

2.0 SCOPE

2.1. PHYSICAL FITNESS FACILITY (PFF)

Provide a[n] [extra small[small][medium][large][extra large]] Physical Fitness Facility. The overall goal is to provide a functional, secure, visually appealing facility that is a source of pride for the installation. The desire is to provide “State-of-the-Art” facilities that rival fitness center and health club facilities found in local communities and on college campuses.

<PFF_STD> </PFF_STD><PFF_NONSTD>The project facility configuration and size is based on filling physical fitness facility deficits provided by existing facilities and shall have a total gross square footage of [PFF_CUSTOM]. The physical fitness facility includes the following modules.</PFF_NONSTD> Refer to the PHYSICAL FITNESS FACILITY PROGRAM AREAS table below for the configuration of the facility.

Physical Fitness Facility Size: [Size]

Total Gross Building Area: Subtotal, Physical Fitness Facility: [total sq ft]

Subtotal, Indoor Jogging Track: [jogtrk sq ft]

Subtotal, Natatorium: [Nat net area]

Modules:

[Fitness Module]

[Exercise Module]

[Gymnasium Module]

Gymnasium Module: (Indicate required elements by “X”)	
<GY1>X</GY1>	1 Court w/ Track
<GY2>X</GY2>	1 Court no Track
<GY3>X</GY3>	2 Courts w/ Track and Tournament Court
<GY4>X</GY4>	2 Courts w/ Track
<GY5>X</GY5>	2 Courts w/ Tournament Court
<GY6>X</GY6>	2 Courts no Track, no Tournament Court
<GY7>X</GY7>	3 Courts w/ Track and Tournament Court
<GY8>X</GY8>	3 Courts w/ Track
<GY9>X</GY9>	3 Courts w/ Tournament Court
<GY10>X</GY10>	3 Courts no Track, no Tournament Court
<GY11>X</GY11>	4 Courts w/ Track and Tournament Court-Option A
<GY12>X</GY12>	4 Courts w/ Track-Option A
<GY13>X</GY13>	4 Courts w/ Tournament Court-Option A
<GY14>X</GY14>	4 Courts w/ Track and Tournament Court-Option B
<GY15>X</GY15>	4 Courts w/ Track-Option B
<GY16>X</GY16>	4 Courts w/ Tournament Court-Option B
<GY17>X</GY17>	4 Courts no Track, no Tournament Court-Option A
<GY18>X</GY18>	4 Courts no Track, no Tournament Court-Option B

[Structured Activity Module]

Structured Activity Module: (Indicate required elements by “X” and by providing information requested)		
<SA1>X</SA1>	Racquetball Courts	[quantity]
<SA2>X</SA2>	Small Group Fitness (Area desired)	[sgf sq ft]
<SA3>X</SA3>	Climbing Wall	
<SA4>X</SA4>	1 Mat Combatives	
<SA5>X</SA5>	2 Mat Combatives	

<SA6>X</SA6>	Spinning Room (Area desired)	[sr sq ft]
<SA7>X</SA7>	Concessions (Area desired)	[con sq ft]
<SA8>X</SA8>	Small Child Care	
<SA9>X</SA9>	Large Child Care	
<SA10>X</SA10>	Other #1	[oth desc1]
<SA11>X</SA11>	Other #2	[oth desc2]
<SA12>X</SA12>	Other #3	[oth desc3]
<SA13>X</SA13>	Other #4	[oth desc4]
<SA14>X</SA14>	Storage	

[Natatorium Module]: The table below indicates the requirements for the natatorium for this project. Various options exist within the natatorium such as size of pool, lap pool or free-form multi-functional pool, inclusion of whirlpool, and diving/depth requirement. Requirements are indicated by an "X" in the left column.

