1.1.1. The information contained in this section applies to the design required after award. After award, the Contractor will develop the accepted proposal into the completed design, as described herein.

1.1.2. The Contractor may elect to fast track the design and construction that is, proceed with construction of parts of the sitework and facilities prior to completion of the overall design. To facilitate fast tracking, the Contractor may elect to divide the design into no more than ten (10) design packages per major facility type and no more than three (3) design packages for site and associated work. The Contractor shall designate how it will package the design, consistent with its overall plan for permitting (where applicable) and construction of the project. See Sections 01 33 00 SUBMITTAL PROCEDURES and 01 32 01.00 10 PROJECT SCHEDULE for requirements for identifying and scheduling the design packaging plan in the submittal register and project schedule. See also Sections 01 10 00 STATEMENT OF WORK and 01 57 20.00 10 ENVIRONMENTAL PROTECTION for any specified permit requirements. If early procurement of long-lead item construction materials or installed equipment, prior to completion of the associated design package, is necessary to facilitate the project schedule, the Contractor shall also identify those long-lead items and how it will assure design integrity of the associated design package to meet the contract requirements (The Contract consists of the Solicitation requirements and the accepted proposal). Once the Government is satisfied that the long-lead items meet the contract requirements, the Contracting Officer will allow the Contractor to procure the items at its own risk.

1.1.3. The Contractor may proceed with the construction work included in a separate design package after the Government has reviewed the final (100%) design submission for that package, review comments have been addressed and resolved to the Government's satisfaction and the Contracting Officer (or the Administrative Contracting Officer) has agreed that the design package may be released for construction.

1.2. DESIGNER OF RECORD

The Design-Build Contractor (“Design-Builder”, “D-B” or simply “Contractor”) shall identify, for approval, the Designer of Record (“DOR”) that will be responsible for each area of design. One DOR may be responsible for more than one area. All areas of design disciplines shall be accounted for by a listed, Professional Registered, DOR. The DOR’s shall stamp, sign, and date each design drawing and other design deliverables under their responsible discipline at each design submittal stage (see contract clause Registration of Designers). If the deliverables are not ready for release for construction, they should be identified as "preliminary" or "not for release for construction" or by using some other appropriate designation. The DOR(s) shall also be responsible for maintaining the integrity of the design and for compliance with the contract requirements through construction and documentation of the as-built condition by coordination, review and approval of extensions of design, material, equipment and other construction submittals, review and approval or disapproval of requested deviations to the accepted design or to the contract, coordination with the Government of the above activities, and by performing other typical professional designer responsibilities.

2.0 PRODUCTS (Not Applicable)

3.0 EXECUTION

3.1. PRE-WORK ACTIVITIES & CONFERENCES

3.1.1. Design Quality Control Plan

The DB Contractor shall submit for Government acceptance, a Design Quality Control Plan in accordance with Section 01 45 04.00 10 CONTRACTOR QUALITY CONTROL before design may proceed.

3.1.2. Post Award Conference

3.1.2.1. The government will conduct a post award contract administration conference at the project site, as soon as possible after contract award. This will be coordinated with issuance of the contract notice to proceed (NTP). The Contractor and major sub-contractor representatives shall participate. All designers need not attend this first meeting. Government representatives will include COE project delivery team members, facility users, facility command representatives, and installation representatives. The Government will provide an agenda, meeting goals, meeting place, and meeting time to participants prior to the meeting.

3.1.2.2. The post award conference shall include determination and introduction of contact persons, their authorities, contract administration requirements, discussion of expected project progress processes, and coordination of subsequent meetings for quality control (see Section 01 45 04.00 10 CONTRACTOR QUALITY CONTROL), Partnering (see below and SCR: Partnering), and the initial design conference (see below).

3.1.2.3. The government will introduce COE project delivery team members, facility users, facility command representatives, and installation representatives. The DB Contractor shall introduce major subcontractors, and other needed staff. Expectations and duties of each person shall be defined for all participants. A meeting roster shall be developed and distributed by the government with complete contact information including name, office, project role, phone, mailing and physical address, and email address.

3.1.3. Partnering & Project Progress Processes

3.1.3.1. The initial Partnering conference may be scheduled and conducted at any time with or following the post award conference. The Government proposes to form a partnership with the DB Contractor to develop a cohesive building team. This partnership will involve the COE project delivery team members, facility users, facility command representatives, installation representatives, Designers of Record, major subcontractors, contractor quality control staff, and contractor construction management staff. This partnership will strive to develop a cooperative management team drawing on the strengths of each team member in an effort to achieve a quality project within budget and on schedule. This partnership will be bilateral in membership and participation will be totally voluntary. All costs, excluding labor and travel expenses, shall be shared equally between the Government and the Contractor. The Contractor and Government shall be responsible for their own labor and travel costs. Normally, partnering meetings will be held at or in the vicinity of the project installation.

3.1.3.2. As part of the partnering process, the Government and Contractor shall develop, establish, and agree to comprehensive design development processes including conduct of conferences, expectations of design development at conferences, fast-tracking, design acceptance, Structural Interior Design (SID)/ Furniture, Fixtures & Equipment (FF&E) design approval, project closeout, etc. The government will explain contract requirements and the DB Contractor shall review their proposed project schedule and suggest ways to streamline processes.

3.1.4. Initial Design Conference

The initial design conference may be scheduled and conducted at the project installation any time after the post award conference, although it is recommended that the partnering process be initiated with or before the initial design conference. Any design work conducted after award and prior to this conference should be limited to site and is discouraged for other items. All Designers of Record shall participate in the conference. The purpose of the meeting is to introduce everyone and to make sure any needs the contractor has are assigned and due dates established as well as who will get the information. See also Attachment F, BUILDING INFORMATION MODELING REQUIREMENTS for discussion concerning the BIM Implementation Plan demonstration at this meeting. The DB Contractor shall conduct the initial design conference.

3.1.5. Pre-Construction Conference

Before starting construction activities, the Contractor and Government will jointly conduct a pre-construction administrative conference to discuss any outstanding requirements and to review local installation requirements for start of construction. It is possible there will be multiple Pre-Construction Conferences based on the content of the design packages selected by the Contractor. The Government will provide minutes of this meeting to all participants.

3.2. STAGES OF DESIGN SUBMITTALS AND OVER THE SHOULDER PROGRESS REVIEWS

The stages of design submittals described below define Government expectations with respect to process and content. The Contractor shall determine how to best plan and execute the design and review process for this project, within the parameters listed below. As a minimum, the Government expects to see at least one interim design submittal, at least one final design submittal before construction of a design package may proceed and at least one Design Complete submittal that documents the accepted design. The Contractor may sub-divide the design into separate packages for each stage of design and may proceed with construction of a package after the Government accepts the final design for that package. See discussion on waivers to submission of one or more intermediate design packages where the parties partner during the design process. See also Attachment F, BUILDING INFORMATION MODELING REQUIREMENTS for discussion concerning BIM and the various stages of design submittals and over-the-shoulder progress reviews

3.2.1. Site/Utilities

To facilitate fast-track design-construction activities the contractor may submit a final (100%) site and utility design as the first design submittal or it may elect to submit interim and final site and utility design submittals as explained below. Following review, resolution, and incorporation of all Government comments, and submittal of a satisfactory set of site/utility design documents, after completing all other pre-construction requirements in this contract and after the pre-construction meeting, the Government will allow the Contractor to proceed with site development activities, including demolition where applicable, within the parameters set forth in the accepted design submittal. For the first site and utility design submission, whether an interim or final, the submittal review, comment, and resolution times from this specification apply, except that the Contractor shall allow the Government a 14 calendar day review period, exclusive of mailing time. No on-site construction activities shall begin prior to written Government clearance to proceed.

3.2.2. Interim Design Submittals

The Contractor may submit either a single interim design for review, representing a complete package with all design disciplines, or split the interim design into smaller, individual design packages as it deems necessary for fast-track construction purposes. As required in Section 01 32 01.00 10 PROJECT SCHEDULE, the Contractor shall schedule its design and construction packaging plan to meet the contract completion period. This submission is the Government's

primary opportunity to review the design for conformance to the solicitation and to the accepted contract proposal and to the Building Codes at a point where required revisions may be still made, while minimizing lost design effort to keep the design on track with the contract requirements. The requirements for the interim design review submittals and review conferences are described hereinafter. This is not necessarily a hold point for the design process; the Contractor may designate the interim design submittal(s) as a snapshot and proceed with design development at its own risk. See below for a waiver, where the parties establish an effective over-the-shoulder progress review procedure through the partnering process that would eliminate the need for or expedite a formal intermediate design review on one or more individual design packages.

3.2.3. Over-the-Shoulder Progress Reviews

To facilitate a streamlined design-build process, the Government and the Contractor may agree to one-on-one reviewer or small group reviews, electronically, on-line (if available within the Contractor's standard design practices) or at the Contractor's design offices or other agreed location, when practicable to the parties. The Government and Contractor will coordinate such reviews to minimize or eliminate disruptions to the design process. Any data required for these reviews shall normally be provided in electronic format, rather than in hard copy. If the Government and Contractor establish and implement an effective, mutually agreeable partnering procedure for regular (e.g., weekly) over-the shoulder review procedures that allow the Government reviewers the opportunity to keep fully informed of the progress, contents, design intent, design documentation, etc. of the design package, the Government will agree to waive or to expedite the formal intermediate design review period for that package. The Contractor shall still be required to submit the required intermediate design documentation, however the parties may agree to how that material will be provided, in lieu of a formal consolidated submission of the package. It should be noted that Government funding is extremely limited for non-local travel by design reviewers, so the maximum use of virtual teaming methods must be used. Some possible examples include electronic file sharing, interactive software with on-line or telephonic conferencing, televideo conferencing, etc. The Government must still perform its Code and Contract conformance reviews, so the Contractor is encouraged to partner with the reviewers to find ways to facilitate this process and to facilitate meeting or bettering the design-build schedule. The Contractor shall maintain a fully functional configuration management system as described herein to track design revisions, regardless of whether or not there is a need for a formal intermediate design review. The formal intermediate review procedures shall form the contractual basis for the official schedule, in the event that the partnering process determines that the formal intermediate review process to be best suited for efficient project execution. However, the Government pledges to support and promote the partnering process to work with the Contractor to find ways to better the design schedule.

3.2.4. Final Design Submissions

This submittal is required for each design package prior to Government acceptance of that design package for construction. The requirements for the final design submittal review conferences and the Government's acceptance for start of construction are described herein after.

3.2.5. Design Complete Submittals

After the final design submission and review conference for a design package, the Contractor shall revise the design package to incorporate the comments generated and resolved in the final review conferences, perform and document a back-check review and submit the final, design complete documents, which shall represent released for construction documents. The requirements for the design complete submittals are described hereinafter.

3.2.6. Holiday Periods for Government Review or Actions

The Contractor shall not schedule meetings, Government reviews or responses during the last two weeks of December or other designated Government Holidays (including Friday after Thanksgiving) and shall exclude such dates and periods from any durations specified herein for Government actions.

3.2.7. Late Submittals and Reviews

If the Contractor cannot meet its scheduled submittal date for a design package, it must revise the proposed submittal date and notify the government in writing, at least one (1) week prior to the submittal, in order to accommodate the Government reviewers' other scheduled activities. If a design submittal is over one (1) day late in accordance with the latest revised design schedule, or if notification of a proposed design schedule change is less than seven (7) days from the anticipated design submission receipt date, the Government review period may be extended up to seven (7) days due to reviewers' schedule conflicts. If the Government is late in meeting its review commitment and the delay increases the Contractor's cost or delays completion of the project, the Suspension of Work and Defaults clauses provide the respective remedy or relief for the delay.

3.3. DESIGN CONFIGURATION MANAGEMENT

3.3.1. Procedures

The Contractor shall develop and maintain effective, acceptable design configuration management (DCM) procedures to control and track all revisions to the design documents after the Interim Design Submission through submission of the As-Built documents. During the design process, this will facilitate and help streamline the design and review schedule. After the final design is accepted, this process provides control of and documents revisions to the accepted design (See Special Contract Requirement: Deviating From the Accepted Design). The system shall include appropriate authorities and concurrences to authorize revisions, including documentation as to why the revision must be made. The DCM data shall be available to the Government reviewers at all times. The Contractor may use its own internal system with interactive Government concurrences, where necessary or may use the Government's "DrChecks Design Review and Checking System" (see below and Attachment C).

3.3.2. Tracking Design Review Comments

Although the Contractor may use its own internal system for overall design configuration management, the Government and the Contractor shall use the DrChecks Design Review and Checking System to initiate, respond to, resolve and track Government design compliance review comments. This system may be useful for other data which needs to be interactive or otherwise available for shared use and retrieval. See Attachment C for details on how to establish an account and set-up the DrChecks system for use on the project.

3.3.3. Design and Code Checklists

The Contractor shall develop and complete various discipline-specific checklists to be used during the design and quality control of each submittal. These completed checklists shall be submitted with each design submittal, as applicable, as part of the project documentation. See Section 01 45 04.00 10 Contractor Quality Control, Attachment D for a Sample Fire Protection and Life Safety Code review checklist and Attachment E for LEED 2.2 Documentation Requirements And Submittals Checklist..

3.4. INTERIM DESIGN REVIEWS AND CONFERENCES

3.4.1. General

At least one interim design submittal, review and review conference is required for each design package (except that, per paragraph 3.2.1, the Contractor may skip the interim design submission and proceed directly to final design on the sitework and utilities package). The DB Contractor may include additional interim design conferences or over-the-shoulder reviews, as needed, to assure continued government concurrence with the design work. The interim submittal review periods and conferences shall be included in the project schedule and shall indicate what part of the design work is at what percentage of completion. The required interim design conferences shall be held when interim design requirements are reached as described below. See also Paragraph: **Over-the-Shoulder Progress Reviews** for a waiver to the formal interim design review.

3.4.2. Procedures

After receipt of an Interim Design submission, the Contractor shall allow the Government fourteen (14) calendar days after receipt of the submission to review and comment on the interim design submittal. For smaller design packages, especially those that involve only one or a few separate design disciplines, the parties may agree on a shorter review period or alternative review methods (e.g., over-the –shoulder or electronic file sharing), through the partnering process. For each interim design review submittal, the COR will furnish, to the Contractor, a single consolidated, validated listing of all comments from the various design sections and from other concerned agencies involved in the review process using the DrChecks Design Review and Checking System. The review will be for conformance with the technical requirements of the solicitation and the Contractor's RFP proposal. If the Contractor disagrees technically with any comment or comments and does not intend to comply with the comment, he/she must clearly outline, with ample justification, the reasons for noncompliance within five (5) days after receipt of these comments in order that the comment can be resolved. The Contractor shall furnish disposition of all comments, in writing, through DrChecks. The Contractor is cautioned that if it believes the action required by any comment exceeds the requirements of this contract, that it should take no action and notify the COR in writing immediately. The Interim Review conference will be held for each design submittal at the installation. The Contractor shall bring the personnel that developed the design submittal to the review conference. The conference will take place the week after the receipt of the comments by the Contractor. For smaller fast-track packages that involve only a few reviewers, the parties may agree to alternative conferencing methods, such as teleconferencing, or televideo, where available, as determined through Partnering.

3.4.3. Conference Documentation

3.4.3.1. In order to facilitate and accelerate the Government code and contract conformance reviews, the Contractor shall identify, track resolution of and maintain all comments and action items generated during the design process and make this available to the designers and reviewers prior to the Interim and subsequent design reviews.

3.4.3.2. The DB Contractor shall prepare meeting minutes and shall enter final resolution of all comments into DrChecks. Copies of comments, annotated with comment action agreed on, will be made available to all parties before the conference adjourns. Unresolved problems will be resolved by immediate follow-on action at the end of conferences. Valid comments shall be incorporated. The Government reserves the right to reject design document submittals if comments are significant. Participants shall determine if any comments are critical enough to require further design development prior to government concurrence. Participants shall also determine how to proceed in order to obtain government concurrence with the design

work presented.

3.5. INTERIM DESIGN REQUIREMENTS

Interim design deliverables shall include drawings, specifications, and design analysis for the part of design that the DB Contractor considers ready for review.

3.5.1. Drawings

Drawings shall include comments from any previous design conferences incorporated into the documents to provide an interim design for the “part” submitted.

3.5.2. Design Analyses

3.5.2.1 The designers of record shall prepare and present design analyses with calculations necessary to substantiate and support all design documents submitted. Address design substantiation required by the applicable codes and references and pay particular attention to the following listed items:

3.5.2.2 For parts including sitework, include site specific civil calculations.

3.5.2.3 For parts including structural work, include structural calculations.

(a) Identify all loads to be used for design.

(b) Describe the method of providing lateral stability for the structural system to meet seismic and wind load requirements. Include sufficient calculations to verify the adequacy of the method.

(c) Provide calculations for all principal roof, floor, and foundation members and bracing and secondary members.

(d) Provide complete seismic analyses for all building structural, mechanical, electrical, architectural, and building features as dictated by the seismiczone for which thefacility is being constructed.

(e) See also the Security (Anti-Terrorism) requirements below for members subject to Anti-Terrorist Force Protection (ATFP) and Progressive Collapse requirements.

3.5.2.4 For Security (Anti-Terrorism): Provide a design narrative and calculations where applicable, demonstrating compliance with each of the 22 standards in UFC 4-010-01. Where sufficient standoff distance is not being provided, show calculations for blast resistance of the structural system and building envelope. Show complete calculations for members subjected to ATFP loads, e.g., support members of glazed items (jambs, headers, sills) and connections of windows to support members. See also Attachment H for analysis of window unit structural supports.For 3 story and higher buildings, provide calculations to demonstrate compliance with progressive collapse requirements.

3.5.2.5 For parts including architectural work, include building floor area analysis.

3.5.2.6 For parts including mechanical work, include HVAC analysis and calculations. Include complete design calculations for mechanical systems. Include computations for sizing equipment, compressed air systems, air duct design, and U-factors for ceilings, roofs and exterior walls and floors. Contractor shall employ commercially available energy analysis techniques to determine the energy performance of all passive systems and features. Use of hourly energy load computer simulation is

required (see paragraph 3.5.5.2 for list of acceptable software). Based on the results of calculations, provide a complete list of the materials and equipment proposed with the manufacturer's published cataloged product installation specifications and roughing-in data.

3.5.2.7 For parts including life safety, include building code analysis and sprinkler and other suppression systems. Notwithstanding the requirements of the Codes, address the following:

(a) A registered fire protection engineer (FPE) must perform all fire protection analyses. Provide the fire protection engineer’s qualifications. NICET certification is not sufficient to address this requirement. A registered fire protection engineer is a professional engineer who has passed the fire protection engineering written examination administered by the National Council of Examiners for Engineering and Surveys (NCEES).

(b) Provide all references used in the design including Government design documents and industry standards used to generate the fire protection analysis.

(c) Provide classification of each building in accordance with fire zone, building floor areas and height and number of stories.

(d) Provide discussion and description of required fire protection requirements including extinguishing equipment, detection equipment, alarm equipment and water supply. Alarm and detection equipment shall interface to requirements of Electronic Systems.

(e) Provide hydraulic calculations based on water flow test for each sprinkler system to insure that flow and pressure requirements can be met with current water supply. Include copies of Contractor's water flow testing done to certify the available water source.

3.5.2.8 For parts including plumbing systems:

(a) List all references used in the design.

(b) Provide justification and brief description of the types of plumbing fixtures, piping materials and equipment proposed for use.

(c) Detail calculations for systems such as sizing of domestic hot water heater and piping; natural gas piping; LP gas piping and tanks, fuel oil piping and tanks, etc., as applicable.

(d) When the geotechnical report indicates expansive soils are present, indicate in the first piping design submittal how piping systems will be protected against damage or backfall/backflow due to soil heave (from penetration of slab to the 5 foot building line).

3.5.2.9 For elevator systems:

(a) List all criteria codes, documents and design conditions used.

(b) List any required permits and registrations for construction of items of special mechanical systems and equipment.

3.5.2.10 For parts including electrical work, include lighting calculations to determine maintained foot-candle levels, electrical load analysis and calculations, electrical short circuit and protective device coordination analysis and calculations and arc fault calculations.

3.5.2.11 For parts including telecommunications voice/data (including SIPRNET, where applicable), include analysis for determining the number and placement of outlets

3.5.2.12 For Cathodic Protection Systems, provide the following stamped report by the licensed corrosion engineer or NACE specialist with the first design submission. Clearly describe structures, systems or components in soil or water to be protected. Describe methods proposed for protection of each.

3.5.3 **Geotechnical Investigations and Reports**:

3.5.3.1 The contractor's licensed geotechnical engineer shall prepare a final geotechnical evaluation report, to be submitted along with the first foundation design submittal. This information should be made available as early as possible during the over-the-shoulder progress review process. The geotechnical report shall summarize the subsurface conditions and provide recommendations for the design of appropriate utilities, foundations, floor slabs, retaining walls, embankments, and pavements. The Contractor's geotechnical report shall recommend foundation systems to be used, allowable bearing pressures for footings, lateral load resistance capacities for foundation systems, elevations for footings, grade beams, slabs, etc. Provide an assessment of post-construction settlement potential including total and differential. Provide recommendations regarding lateral earth pressures (active, at-rest, passive) to be used in the design of retaining walls. Include the recommended spectral accelerations and Site Class for seismic design along with an evaluation of any seismic hazards and recommendations for mitigation, if required. Include calculations to support the recommendations for bearing capacity, settlement, and pavement sections. Include supporting documentation for all recommended design parameters such as Site Class, shear strength, earth pressure coefficients, friction factors, subgrade modulus, California Bearing Ratio (CBR), etc. Provide earthwork recommendations, expected frost penetration, expected groundwater levels, recommendations for dewatering and groundwater control and the possible presence of any surface or subsurface features that may affect the construction of the project such as sinkholes, boulders, shallow rock, old fill, old structures, soft areas, or unusual soil conditions. Include pH tests, salinity tests, resistivity measurements, etc., required to design corrosion control and grounding systems. Include the raw field data. Arrange a meeting with the Government subsequent to completion and evaluation of the site specific geotechnical exploration to outline any differences encountered that are inconsistent with the Government provided preliminary soils information. Clearly outline differences which require changes in the foundation type, or pavement and earthwork requirements from that possible and contemplated using the Government furnished preliminary soils investigation, which result in a change to the design or construction. Any equitable adjustment is subject to the provisions of the contract's Differing Site Conditions Clause.

3.5.3.2 Vehicle Pavements: The Contractor's geotechnical report shall contain flexible and rigid pavement designs, as applicable for the project, including design CBR and modulus of subgrade reaction and the required compaction effort for subgrades and pavement layers. Provide Information on the types of base course materials available in the area and design strengths.

3.5.3.3 The DB Contractor and the professional geotechnical engineer consultant shall certify in writing that the design of the project has been developed consistent with the Contractor's final geotechnical report. The certification shall be stamped by the consulting professional geotechnical engineer and shall be submitted with the first design submission. If revisions are made to the initial design submission, a new certification shall be provided with the final design submission.

3.5.4 **LEED Documentation:**

Assign a LEED Accredited Professional, responsible to track LEED planning, performance and documentation for each LEED credit through construction closeout. Incorporate LEED credits in the plans, specifications and design analyses. Develop LEED supporting documentation as a separable portion of the Design Analysis and provide with each required design submittal. Include the LEED Project checklist for each non-exempt facility (one checklist may be provided for multiple facilities in accordance with the LEED-NC Application Guide for Multiple Buildings and On-Campus Building Projects and the LEED 2.2 Documentation Requirements and Submittals Checklist (Attachment E, herein) with each submittal. Final design submittal for each portion of the work must include all required design documentation relating to that portion of work (example - all site credit design documents with final site design). Submittal requirements are as indicated in Attachment E, LEED 2.2 Documentation Requirements and Submittals Checklist. Submit all documentation indicated on Attachment E as due at final design at final design submittal (for fast-track projects with multiple final design submittals, this shall be at the last scheduled final design submittal). All project documentation related to LEED shall conform to USGBC requirements for both content and format, including audit requirements and be separate from other design analyses. Maintain and update the LEED documentation throughout project progress to construction closeout and shall compile product data, receipts, calculations and other data necessary to substantiate and support all credits claimed. The Government may audit any or all individual credits. Audit documentation is not required to be submitted unless requested. These requirements apply to all projects. If the project requires the Contractor to obtain USGBC certification, the Contractor shall also be responsible for obtaining USGBC certification and shall provide written evidence of certification with the construction closeout LEED documentation submittal. Install the USGBC building plaque at the location indicated by the Government upon receipt. If Contractor obtains USGBC interim design review, submit the USGBC review to the Government within 30 days of receipt for information only.

3.5.4.1 LEED Documentation for Technology Solution Set. If a building design complies fully with its technology solution set, when such is included in the Solicitation, use the data provided with the technology solution set when preparing LEED credit EA1 documentation. If the project requires USGBC certification and a building design complies fully with its technology solution set included in the Solicitation, the Government will provide a partially completed LEED Letter Template, without project energy cost, for the building. The designer must add the project energy cost data.

3.5.5. **Energy Conservation:**

3.5.5.1 Refer to Section 01 10 00, Paragraph 5. Interim and Final Design submittals shall demonstrate that each building including the building envelope, HVAC systems, service water heating, power, and lighting systems meet the Mandatory Provisions and the Prescriptive Path requirements of ASHRAE 90.1-2004. Use Compliance Documentation forms available from ASHRAE and included in the ASHRAE 90.1-2004 User's Manual for this purpose. The Architectural Section of the Design Analysis shall include completed forms titled "Building Envelope Compliance Documentation Parts I and II". The Heating Ventilating and Air Conditioning (HVAC) Section of the Design Analysis shall include a completed form titled "HVAC Simplified Approach Option - Part I" if this approach is allowed by the Standard. Otherwise, the HVAC Section of the Design Analysis shall include completed forms titled "HVAC Mandatory Provisions - Part II" and "HVAC Prescriptive Requirements - Part III". The Plumbing Section of the Design Analysis shall include a completed form titled "Service Water Heating Compliance Documentation". The Electrical Section of the Design Analysis shall include an explanatory statement on how the requirements of ASHRAE 90.1-2004 Chapter 8 Power were met. The Electrical Section of the Design Analysis shall also include a completed form titled "Lighting Compliance Documentation".

3.5.5.2 Interim and Final Design submittals which address energy consuming systems, (heating, cooling, service hot water, lighting, power, etc.) must also include calculations in a separate Energy Conservation Section of the Design Analysis which

demonstrate and document (a) the baseline energy consumption for the facility or facilities under contract, that would meet the requirements of ANSI/ASHRAE/IESNA Standard 90.1-2004 and (b) the energy consumption of the facility or facilities under contract utilizing the materials and methods required by this construction contract. Use the USGBC Energy and Atmosphere (EA) Credit 1 compliance template / form or an equivalently detailed form for documenting compliance with the energy reduction requirements. This template / form is titled PERFORMANCE RATING METHOD and is available when the project is registered for LEED. The calculation methodology used for this documentation and analysis shall follow the guidelines set forth in Appendix G of ASHRAE 90.1-2004, with two exceptions: a) receptacle and process loads may be omitted from the calculation; and b) the definition of the terms in the formula for Percentage Improvement found in paragraph G1.2 are modified as follows: Baseline Building Performance shall mean the annual energy consumption calculated for a building design intended for use as a baseline for rating above standard design meeting the minimum requirements of the energy standard, and Proposed Building Performance shall mean annual energy consumption calculated for the proposed building design intended for construction. This calculation shall address all energy consuming systems in a single integrated methodology. Include laboratory fume hoods and kitchen ventilation loads in the energy calculation. They are not considered process loads. Individual calculations for heating, cooling, power, lighting, power, etc. systems will not be acceptable. The following building simulation software is acceptable for use in calculating building energy consumption: Hourly Analysis Program (HAP) by Carrier Corp., TRACE 700 by Trane Corp., DOE-2 by US Department of Energy, EnergyPlus by DOD/DOE.

3.5.6 **Specifications**

Specifications may be any one of the major, well known master guide specification sources (use only one source) such as MASTERSPEC from the American Institute of Architects, SPECTEXT from Construction Specification Institute or Unified Facility Guide Specifications (UFGS using MASTERFORMAT 2004 numbering system), etc. (including specifications from these sources). Manufacturers' product specifications, utilizing CSI's Manu-Spec, three part format may be used in conjunction with the selected specifications. The designers of record shall edit and expand the appropriate Specifications to insure that all project design requirements, current code requirements, and regulatory requirements are met. Specifications shall clearly identify, where appropriate, specific products chosen to meet the contract requirements (i.e., manufacturers' brand names and model numbers or similar product information).

3.5.7 **Building Rendering**

DB Contractor shall present and provide a draft color computer, artist, or hand drawn rendering with the conceptual design submittal of the building exterior. Perspective renderings shall include a slightly overhead view of the entire building to encompass elevations and the roof configuration of the building. After Government review and acceptance, provide a final rendering, including the following:

Three (3) 18" x 24" color prints, framed and matted behind glass with project title underneath the print.

One (1) Image file (high resolution) in JPG format on CD for those in the submittal distribution list.

3.5.8 **Interim Building Design Contents**

The following list represents what the Government considers should be included in the overall completed design for a facility or project. It is not intended to limit the contractor from providing different or additional information as needed to support the design presented, including the require design analyses discussed above. As the Contractor develops individual design

packages and submits them for Interim review, include as much of the applicable information for an individual design package as is developed at the Interim design level for review purposes. These pieces shall be developed as the design progresses toward the design complete stage.

3.5.8.1 Lawn and Landscaping Irrigation System

3.5.8.2 Landscape, Planting and Turfing

3.5.8.3 Architectural

(a) Design Narrative

(b) Architectural Floor Plans, Typical Wall and Roof Sections, Elevations

(c) Finish schedule

(d) All required equipment

(e) Special graphics requirements

(f) Door and Window Schedules

(g) Hardware sets using BHMA designations

(h) Composite floor plan showing all pre-wired workstations

(i) Structural Interior Design (SID) package: See ATTACHMENT A for specific requirements

(j) Furniture, Fixtures & Equipment (FF&E) design package: See ATTACHMENT B for specific requirements

3.5.8.4 Structural Systems. Include:

(a) Drawings showing principal members for roof and floor framing plans as applicable

(b) Foundation plan showing main foundation elements where applicable

(c) Typical sections for roof, floor, and foundation conditions

3.5.8.5 Plumbing Systems

(a) Show locations and general arrangement of plumbing fixtures and major equipment

(b) Plan and isometric riser diagrams of all areas including hot water, cold water, waste and vent piping. Include natural gas (and meter as required), (natural gas and meter as required), (LP gas), (fuel oil) and other specialty systems as applicable.

(c) Include equipment and fixture connection schedules with descriptions, capacities, locations, connection sizes and other information as required

3.5.8.6 HVAC Systems

(a) Mechanical Floor Plans: The floor plans shall show all principle architectural features of the building which will affect the mechanical design. The floor plans shall also show the following:

(1) Room designations.

(2) Mechanical legend and applicable notes.

(3) Location and size of all ductwork and piping.

(4) Location and capacity of all terminal units (i.e., registers, diffusers, grilles, hydronic baseboards).

(5) Pre-Fabricated Paint Spray Booth (where applicable to project scope)

(6) Paint Preparation Area (where applicable to project scope)

(7) Exhaust fans and specialized exhaust systems.

(8) Thermostat location.

(9) Location of heating/cooling plant (i.e., boiler, chiller, cooling tower, etc).

(10) Location of all air handling equipment.

(11) Air balancing information.

(12) Flue size and location.

(13) Piping diagram for forced hot water system (if used).

(b) Equipment Schedule: Provide complete equipment schedules. Include:

(1) Capacity

(2) Electrical characteristics

(3) Efficiency (if applicable)

(4) Manufacturer's name

(5) Optional features to be provided

(6) Physical size

(7) Minimum maintenance clearances

(c) Details: Provide construction details, sections, elevations, etc., only where required for clarification of methods and materials of design.

(d) HVAC Controls: Submit complete HVAC controls equipment schedules, sequences of operation, wiring and logic diagrams, Input/Output Tables, equipment schedules, and all associated information. See the Statement of Work for additional specific requirements.

3.5.8.7 Fire Protection and Life Safety.

(a) Provide plan for each floor of each building that presents a compendium of the total fire protection features being incorporated into the design. Include the following types of information:

(1) The location and rating of any fire-resistive construction such as occupancy separations, area separations, exterior walls, shaft enclosures, corridors, stair enclosures, exit passageways, etc.

(2) The location and coverage of any fire detection systems

(3) The location and coverage of any fire suppression systems (sprinkler risers, standpipes, etc.)

(4) The location of any other major fire protection equipment

(5) Indicate any hazardous areas and their classification

(6) Schedule describing the internal systems with the following information: fire hazard and occupancy classifications, building construction type, GPM/square foot sprinkler density, area of operation and other as required

(b) Working plans and all other materials submitted shall meet NFPA 13 requirements,with respect to requiredminimum level of detail.

3.5.8.8 Elevators. Provide:

(a) Description of the proposed control system

(b) Description, approximate capacity and location of any special mechanical equipment for elevators.

3.5.8.9 Electrical Systems.

(a) Electrical Floor Plan(s): Show all principle architectural features of the building which will affect the electrical design. Show the following:

(1) Room designations.

(2) Electrical legend and applicable notes.

(3) Lighting fixtures, properly identified.

(4) Switches for control of lighting.

(5) Receptacles.

(6) Location and designation of panelboards. Clearly indicate type of mounting required (flush or surface) and reflect accordingly in specifications.

(7) Service entrance (conduit and main disconnect).

(8) Location, designation and rating of motors and/or equipment which requires electrical service. Show method of termination and/or connection to motors and/or equipment. Show necessary junction boxes, disconnects, controllers

(approximate only), conduit stubs, and receptacles required to serve the motor and/or equipment.

(b) Building Riser Diagram(s) (from pad-mounted transformer to unit load center panelboard): Indicate the types and sizes of electrical equipment and wiring. Include grounding and metering requirements.

(c) Load Center Panelboard Schedule(s): Indicate the following information:

(1) Panelboard Characteristics (Panel Designation, Voltage, Phase, Wires, Main Breaker Rating and Mounting.

(2) Branch Circuit Designations.

(3) Load Designations.

(4) Circuit Breaker Characteristics. (Number of Poles, Trip Rating, AIC Rating)

(5) Branch Circuit Connected Loads (AMPS).

(6) Special Features.

(d) Lighting Fixture Schedule(s): Indicate the following information:

(1) Fixture Designation.

(2) General Fixture Description.

(3) Number and Type of Lamp(s).

(4) Type of Mounting.

(5) Special Features.

(e) Details: Provide construction details, sections, elevations, etc. only where required for clarification of methods and materials of design.

3.5.8.10 Electronic Systems including the following responsibilities:

(a) Fire Detection and Alarm System. Design of the fire alarm and detection system shall include layout drawings for all devices and a riser diagram showing the control panel, annunciator panel, all zones, radio transmitter and interfaces to other systems (HVAC, sprinkler, etc.)

(b) Fire Suppression System Control. Specify all components of the Fire Suppression (FS) System in the FS section of the specifications. Clearly describe how the system will operate and interact with other systems such as the fire alarm system. Include a riser diagram on the drawings showing principal components and interconnections with other systems. Include FS system components on drawing legend. Designate all components shown on floor plans “FS system components” (as opposed to “Fire Alarm components”). Show location of FS control panels, HVAC control devices, sensors, and 120V power panel connections on floor plans. Indicate zoning of areas by numbers (1, 2, 3) and detectors sub-zoned for cross zoning by letter designations (A and B). Differentiate between ceiling mounted and under floor detectors with distinct symbols and indicate sub-zone of each.

(c) Public Address System

(d) Special Grounding Systems. Completely reflect all design requirements in the specifications and drawings. Specifications shall require field tests (in the construction phase), witnessed by the Government, to determine the effectiveness of the grounding system. Include drawings showing existing construction, if any.

(e) Cathodic Protection.

(f) Intrusion Detection, Card Access System

(g) Central Control and Monitoring System

(h) Mass Notification System

(i) Electrical Power Distribution Systems

3.5.8.11 Information Systems including the following responsibilities:

(a) Telecommunications Cabling

(b) Supporting Infrastructure

(c) Outside Plant (OSP) Cabling

(d) Include a layout of the voice/data outlets (including voice only wall & pay phones) on telecommunication floor plan drawing, location of SIPRNET data outlets (where applicable), and a legend and symbol definition to indicate height above finished floor. Show size of conduit and cable type and size on Riser Diagram. Do not show conduit runs between backboard and outlets on the floor plans. Show underground distribution conduit and cable with sizing from point of presence to entrance facility of building.

3.6. FINAL DESIGN REVIEWS AND CONFERENCES

A final design review and review conference will be held upon completion of final design at the project installation, or – where equipment is available - by video teleconference or a combination thereof, for any design package to receive Government acceptance to allow release of the design package for construction. For smaller separate design packages, the parties may agree on alternative reviews and conferences (e.g., conference calls and electronic file sharing, etc.) through the Partnering process. The Contractor shall include the final design conference in the project schedule and shall indicate what part of the design work is at 100% completion. The final design conference will be held after the Government has had seven (7) calendar days after receipt of the submission to review the final design package and supporting data. For smaller packages, especially those involving only one or a few design disciplines the parties may agree on a shorter period.

3.7. FINAL DESIGN REQUIREMENTS

Final design deliverables for a design package shall consist of 100% complete drawings, specifications, submittal register and design analyses for Government review and acceptance. The 100% design submission shall consist of drawings, specifications, updated design analyses and any permits required by the contract for each package submitted. In order to expedite the final design review, prior to the conference, the Contractor shall ensure that the design configuration management data and all review comment resolutions are up-to-date. Include the 100% SID and 100% FF&E binders for

government approval. The Contractor shall have performed independent technical reviews (ITR's) and back-checks of previous comment resolutions, as required by Section 01 45 04.00 10 CONTRACTOR QUALITY CONTROL, including providing documentation thereof.

3.7.1. Drawings

3.7.1.1 Submit drawings complete with all contract requirements incorporated into the documents to provide a 100% design for each package submitted.

3.7.1.2 Prepare all drawings with the Computer-Aided Design and Drafting (CADD)/Computer-Aided Design (CAD) system, organized and easily referenced electronically, presenting complete construction information.

3.7.1.3 Drawings shall be complete. The Contractor is encouraged to utilize graphics, views, notes, and details which make the drawings easier to review or to construct but is also encouraged to keep such materials to those that are necessary.

3.7.1.4 Provide detail drawings that illustrate conformance with the contract. Drawings shall include room finish schedules, corresponding color/finish/special items schedules, and exterior finish schedules that agree with the submitted SID binders.

3.7.1.5 The design documents shall be in compliance with the latest version of the A/E/C CADD Standard, available at https://cadbim.usace.army.mil/CAD. The DB Contractor shall use the approved vertical Corps of Engineers title blocks and borders on all drawings with the appropriate firm name included within the title block area.

3.7.1.6 CAD System and Building Information Modeling (BIM) (NOTE: If this is a Single Award or Multiple Award, Indefinite Delivery/Indefinite Quantity Contract, this information will be provided for each task order.)

All CADD files shall be fully compatible with AutoCAD 2000 or higher. Save all design CADD files as AutoCAD 2000 or higherfiles. All submitted BIM Models and associated Facility Data shall be fully compatible with Bentley BIM file format and the USACE Bentley BIM v8 Workspace.

(a) CAD Data Final File Format: During the design development the contractor shall capture geo-referenced coordinates of all changes made to the existing site (facility footprint, utility line installations and alterations, roads, parking areas, etc) as a result of this contract. There is no mandatory methodology for how the geo-referenced coordinates will be captured, however, Engineering and Construction Bulletin No. 2006-15, Subject: Standardizing Computer Aided Design (CAD) and Geographic Information Systems (GIS) Deliverables for all Military Design and Construction Projects identifies the format for final as-built drawings and data sets to be delivered to the government. Close-out requirements at the as-built stage; require final geo-referenced GIS Database of the new facility along with all exterior modifications. The Government will incorporate this data set into the Installation's GIS Masterplan or Enterprise GIS System. See also, Section 01 78 02.00 10 Closeout Submittals.

(b) Electronic Drawing Files: In addition to the native CAD design files, provide separate electronic drawing files (in editable CAD format and Adobe Acrobat PDF version 7.0 or higher) for each project drawing.

(c) Each file (both CAD and PDF) shall represent one complete drawing from the drawing set, including the date, submittal phase, and border. Each drawing file shall be completely independent of any data in any other file, including fonts and shapes not included with the basic CAD software program utilized. Drawing files with external references or special fonts are not acceptable. All displayed graphic elements on all levels of the drawing files shall be part of the project drawing

image. The drawing files shall not contain any graphic element that is not part of the drawing image.

(d) See Attachment F for additional BIM requirements. BIM Model and associated Facility Data files shall be delivered in their native format. At a minimum, BIM files shall address major architecture design elements, major structural components, mechanical systems and electrical/communication distribution and elements as defined in Attachment F. See Attachment F for additional BIM requirements.

(e) Drawing Index: Provide an index of drawings sheet in CAD as part of the drawing set, and an electronic list in Microsoft Excel of all drawings on the CD. Include the electronic file name, the sheet reference number, the sheet number, and the sheet title, containing the data for each drawing.

(f) Hard Copies: Plot submitted hard copy drawings directly from the “electronic drawing files” and copy for quantities and sizes indicated in the distribution list at the end of this specification section. The Designers of Record shall stamp, sign and date original hard copy sheets as Released For Construction, and provide copies for distribution from this set.

3.7.2. Design Analyses

3.7.2.1 The designers of record shall update, finalize and present design analyses with calculations necessary to substantiate and support all design documents submitted.

3.7.2.2 The responsible DOR shall stamp, sign and date the design analysis. Identify the software used where, applicable (name, version, vendor). Generally, provide design analyses, individually, in an original (file copy) and one copy for the assigned government reviewer.

3.7.2.3 All disciplines review the LEED design analysis in conjunction with their discipline-specific design analysis; include a copy of the separable LEED design analysis in all design analysis submittals.

3.7.2.4 Do not combine multi-disciplined volumes of design-analysis, unless multiple copies are provided to facilitate multiple reviewers (one copy per each separate design analysis included in a volume).

3.7.3. Specifications

Specifications shall be 100% complete and in final form.

3.7.4. Submittal Register

The DB Contractor shall prepare and update the Submittal Register and submit it with the 100% design specifications (see Specification Section 01 33 00, SUBMITTAL PROCEDURES) with each design package. Include the required submittals for each specification section in a design package in the submittal register.

3.7.5. Preparation of DD Form 1354 (Transfer of Real Property)

This form itemizes the types, quantities and costs of various equipment and systems that comprise the project, for the purpose of transferring the new construction project from the Corps Construction Division to the Installation's inventory of real property. The Government will furnish the DB Contractor's design manager a DD Form 1354 checklist to use to produce a draft Form 1354. The completed checklist and prepared draft Form DD 1354 shall be submitted with the 100% design in the Design Analysis. The Corps will use these documents to complete the final DD 1354 upon completion of construction.

3.7.6. Acceptance and Release for Construction

3.7.6.1 At the conclusion of the Final Design Review (after resolutions to the comments have been agreed upon between DOR and Government reviewers), the Contracting Officer or the ACO will accept the Final Design Submission for the design package in writing and allow construction to start for that design package. The Government may withhold acceptance until all major corrections have been made or if the final design submission requires so many corrections, even though minor, that it isn't considered acceptably complete.

3.7.6.2 Government review and acceptance of design submittals is for contract conformance only and shall not relieve the Contractor from responsibility to fully adhere to the requirements of the contract, including the Contractor's accepted contract proposal, or limit the Contractor's responsibility of design as prescribed under Special Contract Requirement: "Responsibility of the Contractor for Design" or limit the Government's rights under the terms of the contract. The Government reserves the right to rescind inadvertent acceptance of design submittals containing contract deviations not separately and expressly identified in the submittal for Government consideration and approval.

3.8. DESIGN COMPLETE CONSTRUCTION DOCUMENT REQUIREMENTS

After the Final Design Submission and Review Conference and after Government acceptance of the Final Design submission, the Contractor shall revise the design documents for the design package to incorporate the comments generated and resolved in the final review conference, perform and document a back-check review and submit the final, design complete documents. Label the final design complete documents "FOR CONSTRUCTION" or use similar language. In addition to the final drawings and specifications, the following deliverables are required for distribution and field use. The deliverable includes all documentation and supporting design analysis in final form, as well as the final review comments, disposition and the back-check. As part of the quality assurance process, the Government may perform a back-check of the released for construction documentation. The Contractor shall promptly correct any errors or omissions found during the Government back-check. The Government may withhold retainage from progress payments for work or materials associated with a final design package until this submittal has been received and the Government determines that it is complete.

3.9. SUBMITTAL DISTRIBUTION, MEDIA AND QUANTITIES

3.9.1. Submittal Distribution and Quantities

General: The documents which the Contractor shall submit to the Government for each submittal are listed and generally described in preceding paragraphs in this Section. Provide copies of each design submittal and design substantiation as follows (NOTE: If this is a Single Award or Multiple Award, Indefinite Delivery/Indefinite Quantity Contract, this information will be provided for each task order):

Activity and Address	Drawing Size (Full Size) ANSI D Full Sets/ *Partial Sets	Design Analyses & Specs Full Sets/ *Partial Sets	Drawing Size (Half Size) ANSI B Full Sets/ *Partial Sets	Non-BIM Data CD-ROM or DVD as Necessary (PDF& dwg)	Furniture Submittal (FFE)	Structural Interior Design Submittal	BIM Data DVD (Per Attach F)

Commander, U.S.Army Engineer District Los Angeles	1/1	2/2	2/2	2	2	0	[not supplied]
Commander, U.S. Army Engineer District , Center of Standardization USAESCH	1/[not supplied]	2/ 2	2/2	2	2	0	[not supplied]
Installation	1/[not supplied]	1/1	1/1	2	1	0	[not supplied]
U.S.Army Corps of Engineers Construction Area Office	2/2	2/ 2	2/2	2	2	0	[not supplied]
Information Systems Engineering Command (ISEC)	0/0	0/1	0/1	1	N/A	N/A	[not supplied]
Other Offices	1/[not supplied]	1/0	1/0	2	1	0	[not supplied]

***NOTE: For partial sets of drawings, specifications and design analyses, see paragraph 3.9.3.3, below.**

3.9.2. Web based Design Submittals

As an alternative to the paper copies listed in the Table above, Web based design submittals will be acceptable provided a single hard-copy PDF based record set is provided to the Contracting Officer for record purposes. Where the contract requires the Contractor to submit documents to permitting authorities, the Contractor shall still provide those authorities paper copies (or in an alternate format where required by the authority). Web based design submittal information shall be provided with adequate security and availability to allow unlimited access to Government reviewers while preventing unauthorized access or modification. File sizes must be of manageable size for reviewers to quickly download or open on their computers. As a minimum,drawings shall be full scale on American National Standards Institute (ANSI) D sheets (34" x 22"). In addition to the optional website, provide the BIM data submission on DVD to each activity and address noted above in paragraph 3.9.1 for each BIM submission required in Attachment F.

3.9.3. Mailing of Design Submittals

3.9.3.1. Mail all design submittals to the Government during design and construction, using an overnight mailing service. The Government will furnish the Contractor addresses where each copy shall be mailed to after award of the contract (or individual task order if this is an indefinite delivery/indefinite quantity, task order contract). Mail the submittals to Ten (10) different addresses. Assemble drawing sheets, specs, design analyses, etc. into individual sets; do not combine duplicate

pages from individual sets so that the government has to assemble a set.

3.9.3.2. Each design submittal shall have a transmittal letter accompanying it indicating the date, design percentage, type of submittal, list of items submitted, transmittal number and point of contact with telephone number.

3.9.3.3. Provide partial sets of drawings, specifications, design analyses, etc., as designated in the Table in paragraph 3.9.1, to those reviewers who only need to review their applicable portions of the design, such as the various utilities. The details of which office receives what portion of the design documentation will be worked out after award.

3.10. AS-BUILT DOCUMENTS

Provide as-built drawings and specifications in accordance with Section 01 78 02.00 10, CLOSEOUT SUBMITTALS. Update LEED design phase documentation during construction as needed to reflect construction changes and advancing project completion status (example - Commissioning Plan updates during construction phase) and include updated LEED documentation in construction closeout submittal.

ATTACHMENT A

STRUCTURAL INTERIOR DESIGN (SID) REQUIREMENTS

1.0 GENERAL INFORMATION

Structural Interior Design includes all building related elements and components generally part of the building itself, such as wall finishes, ceilings finishes, floor coverings, marker/bulletin boards, blinds, signage and built in casework. The SID should be developed in conjunction with the furniture footprint.

2.0 STRUCURAL INTERIOR DESIGN (SID) REQUIREMENTS FOR THE INTERIM AND FINAL DESIGN SUBMITTALS

2.1. FORMAT AND SCHEDULE

Prepare and submit for approval an interior and exterior building finishes scheme for an interim design submittal. The DOR shall meet with and discuss the finish schemes with the appropriate Government officials prior to preparation of the schemes to be presented. Present original sets of the schemes to reviewers at an interim design conference.

At the conclusion of the interim phase, after resolutions to the comments have been agreed upon between DOR and Government reviewers, the DB Contractor may proceed to final design with the interior finishes scheme presented.

The SID information and samples are to be submitted in 8 ½" x 11" format using three ring binders with pockets on the inside of the cover. When there are numerous pages with thick samples, use more than one binder. Large D-ring binders are preferred to O-ring binders. Use page protectors that are strong enough to keep pages from tearing out. Anchor large or heavy samples with mechanical fasteners, Velcro, or double-faced foam tape rather than rubber cement or glue. Fold out items must have a maximum spread of 25 ½". Provide cover and spine inserts sheets identifying the document as "Structural Interior Design" package and include the project title and location, project number, Contractor/A/E name and phone number(s), submittal stage and date.

The design submittal requirements will include, but are not limited to:

2.1.1. Narrative of the Structural Interior Design Objectives

The SID shall include a narrative that discusses the building related finishes. Include topics that relate to base standards, life safety, sustainable design issues, aesthetics, durability and maintainability, discuss the development and features as they relate to the occupants requirements and the building design.

2.1.2. Interior Color Boards

Each item on the color boards shall be identified and keyed to the contract documents to provide a clear indication of how and where each item will be used. To the maximum extent possible, finish samples shall be arranged by room type in order to illustrate room color coordination. All samples shall be labeled on the color boards with the manufacturer's name, patterns and colors name and number. Samples shall also be keyed or coded to match key code system used on contract drawings.

Material and finish samples shall indicate true pattern, color and texture. Photographs or colored photocopies of materials or fabrics to show large overall patterns are required in conjunction with actual samples to show the actual colors. Finish

samples must be large enough to show a complete pattern or design where practical.

Color boards shall include but not be limited to original color samples of the following:

All walls finishes, ceiling finishes, including information regarding tile patterns.

All flooring finishes, including information regarding tile patterns.

All signage, wall base, toilet partitions, accordion/operable/folding partitions and trim

All millwork materials and finishes (cabinets, counter tops, etc.)

All window treatments (sills, blinds, etc.)

Color board samples shall reflect all actual finish textures, patterns and colors required as specified. Patterned samples shall be of sufficient size to adequately show pattern and its repeat if a repeat occurs.

2.1.3. Exterior Color Boards

Prepare exterior finishes color boards in similar format as the interior finishes color boards, for presentation to the reviewers during an interim design conference. The exterior finishes boards shall include original color samples of all exterior finishes including but not limited to the following:

All Roof Finishes

All Brick and cast stone Samples

All Exterior Insulation and Finish Samples

All Glass Color Samples

All Exterior Metals Finishes

All Window & Door Frame Finishes

All Specialty Item Finishes, including trim

Identify each item on the exterior finishes color boards and key to the building elevations to provide a clear indication of how and where each item will be used.

2.2. STRUCTURAL INTERIOR DESIGN DOCUMENTS

2.2.1. General

Structural interior design related drawings must indicate the placement of extents of SID material, finishes and colors and must be sufficiently detailed to define all interior work. The following is a list of minimum requirements:

2.2.2. Finish Color Schedule

Provide finish color schedule(s) in the contract documents. Provide a finish code, material type, manufacturer, series, and color designations.

2.2.3. Interior Finish Plans

Indicate wall and floor patterns and color placement, material transitions and extents of interior finishes.

2.2.4. Furniture Footprint Plans

Provide furniture footprint plans showing the outline of all freestanding and systems furniture for coordination of all other disciplines.

2.2.5. Interior Signage

Include interior signage plans or schedules showing location and quantities of all interior signage. Key each interior sign to a quantitative list indicating size, quantity of each type and signage text.

2.2.6. Interior Elevations, Sections and Details

Interior Elevations, Sections and Details: Indicate material, color and finish placement.

ATTACHMENT B

FURNITURE, FIXTURES & EQUIPMENT (FF&E) REQUIREMENTS

1.0 GENERAL INFOMATION

FF&E is the selection, layout, specification and documentation of furniture includes but is not limited to workstations, seating, tables, storage and shelving, filing, trash receptacles, clocks, framed artwork, artificial plants, and other accessories. Contract documentation is required to facilitate pricing, procurement and installation. The FF&E package is based on the furniture footprint developed in the SID portion of the interior design. The FF&E package shall be developed concurrently with the building design to ensure that there is coordination between the furniture design, the electrical, IT and other building requirements.

The DOR shall interview Government personnel to determine FF&E requirements for furniture and furnishings. Determine FFE items and quantities by, but not limited to: (1) the number of personnel to occupy the building, (2) job functions and related furniture/office equipment to support the job function, (3) room functions, (4) rank and grade.

2.0 FF&E REQUIREMENTS FOR THE INTERIM AND FINAL DESIGN SUBMITTALS

2.1. FORMAT AND SCHEDULE

Prepare and submit for approval a comprehensive FF&E scheme for an interim design submittal. The DOR shall meet with and discuss the FF&E scheme with the appropriate Government officials prior to preparation of the scheme to be presented. Present original sets of the scheme to reviewers at an interim design conference.

At the conclusion of the interim phase, after resolutions to the comments have been agreed upon between DOR and Government reviewers, the DB Contractor may proceed to final design with the FF&E scheme presented.

A complete and approvedFF&E packagemust be submitted to the Government prior to the start of construction to ensure adequate time for furniture acquisition.

The FF&E information and samples are to be submitted in 8 ½” x 11” format using three ring binders with pockets on the inside of the cover. When there are numerous pages with thick samples, use more than one binder. Large D-ring binders are preferred to O-ring binders. Use page protectors that are strong enough to keep pages from tearing out. Anchor large or heavy samples with mechanical fasteners, Velcro, or double-faced foam tape rather than rubber cement or glue. Fold out items must have a maximum spread of 25 ½”. Provide cover and spine inserts sheets identifying the document as “Furniture, Fixtures & Equipment” package and include the project title and location, project number, Contractor/A/E name and phone number(s), submittal stage and date.

The design submittal requirements will include, but are not limited to:

2.1.1. Narrative of Interior Design Objectives

Provide a narrative description of the furnishings design addressing the selection of furnishings, finishes and colors. The narrative shall also include salient features for each item to be procured in the FF&E package. The FF&E package shall also include the market research that resulted in the selection of a preferred vendor, including the sources that were considered and rejected, and why. Enumerate the design decisions made to fully coordinate the SID and the FF&E, including function,

safety and ergonomic considerations, durability and aesthetics.

2.1.2. Point of Contacts

Provide a comprehensive list of Point of Contacts (POCs) needed to implement the FF&E project. This would include appropriate project team members, using activity contacts, interior design representatives, contractors and installers involved in the project. For each contact the name, company, job function, address, phone, fax and email.

2.1.3. Item Code Legend

Provide a consolidated list of all FF&E items in the design package with the item code and a short description of each item.

2.1.4. Item Installation List

The Item Code Legend may be expanded to be used as an Item installation List. Indicate quantity per room, model number, manufacturer and which vendor is responsible for installing each furnishings item.

2.1.5. Manufacturers Source List

Provide the Contractor's address, the ordering address, and the payment address including contact names, phone numbers, fax and email address. Also provide GSA contract information including contract number, FSC group, part, section, expiration date, maximum order limit, pricing terms, shipping terms, etc.

2.1.6. Furnishings Order Forms

One Furnishings Order Form will be prepared for each item specified in the design. This form identifies all information required to order each individual item. In addition to the project name and location, project number, and submittal phase, the order form must include:

a. Furniture item illustration and code

b. Furniture item name

c. Job name, location, and date

d. General Services Administration (GSA) FSC Group, part, and section

e. GSA Contract Number, Special Item Number (SIN), and contract expiration date

f. Maximum Order Limitation

g. GSA Contractor name (Include ordering and payment address, telephone number & fax number, e-mail or website)

h. Manufacturer's name (Include address, telephone number & fax number) or indicate if same as GSA Contractor

i. Dealership/Installer name (include address, telephone number, fax number and point of contact name)

j. Product name

k. Product model number or National Stock Number (NSN)

l. Finish name and number (code to finish samples)

m. Fabric name and number, minimum Wyzenbeek Abrasion Test double rubs (code to fabric samples)

n. Dimensions

o. Description (Information provided shall not be proprietary. Include minimum specification requirements and salient features, to include but not be limited to:

1. required features and characteristics

2. ergonomic requirements

3. functional requirements

4. as appropriate identify furniture style

5. construction materials

6. minimum warranty

p. Justification (Example: “These guest chairs are coordinated to match the task seating at each workstation. The size of the guest chair is critical because of the limited space where they are to be placed. If this company is not selected, coordinate the newly proposed finishes with furniture item numbers #001, 002, 003.”)

q. Item location by room number

r. Quantity per room

s. Total quantity

t. Special instructions (if applicable)

u. List two other manufacturers that meet the above requirements. Information shall include manufacturer name address and telephone number, product series, product name and any pertinent information.

The goal is to provide this information on one page, however, if necessary, a second page may be used for additional detailed specifications. Open market justifications and/or any other critical procurement information must be indicated as well as special instruction for ordering and/or installation. The Furnishings Order Forms are to be organized by product category in the binder and keyed to the Item Code Legend.

2.1.7. Color Boards

Color boards shall be provided for all finishes and fabrics for all FF&E items. Finishes to be included but not limited to paint, laminate, wood finish, fabric, etc.