POOL TYPE:	
<PT1>X</PT1>	25 yd x 17.5 yd lap pool (6 lanes)
<PT2>X</PT2>	25 m x 25 yd lap pool
<PT3>X</PT3>	50 m x 25 yd lap pool
<PT4>X</PT4>	Pool with 6230 sq. ft. of water surface area with 3-4 25 yd lap lanes, and a free-form area with zero depth entry and play features.
<PT5>X</PT5>	Pool with 12,460 sq. ft. of water surface area with 4-6 25 yd lap lanes, and a free-form area with zero depth entry and play features.
POOL OPTIONS:	
<PO1>X</PO1>	Movable bulk-head provided in a 50 m x 25 yd pool
<PO2>X</PO2>	Whirlpool included in deck area
<PO3>X</PO3>	Separate diving tank (40' x 40' x minimum 13' deep) to include 2 – 1 m boards, and 1 – 3 m board/platform
<PO4>X</PO4>	Diving area included in main pool, but separate from lap lanes (such as an "L-shaped" pool. Diving area designed to appropriate safety requirements.
<PO5>X</PO5>	Diving area included in main pool at one end of the lap lanes. Diving area designed to appropriate safety requirements.
<PO6>X</PO6>	Depth to minimum of 11'-6" feet for programming flexibility
<PO7>X</PO7>	Depth to maximum of 6 feet
<PO8>X</PO8>	Separate 20 x 50 pool for therapy and training
<PO9>X</PO9>	Pool to be used for competitive swimming events (Pool then must comply with USA Swimming regulations)
<PO10>X</PO10>	Other: [POOL_OPTION_OTHER]

(Other than the Structured Activity Module, refer to the chart in Attachment A – The Army Standard for Physical Fitness Facilities for the net areas of the module functions.)

Additional Module Details:

2.2. SITE:

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

Approximate area available [XX40]

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

Coordinate with Government on GFGI item requirements and provide suitable structural support, brackets for projectors/VCRs/TVs, all utility connections and space with required clearances for all GFGI items. Local Area Network and personal computers along with related hardware, copiers, faxes, printers, video projectors, VCRs and TVs are GFGI.

The following are also GFGI items: [XX41]

2.4. FURNITURE REQUIREMENTS:

Provide furniture design for all administrative and lobby spaces, including existing furniture and equipment to be re-used. Coordinate with the user to define requirements for furniture systems, movable furniture, equipment, existing items to be re-used, storage systems, etc. Early coordination of furniture schedule is required so the facility is complete and usable at turnover.

Provide the following installed furniture and equipment as part of this contract: [XX42]

3.0 PHYSICAL FITNESS FACILITY (PFF)

3.1. FUNCTIONAL/OPERATIONAL REQUIREMENTS

Comply with the American College of Sports Medicine (ACSM) Health/Fitness Facility Standards and Guidelines and the Technical Criteria – U.S. Army Physical Fitness Facilities (no older than the October 2003 edition), except where modified by this document.

(a) Additional reference material for comparable private sector facilities is accessible from the American College of Sports Medicine website: http://www.acsm.org/AM/Template.cfm?Section=Home_Page

(b) Examples of private sector State-of-the-Art athletic facilities may be found at the Athletic Business websites: <http://www.architecturalshowcase.com/galleries/ArchitecturalShowcase.aspx>

3.1.1. Accessibility Requirements

All aquatic facility functional areas shall be barrier-free and accessible to people with disabilities as required by the Architectural Barriers Act (ABA). Site, sidewalks, building, and pool designs shall enable people with disabilities to act independently and enjoy the full range of programs provided. Level changes may be included, but must be accommodated by ramps suitable for wheelchair access, both indoors and outdoors. Accessible entry to pools may be accomplished by utilizing zero entry depth ramps with ABA compliant handrails or by lift and assistance equipment designed specifically for people with disabilities. Utilize lifts that do not require assistance by another person, and that are operated by rechargeable batteries. The need for special equipment, such as transfer benches, crane lifts, or ramps into the pool shall be considered during the design process.

3.1.2. Functional Space Requirements

The functional space and design must comply with the Army Standards for the facility type, along with the PFF functional criteria. The Technical Criteria for U.S. Army Physical Fitness Facilities is provided in Attachment B. The Army Standard for Physical Fitness Facilities is provided in Attachment A.

3.1.3. Facility Betterments: Provide an intrusion detection alarm system to protect equipment and assets.

3.1.4. Pool and Spa Safety

In accordance with VIRGINIA GRAEME BAKER POOL AND SPA SAFETY ACT, PUBLIC LAW 110-140, each public pool and spa in the United States shall be equipped with anti-entrapment devices or systems that comply with the ASME/ANSI A112.19.8 performance standard, or any successor standard; and each public pool and spa in the United States with a single main drain other than an unblockable drain shall be equipped, at a minimum, with one or more of the following devices or systems designed to prevent entrapment by pool or spa drains:

(a) Safety vacuum release system.--A safety vacuum release system which ceases operation of the pump, reverses the circulation flow, or otherwise provides a vacuum release at a suction outlet when a blockage is detected, that has been tested by an independent third party and found to conform to ASME/ANSI standard A112.19.17 or ASTM standard F2387.

(b) Suction-limiting vent system.--A suction-limiting vent system with a tamper-resistant atmospheric opening.

(c) Gravity drainage system.--A gravity drainage system that utilizes a collector tank.

(d) Automatic pump shut-off system.--An automatic pump shut-off system.

(e) Drain disablement.--A device or system that disables the drain.

(f) Other systems.--Any other system determined by the Commission to be equally effective as, or better than, the systems described in (I) through (V) of this paragraph at preventing or eliminating the risk of injury or death associated with pool drainage systems.

(g) Outlet covers located in less than 6 feet of water shall be unblockable covers, flush with the floor rather than domed, to avoid trip hazards.

3.2. SITE PLANNING AND DESIGN

Organize the site to be compatible with the site planning and style of adjacent existing structures. Locate the building to reflect local climatic conditions. For example, provide protection from prevailing winds and glare. Locate the building to take advantage of passive solar heating and day lighting.

3.2.1. Landscaping

Choose a plant selection that is easy to maintain and enhances the visual quality of the facility in all seasons. Indigenous species are preferred. Assess the growth characteristics of selected plant material when considering line of sight requirements to either flight pavements or facilities. Comply with the local Installation landscape standards.

Take into consideration sustainable design issues when designing the landscape. Select plants that require little to no additional water beyond normal rainfall. Avoid plants that require an irrigation system or, if irrigation is required, consider a gray water or storm water irrigation system.

3.3. ARCHITECTURAL REQUIREMENTS

3.3.1. Building Exterior

Design the facility to enhance or compliment the visual environment of the Installation. The building entrance shall 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. Provide large glass areas where fitness equipment is located to provide visual interest from the outside, and views from the inside. Use glass in other areas as appropriate, taking into consideration glare, direct solar heat gain, and other functional requirements. Design the building exterior using energy efficient strategies and technologies to meet overall energy performance requirements. Exterior colors shall conform to the Area Design Guide.

3.3.1.1. Trim and Flashing: All exterior metals including gutters, downspouts, and fascias shall be factory pre-finished metal, aluminum, or galvanized steel base metal with baked-on or bonded high-performance fluoropolymer coating, fabricated and installed in compliance with SMACNA Architectural Sheet Metal Manual.

3.3.1.2. Bird Habitat Mitigation: Provide details necessary to eliminate the congregating and/or nesting of birds at, on, or in the facility.

3.3.1.3. Exterior Doors and Frames

(a) Main Entrance Doors: Provide aluminum storefront doors and frames with Architectural Class 1 anodized finish (color selected by the Contracting Officer from the manufacturer's full line of standard colors), fully glazed, and with medium or wide stile are preferred for entry lobbies or corridors. Storefront systems shall comply with wind load requirements of applicable codes and UFC 4-010-01 requirements. Framing systems shall have thermal-break design.

(b) Side Entrance/Exit Doors: Exterior doors and frames opening to spaces other than corridors or lobbies shall be insulated hollow metal and comply with SDI/DOOR A250.8 Recommended Specification for Standard Steel Doors and Frames. Fire-rated openings shall comply with NFPA 80 Standard for Fire Doors and Other Opening Protectives, and the requirements of the labeling authority. Door and frame installation shall comply with applicable codes and UFC 4-010-01 requirements. Provide a local alarm as part of the hardware on all doors other than the main entrance door. This alarm shall sound at the door and shall notify the control desk if the door is opened. This alarm requirement is separate from the security forces requirements in paragraph 6.