2.1.8. Itemized Furniture Cost Estimate

Provide an itemized cost estimate of furnishings keyed to the plans and specifications of products included in the package. This cost estimate should be based on GSA price schedules. The cost estimate must include separate line items for general contingency, installation, electrical hook-up for systems furniture or other furniture requiring hardwiring by a licensed electrician, freight charges and any other related costs. Installation and freight quotes from vendors should be use in lieu of a percentage allowance when available.

2.2. INTERIOR DESIGN DOCUMENTS

2.2.1. Overall Furniture and Area Plans

Provide floor Plans showing locations and quantities of all freestanding, and workstation furniture proposed for each floor of the building. Key each room to a large scale Furniture Placement Plan showing the furniture configuration, of all furniture. Provide enlarged area plans with a key plan identifying the area in which the building is located. All the items on the drawings should be keyed by furniture item code.

2.2.2. Workstation Plans

Provide plans showing each typical workstation configuration in plan view, elevations or isometric view. Drawings shall illustrate panels and all major components for each typical workstation configuration. Workstations shall be identified using the same numbering system as shown on the project drawings. Components shall be keyed to a legend on each sheet which identifies and describes the components along with dimensions. To facilitate review the plan, elevations and isometric of each typical workstation shall appear together on a drawing sheet.

2.2.3. Panel Plans

Provide plans showing panel locations and critical dimensions from finished face of walls, columns, panels including clearances and aisle widths. Assemblies shall be keyed to a legend which shall include width, height, configuration and composition of frames, covers finishes, and fabrics, (if different selections exist within a project), power or non-powered connectors and wall mount hardware.

2.2.4. Electrical and Telecommunication Plans

Provide plans showing power provisions including type and locations of feeder components, activated outlets and other electrical components. Include on the plans locations and quantities of outlets for workstations. Clearly identify different outlets, i.e. electrical, LAN and telecommunication receptacles indicating each type proposed. Show wiring configuration, (circuiting, switching, internal and external connections) and provide as applicable.

2.2.5. Artwork Placement Plans

Provide an Artwork Placement Plan to show location of artwork, assign an artwork item code to each piece of artwork. As an alternative, artwork can be located on the Furniture Plans. Provide a schedule that identifies each piece by room name and number. Provide installation instructions; include mounting height.

2.2.6. Window Drapery Plans

Provide Interior Window Drapery Plans. Key each drapery treatment to a schedule showing color, pattern, material, drapery size and type, draw direction, location and quantities.

2.3. ELECTRONIC DOCUMENTS (Not Required for Interim Submittal)

Upon completion of the final submittal, provide electronic versions of all documents. Provide unbound, electronic drawings in CAD and BIM. Provide all files needed to view complete drawings. Submit all text documents in Microsoft Word or Excel.

ATTACHMENT C

TRACKING COMMENTS IN DRCHECKS

1.0 General

The Government and DB Contractor shall set up the project in Dr Checks. Throughout the design process, the parties shall enter, track, and back-check comments using the DrChecks system. Government reviewers enter design review comments into DrChecks. Designers of Record shall annotate comments timely and specifically to indicate exactly what action will be taken or why the action is not required. Comments considered critical by the conference participants shall be flagged as such.

2.0 DrChecks Review Comments

The DB Contractor and the Government shall monitor DrChecks to assure all comments are annotated and agreed to by the designers and reviewers prior to the next submittal. The DrChecks comments and responses shall be printed and included in the design analysis for record.

2.1 Conference participants (reviewers) will expect coordination between Design Analysis calculations and the submitted design. Reviewers will also focus on the design submittal's satisfaction of the contract requirements.

2.2 The Designers of Record shall answer each comment in DrChecks with a formal response prior to the next submittal, clearly indicating what action will be taken and what drawing/spec will change. Designers of Record are encouraged to directly contact reviewers to discuss and agree to the formal comment responses rather than relying only on DrChecks and review meetings to discuss comments. With the next design conference, reviewers will back-check answers to the comments against the submittal, in addition to reviewing additional design work.

2.3 Comments that, in the DB Contractor's opinion, require effort outside the scope of the contract shall be clearly indicated as such in DrChecks. The DB Contractor shall not proceed with work outside the contract until a modification to the contract is properly executed, if one is necessary.

3.0 DrChecks Initial Account Set-Up

To initialize an office's use of DrChecks, choose a contact person within the office to call the DrChecks Help Desk at 800-428-HELP, M-F, 8AM-5PM, Central time. This POC will be given an office password to distribute to others in the office. Individuals can then go to the hyperlink at {http://www.projnet.org} and register as a first time user. Upon registration, each user will be given a personal password to the DrChecks system.

3.1 Once the office and individuals are registered, the COE’s project manager or lead reviewer will assign the individuals and/or offices to the specific project for review. At this point, persons assigned can make comments, annotate comments, and close comments, depending on their particular assignment.

4.0 DrChecks Reviewer Role

The DB Contractor is the technical reviewer and the Government is the compliance reviewer of the DB designers design documents. Each reviewer enters their own comments into the Dr Checks system. To enter comments:

4.1. Log into DrChecks.

4.2. Click on the appropriate project.

4.3. Click on the appropriate review conference. An Add comment screen will appear.

4.4. Select or fill out the appropriate sections (particularly comment discipline and type of document for sorting) of the comment form and enter the comment in the space provided.

4.5. Click the Add Comment button. The comment will be added to the database and a fresh screen will appear for the next comment you have.

4.6. Once comments are all entered, exit DrChecks by choosing “My Account” and then Logout.

5.0 DrChecks Comment Evaluation

The role of the designers of record is to evaluate and respond to the comments entered by the Government reviewers and by the DB Contractor. To respond to comments:

5.1. Log into DrChecks.

5.2. Click on the appropriate project.

5.3. Under “Evaluate” click on the number under “Pending”.

5.4. Locate the comments that require your evaluation. (Note: If you know the comment number you can use the Quick Pick window on your home page in DrChecks; enter the number and click on go.)

5.5. Select the appropriate evaluation (concur, non-concur, for information only, or check and resolve) and add the response.

5.6. Click on the Add button. The evaluation will be added to the database and a fresh screen will appear with the next comment.

5.7. Once evaluations are all entered, exit DrChecks by choosing “My Account” and then Logout.

6.0 DrChecks Back-check

At the following design conference, participants will back-check comment annotations against newly presented documents to verify that the designers' responses are acceptable and completed. The DB Contractor and Government reviewers shall either enter additional back-check comments, as necessary or close those that are resolved as a result of the design conferences:

6.1. Log into DrChecks.

6.2. Click on the appropriate project.

6.3. Under “My Backcheck” click on the number under “Pending”.

6.4. If you agree with the designer’s response select “Close Comment” and add a closing response if desired.

6.5. If you do not agree with the designer's response or the submittal does not reflect the response given, select "Issue Open", enter additional information.

6.6. Click on the Add button. The back-check will be added to the database and a fresh screen will appear with the next comment.

6.7. Once back-checks are all entered, exit DrChecks by choosing "My Account" and then Logout. The design is completed and final when there are no pending comments to be evaluated and there are no pending or open comments under back-check.

ATTACHMENT D

SAMPLE FIRE PROTECTION AND LIFE SAFETY CODE REVIEW

Instructions: The information outlined in this document shall be used to provide the minimum requirement for development of Fire Protection and Life Safety Code submittals for all building projects. Additional and supplemental information may be used to further develop the code review. Insert N/A after criteria, which may be "not applicable".

1.1. Project Name (insert name and location)

1.2. Applicable Codes and Standards

1.2.1. Unified Facilities Criteria (UFC): 3-600-01, Design: Fire Protection Engineering For Facilities

1.2.2. International Building Code (IBC) for fire resistance requirements, allowable floor area, building height limitations and building separation distance requirements, except as modified by UFC 3-600-01.

1.2.3. National Fire Protection Association (NFPA) 101 Life Safety Code (latest edition), for building egress and life safety and applicable criteria in UFC 3-600-01.

1.2.4. UFAS and ADAAG criteria. (Uniform Federal Accessibility Standards, as required by the Architectural Barriers Act (PL 90-480) in 42 USC 4151-4157. Meet Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities, whenever they provide equal or greater accessibility than UFAS. See Section 01 10 00, Paragraph 3 for facility specific criteria.

1.3. Occupancy Classification

IBC chapters 3 and 4

1.4. Construction Type

IBC chapter 6

1.5. Area Limitations

IBC chapter 5, table 503

1.6. Allowable Floor Areas

IBC section 503, 505

1.7. Allowable area increases

IBC section 506, 507

1.8. Maximum Height of Buildings

IBC section 504

1.9. Fire-resistive substitution

1.10. Occupancy Separations

IBC table 302.3.2

1.11. Fire Resistive Requirements

1.11.1. Exterior Walls - [_____] hour rating, IBC table 601, 602

1.11.2. Interior Bearing walls - [_____] hour rating

1.11.3. Structural frame - [_____] hour rating

1.11.4. Permanent partitions - [_____] hour rating

1.11.5. Shaft enclosures - [_____] hour rating

1.11.6. Floors & Floor-Ceilings - [_____] hour rating

1.11.7. Roofs and Roof Ceilings - [_____] hour rating

1.12. Automatic Sprinklers and others used to determine the need for automatic Extinguishing Equipment, Extinguishing Systems, Foam Systems, Standpipe

1.12.1. UFC 3-600-01, chapters 4 and 6 systems, wet chemical systems, etc. State which systems are required and to what criteria they will be designed.

1.12.2. UFC 3-600-01, Appendix B Occupancy Classification. Note the classification for each room. This may be accomplished by classifying the entire building and noting exceptions for rooms that differ (E.g. The entire building is Light Hazard except boiler room and storage rooms which are [_____], etc.)

1.12.3. UFC 3-600-01, Chapter 3 Sprinkler Design Density, Sprinkler Design Area, Water Demand for Hose Streams (supply pressure and source requirements).

1.12.4. UFC 3-600-01, Chapter 4 Coverage per sprinkler head. Extended coverage sprinkler heads are not permitted.

1.12.5. Available Water Supply. Provide the results of the water flow tests showing the available water supply static pressure and residual pressure at flow. Based on this data and the estimated flow and pressure required for the sprinkler system, determine the need for a fire pump.

1.12.6. NFPA 13, Para. 8.16.4.6.1. Provide backflow preventer valves as required by the local municipality, authority, or water purveyor. Provide a test valve located downstream of the backflow preventer for flow testing the backflow preventer at full system demand flow. Route the discharge to an appropriate location outside the building.

1.13. Kitchen Cooking Exhaust Equipment

Describe when kitchen cooking exhaust equipment is provided for the project. Type of extinguishing systems for the equipment should be provided. per NFPA 96. Show all interlocks with manual release switches, fuel shutoff valves,

electrical shunt trips, exhaust fans, and building alarms.

1.14. Portable Fire Extinguishers, fire classification and travel distance. per NFPA 10

1.15. Enclosure Protection and Penetration Requirements. - Opening Protectives and Through Penetrations

1.15.1. IBC Section712, 715 and Table 715.3. Mechanical rooms, exit stairways, storage rooms, janitor [_____] hour rating. IBC Table 302.1.1

1.15.2. Fire Blocks, Draft Stops, Through Penetrations and Opening Protectives

1.16. Fire Dampers. Describe where fire dampers and smoke dampers are to be used (IBC Section 716 and NFPA 90A}. State whether isolation smoke dampers are required at the air handler.

1.17. Detection Alarm and Communication. UFC 3-600-01, (Chapter 5); NFPA 101 para. 3.4 (chapters 12-42); NFPA 72

1.18. Mass Notification. Describe building/facility mass notification system (UFC 4-021-01) type and type of base-wide mass notification/communication system. State whether the visible notification appliances will be combined with the fire alarm system or kept separate. (Note: Navy has taken position to combine visible notification appliances with fire alarm).

1.19. Interior Finishes (classification). NFPA 101.10.2.3 and NFPA 101.7.1.4

1.20. Means of Egress

1.20.1. Separation of Means of Egress, NFPA 101 chapters 7 and 12-42; NFPA101.7.1.3

1.20.2. Occupant Load, NFPA101.7.3.1 and chapters 12-42.

1.20.3. Egress Capacity (stairs, corridors, ramps and doors) NFPA101.7.3.3

1.20.4. Number of Means of Egress, NFPA101.7.4 and chapters 12-42.

1.20.5. Dead end limits and Common Path of Travel, NFPA 101.7.5.1.6 and chapters 12-42.

1.20.6. Accessible Means of Egress (for accessible buildings), NFPA101.7.5.4

1.20.7. Measurement of Travel Distance to Exits, NFPA101.7.6 and chapters 12-42.

1.20.8. Discharge from Exits, NFPA101.7.7.2

1.20.9. Illumination of Means of Egress, NFPA101.7.8

1.20.10. Emergency Lighting, NFPA101.7.9

1.20.11. Marking of Means of Egress, NFPA101.7.10

1.21. Elevators, UFC 3-600-01, Chapter 6; IBC and ASME A17.1 - 2000,(Safety Code for Elevators and Escalators)

1.22. Accessibility Requirements, ADA and ABA Accessibility Guidelines for Buildings and Facilities

1.23. Certification of Fire Protection and Life Safety Code Requirements. (Note: Edit the Fire team membership if necessary). Preparers of this document certify the accuracy and completeness of the Fire Protection and Life Safety features for this project in accordance with the attached completed form(s).

1.24. Designer of Record. Certification of Fire protection and Life Safety Code Requirements. (Note: Edit the Fire team members if necessary). Preparers of this document certify the accuracy and completeness of the Fire Protection and Life Safety features of this project.

Fire Protection Engineer of Record:

_____

Signature and Stamp

Date

OR

Architect of Record:

_____

Signature and Stamp

Date

Mechanical Engineer of Record:

_____

Signature and Stamp

Date

Electrical Engineer of Record:

_____

Signature/Date

ATTACHMENT E

LEED 2.2 DOCUMENTATION REQUIREMENTS AND SUBMITTALS CHECKLIST

Project Name
Project Location

LEED 2.2 Documentation Requirements and Submittals Checklist

LEED Credit Paragraph	Contractor Check Here if Credit is Claimed	**LEED 2.2 Documentation Requirements and Submittals Checklist for Government-Validated Project**		Provide for Credit Audit Only		Date Submitted (to be filled in by Contractor)	Government Reviewer's Use - Comments/Approved
PAR		**FEATURE**	**DUE AT**		**REQUIRED DOCUMENTATION**	**DATE**	**REV**
GENERAL							
	GENERAL - All calculations shall be in accordance with LEED 2.2 Reference Guide.						
	GENERAL: Obtain excel version of this spreadsheet at http://en.sas.usace.army.mil, "Engineering Criteria".						
	GENERAL - For all credits, narrative/comments may be added to describe special circumstances or considerations regarding the project's credit approach.						
	GENERAL - Include all required LEED drawings indicated below in contract drawings with applicable discipline drawings, labeled For Reference Only.						
	NOTE: Each submittal indicated with "**" differs from USGBC certified project submittals by either having a different due date or being an added submittal not required by USGBC.						
			Closeout		List of all Final Design submittals revised after final design to reflect actual closeout conditions. Revised Final Design submittals. - OR - Statement confirming that no changes have been made since final design that effect final design submittal documents.		
CATEGORY 1 - SUSTAINABLE SITES							
SSPR1		Construction Activity Pollution Prevention (PREREQUISITE)	**Final Design		List of drawings and specifications that address the erosion control, particulate/dust control and sedimentation control measures to be implemented.		
			**Final Design		Narrative that indicates which compliance path was used (NPDES or Local standards) and describes the measures to be implemented on the project. If a local standard was followed, provide specific information to demonstrate that the local standard is equal to or more stringent than the NPDES program.		
SS1		Site Selection	Final Design		Statement confirming that project does not meet any of the prohibited criteria.		
			Final Design	X	LEED Site plan drawing that shows all proposed development, line depicting boundary of all bodies of water and/or wetlands within 100 feet of project boundary and a line depicting 5' elevation above 100 year flood line that falls within project boundary. Not required if neither condition applies.		
SS2		Development Density & Community Connectivity	Final Design		Option 1: LEED Site vicinity plan showing project site and surrounding development. Show density boundary or note drawing scale.		
			Final Design		Option 1: Table indicating, for project site and all surrounding sites within density radius (keyed to site vicinity plan), site area and building area. Project development density calculation. Density radius calculation. Development density calculation within density radius.		
			Final Design		Option 2: LEED Site vicinity plan showing project site, the 1/2 mile community radius, pedestrian walkways and the locations of the residential development(s) and Basic Services surrounding the project site.		
			Final Design		Option 2: List (including business name and type) of all Basic Services facilities within the 1/2 mile radius, keyed to site vicinity plan.		
SS3		Brownfield Redevelopment	Final Design		Narrative describing contamination and the remediation activities included in project. Include statement indicating how site was determined to be a brownfield.		
SS4.1		Alternative Transportation: Public Transportation Access	Final Design		Statement indicating which option for compliance applies. State whether public transportation is existing or proposed and, if proposed, cite source of this information.		
			Final Design		Option 1: LEED Site vicinity plan showing project site, mass transit stops and pedestrian path to them with path distance noted.		
			Final Design		Option 2: LEED Site vicinity plan showing project site, bus stops and pedestrian path to them with path distance noted.		
SS4.2		Alternative Transportation: Bicycle Storage & Changing Rooms	Final Design		FTE calculation. Bicycle storage spaces calculation. Shower/changing facilities calculation.		
			Final Design		List of drawings that show the location(s) of bicycle storage areas. Statement indicating distance from building entrance.		
			Final Design		List of drawings that show the location(s) of shower/changing facilities and, if located outside the buiding, statement indicating distance from building entrance.		
SS4.3		Alternative Transportation: Low Emitting & Fuel Efficient Vehicles	Final Design		Statement indicating which option for compliance applies. FTE calculation. Statement indicating total parking capacity of site.		
			Final Design		Option 1: Low-emission & fuel-efficient vehicle calculation.		
			Final Design		Option 1: List of drawings and specification references that show location and number of preferred parking spaces for low-emission & fuel-efficient vehicles and signage.		

Project Number
Submittal Name

Project Name
Project Location

LEED 2.2 Documentation Requirements and Submittals Checklist

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PAR		**FEATURE**	**DUE AT**		**REQUIRED DOCUMENTATION**	**DATE**	**REV**
			Final Design		Option 1: Statement indicating quantity, make, model and manufacturer of low-emission & fuel-efficient vehicles to be provided. Statement confirming vehicles are zero-emission or indicating ACEEE vehicle scores.		
			Final Design		Option 2: Low-emission & fuel-efficient vehicle parking calculation.		
			Final Design		Option 2: List of drawings and specification references that show location and number of preferred parking spaces and signage.		
			Final Design		Option 3: Low-emission & fuel-efficient vehicle refueling station calculation.		
			Final Design		Option 3: List of drawings and specifications indicating location and number of refueling stations, fuel type and fueling capacity for each station for an 8-hour period.		
			Closeout	X	Option 3: Construction product submittals indicating what was provided and confirming compliance with respect to fuel type and fueling capacity for each station for an 8-hour period.		
SS4.4		Alternative Transportation: Parking Capacity	Final Design		Statement indicating which option for compliance applies.		
			Final Design		Option 1: Preferred parking calculation including number of spaces required, total provided, preferred spaces provided and percentage.		
			Final Design		Option 2: FTE calculation. Preferred parking calculation including number of spaces provided, preferred spaces provided and percentage.		
			Final Design		Options 1 and 2: List of drawings and specification references that show location and number of preferred parking spaces and signage.		
			Final Design		Option 3: Narrative indicating number of spaces required and provided and describing infrastructure and support programs with description of project features to support them.		
SS5.1		Site Development: Protect or Restore Habitat	**Final Design		Option 1: List of drawing and specification references that convey site disturbance limits.		
			**Final Design		Option 2: LEED site plan drawing that delineates boundaries of each preserved and restored habitat area with area (sf) noted for each.		
			**Final Design		Option 2: Percentage calculation of restored/preserved habitat to total site area. List of drawings and specification references that convey restoration planting requirements.		
SS5.2		Site Development: Maximize Open Space	Final Design		Option 2: LEED site plan drawing delineating boundary of vegetated open space adjacent to building with areas of building footprint and designated open space noted.		
SS6.1		Stormwater Design: Quantity Control	Final Design		Statement indicating which option for compliance applies.		
			Final Design		Option 1: Indicate pre-development and post-development runoff rate(cfs) and runoff quantity (cf) -OR - Narrative describing site conditions, measures and controls to be implemented to prevent excessive stream velocities and erosion.		
			Final Design		Option 2: Indicate pre-development and post-development runoff rate(cfs) and runoff quantity (cf). Indicate percent reduction in each.		
SS6.2		Stormwater Design: Quality Control	Final Design		For non-structural controls, list all BMPs used and, for each, describe the function of the BMP and indicate the percent annual rainfall treated. List all structural controls and, for each, describe the pollutant removal and indicate the percent annual rainfall treated.		
SS7.1		Heat Island Effect: Non-Roof	**Final Design		LEED site plan drawing indicating locations and quantities of each paving type, including areas of shaded pavement. Percentage calculation indicating percentage of reflective/shaded/open grid area.		
SS7.2		Heat Island Effect: Roof	Final Design		Option 1: Percentage calculation indicating percentage of SRI compliant roof area. List of drawings and specification references that convey SRI requirements and roof slopes.		
			Closeout		Option 1: List of installed roof materials indicating, for each, manufacturer, product name and identification, SRI value and roof slope.		
			Closeout	X	Option 1: Manufacturer published product data or certification confirming SRI		
			Final Design		Option 2: Percentage calculation indicating percentage of vegetated roof area.		

Project Number
Submittal Name

Project Name
Project Location

LEED 2.2 Documentation Requirements and Submittals Checklist

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PAR		**FEATURE**	**DUE AT**		**REQUIRED DOCUMENTATION**	**DATE**	**REV**
			Final Design		Option 3: Combined reflective and green roof calculation.		
			Closeout		Option 3: List of installed roof materials indicating, for each, manufacturer, product name and identification, SRI value and roof slope.		
			Closeout	X	Option 3: Manufacturer published product data or certification confirming SRI		
SS8		Light Pollution Reduction	Final Design		Interior Lighting: List of drawings and specification references that convey interior lighting requirements (location and type of all installed interior lighting, location of non-opaque exterior envelope surfaces, allowing confirmation that maximum candela value from interiorfixtures does not intersect non-opaque building envelope surfaces). - OR - List of drawings and specification references that show automatic lighting controls that turn off non-essential lighting during non-business hours.		
			Final Design		Exterior Lighting: List of drawings and specification references that convey exterior lighting requirements (location and type of all site lighting and building façade/landscape lighting).		
			Final Design		Exterior Site Lighting Power Density (LPD): Tabulation for exterior site lighting indicating, for each location identification or description, units of measure, area or distance of the location, actual LPD using units consistent with ASHRAE 90.1, and the ASHRAE allowable LPD for that type of location. Percentage calculation of actual versus allowable LPD for all site lighting.		
			Final Design		Exterior Building Facade/Landscape Lighting Power Density (LPD): Tabulation for exterior building facade/landscape lighting indicating, for each location identification or description, units of measure, area or distance of the location, actual LPD using units consistent with ASHRAE 90.1, and the ASHRAE allowable LPD for that type of location. Percentage calculation of actual versus allowable LPD for all building facade/landscape lighting.		
			Final Design		Exterior Lighting IESNA Zone: Indicate which IESNA zone is applicable to the project.		
			Final Design		Exterior Lighting Site Lumen table indicating, for each fixture type, quantity installed, initial lamp lumens per luminaire, initial lamp lumens above 90 degrees from Nadir, total lamp lumens and total lamp lumens above 90 degrees. Percentage of site lamp lumens above 90 degrees from nadir to total lamp lumens.		
			Final Design		Exterior Lighting Narrative describing analysis used for addressing requirements for light trespass at site boundary and beyond.		
CATEGORY 2 – WATER EFFICIENCY							
WE1.1		Water Efficient Landscaping: Reduce by 50%	Final Design		Statement indicating which option for compliance applies.		
			Final Design		Calculation indicating, for baseline and design case, total water applied, total potable water applied, total non-potable water applied. Design case percent potable water reduction. If nonpotable water is used, indicate source of nonpotable water.		
			Final Design		List of landscape plan drawings.		
			Final Design		Narrative describing landscaping and irrigation design strategies, including water use calculation methodology used to determine savings and, if non-potable water is used, specific information about source and available quantity.		
WE1.2		Water Efficient Landscaping: No Potable Water Use or No Irrigation	Same as WE1.1		Same as WE1.1		
WE2		Innovative Wastewater Technologies	Final Design		Statement confirming which option for compliance applies.		
			Final Design		Statement confirming which occupancy breakdown applies (default or special). For special occupancy breakdown, indicate source and explanation for ratio.		
			Final Design		Occupancy calculation including male/female numbers for FTEs, visitors, students, customers, residential and other type occupants/users		
			Final Design		Statement indicating percent of male restrooms with urinals. Statement indicating annual days of operation.		
			Final Design		Baseline flush fixture calculation spreadsheet indicating, for each fixture type, gender, flush rate, daily uses per person for each occupant type identified in occupancy calculation and annual baseline flush fixture water usage.		

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PAR		**FEATURE**	**DUE AT**		**REQUIRED DOCUMENTATION**	**DATE**	**REV**
			Final Design		gender, fixture manufacturer, fixture model number, flush rate, percent of occupants using this fixture type, daily uses per person for each occupant type identified in occupancy calculation and annual design case flush fixture water usage.		
			Final Design		Option 1: If onsite non-potable water is used, identify source(s), indicate annual quantity from each source and indicate total annual quantity from all onsite non-potable water sources.		
			Final Design		Option 1: Summary calculation indicating baseline annual water consumption, design case annual water consumption, non-potable annual water consumption and total percentage annual water savings.		
			Final Design		Option 2: Statement confirming on-site treatment of all generated wastewater to tertiary standards and all treated wastewater is either infiltrated or used on-site.		
			Final Design		Option 2: List of drawing and specification references that convey design of on-site wastewater treatment features.		
			Final Design		Option 2: On-site water treatment quantity calculation indicating all on-site wastewater source(s), annual quantity treated, annual quantity infiltrated and annual quantity re-used on site from each source and totals for annual quantity treated, annual quantity infiltrated and annual quantity re-used on site from all sources.		
			Final Design		Option 2: Wastewater summary calculation indicating design case annual flush fixture water usage, annual on-site water treatment and percentage sewage convyance reduction.		
			Final Design		Narrative describing project strategy for reduction of potable water use for sewage conveyance, including specific information on reclaimed water usage and treated wastewater usage.		
WE3.1		Water Use Reduction: 20% Reduction	Final Design		Statement confirming which occupancy breakdown applies (default or special). For special occupancy breakdown, indicate source and explanation for ratio.		
			Final Design		Occupancy calculation including male/female numbers for FTEs, visitors, students, customers, residential and other type occupants/users		
			Final Design		Statement indicating percent of male restrooms with urinals. Statement indicating annual days of operation.		
			Final Design		Baseline flush fixture calculation spreadsheet indicating, for each fixture type, gender, flush rate, daily uses per person for each occupant type identified in occupancy calculation and annual baseline flush fixture water usage.		
			Final Design		gender, fixture manufacturer, fixture model number, flush rate, percent of occupants using this fixture type, daily uses per person for each occupant type identified in occupancy calculation and annual design case flush fixture water usage.		
			Closeout	X	Manufacturer published product data or certification confirming fixture water usage.		
WE3.2		Water Use Reduction: 30% Reduction	Same as WE3.1		Same as WE3.1		
CATEGORY 3 – ENERGY AND ATMOSPHERE							
EAPR1		Fundamental Commissioning of the Building Energy Systems (PREREQUISITE)	**Final Design		**Owner's Project Requirements document		
			**Final Design		**Basis of Design document for commissioned systems		
			**Final Design		**Commissioning Plan		
			Closeout		Statement confirming all commissioning requirements have been incorporated into construction documents.		
			Closeout		Commissioning Report		
EAPR2		Minimum Energy Performance (PREREQUISITE)	Final Design		Statement listing the mandatory provisions of ASHRAE 90.1 that project meets relative to compliance with this prerequisite and indicating which compliance path was used.		
EAPR3		Fundamental Refrigerant Management (PREREQUISITE)	Final Design		Statement indicating which option for compliance applies.		
			Final Design		Option 2: Narrative describing phase out plan, including specific information on phase out dates and refrigerant quantities.		
EA1		Optimize Energy Performance	Final Design		Statement indicating which compliance path option applies.		

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			Final Design		Option 1: Statement confirming simulation software capabilities and confirming assumptions and methodology.		
			Final Design		Option 1: General information including simulation program, principal heating source, percent new construction and renovation, weather file, climate zone and Energy Start Target Finder score.		
			Final Design		Option 1: Space summary listing, for each building use, the conditioned area, unconditioned area and total area and include total area for each category		
			Final Design		Option 1: List of all simulation output advisory message data and show difference between baseline and proposed design		
			Final Design		Option 1: Comparison summary for energy model inputs including description of baseline and design case energy model inputs, showing both by element type		
			Final Design		Option 1: Energy type summary lising, for each energy type, utility rate description, units of energy and units of demand		
			Final Design		Option 1: Statement indicating whether project uses on-site renewable energy. If yes, list all sources and indicate, for each source, backup energy type, annual energy generated, rated capacity and renewable energy cost		
			Final Design		Option 1: If analysis includes exceptional calculation methods, statement describing how exceptional calculation measure cost savings is determined		
			Final Design		Option 1: If analysis includes exceptional calculation methods, for each exceptional calculation method indicate energy types and, for each energy type, annual energy savings, annual cost savings, and brief descriptive narrative		
			Final Design		Option 1: Baseline performance rating compliance report table indicating, for each energy end use, whether it is a process load, energy type, annual and peak energy demand for all four orientations. For each orientation indicate total annual energy use for each orientation and total annual process energy use.		
			Final Design		Option 1: Baseline energy cost table indicating, for each energy type, annual cost for all four orientations and building total energy cost.		
			Final Design		Option 1: Proposed Design performance rating compliance report table indicating, for each energy end use, whether it is a process load, energy type, annual and peak energy demand, baseline annual and peak energy demand and percent savings. Indicate total annual energy use and total annual process energy use for both proposed design and baseline and percent savings.		
			Final Design		Option 1: Proposed Design energy cost table indicating, for each energy type, annual cost for all four orientations and building total energy cost.		
			Final Design		Option 1: Energy cost and consumption by energy type report indicating, for each energy type, proposed design and baseline annual use and annual cost, percent savings annual use and annual cost. Indicate for renewable energy annual energy generated and annual cost. Indicate exceptional calculations annual energy savings and annual cost savings. Indicate building total annual energy use, annual energy cost for proposed design and baseline and indicate percent savings annual energy use and annual energy cost.		
			Final Design		Option 1: Compliance summaries from energy simulation software. If software does not produce compliance summaries provide output summaries and example input summaries for baseline and proposed design supporting data in the tables. Output summaries must include simulated energy consumption by end use and total energy use and cost by energy type. Example input summaries should represent most common systems and must include occupancy, use pattern, assumed envelope component sizes and descriptive features and assumed mechanical equipment types and descriptive features		
			Final Design		Option 1: Energy rate tariff from project energy providers (only if not using LEED Reference Guide default rates)		
EA2.1		On-Site Renewable Energy	Final Design		Statement indicating which compliance path option applies.		
			Final Design		List all on-site renewable energy sources and indicate, for each source, backup energy type, annual energy generated, rated capacity and renewable energy cost. Indicate total annual energy use (all sources), total annual energy cost (all sources) and percent renewable energy cost.		
			Final Design		Option 1: Indicate, for renewable energy,proposed design total annual energy generated and annual cost.		
			Final Design		Option 2: Indicate CBECS building type and building gross area. Provide the following CBECS data: median annual electrical intensity, median annual non-electrical fuel intensity, average electric energy cost, average non-electric fuel cost, annual electric energy use and cost, annual non-electric fuel use and cost.		

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			Final Design		Option 2: Narrative describing renewable systems and explaining calculation method used to estimate annual energy generated, including factors influencing performance.		
EA2.2		On-Site Renewable Energy	Same as EA2.1		Same as EA2.1		
EA2.3		On-Site Renewable Energy	Same as EA2.1		Same as EA2.1		
EA3		Enhanced Commissioning	**Final Design		**Owner's Project Requirements document (OPR)		
			**Final Design		**Basis of Design document for commissioned systems (BOD)		
			**Final Design		**Commissioning Plan		
			Closeout		Statement confirming all commissioning requirements have been incorporated into construction documents.		
			Closeout		**Commissioning Report		
			**Final Design		Statement by CxA confirming Commissioning Design Review		
			Closeout		Statement by CxA confirming review of Contractor submittals for compliance with OPR and BOD		
			Closeout		**Systems Manual		
			Closeout		Statement by CxA confirming completion of O&M staff and occupant training		
			Closeout		**Scope of work for post-occupancy review of building operation, including plan for resolution of outstanding issues		
			**Predesign		Statement confirming CxA qualifications and contractual relationships relative to work on this project, demonstrating that CxA is an independent third party.		
EA4		Enhanced Refrigerant Management	Final Design		Refrigerant impact calculation table with all building data and calculation values as shown in LEED 2.2 Reference Guide Example Calculations		
			Final Design		Narrative describing light trespass analysis conducted to determine compliance		
			Closeout	X	Cut sheets highlighting refrigerant data for all HVAC components.		
EA5		Measurement & Verification	Closeout		Statement indicating which compliance path option applies.		
			Closeout		Measurement and Verification Plan		
			Closeout		**Scope of work for post-occupancy implementation of M&V plan		
EA6		Green Power	Closeout		Statement indicating which compliance path option applies.		
			Closeout		Option 1: Indicate proposed design total annual electric energy usage		
			Closeout		Option 2: Indicate actual total annual electric energy usage		
			Closeout		Option 3: Calculation indicating building type, total gross area, median electrical intensity and annual electric energy use		
			Closeout		Green power provider summary table indicating, for each purchase type, provider name, annual quantity green power purchased and contract term. Indicate total annual green power use and indicate percent green power		
			Closeout		Narrative describing how Green Power or Green Tags are purchased		
CATEGORY 4 – MATERIALS AND RESOURCES							
MRPR1		Storage & Collection of Recyclables (PREREQUISITE)	Final Design		Statement confirming that recycling area will accommodate recycling of plastic, metal, paper, cardboard and glass. Narrative indicating any other materials addressed and coordination with pickup.		
MR1.1		Building Reuse: Maintain 75% of Existing Walls, Floors & Roof	**Final Design		If project includes a building addition, confirm that area of building addition does not exceed 2x the area of the existing building.		
			**Final Design		Spreadsheet listing, for each building structural/envelope element, the existing area and reused area. Total percent reused.		
MR1.2		Building Reuse: Maintain 95% of Existing Walls, Floors & Roof	Same as MR1.1		Same as MR1.1		
MR1.3		Building Reuse: Maintain 50% of Interior Non-Structural Elements	**Final Design		If project includes a building addition, confirm that area of building addition does not exceed 2x the area of the existing building.		
			**Final Design		Spreadsheet listing, for each building interior non-structural element, the existing area and reused area. Total percent reused.		
MR2.1		Construction Waste Management: Divert 50% From Disposal	**Preconstruction		Waste Management Plan		

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PAR		**FEATURE**	**DUE AT**		**REQUIRED DOCUMENTATION**	**DATE**	**REV**
			**Construction Quarterly and Closeout		Spreadsheet calculations indicating material description, disposal/diversion location (or recycling hauler), weight, total waste generated, total waste diverted, diversion percentage		
			Preconstruction		**Implementation Strategy Plan consisting of spreadsheet indicated above, filled in with estimated quantities to show strategy for achieving goal.		
			**Construction Quarterly and Closeout		Receipts/tickets for all items on spreadsheet		
MR2.2		Construction Waste Management: Divert 75% From Disposal	Same as MR2.1		Same as MR2.1		
MR3.1		Materials Reuse: 5%	Closeout		Statement indicating total materials value and whether default or actual.		
			Closeout		Spreadsheet calculations indicating, for each reused/salvaged material, material description, source or vendor, cost. Total reused/salvaged materials percentage.		
MR3.2		Materials Reuse: 10%	Same as MR3.1		Same as MR3.1		
MR4.1		Recycled Content: 10% (post-consumer + 1/2 pre-consumer)	Closeout		Statement indicating total materials value and whether default or actual.		
			Closeout		Spreadsheet calculations indicating, for each recycled content material, material name/description, manufacturer, cost, post-consumer recycled content percent, pre consumer recycled content percent, source of recycled content data. Total post-consumer content materials cost, total pre-consumer content materials cost, total combined recycled content materials cost, recycled content materials percentage.		
			Final Design or NLT Preconstruction		**Implementation Strategy Plan consisting of spreadsheet indicated above, filled in with estimated quantities to show strategy for achieving goal.		
			Closeout	X	Manufacturer published product data or certification, confirming recycled content percentages in spreadsheet		
MR4.2		Recycled Content: 20% (post-consumer + 1/2 pre-consumer)	Same as MR4.1		Same as MR4.1		
MR5.1		Regional Materials:10% Extracted, Processed & Manufactured Regionally	Closeout		Statement indicating total materials value and whether default or actual.		
			Closeout		Spreadsheet calculations indicating, for each regional material, material name/description, manufacturer, cost, percent compliant, harvest distance, manufacture distance, source of manufacture and harvest location data. Total regional materials cost, regional materials percentage.		
			Final Design or NLT Preconstruction		**Implementation Strategy Plan consisting of spreadsheet indicated above, filled in with estimated quantities to show strategy for achieving goal.		
			Closeout	X	Manufacturer published product data or certification confirming regional material percentages in spreadsheet		
MR5.2		Regional Materials:20% Extracted, Processed & Manufactured Regionally	Same as MR5.1		Same as MR5.1		
MR6		Rapidly Renewable Materials	Closeout		Statement indicating total materials value and whether default or actual.		
			Closeout		Spreadsheet calculations indicating, for each rapidly renewable material, material name/description, manufacturer, cost, rapidly renewable content percent, rapidly renewable product value. Total rapidly renewable product value, rapidly renewable materials percentage.		
			Final Design or NLT Preconstruction		**Implementation Strategy Plan consisting of spreadsheet indicated above, filled in with estimated quantities to show strategy for achieving goal.		
			Closeout	X	Manufacturer published product data or certification confirming rapidly renewable material percentages in spreadsheet		

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MR7		Certified Wood	Closeout		Statement indicating total materials value and whether default or actual.		
			Closeout		Spreadsheet calculations indicating, for each certified wood material, material name/description, vendor, cost, wood component percent, certified wood percent of wood component, FSC chain of custody certificate number. Total certified wood product value, certified wood materials percentage.		
			Final Design or NLT Preconstruction		**Implementation Strategy Plan consisting of spreadsheet indicated above, filled in with estimated quantities to show strategy for achieving goal.		
			Closeout	X	Vendor invoices, FSC chain of custody certificates and anufacturer published product data or certification confirming all certified wood materials percentages in spreadsheet.		
CATEGORY 5 – INDOOR ENVIRONMENTAL QUALITY							
EQPR1		Minimum IAQ Performance (PREREQUISITE)	Final Design		Statement indicating which option for compliance applies, stating applicable criteria/requirement, and confirming that project has been designed to meet the applicable requirements.		
			Final Design		Narrative describing the project's ventilation design, including specifics about fresh air intake volumes and special considerations.		
EQPR2		Environmental Tobacco Smoke (ETS) Control (PREREQUISITE)	Final Design		Statement indicating which option for compliance applies, stating applicable criteria/requirement, and confirming that project has been designed to meet the applicable requirements.		
			Final Design		List of drawing and specification references that convey conformance to applicable requirements (signage, exhaust system, room separation details, etc).		
EQ1		Outdoor Air Delivery Monitoring	Final Design		Statement indicating which option for compliance applies and confirming that project has been designed to meet the applicable requirements.		
			Final Design		List of drawing and specification references that convey conformance to applicable requirements.		
			Final Design		Narrative describing the project's ventilation design and CO2 monitoring system, including specifics about monitors, operational parameters and setpoints.		
			Closeout	X	Cut sheets for CO2 monitoring system.		
EQ2		Increased Ventilation	Final Design		Statement indicating which option for compliance applies and confirming that project has been designed to meet the applicable requirements.		
			Final Design		Narrative describing the project's ventilation design, including specifics about zone fresh air intake volumes and demonstrating compliance.		
			Final Design		Option 2: Narrative describing design method used for determining natural ventilation design, including calculation methodology/model results and demonstrating compliance.		
			Final Design		List of drawing and specification references that convey conformance to applicable requirements.		
EQ3.1		Construction IAQ Management Plan: During Construction	**Preconstruction		Construction IAQ Management Plan		
			Closeout		Statement confirming whether air handling units were operated during construction		
			Closeout		Dated jobsite photos showing examples of IAQ management plan practices being implemented. Label photos to indicate which practice they demonstrate. Minimum one photo of each practice at each building.		
			Closeout		Spreadsheet indicating, for each filter installed during construction, the manufacturer, model number, MERV rating, location installed, and if it was replaced immediately prior to occupancy.		
EQ3.2		Construction IAQ Management Plan: Before Occupancy	**Preconstruction		Construction IAQ Management Plan		
			Closeout		Statement indicating which option for compliance applies and confirming that required activities have occurred that meet the applicable requirements.		

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			Closeout		Option 1a: Narrative describing the project's flushout process, including specifics about temperature, airflow and duration, special considerations (if any) and demonstrating compliance.		
			Closeout		Option 1b: Narrative describing the project's pre-occupancy and post-occupancy flushout processes, including specifics about temperature, airflow and duration, special considerations (if any) and demonstrating compliance.		
			Closeout		Option 2: Narrative describing the project's IAQ testing process, including specifics about contaminants tested for, locations, remaining work at time of test, retest parameters and special considerations (if any).		
			Closeout		Option 2: IAQ testing report demonstrating compliance.		
EQ4.1		Low Emitting Materials: Adhesives & Sealants	Closeout		Spreadsheet indicating, for each applicable indoor adhesive, sealant and sealant primer used, the manufacturer, product name/model number, VOC content, LEED VOC limit, and source of VOC data.		
			Closeout		Spreadsheet indicating, for each applicable indoor aerosol adhesive, the manufacturer, product name/model number, VOC content, LEED VOC limit, and source of VOC data - OR - Statement confirming no indoor aerosol adhesives were used for the project.		
			Closeout	X	Manufacturer published product data or certification confirming material VOCs in spreadsheet		
EQ4.2		Low Emitting Materials: Paints & Coatings	Closeout		Spreadsheet indicating, for each applicable indoor paint and coating used, the manufacturer, product name/model number, VOC content, LEED VOC limit, and source of VOC data.		
			Closeout		Spreadsheet indicating, for each applicable indoor anti-corrosive/anti-rust paint and coating used, the manufacturer, product name/model number, VOC content, LEED VOC limit, and source of VOC data - OR - Statement confirming no indoor anti-corrosive/anti-rust paints were used for the project .		
			Closeout	X	Manufacturer published product data or certification confirming material VOCs in spreadsheet		
EQ4.3		Low Emitting Materials: Carpet Systems	Closeout		Spreadsheet indicating, for each indoor carpet used, the manufacturer, product name/model number, if it meets LEED requirement (yes/no) and source of LEED compliance data.		
			Closeout		Spreadsheet indicating, for each indoor carpet cushion used, the manufacturer, product name/model number, if it meets LEED requirement (yes/no) and source of LEED compliance data - OR - Statement confirming no indoor carpet cushion was used for the project.		
			Closeout	X	Manufacturer published product data or certification confirming material CRI label in spreadsheet		
EQ4.4		Low Emitting Materials: Composite Wood & Agrifiber Products	Closeout		Spreadsheet indicating, for each indoor composite wood and agrifiber product used, the manufacturer, product name/model number, if it contains added urea formaldehyde (yes/no) and source of LEED compliance data.		
			Closeout	X	Manufacturer published product data or certification confirming material urea formaldehyde in spreadsheet		
EQ5		Indoor Chemical & Pollutant Source Control	Final Design		Spreadsheet indicating, for each permanent entryway system used, the manufacturer, product name/model number and description of system. Roll-up and carpet systems requiring weekly cleaning to earn this credit are not a permitted option for Army projects.		
			Final Design		List of drawing and specification references that convey locations and installation methods for entryway systems.		
			Final Design		Spreadsheet indicating, for each chemical use area, the room number, room name, description of room separation features (walls, floor/ceilings, openings) and pressure differential from surrounding spaces with doors closed - OR - Statement confirming that project includes no chemical use areas and that no hazardous cleaning materials are needed for building maintenance.		
			Final Design		If project includes chemical use areas: List of drawing and specification references that convey locations of chemical use areas, room separation features and exhaust system.		

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PAR		**FEATURE**	**DUE AT**		**REQUIRED DOCUMENTATION**	**DATE**	**REV**
			Final Design		If project includes chemical use areas: Spreadsheet indicating, for AHUs/mechanical ventilation equipment serving occupied areas, the manufacturer, model number, MERV rating, location installed, and if it was replaced immediately prior to occupancy (yes/no) - OR - Statement confirming that project does not use mechanical equipment for ventilation of occupied areas.		
EQ6.1		Controllability of Systems: Lighting	Final Design		Calculation indicating total number of individual workstations, number of workstations with individual lighting controls and the percentage of workstations with individual lighting controls.		
			Final Design		For each shared multi-occupant space, provide a brief description of lighting controls.		
			Final Design		Narrative describing lighting control strategy, including type and location of individual controls and type and location of controls in shared multi-occupant spaces.		
EQ6.2		Controllability of Systems: Thermal Comfort	Final Design		Calculation indicating total number of individual workstations, number of workstations with individual thermal comfort controls and the percentage of workstations with individual thermal comfort controls.		
			Final Design		For each shared multi-occupant space, provide a brief description of thermal comfort controls.		
			Final Design		Narrative describing thermal comfort control strategy, including type and location of individual and shared multi-occupant controls.		
EQ7.1		Thermal Comfort: Design	Final Design		Design criteria spreadsheet indicating, for spring, summer, fall and winter, maximum indoor space design temperature, minimum indoor space design temperature and maximum indoor space design humidity.		
			Final Design		Narrative describing method used to establish thermal comfort control conditions and how systems design addresses the design criteria, including compliance with the referenced standard.		
EQ7.2		Thermal Comfort: Verification	Final Design		Narrative describing the scope of work for the thermal comfort survey, including corrective action plan development		
EQ8.1		Daylight & Views: Daylight 75% of Spaces	Final Design		Option 1: Table indicating all regularly occupied spaces with space area and space area with 2% daylighting factor. Sum of regularly occupied areas and regularly occupied areas with 2% daylighting factor. Percentage calculation of areas with 2% daylighting factor to total regularly occupied areas.		
			Final Design		Option 1: Glazing factor calculation table		
			Final Design		Option 2: Simulation model method, software and output data		
			Final Design		Option 2: Table indicating all regularly occupied spaces with space area, space area with minimum 25 footcandles daylighting illumination, and method of providing glare control. Sum of regularly occupied areas and regularly occupied areas with 25 fc daylighting. Percentage calculation of areas with 25 fc daylighting to total regularly occupied areas.		
			Final Design		For all occupied spaces excluded from the calculation, provide narrative indicating reasons for excluding the space.		
			Final Design		List of drawing and specification references that convey exterior glazed opening head and sill heights and glazing performance properties.		
			Closeout	X	Manufacturer published product data or certification confirming glazing Tvis in spreadsheet		
EQ8.2		Daylight & Views: Views for 90% of Spaces	Final Design		Table indicating all regularly occupied spaces with space area and space area with access to views. Sum of regularly occupied areas and regularly occupied areas with access to views. Percentage calculation of areas with views to total regularly occupied areas.		
			Final Design		For all occupied spaces excluded from the calculation, provide narrative indicating reasons for excluding the space.		
			Final Design		LEED Floor plan drawings showing line of sight diagramming of views areas in each regularly occupied space. List of drawing/specification references that convey exterior glazed opening head and sill heights.		
CATEGORY 6 – FACILITY DELIVERY PROCESS							
IDc1.1		Innovation in Design	Varies		Narrative decribing intent, requirement for credit, project approach to the credit. List of drawings and specification references that convey implementation of credit. All other documentation that validates claimed credit.		

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IDc1.2		Innovation in Design	Varies				
IDc1.3		Innovation in Design	Varies				
IDc1.4		Innovation in Design	Varies				
IDc2		LEED Accredited Professional	Final Design		Narrative indicating name of LEED AP, company name of LEED AP, description of LEED AP's role and responsiblilities in the project.		

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ATTACHMENT F

BUILDING INFORMATION MODELING REQUIREMENTS

Version 01-04-08

Section 1 - Submittal Format

1.1 Design Deliverables. Develop all designs using Building Information Modeling (BIM) and Computer Aided Design (CAD) software. Design submittal drawings shall be ANSI D size, suitable for half-size (11"x17") scaled reproduction.

Section 2 – Design Requirements

2.1 Drawings. Deliver CAD files used for the creation of the Construction Documents Drawings per requirements in Section 01 33 16, the criteria of the USACE US Army Corps of Engineers, Los Angles District, and as noted herein. Specification of a CAD file format for these Drawings does not limit which BIM application(s) or software(s) may be used for project development and execution.

2.2 BIM Model and Facility Data. Contractor shall select BIM application(s) and software(s) and develop project designs using BIM software. Use 3D graphic model(s) (the "Model") and associated intelligent attribute data ("Facility Data") created by this software to produce accurate Construction Documents. The Contractor will be provided with the Corps of Engineers BIM Workspace CD based on the Bentley System BIM to be utilized for submittals. The Contractor may be provided a baseline multi-discipline BIM Project Workspace for a CoS Facility Standard Design in the Bentley BIM v8 format for the purpose of site adaptation. The Workspace is dependent on specific versions of the Bentley BIM suite of products and only the versions of the software that are listed in the Contractor instructions included on the USACE BIM Workspace CD are permitted to be used.

2.2.1 IFC Coordination View. The Contractor's selected BIM application(s) and software(s) must be certified in the IFC Coordination View (2x3 or better. See www.iai-na.org). Submit any deviations from or additions to the IFC property sets for any new spaces, systems, and equipment for Government approval.

2.2.2 Submittal Requirements. BIM submittals shall be fully compatible with the Bentley BIM format version 08.05.02.55 and conform to the requirements of Section 3 and 4 below.

2.2.3 Implementation Plan.

2.2.3.1 Prior to the Initial Design Conference, submit an Implementation Plan, documenting viability of the BIM design and analysis technologies selected for the Project Model (integrated with the AEC CAD Standard) from concept development through As-Builts as a design, production, coordination, construction, and documentation tool and the collaborative process by which it shall be implemented.

2.2.3.2 The Implementation Plan shall describe uses of BIM during design and construction phases to include value management, interference management, and design-change tracking, or such other uses as the Contractor proposes. Refer to ERDC TR06-10, "Building Information Modeling (BIM) A Road Map for Implementation To Support MILCON Transformation and Civil Works Projects within the U.S. Army Corps of Engineers" for more information at https://cadbim.usace.army.mil/default.aspx?p=s&t=19&i=1.

2.2.3.3 The Implementation Plan shall identify how the BIM data shall be managed and interoperate (data storage, sharing, viewing, quality control parameters in Section 2.3 Quality Control, and updating, as necessary) among all Contractor team members.

2.2.3.4 Conduct an Implementation Plan demonstration at the Initial Design Conference to review the Implementation Plan for clarification, and to verify the functionality of Model technology workflow and processes. The Government shall confirm acceptability of the Plan or advise as to additional processes or activities necessary to be incorporated into the Plan. If modifications are required, the Contractor shall execute the modifications and resubmit the final Implementation Plan for Government acceptance. There will be no payment for design or construction until the Plan is acceptable to the Government. The Government may also withhold payment for design and construction for unacceptable performance in executing the Implementation Plan.

2.2.4 Model Components. The Model shall include the following, subject to Government concurrence:

2.2.4.1 Project Specific BIM Facility Data. Develop the Facility Data, consisting of a set of intelligent elements for the Model (e.g., doors, air handlers, electrical panels). This Facility Data shall include all material definitions, qualities, and attributes that are necessary for the Project facility design.

2.2.4.2 Project Specific Minimum Requirements. The Contractor's Model shall include, at a minimum, the requirements of Section 4 below. The Government must agree with any proposed modifications to minimum requirements before incorporation into the Model.

2.2.4.3 Facility Data Output. Each submittal under Section 3 shall include a list of Construction Documents (e.g., drawings, elevations, design sections and schedules, details) that shall be produced from the Facility Data and updated as necessary.

2.2.4.4 Model Granularity. Models may vary in level of detail for individual elements within a model, but at a minimum must include all features that would be included on a quarter inch (1/4" = 1'0") scaled drawing (e.g. at least 1/16th, 1/8th and 1/4th), or appropriately scaled civil drawings.

2.3 Quality Control. Implement quality control (QC) parameters for the Model, including:

2.3.1 Standards Checks. QC checking performed to ensure that the fonts, dimensions, line styles, levels and other construction document formatting issues are followed per the A/E/C CADD Standard.

2.3.2 Model Integrity Checks. QC validation used to ensure that the Project Facility Data set has no undefined, incorrectly defined or duplicated elements. Report non-compliant elements and provide justification acceptable to the Government if allowed to remain within the Model.

2.3.3 Other Parameters. Develop such other QC parameters as Contractor deems appropriate for the Project and provide to the Government for concurrence.

2.4 Design and Construction Reviews. Perform design and construction reviews at each submittal stage under Section 3 to test the Model, including:

2.4.1 Visual Checks. Checking to ensure the design intent has been followed and that there are no unintended elements in the Model.

2.4.2 Interference Management Checks. Locating conflicting spatial data in the Model where two elements are occupying the same physical space. Log hard interferences (e.g., mechanical vs. structural or mechanical vs. mechanical overlaps in the same location) and soft interferences (conflicts regarding service access, fireproofing, insulation) in a written report and resolve.

2.4.3 IFC Coordination View. Provide an IFC Coordination View in IFC Express format for all deliverables. Provide exported property set data for all IFC supported named building elements.

2.4.4 Other Parameters. Develop such other Review parameters as the Contractor deems appropriate for the Project and provide to the Government for concurrence..

Section 3 – Design Stage Submittal Requirements

3.1 Submittal Requirements.

3.1.1 Provide submittals in compliance with Implementation Plan deliverables at stages as described hereinafter.

3.1.2 Provide a Contractor-certified written report with each design submittal, confirming that consistency checks as identified in Paragraphs 2.3 and 2.4 have been completed for the design submittal. This report shall be discussed as part of the design review conference and shall address cross-discipline interferences, if any.

3.1.3 Following Government review and concurrence at each Stage in Paragraphs 3.3 through 3.5, provide the Government a 3-D interactive visualizationfrom the Model in Bentley Navigator, Navisworks, Adobe 3D PDF 7.0 (or later), Google Earth KMZ or equivalent format. The Government may request other formats if needed to address Project-specific requirements.

3.2 Preliminary Implementation Review. Prior to the first Interim Design Submittal or Over-the-Shoulder Progress Review, demonstrate preliminary development of Model components and Facility Data identified in Paragraph 'Model Components'. Review the Model with the Government for conformity to program, massing, circulation, fire protection, security and sustainability Project requirements consistent with the Implementation Plan.

3.3 Interim Design Submittals.

3.3.1 BIM and CAD Data. The Model shall include architectural, interior design, structural, mechanical, electrical, plumbing and fire protection systems and Facility Data, as applicable to the Interim Design package(s). Provide the Model, Facility, Workspace and CAD Data files in native Bentley BIM/CAD and interoperable formats per Implementation Plan requirements, and any rendering files, on DVD/CD-ROM.

3.4 Final Design Submissions and Design Complete Submittals.

3.4.1 BIM and CAD Data. The Model shall include all design elements identified in Section 4, unless otherwise agreed by the Government. Secure Government acceptance of the Model from the Government before proceeding with commencement of construction, as described in paragraph 3.7.6 of Section 01 33 16. Provide the updated Model, Facility, Workspace and CAD Data and rendering fileson DVD/CD-ROM.

3.5 Construction Submittals – Over-The-Shoulder Progress Reviews. Periodic quality control meetings or construction progress review meetings shall include quality control reviews on the implementation and use of the Model, including interference management and design change tracking information.

3.6 Final As-Builts BIM and CAD Data. Submit the final Model, Facility Data, and CAD files reflecting as-built conditions for Government Approval, as specified in Section 01 78 02.00 10, PROJECT CLOSEOUT.

Section 4 – BIM Model Minimum Requirements and Output

4.1 General Provisions. The deliverable Model shall be developed to include the systems described below as they would be built and the processes of installing them, and to reflect final as-built conditions. The deliverable model at the interim design stage and at the final design stage ("released for construction") shall be developed to include as many of the systems described below as are necessary and appropriate at that design stage.

4.2 Architectural/Interior Design. The Architectural systems Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a quarter inch (1/4"=1'0") scaled drawing. Additional minimum Model requirements include:

4.2.1 Spaces. The Model shall include spaces defining accurate net square footage and net volume, and holding data for the room finish schedule for including room names and numbers. Include Programmatic Information provided by the Government or validated program to verify design space against programmed space, using this information to validate area quantities.

4.2.2. Walls and Curtain Walls. Each wall shall be depicted to the exact height, length, width and ratings (thermal, acoustic, fire) to properly reflect wall types. The Model shall include all walls, both interior and exterior, and the necessary intelligence to produce accurate plans, sections and elevations depicting these design elements

4.2.3 Doors, Windows and Louvers. Doors, windows and louvers shall be depicted to represent their actual size, type and location. Doors and windows shall be modeled with the necessary intelligence to produce accurate window and door schedules.

4.2.4 Roof. The Model shall include the roof configuration, drainage system, major penetrations, specialties, and the necessary intelligence to produce accurate plans, building sections and generic wall sections where roof design elements are depicted.

4.2.5 Floors. The floor slab shall be developed in the structural Model and then referenced by the architectural Model for each floor of the Project building.

4.2.6 Ceilings. All heights and other dimensions of ceilings, including soffits, ceiling materials, or other special conditions shall be depicted in the Model with the necessary intelligence to produce accurate plans, building sections and generic wall sections where ceiling design elements are depicted.

4.2.7 Vertical Circulation. All continuous vertical components (i.e., non-structural shafts, architectural stairs, handrails and guardrails) shall be accurately depicted and shall include the necessary intelligence to produce accurate plans, elevations and sections in which such design elements are referenced.

4.2.8 Architectural Specialties and Woodwork. All architectural specialties (i.e., toilet room accessories, toilet partitions, grab bars, lockers, and display cases) and woodwork (i.e., cabinetry and counters) shall be accurately depicted with the necessary intelligence to produce accurate plans, elevations and sections in which such design elements are referenced.

4.2.9 Signage. The Model shall include all signage and the necessary intelligence to produce accurate plans and schedules.

4.2.10 Schedules. Provide door, window, hardware, sets using BHMA designations, flooring, and wall finish, and signage schedules from the Model, indicating the type, materials and finishes used in the design.

4.3 Furniture/Fixtures/Equipment. 3D representation of FFE elements is preferred. For projects with an extensive systems furniture layout that may impact BIM system performance the Contractor will contact the Government for consideration of 2D representation. The FFE systems Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a quarter inch (1/4”=1’0”) scaled drawing. Additional minimum Model requirements include:

4.3.1 Furniture. The furniture systems Model may vary in level of detail for individual elements within a Model, but at a minimum must include all features that would be included on a quarter inch (1/4”=1’0”) scaled drawing, and shall include all relevant office equipment and furniture system layouts, with necessary intelligence to produce accurate plans, sections, perspectives and elevations necessary to completely depict furniture systems locations and sizes.

4.3.1.1 System Coordination. Furniture that makes use of electrical, data, plumbing or other features shall include the necessary intelligence to produce coordinated documents and data.

4.3.2 Fixtures and Equipment. Fixtures and equipment shall be depicted to meet layout requirements with the necessary intelligence to produce accurate plans, elevations, sections and schedules depicting their configuration

4.3.3 Schedules. Provide furniture and equipment schedules from the model indicating the materials, finishes, mechanical, and electrical requirements.

4.4 Structural. The structural systems Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a quarter inch (1/4”=1’0”) scaled drawing. Additional minimum Model requirements include:

4.4.1 Foundations. All necessary foundation and/or footing elements, with necessary intelligence to produce accurate plans and elevations.

4.4.2 Floor Slabs. Structural floor slabs shall be depicted, including all necessary recesses, curbs, pads, closure pours, and major penetrations accurately depicted.

4.4.3 Structural Steel. All steel columns, primary and secondary framing members, and steel bracing for the roof and floor systems (including decks), including all necessary intelligence to produce accurate structural steel framing plans and related building/wall sections.

4.4.4 Cast-in-Place Concrete. All walls, columns, and beams, including necessary intelligence to produce accurate plans and building/wall sections depicting cast-in-place concrete elements.

4.4.5 Expansion/Contraction Joints. Joints shall be accurately depicted.

4.4.6 Stairs. The structural Model shall include all necessary openings and framing members for stair systems, including necessary intelligence to produce accurate plans and building/wall sections depicting stair design elements.

4.4.7 Shafts and Pits. The structural Model shall include all necessary shafts, pits, and openings, including necessary intelligence to produce accurate plans and building/wall sections depicting these design elements.

4.5 Mechanical. The mechanical systems Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a quarter inch (1/4”=1’0”) scaled drawing. Small diameter (less than 1-1/2” NPS) field-routed piping is not required in the model unless there are space constraints,is necessary for procurement or estimating purposes, oris essential to show operation. Additional minimum Model requirements include:

4.5.1 HVAC. All necessary heating, ventilating, air-conditioning and specialty equipment, including air distribution ducts for supply, return, and ventilation and exhaust ducts, including control system, registers, diffusers, grills and hydronic baseboards with necessary intelligence to produce accurate plans, elevations, building/wall sections and schedules. All piping 1-1/2” NPS and larger shall be modeled.

4.5.1.1 Mechanical Piping. All necessary piping and fixture layouts, and related equipment, including necessary intelligence to produce accurate plans, elevations, building/wall sections, and schedules. All piping larger than 1.5” diameter shall be modeled.

4.5.2 Plumbing. All necessary plumbing piping and fixture layouts, floor and area drains, and related equipment, including necessary intelligence to produce accurate plans, elevations, building/wall sections, riser diagrams, and schedules. All piping larger than 1.5” diameter shall be modeled.

4.5.3 Equipment Clearances. All HVAC and Plumbing equipment clearances shall be modeled for use in interference management and maintenance access requirements.

4.5.4 Elevator Equipment. The Model shall include the necessary equipment and control system, including necessary intelligence to produce accurate plans, sections and elevations depicting these design elements.

4.6 Electrical/Telecommunications. The electrical systems Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a quarter inch (1/4”=1’0”) scaled drawing. Small diameter (less than 1-1/2”Ø) field-routed conduit is not required in the BIM model unless there are space constraints,is necessary for procurement or estimating purposes, oris essential to show operation. Additional minimum Model requirements include:

4.6.1 Interior Electrical Power and Lighting. All necessary interior electrical components (i.e., lighting, receptacles, special and general purpose power receptacles, lighting fixtures, panelboards and control systems), including necessary intelligence to produce accurate plans, details and schedules. Cable tray routing shall be modeled without detail of cable contents. Lighting and power built into furniture/equipment shall be modeled.

4.6.2 Special Electrical Systems. All necessary special electrical components (i.e., security, Mass Notification, Public Address, nurse call and other special occupancies, and control systems), including necessary intelligence to produce accurate plans, details and schedules.

4.6.3 Grounding Systems. All necessary grounding components (i.e., lightning protection systems, static grounding systems, communications grounding systems, bonding), including necessary intelligence to produce accurate plans, details and schedules.

4.6.4 Communications. All existing and new communications service controls and connections, both above ground and underground with necessary intelligence to produce accurate plans, details and schedules. Cable tray routing shall be modeled without detail of cable contents. Communications conduit larger than 1.5” shall be modeled.

4.6.5 Exterior Building Lighting. All necessary exterior lighting with necessary intelligence to produce accurate plans, elevations and schedules. The exterior building lighting Model shall include all necessary lighting, relevant existing and proposed support utility lines and equipment required with necessary intelligence to produce accurate plans, details and schedules.

4.6.6 Equipment Clearances. All lighting and communications equipment clearances and no-fly zones shall be modeled for use in interference management and maintenance access requirements.

4.7 Fire Protection. The fire protection system Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a quarter inch (1/4”=1’0”) scaled drawing. Additional minimum Model requirements include:

4.7.1 Fire Protection System. All relevant fire protection components (i.e., branch piping, sprinkler heads, fittings, drains, pumps, tanks, sensors, control panels) with necessary intelligence to produce accurate plans, elevations, building/wall sections, riser diagrams, and schedules. All fire protection piping shall be modeled.

4.7.2 Fire Alarms. Fire alarm/mass notification devices and detection system shall be indicated with necessary intelligence to produce accurate plans depicting them.

4.8 Civil. The civil Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a one inch (1”=100’) scaled drawing. Additional minimum Model requirements include:

4.8.1 Terrain (DTM). All relevant site conditions and proposed grading, including necessary intelligence to produce accurate Project site topographical plans and cross sections.

4.8.2 Drainage. All existing and new drainage piping, including upgrades thereto, including necessary intelligence to produce accurate plans and profiles for the Project site.

4.8.3 Storm Water and Sanitary Sewers. All existing and new sewer structures and piping, including upgrades thereto, on the Project site with necessary connections to mains or other distribution points as appropriate, including necessary intelligence to produce accurate plans and profiles for the Project site.

4.8.4 Utilities. All necessary new utilities connections from the Project building(s) to the existing or newly-created utilities, and all existing above ground and underground utility conduits, including necessary intelligence to produce accurate plans and site-sections.

4.8.5 Roads and Parking. All necessary roadways and parking lots or parking structures, including necessary intelligence to produce accurate plans, profiles and cross-sections.

Section 5 - Ownership and Rights in Data

5.1 Ownership. The Government has ownership of and rights at the date of Closeout Submittal to all CAD files, BIM Model, and Facility Data developed for the Project in accordance with FAR Part 27, clauses incorporated in Section 00 72 00,

Contract Clauses and Special Contract Requirement 1.14 GOVERNMENT RE-USE OF DESIGN (Section 00 73 00). The Government may make use of this data following any deliverable.

Section 6 – Contractor Electives

6.1 Applicable Criteria. If the Contractor elected to include one or more of the following features as an elective in its accepted contract proposal for additional credit during the source selection, as described in the proposal submission requirements and evaluation criteria, the following criteria are requirements, as applicable to those elective feature(s).

6.2 COBIE Compliance. The Model and Facility Data for the Project shall fulfill Construction Operations Building Information Exchange (COBIE) requirements, including all requirements for the indexing and submission of Portable Document Format (PDF) and other appropriate file formats that would otherwise be printed and submitted in compliance with Project operations and maintenance handover requirements.

6.2.1 Electronic Exchange. The National Building Information Model Standard (NBIMS) COBIE format shall be used for electronic exchange on this Project. Compile a COBIE index on the Microsoft Excel spreadsheet provided by NBIMS at www.nbims.org. Unless otherwise noted, also provide information identified in the COBIE Pilot Implementation Standard worksheets.

6.3 Project Scheduling using the Model. In the Implementation Plan and during the Preliminary Implementation Review, provide an overview of the use of BIM in the development and support of the project construction schedule.

6.3.1 Submittal Requirements. During the Submittal stages, the Contractor shall deliver the construction schedule with information derived from the Model.

6.3.1.2 Construction Submittals – Over-The-Shoulder Progress Reviews. Periodic quality control meetings or construction progress review meetings shall include quality control reviews on the implementation and use of the Model for project scheduling.

6.4 Cost Estimating. In the Implementation Plan and during the Preliminary Implementation Review, provide an overview of the use of BIM in the development and support of cost estimating requirements, or other applications such as cost analysis and estimate validation.

6.4.1 Submittal Requirements. During the Submittal stages, the Contractor shall deliver cost estimating information derived from the Model.

6.4.2 Project completion. At project completion, the Contractor shall provide an MII (Micro Computer Aided Cost Estimating System Generation II) Cost Estimate which follows the USACE Cost Engineering Military Work Breakdown System (WBS), a modified uniformat, to at least the sub-systems level and uses quantity information supplied directly from BIM output to the maximum extent possible, though other "Gap" quantity information will be included as necessary for a complete and accurate cost estimate.

6.4.2.1 Sub system level extracted quantities from the BIM for use within the estimate shall be provided according to how detailed line items or tasks should be installed/built so that accurate costs can be developed and/or reflected. Therefore, when developing a BIM, the designer shall be cognizant of what tasks need to be separated appropriately at the beginning stages of model development, such as tasks done on the first floor versus the same task on higher floors that will be more labor

intensive and therefore need to have a separate quantity and be priced differently. Tasks and their extracted quantities from the BIM shall be broken done by their location (proximity in the structure) as well as the complexity of its installation.

6.4.2.2 At all design stages it shall be understood that BIM output as described in this document will not generate all quantities that are necessary in order to develop a complete and accurate cost estimate of the project based on the design. An example of this would be plumbing that is less than 1.5" diameter and therefore not expected to be modeled due to granularity; this information is commonly referred to as The Gap. Quantities from The Gap and their associated costs shall be included in the final project actual cost estimates as well.

ATTACHMENT G

DESIGN SUBMITTAL DIRECTORY AND SUBDIRECTORY FILE ARRANGEMENT

Organize electronic design submittal files in a subdirectory/file structure in accordance with the following table.

The Contractor may suggest a slightly different structure, subject to the discretion of the government.

Design Submittal Directory and Subdirectory File Arrangement.

Directory	Sub-Directory	Sub-Directory or Files	Files
Submittal/Package Name	Narratives	PDF file or files with updated design narrative for each applicable design discipline	
	Drawings	PDF (subdirectory)	Single PDF file with all applicable drawing sheets - bookmarked by sheet number and name
		BIM (subdirectory) See Attachment F.	BIM project folder (with files) per the USACE Workspace. Include an Excel drawing index file with each drawing sheet listed by sheet #, name and corresponding dgn file name (Final Design & Design Complete only)
	Design Analysis & Calculations	Individual PDF files containing design analysis and calculations for each discipline applicable to the submittal	
		PDF file with Fire Protection and Life Safety Code Review checklist	
	LEED	PDF file with updated Leed Check List	
		PDF file or files with LEED Templates for each point with applicable documentation included in each file.	
		LEED 2.2 Documentation Requirements and Submittals Checklist	
	Energy Analysis	PDF with baseline energy consumption analysis	
		PDF with actual building energy consumption analysis	

	Specifications	Single PDF file with table of contents and all applicable specifications sections.	
		Submittal Register (Final Design & Design Complete submittal only)	
	Design Quality Control	PDF file or files with DQC checklist(s) and/or statements	
	Building Rendering(s)	PDF file of rendering for each building type included in contract (Final Design & Design Complete).	

ATTACHMENT H

ANALYSIS OF WINDOW UNIT STRUCTURAL SUPPORT

The following information is intended to reinforce Standard #10 of UFC 4-010-01, stressing structural analysis of supporting structure for window units. See also paragraphs B 3.1.2 and B 3.1.4 of that document:

The designer must verify the adequacy of the structure surrounding the window unit (for all window sizes for each typical floor height in each building) to withstand the specified loads transmitted to the structure from the windows.

In place of an equivalent static approach to design, a dynamic analysis can be used. A dynamic analysis computer program SBEDS developed by the U.S. Army Corps of Engineers Protective Design Center (PDC) is available for use (the program may be downloaded free of charge from the PDC website once the designer is registered). Use dynamic analysis, based upon the appropriate explosive weight(s) at the standoff distance(s) provided. Standoff distances used shall be in concurrence Anti-Terrorism/Force Protection (ATFP), which specifies setback distances no greater than 45-meters (148-feet) for explosive weight I and 25-meters (82-feet) for explosive weight II. Also, use material response limits associated with the appropriate materials and level of protection. Design connections of the supporting structural elements to develop the capacity of the member; however, loads do not need to be transferred to the rest of the structure if conventional construction distances are provided. If a dynamic or static analysis is used, submit the results of the analysis, signed by a licensed Professional Engineer. A concise narrative shall accompany the calculation submittal, describing the analysis performed and including the name and version of the analysis program.

SECTION 01 45 01.10

QUALITY CONTROL SYSTEM (QCS)

1.0 GENERAL

1.1 CORRESPONDENCE AND ELECTRONIC COMMUNICATIONS

1.2 QCS SOFTWARE

1.3 SYSTEM REQUIREMENTS

1.4 RELATED INFORMATION

1.5 CONTRACT DATABASE

1.6 DATABASE MAINTENANCE

1.7 IMPLEMENTATION

1.8 DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM

1.9 MONTHLY COORDINATION MEETING

1.10 NOTIFICATION OF NONCOMPLIANCE

1.0 GENERAL

The Government will use the Resident Management System for Windows (RMS) to assist in its monitoring and administration of this contract. The Contractor shall use the Government-furnished Construction Contractor Module of RMS, referred to as QCS, to record, maintain, and submit various information throughout the contract period. The Contractor module, user manuals, updates, and training information can be downloaded from the RMS web site. This joint Government-Contractor use of RMS and QCS will facilitate electronic exchange of information and overall management of the contract. QCS provides the means for the Contractor to input, track, and electronically share information with the Government in the following areas:

- Administration
- Finances
- Quality Control
- Submittal Monitoring
- Scheduling
- Import/Export of Data
- Request for Information
- Accident Reporting
- Safety Exposure Manhours

1.1.1. CORRESPONDENCE AND ELECTRONIC COMMUNICATIONS

For ease and speed of communications, both Government and Contractor will exchange correspondence and other documents in electronic format. Correspondence, pay requests and other documents comprising the official contract record shall also be provided in paper format, with signatures and dates where necessary. Paper documents will govern, in the event of discrepancy with the electronic version.

1.1.2. OTHER FACTORS

Particular attention is directed to Contract Clause, "Schedules for Construction Contracts", Contract Clause, "Payments", Section 01 32 01.00 10, PROJECT SCHEDULE, Section 01 33 00, SUBMITTAL PROCEDURES, and Section 01 45 04.00 10, CONTRACTOR QUALITY CONTROL, which have a direct relationship to the reporting to be accomplished through QCS. Also, there is no separate payment for establishing and maintaining the QCS database; all costs associated therewith shall be included in the contract pricing for the work.

1.2. QCS SOFTWARE

QCS is a Windows-based program that can be run on a stand-alone personal computer or on a network. The Government will make available the QCS software to the Contractor after award of the construction contract. Prior to the Pre-Construction Conference, the Contractor shall be responsible to download, install and use the latest version of the QCS

software from the Government's RMS Internet Website. Upon specific justification and request by the Contractor, the Government can provide QCS on CD-ROM. Any program updates of QCS will be made available to the Contractor via the Government RMS Website as they become available.

1.3. SYSTEM REQUIREMENTS

The following listed hardware and software is the minimum system configuration that the Contractor shall have to run QCS:

(1) Hardware

- IBM-compatible PC with 1000 MHz Pentium or higher processor
- 256 MB RAM for workstation / 512+ MB RAM for server
- 1 GB hard drive disk space for sole use by the QCS system
- Compact disk (CD) Reader, 8x speed or higher
- SVGA or higher resolution monitor (1024 x 768, 256 colors)
- Mouse or other pointing devise
- Windows compatible printer (Laser printer must have 4+ MB of RAM)
- Connection to the Internet, minimum 56K BPS

(2) Software

- MS Windows 2000 or higher
- MS Word 2000 or newer
- Latest version of : Netscape Navigator, Microsoft Internet Explorer, or other browser that supports HTML 4.0 or higher
- Electronic mail (E-mail), MAPI compatible
- Virus protection software that is regularly upgraded with all issued manufacturer's updates

1.4. RELATED INFORMATION

1.4.1. QCS USER GUIDE

After contract award, the Contractor shall download instructions for the installation and use of QCS from the Government RMS Internet Website. In case of justifiable difficulties, the Government will provide the Contractor with a CD-ROM containing these instructions.

1.4.2. CONTRACTOR QUALITY CONTROL (CQC) TRAINING

The use of QCS will be discussed with the Contractor's QC System Manager during the mandatory CQC Training class.

1.5. CONTRACT DATABASE

Prior to the pre-construction conference, the Government will provide the Contractor with basic contract award data to use for QCS. The Government will provide data updates to the Contractor as needed, generally by using the government's SFTP repository built into QCS import/export function. These updates will generally consist of submittal reviews, correspondence status, QA comments, and other administrative and QA data.

1.6. DATABASE MAINTENANCE

The Contractor shall establish, maintain, and update data for the contract in the QCS database throughout the duration of the contract. The Contractor shall establish and maintain the QCS database at the Contractor's site office. Data updates to the Government, e.g., daily reports, submittals, RFI’s, schedule updates, payment requests, etc. shall be submitted using the government's SFTP repository built into QCS export function. If permitted by the Contracting Officer, email or CD-ROM may be used instead (see Paragraph DATA SUBMISSION VIA CD-ROM). The QCS database typically shall include current data on the following items:

1.6.1. ADMINISTRATION

1.6.1.1. Contractor Information

The database shall contain the Contractor's name, address, telephone numbers, management staff, and other required items. Within 14 calendar days of receipt of QCS software from the Government, the Contractor shall deliver Contractor administrative data in electronic format.

1.6.1.2. Subcontractor Information

The database shall contain the name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor must be listed separately for each trade to be performed. Each subcontractor/trade shall be assigned a unique Responsibility Code, provided in QCS. Within 14 calendar days of receipt of QCS software from the Government, the Contractor shall deliver subcontractor administrative data in electronic format.

1.6.1.3. Correspondence

All Contractor correspondence to the Government shall be identified with a serial number. Correspondence initiated by the Contractor's site office shall be prefixed with "S". Letters initiated by the Contractor's home (main) office shall be prefixed with "H". Letters shall be numbered starting from 0001. (e.g., H-0001 or S-0001). The Government's letters to the Contractor will be prefixed with "C".

All Requests For Information (RFI) shall be exchanged using the Built-in RFI generator and tracker in QCS.

1.6.1.4. Equipment

The Contractor's QCS database shall contain a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates.

1.6.1.5. Management Reporting

QCS includes a number of reports that Contractor management can use to track the status of the project. The value of these reports is reflective of the quality of the data input, and is maintained in the various sections of QCS. Among these reports are: Progress Payment Request worksheet, QA/QC comments, Submittal Register Status, Three-Phase Inspection checklists.

1.6.2. FINANCES

1.6.2.1. Pay Activity Data

The QCS database shall include a list of pay activities that the Contractor shall develop in conjunction with the design and construction schedule. The sum of all pay activities shall be equal to the total contract amount, including modifications. Pay activities shall be grouped by Contract Line Item Number (CLIN), and the sum of the activities shall equal the amount of each CLIN. The total of all CLINs equals the Contract Amount.

1.6.2.2. Payment Requests

All progress payment requests shall be prepared using QCS. The Contractor shall complete the payment request worksheet prompt payment certification, and payment invoice in QCS. The work completed under the contract, measured as percent or as specific quantities, shall be updated at least monthly. After the update, the Contractor shall generate a payment request report using QCS. The Contractor shall submit the payment request, prompt payment certification, and payment invoice with supporting data by using the government's SFTP repository built into QCS export function. If permitted by the Contracting Officer, E-mail or a CD-ROM may be used. A signed paper copy of the approved payment request is also required, which shall govern in the event of discrepancy with the electronic version.

1.6.3. Quality Control (QC)

QCS provides a means to track implementation of the 3-phase QC Control System, prepare daily reports, identify and track deficiencies, document progress of work, and support other contractor QC requirements. The Contractor shall maintain this data on a daily basis. Entered data will automatically output to the QCS generated daily report. The Contractor shall provide the Government a Contractor Quality Control (CQC) Plan within the time required in Section 01 45 04.00 10, CONTRACTOR QUALITY CONTROL. Within seven calendar days of Government acceptance, the Contractor shall submit a QCS update reflecting the information contained in the accepted CQC Plan: schedule, pay activities, features of work, submittal register, QC requirements, and equipment list.

1.6.3.1. Daily Contractor Quality Control (CQC) Reports

QCS includes the means to produce the Daily CQC Report. The Contractor may use other formats to record basic QC data. However, the Daily CQC Report generated by QCS shall be the Contractor's official report. Data from any supplemental reports by the Contractor shall be summarized and consolidated onto the QCS-generated Daily CQC Report. Daily CQC Reports shall be submitted as required by Section 01 45 04.00 10, CONTRACTOR QUALITY CONTROL. Reports shall be submitted electronically to the Government within 24 hours after the date covered by the report. The Contractor shall also provide the Government a signed, printed copy of the daily CQC report.

1.6.3.2. Deficiency Tracking

The Contractor shall use QCS to track deficiencies. Deficiencies identified by the Contractor will be numerically tracked using QC punch list items. The Contractor shall maintain a current log of its QC punch list items in the QCS database. The

Government will log the deficiencies it has identified using its QA punch list items. The Government's QA punch list items will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of both QC and QA punch list items.

1.6.3.3. QC Requirements

The Contractor shall develop and maintain a complete list of QC testing and required structural and life safety special inspections required by the International Code Council (ICC), transferred and installed property, and user training requirements in QCS. The Contractor shall update all data on these QC requirements as work progresses, and shall promptly provide this information to the Government via QCS.

1.6.3.4. Three-Phase Control Meetings

The Contractor shall maintain scheduled and actual dates and times of preparatory and initial control meetings in QCS.

1.6.3.5. Labor and Equipment Hours

The Contractor shall log labor and equipment exposure hours on a daily basis. This data will be rolled up into a monthly exposure report.

1.6.3.6. Accident/Safety Tracking Reporting

The Government will issue safety comments, directions, or guidance whenever safety deficiencies are observed. The Government's safety comments will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of the safety comments. In addition, the Contractor shall utilize QCS to advise the Government of any accidents occurring on the jobsite. This supplemental entry is not to be considered as a substitute for completion of mandatory notification and reports, e.g., ENG Form 3394 and OSHA Form 300.

1.6.3.7. Features of Work

The Contractor shall include a complete list of the features of work in the QCS database. A feature of work may be associated with multiple pay activities. However, each pay activity (see subparagraph "Pay Activity Data" of paragraph "Finances") will only be linked to a single feature of work.

1.6.3.8. Hazard Analysis

The Contractor shall use QCS to develop a hazard analysis for each feature of work included in its CQC Plan. The hazard analysis shall address any hazards, or potential hazards, that may be associated with the work

1.6.4. Submittal Management

The Government will provide the submittal register form, ENG Form 4288, SUBMITTAL REGISTER, in electronic format. The Contractor and Designer of Record (DOR) shall develop and maintain a complete list of all submittals, including completion of all data columns and shall manage all submittals. Dates on which submittals are received and returned by the Government will be included in its export file to the Contractor. The Contractor shall use QCS to track and transmit all submittals. ENG Form 4025, submittal transmittal form, and the submittal register update, ENG Form 4288, shall be produced using QCS. QCS and RMS will be used to update, store and exchange submittal registers and transmittals, but will

not be used for storage of actual submittals.

1.6.5. Schedule

The Contractor shall develop a design and construction schedule consisting of pay activities, in accordance with Section 01 32 01.00 10, PROJECT SCHEDULE, as applicable. This schedule shall be input and maintained in the QCS database either manually or by using the Standard Data Exchange Format (SDEF) (see Section 01 32 01.00 10 PROJECT SCHEDULE). The updated schedule data shall be included with each pay request submitted by the Contractor.

1.6.5.1. Import/Export of Data

QCS includes the ability to export Contractor data to the Government and to import submittal register and other Government-provided data from RMS, and schedule data using SDEF.

1.7. IMPLEMENTATION

Contractor use of QCS as described in the preceding paragraphs is mandatory. The Contractor shall ensure that sufficient resources are available to maintain its QCS database, and to provide the Government with regular database updates. QCS shall be an integral part of the Contractor's management of quality control.

1.8. DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM

The Government-preferred method for Contractor's submission of QCS data is by using the government's SFTP repository built into QCS export function.. Other data should be submitted using E-mail with file attachment(s). For locations where this is not feasible, the Contracting Officer may permit use of CD-ROM for data transfer. Data on CDs shall be exported using the QCS built-in export function. If used, CD-ROMs will be submitted in accordance with the following:

1.8.1. File Medium

The Contractor shall submit required data on CD-ROMs. They shall conform to industry standards used in the United States. All data shall be provided in English.

1.8.2. Disk Or Cd-Rom Labels

The Contractor shall affix a permanent exterior label to each diskette and CD-ROM submitted. The label shall indicate in English, the QCS file name, full contract number, contract name, project location, data date, name and telephone number of person responsible for the data.

1.8.3. File Names

The files will be automatically named by the QCS software. The naming convention established by the QCS software shall not be altered in any way by the Contractor.

1.9. MONTHLY COORDINATION MEETING

The Contractor shall update the QCS database each workday. At least monthly, the Contractor shall generate and submit an export file to the Government with schedule update and progress payment request. As required in Contract Clause "Payments", at least one week prior to submittal, the Contractor shall meet with the Government representative to review the

planned progress payment data submission for errors and omissions.

The Contractor shall make all required corrections prior to Government acceptance of the export file and progress payment request. Payment requests accompanied by incomplete or incorrect data submittals will be returned. The Government will not process progress payments until an acceptable QCS export file is received.

1.10. NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the requirements of this specification. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification.

SECTION 01 45 04.00 10

CONTRACTOR QUALITY CONTROL

1.0 GENERAL

1.1 REFERENCES

1.2 PAYMENT

2.0 PRODUCTS (NOT APPLICABLE)

3.0 EXECUTION

3.1 GENERAL REQUIREMENTS

3.2 QUALITY CONTROL PLAN

3.3 COORDINATION MEETING

3.4 QUALITY CONTROL ORGANIZATION

3.5 SUBMITTALS AND DELIVERABLES

3.6 CONTROL

3.7 TESTS

3.8 COMPLETION INSPECTION

3.9 DOCUMENTATION

3.10 NOTIFICATION OF NONCOMPLIANCE

1.0 GENERAL

1.1. REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only. Refer to the latest edition, as of the date of the contract solicitation.

• ASTM INTERNATIONAL (ASTM)

• ASTM D 3740 Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction

• ASTM E 329 Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

• U.S. ARMY CORPS OF ENGINEERS (USACE) ER 1110-1-12 Quality Management

1.2. PAYMENT

There will be no separate payment for providing and maintaining an effective Quality Control program. Include all costs associated therewith in the applicable unit prices or lump-sum prices contained in the Contract Line Item Schedule.

2.0 PRODUCTS (Not Applicable)

3.0 EXECUTION

3.1. GENERAL REQUIREMENTS

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product, which complies with the contract requirements. The system shall cover all design and construction operations, both onsite and offsite, and shall be keyed to the proposed design and construction sequence. The site project superintendent is responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the contract. The site project superintendent in this context shall be the highest level manager responsible for the overall construction activities at the site, including quality and production. The site project superintendent shall maintain a physical presence at the site at all times, except as otherwise acceptable to the Contracting Officer, and shall be responsible for all construction and construction related activities at the site.

3.2. QUALITY CONTROL PLAN

Furnish for Government review, not later than 30 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. The Government will consider an interim plan for the first 30 days of operation. Design and construction may begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. The Government will not permit work outside of the features of work included in an accepted interim plan to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started. Where the applicable Code issued by the International

Code Council calls for an inspection by the Building Official, the Contractor shall include the inspections in the Quality Control Plan and shall perform the inspections. The Designer of Record shall develop a program for any special inspections required by the applicable International Codes and the Contractor shall perform these inspections, using qualified inspectors. Include the special inspection plan in the QC Plan.

3.2.1. Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all design and construction operations, both onsite and offsite, including work by subcontractors, fabricators, suppliers, and purchasing agents subcontractors, designers of record, consultants, architect/engineers (AE), fabricators, suppliers, and purchasing agents:

3.2.1.1. A description of the quality control organization. Include a chart showing lines of authority and an acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. A CQC System Manager shall report to the project superintendent or someone higher in the contractor's organization.

3.2.1.2. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function. Also include those responsible for performing and documenting the inspections required by the International Codes and the special inspection program developed by the designer of record.

3.2.1.3. A copy of the letter to the CQC System Manager, signed by an authorized official of the firm, which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Furnish copies of these letters.

3.2.1.4. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents subcontractors, designers of record, consultants, architect engineers (AE), offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.

3.2.1.5. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. Use only Government approved Laboratory facilities.

3.2.1.6. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.

3.2.1.7. Procedures for tracking design and construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.

3.2.1.8. Reporting procedures, including proposed reporting formats.

3.2.1.9. A list of the definable features of work. A definable feature of work is a task, which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable feature under a particular section. This list will be

agreed upon during the coordination meeting.

3.2.1.10. A list of all inspections required by the International Codes and the special inspection program required by the code and this contract.

3.2.2. Additional Requirements for Design Quality Control (DQC) Plan

The following additional requirements apply to the Design Quality Control (DQC) plan:

3.2.2.1. The Contractor's QCP Plan shall provide and maintain a Design Quality Control (DQC) Plan as an effective quality control program which will assure that all services required by this design-build contract are performed and provided in a manner that meets professional architectural and engineering quality standards. As a minimum, competent, independent reviewers identified in the DQC Plan shall review all documents. The same element that produced the product shall not perform the independent technical review (ITR). Correct errors and deficiencies in the design documents prior to submitting them to the Government.

3.2.2.2. Include in the DQC Plan the discipline-specific checklists to be used during the design and quality control of each submittal. Submit these completed checklists at each design phase as part of the project documentation.

3.2.2.3. A Design Quality Control Manager, who has the responsibility of being cognizant of and assuring that all documents on the project have been coordinated, shall implement the DQC Plan This individual shall be a person who has verifiable engineering or architectural design experience and is a registered professional engineer or architect. Notify the Government, in writing, of the name of the individual, and the name of an alternate person assigned to the position.

3.2.3. Acceptance of Plan

Government acceptance of the Contractor's plan is required prior to the start of design and construction. Acceptance is conditional and will be predicated on satisfactory performance during the design and construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.2.4. Notification of Changes

After acceptance of the CQC Plan, notify the Government in writing of any proposed change. Proposed changes are subject to Government acceptance.

3.3. COORDINATION MEETING

After the Postaward Conference, before start of design or construction, and prior to acceptance by the Government of the CQC Plan, the Contractor and the Government shall meet and discuss the Contractor's quality control system. Submit the CQC Plan for review a minimum of 7 calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, design activities, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. The Government will prepare minutes of the meeting for signature by both parties. . The minutes shall become a part of the contract file. There may be occasions when either party will call for subsequent conferences to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4. QUALITY CONTROL ORGANIZATION

3.4.1. Personnel Requirements

The requirements for the CQC organization are a CQC System Manager, a Design Quality Manager, and sufficient number of additional qualified personnel to ensure safety and contract compliance. The CQC System Manager shall provide direction and authority to the Safety and Health Manager, who shall serve as a member of the CQC staff. The CQC System Manager, if qualified and if allowed by Section 00 73 00 may serve as the Safety and Health Manager or it may be a separate position. The CQC organization shall also include personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly. The Contractor's CQC staff shall maintain a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure contract compliance. The CQC staff shall be subject to acceptance by the Contracting Officer. Provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Promptly furnish complete records of all letters, material submittals, shop drawing submittals, schedules and all other project documentation to the CQC organization. The CQC organization shall be responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

3.4.2. CQC System Manager

Identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a graduate engineer, graduate architect, a graduate of construction management. The CQC system Manager may alternately be an engineering technician with at least 2 years of college and an ICC certification as a Commercial Building Inspector (Residential Building Inspector certification will be required for Military Family Housing projects). In addition, the CQC system manager shall have a minimum of 5 years construction experience on construction similar to this contract. The CQC System Manager shall be on the site at all times during construction and shall be employed by the prime Contractor. Assign the CQC System Manager no other duties (except may also serve as Safety and Health Manager, if qualified and if allowed by Section 00 73 00). Identify an alternate for the CQC System Manager in the plan to serve in the event of the System Manager's absence. The requirements for the alternate shall be the same as for the designated CQC System Manager but the alternate may have other duties in addition to serving in a temporary capacity as the acting QC manager.

3.4.3. CQC Personnel

3.4.3.1. In addition to CQC personnel specified elsewhere in the contract provide specialized CQC personnel to assist the CQC System Manager in accordance with paragraph titled Area Qualifications.

3.4.3.2. These individuals may be employees of the prime or subcontractor; be responsible to the CQC System Manager; **are not intended to be full time, but must be physically present at the construction site during work on their areas of responsibility**; have the necessary education and/or experience in accordance with the experience matrix listed herein. These individuals may perform other duties but must be allowed sufficient time to perform their assigned quality control duties as described in the Quality Control Plan. **One person may cover more than one area, provided that they are qualified to perform QC activities for the designated areas below and provided that they have adequate time to perform their duties:**

3.4.4. Experience Matrix

3.4.4.1. Area Qualifications

3.4.4.1.1. Civil - Graduate Civil Engineer or construction management with 4 years experience in the type of work being performed on this project or engineering technician with 5 yrs related experience.

3.4.4.1.2. Mechanical - Graduate Mechanical Engineer or construction management with 4 yrs related experience or engineering technician with an ICC certification as a Commercial Mechanical Inspector with 5 yrs related experience.

3.4.4.1.3. Electrical - Graduate Electrical Engineer or construction management with 4 yrs related experience or engineering technician with an ICC certification as a Commercial Electrical Inspector with 5 yrs related experience.

3.4.4.1.4. Structural - Graduate Structural Engineer or construction management with 4 yrs related experience or person with an ICC certification as a Reinforced Concrete Special Inspector and Structural Steel and Bolting Special Inspector (as applicable to the type of construction involved) with 5 yrs related experience.

3.4.4.1.5. Plumbing - Graduate Mechanical Engineer or construction management with 4 yrs related experience, or person with an ICC certification as a Commercial Plumbing Inspector with 5 yrs related experience.

3.4.4.1.6. Concrete, Pavements and Soils Materials Technician (present while performing tests) with 2 yrs experience for the appropriate area

3.4.4.1.7. Testing, Adjusting and Balancing Specialist must be a member (TAB) Personnel of AABC or an experienced technician of the firm certified by the NEBB (present while testing, adjusting, balancing).

3.4.4.1.8. Design Quality Control Manager Registered Architect or Professional Engineer (not required on the construction site)

3.4.4.1.9. Registered Fire Protection Engineer with 4 years related experience or engineering technician with 5 yrs related experience (but see requirements for Fire Protection Engineer of Record to witness final testing in Section 01 10 00, paragraph 5.10, Fire Protection).

3.4.4.1.10. QC personnel assigned to the installation of this system or any of its components shall be Building Industry Consulting Services International (BICSI) Registered Cabling Installers, Technician Level. Submit documentation of current BICSI certification. In lieu of BICSI certification, QC personnel shall have a minimum of 5 years experience in the installation of the specified copper and fiber optic cable and components. They shall have factory or factory approved certification from each equipment manufacturer indicating that they are qualified to install and test the provided products. QC personnel shall witness and certify the testing of telecommunications cabling and equipment.

3.4.5. Additional Requirement

In addition to the above experience and/or education requirements the CQC System Manager shall have completed the course entitled "Construction Quality Management for Contractors". This course is periodically offered at USACE 915 Wilshire Blvd Los Angles. Ca.90017. Inquire of the District or Division sponsoring the course for fees and other expenses involved, if any, for attendance at this course.

3.4.6. Organizational Changes

When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.5. SUBMITTALS AND DELIVERABLES

Make submittals as specified in Section 01 33 00 ***SUBMITTAL PROCEDURES***. The CQC organization shall certify that all submittals and deliverables are in compliance with the contract requirements.

3.6. CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. The CQC organization shall conduct at least three phases of control for each definable feature of the construction work as follows:

3.6.1. Preparatory Phase

Perform this phase prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

3.6.1.1. A review of each paragraph of applicable specifications, reference codes, and standards. Make a copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field at the preparatory inspection. Maintain these copies in the field, available for use by Government personnel until final acceptance of the work.

3.6.1.2. A review of the contract drawings.

3.6.1.3. A check to assure that all materials and/or equipment have been tested, submitted, and approved.

3.6.1.4. Review of provisions that have been made to provide required control inspection and testing.

3.6.1.5. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.

3.6.1.6. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.

3.6.1.7. A review of the appropriate activity hazard analysis to assure safety requirements are met.

3.6.1.8. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.

3.6.1.9. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.

3.6.1.10. Discussion of the initial control phase.

3.6.1.11. Notify the Government at least 24 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. Document the results of the preparatory phase actions by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.6.2. Initial Phase

Accomplish this phase at the beginning of a definable feature of work. Include the following actions:

3.6.2.1. Check work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.

3.6.2.2. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.

3.6.2.3. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.

3.6.2.4. Resolve all differences.

3.6.2.5. Check safety to include compliance with and upgrading of the Accident Prevention plan and activity hazard analysis. Review the activity analysis with each worker.

3.6.2.6. Notify the Government at least 24 hours in advance of beginning the initial phase. The CQC System Manager shall prepare and attach to the daily CQC report separate minutes of this phase. Indicate exact location of initial phase for future reference and comparison with follow-up phases.

3.6.2.7. Repeat the initial phase any time acceptable specified quality standards are not being met.

3.6.3. Follow-up Phase

Perform daily checks to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Conduct final follow-up checks and correct deficiencies prior to the start of additional features of work which may be affected by the deficient work. Do not build upon nor conceal non-conforming work.

3.6.4. Additional Preparatory and Initial Phases

Conduct additional preparatory and initial phases on the same definable features of work if: the quality of on-going work is unacceptable; if there are changes in the applicable CQC staff, onsite production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

3.7. TESTS

3.7.1. Testing Procedure

Perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements and project design documents. Upon request, furnish to the Government duplicate samples of test

specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory, or establish an approved testing laboratory at the project site. The Contractor may elect to use a laboratory certified and accredited by the Concrete and cement Reference Laboratory (CCRL) or by AASHTO Materials Reference Laboratory (AMRL) for testing procedures that those organizations certify. The Contractor shall perform the following activities and record and provide the following data:

3.7.1.1. Verify that testing procedures comply with contract requirements and project design documents.

3.7.1.2. Verify that facilities and testing equipment are available and comply with testing standards.

3.7.1.3. Check test instrument calibration data against certified standards.

3.7.1.4. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.

3.7.1.5. Include results of all tests taken, both passing and failing tests, recorded on the CQC report for the date taken. Include specification paragraph reference, location where tests were taken, and the sequential control number identifying the test. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. Provide an information copy of tests performed by an offsite or commercial test facility directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.7.2. Testing Laboratories

3.7.2.1. Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329.

3.7.2.2. Capability Recheck

If the selected laboratory fails the capability check, the Government will asses the Contractor a charge of $1,375 to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

3.7.3. Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests, and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.7.4. Furnishing or Transportation of Samples for Testing

The Contractor is responsible for costs incidental to the transportation of samples or materials. Deliver samples of materials for test verification and acceptance testing by the Government to the Corps of Engineers Laboratory, f.o.b., at the following address:

- For delivery by mail:

Army Corps of Engineers

Randi Elder

Ave F & 5th street

Fort Irwin, Ca 92392

- For other deliveries:

N/A

N/A

N/A

N/A

The area or resident office will coordinate, exact delivery location, and dates for each specific test.

3.8. COMPLETION INSPECTION

3.8.1. Punch-Out Inspection

Near the end of the work, or any increment of the work established by a time stated in the SPECIAL CONTRACT REQUIREMENTS Clause, "Commencement, Prosecution, and Completion of Work", or by the specifications, the CQC Manager shall conduct an inspection of the work. Prepare a punch list of items which do not conform to the approved drawings and specifications and include in the CQC documentation, as required by paragraph DOCUMENTATION. The list of deficiencies shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

3.8.2. Pre-Final Inspection

As soon as practicable after the notification above, the Government will perform the pre-final inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government, so that a Final inspection with the customer can be scheduled. Correct any items noted on the Pre-Final inspection in a timely manner. Accomplish these inspections and any deficiency corrections required by this paragraph within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate completion dates.

3.8.3. Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall attend the final acceptance inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups and major commands may also attend.

The Government will formally schedule the final acceptance inspection based upon results of the Pre-Final inspection. Provide notice to the Government at least 14 days prior to the final acceptance inspection and include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

3.9. DOCUMENTATION

3.9.1. Maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers using government-provided software, QCS (see Section 01 45 01.10). The report includes, as a minimum, the following information:

3.9.1.1. Contractor/subcontractor and their area of responsibility.

3.9.1.2. Operating plant/equipment with hours worked, idle, or down for repair.

3.9.1.3. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.

3.9.1.4. Test and/or control activities performed with results and references to specifications/drawings requirements. Identify the applicable control phase (Preparatory, Initial, Follow-up). List deficiencies noted, along with corrective action.

3.9.1.5. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.

3.9.1.6. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.

3.9.1.7. Offsite surveillance activities, including actions taken.

3.9.1.8. Job safety evaluations stating what was checked, results, and instructions or corrective actions.

3.9.1.9. Instructions given/received and conflicts in plans and/or specifications.

3.9.1.10. Provide documentation of design quality control activities. For independent design reviews, provide, as a minimum, identity of the ITR team, the ITR review comments, responses and the record of resolution of the comments.

3.9.2. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. Furnish the original and one copy of these records in report form to the Government daily within 24 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, submit one report for every 7 days of no work and on the last day of a no work period. Account for all calendar days throughout the life of the contract. The first report following a day of no work shall be for that day only. The CQC System

Manager shall sign and date reports. The report shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel. The Contractor may submit these forms electronically, in lieu of hard copy.

3.10. NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

SECTION 01 50 02

TEMPORARY CONSTRUCTION FACILITIES

1.0 OVERVIEW

1.1 GENERAL REQUIREMENTS

1.2 AVAILABILITY AND USE OF UTILITY SERVICES

1.3 BULLETIN BOARD, PROJECT SIGN, AND PROJECT SAFETY SIGN

1.4 PROTECTION AND MAINTENANCE OF TRAFFIC

1.5 MAINTENANCE OF CONSTRUCTION SITE

1.0 OVERVIEW

1.1. GENERAL REQUIREMENTS

1.1.1. Site Plan

Prepare a site plan indicating the proposed location and dimensions of any area to be fenced and used by the Contractor, the number of trailers to be used, avenues of ingress/egress to the fenced area and details of the fence installation. Identify any areas which may have to be graveled to prevent the tracking of mud. Also indicate if the use of a supplemental or other staging area is desired.

1.2. AVAILABILITY AND USE OF UTILITY SERVICES

1.2.1. See Section 00 73 00, Special Contract Requirements, for Utility Availability requirements.

1.2.2. Sanitation

Provide and maintain within the construction area minimum field-type sanitary facilities approved by the Contracting Officer. Government toilet facilities will not be available to Contractor's personnel.

1.2.3. Telephone

Make arrangements and pay all costs for desired telephone facilities.

1.3. BULLETIN BOARD, PROJECT SIGN, AND PROJECT SAFETY SIGN

1.3.1. Bulletin Board

Immediately upon beginning of onsite work, provide a weatherproof glass-covered bulletin board not less than 36 by 48 inches in size for displaying the Equal Employment Opportunity poster, a copy of the wage decision contained in the contract, Wage Rate Information poster, and other information approved by the Contracting Officer. Locate the bulletin board at the project site in a conspicuous place easily accessible to all employees, as approved by the Contracting Officer. Display legible copies of the aforementioned data until work is completed. Remove the bulletin board from the site upon completion of the project.

1.3.2. Project and Safety Signs

Erect a project sign and a site safety sign with informational details as provided by the Government at the Post award conference, within 15 days prior to any work activity on project site. Update the safety sign data daily, with light colored metallic or non-metallic numerals. Remove the signs from the site upon completion of the project. Engineer Pamphlet EP 310-1-6a contains the standardized layout and construction details for the signs. It can be found through a GOOGLE Search or try http://www.usace.army.mil/publications/eng-pamphlets/ep310-1-6a/s-16.pdf.

1.4. PROTECTION AND MAINTENANCE OF TRAFFIC

Provide access and temporary relocated roads as necessary to maintain traffic. Maintain and protect traffic on all affected roads during the construction period except as otherwise specifically directed by the Contracting Officer. Take measures for the protection and diversion of traffic, including the provision of watchmen and flagmen, erection of barricades, placing of

lights around and in front of equipment and the work, and the erection and maintenance of adequate warning, danger, and direction signs, as required by the State and local authorities having jurisdiction. Protect the traveling public from damage to person and property.

The Contractor's traffic on roads selected for hauling material to and from the site shall interfere as little as possible with public traffic. Investigatethe adequacy of existing roads and the allowable load limit on these roads. Repairany damage to roads caused by construction operations.

1.4.1. Haul Roads

The Contractor shall, at its own expense, construct access and haul roads necessary for proper prosecution of the work under this contract. Construct haul roads with suitable grades and widths. Avoid sharp curves, blind corners, and dangerous cross traffic. Provide necessary lighting, signs, barricades, and distinctive markings for the safe movement of traffic. The method of dust control, although optional, shall be adequate to ensure safe operation at all times. Location, grade, width, and alignment of construction and hauling roads shall be subject to approval by the Contracting Officer. Provide adequate lighting to assure full and clear visibility for full width of haul road and work areas during any night work operations. Remove haul roads designated by the Contracting Officer upon completion of the work and restore those areas.

1.4.2. Barricades

Erect and maintain temporary barricades to limit public access to hazardous areas. Barricades shall be required whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Securely place barricades clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night.

1.5. Maintenance of Construction Site

Mow grass and vegetation located within the boundaries of the construction site for the duration of the project, from NTP to contract completion. Edge or neatly trim grass and vegetation along fences, buildings, under trailers, and in areas not accessible to mowers from NTP to contract completion.

SECTION 01 57 20.00 10

ENVIRONMENTAL PROTECTION

1.0 GENERAL REQUIREMENTS

1.1 SUBCONTRACTORS

1.2 ENVIRONMENTAL PROTECTION PLAN

1.3 PROTECTION FEATURES

1.4 ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS

1.5 NOTIFICATION

2.0 PRODUCTS (NOT USED)

3.0 EXECUTION

3.1 LAND RESOURCES

3.2 WATER RESOURCES

3.3 AIR RESOURCES

3.4 CHEMICAL MATERIALS MANAGEMENT AND WASTE DISPOSAL

3.5 RECYCLING AND WASTE MINIMIZATION

3.6 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

3.7 BIOLOGICAL RESOURCES

3.8 INTEGRATED PEST MANAGEMENT

3.9 PREVIOUSLY USED EQUIPMENT

3.10 MILITARY MUNITIONS

3.11 TRAINING OF CONTRACTOR PERSONNEL

3.12 POST CONSTRUCTION CLEANUP

1.0 GENERAL REQUIREMENTS

Minimize environmental pollution and damage that may occur as the result of construction operations. Protect the environmental resources within the project boundaries and those affected outside the limits of permanent work during the entire duration of this contract. Comply with all applicable environmental Federal, State, and local laws and regulations. The Contractor shall be responsible for any delays resulting from failure to comply with environmental laws and regulations

1.1. SUBCONTRACTORS

Ensure compliance with this section by subcontractors.

1.2. ENVIRONMENTAL PROTECTION PLAN

1.2.1. The purpose of the Environmental Protection Plan is to present a comprehensive overview of known or potential environmental issues which the Contractor must address during construction. Define issues of concern within the Environmental Protection Plan as outlined in this section. Address each topic in the plan at a level of detail commensurate with the environmental issue and required construction task(s). Identify and discuss topics or issues which are not identified in this section, but which the Contractor considers necessary, after those items formally identified in this section. Prior to commencing construction activities or delivery of materials to the site, submit the Plan for review and Government approval. The Contractor shall meet with the Government prior to implementation of the Environmental Protection Plan, for the purpose of discussing the implementation of the initial plan; possible subsequent additions and revisions to the plan including any reporting requirements; and methods for administration of the Contractor's Environmental Plans. Maintain and keep the Environmental Protection Plan current onsite.

1.2.2. Compliance

No requirement in this Section shall be construed as relieving the Contractor of any applicable Federal, State, and local environmental protection laws and regulations. During Construction, the Contractor shall be responsible for identifying, implementing, and submitting for approval any additional requirements to be included in the Environmental Protection Plan.

1.2.3. Contents

The plan shall include, but shall not be limited to, the following:

1.2.3.1. Name(s) of person(s) within the Contractor's organization who is(are) responsible for ensuring adherence to the Environmental Protection Plan.

1.2.3.2. Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from the site, if applicable

1.2.3.3. Name(s) and qualifications of person(s) responsible for training the Contractor's environmental protection personnel

1.2.3.4. Description of the Contractor's environmental protection personnel training program

1.2.3.5. An erosion and sediment control plan which identifies the type and location of the erosion and sediment controls to be provided. Include monitoring and reporting requirements to assure that the control measures are in compliance with the erosion and sediment control plan, Federal, State, and local laws and regulations. A Storm Water Pollution Prevention Plan

(SWPPP) may be substituted for this plan.

1.2.3.6. Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on the site

1.2.3.7. Traffic control plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Include measures to minimize the amount of mud transported onto paved public roads by vehicles or runoff.

1.2.3.8. Work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Include measures for marking the limits of use areas including methods for protection of features to be preserved within authorized work areas.

1.2.3.9. Drawing showing the location of on-installation borrow areas.

1.2.3.10. A spill control plan shall include the procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by 40 CFR 68, 40 CFR 302, 40 CFR 355, and/or regulated under State or Local laws and regulations. The spill control plan supplements the requirements of EM 385-1-1. This plan shall include as a minimum:

(a) The name of the individual who will report any spills or hazardous substance releases and who will follow up with complete documentation. This individual shall immediately notify the Government and the local Fire Department in addition to the legally required Federal, State, and local reporting channels (including the National Response Center 1-800-424-8802) if a reportable quantity is released to the environment. The plan shall contain a list of the required reporting channels and telephone numbers.

(b) The name and qualifications of the individual who will be responsible for implementing and supervising the containment and cleanup

(c) Training requirements for Contractor's personnel and methods of accomplishing the training

(d) A list of materials and equipment to be immediately available at the job site, tailored to cleanup work of the potential hazard(s) identified.

(e) The names and locations of suppliers of containment materials and locations of additional fuel oil recovery, cleanup, restoration, and material-placement equipment available in case of an unforeseen spill emergency

(f) The methods and procedures to be used for expeditious contaminant cleanup

1.2.3.11. A solid waste management plan identifying waste minimization, collection, and disposals methods, waste streams (type and quantity), and locations for solid waste diversion/disposal including clearing debris and C&D waste that is diverted (salvaged, reused, or recycled). Detail the contractor's actions to comply with, and to participate in, Federal, state, regional, local government, and installation sponsored recycling programs to reduce the volume of solid waste at the source. Identify any subcontractors responsible for the transportation, salvage and disposal of solid waste. Submit licenses or permits for solid waste disposal sites that are not a commercial operating facility. Attach evidence of the facility's ability to accept the solid waste to this plan. A construction and demolition waste management plan, similar to the plan specified in the UFGS 01 74 19 (formerly 01572) may be used as the non-hazardous solid waste management plan. Provide a Non-Hazardous Solid Waste

Diversion Report. Submit the report on the first working day after the first quarter that non-hazardous solid waste has been disposed and/or diverted and each quarter thereafter (e.g. the first working day of January, April, July, and October) until the end of the project. Additionally, a summary report, with all data fields, is required at the end of the project. The report shall indicate the total type and amount of waste generated, total type and amount of waste diverted, type and amount of waste sent to waste-to-energy facility and alternative daily cover, in tons along with the percent that was diverted. Maintain, track and report construction and demolition waste data in a manner such that the installation can enter the data into the Army SWAR database, which separates data by type of material. A cumulative report in LEED Letter Template format may be used but must be modified to include the date disposed of/diverted and include the above stated diversion data.

1.2.3.12. DELETED.

1.2.3.13. An air pollution control plan detailing provisions to assure that dust, debris, materials, trash, etc., do not become air borne and travel off the project site.

1.2.3.14. A contaminant prevention plan that: identifies potentially hazardous substances to be used on the job site; identifies the intended actions to prevent introduction of such materials into the air, water, or ground; and details provisions for compliance with Federal, State, and local laws and regulations for storage and handling of these materials. In accordance with EM 385-1-1, include a copy of the Material Safety Data Sheets (MSDS) and the maximum quantity of each hazardous material to be on site at any given time in the contaminant prevention plan. Update the plan as new hazardous materials are brought on site or removed from the site. Reference this plan in the storm water pollution prevention plan, as applicable.

1.2.3.15. A waste water management plan that identifies the methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines. If a settling/retention pond is required, include the design of the pond including drawings, removal plan, and testing requirements for possible pollutants. If land application will be the method of disposal for the waste water, include a sketch showing the location for land application along with a description of the pretreatment methods to be implemented and any required permits. If surface discharge will be the method of disposal, include a copy of the permit and associated documents as an attachment prior to discharging the waste water. If disposal is to a sanitary sewer, include documentation that the waste water treatment plant Operator has approved the flow rate, volume, and type of discharge.

1.2.3.16. A historical, archaeological, cultural resources biological resources and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands known to be on the project site: and/or identifies procedures to be followed if historical archaeological, cultural resources, biological resources and wetlands not previously known to be onsite or in the area are discovered during construction. Include methods to assure the protection of known or discovered resources and shall identify lines of communication between Contractor personnel and the Government.

1.2.3.17. A pesticide treatment plan, updated, as information becomes available. Include: sequence of treatment, dates, times, locations, pesticide trade name, EPA registration numbers, authorized uses, chemical composition, formulation, original and applied concentration, application rates of active ingredient (i.e. pounds of active ingredient applied), equipment used for application and calibration of equipment. The Contractor is responsible for Federal, State, Regional and Local pest management record keeping and reporting requirements as well as any additional Installation specific requirements. Follow AR 200-5 Pest Management, Chapter 2, Section III "Pest Management Records and Reports" for data required to be reported

to the Installation.

1.3. PROTECTION FEATURES

This paragraph supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES AND IMPROVEMENTS. Prior to start of any onsite construction activities, the Contractor and the Government shall make a joint condition survey. Immediately following the survey, the Contractor shall prepare a brief report including a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs and grassed areas immediately adjacent to the site of work and adjacent to the Contractor's assigned storage area and access route(s), as applicable. Both the Contractor and the Government will sign this survey, upon mutual agreement as to its accuracy and completeness. The Contractor develop a plan that depicts how it will protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference which their preservation may cause to the Contractor's work under the contract.

1.4. ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS

Any deviations, requested by the Contractor, from the drawings, plans and specifications which may have an environmental impact will be subject to approval by the Government and may require an extended review, processing, and approval time. The Government reserves the right to disapprove alternate methods, even if they are more cost effective, if the Government determines that the proposed alternate method will have an adverse environmental impact.

1.5. NOTIFICATION

The Government will notify the Contractor in writing of any observed noncompliance with Federal, State or local environmental laws or regulations, permits, and other elements of the Contractor's Environmental Protection plan. The Contractor shall, after receipt of such notice, inform the Government of the proposed corrective action and take such action when approved by the Government. The Government may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or equitable adjustments allowed to the Contractor for any such suspensions. This is in addition to any other actions the Government may take under the contract, or in accordance with the Federal Acquisition Regulation or Federal Law.

2.0 PRODUCTS (NOT USED)

3.0 EXECUTION

3.1. LAND RESOURCES

Confine all activities to areas defined by the drawings and specifications. Prior to the beginning of any construction, identify any land resources to be preserved within the work area. Except in areas indicated on the drawings or specified to be cleared, do not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without approval. Do not attach or fasten any ropes, cables, or guys to any trees for anchorage unless specifically authorized. Provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs. Remove all stone, soil, or other materials displaced into uncleared areas..

3.1.1. Work Area Limits

Prior to commencing construction activities, mark the areas that need not be disturbed under this contract. Mark or fence isolated areas within the general work area which are not to be disturbed. Protect monuments and markers before construction operations commence. Where construction operations are to be conducted during darkness, any markers shall be visible in the dark. Personnel shall be knowledgeable of the purpose for marking and/or protecting particular objects.