(c) Exterior Door Finish Hardware: All hardware and accessories in the facility shall be consistent and shall conform to BMHA A156 Series Standards, Grade 1. Coordinate door hardware and security requirements with the functional requirements, the Technical Criteria for U.S. Army Physical Fitness Facilities, and the electrical security/fire alarm system requirements of this document. Provide bored Locks in accordance with BHMA A156.2 Bored and Preassembled Locks and Latches. Provide all hardware necessary to meet the requirements of NFPA 80 for fire doors and NFPA 101 for all exit doors and BHMA A156.3 Exit Devices. Provide closers on all exterior doors, fire-rated doors, and restroom doors. The Main Entrance door is considered a high traffic door that requires a high quality door closing mechanism complying with BHMA A156.4 Door Controls - Closers with

adequate strength to ensure safe and easy operation in a high wind environment. Hardware finish shall be US 26D/652 Satin Chrome over Nickel, steel base metal. Doors leading directly outside from functional areas (such as gymnasium, locker rooms, etc.) do not require any hardware on the exterior side of the door.

- 3.3.1.4. Exterior Windows: Provide non-operable windows.
- 3.3.1.5. Exterior Glass and Glazing: Provide the thickness required to provide necessary sound deadening properties for the exterior walls. The rating of the exterior glass shall be within 5 decibels of the wall to which it is installed. In addition, glazing must comply with ATFP and Energy requirements.
- 3.3.1.6. Thermal Insulation: Provide exterior wall, floor, and roof/ceiling assemblies with thermal transmittance (U-values) required to comply with the proposed energy calculations for the facility. Do not install insulation directly on top of suspended acoustical panel ceilings.
- 3.3.1.7. Exterior Louvers: Design exterior louvers to exclude wind-driven rain, with bird screens and made to withstand a wind loads in accordance with the applicable codes. Wall louvers shall bear the AMCA certified ratings program seal for air performance and water penetration in accordance with AMCA 500-D Laboratory Methods of Testing Dampers for Rating and AMCA 511 Certified Ratings Program for Air Control Devices.
- 3.3.1.8. Exterior Paint Systems: Exterior Paint Systems shall be based on and comply with the recommendations of the Master Painters Institute (MPI) for the substrate to be painted and the environmental conditions existing at the project site. Exterior surfaces, except those from factory pre-finished material, shall be painted with a minimum one prime coat and two finish coats. No lead paints are acceptable. For exterior applications provide an MPI gloss Level 5 finish (semi-gloss), unless otherwise specified. Apply all paints in accordance with the manufacturer's specifications.

3.3.2. Building Interior

- 3.3.2.1. Space Configuration: Arrange spaces in an efficient and functional manner. Structure interior spaces to allow maximum flexibility for future modifications. Provide glass panels between functions when appropriate to enhance the open concept of the PFF. Maximize use of natural lighting and daylighting within the constraints of the applicable codes and UFC 4-010-01. Arrange active spaces visible from the lobby to provide a high energy feel when entering the facility. Per the requirements of the Technical Criteria, locate the Control Counter with direct visual and physical access to the Lobby and the Free Weight Area.
- 3.3.2.2. Locate electrical distribution equipment installed within the facility, including dry-type transformers and electrical panels, within dedicated electrical rooms/closets.
- 3.3.2.3. Concepts such as exposed structure in lieu of acoustical tile ceilings may be utilized in many different areas. Spaces shall be as open as possible to provide flexibility to accommodate shifts in trends in fitness and recreation.
- 3.3.2.4. Circulation schemes must support easy way-finding within the building. Consider locating the control desk on the right side as you enter the facility to avoid cross traffic conflicts when entering the facility. Ensure wet circulation is kept separate from dry circulation.
- 3.3.2.5. Appearance retention is the top priority for building related finishes. Provide low maintenance, easily cleaned room finishes that are commercially standard for the facility occupancy specified, unless noted otherwise.
- 3.3.2.6. In general, use neutral tones with contrasts. Bright color accents or schemes may be considered for areas where appropriate. Facility should have a bright and energetic feel.
- 3.3.2.7. Interior Doors and Frames