3.1.2. Landscape

Clearly identify trees, shrubs, vines, grasses, land forms and other landscape features indicated and defined on the drawings to be preserved by marking, fencing, or wrapping with boards, or any other approved techniques. Restore landscape features damaged or destroyed during construction operations outside the limits of the approved work area.

3.1.3. Erosion and Sediment Controls

Provide erosion and sediment control measures in accordance with Federal, State, and local laws and regulations. Coordinate with approving authorities (federal, state, etc.) for specific requirements to be included in the plan. The erosion and sediment controls selected and maintained by the Contractor shall be such that water quality standards are not violated as a result of the Contractor's construction activities. Keep the area of bare soil exposed at any one time by construction operations to a minimum necessary. Construct or install temporary and permanent erosion and sediment control best management practices (BMPs). BMPs may include, but not be limited to, vegetation cover, stream bank stabilization, slope stabilization, silt fences, construction of terraces, interceptor channels, sediment traps, inlet and outfall protection, diversion channels, and sedimentation basins. Remove any temporary measures after the area has been stabilized.

3.1.4. Contractor Facilities and Work Areas

Place field offices, staging areas, stockpile storage, and temporary buildings in areas designated on the drawings or as directed by the Government. Make only approved temporary movement or relocation of Contractor facilities. Provide erosion and sediment controls for on-site borrow and spoil areas to prevent sediment from entering nearby waters. Control temporary excavation and embankments for plant and/or work areas to protect adjacent areas.

3.2. WATER RESOURCES

Monitor construction activities to prevent pollution of surface and ground waters. Do not apply toxic or hazardous chemicals to soil or vegetation unless otherwise indicated. Monitor all water areas affected by construction activities. For construction activities immediately adjacent to impaired surface waters, the Contractor shall be capable of quantifying sediment or pollutant loading to that surface water when required by state or federally issued Clean Water Act permits.

3.2.1. Stream Crossings

Stream crossings shall allow movement of materials or equipment without violating water pollution control standards of the Federal, State, and local governments or impede state-designated flows.

3.2.2. Wetlands

Do not enter, disturb, destroy, or allow discharge of contaminants into any wetlands.

3.3. AIR RESOURCES

Comply with all Federal and State air emission and performance laws and standards for equipment operation, activities, or processes.

3.3.1. Particulates

Control dust particles; aerosols and gaseous by-products from construction activities; and processing and preparation of materials, such as from asphaltic batch plants, including weekends, holidays and hours when work is not in progress. Maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates which would cause the Federal, State, and local air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, baghouse, scrubbers, electrostatic precipitators or other methods are permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp at all times. Provide sufficient, competent equipment available to accomplish these tasks. Perform particulate control as the work proceeds and whenever a particulate nuisance or hazard occurs. Comply with all State and local visibility regulations.

3.3.2. Odors

Control odors from construction activities at all times. Odors shall not cause a health hazard and shall be in compliance with State regulations and/or local ordinances.

3.3.3. Sound Intrusions

Keep construction activities under surveillance and control to minimize environment damage by noise. Comply with the provisions of the state and Installation rules.

3.3.4. Burning

Burning is not allowed on the project site unless specified in other sections of the specifications or by written authorization. Specific times, locations, and manners of burning shall be subject to approval.

3.4. CHEMICAL MATERIALS MANAGEMENT AND WASTE DISPOSAL

Disposal of wastes shall be as directed below, unless otherwise specified in other sections and/or shown on the drawings.

3.4.1. Solid Wastes

Place solid wastes (excluding clearing debris) in containers which are emptied on a regular schedule. Conduct handling, storage, and disposal to prevent contamination. Employ segregation measures so that no hazardous or toxic waste will become co-mingled with solid waste. Transport solid waste off Government property and dispose of it in compliance with Federal, State, and local requirements for solid waste disposal. The minimum acceptable off-site solid waste disposal option is a Subtitle D RCRA permitted landfill. Verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate. Comply with Federal, State, and local laws and regulations pertaining to the use of landfill areas.

3.4.2. Chemicals and Chemical Wastes

Dispense chemicals, ensuring no spillage to the ground or water. Perform and document periodic inspections of dispensing areas to identify leakage and initiate corrective action. The Government may periodically review this documentation. Collect chemical waste in corrosion resistant, compatible containers. Monitor and remove collection drums to a staging or storage area when contents are within 6 inches of the top. Classify, manage, store, and dispose of wastes in accordance with Federal, State, and local laws and regulations.

3.4.3. Contractor Generated Hazardous Wastes/Excess Hazardous Materials

Hazardous wastes are defined in 40 CFR 261, or are as defined by applicable state and local regulations. Hazardous materials are defined in 49 CFR 171 - 178. At a minimum, manage and store hazardous waste in compliance with 40 CFR 262. Take sufficient measures to prevent spillage of hazardous and toxic materials during dispensing. Segregate hazardous waste from other materials and wastes; protect it from the weather by placing it in a safe covered location and take precautionary measures, such as berming or other appropriate measures, against accidental spillage. Store, describe, package, label, mark, and placard hazardous waste and hazardous material in accordance with 49 CFR 171 - 178, state, and local laws and regulations. Transport Contractor generated hazardous waste off Government property in accordance with the Environmental Protection Agency and the Department of Transportation laws and regulations. Dispose of hazardous waste in compliance with Federal, State and local laws and regulations. Immediately report spills of hazardous or toxic materials to the Government and the Facility Environmental Office. Contractor will be responsible for cleanup and cleanup costs due to spills. Contractor is responsible for the disposition of Contractor generated hazardous waste and excess hazardous materials.

3.4.4. Fuel and Lubricants

Conduct storage, fueling and lubrication of equipment and motor vehicles in a manner that affords the maximum protection against spill and evaporation. Manage and store fuel, lubricants and oil in accordance with all Federal, State, Regional, and local laws and regulations.

3.5. RECYCLING AND WASTE MINIMIZATION

Participate in State and local government sponsored recycling programs. The Contractor is further encouraged to minimize solid waste generation throughout the duration of the project. Line and berm fueling areas and establish storm water control structures at discharge points for site run-off. Keep a liquid containment clean-up kit available at the fueling area.

3.6. HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

Existing historical, archaeological, and cultural resources within the Contractor's work area are shown on the drawings. Protect and preserve these resources during the life of the Contract. Temporarily suspend all activities that may damage or alter such resources, if any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found during excavation or other construction activities. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rock or coral alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, notify the Government so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. Cease all activities that may result in impact to or the destruction of these resources. Secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources.

3.7. BIOLOGICAL RESOURCES

Minimize interference with, disturbance to, and damage to fish, wildlife, and plants, including their habitat. Protect threatened and endangered animal and plant species including their habitat in accordance with Federal, State, Regional, and local laws and regulations.

3.8. INTEGRATED PEST MANAGEMENT

Coordinate, through the Government, with the Installation Pest Management Coordinator (IPMC) at the earliest possible time prior to pesticide application, in order to minimize impacts to existing fauna and flora. Discuss integrated pest management strategies with the IPMC and receive concurrence from the IPMC, through the COR, prior to the application of any pesticide associated with these specifications. Give IMPC personnel the opportunity to be present at all meetings concerning treatment measures for pest or disease control and during application of the pesticide. The use and management of pesticides are regulated under 40 CFR 152 - 186.

3.8.1. Pesticide Delivery and Storage

Deliver pesticides, approved for use on the Installation, to the site in the original, unopened containers bearing legible labels indicating the EPA registration number and the manufacturer's registered uses.

3.8.2. Qualifications

Use the services of a subcontractor for pesticide application whose principal business is pest control. The subcontractor shall be licensed and certified in the state where the work is to be performed.

3.8.3. Pesticide Handling Requirements

Formulate, treat with, and dispose of pesticides and associated containers in accordance with label directions.

3.8.4. Application

A state certified pesticide applicator shall apply pesticides in accordance with EPA label restrictions and recommendations.

3.9. PREVIOUSLY USED EQUIPMENT

Clean all previously used construction equipment prior to bringing it onto the project site. Ensure that the equipment is free from soil residuals, egg deposits from plant pests, noxious weeds, and plant seeds. Consult with the USDA jurisdictional office for additional cleaning requirements.

3.10 MILITARY MUNITIONS

Immediately stop work in that area and immediately inform the Government, in the event military munitions, as defined in 40 CFR 260, are discovered or uncovered.

3.11 TRAINING OF CONTRACTOR PERSONNEL

Train personnel in all phases of environmental protection and pollution control. Conduct environmental protection/pollution control meetings for all Contractor personnel prior to commencing construction activities. Conduct additional meetings for new personnel and when site conditions change. The training and meeting agenda shall include methods of detecting and

avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of archaeological sites, artifacts, wetlands, and endangered species and their habitat that are known to be in the area.

3.12 POST CONSTRUCTION CLEANUP

Clean up all areas used for construction in accordance with Contract Clause: "Cleaning Up". Unless otherwise instructed in writing , obliterate all signs of temporary construction facilities such as haul roads, work area, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. Grade, fill and seed the entire disturbed area, unless otherwise indicated.

SECTION 01 62 35

RECYCLED/RECOVERED MATERIAL

1.0 GENERAL

1.1 REFERENCES

1.2 OBJECTIVES

1.3 EPA DESIGNATED ITEMS INCORPORATED IN THE WORK

1.4 EPA PROPOSED ITEMS INCORPORATED IN THE WORK

1.5 EPA LISTED ITEMS USED IN CONDUCT OF THE WORK BUT NOT INCORPORATED IN THE WORK

1.0 GENERAL

1.1. REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

- U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)
- 40 CFR 247 Comprehensive Procurement Guideline for Products Containing Recovered Materials

1.2. OBJECTIVES

Government procurement policy is to acquire, in a cost effective manner, items containing the highest percentage of recycled and recovered materials practicable consistent with maintaining a satisfactory level of competition without adversely affecting performance requirements or exposing suppliers' employees to undue hazards from the recovered materials. The Environmental Protection Agency (EPA) has designated certain items which must contain a specified percent range of recovered or recycled materials. The Contractor shall make all reasonable efforts to use recycled and recovered materials in providing the EPA designated products and in otherwise utilizing recycled and recovered materials in the execution of the work.

1.3. EPA DESIGNATED ITEMS INCORPORATED IN THE WORK

Materials that have been designated by EPA as being products which are or can be made with recovered or recycled materials, when incorporated into the work under this contract, shall contain at least the minimum percentage of recycled or recovered materials indicated by EPA unless adequate justification (non-availability) for non-use is provided. When a designated item is specified as an option to a non-designated item, the designated item requirements apply only if the designated item is used in the work.

1.4. EPA PROPOSED ITEMS INCORPORATED IN THE WORK

Products other than those designated by EPA are still being researched and are being considered for future Comprehensive Procurement Guideline (CPG) designation. It is recommended that these items, when incorporated in the work under this contract, contain the highest practicable percentage of recycled or recovered materials, provided specified requirements are also met.

1.5. EPA LISTED ITEMS USED IN CONDUCT OF THE WORK BUT NOT INCORPORATED IN THE WORK

There are many products listed in 40 CFR 247 which have been designated or proposed by EPA to include recycled or recovered materials that may be use by the Contractor in performing the work but will not be incorporated into the work. These products include office products, temporary traffic control products, and pallets. It is recommended that these non-construction products, when used in the conduct of the work, contain the highest practicable percentage of recycled or recovered materials and that these products be recycled when no longer needed.

SECTION 01 78 02.00 10

CLOSEOUT SUBMITTALS

1.0 OVERVIEW

1.1 SUBMITTALS

1.2 PROJECT RECORD DOCUMENTS

1.3 EQUIPMENT DATA

1.4 CONSTRUCTION WARRANTY MANAGEMENT

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1.8 LEED REVIEW MEETINGS

1.9 RED ZONE MEETING

1.10 FINAL CLEANING

EXHIBIT 1 SAMPLE RED ZONE MEETING CHECKLIS

1.0 OVERVIEW

1.1. SUBMITTALS

Government approval is required for any submittals with a "G" designation; submittals not having a "G" designation are for Designer of Record approval or for information only. Submit the following in accordance with Section 01 33 00 submittals***:***

SD-02 Shop Drawings

- As-Built Drawings - G

• Drawings showing final as-built conditions of the project. Provide electronic drawing files as specified in Section 01 33 16, 3 sets of blue-line prints and one set of the approved working as-built drawings.

SD-03 Product Data

- As-Built Record of Equipment and Materials

• Two copies of the record listing the as-built materials and equipment incorporated into the construction of the project.

- Construction Warranty Management Plan

• Three sets of the construction warranty management plan containing information relevant to the warranty of materials and equipment incorporated into the construction project, including the starting date of warranty of construction. Furnish with each warranty the name, address, and telephone number of each of the guarantor's representatives nearest to the project location.

- Warranty Tags

• Two record copies of the warranty tags showing the layout and design.

- Final Cleaning

• Two copies of the listing of completed final clean-up items.

1.2. PROJECT RECORD DOCUMENTS

1.2.1. As-Built Drawings – G

An as-built drawing is a construction drawing revised to reflect the final as-built conditions of the project as a result of modifications and corrections to the project design required during construction. The final as-built drawings shall not have the appearance of marked up drawings, but that of professionally prepared drawings as if they were the "as designed" drawings.

1.2.2. Maintenance of As-Built Drawings

1.2.2.1 The Configuration Management Plan shall describe how the Contractor will maintain up-to-date drawings, how it will control and designate revisions to the drawings and specifications (In accordance with Special Contract Requirement: ***Deviating from the Accepted Design*** and Section 01 33 16: ***Design after Award***, the Designer of Record's approval is

necessary for any revisions to the accepted design).

1.2.2.1 Make timely updates, carefully maintaining a record set of working as-built drawings at the job site, marked in red, of all changes and corrections from the construction drawings. Enter changes and corrections on drawings promptly to reflect "Current Construction". Perform this update no less frequently than weekly for the blue line drawings and update no less frequently than quarterly for the CADD/CAD and BIM files, which were prepared previously in accordance with Section 01 33 16. Include a confirmation that the as-builts are up to date with the submission of the monthly project schedule.

1.2.2.3 If the DB Contractor fails to maintain the as-built drawings as required herein, the Government will retain from the monthly progress payment, an amount representing the estimated monthly cost of maintaining the as-built drawings. Final payment with respect to separately priced facilities or the contract as a whole will be withheld until the Contractor submits acceptable as-built drawings and the Government approves them.

1.2.2.4 The marked-up set of drawings shall reflect any changes, alterations, adjustments or modifications. Changes must be reflected on all sheets affected by the change. Changes shall include marking the drawings to reflect structural details, foundation layouts, equipment sizes, and other extensions of design.

1.2.2.5 Typically, room numbers shown on the drawings are selected for design convenience and do not represent the actual numbers intended for use by the end user. Final as-built drawings shall reflect actual room numbers adopted by the end user.

1.2.2.6 If there is no separate contract line item (CLIN) for as-built drawings, the Government will withhold the amount of $35,000, or 1% of the present construction value, whichever is the greater, until the final as-built drawing submittal has been approved by the Government.

1.2.3. Underground Utilities

The drawings shall indicate, in addition to all changes and corrections, the actual location, kinds and sizes of all sub-surface utility lines. In order that the location of these lines and appurtenances may be determined in the event the surface openings or indicators become covered over or obscured, the as-built drawings shall show, by offset dimensions to two permanently fixed surface features, the end of each run including each change in direction. Locate Valves, splice boxes and similar appurtenances by dimensioning along the utility run from a reference point. Record average elevation of the top of each run or underground structure..

1.2.4. Partial Occupancy

For projects where portions of construction are to be occupied or activated before overall project completion, including portions of utility systems, supply as-built drawings for those portions of the facility being occupied or activated at the time the facility is occupied or activated. Show this same as-built information previously furnished on the final set of as-built drawings.

1.2.5. As-Built Conditions That are Different From the construction Drawings

Accurately reflect all as-built conditions that are different, such as dimensions, road alignments and grades, and drainage and elevations, from the construction drawings on each drawing. If the as-built condition is accurately reflected on a shop drawing, then furnish that shop drawing in CADD format. Reference the final as-built construction drawing the shop drawing file that includes the as-built information. In turn, the shop drawing shall reference the applicable construction as-

built drawing. Delete any options shown on drawings and not selected clearly reflect options selected on final as-built drawings.

1.2.6. Additional As-Built Information that Exceeds the Detail Shown on the construction Drawings:

These as-built conditions include those that reflect structural details, foundation layouts, equipment, sizes, mechanical and electrical room layouts and other extensions of design, that were not shown in the project design documents because the exact details were not known until after the time of approved shop drawings. It is recognized that these shop drawing submittals (revised showing as-built conditions) will serve as the as-built record without actual incorporation into the construction drawings, piping, and equipment drawings. Include locations of all explorations, logs of all explorations, and results of all laboratory testing, including those provided by the Government. Furnish all such shop drawings in CADD /CADformat. Include fire protection details, such as wiring, performed for the design of the project.

1.2.7. Final As-Built Drawings

Submit final as-built CADD/CAD and BIM Model(s) and Facility Data files at the time of Beneficial Occupancy of the project or at a designated phase of the project. In the event the Contractor accomplishes additional work after this submittal, which changes the as-built conditions, submit a new DVD with all drawing sheets and three blue-line copies of affected sheets which depict additional changes.

1.2.8. Title Blocks

In accordance with the configuration management plan, clearly mark title blocks to indicate final as-built drawings.

1.2.9. Other As-Built Documents

Provide scans of all other documents such as design analysis, catalog cuts, certification documents that are not available in native electronic format in an organized manner in Adobe.pdf format.

1.2.9.1. LEED Documentation

Update LEED documentation on at least a monthly basis and have it available for review by the Government on the jobsite at all times during construction. Submit the final LEED Project Checklist(s), final LEED submittals checklist and complete project documentation, verifying the final LEED score and establishing the final rating. Provide full support to the validation review process, including credit audits.See also the LEED documentation requirements in Section 01 33 16, DESIGN AFTER AWARD.

1.2.9.2. GIS Documentation

Provide final geo-referenced GIS database of the new building footprint along with any changes made to exterior of the building. The intent of capturing the final building footprint and exterior modifications in a GIS database is to provide the installation with a data set of the comprehensive changes made to the landscape as a result of the construction project. The Government will incorporate this data set into the installations existing GIS MasterPlan or Enterprise GIS system. The GIS database deliverable shall follow a standard template provided to the Contractor by the Government, adhere to detailed specifications outlined in ECB No 2006-15, and be documented using the Federal Geographic Data Committee (FGDC) metadata standard.

1.3. EQUIPMENT DATA

1.3.1. Real Property Equipment

Provide an Equipment-in-Place list of all installed equipment furnished under this contract. Include all information usually listed on manufacturer's name plate. Include the cost of each piece of installed property F.O.B. construction site. For each of the items which is specified herein to be guaranteed for a specified period from the date of acceptance thereof, provide the following information: The name, serial and model number address of equipment supplier, or manufacturer originating the guaranteed item. The Contractor's guarantee to the Government of these items will not be limited by the terms of any manufacturer's guarantee to the Contractor. Furnish the list as one (1) reproducible and three (3) copies thirty (30) calendar days before completion of any segment of the contract work which has an incremental completion date.

1.3.2. Maintenance and Parts Data

Furnish a brochure, catalog cut, parts list, manufacturer's data sheet or other publication showing detailed parts data on all other equipment subject to repair and maintenance procedures not otherwise required in Operations and Maintenance Manuals specified elsewhere in this contract. Distribution of directives shall follow the same requirements as listed in paragraph above.

1.3.3. Construction Specifications

Furnish permanent electronic files of final as-built construction specifications, including modifications thereto, with the as-built drawings.

1.4. CONSTRUCTION WARRANTY MANAGEMENT

1.4.1. Prior to the end of the one year warranty, the Government may conduct an infrared roof survey on any project involving a membrane roofing system. This survey will be conducted in accordance with ASTM C1153-90, "Standard Practice for Location of Wet Insulation in Roofing Systems Using Infrared Imaging". The Contractor shall replace all damaged materials and locate and repair sources of moisture penetration.

1.4.2. Management

1.4.2.1. Warranty Management Plan

Develop a warranty management plan containing information relevant to the clause ***Warranty of Construction*** in FAR 52.246-21. Submit the warranty management plan for Government approval at least 30 days before the planned pre-warranty conference. In the event of phased turn-over of the contract, update the Warranty Management Plan as necessary to include latest information required. Include all required actions and documents to assure that the Government receives all warranties to which it is entitled. The plan shall be in narrative form and contain sufficient detail to render it suitable for use by future maintenance and repair personnel, whether tradesmen, or of engineering background, not necessarily familiar with this contract. The term "status" as indicated below shall include due date and whether item has been submitted or was accomplished. Submit warranty information made available during the construction phase prior to each monthly pay estimate. Assemble information in a binder and turn over to the Government upon acceptance of the work. The construction warranty period shall begin on the date of project acceptance and shall continue for the full product warranty period. The Contractor, Government, including the Customer Representative shall jointly conduct warranty inspections, 4 months and 9

months, after acceptance. The warranty management plan shall include, but shall not be limited to, the following information:

(a) Roles and responsibilities of all personnel associated with the warranty process, including points of contact and telephone numbers within the organizations of the contractors, subcontractors, manufacturers or suppliers involved.

(b) Listing and status of delivery of all Certificates of Warranty for extended warranty items, to include roofs, HVAC balancing, pumps, motors, transformers, and for all commissioned systems such as fire protection and alarm systems, sprinkler systems, lightning protection systems, etc.

(c) A list for each warranted equipment, item, feature of construction or system indicating:

(i) Name of item.

(ii) Model and serial numbers.

(iii) Location where installed.

(iv) Name and phone numbers of manufacturers or suppliers.

(v) Names, addresses and telephone numbers of sources of spare parts.

(vi) Warranties and terms of warranty. Include one-year overall warranty of construction. Indicate those items, which have extended warranties with separate warranty expiration dates.

(vii) Cross-reference to warranty certificates as applicable.

(viii) Starting point and duration of warranty period.

(ix) Summary of maintenance procedures required to continue the warranty in force.

(x) Cross-reference to specific pertinent Operation and Maintenance manuals.

(xi) Organization, names and phone numbers of persons to call for warranty service.

(xii) Typical response time and repair time expected for various warranted equipment.

(d) The Contractor's plans for attendance at the 4 and 9 month post-construction warranty inspections conducted by the Government.

(e) Procedure and status of tagging of all equipment covered by extended warranties.

(f) Copies of instructions to be posted near selected pieces of equipment where operation is critical for warranty and/or safety reasons.

1.4.3. Performance Bond

1.4.3.1. The Contractor's Performance Bond will remain effective throughout the construction warranty period.

1.4.3.2. In the event the Contractor or his designated representative(s) fails to commence and diligently pursue any work required under this clause, and in a manner pursuant to the requirements thereof, the Government shall have a right to demand that said work be performed under the Performance Bond by making written notice on the surety. If the surety fails or refuses to perform the obligation it assumed under the Performance Bond, the Government shall have the work performed by others, and after completion of the work, may make demand for reimbursement of any or all expenses incurred by the Government while performing the work, including, but not limited to administrative expenses.

1.4.3.3. In the event sufficient funds are not available to cover the construction warranty work performed by the Government at the Contractor's expense, the Government will have the right to recoup expenses from the bonding company.

1.4.3.4. Following oral or written notification of required warranty repair work, the Contractor will respond as dictated by para. 1.4.5. Written verification will follow oral instructions. Failure of the Contractor to respond will be cause for the Government to proceed against the Contractor as outlined in the paragraph 1.4.5.5 and/or above.

1.4.4. Pre-Warranty Conference

Prior to contract completion, or completion of any phase or portion of contract to be turned over, and at a time designated by the Contracting Officer, the Contractor shall meet with the Government to develop a mutual understanding with respect to the requirements of this clause. Communication procedures for Contractor notification of warranty defects, priorities with respect to the type of defect, reasonable time required for Contractor response, and other details deemed necessary by the Government for the execution of the construction warranty shall be established/reviewed at this meeting. In connection with these requirements and at the time of the Contractor's quality control completion inspection, the Contractor will furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue warranty work action on behalf of the Contractor. This point of contact will be located within the local service area of the warrantied construction, will be continuously available, and will be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of his responsibilities in connection with other portions of this provision.

1.4.5. Contractor's Response to Warranty Service Requirements.

Following Government oral or written notification, which may include authorized installation maintenance personnel, the Contractor shall respond to warranty service requirements in accordance with the "Warranty Service Priority List" and the three categories of priorities listed below. Submit a report on any warranty item that has been repaired during the warranty period. The report shall include the cause of the problem, date reported, corrective action taken, and when the repair was completed. If the Contractor does not perform the construction warranty within the timeframe specified, the Government will perform the work and backcharge the construction warranty payment item established.

1.4.5.1. First Priority Code 1 Perform onsite inspection to evaluate situation, and determine course of action within 4 hours, initiate work within 6 hours and work continuously to completion or relief.

1.4.5.2. Second Priority Code 2 Perform onsite inspection to evaluate situation, and determine course of action within 8 hours, initiate work within 24 hours and work continuously to completion or relief.

1.4.5.3. Third Priority Code 3 All other work to be initiated within 3 work days and work continuously to completion or relief.

1.4.5.4. The "Warranty Service Priority List" is as follows:

• Code 1 - Air Conditioning System

(a) Buildings with computer equipment.

(b) Barracks, mess halls (entire building down).

• Code 2 - Air Conditioning Systems

(a) Recreational support.

(b) Air conditioning leak in part of building, if causing damage.

(c) Air conditioning system not cooling properly

(d) Admin buildings with Automated Data Processing (ADP) equipment not on priority list.

• Code 1 - Doors

(a) Overhead doors not operational.

• Code 1 - Electrical

(a) Power failure (entire area or any building operational after 1600 hours).

(b) Traffic control devices.

(c) Security lights.

(d) Smoke detectors and fire alarm systems

(e) Power or lighting failure to an area, facility, portion of a facility, which may adversely impact health, safety, security, or the installation's mission requirement, or which may result in damage to property.

• Code 2 - Electrical

(a) Power failure (no power) for unoccupied buildings or portions thereof or branch circuits within occupied buildings, not listed as Code 1.

(b) Receptacle and lights, not listed as code 1.

• Code 3 - Electrical

(a) Street, parking area lights

• Code 1 - Gas

(a) Leaks and breaks.

(b) No gas to cantonment area.

• Code 1 - Heat

(a) Area power failure affecting heat.

(b) Heater in unit not working.

• Code 2 Heat

(a) All heating system failures not listed as Code 1.

• Code 3 - Interior

(a) Floor damage

(b) Paint chipping or peeling

• Code 1 - Intrusion Detection Systems - N/A.

• Code 2 - Intrusion Detection Systems other than those listed under Code 1

• Code 1 - Kitchen Equipment

(a) Dishwasher.

(b) All other equipment hampering preparation of a meal.

• Code 2 - Kitchen Equipment

(a) All other equipment not listed under Code 1.

• Code 2 - Plumbing

(a) Flush valves not operating properly

(b) Fixture drain, supply line commode, or water pipe leaking.

(c) Commode leaking at base.

• Code 3 - Plumbing

(a) Leaking faucets

• Code 1 - Refrigeration

(a) Mess Hall.

(b) Medical storage.

• Code 2 - Refrigeration

(a) Mess hall - other than walk-in refrigerators and freezers.

• Code 1 - Roof Leaks

(a) Temporary repairs will be made where major damage to property is occurring.

• Code 2 - Roof Leaks

(a) Where major damage to property is not occurring, check for location of leak during rain and complete repairs on a Code 2 basis.

• Code 1 - Sprinkler System

(a) All sprinkler systems, valves, manholes, deluge systems, and air systems to sprinklers.

• Code 1 - Tank Wash Racks (Bird Baths)

(a) All systems which prevent tank wash.

• Code 1 - Water (Exterior)

(a) Normal operation of water pump station.

• Code 2 - Water (Exterior)

(a) No water to facility.

• Code 1 - Water, Hot (and Steam)

(a) Barracks (entire building).

• Code 2 - Water, Hot

(b) No hot water in portion of building listed under Code 1

1.4.5.5. Should parts be required to complete the work and the parts are not immediately available, the Contractor shall have a maximum of 12 hours after arrival at the job site to provide the Government, with firm written proposals for emergency alternatives and temporary repairs for Government participation with the Contractor to provide emergency relief until the required parts are available on site for the Contractor to perform permanent warranty repair. The Contractors proposals shall include a firm date and time that the required parts shall be available on site to complete the permanent warranty repair. The Government will evaluate the proposed alternatives and negotiate the alternative considered to be in the best interest of the Government to reduce the impact of the emergency condition. Alternatives considered by the Government will include the alternative for the Contractor to "Do Nothing" while waiting until the required parts are available to perform permanent warranty repair. Negotiating a proposal which will require Government participation and the expenditure of Government funds shall constitute a separate procurement action by the using service.

1.4.6. Equipment Warranty Identification Tags

1.4.6.1. Provide warranty identification tags at the time of installation and prior to substantial completion shall provide warranty identification tags on all Contractor and Government furnished equipment which the Contractor has installed.

(a) The tags shall be suitable for interior and exterior locations, resistant to solvents, abrasion, and to fading caused by sunlight, precipitation, etc. These tags shall have a permanent pressure-sensitive adhesive back, and they shall be installed in a position that is easily (or most easily) noticeable. Tag each component of contractor furnished equipment that has differing warranties on its components.

(b) Submit sample tags, representing how the other tags will look, for Government review and approval.

(c) Tags for Warrantied Equipment: The tag for this equipment shall be similar to the following: Exact format and size will be as approved.

EQUIPMENT WARRANTY - CONTRACTOR FURNISHED EQUIPMENT

MFG NAME MODEL NO.

SERIAL NO.

CONTRACT NO.

CONTRACTOR NAME

CONTRACTOR WARRANTY EXPIRES

MFG WARRANTY(IES) EXPIRE

EQUIPMENT WARRANTY - GOVERNMENT FURNISHED EQUIPMENT

MFG NAME MODEL NO.

SERIAL NO.

CONTRACT NO.

DATE EQUIP PLACED IN SERVICE

MFG WARRANTY(IES) EXPIRE

(c) If the manufacturer's name (MFG), model number and serial number are on the manufacturer's equipment data plate and this data plate is easily found and fully legible, this information need not be duplicated on the equipment warranty tag

1.4.6.2. Execution: Complete the required information on each tag and install these tags on the equipment by the time of and as a condition of final acceptance of the equipment.

1.5. MECHANICAL TESTING, ADJUSTING, BALANCING, AND COMMISSIONING

Submit; all reports, statements, certificates, and completed checklists for testing, adjusting, balancing, and commissioning of mechanical systems prior to final inspection and transfer of the completed facility for approval, as specified in applicable technical specification sections.

1.6. OPERATION AND MAINTENANCE MANUALS

1.6.1. General Requirements

1.6.1.1. Inasmuch as the operations and maintenance manuals are required to operate and maintain the facility, the operations and maintenance (O&M) manuals will be considered a requirement prior to substantial completion of any facility to be turned over to the Government. Beneficial occupancy of all or portions of a facility prior to substantial completion will not relieve the Contractor of liquidated damages, if substantial completion exceeds the required completion date.

1.6.1.2. Provide one permanent electronic copy on CD-ROM and 2 hard copies of the Equipment Operating, Maintenance, and Repair Manuals. Provide separate manuals for each utility system as defined hereinafter. Submit Operations and Maintenance manuals for approval before field training or 90 days before substantial completion (whichever occurs earlier). If there is no separate CLIN for O&M Manuals, the Government will withhold an amount representing $20,000, as non-progressed work, until submittal and approval of all O&M manuals are complete.

1.6.2. Definitions

1.6.2.1. Equipment

A single piece of equipment operating alone or in conjunction with other equipment to accomplish a system function.

1.6.2.2. System

A combination of one or more pieces of equipment which function together to accomplish an intended purpose (i.e. HVAC system is composed of many individual pieces of equipment such as fans, motors, compressors, valves, sensors, relays, etc.)

1.6.3. Hard Cover Binders

The manuals shall be hard cover with posts, or 3-ring binders, so sheets may be easily substituted. Print the following identification on the cover: the words "EQUIPMENT OPERATING, MAINTENANCE, AND REPAIR MANUALS," the project name, building number, and an indication of utility or systems covered, the name of the Contractor, and the Contract number. Manuals shall be approximately 8-1/2 by 11-inches with large sheets folded in and capable of being easily pulled out for reference. All manuals for the project must be similar in appearance, and be of professional quality.

1.6.4. Warning Page

Provide a warning page to warn of potential dangers (if they exist, such as high voltage, toxic chemicals, flammable liquids, explosive materials, carcinogens, high pressures, etc.). Place the warning page inside the front cover and in front of the title page. Include any necessary Material Safety Data Sheets (MDSD) here.

1.6.5. Title Page

The title page shall include the same information shown on the cover and show the name of the preparing firm and the date of publication.

1.6.6. Table of Contents

Each volume of the set of manuals for this project shall include a table of contents, for the entire set, broken down by volume.

1.6.7. GENERAL

Organize manuals according to the following format, and include information for each item of equipment Submit a draft outline and table of contents for approval at 50% contract completion.

TABLE OF CONTENTS

PART I: Introduction

· Equipment Description

· Functional Description

· Installation Description

PART II: Operating Principles

PART III: Safety

PART IV: Preventive Maintenance

· Preventive Maintenance Checklist, Lubrication

· Charts and Diagrams

PART V: Spare Parts Lists

· Troubleshooting Guide

· Adjustments

· Common Repairs and Parts Replacement

PART VI: Illustrations

1.6.7.1. Part I-Introduction

Part I shall provide an introduction, equipment or system description, functional description and theory of operation, and installation instructions for each piece of equipment. Include complete instructions for uncrating, assembly, connection to the power source and pre-operating lubrication in the installation instructions as applicable. Illustrations, including wiring and cabling diagrams, are required as appropriate in this section. Include halftone pictures of the equipment in the introduction and equipment description, as well as system layout drawings with each item of equipment located and marked. Do not use copies of previously submitted shop drawings in these manuals.

1.6.7.2. Part II-Operating Principles

Part II shall provide complete instructions for operating the system, and each piece of equipment. Illustrations, halftone pictures, tables, charts, procedures, and diagrams are required when applicable. This will include step-by-step procedures for start-up and shutdown of both the system and each component piece of equipments, as well as adjustments required to obtain optimum equipment performance, and corrective actions for malfunctions. Show performance sheets and graphs showing capacity data, efficiencies, electrical characteristics, pressure drops, and flow rates here, also. Marked-up catalogs or catalog pages do not satisfy this requirement. Present performance information as concisely as possible with only data pertaining to equipment actually installed. Include actual test data collected for Contractor performance here.

1.6.7.3. Part III-Safety

Part III shall contain the general and specific safety requirements peculiar to each item of equipment. Repeat safety information as notes cautions and warnings in other sections where appropriate to operations described.

1.6.7.4. Part IV-Preventive Maintenance

Part IV shall contain a troubleshooting guide, including detailed instructions for all common adjustments and alignment procedures, including a detailed maintenance schedule. Also include a diagnostic chart showing symptoms and solutions to problems. Include test hookups to determine the cause, special tools and test equipment, and methods for returning the equipment to operating conditions. Information may be in chart form or in tabular format with appropriate headings. Include instructions for the removal, disassembly, repair, reassembly, and replacement of parts and assemblies where applicable and the task is not obvious.

1.6.7.5. Part V-Spare Parts List

Part V shall contain a tabulation of description data and parts location illustrations for all mechanical and electrical parts. The heading of the parts list shall clearly identify the supplier, purchase order number, and equipment. Include the unit price for each part. List parts by major assemblies, and arrange the listing in columnar form. Include names and addresses of the nearest manufacturer's representatives, as well as any special warranty information. Provide a list of spare parts that are recommended to be kept in stock by the Government installation.

1.6.7.6. Part VI-Illustrations

Part VI shall contain assembly drawings for the complete equipment or system and for all major components. Include complete wiring diagrams and schematics. Other illustrations, such as exploded views, block diagrams, and cutaway drawings, are required as appropriate.

1.6.8. Framed Instructions

Post framed instructions are required for substantial completion. Post framed instructions under glass or in laminated plastic, including wiring and control diagrams showing the complete layout of the entire system, including equipment, ductwork, piping valves, dampers, and control sequence at a location near the equipment described. Prepare condensed operating instructions explaining preventive maintenance procedures methods of checking the system for normal safe operation, valve schedule and procedures for safely starting and stopping the system in type form, framed as specified above for the wiring and control diagrams and posted beside the diagrams. Submit proposed diagrams, instructions, and other sheets prior to posting. Post the framed instructions before field training.

1.6.9. Field Training

Field Training is a requirement for substantial completion. Conduct a training course for the operating staff for each particular system. Conduct the training is to be conducted during hours of normal working time after the system is functionally complete. The field instructions shall cover all of the items contained in the Equipment Operating, Maintenance and Repair Manuals. The training will include both classroom and "hands-on" training. Submit a lesson plan outlining the information to be discussed during training periods. Submit this lesson plan for approval 90 days before contract completion before the field training occurs. Record training on DVD and furnish to the Government within ten (10) days following training. Document all training and furnish a list of all attendees.

1.6.10. SYSTEM/EQUIPMENT REQUIREMENTS

1.6.10.1. Facility Heating System

Provide information on the following equipment: boilers, water treatment, chemical feed pumps and tanks, converters, heat exchangers, pumps, unit heaters, fin-tube radiation, air handling units (both heating only and heating and cooling), and valves (associated with heating systems).

1.6.10.2. Air-Conditioning Systems

Provide information in chillers, packaged air-conditioning equipment, towers, water treatment, chemical feed pumps and tanks, air-cooled condensers, pumps, compressors, air handling units, and valves (associated with air-conditioning systems).

1.6.10.3. Temperature Control and HVAC Distribution Systems

Provide all information described for the following equipment: valves, fans, air handling units, pumps, boilers, converters and heat exchangers, chillers, water cooled condensers, cooling towers, and fin-tube radiation, control air compressors, control components (sensors, controllers, adapters and actuators), and flow measuring equipment.

1.6.10.4. Central Heating Plants

Provide the information described for the following equipment: boilers, converters, heat exchangers, pumps, fans, steam traps, pollution control equipment, chemical feed equipment, control systems, fuel handling equipment, de-aerators, tanks (flash, expansion, return waters, etc.), water softeners, and valves.

1.6.10.5. Heating Distribution Systems

Provide the information described for the following equipment: valves, fans, pumps, converters and heat exchangers, steam traps, tanks (expansion, flash, etc.), and piping systems.

1.6.10.6. Exterior Electrical Systems

Provide information on the following equipment: power transformers, relays, reclosers, breakers, and capacitor bank controls.

1.6.10.7. Interior Electrical Systems

Provide information on the following equipment: relays, motor control centers, switchgear, solid state circuit breakers, motor controller, EPS lighting systems, wiring diagrams and troubleshooting flow chart on control systems, and special grounding systems.

1.6.10.8. Energy Monitoring and Control Systems

The maintenance manual shall include descriptions of maintenance for all equipment, including inspection, periodic preventative maintenance, fault diagnosis, and repair or replacement of defective components.

1.6.10.9. Domestic Water Systems

Provide the identified information on the following equipment: tanks, unit process equipment, pumps, motors, control and monitoring instrumentation, laboratory test equipment, chemical feeders, valves, switching gear, and automatic controls.

1.6.10.10. Wastewater Treatment Systems

Provide the identified information on the following equipment: tanks, unit process equipment, pumps, motors, control and monitoring instrumentations, laboratory test equipment chemical feeders, valves, scrapers, skimmers, comminutors, blowers, switching gear, and automatic controls.

1.6.10.11. Fire Protection Systems

Provide information on the following equipment: alarm valves, manual valves, regulators, foam and gas storage tanks, piping materials, sprinkler heads, nozzles, pumps, and pump drivers.

1.6.10.12. Fire Alarm and Detection Systems

(a) The maintenance manual shall include description of maintenance for all equipment, including inspection, periodic preventive maintenance, fault diagnosis, and repair or replacement of defective components.

(b) Provide all software; database with complete identification of programmable portions of system equipment and devices, and all other system programming data on all modes of the system; connecting cables; and proprietary equipment necessary for the operation, maintenance, testing, repair and programming, etc. of the system and that may be required for implementation of future changes to the fire system (additional and/or relocated initiating devices, notification devices, etc.

(c) Provide all system and equipment technical data and computer software with the requisite rights to Government use, in accordance with the applicable contract clauses.

(d) Training shall include software and programming required for the effective operation, maintenance, testing, diagnostics and expansion of the system.

1.6.10.13. Plumbing Systems

Provide information on the following equipment: water heaters, valves, pressure regulators backflow preventors, piping materials, and plumbing fixtures.

1.6.10.14. Liquid Fuels Systems

Provide information on the following equipment: tanks, automatic valves manual valves, filter separators, pumps, mechanical loading arms, nozzles, meters, electronic controls, electrical switch gear, and fluidic controls.

1.6.10.15. Cathodic Protection Systems

Provide information on the following material and equipment: rectifiers, meters, anodes, anode backfill, anode lead wire, insulation material and wire size, automatic controls (if any), rheostats, switches, fuses and circuit breakers, type and size of rectifying elements, type of oil in oil-immersed rectifiers, and rating of shunts.

1.6.10.16. Generator Installations

Provide information on the following equipment: generator sets, automatic transfer panels, governors, exciters, regulators starting systems, switchgear, and protective devices.

1.6.10.17. Miscellaneous Systems

Provide information on the following: communication and ADP systems, security and intrusion alarm, elevators, material handling, active solar, photovoltaic, nurse call, paging, intercom, closed circuit TV, irrigation, sound and material delivery systems, kitchen, refrigeration, disposal, ice making equipment, and other similar type special systems not otherwise specified.

1.6.10.18. Laboratory, Environmental and Pollution Control Systems

Provide information on the following equipment: wet scrubbers, quench chambers, scrub tanks, liquid oil separators, and fume hoods.

1.7. PRICING OF CONTRACTOR-FURNISHED AND INSTALLED PROPERTY AND GOVERNMENT-FURNISHED CONTRACTOR-INSTALLED PROPERTY

Promptly furnish and require any sub-contractor or supplier to furnish, in like manner, unit prices and descriptive data required by the Government for Property Record purposes of fixtures and equipment furnished and/or installed by the Contractor or sub-contractor, except prices do not need to be provided for Government-Furnished Property.

1.8. LEED REVIEW MEETINGS

Pre-Closeout Meeting. Approximately 30 days before submittal of LEED closeout documentation, the Contractor and the Government's project delivery team (including Installation representative) will meet to review the documentation, determine which, if any, credits will be audited and identify any corrections/missing items prior to the closeout LEED documentation

submittal.

Approximately 14 days after submittal of LEED closeout documentation, the Contractor and the Government's project delivery team (including Installation representative) will meet to review the LEED closeout documentation. The review conference will include discussion of and resolution of all review comments to ensure consensus on achievement of credits and satisfactory documentation. At the review conference a final score will be determined and endorsed in writing by all parties.

1.9. RED ZONE MEETING

At approximately 80% of contract completion or 60 days before the anticipated Beneficial Occupancy Date (BOD), whichever occurs first, the Contractor and the Government's project delivery team will conduct what is known as the Red Zone Meeting to discuss the close-out process, to schedule the events and review responsibilities for actions necessary to produce a timely physical, as well as fiscal, project close-out. The Red Zone meeting derives its name from the football term used to describe the team effort to move the ball the last 20 yards into the end zone. The close-out of a construction project sometimes can be equally as hard and most definitely requires the whole team’s efforts. The ACO will chair the meeting. If not already provided, shortly before the meeting, the Contractor shall provide an electronic copy or access to the CADD as-built drawings, completed commensurate with the amount of work completed at the time of the Red Zone Meeting, as an indicator of the Contractors’ understanding of and ability to meet the USACE CADD Standards and to ensure that the Contractor is making progress with CADD As-Built requirements. EXHIBIT 1 is a generic meeting checklist.

1.10. FINAL CLEANING

Clean the premises in accordance with FAR clause 52.236-12 and additional requirements stated here. Remove stains, foreign substances, and temporary labels from surfaces. Vacuum carpet and soft surfaces. Clean equipment and fixtures to a sanitary condition. Clean or replace filters of operating equipment if cleaning isn’t possible or practicable. Remove debris from roofs, drainage systems, gutters, and downspouts. Sweep paved areas and rake clean landscaped areas. Remove waste, surplus materials, and rubbish from the site. Remove all temporary structures, barricades, project signs, fences and construction facilities. Submit a list of completed clean-up items on the day of final inspection.

EXHIBIT 1

SAMPLE

Red Zone Meeting Checklist

Date:_____

Contract No.	
Description / Location	
Contractor	
Contracting Officer	

Action	**Completion Milestone**	
Inspections		
Fire		
Safety		
Pre-final		
Mechanical Test & Balance		
Commissioning		
Landscaping Complete		
Erosion Control		
Beneficial Occupancy Date (BOD)		
Furniture Installation		
Comm Installation		
As-Built Drawings		
Provide all O&M manuals, tools, shop drawings, spare parts, etc. to customer		

Training of O&M Personnel		
Provide Warranty documents to Customer		
Contract completion		
Final Inspection		
User move-in		
DD Form 1354, Transfer of Real Property completed & signed		
Ribbon cutting		
Payroll Clearances		
DD Form 2626 - Construction Contractor Performance Evaluation		
DD Form 2631 – A-E Performance Rated after Construction		
Status of Pending Mods and REA’s/Claims		
Final Payment Completed		
Release of Claims		
Return of Unobligated Funds		
Move Project from CIP to General Ledger		
Financial completion		

-CHILD DEVELOPMENT CENTER (SOUTH)—PN 65334-

at

Fort Irwin National Training Center (NTC)
San Bernardino County, California

PRELIMINARY GEOTECHNICAL REPORT

January 2009

Prepared by:

Randall C. Born, P.E.

Soil Design Section
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING BRANCH
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS

-Child Development Center (CDC) South—PN 65334-
Fort Irwin NTC, California
January 2009

1. GENERAL INFORMATION:

1.1 Report Abstract: This Preliminary Geotechnical Report is to be used only to provide tentative parameters for the project cost estimation for foundation, pavement, grading, and utility design for this project; it is not a substitute for the Project-specific Geotechnical Report to be prepared by the Contractor in accordance with Paragraphs 5 and 6 of the RFP Statement of Work (Section 01 10 00). The content and recommendations are based upon our vast experience at Fort Irwin NTC as well as explorations performed in January 2008.

1.2 Topography: Fort Irwin NTC is located about 28 miles northeast of Barstow, California in San Bernardino County at the northern edge of the Mojave Desert Geomorphic Province. The NTC encompasses an area of over 1,000 square miles and is dominated by mountain ranges and broad alluvial basins. Elevations range from 1,700 feet at Coyote Lake to 4,800 feet in the Tiefort Mountains. The cantonment area, located in the southwest portion of the NTC, has elevations that range from 2,400 feet at the southwest to 2,600 feet on the north.

1.3 Geomorphology:

- The geomorphology around Fort Irwin NTC contains many elements of desert landscapes including closed drainage (bolsons), mountains, alluvial fan systems (bajadas), and flat-floored dry lakes (playas). The Fort Irwin Basin is a semi-bolson, a basin that is not completely closed and has some exterior drainage. Mountains of Tertiary age and Pleistocene age volcanics, Pre-Cenozoic (Mesozoic) granitics, and Pleistocene non-marine sediments bound the NTC on the north and northwest. To the northeast is Bicycle Lake, a playa, and the eastern boundary includes Pre-Cretaceous metamorphic rocks with included limestone and/or dolomite. Quartenary alluvium is evident south and southwest of the NTC and the southwest boundary includes Mesozoic granitics and Tertiary age and Pleistocene age volcanics. Relief decreases to the southwest, thus drainage in this semi-bolson is from northeast to southwest.

- The NTC and its immediate vicinity is underlain by Quaternary Alluvium which are generally non-marine unconsolidated fan, lake, and playa deposits. Surrounding rock outcroppings consist of Mesozoic granite, quartz monzonite, granodiorite, and quartz diorite; a great variety of pre-Cenozoic metasedimentary and metavolcanic rocks. The metavolcanic rock consists of both Tertiary and Quaternary volcanic flow rocks with minor pyroclastic deposits. The predominate soil types on the NTC are silty sandy gravels and gravelly sands and some clayey sands. The soils are often intermingled with cobbles and occasional boulders. These volcanic and granitic derived soils have medium to low permeability.

1.4 Seismic Information:

- Fort Irwin NTC is located in Seismic Zone-4 of Division IV, *Earthquake Design* of the Uniform Building Code. Site locations in Seismic Zone-4 have the highest probability of earthquake occurrence and damage.

The CDC South site, as well as the main cantonment area of Irwin NTC, is expected to have a S_D (Stiff soil profile) site classification according to the 2006 International Building Code, assuming the sand and gravel materials in the upper subsurface strata would likely have

standard penetration test blow counts of between 15 and 50, if the cobbles typically present at Irwin NTC did not influence the count.

1.5 Climate: The climate at Fort Irwin NTC is very arid and hot during the summer, typical of the southwest desert regions. Summer temperatures are often in excess of 120º F. Winter freezing occurs from October to April and frost penetration per UFC 3-310-01 is 22 inches; design snow load is zero. The average annual precipitation is approximately 1.5 inches and can fall in brief intense rainstorms that occasionally result in flash flooding and temporary water ponding. The prevailing winds are from the southwest with speeds ranging from calm to 40 knots, however speeds in excess of 80 mph have been recorded; the basic design wind speed is 85 mph per the UFC. The local topography channels wind along valley floors and windborne dust occasionally reduces visibility to zero. The design rainfall intensity at Fort Irwin NTC is:

Event/ Intensity	**2-Year**	**5-Year**	**10-Year**	**25-Year**
Inches/hour	0.3	0.4	0.5	0.6

2. PROJECT INFORMATION:
The site area is shown on the 1986 “Fort Irwin, Calif.” 1:24000 U.S. Geological Survey Quadrangle. The site is located at the southerly end of the main cantonment area, adjacent to the easterly side of Outer Loop/North Loop Road and the southerly side of Camp Irwin/Barstow Road. The area to be developed is bounded by a major drainage channel to the northeast, and a 16-inch water main is reportedly crossing the site. The proposed construction includes a single-story building, and site development will include cut and fill, parking, landscaping, and utility services. See Paragraph 6 of Section 01 10 00 and the Civil sheets of the RFP for more complete and detailed information.

3. SITE CONDITIONS:
Three explorations labeled 4F-08-01, 4F-08-02 and 4F-08-03 were performed at the proposed project site in late January 2008 by Tack Construction under contract to the Fort Irwin Resident Office. This report author located the explorations, supervised the digging, logged the materials, and collected selected samples (visually screened of 3-inch and larger materials) for classification and Proctor testing. The excavated materials were evaluated and logged in general accordance with ASTM D 2488 Description and Identification of Soils (Visual-Manual Procedure). A map indicating the locations of explorations, and Sheet B-101 showing the exploration logs of materials and applicable notes, are appended to this report. Briefly, the predominant site materials are sandy gravels with silt and cobbles, and the estimated combined cobble and boulder content ranges from 20 to 40 percent by volume. Each of the backhoe excavations was terminated in moderate digging conditions at a depth of 9 feet below grade, and the Deere 310SE backhoe never encountered digging refusal. Groundwater was not encountered, and has been previously reported to reside at depths of 150 to 200 feet. Sheet B-101 also indicates soils laboratory classification and compaction test data for a bulk sample collected from the upper 4 feet of exploration 4F-08-01.

4. PRELIMINARY DESIGN INFORMATION:
4.1 Local Borrow Materials: Cobbles and boulders will need to be screened from project excavations in order to produce satisfactory fill and backfill materials. See subparagraph 6.4.8 of Section 01 10 00 for discussion of borrow material available on Irwin NTC property, located

approximately 4 to 5 miles outside the main gate. Determining locations and suitability of all borrow sources on and near Fort Irwin NTC is the Contractor's responsibility.

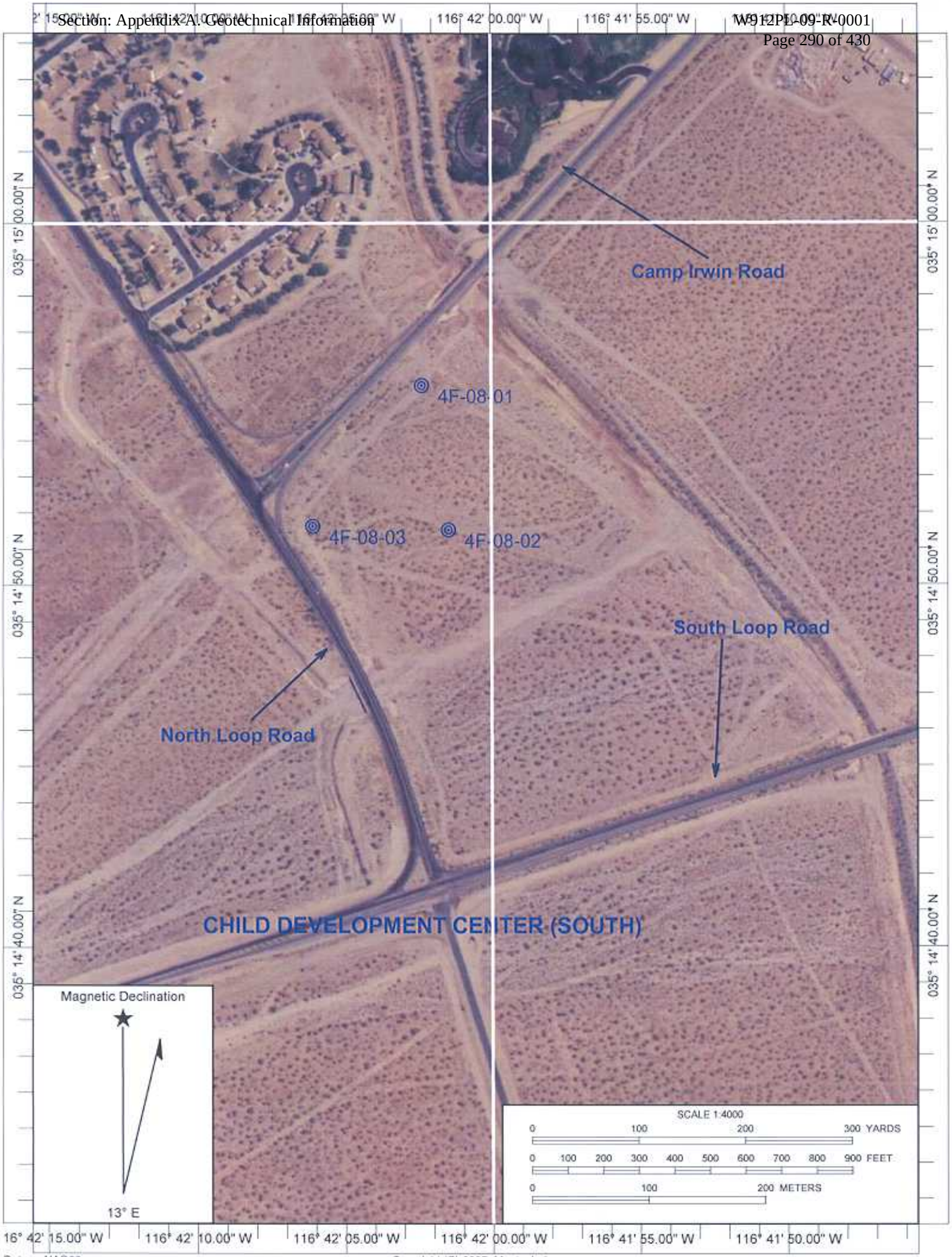
4.2 Chemistry: No chemical testing was performed on project exploration materials. Based upon historical data, the materials should be considered moderately corrosive at field water contents. All underground ferrous materials should be coated or wrapped for protection against the galvanic action of the soil. In general, the local soil sulfate and chloride contents have been found to be low or negligible, but as a low-cost precaution, Type II or Type V Portland Cement shall be specified for all concrete construction at or below grade.

4.3 Disposal of Materials: Construction debris including asphalt, concrete, lumber and trash shall be properly disposed off Irwin NTC property. Excess borrow and/or excavated soil materials shall be disposed as stated in the RFP Section 01 10 00 paragraph 6.4 SITE ENGINEERING. Oversized cobble and boulder sized materials may be placed as local erosion control and/or landscape facing material, if appropriate for the project design and approved by the Contracting Officer.

5. TENTATIVE DESIGN:

5.1 Foundations & Slabs: The most economical foundation for this size facility at this location will likely be a shallow foundation consisting of continuous wall and isolated column footings. Over-excavation a minimum of 12" beneath footings and slabs, and replacement with structural fill in two equal lifts compacted to 95 percent of ASTM D 1557 laboratory maximum density, is specified at Fort Irwin NTC to allow for varied in-situ densities of, and removal of cobbles and boulders from, the near-surface native soils. Deep drilled shaft foundations are generally not economical due to the small structural loads, and due to the large quantities of cobble and boulder sized materials that make drilling difficult. Place slabs-on-grade (6" minimum thick PCC) on 4" damp sand on a minimum 20-mil poly vapor barrier on compacted clean native subgrade. Specify minimum 4,000 psi concrete for structural, slab on grade, and exterior site concrete. See Section 01 10 00 paragraph 6.4 SITE ENGINEERING and paragraph 6.6 STRUCTURAL for more complete earthwork and foundation requirements. **For foundation subgrade over-excavation and preparation as required by Section 01 10 00 paragraph 6.6, an allowable soil bearing capacity of 3,000 psf may be used for bidding purposes**.

5.2 Pavements: Historical conservative values of CBR = 20, R = 40, and subgrade modulus k = 250 pci have typically been assigned native sands and gravels compacted to 95 percent density. For light-duty POV parking areas, a pavement section consisting of 2" asphalt concrete over 6" aggregate base over minimum 6" compacted subgrade has proven satisfactory. See Section 01 10 00 paragraphs 5.2.3 and 6.4.4 for more complete pavement design requirements.