- (a) Wood Doors: Provide flush wood solid core doors complying with National Wood Window and Door Association (NWWDA) I.S.-1A. Stile edges shall be non-finger jointed hardwood compatible with face veneer. Provide Architectural Woodwork Institute (AWI) Grade-A hardwood face veneer for transparent finished doors; provide AWI Sound Grade hardwood face veneer for painted doors. Transparent finished doors are preferred.
- (b) Hollow Metal Doors: Comply with SDI/DOOR A250.8. Doors shall be minimum Level 2, physical performance Level B, Model 2; factory primed. Hollow metal doors shall be mounted in hollow metal frames.
- (c) Hollow Metal Frames: Comply with SDI/DOOR A250.8. Frames shall be minimum Level 2, 16 gauge, with continuously welded corners and seamless face joints; factory primed.
- (d) Side Lites: Provide ¼" clear tempered glass at all door lites.
- (e) Interior Door Finish Hardware: Door hardware and security requirements must be coordinated with the functional requirements, the room-by-room criteria, and the electrical security/fire alarm requirements. Hardware finish shall be US 26D/652 Satin Chrome over Nickel, steel base metal.
- (f) Programmable Electronic Key Card Access Systems: Provide Key Card System on all doors to rooms from corridors other than service doors such as: Janitor's closets, communication rooms, electrical rooms, mechanical rooms.

3.3.2.8. Interior Doors and Frames, Natatorium

- (a) Hollow Metal Doors: Comply with SDI/DOOR A250.8. Doors shall be minimum Level 2, physical performance Level B, Model 2; factory primed. Hollow metal doors shall be mounted in hollow metal frames. Doors shall be 316L stainless steel, painted with high performance coating (to avoid corrosion).
- (b) Hollow Metal Frames: Comply with SDI/DOOR A250.8. Frames shall be minimum Level 2, 16 gauge, with continuously welded corners and seamless face joints; factory primed. Frames shall be 316L stainless steel, painted with high performance coating (to avoid corrosion).
- (c) Side Lites: Provide ¼ inch clear tempered glass at all door lites.
- (d) Interior Door Hardware: Door hardware and security requirements must be coordinated with the functional requirements, the room-by-room criteria, and the electrical security/fire alarm requirements. At a minimum, provide closers on all fire-rated doors, locker room doors, and restroom doors. If possible, utilize "airport" entrances to locker rooms and other applicable areas to minimize wear on finishes and hardware. Hardware finish shall be type 316L stainless steel.
- (e) NOTE: As an alternative to stainless steel door and frames, FIB-R-DORS could be utilized. These would be the best doors and frames for doors leading directly to the pools.
- (f) Interior doors shall be rated the same as the wall in which they are installed.

3.3.2.9. Casework: Provide casework complying with AWI Section 400, Custom Grade flush overlay cabinets with stained wood. Work surfaces and counters shall be solid surfacing material or a material with at least the same durability qualities. Laminate countertops are not allowed. Install casework complying with AWI Section 1700.

3.3.2.10. Comply with the recommendations of the Master Painters Institute (MPI) on interior paint systems for the substrate to be painted and the interior environmental conditions existing at the project site. Apply a minimum of one prime coat and two finish coats on interior surfaces, except factory pre-finished material or interior surfaces receiving other finishes. Lead paints are acceptable. In wet areas, provide an MPI Gloss Level 5 (semi-gloss) finish. Apply all paints in accordance with manufacturer's instructions.

3.3.2.11. Gypsum Board: Comply with ASTM C 36 Gypsum Wallboard. Minimum panel thickness shall be 5/8 inch. Provide moisture resistant panels (glass-mat panels are preferred) at locations subject to moisture. Consider use of impact resistant gypsum board.