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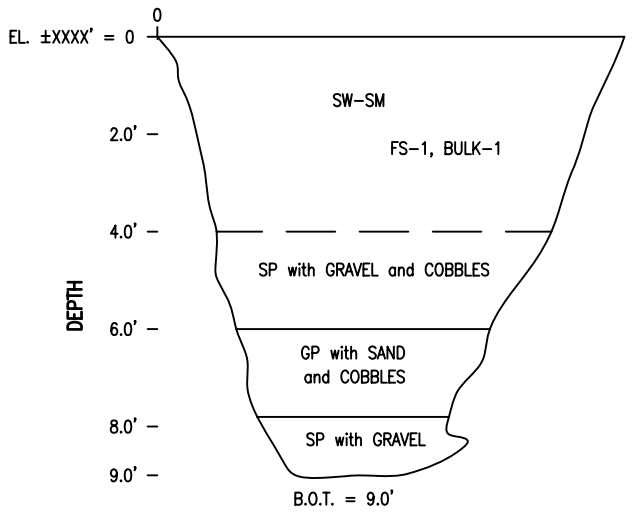
4F-08-01
N 35° 14' 55.5", W 116° 42' 02.3" (NAD 83)



	GR	SA	FI	LL	PI	MC	γ_{max} @ OMC
0.0' – 4.0'	12	80	8	–	–	4.2	129 @8.8
4.0' – 6.0'	–	–	–	–	–	–	–
6.0' – 7.8'	–	–	–	–	–	–	–
7.8' – 9.0'	–	–	–	–	–	–	–

0.0' – 4.0': WELL GRADED SAND WITH SILT, SW-SM: Moist to 1.5' then dry to moist; light brown; fine to coarse, subangular to subrounded sand; nonplastic fines; fine to coarse, subangular to subrounded gravel; trace of cobbles maximum particle size 8-inch; mica present; no reaction to HCl; easy digging

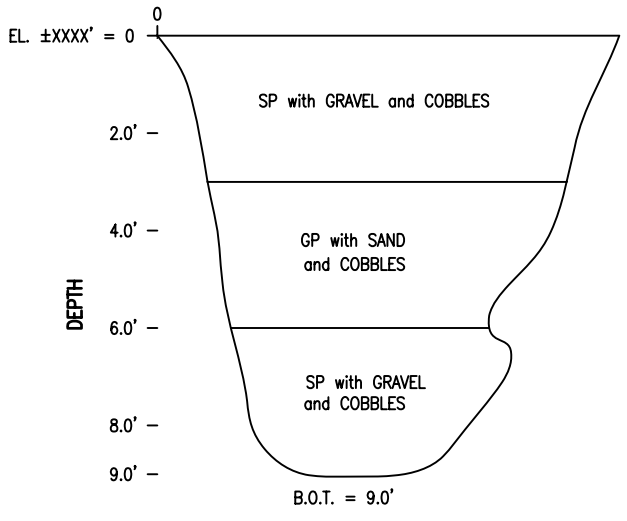
4.0' – 6.0': POORLY GRADED SAND WITH GRAVEL AND COBBLES, SP: Dry to moist; light brown-gray; 40% fine to coarse, subangular to subrounded sand; 35% fine to coarse, subangular to subrounded gravel; 20% subangular cobbles maximum particle size 10-inch; 5% nonplastic fines; cobbles and gravel matting cemented; trace of mica; mild reaction to HCl; moderate digging

6.0' – 7.8': POORLY GRADED GRAVEL WITH SAND AND COBBLES, GP: Caliche layer; gray-white; 40% fine to coarse, subangular to subrounded gravel; 30% fine to coarse, subangular to subrounded sand; 25% subangular to subrounded cobbles maximum particle size 12-inch; 5% nonplastic fines; moderate reaction to HCl; moderately hard digging;

7.8' – 9.0': POORLY GRADED SAND WITH GRAVEL, SP: Dry to moist; gray; 60% fine to coarse, subangular to subrounded sand; 30% fine to coarse, subangular to subrounded gravel; 5% subangular to subrounded cobbles maximum particle size 10-inch; 5% nonplastic fines; no reaction to HCl; easy digging

Test pit performed 31 Jan 08 at 0830 hours

4F-08-02
N 35° 14' 51.6", W 116° 42' 06.0" (NAD 83)



	GR	SA	FI	LL	PI	MC	γ_{max} @ OMC
0.0' – 3.0'	–	–	–	–	–	–	–
3.0' – 6.0'	–	–	–	–	–	–	–
6.0' – 9.0'	–	–	–	–	–	–	–

0.0' – 3.0': POORLY GRADED SAND WITH GRAVEL AND COBBLES, SP: Moist to 1.2' then dry to moist; light brown-tan; 60% fine to coarse, subrounded to subangular sand; 30% fine to coarse, subrounded to subangular gravel; 10% subrounded to subangular cobbles maximum particle size 12-inch; mica present; no reaction to HCl; easy digging

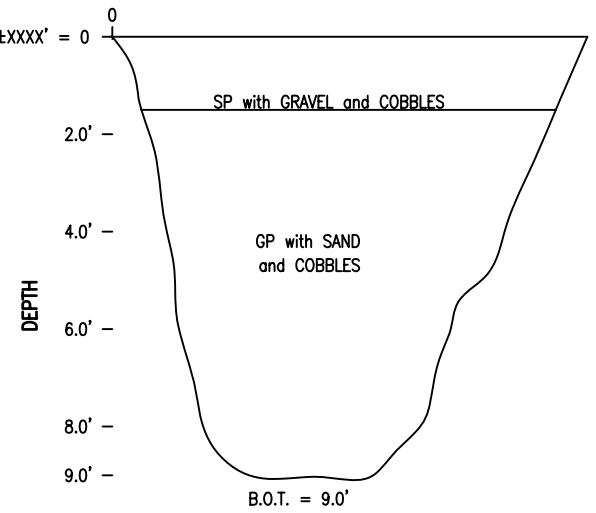
3.0' – 6.0': POORLY GRADED GRAVEL WITH SAND AND COBBLES, GP: Dry to moist; light brown-gray; 35% fine to coarse, subangular to subrounded gravel; 30% fine to coarse, subangular to subrounded sand; 30% subangular to subrounded cobbles maximum particle size 12-inch; 5% nonplastic fines; cobbles and gravel mix cemented and alluvial particle; moderate reaction to HCl; moderately hard to hard digging

6.0' – 9.0': POORLY GRADED SAND WITH GRAVEL, SP: Moist; light brown; 55% fine to coarse, subangular to subrounded sand; 30% fine to coarse, subangular to subrounded gravel; 15% subangular to subrounded cobbles maximum particle size 8-inch; mild reaction to HCl; easy digging

Test pit performed 31 Jan 08 at 1000 hours

VERTICAL SCALE: 1" = 4'

4F-08-03
N 35° 14' 51.5", W 116° 42' 01.4" (NAD 83)



	GR	SA	FI	LL	PI	MC	γ_{max} @ OMC
0.0' – 1.5'	–	–	–	–	–	–	–
1.5' – 4.5'	–	–	–	–	–	–	–
4.5' – 9.0'	–	–	–	–	–	–	–

0.0' – 1.5': POORLY GRADED SAND WITH GRAVEL AND COBBLES, SP: Moist; light brown; 50% fine to coarse, subangular to subrounded sand; 35% fine to coarse, subangular to subrounded gravel; 10% subangular to subrounded cobbles maximum particle size 8-inch; 5% nonplastic fines; a 18-inch boulder present; mica present; easy digging

1.5' – 4.5': POORLY GRADED GRAVEL WITH SAND AND COBBLES, GP: Dry to moist; tan; 40% fine to coarse, subangular to subrounded gravel; 35% fine to coarse, subangular to subrounded sand; 20% subangular to subrounded cobbles maximum particle size 10-inch; 5% nonplastic fines; weak cementation; trace of mica; easy digging

4.5' – 9.0': POORLY GRADED GRAVEL WITH SAND AND COBBLES, GP: Dry to moist; light brown-gray; 40% fine to coarse, subangular to subrounded gravel; 30% fine to coarse, subangular to subrounded sand; 30% subangular to subrounded cobbles maximum particle size 10-inch; mix of cemented and alluvial cobbles and gravel; moderate cementation; trace of mica; moderatly hard digging; from 8.0' become moderate digging

Test pit performed 31 Jan 08 at 1045 hours to 1120 hours

LEGEND:

■ 4F-08-01	Exploration Designation
GR	Gravel, Laboratory Percent by Weight Passing the 3" Sieve and Retained on the No. 4 Sieve.
SA	Sand, Laboratory Percent by Weight Passing the No. 4 Sieve and Retained on the No. 200 Sieve.
FI	Fines, Laboratory Percent by Weight Passing the No. 200 Sieve.
MC	Moisture Content
SM	Combined Field Visual Identification and/or Laboratory Classification.
B.O.T.	Bottom of Trench
γ_{max}	Maximum Laboratory Density (ASTM D1557), pcf
NP	Non-Plastic
OMC	Optimum Moisture Content

NOTES:

1. This drawing is to be used only for approximate location of explorations and description of subsurface conditions.
2. Soil classifications and descriptions are based on field log descriptions in accordance with ASTM D 2488 ("Description and Identifications of Soils, Visual-Manual Procedure") and/or laboratory test results in accordance with ASTM 2487 ("Classification of Soils for Engineering Purposes").
3. All sieve sizes shown are U.S. Standard.
4. All explorations were performed on 31 January 2008 by Tack Construction under the direct supervision of a geotechnical engineer with the US Army Corps of Engineers, Sacramento Dictrict. Utilizing a Deere 310SE backhoe fitted with a 18" bucket with rock teeth.
5. Exploration coordinates are in NAD 83 system, recorded on a Garmin eTrex Legend handheld GPS unit.
6. Groundwater was not encountered at the time of explorations; however, groundwater levels can be expected to fluctuate in response to rainfall variations, particularly in the vicinity of site drainage features.
7. Depending on the soil moisture at the time of construction, the soil encountered may be unstable or potentially unstable. The probability of unstable conditions is highest when the soil moisture is greatest.
8. All percentages of fines, sand and gravel, in field descriptions, are approximate.
9. Cobbles and boulders (+3-inch sieve) are not considered in ASTM D-2487 or ASTM D-2488. Percentages in field descriptions for cobbles and boulders are field estimates by volume (not weight).
10. Particles larger than 3-inch size were selectively removed from samples collected for laboratory testing.
11. All rock materials are moderately hard to hard.

US Army Corps of Engineers
Sacramento District

Approved | Date | Description | Symbol

Rev: | Date: | Design file no: | Drawing Code: | File name: 2121708 | Plot date: | Dwg scale: AS NOTED

Designed by: RANDALL C. BORN, PE | Spec. No.: | Dwn. by: K. PHAN | Reviewed by: | Submitted by: Jeff Stewart, Ketchum

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 'J' STREET
SACRAMENTO, CA 95814-2922

CALIFORNIA
FORT IRWIN
CHILD DEVELOPMENT CENTER (SOUTH)
PN. 65334
LEGEND, NOTES AND LOG OF EXPLORATIONS
4F-08-01, 4F-08-02 AND 4F-08-03

Sheet reference number:
B-101

Soil Design Section Sheet No.: 1 of 4

Reference - Exploration Log file no.:

Section: Appendix A. Geotechnical Information

Border Revised 08/30/04, 02E30T02.DWG

APPENDIX B
List of Drawings

Refer to Appendix J

APPENDIX C

Utility Connections

Refer to Appendix J

APPENDIX D
Results of Fire Flow Tests

HYDRANT FLOW TEST DATA

Location: Ft. Irwin, CA

Date: 8 NOV 2007

Test made by: Oliver Obagi, P.E. AND CH2MHILL STAFF TEL: 760-386-9706 CEL: 760-212-7677

Time: 1615

Representative of: CH2MHILL, CONSTRUCTORS, INC

Witness: TIM LEE AND RICHARD KELLY

Representative of: SPK, CORPS OF ENGINEERS

State purpose of test: MILCON PROJECT, CHILD DEVELOPMENT CENTER, F.Y 12

Height from static/residual hydrant to building finished floor elevation (feet) = +5'

Height from static/residual hydrant to flow hydrant = +3'

	Static/Residual Hydrant (R)	Flowing Hydrant 1 (F1)	Flowing Hydrant 2 (F2)	Flowing Hydrant 3 (F3)
	No. SEE SKETCH	No. SEE SKETCH	No.	No.
Outlet size(inches)		2 1/2		
Outlet Coef.		* 0.90		
Static (psig) before test	70 static			
Pressure (psig) 1 hydrant open	55 residual	35 pitot		
Pressure (psig) 2 hydrants open	— residual	pitot	pitot	
Pressure (psig) 3 hydrants open	— residual	pitot	pitot	pitot
Static (psig) after test	70 static			

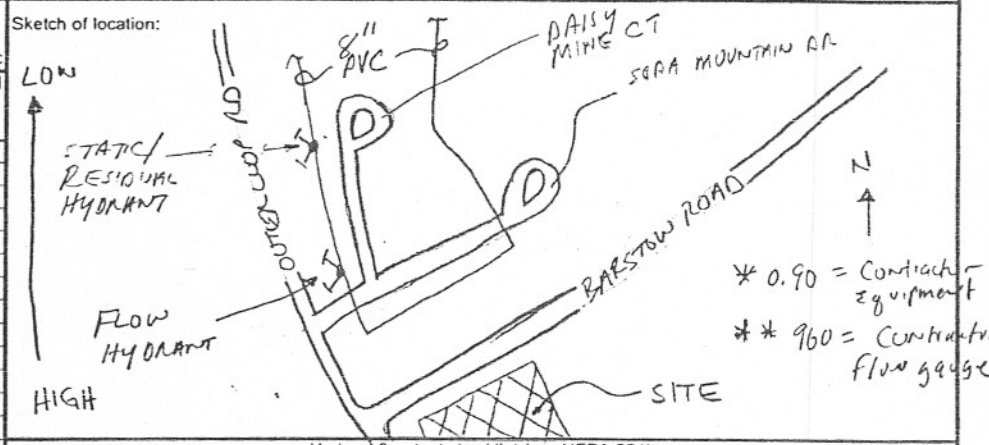
Hydrant outlet discharge coefficients

Outlet with Akron FK-25 (2.5" stream straightener):	FK-25
Outlet smooth and rounded:	0.90
Outlet square and sharpe:	0.80
Outlet square and projecting into barrel:	0.70

Flow rate Hydrant 1 (F1)	Flow rate Hydrant 2 (F2)	Flow rate Hydrant 3 (F3)	Flow rate Total
* 960 gpm			gpm
gpm	gpm		gpm
gpm	gpm	gpm	gpm

Pitot Press. (psig)	GPM 2.5" outlet	GPM FK-25	GPM x.90	GPM x.80	GPM x.70
10	590	608	531	472	413
11	619	635	557	495	433
12	646	662	581	517	452
13	672	687	605	538	470
14	698	711	628	558	489
15	722	734	650	578	505
16	746	756	671	597	522
17	769	777	692	615	538
18	791	797	712	633	554
19	813	815	732	650	569
20	834	835	751	667	584
22	875	871	788	700	613
24	914	906	823	731	640
26	951	938	856	761	666
28	987	969	888	790	691
30	1022	998	920	818	715
(Avoid pitot pressures above 30 psig)					
32	1055	1031	950	844	739
34	1087	1062	978	870	761
36	1119	1093	1007	895	783
38	1150	1123	1035	920	805
40	1180	1152	1062	944	826
42	1209	1171	1088	967	846
44	1237	1188	1113	990	866
46	1265	1205	1139	1012	886
48	1292	1220	1163	1034	904
50	1319	1234	1187	1055	923

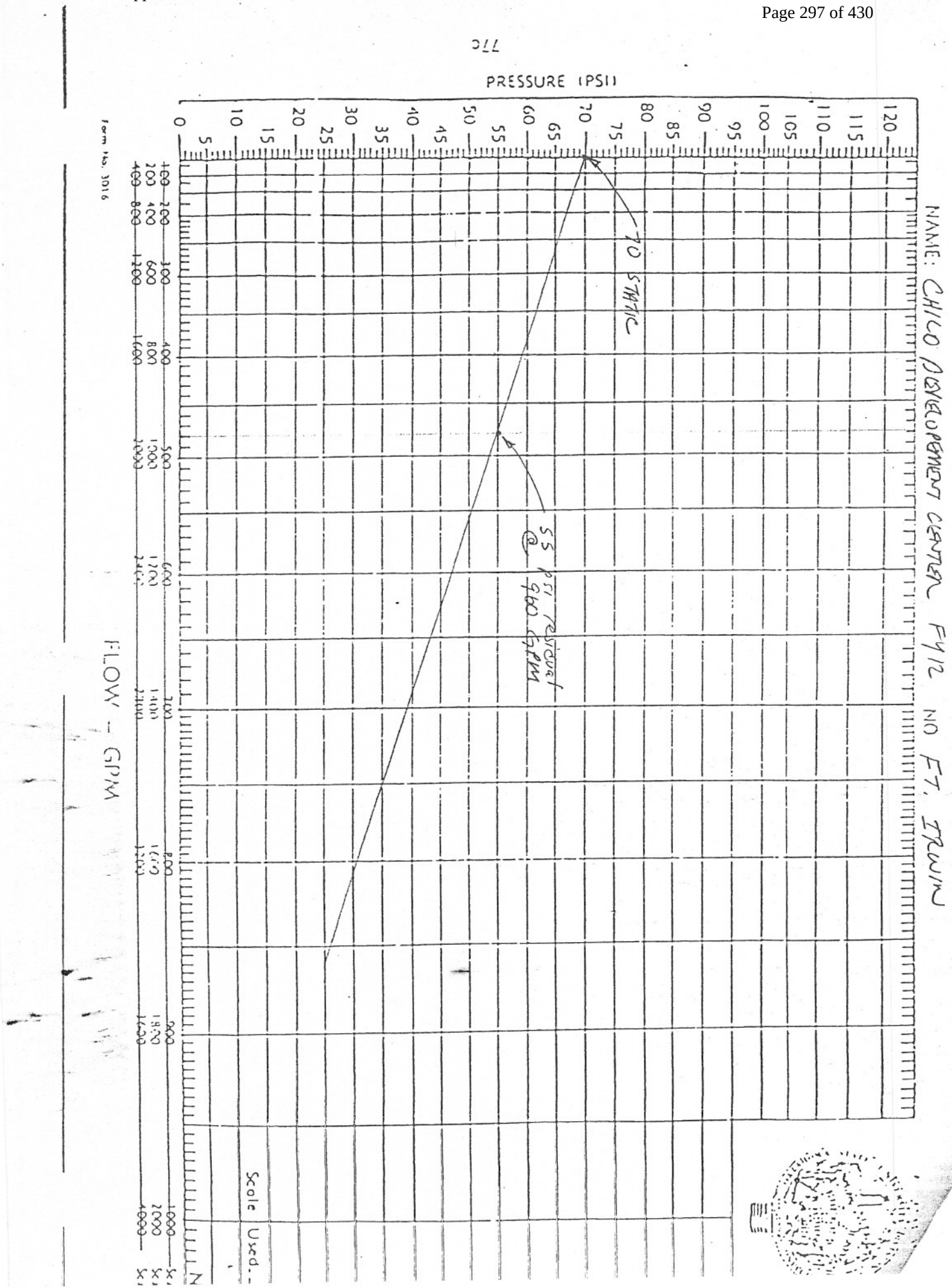
Sketch of location:



Hydrant flow test checklist (per NFPA 291)

	Conduct flow test in accordance with NFPA 291 (2007).
	Portable radios to facilitate communications between team members.
	Conduct flow test during a period of ordinary demand.
	Select static/residual hydrant between hydrant being flowed and the large mains.
	Discharge sufficient flow to cause 25% drop in residual pressure OR flow maximum demand.
	Static/residual gage should have 200 psig range, liquid filled, 1 psig graduations.
	Pitot gage should have 50-60 psig range, liquid filled, 1 psig graduations.
	All gages should be calibrated at least every 12 months, or more frequently depending on use.
	Flow table on this form is for 2.5" diameter outlet (a dollar bill is 2.6" wide) *.
	* Correction factors for outlet diameters less than 2.5" ($d^2/2.5^2$) [2.25" = 0.81] [2.0" =0.64] [1.75"=0.49].
	Pitot tube held 1/2 outlet diameter away from outlet in center of stream.
	Pitot readings of less than 10 psig and more than 30 psig should be avoided, if possible.

Form updated 2/20/2007 by Scott L.Barmann - for free electronic copies call (916) 557-7387


NAME: CHICO DEVELOPMENT CENTER FY12 NO FT. IRWIN
PRESSURE (PSI)
70 STATIC
55 @ 960 GPM
FLOW - GPM
Scale Used

RECORD OF ENVIRONMENTAL CONSIDERATION
REC FY08-57

To: Garrison Commander
From: DPW ENVIRONMENTAL
Title: Child Development Center (CDC) Facility Construction
Anticipated Date and Duration of Action: 120 Days
Description of Proposed Action: USACE (POC Randi Elder) seeks to construct a new facility at Barstow & Outer Loop Roads; new CDC facility.

The proposed action is covered by the determination checked below:

___ 1. Is adequately covered in an existing ___ EA ___ EIS entitled and dated: ____

_X__ 2. Is categorically excluded under the provisions of CX _f1__ 32 CFR 651 (March 29, 2002), Appendix B, (and no extraordinary circumstances exist as defined in 32 CFR 651.29 (b));

f1 = Real Estate Activities: Grants or acquisitions of leases, permits…Including property for special purpose/use…

___ However, due to special circumstances (described below) further documentation is required.
Description of special circumstances: _____

___ 3. Is a bona fide emergency situation and HQ FORSCOM has been notified:

Person Notified: _____
Date of Notification: _____

___ 4. Is exempt from NEPA requirements under the provisions of (cite superseding Federal law other than security classification): _____

Date 8/6/08

Marco Garcia
QinetiQ North America
NEPA Coordinator
Directorate of Public Works
Environmental Division

Date 8/6/08

Muhammad A. Bari
Chief, Environmental Division
Directorate of Public Works

APPENDIX F
Photos of Surrounding Buildings

Not Used

APPENDIX G
GIS Data

Not Used

APPENDIX H
Exterior Signage

Not Used

APPENDIX B
PLANT LISTS AND SOURCES

The following lists are provided:

- To encourage aesthetic consistency in landscaping throughout the post.
- To provide assistance in plant selection for landscape architects and nonprofessional designers who are not experienced in the landscape use of desert plants.
- To encourage the use of plants appropriate to the Fort Irwin environments, and particularly plants with low water requirements.

The lists are intended only as guidelines and are not meant to be exclusive. They are not meant to discourage the imaginative or experimental use of other plants, or to prevent designers from using other plants from their usual palettes, provided that the use of these plants is consistent with the intent of the landscape guidelines. The lists should be modified as experience is gained at the post in desert landscaping. Modifications, however, should be made only with the advice of landscape designers or horticulturalists familiar with desert plants and with the Fort Irwin environment.

Abbreviations and Keys

Type	Type of Plant:
A	Annual
G	Ground Cover
P	Perennial
S	Shrub
T	Tree
V	Vine
g	Grass
s	Desert Scrub Plant
C	Cactus, succulent or similar desert specimen plant

Nty	Native to:
A	Arizona
T	Texas
X	Mexico
a	Alkali Sink
c	Creosote
f	Ft. Irwin
C	Chihuahua Desert
J	Joshua Tree
M	Mojave Desert
S	Sonoran Desert
s	Shadscale Scrub
w	Desert Wash or riparian

E/D

D	Deciduous
DD	Drought Deciduous
E	Evergreen
SD	Semi deciduous

Comments: See notes, following plant lists

Desert Landscaping

Includes only plants with low water requirements and appropriate character for desert landscaping. Plants from riparian zones in the desert (river bottom areas along the Mojave and Colorado Rivers), such as cottonwoods and sycamores, are not included on this list. Some of these plants can be used satisfactorily in traditional landscapes if grouped with plants that have low water requirements.

Recommended for first consideration:

	Type	E/D	Nty	Common Name	Comments
Acacia fornesiana	T	D		sweet acacia	
Acacia constricta	TS	D	S	mescat acacia	
A. greggii	S	D	SCMw	catclaw acacia	
Atriplex hymenelytra	Ss	D	Mfca	desert holly	
Caesalpinia galleria	S	D	S	yellow bird of paradise	(8)
Cercidium floridum	T	D		blue palo verde	(7)
Chilopsis linearis	TS	D	Mw	desert willow	(7) (13)
C. l. arcuata	TS	D	Mw	western desert willow	(7)
Chrysothamnus nauseosus	Ss	DD		rubber rabbitbrush	
Cowania mexicana Stansbur.	S	E	Mj	cliff rose	
Dasylirion wheeleri	P	D	S	desert spoon, sotol	
Ferocactus wislizenni	C	-		fishhook barrel cactus	
Fouquieria splendens	C	DD	SC	ocotillo	
Haplopappus Laricifollus	S	E	SCMc	turpentine bush	
Hesperaloe	P	E	TX	red yucca	
Larrea tridentata	Ss	DD	SMtc	creosote brush	
Leucophyllum Frutescens	S	E	TX	ceniza, Texas sage	
Mammillaria compressa	CG	-			
Pennisetum setaceum ‘Cupreum’	P	E	Afr.	purple fountain grass	
Prosopis alba	T	E		Argentine mesquite	
P. chilensis	T	D		Chilean mesquite	
P. j. glandulosa	T	D	T	Texas, honey mesquite	
P. j. torreyana	T	D	Mw	western honey mesquite	(13)
Salvia dorii	S	E	Mj	blue sage, purple sage	

Other plants recommended for possible use:

	Type	E/D	Nty	Common Name	Comments
S. greggii	S	D		Autumn sage	
Yucca aloifolia	C	E	S	dagger plant	
Y. elata	C	E	SC	soaptree yucca	
Anisacanthus thurberi	S	SD	ATX	desert honeysuckle	
Artemisia schmidtiana	P			angel’s hair	

	Type	E/D	Nty	Common Name	Comments
A. tridentate	s	E		Great Basin sagebrush	
Atriplex canescens	Ss	E	Mfca	four-wing saltbush	
A. lentiformis	s	SD		quail bush	
Calliandra eriophylla	S	E	S	fairy duster	
Cassia wislizenni	S	D	SC	shrubby senna	
Cercidium microphyllum	T	D	S	littleleaf palo verde	
Encelia farinose	S	E	Mfcs	brittlebush, incienso	
Fallugia paradoxa	S	D		Apache plume	
Nicotiana glauca	S	E		tree tobacco	
Pennisetum setaceum	P	E		fountain grass	
Pluchea sericea	S	E	Mw	arrow weed	
Prosopis juliflora velutina	T	D		velvet mesquite	
P. pubscens	T	D	Mw	screwbean mesquite	
Yucca brevifolia	C	E	Mj	Joshua tree	
Y. whipplei	C	E		Spanish Bayonet	

The following plants are acceptable under certain conditions:

Baccharis sarothroides	S	DD	S	desert broom	(9)
Caesalpinia pulcherrima	S	D	X	red bird of paradise	(2, 8, 10)
Hymenociea salsola	S		Mfwc	cheesebush	

Exotics Useful in Combination with Desert Plants

Recommended for first consideration:

	Type	E/D	Nty	Common Name	Comments
Albizia julibrissin	T	D		silk tree	
Baccharis Pilularis	G	E		coyote brush	(14)
Elaeagnus angustifolia	T	D		Russian olive	
E. rodantha	S	E		rose malee	
Gazania rigens leucoleana	G	E		trailing gazania	
Oenothera berlandii (O. speciosa childsii)	P	E		Mexican primrose	
Rosmarinus officinalis	GS	E		rosemary	
Santolina Chamaecyparissus	G	E		lavenue cotton	
S. virens	G	E		green santolina	
Verbena peruviana	GP	E		Peruvian verbena	

Other plants recommended for possible use:

	Type	E/D	Common Name	Comments
Baileya multiradiata	P	SD	desert baileya	
Celtis pallida	ST	D	desert hackberry	
C. reticulate	T	D	western hackberry	
Centaurea cineraria	P	E	dusty miller	
C. gymnocarpa	P	E	velvet centaurea	
Fremontodendron 'Cal. Glory'	ST	E		
F. californicum	ST	E	flannel bush	
F. mexicanum	ST	E	southern flannel bush	
Gleditsia triacanthos inerm	T	D	honey locust	
Junieperus scopulorum	T	E		
'Tolleson' Weeping	T	T	Tolleson's weeping juniper	
Quercus suber	T	E	cork oak	
Senecio cineraria	P		dusty miller	

The following plants are acceptable under certain conditions:

	Type	E/D	Common Name	Comments
Olea europaea	T	E	olive tree	(7) (9)
Pithecellobium flexicaule	T	SD	Texas ebony	(10)
Pittosporum phillyraeoides	VT	E	willow pittoporum	(10)

Exotics for Traditional Landscaping

These plants should generally be grouped in areas where strong landscape effect is most desirable: In areas of high visibility, around key buildings, and particularly in courtyard and transition spaces sheltered by buildings. Some of these plants, if used carefully, can be effective in desert landscapes.

Recommended for first consideration:

	Type	E/D	Common Name	Comments
Baccharis pilularis	G	E	coyote brush	
Campsis radicans	V	D	trumpet creeper	(14)
Fraxinus velutina	T	D	Arizona ash	(14)
F. v. 'Modesto'	T	D	Modesto Ash	(14)
F. v. 'Rio Grande'	T	D	fantex ash (drk grn)	(14)
Gazania rigens leucoleana	G	E	trailing gazania	(14)

	Type	E/D	Common Name	Comments
Gelsemium sempervirens	V	E	Carolina jasmine	(14)
Ilex vomitoria & cultivars	ST	E	yaupon	(14)
Ligustrum lucidum	T	E	glossy privet	(8) (14)
Lonicera japonica 'Halliana'	VG	SD	Hall's honeysuckle	(14)
Macfadyena unguis-cati (Doxantha u.-c.)	V	D	Cat's claw	(14)
Myrtus communis & c. 'Compacta'	S	E	myrtle	(14)
M. c. 'Boetica'	S	E	twisted myrtle	(14)
Oenothera beriandii (O. speciosa childsii)	P	E	Mexican evening primrose	(14)
Pinus eldarica	T	E	Mondell Pine	(14)
Pinus densiflora	T	E	Japanese Red Pine	(14)
Pinus halepensis	T	E	Aleppo Pine	(14)
Pyracantha varieties	ST	E	pyrancantha	(14)
Rosmarinus officinalis	G	E	rosemary	(14)
Verbena peruviana	PG	E	Peruvian verbena	(14)

Other plants recommended for possible use:

	Type	E/D	Common Name	Comments
Ajuga reptans	GP		carpet bugle	(14)
Ailanthus altissima	T	D	tree of heaven	(14)
Albizia julibrissin	T	D	silk tree	(14)
Celastrus orbiculatus	V	D	Oriental Bittersweet	(14)
Cerastium Tomentosum	G	E	snow in summer	(14)
Clematis drummondil	V	D	Drummond clematis	(14)
Cotoneaster lacteus	S	E	red clusterberry	(14)
C. buxifolisus (C. glaucophyllus & pannosus)	S	E	silverleaf cotoneast	(14)
Cupressus glabra (arizonica)	T	E	Arizona cypress	(13) (14)
Elaeagnus ebbingei	S	SD	Ebbing silverberry	(14)
E. pungens	S	E	silverberry	(14)
Erigeron speciosus	P	E	fleabane	(14)
Eucalyptus niphophila	T	E	snow gum	(13) (14)
Euonymous japonica	S	E	evergreen euonynous	(14)
Festuca ovina glauca	G	E	blue fescue	(14)
Gleditsia triacanthos inermis	T	D	honey locust	(14)
Helianthemum nummularium	S	E	sunrose	(14)
Heteromeles abutofolia	ST	E	toyon	(14)
Hibiscus siriacus	ST	D	rose of Sharon	(14)

	Type	E/D	Common Name	Comment
Hypericum calycinum	G	E	Aaron's beard	(14)
Jasminum mesnyi	S	E	yellow jasmine	(14)
Juniperus californica	TS	E	California juniper	(14)
J. chinensis 'Blue Vase'	S	E	mint julep juniper	(14)
J. c. 'Mint Julep'	S	E	J. c. 'Torulosa'	(14)
(J. c. 'Kaizuka')	T	E	Hollywood juniper	(14)
J. c. 'Pfitzerana'	S	E	Pfitzer juniper	(14)
J. c. 'P. Compacta'	S	E	compact Pfitzer	(14)
J. c. 'P. Glauca'	S	E	blue Pfitzer	(14)
J. horizontalis	G	E	creeping juniper	(14)
J. h. 'Witonil'	G	E	blue carpet juniper	(14)
J. sabina 'Arcadia'	S	E	Arcadia juniper	(14)
J. s. 'Buffalo'	G	E	buffalo juniper	(14)
J. s. 'Tamarascifolia'	G	E	tamarix juniper	(14)
J. scopulorum 'Tolleson's Weeping'	T	E	Tolleson's weeping juniper	(14)
Koelreuteria paniculata	T	D	goldenrain tree	(14)
Lonicera heckrotti	VS	D	coral honeysuckle	(14)
Nerium oleander	ST	E	oleander	(13) (14)
Parthenocissus tricuspidata	V	D	Boston Ivy	(14)
Photinia fraser	S	E	fraser photinia	(14)
Pistachia atlantica	T	D	Mt Atlas pistache	(14)
P. chinensis	T	D	Chinese pistache	(14)
Platyclaldus oriebtalis 'Aureus Nana'	S	E	dwarf golden arborvitae	
P. o. 'Fruitlandii'	S	E	fruitland arborvitae	
Polygonum aubertii	V	D	silverface vine	
Potentilla fruticosa	SG	D		
Phyla nodiflora	PG	E	lippia	(14)
Punica granatum	ST	E	pomegranate	
Quercus suber	T	E	cork oak	
Syringa persica	S	D	Persian lilac	
Aecidium chamaedry's & 'Prostratum'	G	E	germander	
Vinca major	G	E	periwinkle	
Xylosma congestum	ST	SD	shiny xylosma	
Zizyphus jujuba	T	D	Chinese jujube	

The following plants are acceptable under certain conditions:

	Type	E/D	Common Name	Comments
Abelia grandiflora	S	E	glossy abelia	(12)
Aucuba japonica	S	E	Japanese aucuba	(1)
Buxus microphylia Japonic	S	E	Japanese boxwood	(5) (6)
Cataranthus roseus (Vinca rosea)	G	P	Madagascar Periwinkle	(2)
Cercis Canadensis	T	D	eastern redbud	(1)
Eunymous fortunei	VS	E	wintercreeper	(5, 6)

	Type	E/D	Common Name	Comments
Ficus pumila	V	E	creeping fig	(4)
Hedera helix	G	E	English Ivy	(5, 6)
Ilex cornuta burfordii	S	E	Burford holly	(5)
Leptospermum laevigatum	T	E	Australian tea tree	(12)
Lugustrum japonicum	S	E	Japanese privet	(5, 12)
Olea europaea	T	E	olive tree	(7, 9)
Photinia serrulata	S	E	Chinese photinia	(12)
Phitecellobium flexicaule	T	SD	Texas ebony	(10)
Pittosporum phillyraeoides	T	E	willow pitt	(10)
Trachelospermum asiaticum	VG	E	Asiatic jasmine	(5)
Wisteria floribunda	V	D	Japanese wisteria poison	(8, 11, 12)
W. sinensis	V	D	Chinese wisteria	(12)

NOTES:

1 Needs shade and protection from wind
2 May look bad in winter
3 Use male trees. Females very messy
4 Will not climb on hot western or southern wall. Best on warm wall in winter; may be damaged by cold otherwise
5 May sunburn; best with some afternoon shade
6 Best in improved soil
7 Litter
8 Poison
9 Causes hay fever. Bad litter
10 Tender. Protected locations only
11 Slightly hardier than W. sinensis. Longer blooming period
12 Subject to chlorosis alkaline soils
13 Used as windbreaker zone
14 Courtyards/transition zones

Plant and Seed Sources

Seed Companies

Clyde Robin Seed Co.
P.O. Box 2855
Castro Valley, CA 94546
(415) 581-3467
Excellent catalog with a lot
Of useful information

Native Plants, Inc
9180 S. Wasatch Blvd.
Salt Lake City, UT 84092
(801) 582-0144 / 943-3532
Mostly seeds from Great Basin,
but will gather seed from Mojave
on request

Peckoff Brother Seed Co.
Route 5, Box 215R
Escondido, CA
(714) 744 3120
Catalog available

S & S Seed Co.
910 Alphonse
Santa Barbara, CA 93103
(805) 965 5243
Catalog available

Theodore Payne Foundation
10459 Tuxford Street
Sun Valley, CA 91352
(818) 768-1802

Nurseries

Arid Zone Farms
P.O. Box 58
La Quinta, CA92253
(619) 564-3574

Desert Tree Farms
20039 N. Cave Creek Rd.
Phoenix, AZ 85024
(602) 992-0402

Living Desert Reserve
47900 Portola
Palm Desert, CA 92260
(619) 346-5694

Mockingbird Nursery
1645 Jackson Street
Riverside, CA 92504
(714) 780-3571

Mountain State Nursery
P.O. Box 33982
Phoenix, AZ85067
(602) 247-8509
Good selection of plants when contacted

Native Plants, Inc.
(See seed Companies)
Good selection. Emphasis on Great Basin plants

Theodore Payne Foundation
(See Seed Companies)

Tree of Life Nursery
P.O. Box 736
San Juan Capistrano, CA 92693
(714) 496-4124

V & P Nursery
629 N. Roosevelt Road
Mesa, AZ 85281
(602) 969-7255

US Army Corps of Engineers

Huntsville Center

BARSTOW RD
CHILD DEVELOPMENT CENTER
FORT IRWIN, CA

SOLICITATION NO.:

INDEX OF DRAWINGS

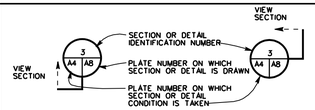
PLATE NO.	SHEET NO.	DGN FILE	TITLE
G-001	01	G-001.dgn	COVER SHEET, INDEX TO DRAWINGS
G-101	02	site.dgn	LOC/VIC & HAUL ROUTE MAP
V1.00	03	FinalSavedin2004.dwg	TOPOGRAPHIC SURVEY INDEX
V1.01	04	FinalSavedin2004.dwg	TOPOGRAPHIC SURVEY
V1.02	05	FinalSavedin2004.dwg	TOPOGRAPHIC SURVEY
V1.03	06	FinalSavedin2004.dwg	TOPOGRAPHIC SURVEY
V1.04	07	FinalSavedin2004.dwg	TOPOGRAPHIC SURVEY
C-101	08	site.dgn	CONCEPT SITE PLAN
CS-101	09	site.dgn	UTILITY PLAN
A-101	10	irwin med ...dgn	FLOOR PLAN

PLATE NO.	SHEET NO.	DGN FILE	TITLE

STANDARD ABBREVIATIONS

A	
A.C.	AIR CONDITIONED
A.D.	AREA DRAIN
A.H.U.	AIR HANDLING UNIT
ALT.	ALTERNATE
ALUM.	ALUMINUM
AMP., A.	AMPERES
A.O.	ACCESS OPENING
APPROX.	APPROXIMATELY
ARCH.	ARCHITECTURAL
A.T.	ASPHALT TILE
A.T.C.	ACOUSTIC TILE CEILING
B	
BAL.	BALANCE
BD.	BOARD
BLDG.	BUILDING
BLK.	BLANK
BM.	BEAM
BOT.	BOTTOM
BRG.	BEARING
B.T.U.H.	BRITISH THERMO UNIT/HOUR
C	
CAB.	CABINET
CAP.	CAPACITY
C/B	CIRCUIT BREAKER
C.D.	CEILING DIFFUSER
CEM.	CEMENT
CER.	CERAMIC
C.F.M.	CUBIC FEET/MINUTE
CKT.	CIRCUIT
℄	CENTER LINE
CEIL.	CEILING
CL.	CLOSET
C.M.U.	CONCRETE MASONRY UNIT
C.O.	CLEAN OUT
COL.	COLUMN
CONC.	CONCRETE
COND.	CONDENSATE
CONN.	CONNECTION
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
CONTR. JT.	CONTRACTION JOINT
C.S.C.	COLOR SYMBOL CODE
C.T.	CERAMIC TILE
C.T.B.	CERAMIC TILE BASE
C. TO C.	CENTER TO CENTER
D	
DET.	DETAIL
DIA.	DIAMETER
DIFF.	DIFFUSER
DIM.	DIMENSION
DISC.	DISCONNECT
D.J.	DUMMY JOINT
DN.	DOWN
DR.	DRAIN
D.S.	DOWN SPOUT
DWG.(S)	DRAWING(S)
E	
EA.	EACH
ELEC.	ELECTRIC
EQUIP.	EQUIPMENT
E.W.C.	ELECTRIC WATER COOLER
EXH.	EXHAUST
EXP. JT.	EXPANSION JOINT
EXT.	EXTERIOR
EXIST.	EXISTING
F	
F.A.	FIRE ALARM
F.C.	FLEXIBLE CONNECTION
F.D.	FLOOR DRAIN
F.E.C.	FIRE EXTINGUISHER CABINET
FIN.	FINISH
FL.	FLOOR
FT.	FOOT, FEET
FTG.	FOOTING
G	
GA.	GAGE
GAL.	GALLON
GALV.	GALVANIZED
G.F.E.	GOVERNMENT FURNISHED EQUIPMENT
GL.	GLASS
GND.	GROUND
GOV'T	GOVERNMENT
G.P.H.	GALLONS/HOUR
G.P.M.	GALLONS/MINUTE
GR.	GRILLE
G.W.B.	GYPSUM WALL BOARD
H	
H.	HIGH
H.B.	HOSE BIBB
H.C.	HOLLOW CORE
HT.	HEIGHT
H.M.	HOLLOW METAL
H.P.	HORSE POWER
HR.	HOUR
HTG.	HEATING
HTR.	HEATER
H.&V.	HEATING AND VENTILATING
HW.	HARDWARE
HYD.	HYDRANT
I	
I.D.	INSIDE DIAMETER
I.E.	INVERT ELEVATION
IN.	INCHES
INCAND.	INCANDESCENT
INSUL.	INSULATION
INT.	INTERIOR
J	
J.B.	JUNCTION BOX
JCT.	JUNCTION
JT.	JOINT
K	
KVA	KILOVOLT AMPERE
L	
LB.,*	POUND
L.G.	LONG
L.P.	LIGHTING PANEL
LTG.	LIGHTING
M	
M.	MOTOR
MAINT.	MAINTENANCE
MAX.	MAXIMUM
M.D.P.	MAIN DISTRIBUTION PANEL
MECH.	MECHANICAL
MTL.	METAL
MIN.	MINIMUM
MISC.	MISCELLANEOUS
M.O.	MASONRY OPENING
M.T.	METAL THRESHOLD
MTD.	MOUNTED
MTG.	MOUNTING
M.V.	MECHANICAL VENTILATION
M.G.T.	MATT GLAZE TILE
N	
N.A.	NOT APPLICABLE
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
O	
O.A.	OUTDOOR AIR
OL.	OVERLOAD
OPNG.	OPENING
OPP.	OPPOSITE
O.S.D.	OPEN SIGHT DRAIN
P	
P.	PAPER
PART.	PARTITION
PER.	PERIMETER
℗, PL.	PLATE
PLBG.	PLUMBING
PLYW'D	PLYWOOD
PNL.	PANEL
PRESS.	PRESSURE
PSF	POUNDS/SQUARE FOOT
PSI	POUNDS/SQUARE INCH
PSIG	POUNDS/SQUARE INCH GAGE
PT.	POINT
PTD.	PAINTED
Q	
QTR.	QUARTER
QUAN.	QUANTITY
R	
R.	RISER
R.A.	RETURN AIR
RAD.	RADIUS
RD.	ROUND
REG.	REGISTER
REINF.	REINFORCING
REQ'D.	REQUIRED
RET.	RETURN
R.G.	RETURN GRILLE
RM.	ROOM
R.P.M.	REVOLUTION/MINUTE
S	
S.	SUPPLY
S.A.	SUPPLY AIR
SCH.	SCHEDULE
SECT.	SECTION
SERV.	SERVICE
SHT.	SHEET
S.J.	SLIP JOINT
SPEC.	SPECIFICATIONS
SQ. FT.	SQUARE FEET
ST.	STEEL
STOR.	STORAGE
STRUC.	STRUCTURAL
SUSP.	SUSPENDED
SW.	SWITCH
T	
T.	TOILET
TEL.	TELEPHONE
TEMP.	TEMPERATURE
THK.	THICKNESS
THD.	THRESHOLD
TOIL.	TOILET
TYP.	TYPICAL
V	
V.	VOLT
V.A.T.	VINYL ASBESTOS TILE
VENT.	VENTILATION
VERT.	VERTICAL
VTR	VENT THRU ROOF
W	
W.	WATT
W/	WITH
WC	WAINSCOATING
WD.	WOOD
W.D.	WINDOW DIMENSION
WF	WIDE FLANGE
W.G.	WATER GAGE
WP.	WEATHERPROOF
WTR.	WATER
W.W.F.	WELDED WIRE FABRIC

SECTION SYMBOLS



SYMBOL WHERE SECTION IS TAKEN

SECTION/DETAIL 3 / A4 / A8

TITLE WHERE SECTION IS DRAWN

ELEVATION SYMBOL

MATERIAL INDICATIONS

- EARTH (ORIGINAL GRADE)
- EARTH (COMPACTED FILL)
- GRAVEL
- CONCRETE
- MORTAR - CEMENT - PLASTER - STUCCO
- CONCRETE MASONRY UNITS (C.M.U., SMALL\ SCALE - PLAN)
- CONCRETE MASONRY UNITS (C.M.U., LARGE SCALE - SECTION)
- CONCRETE MASONRY UNITS OR HOLLOW TILE (SMALL SCALE - SECTION)
- METAL (ELEVATION)
- STEEL (CROSS SECTION)
- INSULATION (RIGID)
- INSULATION (LOOSE OR BATT)
- BRICK
- WOOD (BLOCKING)
- WOOD (FINISH)

US ARMY CORPS OF ENGINEERS

BY	DATE	DESCRIPTION

DESIGNED BY: DWG/SPECS
DRAWN BY: KP
CKD BY: REB
SUBMITTED BY:
DATE: 07/07/2008
SOLICITATION NO.: SOLICITATION NO.:
PROJECT NO.: PN65334
CATEGORY CODE: 740-17-01
FILE NAME: G-001.DGN
PLOT SCALE: 1:1
PLOT DATE: 12/17/2008
SIZE: ANSI D

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
HUNTSVILLE CENTER

Barstow Rd
Child Development Center
Fort Irwin, CA

COVER SHEET
INDEX TO DRAWINGS

PLATE REFERENCE NUMBER
G-001
SHEET 1 OF 10

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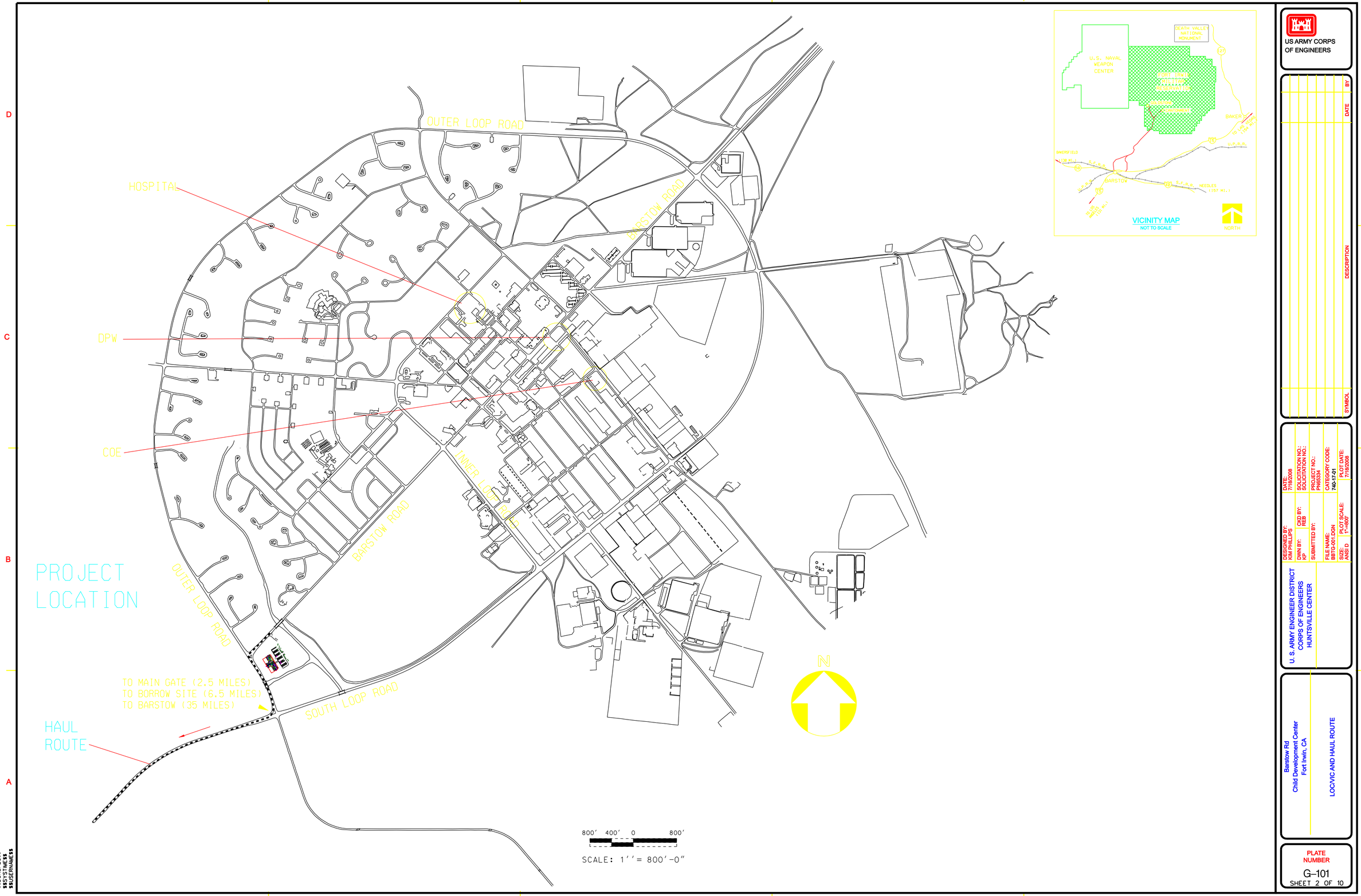
$$SYSTIME$$
$$USERNAME$$

$$DGNSPEC$$
$$SYSTIME$$
$$USERNAME$$



US ARMY CORPS OF ENGINEERS

SYMBOL	DESCRIPTION	DATE	BY

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
HUNTSVILLE CENTER

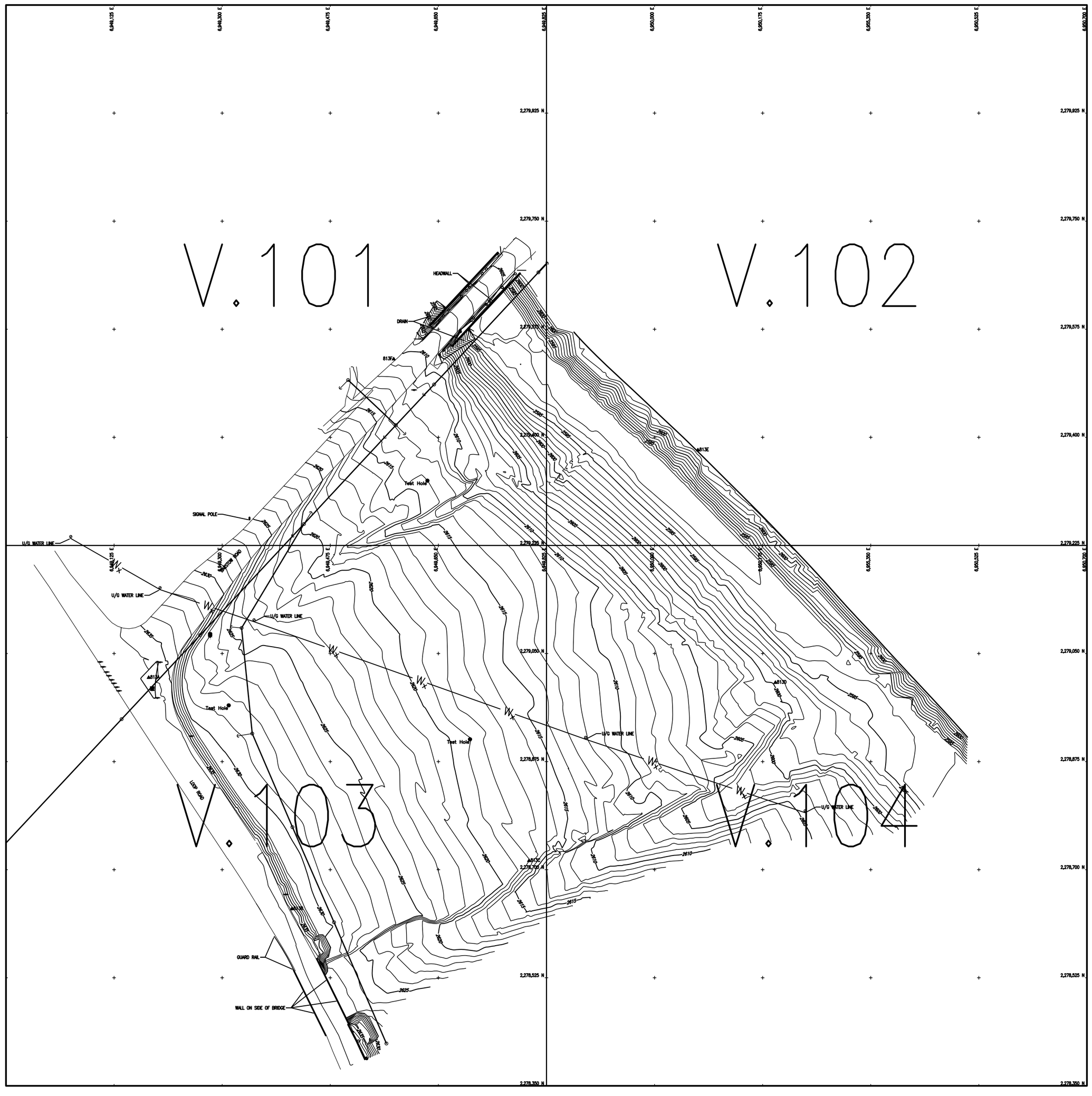
DESIGNED BY: KIM PHILLIPS
DWN BY: KP
CKD BY: REB
SUBMITTED BY:
FILE NAME: BBTG-001.DGN
SIZE: ANSI D
PLOT SCALE: 1"=800'
DATE: 7/18/2008
SOLICITATION NO.:
SOLICITATION NO.:
PROJECT NO.: PN65334
CATEGORY CODE: 740-17-01
PLOT DATE: 7/18/2008

Barstow Rd
Child Development Center
Fort Irwin, CA

LOC/VIC AND HAUL ROUTE

PLATE NUMBER
G-101
SHEET 2 OF 10

$$DGNSPEC$$
$$SYSTIME$$
$$USERNAME$$



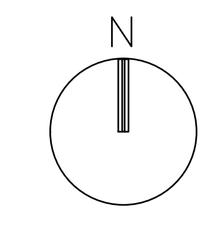
SURVEY NOTES

1. GRID COORDINATES ARE IN FEET AND REFER TO THE CALIFORNIA STATE COORDINATE SYSTEM ZONE 5, NAD 83, AND ARE BASED ON GPS BASE STATION 238-13, 31-4, R5, 83+69.93, HV16.4, KEN2 & CI105.
2. ELEVATIONS ARE IN FEET AND REFER TO NGVD 1929, AND ARE BASED ON GPS BASE STATION 238-13.
3. TOPOGRAPHY BY GROUND SURVEY METHODS. FIELD SURVEY DATE FEBRUARY 2008.
4. ORIGINAL SURVEY SHOWN ON DRAWING FILE NO. 238-25-508.
5. COMBINED FACTOR IS 0.999842939 FROM GRID TO SURFACE.

CONTROL TABULATION

STATION	NORTH	EAST	MON EL	GR ELEV	DESCRIPTION
813A	2,279,010.98	6,949,181.14	2,636.65	_____	PK W/USACE WASHER
813B	2,278,636.46	6,949,412.97	2,636.67	_____	REBAR & USCE ALUMINUM CAP
813C	2,278,714.42	6,949,796.81	2,618.14	_____	REBAR & USCE ALUMINUM CAP
813D	2,279,002.91	6,950,195.63	2,599.88	_____	REBAR & USCE ALUMINUM CAP
813E	2,279,379.35	6,950,070.13	2,603.77	_____	REBAR & USCE ALUMINUM CAP
813F	2,279,526.71	6,949,577.69	2,610.58	_____	REBAR & USCE ALUMINUM CAP

	LIGHT POLE
	SIGN
MW	MONITORING WELL
S	SANITARY MANHOLE
CO	CLEANOUT
TEXT	VALVE - G=GAS - W=WATER
	TREE CONIFEROUS
G	GAS METER
C	COMMUNICATION VAULT
E	ELECTRIC VAULT
	ELECTRIC PANEL
	SIGN
	GUY WIRE
MH	MANHOLE
N	NORTH
S	SOUTH
E	EAST
W	WEST



SCALE: 1"=100'-0"

100' 0 100'

US Army Corps of Engineers
Sacramento District

Rev.	Date	Description	Approved

Mapping Unit (S/S) No.: 0813

Date:

Design file no: 238-25-508

Drawing Code:

File name: 08N-100xxx.dwg
Plot date:
Dwg scale: 1" = 100' - 0"

Designed by: Ken Reppoldo
Dwn by: R. Stewardson
Spec No.: 1648
Reviewed by: J. Meres
Submitted by: Thomas X. Sobolewski
RS & Mapping Section

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 'J' STREET
SACRAMENTO, CA 95814-2922

FT IRWIN CALIFORNIA

CHILD DEVELPOMENT CENTER II
PN 150176

INDEX

Sheet reference number:
V1.00

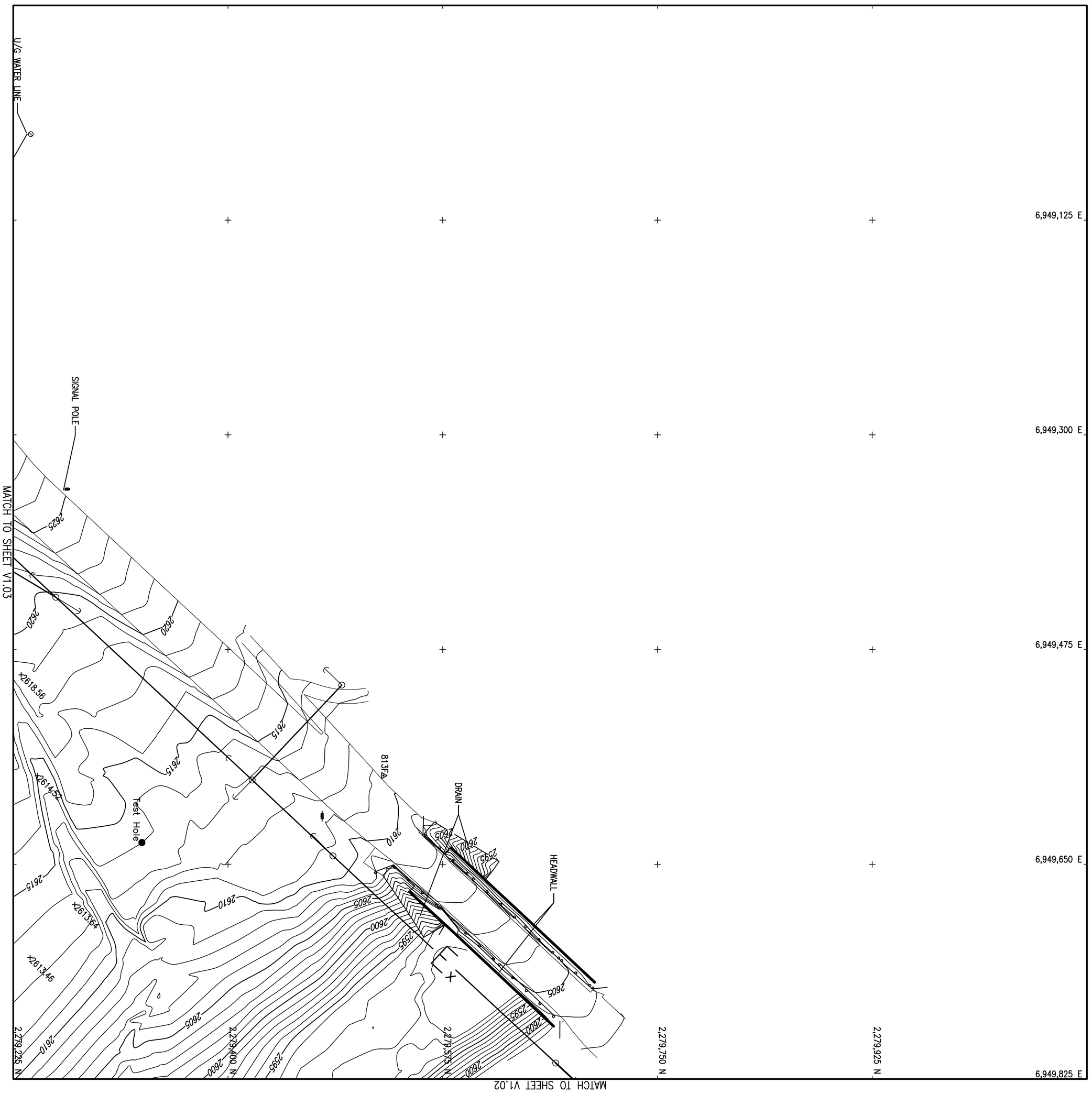
Mapping Unit Sheet No.: 1 of 5

Reference - Mapping Unit file no.: 238-13-509

Section: Appendix J Drawings

Border Revised 08/20/04, CDESIGN02.DWG

V1.00
20090-00-00-001
Page 314 of 430



SURVEY NOTES

1. GRID COORDINATES ARE IN FEET AND REFER TO THE CALIFORNIA STATE COORDINATE SYSTEM ZONE 5, NAD 83, AND ARE BASED ON GPS BASE STATION 238-13, 31-4, R5, 83+69.93, HV16.4, KEN2 & CI105.
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5. COMBINED FACTOR IS 0.999842939 FROM GRID TO SURFACE.

CONTROL TABULATION

STATION	NORTH	EAST	MON EL	GR ELEV	DESCRIPTION
813F	2,279,526.71	6,949,577.69	2,610.58	———	REBAR & USCE ALUMINUM CAP

LP	LIGHT POLE
S	SIGN
MW	MONITORING WELL
S	SANITARY MANHOLE
CO	CLEANOUT
TEXT	VALVE - G=GAS - W=WATER
	TREE CONIFEROUS
G	GAS METER
C	COMMUNICATION VAULT
E	ELECTRIC VAULT
	ELECTRIC PANEL
	TREE DECIDUOUS
+	SHRUB DECIDUOUS
MH	MANHOLE
N	NORTH
S	SOUTH
E	EAST
W	WEST

N

SCALE: 1"=50'-0"
50' 0 50'

Sheet reference number: V1.01

FT IRWIN CALIFORNIA
CHILD DEVELPOMENT CENTER II
PN 150176

TOPOGRAPHY

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

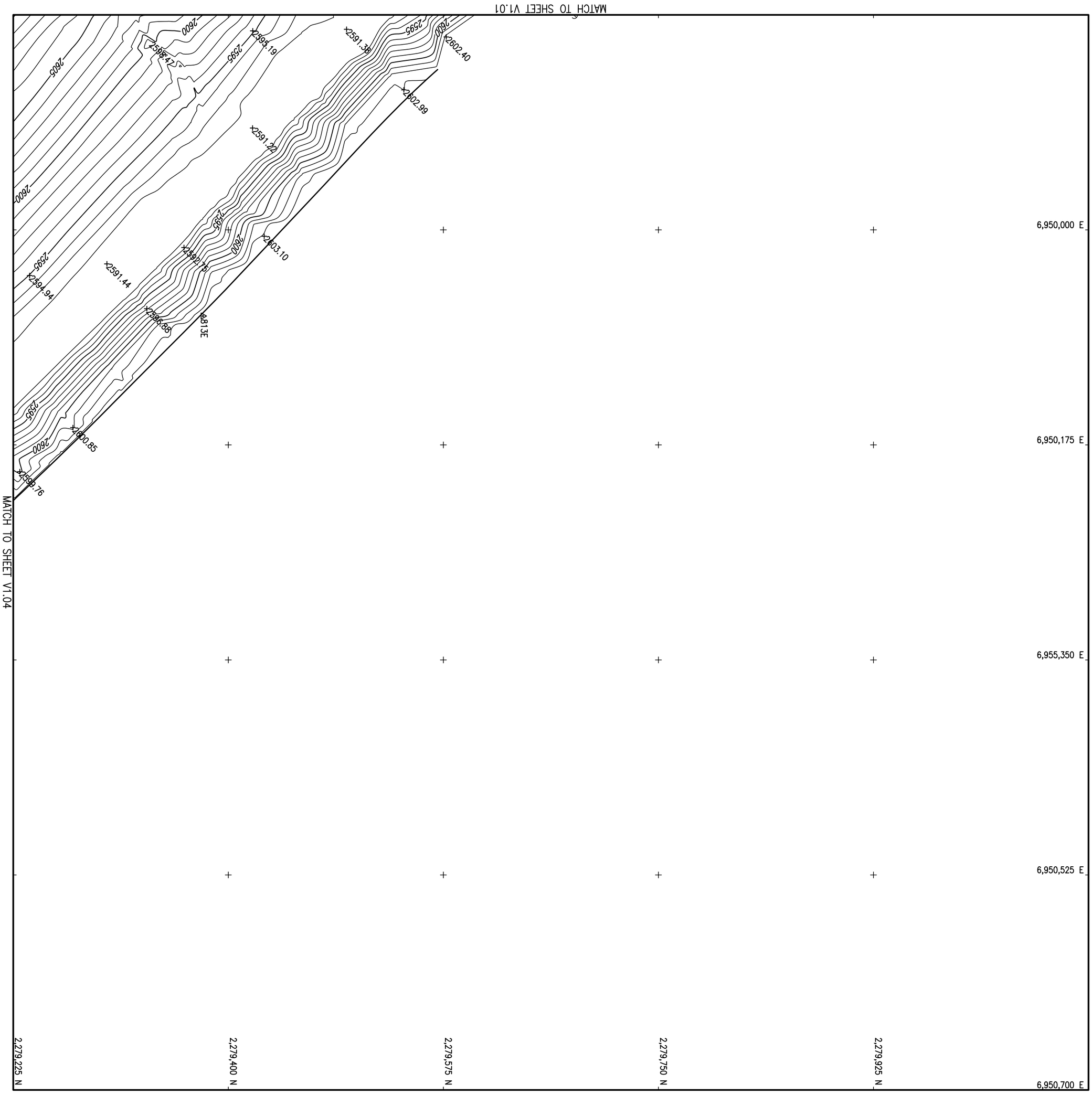
SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 'J' STREET
SACRAMENTO, CA 95814-2922

Designed by: Ken Regalado		Date:	Rev.
Dwn by: R. Stewardson	Spec No.: 1580	Design file no: 193-25-265	
Reviewed by: J. Meres		Drawing Code:	
Submitted by: Thomas X. Sobolewski, GIS & Mapping Section		File name: I08V-101xxx.dwg Plot date: Dwg scale: 1" = 50' - 0"	

Symbol	Description	Date	Approved

US Army Corps of Engineers
Sacramento District

Reference - Mapping Unit file no.: 238-13-509 | Mapping Unit Sheet No.: 2 of 5 | Mapping Unit (S/S) No.: 0813



SURVEY NOTES

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2. ELEVATIONS ARE IN FEET AND REFER TO NGVD 1929, AND ARE BASED ON GPS BASE STATION 238-13.
3. TOPOGRAPHY BY GROUND SURVEY METHODS. FIELD SURVEY DATE FEBRUARY 2008.
4. ORIGINAL SURVEY SHOWN ON DRAWING FILE NO. 238-25-508.
5. COMBINED FACTOR IS 0.99984293 FROM GRID TO SURFACE.

CONTROL TABULATION

STATION	NORTH	EAST	MON EL	GR ELEV	DESCRIPTION
813E	2,279,379.35	6,950,070.13	2,603.77	———	REBAR & USCE ALUMINUM CAP

LIGHT POLE	
SIGN	
MW	MONITORING WELL
S	SANITARY MANHOLE
CO	CLEANOUT
TEXT	VALVE - G=GAS - W=WATER
	TREE CONIFEROUS
G	GAS METER
C	COMMUNICATION VAULT
E	ELECTRIC VAULT
	ELECTRIC PANEL
	TREE DECIDUOUS
+	SHRUB DECIDUOUS
MH	MANHOLE
N	NORTH
S	SOUTH
E	EAST
W	WEST

N

SCALE: 1"=50'-0"
50' 0 50'

Sheet reference number: V1.02

FT IRWIN CALIFORNIA
CHILD DEVELPOMENT CENTER II
PN 150176

TOPOGRAPHY

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

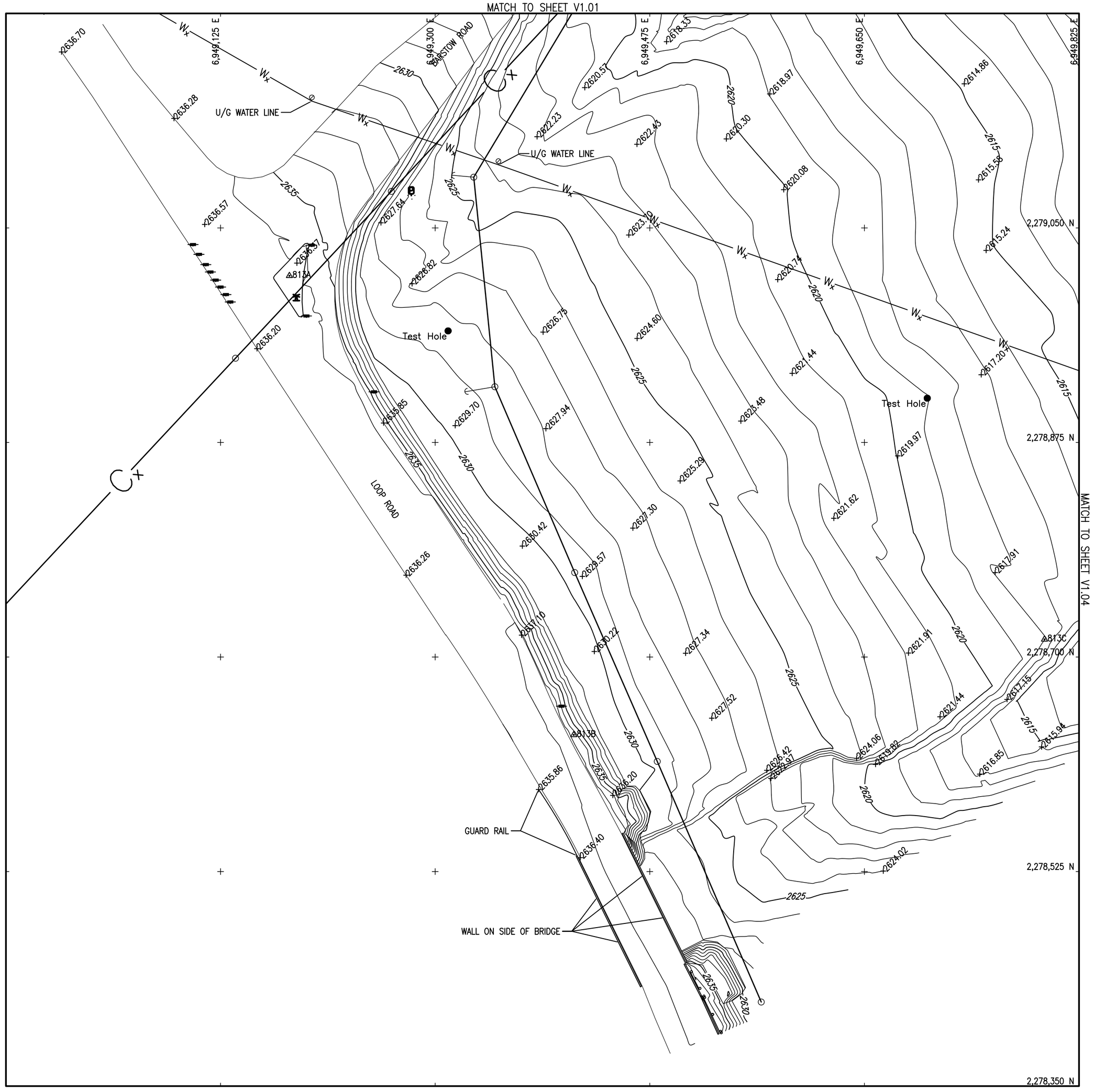
SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 'J' STREET
SACRAMENTO, CA 95814-2922

Designed by: Ken Regalado		Date:	Rev.
Dwn by: R. Stewardson	Spec No.: 1580	Design file no: 193-25-265	
Reviewed by: J. Meres		Drawing Code:	
Submitted by: Thomas X. Sobolewski, GIS & Mapping Section		File name: I08V-102xxx.dwg Plot date: Dwg scale: 1" = 50' - 0"	

Symbol	Description	Date	Approved

US Army Corps of Engineers
Sacramento District

Reference - Mapping Unit file no.: 238-13-509 | Mapping Unit Sheet No.: 3 of 5 | Mapping Unit (S/S) No.: 0813



SURVEY NOTES

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4. ORIGINAL SURVEY SHOWN ON DRAWING FILE NO. 238-25-508.
5. COMBINED FACTOR IS 0.999842939 FROM GRID TO SURFACE.

CONTROL TABULATION

STATION	NORTH	EAST	MON EL	GR ELEV	DESCRIPTION
813F	2,279,526.71	6,949,577.69	2,610.58	———	REBAR & USCE ALUMINUM CAP

	LIGHT POLE
	SIGN
MW	MONITORING WELL
S	SANITARY MANHOLE
CO	CLEANOUT
TEXT	VALVE – G=GAS – W=WATER
	TREE CONIFEROUS
G	GAS METER
C	COMMUNICATION VAULT
E	ELECTRIC VAULT
	ELECTRIC PANEL
	TREE DECIDUOUS
+	SHRUB DECIDUOUS
MH	MANHOLE
N	NORTH
S	SOUTH
E	EAST
W	WEST

N

SCALE: 1"=50'-0"

50' 0 50'

US Army Corps of Engineers
Sacramento District

Symbol	Description	Date	Approved

Designed by: Ken Regalado
Dwn by: R. Stewardson
Spec No.: 1580
Reviewed by: J. Meres
Submitted by: Thomas X. Sobolewski
GIS & Mapping Section
Date:
Rev.
Design file no: 193-25-265
Drawing Code:
File name: I08V-104xxx.dwg
Plot date:
Dwg scale: 1" = 50' - 0"

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 'J' STREET
SACRAMENTO, CA 95814-2922

FT IRWIN CALIFORNIA
CHILD DEVELPOMENT CENTER II
PN 150176
TOPOGRAPHY

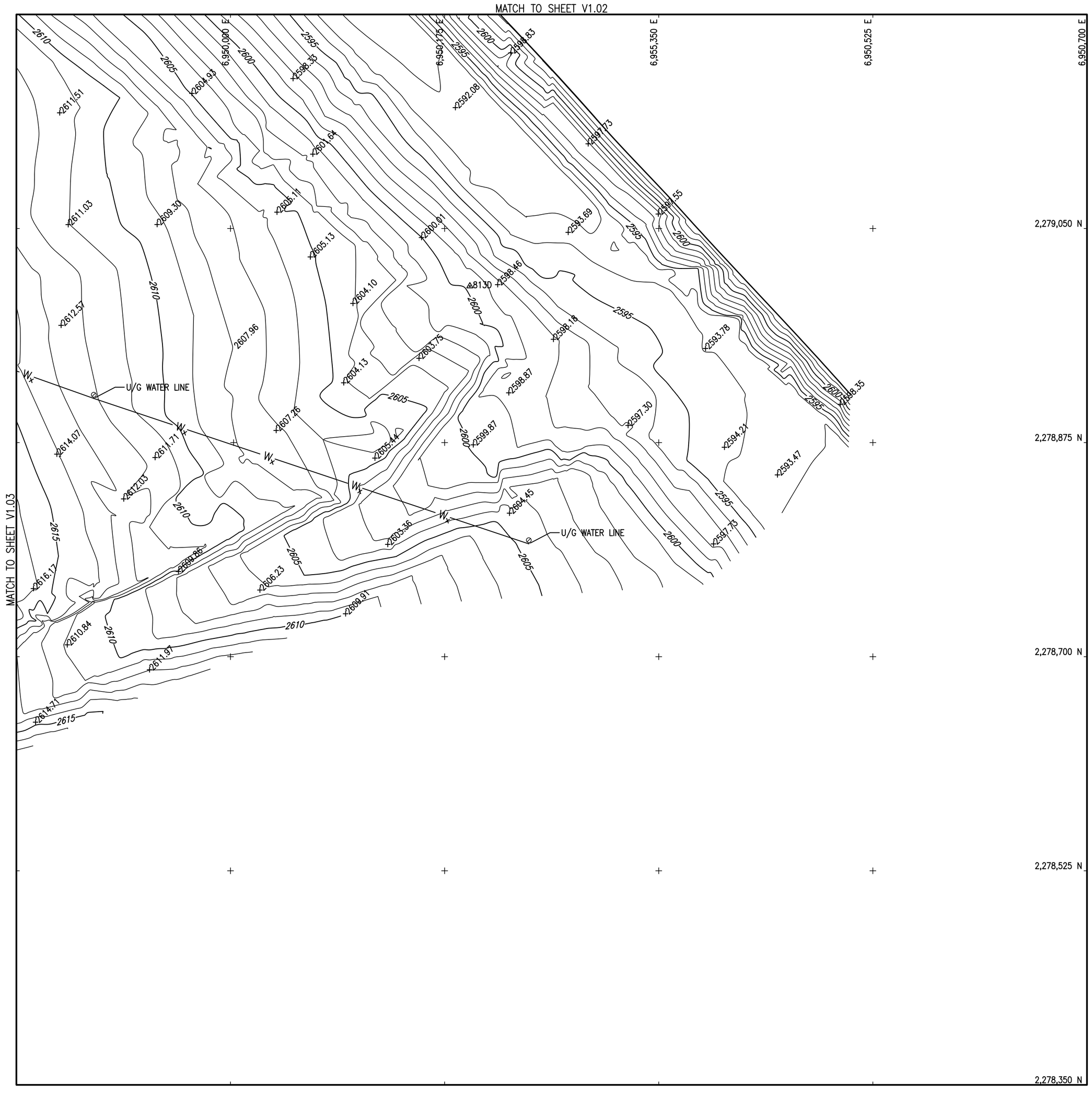
Sheet reference number:
V1.03

Mapping Unit (S/S) No.: 0813

Mapping Unit Sheet No.: 4 of 5

Reference – Mapping Unit file no.: 238-13-509

Border Revised 08/30/04, COESHT02.DWG



SURVEY NOTES

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4. ORIGINAL SURVEY SHOWN ON DRAWING FILE NO. 238-25-508.
5. COMBINED FACTOR IS 0.999842939 FROM GRID TO SURFACE.

CONTROL TABULATION

STATION	NORTH	EAST	MON EL	GR ELEV	DESCRIPTION
813D	2,279,002.91	6,950,195.63	2,599.88	———	REBAR & USCE ALUMINUM CAP

	LIGHT POLE
	SIGN
MW	MONITORING WELL
S	SANITARY MANHOLE
CO	CLEANOUT
TEXT	VALVE - G=GAS - W=WATER
	TREE CONIFEROUS
G	GAS METER
C	COMMUNICATION VAULT
E	ELECTRIC VAULT
	ELECTRIC PANEL
	TREE DECIDUOUS
+	SHRUB DECIDUOUS
MH	MANHOLE
N	NORTH
S	SOUTH
E	EAST
W	WEST

N

SCALE: 1"=50'-0"

50' 0 50'

US Army Corps of Engineers
Sacramento District

Symbol	Description	Date	Approved

Designed by: Ken Regalado
Dwn by: R. Stewardson
Spec No.: 1580
Reviewed by: J. Meres
Submitted by: Thomas X. Sobolewski
GIS & Mapping Section
Date:
Rev.
Design file no: 193-25-265
Drawing Code:
File name: I08V-104xxx.dwg
Plot date:
Dwg scale: 1" = 50' - 0"

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 'J' STREET
SACRAMENTO, CA 95814-2922

FT IRWIN CALIFORNIA
CHILD DEVELOPMENT CENTER II
PN 150176
TOPOGRAPHY

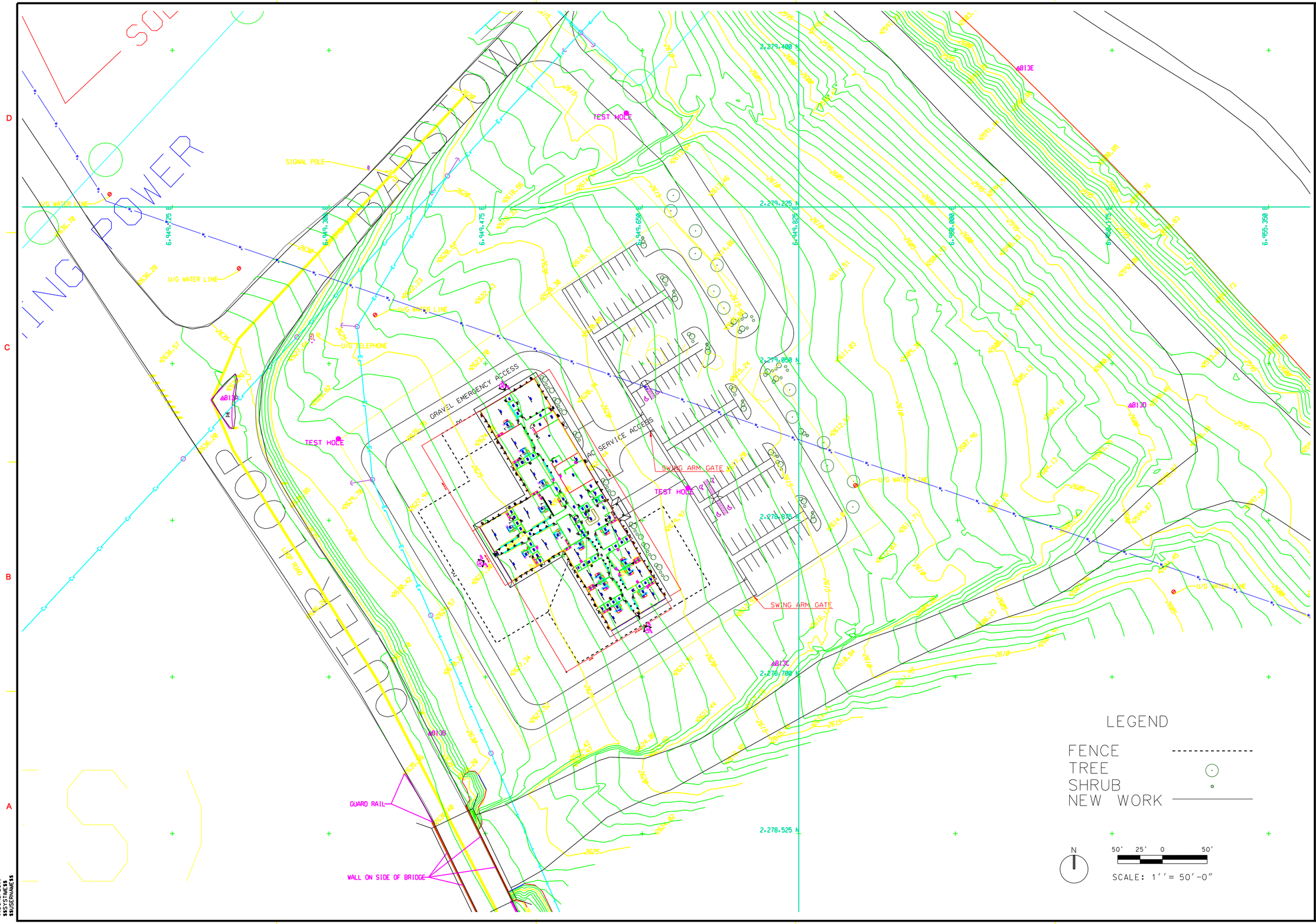
Sheet reference number:
V1.04

Mapping Unit (S/S) No.: 0813

Mapping Unit Sheet No.: 5 of 5

Reference - Mapping Unit file no.: 238-13-509

Border Revised 08/30/04, COESHT02.DWG



US ARMY CORPS OF ENGINEERS

SYMBOL	DESCRIPTION	DATE	BY

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DWN BY: KP
CKD BY:
SUBMITTED BY:
FILE NAME: BBTG-001.DGN
SIZE: ANSI D
PLOT SCALE: 1"=50'
DATE: 7/31/2008
SOLICITATION NO.:
SOLICITATION NO.:
PROJECT NO.: PN65334
CATEGORY CODE: 740-17-01
PLOT DATE: 7/31/2008

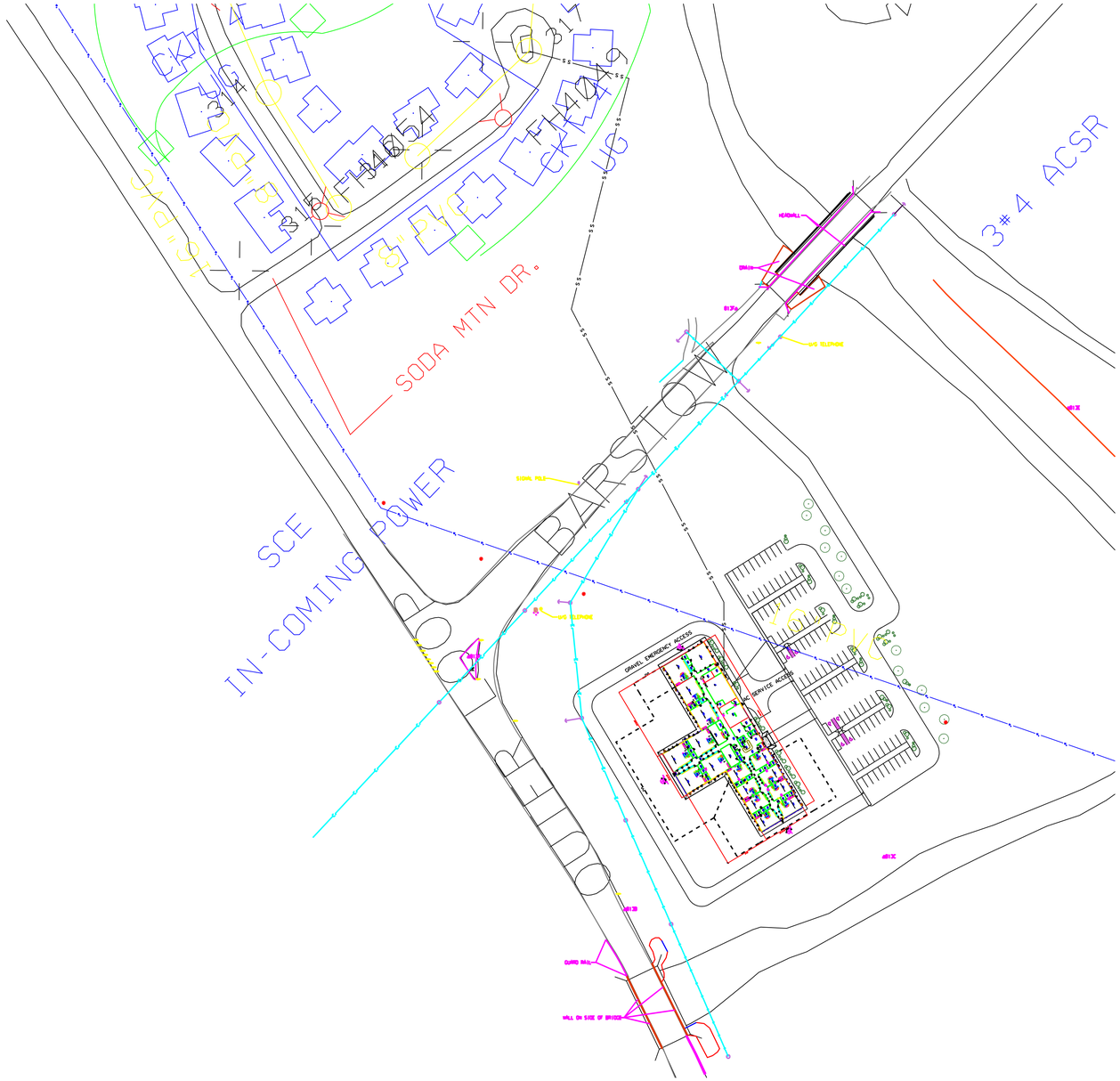
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
HUNTSVILLE CENTER

Barstow Rd
Child Development Center
Fort Irwin, CA

CONCEPT SITE

PLATE NUMBER
C-101
SHEET 8 OF 10

$$DGNSPEC$$
$$SYSTIME$$
$$USERNAME$$



LEGEND

EXIST WATER
EXIST OH POWER
EXIST COMMUNICATIONS
EXIST SEWER
WATER
SEWER

N

100' 50' 0 100'

SCALE: 1'' = 100'-0"

US ARMY CORPS OF ENGINEERS

SYMBOL	DESCRIPTION	DATE	BY

DESIGNED BY: KIM PHILLIPS
DATE: 12/16/2008
DWN BY: KP
CKD BY:
SOLICITATION NO.: SOLICITATION NO.:
SUBMITTED BY:
PROJECT NO.: PN65334
FILE NAME: SITE.DGN
CATEGORY CODE: 740-17-01
SIZE: ANSI D
PLOT SCALE: 1"=100'
PLOT DATE: 12/16/2008

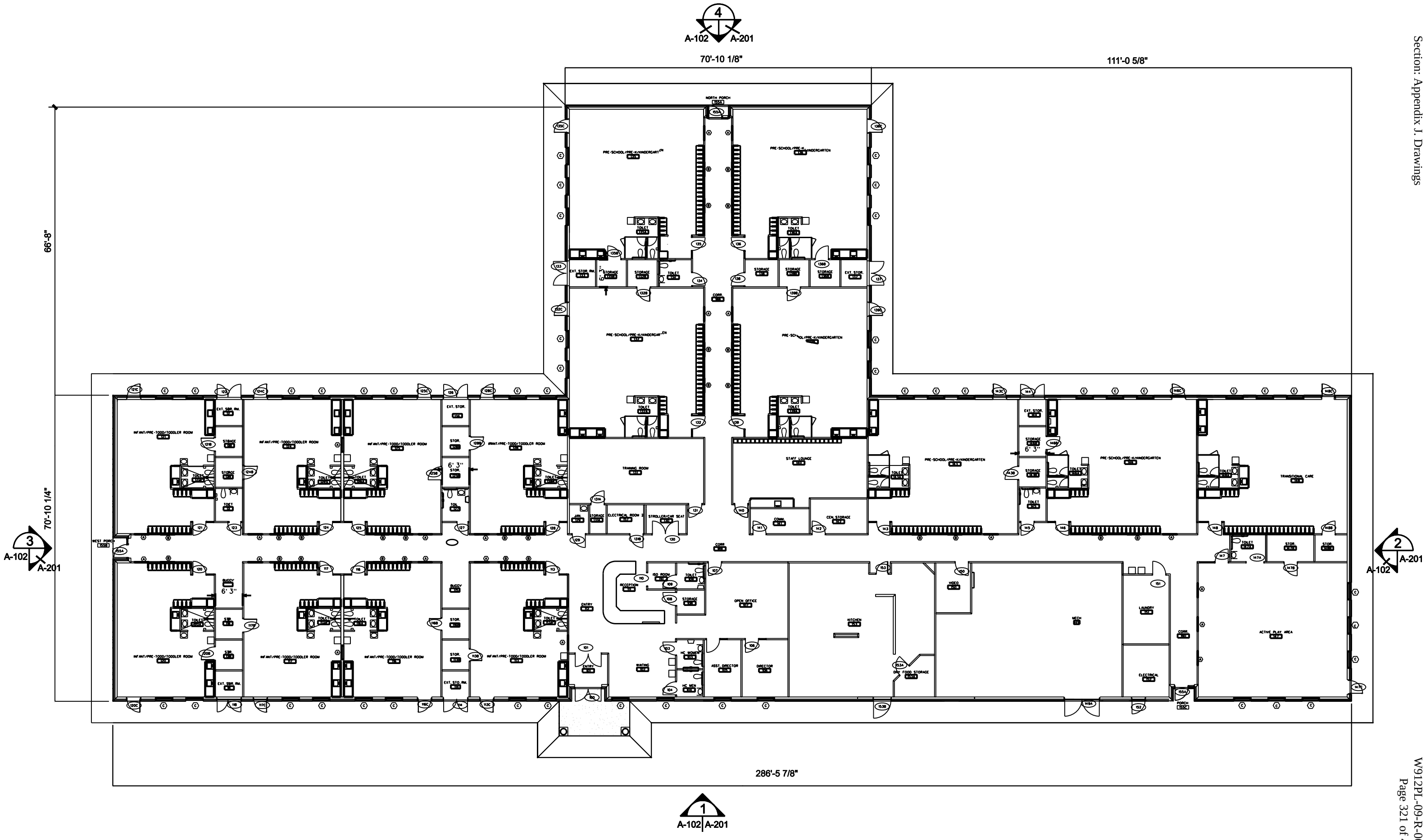
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
HUNTSVILLE CENTER

Barstow Rd
Child Development Center
Fort Irwin, CA

UTILITY PLAN

PLATE NUMBER
C-102
SHEET 9 OF 10

$$DGNSPEC$$
$$SYSTIME$$
$$USERNAME$$



Ft. Irwin - 0-5 CDC Floor Plan

APPENDIX K

Life Cycle Cost Analysis Fuel Cost Information

IMWE – IRW – PWF December 26, 2008

MEMORANDUM

Subject: New FY 09 Utility Rate.

The purpose of this letter and the attached Summary Rate is to outline the new FY09 Utility Rates. This FY09 Utility Rates calculation with formats is based on the AR 420 – 41 guidelines and the Army Regulations. AR 420 -41, facilities Engineering, Acquisition and Sale of Utilities Services dated 15 September 1990.

A. **This new Rate applies <u>ONLY</u> on all <u>Metered Services</u>.**

1. Electricity:

- **<u>Effective on 10/1/2008;</u>**

  I- The new rate for (A) Government Customers will be $0.083 per KWH

  II- The new rate for (B) Non Government Customers will be $0.0904 per KWH

- **<u>Effective on 1ST Quarter of 2009:</u>**

  I- The new rate for (A) Government Customers will be $0.0908 per KWH

  II- The new rate for (B) Non Government Customers will be $0.0935 per KWH

<u>For ECH Customers Meters:</u>

- **<u>Effective on 10/1/2008;</u>**

  I. Rate (A) Government; the increase is 5.6% of the total bill from SCE to cover the Operation and Maintenance only. This will be added by ECH in the system in one line only referring to this percentage.

  II. Rate (B) Non - Government; the increase is 5.6% of the total bill from SCE to cover the Operation and Maintenance only. Also, there is 3% for administration overhead cost. This 3% increase will be generated by cover letter by the DRM in the process of billing referring to this percentage.

- **<u>Effective on 1ST Quarter of 2009:</u>**

III. Rate (A) Government; the increase is 5.14% of the total bill from SCE to cover the Operation and Maintenance only. This will be added by ECH in the system in one line only referring to this percentage.

IV. Rate (B) Non - Government; the increase is 5.14% of the total bill from SCE to cover the Operation and Maintenance only. Also, there is 3% for administration overhead cost. This 3% increase will be generated by cover letter by the DRM in the process of billing referring to this percentage.

2- WATER:

I. The new Water rate for (A) Government Customers will be $3.5815 per kgal.
II. The new Water rate for (A) Non-Government Customers will be $3.6889 per kgal.

3- SEWAGE:

I. The new sewage rate for (A) Government Customers will be $3.2732 per kgal.
II. The new sewage rate for (A) Non -Government Customers will be $3.3714 per Kgal.

4- LPG:

I. The new LPG rate for (A) Government Customers will be $2.2491 per Gal.
II. The new LPG rate for (A) Non -Government Customers will be $2.3165 per Gal.

5- Refuse for Trash and Recyclables:

Refuse for Trash and Recyclables: The new rate will be the same as it was before and there will be no change. The rate stays as $40.00 per ton of trash and $20.00 per ton for recyclables. The only change affected it will be on the calculation from pound (LB) and Ton. Every Five (5) cubic yards is equal to one (1) ton according AR 420 -41. For Example, if you have one 6 cubic yards of trash outside your building and it is picked up once a day (FREQUENCY) the cost is $40.00 a day.

B- **This new Rate applies ONLY on all NON Metered Services. Meters are the preferred method for determining consumption.**

1. **Electricity:**

THE NEW RATE CHARGE for (A) Government IS $ **1.43** per Sq. Ft. /per year) Effective Immediately / (1 Oct. 08)

THE NEW RATE CHARGE for (B) NON - Government IS $ **1.47** per Sq. Ft. /per year) Effective Immediately / (1 Oct. 08)

THE NEW RATE CHARGE for (A) Government IS **$1.56** per Sq. Ft. /per year after the projected rate increase is in effect.

THE NEW RATE CHARGE for (B) NON - Government IS **$1.60** per Sq. Ft. /per year after the projected rate increase is in effect.

2. Water:

THE NEW RATE CHARGE for (A) Government IS (3, 015044/ 7695681) = **$ 0.39** per Sq. Ft. / per year.)

THE NEW RATE CHARGE for (B) NON - Government IS (3,105,495.32/ 7695681) = $ **0.4035** per Sq. Ft. /per year.)

3- SEWAGE:

THE NEW RATE CHARGE for (A) Government IS (1,928,825/ 7695681) = **$ 0.2506** per Sq. Ft. / per year.)

THE NEW RATE CHARGE for (B) NON - Government is (1,986,689.75/ 7695681) = $ **0.2582** per Sq. Ft. /per year.)

3. Liquefied Petroleum Gas (LPG):

THE NEW RATE CHARGE for (A) Government IS (5640890.61/ 7695681) = **$ 0.733** per Sq. Ft. / per year.)

THE NEW RATE CHARGE for (B) NON - Government IS (5,641,230.33/ 7695681) = $ **0.733** per Sq. Ft. / per year).

Finally, please refer to AR 420-41 for any clarifications regarding the attached Utility Summary.

Lance K. Toyofuku
Director, Department of Public Works
Fort Irwin, CA 92310

APPENDIX L

LEED Project Credit Guidance

This spreadsheet indicates Army required credits, Army recommendations regarding preference and avoidance of individual credits, project-specific ranking of individual point preferences, discussion of Installation roles in support of individual credits, and issues that Government Project Delivery Teams (PDTs) need to be aware of relating to individual credits. The Resources section that follows provides references and resources that relate to LEED, including policy and legal requirements, design guides and documentation resources.

LEED 2.2 Credit Paragraph	**LEED Project Credit Guidance**	**Army Guidance:** Required - Preferred - Avoid	**Project Preference Ranking**: (1=most preferred, blank=no preference, X=preference not applicable to this credit, Rqd=required)	
PAR	**FEATURE**			**REMARKS**
CATEGORY 1 - SUSTAINABLE SITES (14 POSSIBLE POINTS)				
SSPR1	Construction Activity Pollution Prevention (PREREQUISITE)	Rqd	Rqd	All LEED prerequisites are required to be met. Related to compliance with 40 CFR 122.26 (Clean Water Act).
SS1	Site Selection		X	See paragraph LEED CREDITS COORDINATION for information relating to this credit.

SS2	Development Density & Community Connectivity - OPTION 1 DENSITY		X	Credit is determined by Installation's site selection. See paragraph LEED CREDITS COORDINATION for information relating to this credit.
	Development Density & Community Connectivity - OPTION 2 CONNECTIVITY		X	Credit is determined by Installation's site selection. See paragraph LEED CREDITS COORDINATION for information relating to this credit.
SS3	Brownfield Redevelopment		X	Credit is determined by Installation's site selection. See paragraph LEED CREDITS COORDINATION for information relating to this credit.
SS4.1	Alternative Transportation: Public Transportation Access		X	Credit is determined by Installation's site selection. See paragraph LEED CREDITS COORDINATION for information relating to this credit.
SS4.2	Alternative Transportation: Bicycle Storage & Changing Rooms	Pref		
SS4.3	Alternative Transportation: Low Emitting & Fuel Efficient Vehicles - OPTION 1			Requires provision of vehicles, which cannot be purchased with construction funds. Assume Government will not provide vehicles unless indicated otherwise.
SS4.3	Alternative Transportation: Low Emitting & Fuel Efficient Vehicles - OPTION 2	Pref		
SS4.3	Alternative Transportation: Low Emitting & Fuel Efficient Vehicles - OPTION 3			Requires provision of vehicle refueling stations. Installation must support type of fuel and commit to maintaining/supporting refueling stations.
SS4.4	Alternative Transportation: Parking Capacity	Pref		
SS5.1	Site Development: Protect or Restore Habitat			
SS5.2	Site Development: Maximize Open Space	Pref		Assume AGMBC option for aggregated open space at another location on the installation is not available to the project unless indicated otherwise.
SS6.1	Stormwater Design: Quantity Control	Pref		Related to compliance with 40 CFR 122.26 (Clean Water Act).

SS6.2	Stormwater Design: Quality Control			
SS7.1	Heat Island Effect: Non-Roof	Pref		
SS7.2	Heat Island Effect: Roof	Pref		Coordinate with nearby airfield requirements, which may preclude this credit.
SS8	Light Pollution Reduction	Pref		
CATEGORY 2 – WATER EFFICIENCY (5 POSSIBLE POINTS)				
WE1.1	Water Efficient Landscaping: Reduce by 50%	Pref		Project must include landscaping to be eligible for this credit.
WE1.2	Water Efficient Landscaping: No Potable Water Use or No Irrigation	Pref		Project must include landscaping to be eligible for this credit.
WE2	Innovative Wastewater Technologies - OPTION 1			
WE2	Innovative Wastewater Technologies - OPTION 2			
WE3.1	Water Use Reduction: 20% Reduction	Pref		Related to Army mandate for waterless urinals beginning FY10.
WE3.2	Water Use Reduction: 30% Reduction	Pref		
CATEGORY 3 – ENERGY AND ATMOSPHERE (17 POSSIBLE POINTS)				
EAPR1	Fundamental Commissioning of the Building Energy Systems (PREREQUISITE)	Rqd	Rqd	All LEED prerequisites are required to be met.
EAPR2	Minimum Energy Performance (PREREQUISITE)	Rqd	Rqd	All LEED prerequisites are required to be met.
EAPR3	Fundamental Refrigerant Management (PREREQUISITE)	Rqd	Rqd	All LEED prerequisites are required to be met.
EA1	Optimize Energy Performance	Rqd	Rqd	Earning of LEED EA1 points as indicated in paragraph ENERGY CONSERVATION, as a minimum, is required. Note that LEED points calculation is based on energy cost reduction.
EA2.1	On-Site Renewable Energy			

EA3	Enhanced Commissioning			The Commissioning Authority may be provided through the Design-Build Contractor only if in accordance with USGBC Credit Interpretation Ruling (CIR) dated 9/15/06. Commissioning Authority activities begin during design phase and continue well beyond beneficial occupancy. Assume Government will not provide CxA post-occupancy activities unless indicated otherwise.
EA4	Enhanced Refrigerant Management			
EA5	Measurement & Verification			Credit relates to EPACT metering requirements. Provider and funding of post-occupancy activities must be coordinated. Assume Government will not provide post-occupancy activities unless indicated otherwise.
EA6	Green Power		X	Credit is determined by Installation's purchase of green power. See paragraph LEED CREDITS COORDINATION for information relating to this credit.
CATEGORY 4 – MATERIALS AND RESOURCES (13 POSSIBLE POINTS)				
MRPR1	Storage & Collection of Recyclables (PREREQUISITE)	Rqd	Rqd	All LEED prerequisites are required to be met. Installation provides collection service and outside receptacle needs coordination.
MR1.1	Building Reuse: Maintain 75% of Existing Walls, Floors & Roof			
MR1.2	Building Reuse: Maintain 95% of Existing Walls, Floors & Roof			
MR1.3	Building Reuse: Maintain 50% of Interior Non-Structural Elements			
MR2.1	Construction Waste Management: Divert 50% From Disposal	Pref	1	See paragraph CONSTRUCTION AND DEMOLITION (C&D) WASTE MANAGEMENT for project requirement.
MR2.2	Construction Waste Management: Divert 75% From Disposal	Pref		

MR3.1	Materials Reuse: 5%			
MR3.2	Materials Reuse: 10%			
MR4.1	Recycled Content: 10% (post-consumer + 1/2 pre-consumer)	Pref		Relates directly to EPA CPG compliance. Federal regulation as well as Federal, DOD and Army policies require purchase of products that contribute to this credit.
MR4.2	Recycled Content: 20% (post-consumer + 1/2 pre-consumer)	Pref		Relates directly to EPA CPG compliance.
MR5.1	Regional Materials:10% Extracted, Processed & Manufactured Regionally			
MR5.2	Regional Materials:20% Extracted, Processed & Manufactured Regionally			
MR6	Rapidly Renewable Materials			Relates directly to USDA FB4P biobased materials compliance.
MR7	Certified Wood			
CATEGORY 5 – INDOOR ENVIRONMENTAL QUALITY (15 POSSIBLE POINTS)				
EQPR1	Minimum IAQ Performance (PREREQUISITE)	Rqd	Rqd	All LEED prerequisites are required to be met. Related to compliance with 10 CFR 434 (Federal Energy Code).
EQPR2	Environmental Tobacco Smoke (ETS) Control (PREREQUISITE)	Rqd	Rqd	All LEED prerequisites are required to be met. Assume all buildings are smoke free unless indicated otherwise. Family housing, barracks and other lodging are facility types where smoking may be permitted in some cases. If Statement of Work indicates smoking is permitted in these types of facilities, the requirements of LEED-NC 2.2 Option 3 apply.
EQ1	Outdoor Air Delivery Monitoring			
EQ2	Increased Ventilation			May adversely effect ability to earn energy optimization credits.
EQ3.1	Construction IAQ Management Plan: During Construction	Pref		
EQ3.2	Construction IAQ Management Plan: Before Occupancy	Pref		Construction schedule must accommodate activities required for this credit.

EQ4.1	Low Emitting Materials: Adhesives & Sealants	Pref		
EQ4.2	Low Emitting Materials: Paints & Coatings	Pref		
EQ4.3	Low Emitting Materials: Carpet Systems	Pref		
EQ4.4	Low Emitting Materials: Composite Wood & Agrifiber Products	Pref		
EQ5	Indoor Chemical & Pollutant Source Control	Pref		System requiring weekly cleaning to earn this credit is not a permitted option for Army projects.
EQ6.1	Controllability of Systems: Lighting			
EQ6.2	Controllability of Systems: Thermal Comfort			
EQ7.1	Thermal Comfort: Design			
EQ7.2	Thermal Comfort: Verification			Project must earn credit EQ7.1 to be eligible for this credit. Assume Government will not provide post-occupancy activities unless indicated otherwise.
EQ8.1	Daylight & Views: Daylight 75% of Spaces	Pref		
EQ8.2	Daylight & Views: Views for 90% of Spaces	Pref		
CATEGORY 6 – FACILITY DELIVERY PROCESS (5 POSSIBLE POINTS)				
IDc1.1	Innovation in Design			
IDc1.2	Innovation in Design			
IDc1.3	Innovation in Design			
IDc1.4	Innovation in Design			
IDc2	LEED Accredited Professional	Rqd	Rqd	LEED AP during design and construction is required.

Resources. Following are resources with web links, discussion of Federal and Army mandates and policies that relate to LEED, sources of design guidance and documentation tools to assist the PDT. Use of/compliance with documents indicated in this appendix is not required unless indicated in RFP. In the event of conflict between RFP and this appendix, RFP takes precedence.

Federal Mandates

EPA, *Environmentally Preferable Purchasing* (EPP) Program (EPA), available through URL: http://www.epa.gov/oppt/epp/ . Resulting from Executive Order [EO] 13101 *Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition* (White House, 14 September 1998), it establishes basic guidelines for EPP as well as forms the basis for Comprehensive Procurement Guidelines (see below).

Comprehensive Procurement Guidelines [CPG], www.epa.gov/cpg.

The EPA publishes the Comprehensive Procurement Guidelines (CPGs), found in 40 CFR 247, that provide a list of products that must contain recovered material. **This is required regardless of whether the LEED recycled content credit is pursued or not.** Recommendations for the percentages of recovered materials are published in a companion document titled the Recovered Materials Advisory Notice (RMAN). Additional products are added every 2-3 years. The CPGs currently include several commonly used construction products (such as concrete, floor tiles, and roofing materials) and landscaping products (such as site furnishings and landscaping timbers).
EPA requires that the purchase of products listed on the CPG contain at least the recycled content indicated in the CPG when practicable. For every project, designer must review the current CPG list and, unless designer determines that justification for non-use exists, ensure that the technical specifications require at least the recycled content indicated in the CPG. The following are considered adequate justifications for non-use:

a. The product does not meet appropriate performance standards.
b. The product is not available within a reasonable time frame.
c. The product is not available competitively (from two or more sources).
d. The product is only available at an unreasonable price (compared with a comparable non-recycled content product).

Applicable FAR provisions and clauses: FAR Part 23.4, *Use of Recovered Materials,* 52.223-4, *Recovered Material Certification,* 52.223-9, *Estimate of Percentage of Recovered Material Content for EPA-Designated Products*. Note that although EPA designated recycled content products contribute to the LEED recycled content credit, satisfying this requirement does not guarantee that the project will reach the cumulative total required to earn the LEED credit.

USDA Federal Biobased Products Preferred Procurement Program (FB4P)
http://www.biobased.oce.usda.gov

The USDA has a program similar to the EPA CPG, found in 7 CFR 2902, that provides a list of designated products that must contain bio-based material with recommendations for the percentages of bio-based content. The rules for use of designated products are the same as EPA CPG. Currently the only designated construction product is roof coatings, however additional products may be added. For every project, designer must review the current USDA designations for products applicable to the project and, if any are found, unless designer determines that justification for non-use exists, ensure that the technical specifications require at least the bio-based content indicated in the designation.

All Federal contracts that involve the use or purchase of USDA- designated products must specify that the associated procurement requirements be met and must include applicable FAR provisions and clauses (currently not yet published). Note that although USDA designated bio-based content products contribute to the LEED rapidly renewable materials credit, satisfying this requirement does not guarantee that the project will reach the cumulative total required to earn the LEED credit.

Army Policy and Mandates

ECB 2006-7R Army Standard for Urinals (09 AUG2006) www.hnd.usace.army.mil/techinfo “Publications”, “Engineering and Construction Bulletins”. Mandates waterless urinals beginning FY10.

United States Green Building Council/LEED

USGBC Website – http://www.usgbc.org

LEED-NC (New Construction) v.2.2 Rating System, October 2005 -- https://www.usgbc.org/ShowFile.aspx?DocumentID=1095

LEED-NC v.2.2 Registered Project Checklist -- https://www.usgbc.org/FileHandling/show_general_file.asp?DocumentID=1096

LEED-NC v.2.2 Reference Guide – Available by purchase from the USGBC at: http://www.usgbc.org/b2c/b2c/mainFS.jsp

LEED Letter Templates – Use of LEED Letter Templates for projects not registered with USGBC is a copyright infringement and is not permitted. Samples of the templates are available for review only at: http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1447. (Fully functional access to LEED On-Line is only available to projects registered with the USGBC.)

LEED Credit Interpretations (CIRs) – Available on the members only side of the USGBC website. Click 'My Account' from the USGBC main web page (log-in and look for CIRs under 'My Resources.'

LEED Application Guide for Multiple Buildings and On-Campus Building Projects https://www.usgbc.org/FileHandling/show_general_file.asp?DocumentID=1097. Provides direction in applying LEED-NC v2.1 and v2.2 to projects in a campus or multi-building setting such as corporate campuses, college campuses, and government installations (i.e. there is one owner or common property management and control).

General Resources

Unified Facilities Guide Specifications (UFGS) www.wbdg.org/ccb

UFGS are non-proprietary guide specifications covering a broad range of products and systems and incorporating agency–specific guidance and many sustainability updates. They are used and maintained by USACE, NAVFAC, AFCESA and NASA.

UFGS are in the process of being updated to include Specifier notes relating to all current EPA CPG product designations, but this process is not complete yet. Designer MUST address EPA CPG requirements in specifications on a product-by-product basis.

UFGS 01 33 29 *LEED ™ Documentation.* This section includes overview and documentation requirements plus credit-specific requirements.

UFGS 01 62 35 *Recycled/Recovered Materials*. This section addresses EPA CPG compliance requirements.

UFGS 02 42 00 *Construction and Demolition Waste Management.* For DB and DBB use. This section includes requirement for waste management plan, diversion requirements and reporting.

UFGS 23 08 00.00 10 *Commissioning of HVAC Systems*. This section includes qualifications, standards and documentation, also includes several test checklists. Because it is limited to HVAC only it **does not** by itself satisfy the LEED fundamental commissioning requirement. Commissioning of other LEED required systems and coordination of documentation associated with this additional commissioning must be addressed.

USACE LEED Credit Documentation Tools

LEED 2.2 Documentation Requirements and Submittals Checklist. USACE Spreadsheet is available at http://en.sas.usace.army.mil to fill in for project submittals.

Commissioning Plan Document for LEED Fundamental Commissioning USACE template available at http://en.sas.usace.army.mil to edit to create project-specific document.

Owners Project Requirements Document for LEED Fundamental Commissioning. USACE template available at http://en.sas.usace.army.mil for Design Agent/Owner to edit to create project-specific document. Completed document should be included in DB RFPs or provided to Design Team at start of design.

Basis of Design Document for LEED Fundamental Commissioning. USACE template available at http://en.sas.usace.army.mil for Designer of Record to edit to create project-specific document.

Owner's Project Requirements Document for LEED Fundamental Commissioning

Project: Child Development Center

Location: Fort Irwin, California

Project Number: 65334

Approved:

Name	Proponent's Representative	Date
Name	COS Representative	Date

Overview and Instructions

The purpose of this document is to provide clear and concise documentation of the Owner's goals, expectations and requirements for commissioned systems, and shall be utilized throughout the project delivery and commissioning process to provide an informed baseline and focus for design development and for validating systems' energy and environmental performance.

The Owner's Project Requirements Document is a required document for LEED Version 2.2 EA Prerequisite 1, Fundamental Commissioning of the Building Energy Systems. It shall be completed by the Corps District/Design Agent based on coordination with the Installation/User/Proponent and shall be approved by the Installation/User/Proponent representative.

Use of this template is not required, nor are there any restrictions on editing of it. It is provided simply as a tool to assist project teams in meeting the documentation requirements for LEED Fundamental Commissioning.

The intent of the Owner's Project Requirements Document, per the LEED v2.2 Reference Guide, is to detail the functional requirements of a project and the expectations of the building's use and operation as it relates to commissioned systems. This template contains the basic recommended components indicated in the LEED v2.2 Reference Guide. It should be adapted as needed to suit the project, remaining reflective of the LEED intent.

The Owner's Project Requirements Document should ideally be completed before the start of design and furnished to the design team. It must be completed prior to the approval of Contractor submittals of any commissioned equipment or systems to meet LEED requirements.

Updates to the Owner’s Project Requirements Document throughout the course of project delivery shall be made by the Corps District/Design Agent based on decisions and agreements coordinated with and agreed to by the Installation/User/Proponent.

The Owner’s Project Requirements Document shall be included in the project’s LEED documentation file under EA PR1, Fundamental Commissioning of the Building Energy Systems.

1. *Owner and User Requirements*

The primary purpose, program and use of this project is as a child development center (similar to a civilian child day care).

The project has been developed from standard design developed by the Center of Standardization for Child Development Centers at the US Army Engineering and Support Center, Huntsville and approved by the proponent agency for this type of facility, FMWRC. Project and installation specific requirements have been included in the work statement to reflect the adjustments to the standard to meet local conditions and requirements.

Broad Goals

The broad goals relative to program need are to provide economical, standardized facilities that meet the basic functional needs of child development for the Installation.

The broad goals relative to flexibility are to allow interior spaces maximum flexibility for future modifications.