- 3.3.2.12. Interior Windows: Provide minimum ¼" clear tempered glass. Provide STC rated windows that meet required STC rating of the wall it is located.
- 3.3.2.13. Signage: Provide interior signage for overall way finding and life safety requirements. The comprehensive interior plan shall be from one manufacturer and shall include the following sign types: (1) Lobby Directory; (2) Directional Signs; (3) Room Identifications signs; (4) Building Service signs; (5) Regulatory signs; (6) Official and Unofficial Signs; (7) Visual Communication Boards.
- 3.3.2.14. Window Treatments: Provide window blinds or an appropriate type of window treatment on all exterior windows in administrative spaces. Provide permanent shading devices and other measures to reduce glare in activity spaces while still allowing for natural daylighting and views into and out of the facility.
- 3.3.2.15. Provide bulletin boards in the lobby and main corridors. Bulletin boards shall fit into an overall architectural theme. The intent is to avoid randomly placed bulletin boards that are not coordinated with the interior finishes, colors, and/or theme. Coordinate placement of bulletin boards with the user.
- 3.3.2.16. Corner Guards: On gypsum board walls, provide surface-mounted, high impact integral color rigid vinyl corner guards where necessary to reduce the potential for damage (i.e. in areas subject to high traffic and where carts or other mobile pieces may be used.). Provide stainless steel corner guards at all outside corners of ceramic tile walls where necessary to reduce the potential for damage (i.e. in areas subject to high traffic and where carts or other mobile pieces may be used.).
- 3.3.2.17. Mold Prevention: Design and construct buildings to maintain space humidity at reasonable levels. Building construction shall be relatively air tight. Locate vapor barriers, if used, where temperature is above dewpoint in both heating and cooling seasons, and not under insulation installed on top of a ceiling at a ventilated attic. Do not ventilate crawl spaces. Install a vapor barrier on ground surfaces of crawl spaces. Acoustical ceiling tiles shall have factory applied mold preventive and sag resistant physical properties.

3.3.3. Special Acoustical Requirements

Design and construct exterior walls and roof/ceiling assemblies, doors, windows and interior partitions to provide for attenuation of external noise sources such as airfields in accordance with applicable criteria. Provide additional acoustical control for reverberation in gymnasiums and natatoriums.

3.4. STRUCTURAL REQUIREMENTS

3.4.1. General

Design and construct as a complete system in accordance with APPLICABLE CRITERIA.

3.4.2. Running Track

Structural design shall account for a suspended running track. Attach the track to the roof system structural framing. Design suspended running track to dampen all vibrations from users.

3.5. MECHANICAL REQUIREMENTS

3.5.1. Fire Protection

Provide facilities with automatic sprinklers that provide 100 percent coverage of the facility. Take care to avoid freezing sprinkler pipes located in attic spaces. Portions of the sprinkler system subject to freezing may be pre-action sprinkler systems.

- 3.5.1.1. Racquetball Courts - Any fire suppression or detection equipment must be protected and flush with the wall or ceiling surface.

- 3.5.1.2. Gymnasium/Basketball/Volleyball Courts - Provide protection for sprinkler heads, exit signs, manual pull stations, and other exposed components. Minimize equipment that protrudes into activity space or raise it above 6 feet for safety considerations.

3.5.2. Plumbing

Provide facilities with a fully functional plumbing system that complies with the International Plumbing Code (IPC).

3.5.3. Heating, Ventilating and Air-Conditioning (HVAC)

- 3.5.3.1. Provide facilities with a fully functional HVAC system that is automatically controlled by a Building Automation System (BAS). Do not locate HVAC equipment above the gymnasium due to the risk of a leak causing water damage. Provide for air flow from the dry side of the Men's And Women's Locker/Dressing/Shower/Toilet space to the exhaust intakes in the wet area.
- 3.5.3.2. Provide for connection to energy monitoring and control system (EMCS) for monitoring purposes.
- 3.5.3.3. Steam Room – Maintain space temperature at 100 F minimum, 110 F maximum. Humidity 100% relative.
- 3.5.3.4. Sauna - Provide a separate dry heat system with individual temperature controls and a timer. Provide secure controls. Provide passive ventilation.
- 3.5.3.5. Gymnasium/Basketball/Volleyball Courts - Provide durable air grill covers and do not place air grills in line with basketball nets.
- 3.5.3.6. Racquetball Courts - Ventilating ducts must be installed flush with the ceiling or wall surfaces. Locate supply and return vents in the rear one-third of the ceiling and/or the upper one-third of the back wall.