The broad goals relative to quality of materials are similar to a representative facility of the same type in the private sector, 25-year life with normal maintenance.

The broad goal relative to construction costs is the facility must be within budgeted limitations.

The broad goals relative to operational costs are to meet EPACT 2005 (reduced water and energy consumption) and minimize life cycle operating costs as much as possible within programmed budget.

The broad goals relative to life cycle of the equipment are to have equipment with life similar to that in private sector.

To provide essentially the same functional facility components at all locations (site-adapt) to the extent possible to facilitate unit mobility and to reduce repetitive design costs.

_____

_____

_____

2. Environmental and Sustainability Goals

The project goals relative to sustainability and environmental issues are to obtain LEED-NC Silver rating.

The project goals relative to energy efficiency are to meet EPACT-2005.

The project goals and requirements for building siting that will impact energy use vary due to the same facility being site-adapted worldwide. Consistent building orientation cannot be expected, however orientation to take maximum advantage of natural conditions and to minimize energy use. Special local requirements are indicated in Paragraph 6 of Statement of Work.

The project goals and requirements for building facade that will impact energy use vary due to the same facility being site-adapted worldwide. Exterior appearance will vary to be compatible with adjoining environment’s architectural theme. Special local requirements are indicated in Paragraph 6 of Statement of Work.

The project goals and requirements for building fenestration that will impact energy use vary due to the same facility being site-adapted worldwide. Antiterrorism/Force Protection criteria (UFC4-010-01) requires laminated glass and heavy duty frame. Required AT/FP measures will include resistance to progressive collapse, sway bracing, blast resistant windows and exterior glass, and exterior setbacks.

The project goals and requirements for building envelope that will impact energy use are ASHRAE 90.1-2004 and EPACT-2005 are required. Special local requirements are indicated in Paragraph 6 of Statement of Work.

Other: *(Insert as applicable)*

_____
_____
_____

3. Indoor Environmental Quality Requirements

All variances from the default or apparent requirements or uses have information provided in Table 1.

The intended use for all spaces are child development activities and administrative.

The anticipated occupancy schedule (numbers of occupants and time frames) depends on the size of the facility based on the installation population and the Garrison's mission. Occupancy hours are likely to extend well into the evening past normal business hours to accommodate parents picking children up after work. It is also anticipated that the facility will be open well before normal business opening hours to accommodate those parents wanting to drop off children before going to their regular job. Occupancy schedule also will depend on the Garrison's mission which may result in the necessity to operate the facility on Saturdays.

Accommodations for after-hours use include office areas with automatic lighting controls with manual override as necessary. Automatic controls shall consist of an automatic time clock and/or occupancy sensors.

The lighting, temperature, humidity, air quality, ventilation and filtration requirements for all spaces are defined in the Statement of Work.

The acoustical requirements for all spaces are indicated in the Statement of Work.

The desired level of occupant ability to adjust systems controls is indicated in the Statement of Work.

Specific types of lighting desired, if any, are indicated in the Statement of Work.

Other: *(Insert as applicable)*

_____
_____
_____

4. Equipment and System Expectations

Refer to the Statement of Work for technical requirements of the following commissioned systems: Space Heating, Ventilation, Air Conditioning, Refrigeration, HVAC Controls, Domestic Hot Water, Lighting Controls, Daylighting Controls, Emergency Power

5. Building Occupant and O&M Personnel Requirements

The facility will be staffed and operated by the Garrison Child and Youth Services staff. The DPW or DPW contractors will be maintaining the facility. The desired level of training and orientation for O&M staff to understand and maintain the building systems is as indicated in Section CONSTRUCTION CLOSEOUT and Statement of Work.

If available, the facility will be connected to the installation EMCS (UMCS). See the Statement of Work for the interface requirements.

Table 1

Space	Use / Activity	Num of Occs	Special Occupancy Schedule	After Hours Use Reqmt.	Special Cooling Reqmt.	Special Heating Reqmt.	Special Humidity Reqmt.	Special Ventil./Filtration Reqmt.	Special Acoustic Reqmt.	Special Lighting Reqmt.	Special Occup Adjustability Reqmt.

APPENDIX N
LEED Requirements for Multiple Contractor Combined Projects

Not Used

APPENDIX O
LEED Strategy Tables

Not Used

APPENDIX P

USGBC Registration of Army Projects

Typical Registration Procedure

1. Complete the online registration form (see guidance below) at the USGBC website http://www.usgbc.org/showfile.aspx?documentid=875 and submit it online.
2. Pay the registration fee via credit card (USACE staff: credit card PR&C is funded by project design or S&A funds).
3. The USGBC will follow up with a final invoice, the LEED-online passwords and template information.
4. If you have any questions, the USGBC contact (as of October 08) is:
Courtney Yan, LEED Program Assistant
U.S. Green Building Council
202/587-7180
cyan@usgbc.org

Completing the Registration Form

BEFORE YOU BEGIN:

Create a personal account with USGBC if you do not have one.
You will need the following information:
Project name as it appears in P2 (obtain from USACE Project Manager)
Building number/physical address of project
Zip code for Installation/project location
Total gross area all buildings in project
Total construction cost for buildings only (see Project Details Section instructions below)

ACCOUNT/LOGIN INFORMATION SECTION

1. The person registering the project **must have an account with USGBC** (login and password) to complete the form. If you have an account, select "I already have a USGBC Web site account" and enter email and password (twice). If you do not have an account, you may select "Create a new USGBC website account" and follow the instructions. It is recommended that you create an account separately on the USGBC website before you start the form. IMPORTANT: USACE team members are members of USGBC and are eligible for Member prices. USACE team members registering projects should be sure to include the USACE Corporate Access ID on the form (if you do not have it contact richard.l.schneider@usace.army.mil or judith.f.milton@usace.army.mil for the number).
2. The Account/Login Information section is filled out by the person registering the project. It may be a Contractor or a USACE staff member.

PROJECT TYPE SECTION

Self-explanatory. As of October 08 USACE projects use LEED for New Construction V2.2. USACE staff members are USGBC members.

GENERAL PROJECT INFORMATION SECTION

Project Title: Match the project name used in P2. Contact the USACE Project Manager for this information.
Is Project Confidential: Indicate NO except if project has security sensitivity (elements that are FOUO or higher security) indicate YES.
Project Address 1 and 2: This is the physical location of the project. Provide building number, street address, block number or whatever is known to best describe the location of the project on the Installation.
Project City: Installation Name
State, Country, Zip Code: Self-explanatory
How Did You Hear About LEED: USACE requirement

PRIMARY CONTACT INFORMATION

The Primary Contact may be a Contractor or a USACE staff member. USGBC considers this individual the primary point of contact for all aspects of the project. It is recommended this person be the Contractor Project Manager or the USACE Project Manager.

PROJECT OWNER INFORMATION

Project Owner First Name, Last Name, email: The Project Owner is the USACE Project Manager.
Organization Name: U.S. Army Corps of Engineers. This field MUST be completed this way because it will be used as a search field by higher HQ to find all USACE registered projects.

PROJECT DETAILS

Owner Type: Military Base
Project Scope: Provide brief description (example: barracks complex)
Site Conditions: Provide brief description (example: wooded with steep grades)
Occupant Type: Provide brief description (example: military and civilian employees)
Owner Occupied: No
Gross Square Footage: Provide total area all buildings in project
Project Budget: Do not include the cost for design, site work, demolition, abatement or other work – do not include Government contingency or supervision costs. For design-build and construction projects registered after award, use the awarded contract cost for construction of buildings only. For projects registered prior to award of design-build or construction contract, use the total Primary Facility cost from DD1391 or updated Primary Facility cost based on design development if available.
Current Project Phase: Identify phase at time of registration (example: design start, construction start)
Project Type: Self-explanatory

PAYMENT INFORMATION

Self-explanatory

APPENDIX Q

AREA COMPUTATIONS

(Source: Technical Instruction TI 0800-02, DESGN CRITERIA)

Computation of Areas: Compute gross and net areas of facilities (other than family housing) according to subparagraphs 1.c.(1) through (5), below.

(1) Enclosed Spaces. The gross area includes the total area of all floors, including basements, mezzanines, penthouses, usable attic or sloping spaces used to accommodate mechanical equipment or for storage with an average height of 2100 mm (6 ft 11 inches) measured from the underside of the structural system and with perimeter walls measuring a minimum of 1500 mm (4 ft 11 inches) in height, and other enclosed spaces as determined by the effective outside dimensions of the building.

(2) One-Half Spaces. One-half of the area will be included in the gross area for balconies and porches; exterior covered loading platforms or facilities, either depressed, ground level, or raised; covered but not enclosed passageways or walks; covered and uncovered but open stairs; and covered ramps.

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

(4) Net Floor Area. The net floor area includes the total gross area excluding:
(a) Basements not suited as office, special, mechanical, or storage space.
(b) Elevator shafts and machinery space.
(c) Exterior walls.
(d) Interior partitions.
(e) Mechanical equipment and water supply equipment space.
(f) Permanent corridors and hallways.
(g) Stairs and stair towers.
(h) Toilet and cleaning equipment space.
(i) Electrical equipment space.
(j) Electronic/communications equipment space.

BUILDING 1322

FUNCTIONAL DESIGN CRITERIA
ROOM BY ROOM REQUIREMENTS

GENERAL

This section defines the requirements of the project on an exterior space and room-by-room. The Contractor is responsible for coordinating with the Using Agency, the Corps of Engineers, and the Base personnel to verify that the requirements are still valid and complete. The intent of this section is to clarify the functional requirements of the building and site for the offerors before the final design is complete; however, the Contractor is responsible for providing a complete design, and to construct a facility ready for operations.

ENVIRONMENTAL INTERIOR DESIGN

The selection of finishes as well as furniture shall take environmentally sustainable attributes into consideration when selections are made (reference ETL 1110-3-491, Sustainable Design for Military Facilities, 1 May 2001). Consider manufacturers for acoustical ceiling tile, carpet/carpet tile, resilient flooring, etc. as much as possible that are closed-loop recyclable. At a minimum, the manufacturer's product shall contain: a recovered materials preference program, to assure the use of recovered materials to the maximum extent possible without jeopardizing the intended use of the item. Product should meet or exceed the EPA guideline, unless written justification is provided that a product is not available competitively within a reasonable time frame, does not meet appropriate performance standards, or is only available at an unreasonable price.

FINISH NOTICE

The selections named serve only to indicate the color and quality which are minimum requirement guidelines, several other materials or furniture may be appropriate. Furniture and Finishes shall be durable, suitable for the function and area in which they are used, and aesthetically pleasing.

LANDSCAPE ARCHITECTURE

DESIGN

The design of landscaped areas shall be in accordance with Presidential Executive Order 13148 of April 2000, with a goal to reduce fertilizers, pesticides, and water use. The intent is to achieve a base-wide ratio of 20 percent maximum non-native plants and 80 percent minimum locally or regionally native plants. Do not use plants deemed invasive by the project state or region's Exotic Pest Plant Council, State Department of Agriculture or local chapter of the American Society of Landscape Architects as a threat to ecosystems or agriculture. All non-paved site areas inside the project limits or outside the project limits disturbed by construction operations, after meeting plant quantity requirements, shall be covered with plant material or inorganic mulch. Stabilized soil or organic mulch is not acceptable as a ground cover. Minimize the use of turf, except when needed for active or passive recreation. Provide landscape architectural work in accordance with UFC 3-201-02, *Landscape Architecture*. All projects with planting and or irrigation areas shall utilize the design services of a Landscape Architect licensed in the state of the project. The Landscape Architect of Record shall visit the site at least once prior to design, twice during construction, and quarterly during the Establishment Period, including the Establishment Period start and completion.

LANDSCAPE ARCHITECTURE

General

Provide complete renovation design and installation of the play areas of the existing Child Development Center. The renovation plans shall be in accordance with the layouts and photos that follow in this document. Re-landscaping shall consist of removing some existing trees, adding new trees, creating age appropriate play areas, removing existing play structures and adding new age appropriate structures, removing some existing concrete walks and adding new concrete walks as required to create functional age appropriate play areas, remove/repair/replace exterior perimeter fencing, remove existing fencing with existing play areas, removing existing storage sheds and adding new safe storage sheds, and visually appealing landscape and interactive play areas for school age children. All enhances shall comply with all applicable anti-terrorism, force protection and physical security requirements.

Guarantee all landscaping for a period of one year after final acceptance of the project.

Provide all age appropriate play outdoor play ground equipment (play structures) as noted on layouts.

Provide appropriate shade structures for outdoor play areas.

Provide age appropriate, safe open space play areas that enhance learning and develop cognitive and physical skills. Provide an intriguing environment, but one devoid of overpowering colors, features and literal themes.

Provide a facility that supports the staff's care of children by creating safe and healthy environments that allow them to focus their efforts on the care and nurture of children. Provide features that encourage positive relationships between staff, children and parents.

Provide a facility that facilitates family involvement in the center.

Respond to local conditions, climate, and regional preferences in the design, while also considering the goals of the parents and sponsoring agency.

Accommodate a child's scale, including how they will use the space, what they will see, and what kind of experience they will have, i.e., design through the eyes of a child.

Provide durable and cost effective materials and details. A CDC is used intensely; the design must be particularly sensitive to the life cycle cost of materials.

In as much a possible provide for flexibility as the installations' demographic needs change.

Child Development Center Features

Design criteria shall be based on a “large” facility that will accommodate approximately 250 to 300 children.

Follow criteria set forth in UFC 4-740-14, 1 August 2002, Design: Child Development Centers.

Fencing

Replace existing exterior fencing around the play areas with fences to define the play area, allow ease of supervision of children, and protect them from unauthorized individuals. The fence design shall be compatible with the architecture of the CDC and be more than simply utilitarian. Use a combination of fencing materials to avoid the institutional effect. The preferred fence type is a commercial grade aluminum fence with 1 inch pickets spaced no more then 3.5 inches apart. The fence shall have a bottom rail that meets finished grade. Follow all other fencing criteria as set forth in section 6-5 of the UFC 4-740-14. The following photo is an example of the type fence that is preferred for this facility.

Storage

Provide enclosed, weather-tight, vandal-proof storage in each play area. The storage structure shall house a wide range of play materials that are essential to children’s play including balls, water activity play, movable seating and hoops. The design or selection of storage units shall be in accordance with section 6-5.2 of the UFC 4-740-14.

Shade

Shade structures shall be provided throughout the play areas. Shade is a requirement for the CDC to receive DoD certification. Due to the extreme environment in which this facility is located the minimum of 10% shade coverage required by UFC 4-740-14 is increased to a minimum of 30% shade coverage. Due to the high heat and wind in this area the preferred shade structure shall have a steel roof with columns that are a minimum of 3 inches wide. Follow all other shade structure criteria as set forth in section 6-5 of the UFC 4-740-14. The following photo is an example of the type shade structure that is preferred for this facility.

Play Structure Surfacing

Provide poured-in-place resilient safety surfaces in accordance with section 6-5 of the UFC 4-740-14.

Plumbing

Repair potable water access on the exterior of the building within the play areas. Provide plumbing in accordance with section 6-5 of the UFC 4-740-14.

Drinking Water

Raise existing drinking fountains to appropriate heights for users between the ages of 5 years old to adult.

Hose Bibs

Provide a minimum of one hose bib in each play area for water play.

Misters

Provide misters on shade shelters where picnic tables or gather areas are located.

Plant Preparation

Existing Plant Material to remain

Preserve existing trees to the greatest extent possible. The Contractor shall tag trees to be saved with plastic or vinyl tape tied to the tree caliper. The Contractor shall protect existing trees by fencing planting areas to remain from compaction and any other damage with a barrier of metal poles a maximum 2.4 meter (8 feet) on center with plastic netting to a minimum of 3.0 meter (10 feet) radius from outside of the tree's trunk. Where tree drip lines are greater than 3.0 meter (10 feet) from the tree's trunk, locate barrier fencing at the drip line of the tree. The Contractor shall not allow debris from tree or stump removal operations to fall on or otherwise damage plants that are not scheduled for removal. Plastic tape and barrier fencing shall not be removed until planting operations are ready to begin and or instructed by the Contracting Officer. During the landscape warranty period, trees, turf, shrubs, and ground cover that are damaged or destroyed during construction operations shall be replaced by the Contractor at no additional cost to the Government. The Contractor, at the direction of the Contracting Officer, shall remove the existing tree and stump and replace it with trees of the same genus and species equal to the total caliper of the existing tree. Minimum caliper of replacement trees shall be 100 mm (4 inch). Replace shrubs with 18.9 liter (5 gallon) size container, ground cover with flat containers planted at 200 mm (8 inches) on center, and turf with sod, all of the same genus and species.

Planting over Utilities

Trees shall not be placed within 3 meter (10 feet) of any above or below-grade utility line or structure. Within roadway sightlines, mature shrubs shall not be greater than 1 m (3 feet) in height and trees shall be limbed up a minimum of 2 m (6 feet) so their mature growth will not obstruct views from vehicle intersections or points of vehicle ingress or egress.

Green Waste

Green waste: Contact the Public Works Department for potential green waste collection and hauling by the Government. Green waste not collected by the Government shall be separated from construction debris and delivered to the base's or local landfill's green waste recycling area. Quantify and report diverted waste to the Contracting Officer.

Plant Material

Plant Quantities

Provide new trees along the play areas fence periphery as noted on the layouts that can be found in landscape Architecture Layouts section of this document. Provide a minimum tree size of 5 gallon (1 inch) caliper. For trees within concrete or other non-permeable paved areas, allow a minimum non-paved planting area of 1.2 m by 2.4 m (4 feet by 8 feet per tree).

Ground covers shall include synthetic turf, inorganic mulch and decomposed granite. The minimum specification for synthetic turf shall be:
Yarn type:

- Grass Zone: Nylon
- Thatch Zone: Texturized High Bulk Nylon

Color :

- Grass Zone: Turf Green
- Thatch Zone: Turf Green

Pile height

- Grass Zone: 1.75"
- Thatch Zone: 1.5"

Face weight
56 ounces
Warranty
10 year warranty year
Roll width
15.00 Feet
Drain rate
30 inches per hour

The synthetic turf shall similar or equal to "SYNPlay Platinum 300" with a foam cushion backing for added safety. The surface artificial grass products shall be appropriate for in a playground setting with a lawn area and a safe play area.

Inorganic mulch shall meet the following minimum requirements, provide 75 mm (3 inch) depth of 25 mm to 50 mm (1" to 2" inch) rock mulch, and for larger areas outside of the play areas use 100 mm (4" inch)

size rock cobble, assure complete ground surface coverage. For decomposed granite, provide 50 mm (2 inch) minimum depth. Do not use decomposed granite as a ground cover on slopes 5:1 and greater.

The overall design intent should be to plant mostly trees within rock mulch, to reduce maintenance costs while still providing for functional planting requirements (e.g., soil stabilization, energy conservation, force protection, aesthetics, etc.).

Plant Quality

All plants shall comply with ANSI Z60.1 and ANSI Z133.1, current editions. All plants shall be in a healthy, disease and pest free condition.

Plant Selection

The reviewing Government Landscape Architect shall have final approval authority on all selected plant material. Species deemed unsuitable for planting by the Government Landscape Architect will not be allowed.

Plant Installation

Planting operations, including but not limited to planting soil mixes and fertilization, shall comply with local established practices and agricultural extension service recommendations. Stake newly planted trees with a minimum two stakes {2 – 63.5 mm (2 ½ inch) x 2.4 m (8 feet) hardwood}.

Edging Materials and Mulching Materials

Provide 100 mm (4 inch) recycled vinyl “L” shaped edging (equal or similar to “Oly-Ola” or 150 mm (6 inch) wide concrete edging dividing all shrub areas and dividing all planted and non-planted inorganic mulch areas. Mulch all planted areas with inorganic mulch a minimum of 75 mm (3-inch) depth.

Fertilizer

Fertilize all new trees as recommended by local agricultural extension services.

Weed Fabric and Erosion Control Fabric

Provide a biodegradable product designed specifically for erosion control on all sloped areas 3:1 and greater in slope.

Drainage

Provide for proper grading and drainage of planting areas. Provide sub-surface drainage where soil or other conditions do not allow surface drainage. Do not drain roof gutters into planter areas.

Irrigation systems

No irrigation system will be required for this project.

Exterior Furnishings

All site furnishings shall conform to the Base Exterior Architectural Plan (BEAP) and the Installation and Appearance Guide. Provide moveable tables, moveable chairs, moveable picnic tables, trash receptacles, benches, recycling receptacles, playground structures, storage shelters and shade structures.

Security Structures

No additional security structures will be required for this project.

Signage

No additional signage will be required for this project.

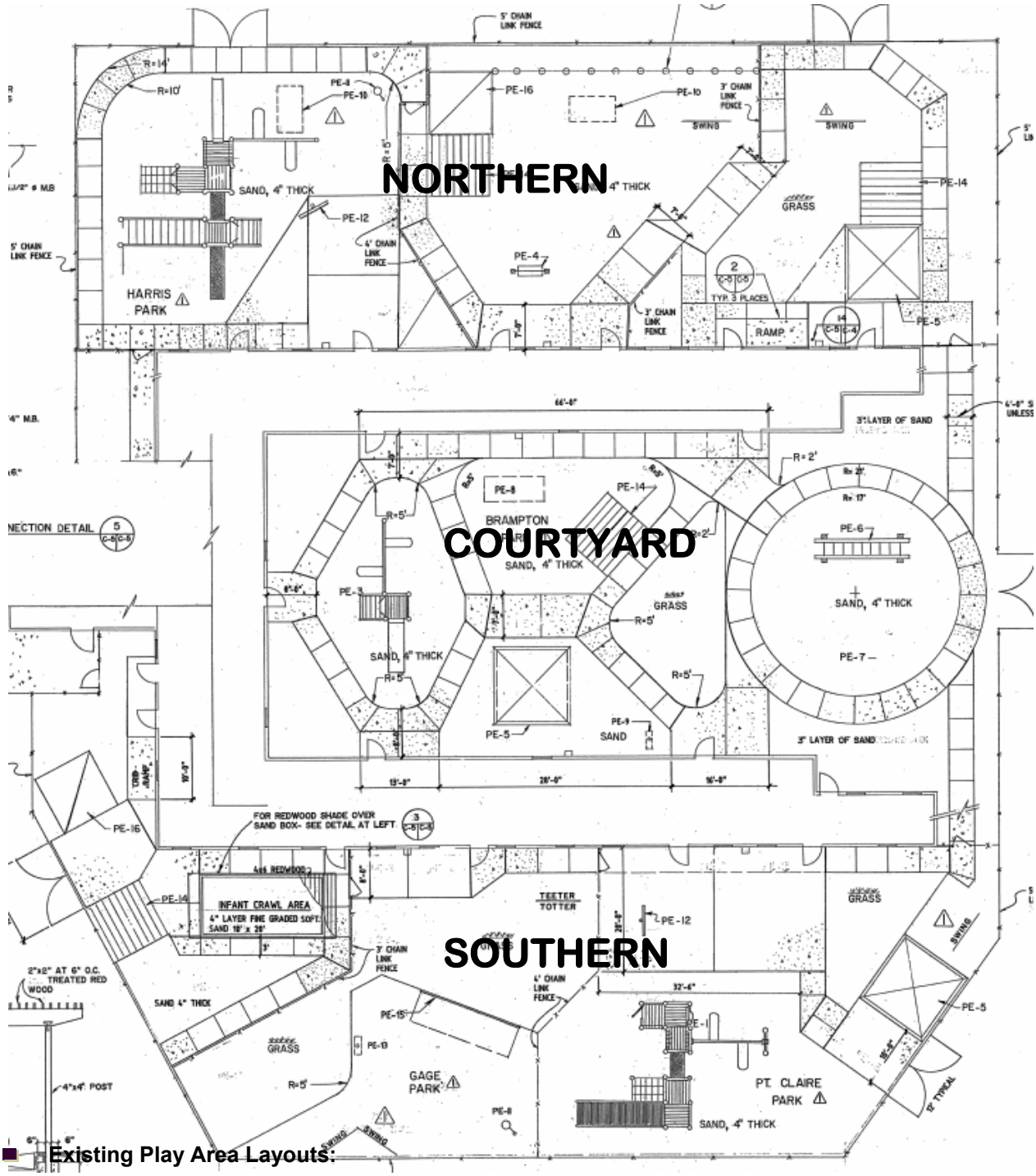
Other Site Improvements

No other site improvement will be required for this project.

Erosion Control Measures

Prevent erosion from occurring by providing erosion control measures as required by city, state and federal requirements.

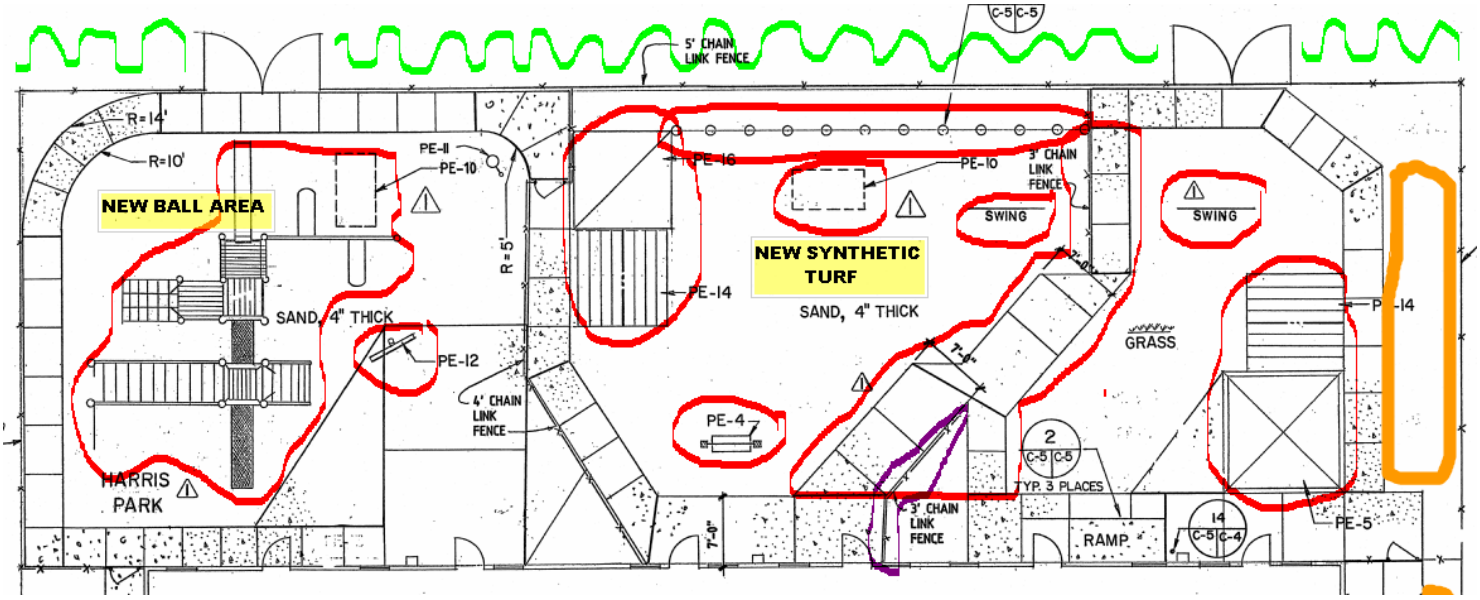
LANDSCAPE ARCHITECTURE: LAYOUTS



Existing Play Area Layouts:

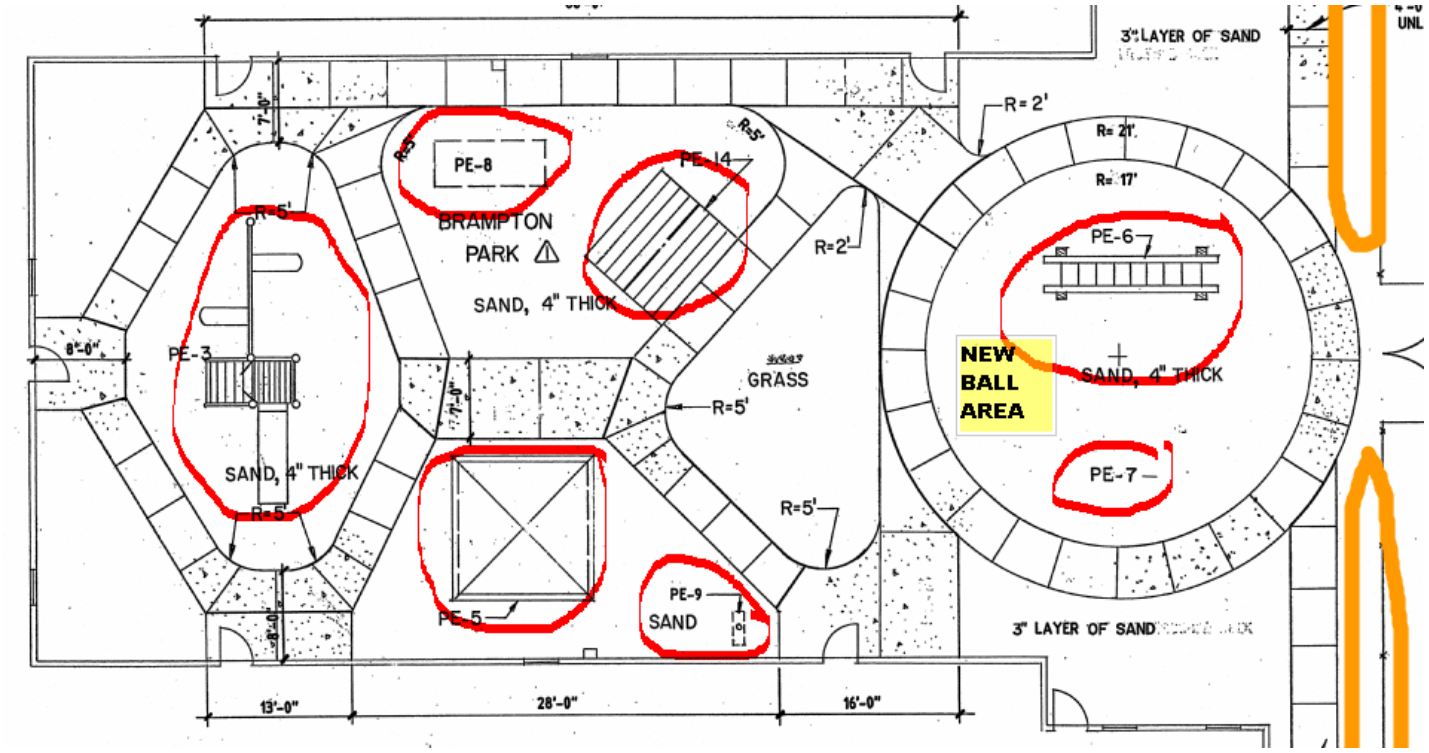
- Divided into three areas: Northern, Courtyard and Southern

NORTH PLAY AREA



- Remove all existing play structures and equipment known at this time. Those known to date are circled in red. Contractor shall field verify during the design process all features to be removed.
- Remove existing chain link fence that separates the north area into segments. The new layout shall be open with adequate space for soft-scape play, hard-scape ball play, shaded seating areas, an area for jumping games and school age play.
- Remove sidewalk circled in red on the plan above that separates the east side of the play area. The intent is to create a large soft-scape play area for running, tag, tumbling, and football/soccer type games.
- Preserve gate egress on the north side fence.
- Repair or replace exterior fence around the play area.
- Add a minimum of two new shade structures of the quality as specified in previous section.
- Add a concrete area for ball play such as basketball, wall ball, four square, and tether ball.
- Add a storage unit as per UFC, in a location similar to the area circled in orange.
- Add shade trees on the outside of the fence on the north side. Use only tree species that meet the requirement specified in previous section. Trees locations shall be as indicated by the green curving line on plan above.
- Raise drinking fountains to appropriate height as per specification in previous section.
- Insure all exterior hose bibs are in proper working condition. Repair all non-operative hose bibs.
- Add a minimum of three moveable tables, twenty moveable chairs and two moveable picnic tables.

COURTYARD PLAY AREA



- Remove all existing play structures and equipment known at this time. Those known to date are circled in red. Contractor shall field verify during the design process all features to be removed.
- Remove existing shade structures and install new shade structures as specified in previous section. Field verify during the design process all features to be removed.
- Create a new layout that shall be open with adequate space for hard-scape ball play, shaded seating areas, an area for jumping games and school age play.
- The design intent is to create a large play area for running, tag, tumbling, and football/soccer type games.
- Preserve gate egress on the east side fence.
- Repair or replace exterior fence around the play area.
- Add a minimum of two new shade structures of the quality as specified in previous section.
- Add a concrete area for ball play such as four square, and tether ball.
- Add a storage unit as per UFC, in a location similar to the area circled in orange.
- Raise drinking fountains to appropriate height as per specification in previous section.
- Insure all exterior hose bibs are in proper working condition. Repair all non-operative hose bibs.

Add a minimum of three moveable tables, twenty moveable chairs and two moveable

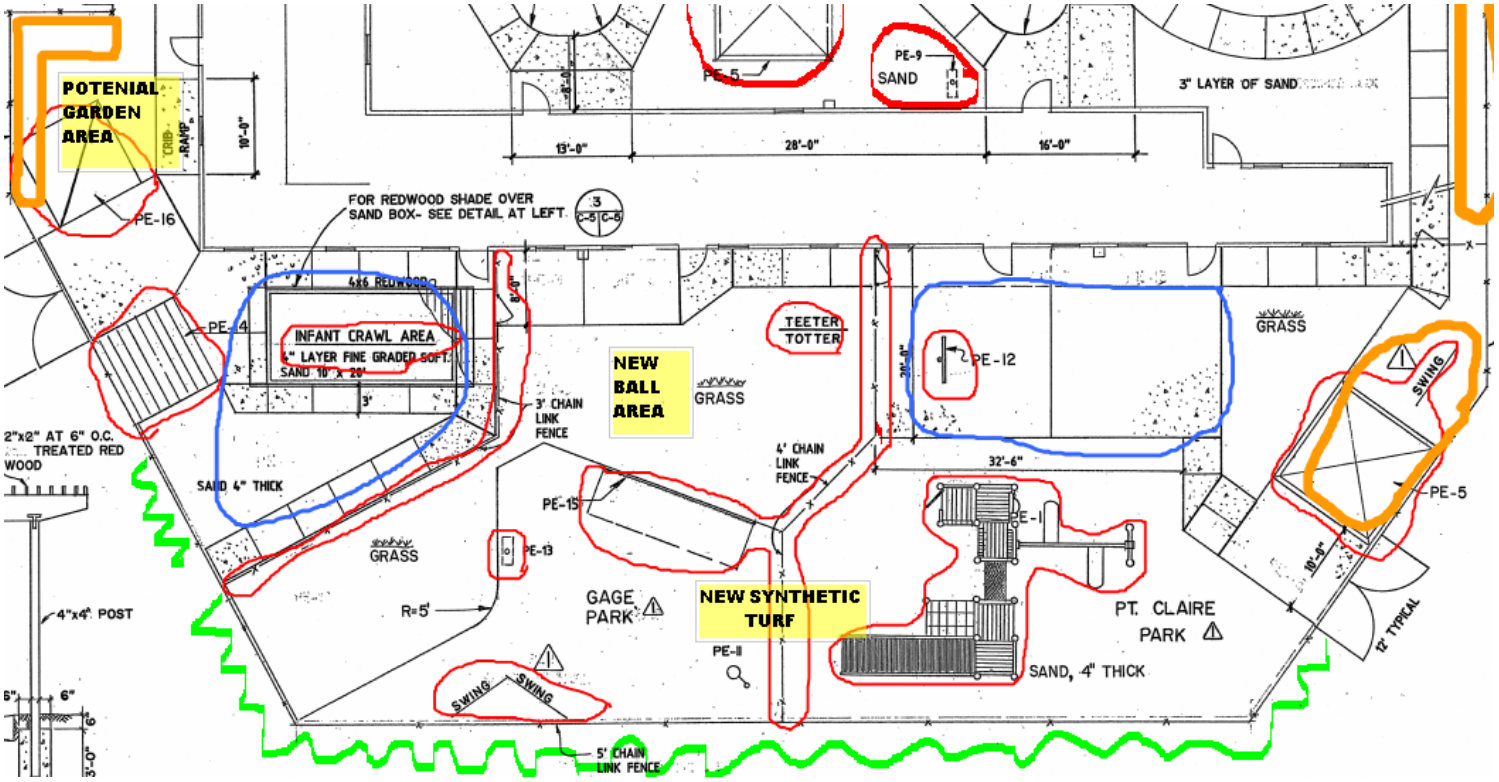
- The following photographs are of the existing courtyard play area.

Remove existing shade structures and install new shade structures as specified in previous section. Remove existing trees, filling those areas with concrete. Design new play areas around existing sidewalks within the courtyard. Update swings. Remove existing play equipment as it is not age appropriate. Replace with age appropriate play equipment or ball play layout as site permits.

Remove existing shade structures and install new shade structures as specified in previous section. Remove existing trees, filling those areas with concrete. Remove and replace storage shed shown in the back right corner of this photo.

Remove existing shade structures and install new shade structures as specified in previous section. Remove existing trees, filling those areas with concrete. Design new play areas around existing sidewalks within the courtyard. Remove existing play equipment as it is not age appropriate. Replace with age appropriate play equipment or ball play layout as site permits. Raise existing drinking fountain to appropriate height as per specification in previous section.

SOUTHERN PLAY AREA



- Remove all existing play structures and equipment known at this time. Those known to date are circled in red. Contractor shall field verify during the design process all features to be removed.
- Remove existing chain link fence that separates the southern area into segments. The new layout shall be open with adequate space for soft-scape play, hard-scape ball play, shaded seating areas, an area for jumping games and school age play.
- The design intent is to create a large soft-scape play area for running, tag, tumbling, and football/soccer type games.
- Provide a full size basketball court.
- Preserve gate egress on the north side fence.
- Repair or replace exterior fence around the play area.
- Add a minimum of two new shade structures of the quality as specified in previous section.
- Add a concrete area for ball play such as wall ball, four square, and tether ball.
- Add a storage unit as per UFC, in a location similar to the area circled in orange.
- Add shade trees on the outside of the fence on the south side. Use only tree species that meet the requirement specified in previous section. Trees locations shall be as indicated by the green curving line on plan above.
- Raise drinking fountains to appropriate height as per specification in previous section.
- Add a garden area on the north-west side of the play area. Fence across this area to remain. See photo that follows.
- Insure all exterior hose bibs are in proper working condition. Repair all non-operative hose bibs.
- Add a minimum of three moveable tables, twenty moveable chairs and two moveable picnic tables.

- The following photographs are of the existing southern play area.

Protect two existing steel shade structures that appear in the photo. New shade structures shall similar to these steel shade structures. Design new play areas adding or removing existing sidewalks to create a full size basketball court and soft-scape play area. Update swings. Remove existing play equipment as it is not age appropriate. Replace with age appropriate play equipment or ball play layout as site permits. Replace or repair fence as determined during the design process.

Protect two existing steel shade structures that appear in the photo. New shade structures shall similar to these steel shade structures. Design new play areas adding or removing existing sidewalks to create a full size basketball court and soft-scape play area. Update swings. Remove existing play equipment as it is not age appropriate. Replace with age appropriate play equipment or ball play layout as site permits. Replace or repair perimeter fence as determined during the design process.

Protect two existing steel shade structures that appear in the photo. New shade structures shall similar to these steel shade structures. Remove existing fabric covered shade structure on the left side of this photo. Design new play areas adding or removing existing sidewalks and rubberized play surfaces to create a full size basketball court and soft-scape play area. Remove existing play equipment as it is not age appropriate. Replace with age appropriate play equipment or ball play layout as site permits.

Remove existing fabric covered shade structure shown in this photo. Remove existing play equipment as it is not age appropriate. Replace with age appropriate play equipment or ball play layout as site permits. Replace or repair perimeter fence as determined during design process.

Update this space to be used as a garden area. Existing fence can remain in place. Existing steel frame can be used and have new fabric applied or removed dependent on new design for this area.

MECHANICAL

The renovation design and construction for all Plumbing, HVAC, and Fire Protection work shall be in accordance with SECTION 01 10 00, paragraph 4.0 APPLICABLE CRITERIA.

Plumbing

Unless noted otherwise, the plumbing requirements listed below are for areas where demolition and/or new work is being performed. Demo all plumbing fixtures per the architectural narrative. Terminate and cap all excessive utility piping that is no longer utilized. Piping shall only be abandon in place if not readily accessible i.e., buried waste and vent piping, and piping in wall cavities.

Provide floor drains for all bath rooms.

Provide lockable hose faucets for all bathrooms.

Provide tempered make-up air for all bathrooms.

Insulate all hot water and re-circulating piping.

Provide isolation valves for all piping for each bathroom.

Provide cleanouts as required.

All new plumbing fixtures shall be for adult use. Plumbing fixtures shall be water conservation type Vitreous china, nonabsorbent, hard-burned, and vitrified throughout the body shall be provided. Porcelain enameled ware shall have specially selected, clear white, acid-resisting enamel coating evenly applied on surfaces.

Each new fixture shall have the same utility (cold/hot/de-mineralized water, sanitary drain, gas, etc.) connections and materials as shown on the “as-built” drawings.

Provided water hammer arrestors as required by code.

No automatic flush controls shall be utilized.

Provide a hot water re-circulating main from the existing water heater to the most remote hot water fixture.

Water closet shall be elongated bowl with solid plastic elongated open-front seat.

Urinals shall be siphon jet, integral trap, and extended side shields.

Counter-top lavatories shall be self-rimming, minimum dimensions of 19 inches wide by 17 inches front to rear, with supply openings for use with top mounted center-set faucets.

Wall-hung lavatory shall be straight back type, minimum dimensions of 19 inches, wide by 17 inches front to rear, with supply openings for use with top mounted center-set faucets, and openings for concealed arm carrier installation. Provide aerator with faucet.

Kitchen sinks shall be 20 gage stainless steel with integral mounting rim for flush installation, minimum dimensions of 33 inches wide by 21 inches front to rear, two compartments, with undersides fully sound deadened, with supply openings for use with top mounted washer-less sink faucets with hose spray, and with 3.5 inch drain outlet. Provide 10” to 12” swing gooseneck spout with aerator and lever handles.

Drinking fountain (semi-recessed) shall be wall-hung, bubbler style, air-cooled condensing unit, 4.75 gph minimum capacity, stainless steel splash receptor and basin, and stainless steel cabinet. Bubblers shall be controlled by push levers or push bars, front mounted or side mounted near the front edge of the cabinet.

Wheelchair drinking fountain (fully exposed) shall be wall-mounted bubbler style with concealed chair carrier, air-cooled condensing unit, 4.75 gph minimum capacity, stainless steel splash receptor, and all stainless steel cabinet, with required knee clearances and required spout height above floor. Bubblers shall also be controlled by push levers, by push bars, or touch pads one on each side or one on front and both sides of the cabinet.

Wheelchair drinking fountain (semi-recessed) shall be wall-mounted bubbler style with concealed chair carrier, air-cooled condensing unit, 4.75 gph minimum capacity, stainless steel splash receptor, and all stainless steel cabinet, with required knee clearances and required spout height above floor. Bubblers shall also be controlled by push levers, by push bars, or touch pads one on each side or one on front and both sides of the cabinet.

The electric range/oven shall be UL listed residential grade. Oven shall have self-clean convection and bake/broil features. Oven size to be 30 inch with large viewing window. Range shall have two six inch) and two 8 inch coil burners, porcelain drip pans, lift-up cook top. All controls for the unit shall be electronic. (See HVAC and Fire for further information).

Refrigerator (NIC) shall have de-mineralized cold water stub-out with shut-off valve.

Cap all floor drains no longer in use. Caps shall be air and water tight and shall be constructed of brass or stainless steel with the words “abandon drain” engraved into cap.

HVAC

Unless noted otherwise, the HVAC requirements listed below are for areas where demolition and/or new work is being performed.

Demo and remove all ductwork, insulation, thermostats, supply diffusers, return diffusers, exhaust grilles, exhaust fans, etc. that is impacted by the redesign. All replacement equipment shall be new unless noted otherwise.

Contractor shall determine new outside air requirements, heating/cooling cfms for each zone and adjust HVAC equipment delivery rates as required. Redesign and install all new ductwork supply diffusers, return diffusers, exhaust grilles, etc. for proper airflows, coverage, and throws. All supply diffusers, return diffusers, and grilles shall match in color and pattern. For supply diffusers, this shall include panel size, and louver size.

All areas with new ceilings shall also have complete new supply diffusers, return diffusers, and grilles that match in color and pattern. For supply diffusers, this shall include panel size, and louver size. Adjust ductwork as required.

Provide opposed blade dampers for all supply diffusers.

A exhaust range hood shall be furnished for the electric range/oven. The air shall be exhausted outdoors. The length and color shall match range. Provide with metal mesh screens, two-speed exhaust fan, cook-top light with night setting, and light cover. (See HVAC and Fire for further information).

Testing, Adjusting, and Balancing (TAB) shall be performed on all new and modified systems.

Provide new fire and smoke dampers as required and interface to fire alarm panel as required.

Replace all thermostats with new programmable thermostats with Energy Star certification.

Reuse existing exhaust “weather hood” penetrations if possible otherwise provide new exhaust penetrations.

Provide seismic restraints as required.

Fire

1. The residential type range top cooking surface must be equipped with an approved UL residential range top extinguishing system. The range top extinguishing system must be connected to the building fire alarm system to sound a general building fire alarm and must automatically shut off all sources of fuel and electric power that produce heat to the equipment being protected by that unit. (See HVAC and Plumbing for further information).

2. The building is partially protected by an automatic sprinkler system; as-built drawing M-1 shows the following hazard areas protected: 105 Storage, 106 Staff, 107 Toilet, 108 SOL., 110 Kitchen, 111 Pantry, 114 Storage, 115 Maintenance, and 131 Laundry Room. A site visit revealed that the following rooms were also protected with sprinkler heads: 116 Toilet, 117 Receiving, and 132 Janitor. The existing fire sprinkler system is a dedicated main that branches off a 6 inch main located on the east side of the facility (see as-built sheet C-3). Provide the following items:

a. Install sprinkler coverage for 112 Electrical Room.

b. Install sprinkler coverage for 113 Mechanical Room.

c. Install sprinkler coverage for new Demonstration Kitchen.

d. Provide an indicating shutoff valve, supervised in accordance with NFPA 13.

e. Provide a water flow detection device that is tied into the fire alarm panel and will sound the local building alarm.

ELECTRICAL

All electrical work shall be NFPA-70 code compliant. Electrical work shall include all power, lighting and communication upgrade, retrofit and demolition.

Overall design and construction shall also conform to Applicable Criteria paragraph 4.0 and Project Specific requirements paragraph 6.0, Section 01 10 00.

There will be wall and partition removal\reconfiguration in various rooms [refer architectural\structural narrative under room by room requirements (interior)]. Contractor shall demo electrical devices such as switches, outlets etc associated (with wall\partition removal) and systematically rearrange\reuse existing good circuits, for electrical rewiring (power, lighting) in reconfigured room layout. When reutilizing existing circuits, apply sound judgment based on NFPA-70 and NFPA-101 while ensuring circuit integrity all the way to electrical Panel.

All new power and communication drops shall be from the ceiling.

All power outlets in the affected rooms and toilets, located at less than 54" AFF; shall be moved up to maintain a clearance of 54" AFF.

LIGHTING

Lighting shall be designed to minimize glare and with following average foot candle levels for various areas. Direct\indirect lighting may be used in Childcare and Computer Lab to maximize comfort. Lighting shall utilize 2 or 3 T-8, HO lamps per fixtures. Multi-switching may be incorporated in Karate\Dance room.

Rooms scoped for modification in this document shall have all new light, new wall switches and new ceiling mounted motion sensors. More than one motion sensors with coverage overlap may be used in rooms with ceiling height partition walls and\or any other partition. All new wall-mounted light switches and ceiling mounted motion sensors shall be preferably Low Voltage. Each motion sensor shall be located minimum 6'-0" from HVAC vents and\or diffusers.

All toilets modified under the scope of this project shall have motion sensors optimally located to control lights.

Kitchen	50 FC
Bathrooms	30 FC
Childcare	50 FC
Computer Lab	50 FC
Dance\Karate	50 FC

Some existing rooms to be modified under architectural\structural narrative have canister type down lights, these lights shall be removed and replaced by new recessed fluorescent fixtures.

All track lights from the affected rooms shall be removed and turned over to the Contracting Officer.

Emergency Exit Lighting

Emergency exit lighting shall be installed per NFPA and shall be LED type.

COMMUNICATION

Cameras
Because of wall and partition removal\reconfiguration in various rooms, certain ceiling mounted cameras may have be relocated to optimize coverage and eliminating any blind spot. Extra cameras shall be turned over to Contacting Officer.

It is user preference that Camera reconfiguration shall be done with at least one camera (with full zooming capability) located in the center of reconfigured room to provide overall coverage of the room and including entrance to its bathrooms.

Newly reconfigured play area shall cameras relocated to provide maximum effective coverage.

Intercom
Because of wall and partition removal\reconfiguration in various rooms, certain intercom modules may have be relocated to different walls. Wall-mounted Intercom modules shall be relocated on different walls at a location which is obstruction free and easily accessible. These modules shall be mounted a minimum 54" AFF.

Fire Alarm Detection and Reporting System

Contractor shall field-verify that existing Fire Alarm Control Panel is adequate to accommodate new circuits as required by the Scope described in this document. Contractor shall be responsible for upgrading Fire Alarm Control Panel if necessary and perform actual testing for successful signal transmission to the Central Base Facility.

Test the battery adequacy for ample capacity to operate the fire alarm system for a period of 72 hours, with primary power disconnected. Following this period of battery operation, the batteries shall have ample capacity to operate all components of the system, including all alarm signaling devices in the total alarm mode for a period of 15 minutes. In case of conflict with any other document requirements, stringent requirements will govern.

In the affected rooms provide new dual (photoelectric\ionization) type smoke detectors. Smoke detectors shall be hard wired to Fire Alarm Control Panel, using class A, 4 wire, loop-in and loop-out conduit system. All smoke detectors shall be placed at least 3'-0" from HVAC diffusers.

Provide one dual-technology smoke detector above ceiling of each renovated room (excluding toilets) within the scope of this project. All smoke detectors shall be wired into fire alarm control panel.

Compliance with NFPA 70, 72, & 101, UFC 3-600-01 and UFC 4-740-14 is required for all reconfigured room. Fire protection operation and modification shall be coordinated & approved by Base Fire Marshall or his representative (POC Mr. Olaf Tryggvason of Fire Prevention Bureau can be reached at 760-380-6847.

Electrical\Communication Issues:
To accommodate new computer lab load, Contractor shall be involved in minor communication infra-structure modifications. Contractor shall splice an existing 144-FSM cable (strands 133-144) in an existing handhole GL-14 across Goldstone Road, with a new 12 strand SM cable . New 12 strand SM, underground F\O cable run shall be brought into existing electrical room of the building 1332 and terminated on the existing TTB. From this point it shall be distributed into the building to accommodate modifications and new loads.

Coordinate all design and construction with DOIM's Don Wanco @ 760-380-5000.

ROOM-BY-ROOM REQUIREMENTS – INTERIOR

ROOM 100 – LOBBY

Architectural Issues:

- New Exterior storefront, glass entry doors shall be dual pane with ¼" laminated glass at inner lite.

Special Door Hardware (Special Locks):

- None

Shelving/Cabinet Requirements (Items for Storage – Chemical, Administrative Products, Shelving):

- None

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None

Interior Design Issues:

- Remove the low art display panels along the north side of the corridor.
- Fix patched flooring where repair work has been done. Match new sheet vinyl.
- New built-in counter-top with storage will be part of the Receptionist #101, see that section for more information.
- Remove the existing wallcovering. Replace with new wallcovering.
- Vinyl wall covering shall be Type II for heavy duty wear. Surface of the vinyl wall covering shall be smooth, no grooves or dimples for dirt to accumulate. Texture shall be created visually with pattern/design of wall covering, not embossing. VWC color to coordinate with the selected color scheme for the facility.
- Wall guards and corner guards in this area shall be high impact integral color vinyl in color to coordinate with the chosen color scheme (Korogard, Acrovyn , Arden, or IPC).

Structural Issues:

- None

Mechanical Issues:

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- None

Power:

- None

Communications:

- None

Audio Visual (Video and Audio Equipment):

- None.

ROOM 101 – Receptionist

Architectural Issues:

- Vinyl wall covering finish with 6" resilient base. Floor-to-ceiling corner guards for all corners.
- Resilient flooring.

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- Remove the low art display panels along the north side of the corridor.
- Fix patchy flooring where repair work has been done. Match new sheet vinyl.
- New built-in counter-top with storage will be added. This counter-top will facilitate 2 card swipes (one hourly, the other PDPS). Existing systems furniture will be removed. New built-in counter-top finish will be variegated pattern solid surface material with rounded edges. Storage finish will be variegated pattern high-pressure plastic laminate.
- The larger area past the new counter-top (south) will be an adult waiting area.
- Remove the existing wallcovering. Replace with new wallcovering.
- Vinyl wall covering shall be Type II for heavy duty wear. Surface of the vinyl wall covering shall be smooth, no grooves or dimples for dirt to accumulate. Texture shall be created visually with pattern/design of wall covering, not embossing. VWC color to coordinate with the selected color scheme for the facility.
- Wall guards and corner guards in this area shall be high impact integral color vinyl in color to coordinate with the chosen color scheme (Korogard, Acrovyn , Arden, or IPC).

Structural Issues:

- None.

Mechanical Issues:

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- None

Power:

- None

Communications:

- None

Audio Visual (Video and Audio Equipment):

- None

ROOM 102 – OFFICE

Architectural Issues:

- None

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- None

Structural Issues:

- None.

Mechanical Issues:

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- None

Power:

- None

Communications:

- None

Audio Visual (Video and Audio Equipment):

- None

ROOM 103 – OFFICE

Architectural Issues:

- None

Special Door Hardware (Special Locks):

- None

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- None

Structural Issues:

- None.

Mechanical Issues:

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- None

Power:

- None

Communications:

- None

Audio Visual (Video and Audio Equipment):

- None

ROOM 104 – STAFF/WORK

Architectural Issues:

- None

Special Door Hardware (Special Locks):

- None

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- None

Structural Issues:

- None.

Mechanical Issues:

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- None.

Power:

- None.

Communications:

- None.

Audio Visual (Video and Audio Equipment):

- None.

ROOM 105 – STORAGE

Architectural Issues:

- None.

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- None.

Structural Issues:

- None.

Mechanical Issues:

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- None.

Power:

- None.

Communications:

- None.

Audio Visual (Video and Audio Equipment):

- None

ROOM 106 – TOILET

Architectural Issues:

- None.

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- None.

Structural Issues:

- None.

Mechanical Issues:

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- None.

Power:

- None.

Communications:

- None.

Audio Visual (Video and Audio Equipment):

- None

ROOM 107 – TOILET

Room Function:

- None.

Architectural Issues:

- None.

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- None.

Structural Issues:

- None.

Mechanical Issues:

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- None.

Power:

- None.

Communications:

- None.

Audio Visual (Video and Audio Equipment):

- None

ROOM 108 – ISOLATION

Architectural Issues:

- None.

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- None.

Structural Issues:

- None.

Mechanical Issues:

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- None

Power:

- None

Communications:

- None

Audio Visual (Video and Audio Equipment):

- None

ROOM 109 – CORRIDOR

Architectural Issues:

- New semi-recessed handicap accessible drinking fountain

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- Repair any damaged flooring. Match existing sheet vinyl.
- Remove the existing wallcovering. Replace with new wallcovering.
- Vinyl wall covering shall be Type II for heavy duty wear. Surface of the vinyl wall covering shall be smooth, no grooves or dimples for dirt to accumulate. Texture shall be created visually with pattern/design of wall covering, not embossing. VWC color to coordinate with the selected color scheme for the facility.
- Wall guards and corner guards in this area shall be high impact integral color vinyl in color to coordinate with the chosen color scheme (Korogard, Acrovyn , Arden, or IPC).

Structural Issues:

- None

Mechanical Issues:

- Remove existing water fountain.

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- Provide additional dual head emergency light packs in Corridor 109, in line with existing fixtures to effectively cover the hallway.

Power:

- Provide child safety type, Hospital grade NEMA 6-20R outlets in this corridor at 16' intervals, at 54" AFF.

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Communications:

- None

Audio Visual (Video and Audio Equipment):

- None.

Fire Protection Issues:

-

ROOM 110 – KITCHEN

Architectural Issues:

- None

Special Door Hardware (Special Locks):

- None

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None

Interior Design Issues:

- None

Structural Issues:

- None

Mechanical Issues:

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- None

Power:

- None

Communications:

- None

Audio Visual (Video and Audio Equipment):

- None

ROOM 111– PANTRY

Architectural Issues:

- None

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None

Interior Design Issues:

- None

Structural Issues:

- None

Mechanical Issues:

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- None

Power:

- None

Communications:

- None

Audio Visual (Video and Audio Equipment):

- None.

Fire Protection Issues:

- None

ROOM112 – ELECTRICAL

Architectural Issues:

- None

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None

Interior Design Issues:

- None

Structural Issues:

- None

Mechanical Issues:

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues: Electrical work in this room shall be determined by the Contractor, as required to complete modifications stated in this entire document.

Lighting:

- None

Power:

- None

Communications:

- As required to accommodate infra-structure improvements stated under electrical\communication exterior paragraph on the front of this document and communication requirements stated in this entire documents.

Audio Visual (Video and Audio Equipment):

- None

ROOM 113 – MECHANICAL

Architectural Issues:

- None

Special Door Hardware (Special Locks):

- None

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- None

Structural Issues:

- None

Mechanical Issues:

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- None

Power:

- None

Communications:

- None

Audio Visual (Video and Audio Equipment):

- None.

Fire Protection Issues:

- None

ROOM 114 – STORAGE

Architectural Issues:

- None

Special Door Hardware (Special Locks):

- None

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- None

Structural Issues:

- None.

Mechanical Issues:

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- None

Power:

- None

Communications:

- None

Audio Visual (Video and Audio Equipment):

- None.

ROOM 115 – MAINTENANCE

Architectural Issues:

- None

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- None.

Structural Issues:

- None.

Mechanical Issues:

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- None

Power:

- None

Communications:

- None

Audio Visual (Video and Audio Equipment):

- None.

Fire Protection Issues:

- None

ROOM 116 – TOILET

Room Function:
- None

Architectural Issues:
- None

Special Door Hardware (Special Locks):
- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):
- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):
- None.

Interior Design Issues:
- None.

Structural Issues:
- None.

Mechanical Issues:
- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:
- None

Power:
- None

Communications:
- None

Audio Visual (Video and Audio Equipment):
- None.

Fire Protection Issues:
- None

ROOM 117 – RECEIVING

Architectural Issues:

- None

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- None.

Structural Issues:

- None.

Mechanical Issues:

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- None

Power:

- None

Communications:

- None

Audio Visual (Video and Audio Equipment):

- None

Fire Protection Issues:

- None

ROOM 118 – COMPOSITE

Architectural Issues:

- This area is to be turned into an activity space.
- Base cabinets
- Handicap accessible drinking fountain
- Room 123 shall be a storage closet with shelves and door with lower and upper view panels
- Suspended acoustical ceiling tile at 8 feet above finished floor.
- Window shall be dual pane, with ¼" laminated glass at inner lite.
- Vinyl wall covering finish with resilient base.
- Vinyl composition tile (VCT) flooring.

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- Existing Corian counter-tops will be reused to the maximum extent possible, only the cabinetry needs to be replaced.
- The low cabinetry needs to be replaced with taller cabinets sized for the older children.
- All the convex mirrors that are removed, need to be salvaged and turned over to the Contracting Officer.
- Existing acoustical ceiling tiles and suspension system will be removed. New acoustical ceiling tiles and suspension system will be installed per new room reconfiguration.
- Acoustical ceiling tile shall be Type III (non-asbestos mineral fiber with painted finish), Pattern E, Class A, NRC range .65-.75, CAC range 40-44. Tile size shall be 2' x 4'. Tile finish shall be white. Suspension system shall be a standard exposed grid conforming to ASTM C 635 for intermediate-duty systems. The suspension exposed grid shall be of aluminum or steel with a factory-applied white baked-enamel finish.
- Replace damaged VCT (5%). Match existing vinyl composition tile. VCT shall have the color and pattern uniformly distributed through out the thickness of the product.
- Repair any damaged or missing wall covering due to room reconfigure and acoustical tile removal in Music/Media area of room. Match existing painted wallcovering to maximum extent possible.
- Vinyl wall covering (VWC) shall be Type II for heavy duty wear. Surface texture of the vinyl wall covering shall match existing painted wall covering texture. VWC color to coordinate with the selected color scheme for the facility.

Structural Issues:

- None.

Mechanical Issues:

- Provide new handicap accessible drinking fountain (fully exposed).

- Reuse existing sinks and elevate to accommodate new height of countertop (see architectural narrative). Extend all utilities as required.

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

There will be wall and partition removal\reconfiguration in room 118. Contractor shall demo electrical devices such as switches, outlets etc associated (with wall\partition removal) and systematically rearrange\reuse existing good circuits, for electrical rewiring (power and lighting) in reconfigured room layout. When reutilizing existing circuits, apply sound judgment based on NFPA-70 and NFPA 101while ensuring circuit integrity all the way to electrical panels.

Lighting:

Lighting:

- Room 118 shall require limited lighting rearrangement due to demolition of a wall. In most part existing light fixtures may be reused. All existing track lights shall be removed.

Lighting level of 50 FC along with multiple switching is required. A few selected new light fixtures shall be provided with emergency battery pack to provide uniform illumination thru-out the room in case of power outage.

Power:

- Existing outlet cover plate located on the common entrance wall (M\F toilets) shall be changed to white, in composite room 118.

No power outlets shall be below 54" AFF.

Communications:

- Existing intercom module located on demo wall, shall be relocated 54" AFF on the wall near the entrance to composite room 118.

Audio Visual (Video and Audio Equipment):

- Relocate\ rearrange cameras to optimize coverage.

Fire Protection Issues:

- Provide new smoke detectors wired for class A , 4 wire service connected to existing Fire Alarm Control Panel.

Compliance with NFPA 70, 72, & 101, UFC 3-600-01 and UFC 4-740-14 is required.

ROOM 124 – TODDLERS

Architectural Issues:

- This area is to be turned into an activity space.
- Handicap accessible drinking fountain (semi-recessed)
- Suspended acoustical ceiling tile at 9 feet above finished floor.
- Window shall be dual pane, with ¼" laminated glass at inner lite.
- The existing raised platform along the west side of the space shall be connected in the new space. This existing platform will be made deeper, the platform will be extended approximately 2' (to the east) out from the existing platform.
- Vinyl wall covering finish with resilient base.
- Vinyl composition tile (VCT) flooring.
- New boys and girls restrooms. Boys restroom to include one urinal, one water closet and two lavs. Girls restroom to include two water closet and two lavs. Include all required toilet accessories in both.

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- The existing Corian counter-tops along the west side of the space shall be removed. Existing Corian counter-tops will be reused to the maximum extent possible in the other areas of this facility remodel that counter-tops are being added (i.e. Reception #101, Kitchen #142, etc.).
- Existing acoustical ceiling tiles and suspension system will be removed. New acoustical ceiling tiles and suspension system will be installed per new room reconfiguration.
- Acoustical ceiling tile shall be Type III (non-asbestos mineral fiber with painted finish), Pattern E, Class A, NRC range .65-.75, CAC range 40-44. Tile size shall be 2' x 4'. Tile finish shall be white. Suspension system shall be a standard exposed grid conforming to ASTM C 635 for intermediate-duty systems. The suspension exposed grid shall be of aluminum or steel with a factory-applied white baked-enamel finish.
- Replace damaged VCT (5%). Match existing vinyl composition tile. VCT shall have the color and pattern uniformly distributed through out the thickness of the product.
- Repair any damaged or missing wall covering due to room reconfigure. Match existing painted wallcovering to maximum extent possible.
- Vinyl wall covering (VWC) shall be Type II for heavy duty wear. Surface texture of the vinyl wall covering shall match existing painted wall covering texture. VWC color to coordinate with the selected color scheme for the facility.

Structural Issues:

- None.

Mechanical Issues:

- Provide new handicap accessible drinking fountain (semi-recessed).
- Demo all plumbing fixtures.

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

There will be wall and partition removal\reconfiguration. Contractor shall demo electrical devices such as switches, outlets etc associated (with wall\partition removal) and systematically rearrange\reuse existing good circuits, for electrical rewiring in reconfigured room layout. When reutilizing existing circuits, apply sound judgment based on NFPA-70 and NFPA-101 while ensuring circuit integrity all the way to electrical panels.

Lighting:

- All existing track lights shall be removed from toddler room 124. Lighting level of 50 FC shall be provided with multiple switching. A few selected new light fixtures shall be provided with emergency battery pack to provide uniform illumination thru-out the room in case of power outage.

Power:

- No power outlets shall be below 54" AFF, and each outlet shall be Child safety type

Communications:

- None

Audio Visual (Video and Audio Equipment):

- Rearrange and relocate cameras to provide optimum coverage..

Fire Protection Issues:

- Provide new smoke detectors wired for class A, 4 wire service connected to Existing Fire Alarm Control Panel.

  Compliance with NFPA 70, 72, & 101, UFC 3-600-01 and UFC 4-740-14 is required.

ROOM 124B – TOILET

Room Function:

- New Boys Toilet Room

Architectural Issues:

- Toilet room to include one urinal, two water closet and three lavs. One toilet and lav. to handicap accessible.
- Install toilet partitions
- Suspended gypsum board ceiling at 9 feet above finished floor.
- Painted ceiling and wall finish above FRP wall panels.
- Resilient flooring with integral cove base.

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- New suspended gypsum board ceiling will be installed.
- Painted ceiling and wall finish above FRP wall panels. The wall panels need to be installed in the wet areas (toilets and sinks) of room.
- FRP wall panels are fiberglass reinforced plastic impact resistant and durable wall panels with matching trim pieces.
- Install new resilient flooring with a self-cove base. The resilient flooring shall be a Type I homogeneous product without backing. The color and pattern shall extend through the total thickness of the material. Extend the integral coved base up the wall 6 inches. Provide a square cap strip on the top of the integral cove. The seams of the resilient flooring and integral cove will be heat-welded to create a seamless installation.

Structural Issues:

- None.

Mechanical Issues:

- Add new bathroom fixtures and utilities (see architectural narrative).
- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- Provide surface mounted light fixture to provide uniform 30 FC light levels, with a new wall-mounted switch at 54” AFF.

Power:

- Provide GFCI type, safety outlet mounted 54” AFF. Bathroom exhaust fan shall connected to new light switch. Also coordinate with Mechanical Issues above for any other specific consideration for exhaust fan.

Communications:

- None

Audio Visual (Video and Audio Equipment):

- None.

Fire Protection Issues:

- None

ROOM 124G – TOILET

Room Function:

- New Girls Toilet Room

Architectural Issues:

- Toilet room to include three water closet and three lavs. One toilet and lav. to handicap accessible.
- Install toilet partitions
- Suspended gypsum board ceiling at 9 feet above finished floor.
- Painted ceiling and wall finish above FRP wall panels.
- Resilient flooring with integral cove base.

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- New suspended gypsum board ceiling will be installed.
- Painted ceiling and wall finish above FRP wall panels. The wall panels need to be installed in the wet areas (toilets and sinks) of room.
- FRP wall panels are fiberglass reinforced plastic impact resistant and durable wall panels with matching trim pieces.
- Install new resilient flooring with a self-cove base. The resilient flooring shall be a Type I homogeneous product without backing. The color and pattern shall extend through the total thickness of the material. Extend the integral coved base up the wall 6 inches. Provide a square cap strip on the top of the integral cove. The seams of the resilient flooring and integral cove will be heat-welded to create a seamless installation.

Structural Issues:

- None.

Mechanical Issues:

- Add new bathroom fixtures and utilities (see architectural narrative).
- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues: Lighting and power requirements for 124B toilet room shall be similar to 124G.

Lighting:

- Provide surface mounted light fixture to provide uniform 30 FC light levels, with a new wall-mounted switch at 54” AFF.

Power:

- Provide GFCI type, safety outlet mounted 54” AFF. Bathroom exhaust fan shall connected to new light switch. Also coordinate with Mechanical Issues above for any other specific consideration for exhaust fan

Communications:

- None.

Audio Visual (Video and Audio Equipment):

- None.

Fire Protection Issues:

- None

ROOMS 130 – CORRIDOR

Architectural Issues:

- Handicap accessible drinking fountain (semi-recessed)
- Windows shall be dual pane, with ¼" laminated glass at inner lite.
- Vinyl wall covering finish with 6" resilient base. Floor-to-ceiling corner guards for all corners.
- Resilient flooring.

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- Repair any damaged flooring. Match existing sheet vinyl.
- Remove the existing wallcovering. Replace with new wallcovering.
- Vinyl wall covering shall be Type II for heavy duty wear. Surface of the vinyl wall covering shall be smooth, no grooves or dimples for dirt to accumulate. Texture shall be created visually with pattern/design of wall covering, not embossing. VWC color to coordinate with the selected color scheme for the facility.
- Wall guards and corner guards in this area shall be high impact integral color vinyl in color to coordinate with the chosen color scheme (Korogard, Acrovyn , Arden, or IPC).

Structural Issues:

- None.

Mechanical Issues:

- Provide new drinking fountain (semi-recessed).
- Provide new handicap accessible drinking fountain (semi-recessed).
- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- Provide additional dual head emergency light packs in Corridor 130, in line with existing fixtures to effectively cover the hallway.

Power:

- Provide child safety type, Hospital grade NEMA 6-20R outlets in this corridor at 16' intervals, at 54" AFF.

Communications:

- None

Audio Visual (Video and Audio Equipment):

- None.

Fire Protection Issues:

- None

ROOM 131 – LAUNDRY

Architectural Issues:

- None

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- None.

Structural Issues:

- None.

Mechanical Issues:

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- None

Power:

- None

Communications:

- None

Audio Visual (Video and Audio Equipment):

- None.

Fire Protection Issues:

- Provide a smoke detector in the laundry room which will sound a local alarm and transmit signal to the facility Fire Alarm Control Pane

ROOM 132 – JANITOR

Room Function:
- None

Architectural Issues:
- None

Special Door Hardware (Special Locks):
- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):
- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):
- None.

Interior Design Issues:
- None.

Structural Issues:
- None.

Mechanical Issues:
- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:
- None

Power:
- None

Communications:
- None

Audio Visual (Video and Audio Equipment):
- None.

Fire Protection Issues:
- None

ROOM 133 – TOILET

Room Function:

- Storage room

Architectural Issues:

- This room is to be turned into a storage room.
- Suspended gypsum board ceiling at 9 feet above finished floor.
- Painted ceiling and wall finish with resilient base.
- Vinyl composition tile flooring.

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- Provide minimum three adjustable 1 foot deep by 3 foot long wooden shelves mounted on wall with metal standards and brackets.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- New suspended gypsum board ceiling will be installed.
- Remove the existing wall finishes. Repair, refinish and paint walls.
- Install a new vinyl composition tile floor. Match existing vinyl composition tile in adjacent areas. VCT shall have the color and pattern uniformly distributed through out the thickness of the product.

Structural Issues:

- None.

Mechanical Issues:

- Demo all plumbing fixtures
- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- None

Power:

- No power outlets and switch shall be located below 54” AFF.

Communications:

- None

Audio Visual (Video and Audio Equipment):

- None.

Fire Protection Issues:

- None

ROOM 134 – INFANT

Room Function:

- Dance studio and Karate area

Architectural Issues:

- This area is to be turned into a dance studio (15-20 children per class) and karate area (15-20 children per class).
- Handicap accessible drinking fountain(semi-recessed).
- Suspended acoustical ceiling tile at 9 feet above finished floor.
- Window shall be dual pane, with ¼" laminated glass at inner lite.
- Vinyl wall covering finish with resilient base.
- Vinyl composition tile (VCT) flooring.
- Toe bars
- Floor to ceiling mirrors

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- The existing Corian counter-tops and cabinetry shall be removed and reused. Existing Corian counter-tops will be reused to the maximum extent possible in the other areas of this facility remodel that counter-tops are being added (i.e. Reception #101, Kitchen #142, etc.).
- Existing acoustical ceiling tiles and suspension system will be removed. New acoustical ceiling tiles and suspension system will be installed per new room reconfiguration.
- Acoustical ceiling tile shall be Type III (non-asbestos mineral fiber with painted finish), Pattern E, Class A, NRC range .65-.75, CAC range 40-44. Tile size shall be 2' x 4'. Tile finish shall be white. Suspension system shall be a standard exposed grid conforming to ASTM C 635 for intermediate-duty systems. The suspension exposed grid shall be of aluminum or steel with a factory-applied white baked-enamel finish.
- Remove the existing wallcovering. Replace with new wallcovering.
- Vinyl wall covering shall be Type II for heavy duty wear. Surface of the vinyl wall covering shall be smooth, no grooves or dimples for dirt to accumulate. Texture shall be created visually with pattern/design of wall covering, not embossing. VWC color to coordinate with the selected color scheme for the facility.
- Replace damaged VCT due to space reconfiguration. Match existing vinyl composition tile. VCT shall have the color and pattern uniformly distributed through out the thickness of the product.
- Place floor to ceiling mirrors and toe bars along north, south, east and west walls

Structural Issues:

- None.

Mechanical Issues:

- Provide new handicap accessible drinking fountain (semi-recessed).

- Demo all plumbing fixtures.

- Add new bathroom fixtures and utilities (see architectural narrative).

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

There will be wall and partition removal\reconfiguration. Contractor shall demo electrical devices such as switches, outlets etc. associated (with wall\partition removal) and systematically rearrange\reuse existing good circuits, for electrical rewiring in reconfigured room layout. When reutilizing existing circuits, apply sound judgment based on NFPA-70 and NFPA-101, ensuring circuit integrity all the way to electrical panels.

Lighting:

- Rearrange lighting to illuminate reconfigured room for new function (Karate\dance). Remove all existing track lights and canister type down lights. Suitably relocate existing emergency lights to increase effective coverage and to minimize protrusion. Lights may be zone switched to maximize energy conservation. Dancing psychedelic lights shall be on a separate light switch.

Power:

- Power outlets shall be installed @ 54" AFF. Separate power outlets shall be installed for musical equipment.

Communications:

- . Existing cameras shall be rearranged to provide effective coverage of reconfigured room.

Audio Visual (Video and Audio Equipment):

- Amplifiers and speakers for balanced sound effect in the room.

Fire Protection Issues:

- Compliance with NFPA 70, 72 & 101, UFC 3-600-01 and UFC 4-740-14 is required

ROOM 139 – CLOSET

Room Function:

- Storage closet.

Architectural Issues:

- Painted wall finish with resilient base.
- Vinyl composition tile (VCT) flooring.
- New door with view panels.

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- Provide minimum three adjustable 1 foot deep by 3 foot long wooden shelves mounted on wall with metal standards and brackets.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- None.

Structural Issues:

- None.

Mechanical Issues:

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- None

Power:

- None

Communications:

- None

Audio Visual (Video and Audio Equipment):

- None.

Fire Protection Issues:

- None

ROOM 140 – CORRIDOR

Architectural Issues:

- Windows shall be dual pane, with ¼" laminated glass at inner lite.
- Vinyl wall covering finish with 6" resilient base. Floor-to-ceiling corner guards for all corners.
- Resilient flooring.
- Handicap accessible drinking fountain (semi-recessed).

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- Repair any damaged flooring. Match existing sheet vinyl.
- Remove the existing wallcovering. Replace with new wallcovering.
- Vinyl wall covering shall be Type II for heavy duty wear. Surface of the vinyl wall covering shall be smooth, no grooves or dimples for dirt to accumulate. Texture shall be created visually with pattern/design of wall covering, not embossing. VWC color to coordinate with the selected color scheme for the facility.
- Wall guards and corner guards in this area shall be high impact integral color vinyl in color to coordinate with the chosen color scheme (Korogard, Acrovyn , Arden, or IPC).

Structural Issues:

- None.

Mechanical Issues:

- Provide new handicap accessible drinking fountain (semi-recessed).
- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- Provide additional dual head emergency light packs in Corridor 140, in line with existing fixtures to effectively cover the hallway.

Power:

- Provide child safety type, Hospital grade NEMA 6-20R outlets in this corridor at 16' intervals, at 54" AFF.

Communications:

- None

Audio Visual (Video and Audio Equipment):

- None.

Fire Protection Issues:

- None

ROOM 141 – PRE-SCHOOL AGE

Architectural Issues:

- This area is to be turned into an activity space.
- Handicap accessible drinking fountain (semi-recessed).
- Suspended acoustical ceiling tile at 9 feet above finished floor.
- Window shall be dual pane, with ¼" laminated glass at inner lite.
- Vinyl wall covering finish with resilient base.
- Vinyl composition tile (VCT) flooring

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- Existing Corian counter-tops will be reused to the maximum extent possible, only the cabinetry needs to be replaced.
- The low cabinetry needs to be replaced with taller cabinets sized for the older children.
- Existing acoustical ceiling tiles and suspension system will be removed. New acoustical ceiling tiles and suspension system will be installed per new room reconfiguration.
- Acoustical ceiling tile shall be Type III (non-asbestos mineral fiber with painted finish), Pattern E, Class A, NRC range .65-.75, CAC range 40-44. Tile size shall be 2' x 4'. Tile finish shall be white. Suspension system shall be a standard exposed grid conforming to ASTM C 635 for intermediate-duty systems. The suspension exposed grid shall be of aluminum or steel with a factory-applied white baked-enamel finish.
- Replace damaged VCT (5%). Match existing vinyl composition tile. VCT shall have the color and pattern uniformly distributed through out the thickness of the product.
- Repair any damaged or missing wall covering due to room reconfigure. Match existing painted wallcovering to maximum extent possible.
- Vinyl wall covering (VWC) shall be Type II for heavy duty wear. Surface texture of the vinyl wall covering shall match existing painted wall covering texture. VWC color to coordinate with the selected color scheme for the facility.

Structural Issues:

- None.

Mechanical Issues:

- Provide new handicap accessible drinking fountain (semi-recessed).
- Demo existing bathroom, room 144 (see architectural narrative).
- Reuse existing sinks and elevate to accommodate new height of countertop (see architectural narrative). Extend all utilities as required.
- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

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Electrical Issues:

There may be wall and partition removal\reconfiguration. Contractor shall demo electrical devices such as switches, outlets etc. associated (with wall\partition removal) and systematically rearrange\reuse existing good circuits, for electrical rewiring in reconfigured

room layout. When reutilizing existing circuits, apply sound judgment and ensure circuit integrity all the way to electrical panels.

Lighting:

- All existing track lights shall be removed from room 141. Lighting level of 50 FC shall be required throughout this room including new kitchen portion. Provide new recessed light fixtures and switches only if existing fixtures & switches show signs of deterioration and\or if any wall demolition requires lighting reconfiguration to maintain 50 FC lighting level.

Power:

- Lighting switches shall be mounted 54" AFF.

Communications:

- None

Audio Visual (Video and Audio Equipment):

- Locate cameras to provide maximum coverage for all rooms in room 141 group, particularly kitchen need to be fully monitored for any undesirable presence of any child.

Fire Protection Issues:

- Compliance with NFPA 70, 72 & 101, UFC 3-600-01 and UFC 4-740-14 is required.

ROOM 142 – MUSIC MEDIA

Room Function:

- Demonstration Kitchen.

Architectural Issues:

- This room is to be turned into a demonstration and participation residential kitchen.
- Suspended gypsum board ceiling at 9 feet above finished floor.
- Painted ceiling and wall finish with resilient base.
- Vinyl composition tile flooring.
- New stove with oven
- Provide space for refrigerator with freezer
- New double sink
- New Dutch door with view panels

Special Door Hardware (Special Locks):

- Provide hardware for new Dutch door.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- Wall and base cabinets with one adjustable shelf.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- Existing acoustical ceiling tiles and suspension system will be removed. New suspended gypsum board ceiling will be installed.
- The existing Corian counter-tops and cabinetry that has been removed from other areas of this facility (i.e. Infant #134 or Infant Hourly) will be reused to the maximum extent possible in this space.
- Remove the existing wallcovering and acoustical wall tiles. Repair, refinish and paint walls.
- Replace damaged VCT due to space reconfiguration. Match existing vinyl composition tile. VCT shall have the color and pattern uniformly distributed through out the thickness of the product.

Structural Issues:

- None.

Mechanical Issues:

- For the new Demonstration Kitchen (see architectural narrative), provide the following:
  - electric range/oven
  - exhaust range hood for the electric range/oven
  - UL fire extinguishing system for the exhaust range hood
  - water connection/isolation valve for a refrigerator (Not in Contract – NIC)
  - kitchen sink (double bowl)
- Provide sprinkler coverage for the entire Demonstration Kitchen area.

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

There may be wall and partition removal\reconfiguration. Contractor shall demo electrical devices such as switches, outlets etc. associated (with wall\partition removal) and systematically rearrange\reuse existing good circuits, for electrical rewiring in reconfigured room layout. When reutilizing existing circuits, apply sound judgment and ensure circuit integrity all the way to electrical panels.

Lighting:

- In kitchen vapor proof, surface mounted light fixtures shall be provided. Lighting switches shall be mounted 54" AFF.

Power:

- Provide GFI outlets on counter tops in the new kitchen. Provide adequate counter top GFI outlets, minimum 2 on each counter top along each wall. All accessible outlets shall be child safety type 54" AFF. There will be sufficient outlets in the kitchen to power all appliance listed under "Architectural appliance narrative" and all appliance outlets shall be concealed behind respective appliance.

Communications:

- None

Audio Visual (Video and Audio Equipment):

- None.

Fire Protection Issues:

- Range top extinguishing system shall be connected to building fire alarm system to sound a general building fire alarm and simultaneously disconnect power to cooking equipment, as per NFPA and UFC 3-600-01.

Compliance with NFPA 70, 72 & 101, UFC 3-600-01 and UFC 4-740-14 is required.

ROOM 143 – TOILET

Room Function:

- Storage Room

Architectural Issues:

- This room is to be turned into a storage room.
- Suspended gypsum board ceiling at 9 feet above finished floor.
- Painted ceiling and wall finish with resilient base.
- Vinyl composition tile flooring.
- New door with view panels.

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- None.

Structural Issues:

- None.

Mechanical Issues:

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- None

Power:

- None

Communications:

- None.

Audio Visual (Video and Audio Equipment):

- None.

Fire Protection Issues:

- None

ROOM 144B – TOILET

Room Function:

- New boys toilet Room

Architectural Issues:

- New toilet room to include one urinal, one water closet and two lavs. Include all required toilet accessories in both.
- Install toilet partitions
- Suspended gypsum board ceiling at 9 feet above finished floor.
- Painted ceiling and wall finish above FRP wall panels.
- Resilient flooring with integral cove base.

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- Existing Corian counter-tops will be reused to the maximum extent possible, only the counter-tops height needs to be adjusted for the older children.
- New suspended gypsum board ceiling will be installed.
- Painted ceiling and wall finish above FRP wall panels. The wall panels need to be installed in the wet areas (toilets and sinks) of room.
- FRP wall panels are fiberglass reinforced plastic impact resistant and durable wall panels with matching trim pieces.
- Install new resilient flooring with a self-cove base. The resilient flooring shall be a Type I homogeneous product without backing. The color and pattern shall extend through the total thickness of the material. Extend the integral coved base up the wall 6 inches. Provide a square cap strip on the top of the integral cove. The seams of the resilient flooring and integral cove will be heat-welded to create a seamless installation.

Structural Issues:

- None.

Mechanical Issues:

- Add new bathroom fixtures and utilities (see architectural narrative).
- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- Provide surface mounted light fixture to provide uniform 30 FC light levels, with a new wall-mounted switch at 54” AFF.

Power:

- Provide GFCI type, safety outlet mounted 54" AFF. Bathroom exhaust fan shall connected to new light switch. Also coordinate with Mechanical Issues above for any other specific consideration for exhaust fan.

Communications:

- None

Audio Visual (Video and Audio Equipment):

- None.

Fire Protection Issues:

- None

ROOM 144G – TOILET

Room Function:

- New girls toilet Room

Architectural Issues:

- Girls toilet room to include two water closet and two lavs. Include all required toilet accessories in both.
- Install toilet partitions
- Suspended gypsum board ceiling at 9 feet above finished floor.
- Painted ceiling and wall finish above FRP wall panels.
- Resilient flooring with integral cove base.

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- Existing Corian counter-tops will be reused to the maximum extent possible, only the counter-tops height needs to be adjusted for the older children.
- New suspended gypsum board ceiling will be installed.
- Painted ceiling and wall finish above FRP wall panels. The wall panels need to be installed in the wet areas (toilets and sinks) of room.
- FRP wall panels are fiberglass reinforced plastic impact resistant and durable wall panels with matching trim pieces.
- Install new resilient flooring with a self-cove base. The resilient flooring shall be a Type I homogeneous product without backing. The color and pattern shall extend through the total thickness of the material. Extend the integral coved base up the wall 6 inches. Provide a square cap strip on the top of the integral cove. The seams of the resilient flooring and integral cove will be heat-welded to create a seamless installation.

Structural Issues:

- None.

Mechanical Issues:

- Add new bathroom fixtures and utilities (see architectural narrative).
- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- Provide surface mounted light fixture to provide uniform 30 FC light levels, with a new wall-mounted switch at 54” AFF.

Power:

- Provide GFCI type, safety outlet mounted 54" AFF. Bathroom exhaust fan shall connected to new light switch. Also coordinate with Mechanical Issues above for any other specific consideration for exhaust fan.

Communications:

- None

Audio Visual (Video and Audio Equipment):

- None.

Fire Protection Issues:

- None

ROOM 145 – CLOSET

Architectural Issues:

- Painted wall finish with resilient base.
- Vinyl composition tile (VCT) flooring.
- Door with view panels.

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- Replace damaged VCT due to space reconfiguration. Match existing vinyl composition tile. VCT shall have the color and pattern uniformly distributed through out the thickness of the product.

Structural Issues:

- None.

Mechanical Issues:

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- None

Power:

- None

Communications:

- None

Audio Visual (Video and Audio Equipment):

- None.

Fire Protection Issues:

- None

ROOM 146 – MULTI-AGE HOURLY

Room Function:

- New activity area.

Architectural Issues:

- This area is to be turned into an activity space.
- Handicap accessible drinking fountain (semi-recessed).
- Suspended acoustical ceiling tile at 9 feet above finished floor.
- Window shall be dual pane, with ¼" laminated glass at inner lite.
- Vinyl wall covering finish with resilient base.
- Vinyl composition tile (VCT) flooring.

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- Existing Corian counter-tops will be reused to the maximum extent possible, only the cabinetry needs to be replaced.
- The low cabinetry needs to be replaced with taller cabinets sized for the older children.
- Existing acoustical ceiling tiles and suspension system will be removed. New acoustical ceiling tiles and suspension system will be installed per new room reconfiguration.
- Acoustical ceiling tile shall be Type III (non-asbestos mineral fiber with painted finish), Pattern E, Class A, NRC range .65-.75, CAC range 40-44. Tile size shall be 2' x 4'. Tile finish shall be white. Suspension system shall be a standard exposed grid conforming to ASTM C 635 for intermediate-duty systems. The suspension exposed grid shall be of aluminum or steel with a factory-applied white baked-enamel finish.
- Replace damaged VCT (5%). Match existing vinyl composition tile. VCT shall have the color and pattern uniformly distributed through out the thickness of the product.
- Repair any damaged or missing wall covering due to room reconfigure and acoustical tile removal in Music/Media area of room. Match existing painted wallcovering to maximum extent possible.
- Vinyl wall covering (VWC) shall be Type II for heavy duty wear. Surface texture of the vinyl wall covering shall match existing painted wall covering texture. VWC col or to coordinate with the selected color scheme for the facility.

Structural Issues:

- None.

Mechanical Issues:

- Provide new handicap accessible drinking fountain (semi-recessed).
- Demo existing bathroom, room 149 (see architectural narrative).
- Add new bathroom fixtures and utilities (see architectural narrative).
- Reuse existing sinks and elevate to accommodate new height of countertop (see architectural narrative). Extend all utilities as required.

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

There may be wall and partition removal\reconfiguration. Contractor shall demo electrical devices such as switches, outlets etc. associated (with wall\partition removal) and systematically rearrange\reuse existing good circuits, for electrical rewiring in reconfigured room layout. When reutilizing existing circuits, apply sound judgment and ensure circuit integrity all the way to electrical panels.

Lighting:

- All track lights shall be removed from room 146. All other existing lights shall be demo. New lights shall be re-engineered with direct\indirect lighting fixtures. New wall mounted light switch shall also be provided.

Power:

- All power outlets shall be child-safety type and shall be mounted 54” AFF.

Communications:

- Locate cameras to provide maximum coverage with no blind spot.

Audio Visual (Video and Audio Equipment):

- None.

Fire Protection Issues:

- none

ROOM 146A – STUDY/QUIET ROOM

Room Function:

- Provide area for tutoring and mentoring services as well as a quiet area to read books and magazines.

Architectural Issues:

- This area is to be turned into a study/quiet space.
- Suspended acoustical ceiling tile at 9 feet above finished floor.
- Window shall be dual pane, with ¼" laminated glass at inner lite.
- Vinyl wall covering finish with resilient base.
- Vinyl composition tile (VCT) flooring.
- Door with view panels from the computer room.
- Doors (2) to the exterior for egress.

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- Existing acoustical ceiling tiles and suspension system will be removed. New acoustical ceiling tiles and suspension system will be installed per new room reconfiguration.
- Acoustical ceiling tile shall be Type III (non-asbestos mineral fiber with painted finish), Pattern E, Class A, NRC range .65-.75, CAC range 40-44. Tile size shall be 2' x 4'. Tile finish shall be white. Suspension system shall be a standard exposed grid conforming to ASTM C 635 for intermediate-duty systems. The suspension exposed grid shall be of aluminum or steel with a factory-applied white baked-enamel finish.
- Replace damaged VCT (5%). Match existing vinyl composition tile. VCT shall have the color and pattern uniformly distributed through out the thickness of the product.
- Repair any damaged or missing wall covering due to room reconfigure and acoustical tile removal in Music/Media area of room. Match existing painted wallcovering to maximum extent possible.
- Vinyl wall covering (VWC) shall be Type II for heavy duty wear. Surface texture of the vinyl wall covering shall match existing painted wall covering texture. VWC color to coordinate with the selected color scheme for the facility.

Structural Issues:

- None.

Mechanical Issues:

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- Provide reconfigured light @ 50 foot candle in this room. Light shall utilize RT5 or equal direct\indirect, T-8 lamp light fixture to suit the character of this room (maintaining quiet light to encourage studying etc).

A few (2 or 3) selected light fixtures shall be provided with emergency battery pack to provide illumination on case of power outage.

Provide LED emergency exit light at outgoing personnel doors. Exit light fixtures shall be powered from un-switched leg.

Power:

- Provided wall-mounted safety outlets 54" AFF at 12'-0" intervals. All power drops shall be from ceiling.

Communications:

- None

Audio Visual (Video and Audio Equipment):

- None.

Fire Protection Issues:

- Compliance with NFPA 70,72,101, UFC 3-600-01 and UFC 4-740-14 is required. Provide above ceiling smoke detector and as well ceiling mounted dual-type smoke detectors.

ROOM 149B – TOILET

Room Function:

- Boys Toilet Room

Architectural Issues:

- New toilet room to include one urinal, one water closet and two lavs. Include all required toilet accessories in both.
- Install toilet partitions
- Suspended gypsum board ceiling at 9 feet above finished floor.
- Painted ceiling and wall finish above FRP wall panels.`
- Resilient flooring with integral cove base.

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- Existing Corian counter-tops will be reused to the maximum extent possible, only the counter-tops height needs to be adjusted for the older children.
- New suspended gypsum board ceiling will be installed.
- Painted ceiling and wall finish above FRP wall panels. The wall panels need to be installed in the wet areas (toilets and sinks) of room.
- FRP wall panels are fiberglass reinforced plastic impact resistant and durable wall panels with matching trim pieces.
- Install new resilient flooring with a self-cove base. The resilient flooring shall be a Type I homogeneous product without backing. The color and pattern shall extend through the total thickness of the material. Extend the integral coved base up the wall 6 inches. Provide a square cap strip on the top of the integral cove. The seams of the resilient flooring and integral cove will be heat-welded to create a seamless installation.

Structural Issues:

- None.

Mechanical Issues:

- Demo existing bathroom, room 149 (see architectural narrative).
- Add new bathroom fixtures and utilities (see architectural narrative).
- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- Provide surface mounted light fixture to provide uniform 30 FC light levels, with a new wall-mounted switch at 54” AFF.

Power:

- Provide GFCI type, safety outlet mounted 54” AFF. Bathroom exhaust fan shall connected to new light switch. Also coordinate with Mechanical Issues above for any other specific consideration for exhaust fan.

Communications:

- None

Audio Visual (Video and Audio Equipment):

- None.

Fire Protection Issues:

- None

ROOM 149G – TOILET

Room Function:

- Girls Toilet Room

Architectural Issues:

- New toilet room to include two water closet and two lavs. Include all required toilet accessories in both.
- Install toilet partitions
- Suspended gypsum board ceiling at 9 feet above finished floor.
- Painted ceiling and wall finish above FRP wall panels.
- Resilient flooring with integral cove base.

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- Existing Corian counter-tops will be reused to the maximum extent possible, only the counter-tops height needs to be adjusted for the older children.
- New suspended gypsum board ceiling will be installed.
- Painted ceiling and wall finish above FRP wall panels. The wall panels need to be installed in the wet areas (toilets and sinks) of room.
- FRP wall panels are fiberglass reinforced plastic impact resistant and durable wall panels with matching trim pieces.
- Install new resilient flooring with a self-cove base. The resilient flooring shall be a Type I homogeneous product without backing. The color and pattern shall extend through the total thickness of the material. Extend the integral coved base up the wall 6 inches. Provide a square cap strip on the top of the integral cove. The seams of the resilient flooring and integral cove will be heat-welded to create a seamless installation.

Structural Issues:

- None.

Mechanical Issues:

- Demo existing bathroom, room 149 (see architectural narrative).
- Add new bathroom fixtures and utilities (see architectural narrative).
- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- Provide surface mounted light fixture to provide uniform 30 FC light levels, with a new wall-mounted switch at 54” AFF.

Power:

- Provide GFCI type, safety outlet mounted 54" AFF. Bathroom exhaust fan shall connected to new light switch. Also coordinate with Mechanical Issues above for any other specific consideration for exhaust fan.

Communications:

- None

Audio Visual (Video and Audio Equipment):

- None.

Fire Protection Issues:

- None

ROOM 151 – INFANT HOURLY

Room Function:

- This space is going to be turned into a computer room.

Architectural Issues:

- Suspended acoustical ceiling tile at 9 feet above finished floor.
- Window shall be dual pane, with ¼" laminated glass at inner lite.
- Vinyl wall covering finish with resilient base.
- Vinyl composition tile (VCT) flooring.
- Door with view panels into new study/quiet room

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- None.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- Existing Corian counter-tops will be reused to the maximum extent possible. Some of the cabinetry in this space could be reused because it is sized for adult use.
- Existing acoustical ceiling tiles and suspension system will be removed. New acoustical ceiling tiles and suspension system will be installed per new room reconfiguration.
- Acoustical ceiling tile shall be Type III (non-asbestos mineral fiber with painted finish), Pattern E, Class A, NRC range .65-.75, CAC range 40-44. Tile size shall be 2' x 4'. Tile finish shall be white. Suspension system shall be a standard exposed grid conforming to ASTM C 635 for intermediate-duty systems. The suspension exposed grid shall be of aluminum or steel with a factory-applied white baked-enamel finish.
- Replace damaged VCT (5%). Match existing vinyl composition tile. VCT shall have the color and pattern uniformly distributed through out the thickness of the product.
- Repair any damaged or missing wall covering due to room reconfigure. Match existing painted wallcovering to maximum extent possible.
- Vinyl wall covering (VWC) shall be Type II for heavy duty wear. Surface texture of the vinyl wall covering shall match existing painted wall covering texture. VWC color to coordinate with the selected color scheme for the facility.

Structural Issues:

- None.

Mechanical Issues:

- Demo sinks.

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

This room 151 shall be reconfigured to act as computer lab (with roughly 15 new computers and 2 new shared laser printers) and hence all lighting, power and communication shall be engineered for computer lab.

There may be wall and partition removal\reconfiguration. Contractor shall demo electrical devices such as switches, outlets etc associated (with wall\partition removal) and systematically rearrange\reuse existing good circuits, for electrical rewiring in reconfigured room layout. When reutilizing existing circuits, apply sound judgment and ensure circuit integrity all the way to electrical panels

Lighting:

- Direct\indirect light shall be considered to minimize glare. Lighting level shall be within 43 to 50 FC minimum. Remove existing can lights.

Power:

- All safety outlets shall be 54" AFF. All power drops shall be from the ceiling. There is a space for a new 3 pole breaker on existing 600 amp. 120\208 volt main distribution panel, located inside electrical room to accommodate new computer lab loads.

Communications:

- All data outlets shall be 54" AFF. All communication drops shall be from the ceiling.

Audio Visual (Video and Audio Equipment):

- None.

Fire Protection Issues:

- Compliance with NFPA 70, 72 & 101, UFC 3-600-01 and UFC 4-740-14. Provide above ceiling smoke detectors connected to Fire Alarm Control Panel. Provide a pull station near the exit door to outside along with a directional emergency exit sign.

ROOM 153 – CLOSET

Room Function:

- Storage Closet

Architectural Issues:

- Painted wall finish with resilient base.
- Vinyl composition tile (VCT) flooring
- Door with view panels

Special Door Hardware (Special Locks):

- None.

Shelving/Cabinet Requirements (Items for Storage - Chemical, Administrative Products, Number of Shelves):

- Provide minimum three adjustable 1 foot deep by 3 foot long wooden shelves mounted on wall with metal standards and brackets.

Other Special Room Requirements (Whiteboards, Visual Observation, Monitor Brackets, Projector Screens, Sound Attenuation, etc.):

- None.

Interior Design Issues:

- Replace damaged VCT due to space reconfiguration. Match existing vinyl composition tile. VCT shall have the color and pattern uniformly distributed through out the thickness of the product.

Structural Issues:

- None.

Mechanical Issues:

- See **Mechanical** notes under the **General** paragraph at the beginning of this attachment for any applicable requirements.

Electrical Issues:

Lighting:

- None

Power:

- None

Communications:

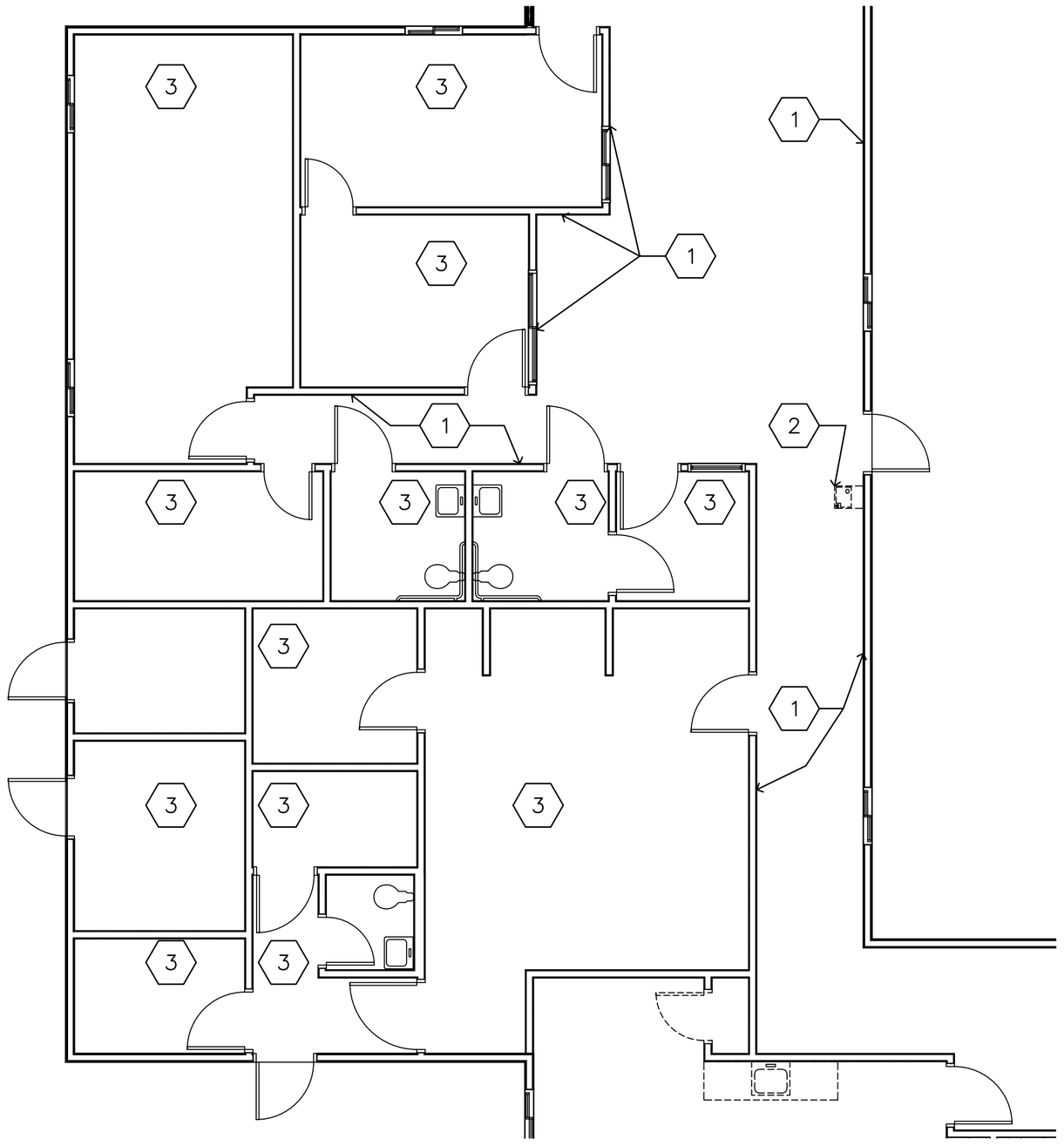
- None

Audio Visual (Video and Audio Equipment):

- None.

Fire Protection Issues:

- None



SHEET KEYNOTES

1	VINYL WALL COVERING TO BE REMOVED
2	FIXTURES TO BE REMOVED
3	NO WORK REQUIRED

PARTIAL FLOOR PLAN

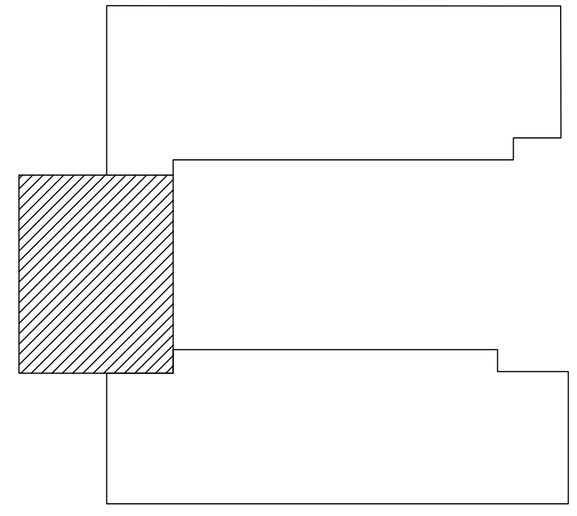
SCALE: 3/16 = 1' – 0"

NOTES:

1. CAP PLUMBING LINE IN WALL AND ABANDON IN PLACE.
2. PATCH AND REPAIR WALL AS REQUIRED TO INSTALL NEW FINSHES.

GRAPHIC SCALES

3/16"=1'-0" 0' 2' 4' 8' 12' 16'



KEY PLAN

Date: dd/mm/yy
Design File no: 238-25-498
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Designed by: J. CANO
Dwn by: J. CANO
Reviewed by: MKB
Submitted by: Chief, Section Chief
Spec No: 1611

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 J STREET
SACRAMENTO, CA 95814-2922

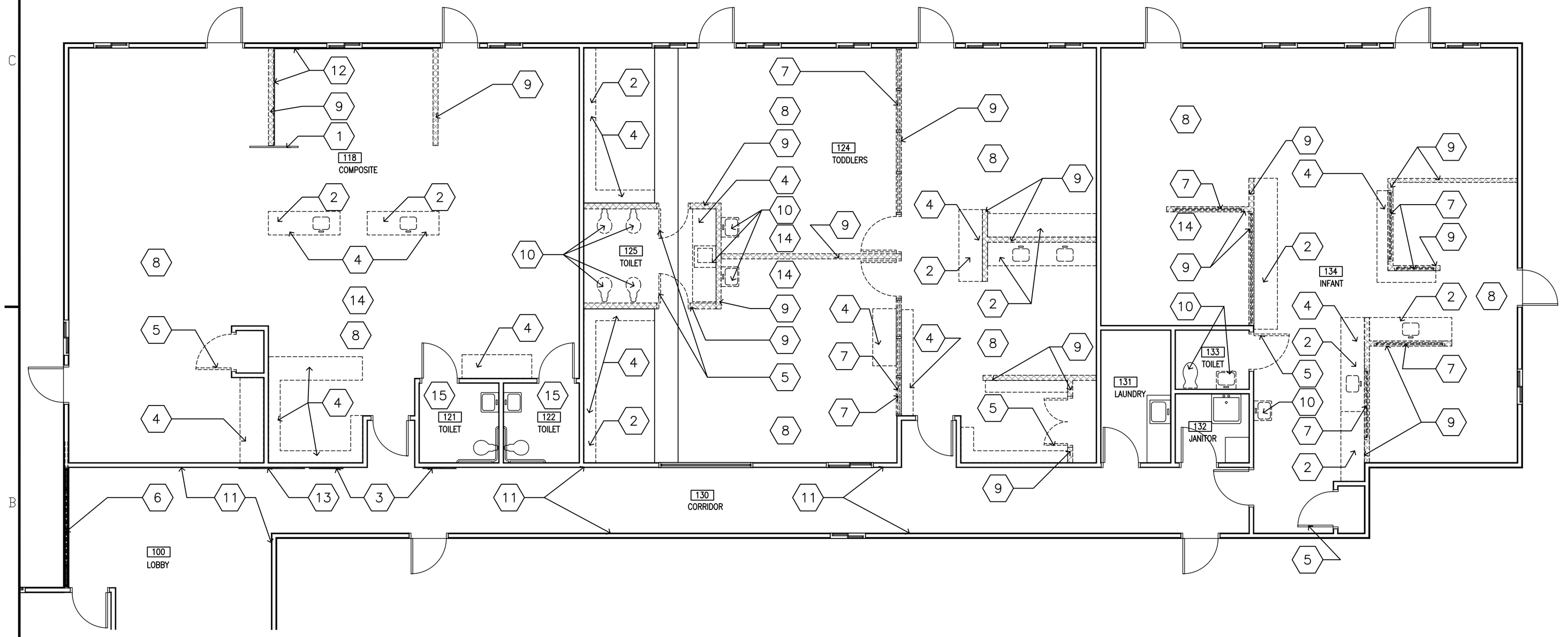
FT. IRWIN CALIFORNIA
CHILD DEVELOPMENT CENTER

DEMOLITION PLAN
BUILDING 1322

A–101

UPDATE

Border Revised 03/02/04 CEGHTB2.DWG



PARTIAL FLOOR PLAN

SCALE: 3/16 = 1' – 0"

SHEET KEYNOTES

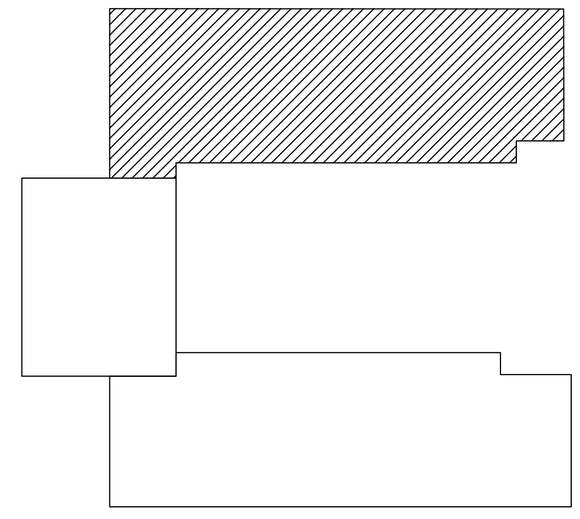
1	SALVAGE CONVEX MIRROR, RETURN TO CONTRACTING OFFICER
2	SALVAGE ITEM, RE-USE IN NEW WORK
3	REMOVE BULLETIN BOARD
4	CASEWORK TO BE REMOVED
5	DOOR TO BE REMOVED
6	DOOR AND FRAME TO BE REMOVED
7	WINDOW AND FRAME TO BE REMOVED
8	CEILING TO BE REMOVED
9	WALL TO BE REMOVED
10	FIXTURES TO BE REMOVED
11	VINYL WALL COVERING TO BE REMOVED
12	ACOUSTICAL WALL PANELS TO BE REMOVED
13	REMOVE BULLETIN BOARDS, RE-USE IN NEW WORK
14	REMOVE TRACK LIGHTING
15	NO WORK REQUIRED

NOTES:

1. CAP PLUMBING LINE IN WALL AND ABANDON IN PLACE.
2. PATCH AND REPAIR WALL AS REQUIRED TO INSTALL NEW FINSHES.
3. CAP WASTE LINE BELOW FINISH FLOOR AND ABANDON IN PLACE. PATCH AND REPAIR FLOOR AS REQUIRE TO INSTALL NEW FINISHES.
4. REPLACE DOOR TO BE REMOVED WITH NEW DOORS WITH UPPER AND AND LOWER VIEW PANELS.
5. REPAIR ANY DAMAGED OR MISSING FLOOR FINISH DUE TO ROOM RECONFIGURE.

GRAPHIC SCALES

3/16"=1'-0" 0' 2' 4' 8' 12' 16'



KEY PLAN

US Army Corps of Engineers
Sacramento District

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Reviewed by: MKB
Submitted by: /s/ Section Chief
Chief, Arch. Des. Sec.
Date: dd/mm/yy
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Design File no: 238-25-498
Drawing Code: 65% Design Submittal
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DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

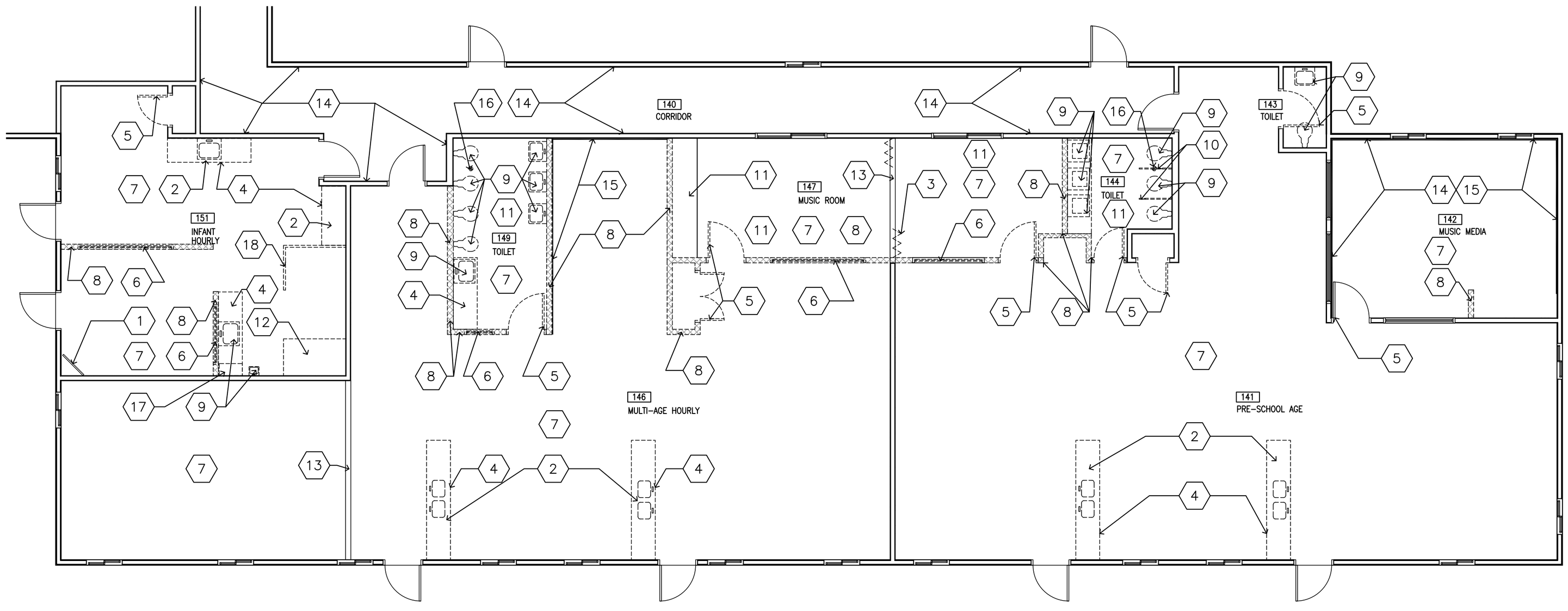
SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 'J' STREET
SACRAMENTO, CA 95814-2922

FT. IRWIN CALIFORNIA
CHILD DEVELOPEMNT CENTER

DEMOLITION PLAN
BUILDING 1322

Sheet reference number:
A–102

UPDATE



PARTIAL FLOOR PLAN

SCALE: 3/16 = 1' – 0"

SHEET KEYNOTES

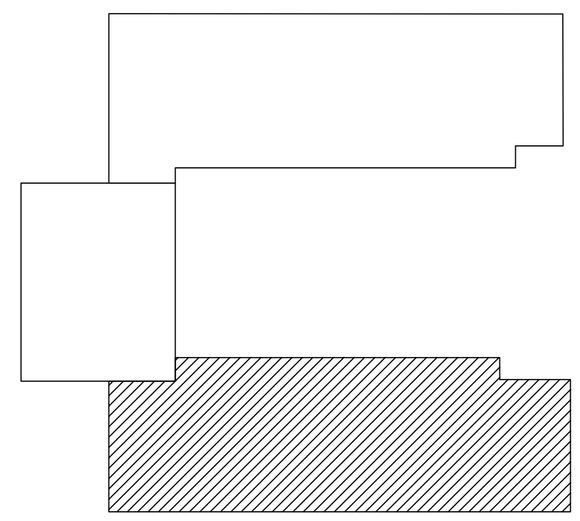
1	SALVAGE ITEM, RETURN TO OWNER
2	SALVAGE ITEM, RE-USE IN NEW WORK
3	REMOVE ACCORDION PARTITION
4	CASEWORK TO BE REMOVED
5	DOOR TO BE REMOVED
6	WINDOW AND FRAME TO BE REMOVED
7	CEILING TO BE REMOVED
8	WALL TO BE REMOVED
9	FIXTURES TO BE REMOVED
10	TOILET PARTITION TO BE REMOVED
11	FINISH FLOOR TO BE REMOVED
12	PLATFORM TO BE REMOVED
13	1 HOUR RATED WALL WITH 3-5/8" METAL STUD AND 5/8" TYPE "X" GYP. BOARD EACH SIDE. WALL TO CONTINUE TO UNDER SIDE OF ROOF DECK
14	VINYL WALLCOVERING
15	ACOUSTICAL WALL PANEL
16	REMOVE FLOOR DRAIN. CAP BELOW FINISH FLOOR AND ABANDON IN PLACE
17	REMOVE SHELVES
18	REMOVE RAILING AND CURB

NOTES:

1. CAP PLUMBING LINE IN WALL AND ABANDON IN PLACE.
2. PATCH AND REPAIR WALL AS REQUIRED TO INSTALL NEW FINSHES.
3. CAP WASTE LINE BELOW FINISH FLOOR AND ABANDON IN PLACE. PATCH AND REPAIR FLOOR AS REQUIRE TO INSTALL NEW FINISHES.
4. REPLACE DOOR TO BE REMOVED WITH NEW DOORS WITH UPPER AND AND LOWER VIEW PANELS.
5. REPAIR ANY DAMAGED OR MISSING FLOOR FINISH DUE TO ROOM RECONFIGURE.

GRAPHIC SCALES

3/16"=1'-0" 0' 2' 4' 8' 12' 16'



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Sheet reference number:
A–103

UPDATE