3.6. ELECTRICAL REQUIREMENTS

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.

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). 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.) Circuit breakers, disconnect switches, and other devices that meet the OSHA definition of energy-isolating device must be lockable. 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 shall be limited to 1 percent voltage drop.

3.6.1. Interior Power

Provide interior power per the general electrical requirements and per the Technical Criteria – U.S. Army Physical Fitness Facilities unless revised by the requirements of this RFP. 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.

- 3.6.1.1. Lobby. Power to circuits as needed to Control Desk, for computer terminals (2 minimum in the X-small and Small, 3 minimum in the medium, 4 minimum in the large and X-large), counter mounted video monitors, multiplex video receiver, tape backup, sound processor for multiple

paging sources, music source (such as a CD player) and sound amplifier.

- 3.6.1.2. Gymnasium/Suspended Running Track. Scorer's table is generally located for one designated court, at mid court, and requires one (1) 4-outlet, 20 amp power outlet and two (2) Cat5 or better data connections, both in recessed floor boxes, centered under the anticipated table location, but outside the court boundaries. Solid brass cover plates shall be provided for these outlets for when scoreboard equipment is not in use to provide good ball return value and skid resistance.
- 3.6.1.3. Fitness Module (Cardio, Circuit, Free Weight). 20A dedicated circuits (one outlet per piece of equipment is acceptable) unless equipment manufacturer's data indicates a larger circuit is required for the equipment.
- 3.6.1.4. Miscellaneous Areas – Offices. In copy/file/work/break room, provide outlets at built-in counter area for microwave, coffee pot, refrigerator, and other cooking devices. Provide ground fault protection of outlets within 6 feet of any water source.

3.6.2. Interior Lighting

Provide interior lighting and control per the Technical Criteria – U.S. Army Physical Fitness Facilities unless revised by the requirements of this RFP. When “PL Lamp” is indicated by Technical Criteria – U.S. Army Physical Fitness Facilities, provide multi-tube, 4-pin, compact fluorescent lamp. When building electrical design includes 480/277V power distribution system, interior lighting will generally be fed from the 480/277V power distribution system. Pay particular attention to issues such as glare, heat generation, and impact protection for the fixtures in Fitness Facility activity spaces. Provide fluorescent luminaires with electronic programmed start fluorescent ballasts. Provide daylighting dimming systems where dimming is controlled by a photosensor to save energy in interior spaces where on a clear summer day a minimum interior illumination of 50% is expected in the majority of the space and where there is a life cycle cost benefit.

- 3.6.2.1. Lobby. Low profile LED lighting is acceptable under cabinet lighting.
- 3.6.2.2. Gymnasium/Suspended Running Track. High Intensity Discharge (HID) fixtures are not required. Lighting selected shall be identified as suitable for the intended use and lighting design shall meet IESNA recommendations for Basketball Sports-Lighting, Class III (Class of Play). Fixtures shall be mounted not less than 25' above the finished floor. Fixtures with 80% direct and 20% indirect lighting are preferred. For overhead locations, protect luminaires with wire cages and/or provide appropriate shatterproof enclosed luminaires. Switching for lighting control shall provide different lighting options to take into account natural lighting and different activities (such as boxing matches, etc.). Lighting control shall be located in a controlled area to avoid accidental and unauthorized switching.
- 3.6.2.3. Fitness Module (Cardio, Circuit, Free Weight). When ceilings heights do not allow pendant mounted or suspended lighting, 2 x 2 or 2 x 4 lay-in indirect fluorescent fixtures may be used. Independent slide or toggle controls may be used to control fixtures by groups. Grouping needs and/or preferences will be determined by circuit capacity and by location and amount of natural daylighting. If fixtures requiring remote ballasts are used, where possible install the remote ballasts above ceiling and provide with above ceiling access adequate to service the remote ballasts. Additional contribution of natural light via windows and/or skylighting is highly recommended.
- 3.6.2.4. Exercise Module. When ceilings heights do not allow pendant mounted or suspended lighting, direct 2 x 2 or 2 x 4 lay-in fluorescent fixtures may be used but are not recommended due to lower light quality (excessive glare and static light distribution; e.g. causes greater eye fatigue over long periods of time). Natural light via windows may be provided, but direct sun-light and glare must be avoided. Windows providing internal views to other spaces is desirable.
- 3.6.2.5. Miscellaneous Areas – Offices. Flush edge lens frames are minimum; chamfered lens frames preferred. Indirect lighting, to reduce computer glare, would be preferred. Provide recessed wall wash downlight accent lighting to improve wall surface brightness and illuminate

architectural features to assist visitor wayfinding in the main lobby, to functional areas, and in the waiting spaces for office suites. Lay-in lighting fixtures with integral HVAC diffusers in a slot arrangement on the fixture frame do not provide a good distribution of air and tend to increase air noise; therefore, these are not recommended.

3.6.3. General Site Lighting

Ensure that parking areas and the facility have adequate lighting for safety, evacuation, and security measures. Lighting for all exterior applications shall be controlled by a photosensor and astronomical time switch that is capable of automatically turning off the exterior lighting when sufficient daylight is available or the lighting is not required.

3.6.4. Cathodic Protection System

Corrosion protection for the facility shall be provided by coordinated material specification and/or provision of a cathodic protection system to assure corrosion will not compromise system operation for the 50 year infrastructure design lifetime of the facility. Provide an appropriate Cathodic Protection System when the design analysis of a corrosion engineer indicates cathodic protection is recommended to assure corrosion will not compromise system operation for the 50 year infrastructure design lifetime of the facility.

3.6.5. Mass Notification

A Mass Notification System (MNS) shall be integral to the fire alarm system and shall be connected to the base MNS. Speakers shall be located throughout the facility, providing total coverage. Announcements or music shall be by all-call or by room. If speakers are mounted on/in a wall, ensure they are mounted at least 8' above the floor.

3.7. TELECOMMUNICATIONS REQUIREMENTS

Design telecommunications design in accordance with the Technical Guide for Installation Information Infrastructure Architecture (I3A). In the I3A Technical Guide, substitute the word "shall" for the word "should" throughout the document.

3.7.1. Service

Coordinate service with local DOIM personnel.

3.7.2. System

Provide a fully operational system from the demarcation point to each outlet.

3.8. PUBLIC ADDRESS SYSTEM

System may be integrated into Fire Alarm/MNS. Locate the master station at the Control Desk with input for music source. Locate the PA speakers in all hallways, restrooms, locker rooms, gymnasium and exterior areas. If speakers are mounted on/in a wall, ensure they are mounted at least 8 feet above the floor. Provide announcement configuration capability by room, zone or all-call. Provide commercial grade audio system for each group exercise room with recessed A/V rack and ceiling mounted speakers.

3.9. CABLE TV (CATV) REQUIREMENTS

3.9.1. Service

Cable Television service will be by the Installation provider. The D/B contractor shall provide a two inch conduit with nylon pull cord from the communications room to the designated interface point.

3.9.2. System

Provide a CATV system to distribute incoming television signals and user supplied. Distribution point shall be the communications room. Outlets shall be in the lobby, all exercise modules, break rooms and activity rooms. Coordinate the number of outlets in exercise rooms with the user. Run cables in conduit and install a nylon pull cord in each conduit.

3.10. FIRE ALARM REQUIREMENTS

The fire alarm system shall consist of a fire alarm panel integrated with the MNS, transceiver, initiating devices, and notification devices. The fire alarm system shall be compatible with existing Installation fire alarm system and base MNS, and shall be coordinated with Base Fire Chief and\ or AHJ. The system shall be a Class A, addressable system, Style Z. All audible alarm appliances shall be voice type with a selection of prerecorded announcements.

3.11. Attachments

Attachment A - The Army Standard for Physical Fitness Facilities

Attachment B – Technical Criteria for U.S. Army Physical Fitness Facilities

<natatorium>Attachment C – Natatorium</natatorium>