Appendix C1 - Narrative

Community Based Outpatient Clinic
Missoula, MT

APPENDIX C: BASIS OF DESIGN NARRATIVE

This appendix contains Agency Specific Requirements (ASR) that must be included in the construction and operation of the leased premises. These requirements supersede any conflicting requirements in the standard lease template and referenced national standards and codes. See also attached chart of ASR.

I. HEALTHCARE REQUIREMENTS

The lease is for a healthcare facility and as such local building codes do not capture all requirements needed for the facility to be accredited by The Joint Commission for operation after acceptance. Appendix D contains the additional standards and codes that must be met to ensure accreditation. Several standards and codes depend on parameters such as the types and quantities of services provided to determine requirements. Unless noted in the Appendix, these parameters regarding service information, risk, and code application will be determined during design.

NFPA 99

The VA has determined the following areas and systems are **risk Category 1**. **Life Safety Systems** (i.e. exit signs, emergency lighting, etc.).

Pharmacy services

IT System

HVAC systems for areas requiring 24/7 temperature and humidity control including Sterile Supply.

NFPA 101 and IBC

For developer to properly determine occupancy type, the VA intends to simultaneously treat zero (0) patients at any given time who are incapable of self-preservation.

The Joint Commission (TJC)

The following lists are location specific VA TJC standards that must be included in the construction and operation of the lease. (Lessor shall refer to all TJC standards to ensure they understand and apply all the requirements.)

TJC requirements for Behavioral Health and Laboratory categories.

II. BUILDING FEATURES

1.1 EXTERIOR CANOPIES:

Due to our patient demographic, the ambulatory needs of our patients require that the building have a front drive-under entrance canopy. Height from finished grade to bottom of the canopy should be 14'. From the entrance canopy, the patient should then be able to enter the space via a vestibule at the front entrance.

1.2 EMERGENCY POWER AND BACK UP POWER SYSTEMS:

ASR) No emergency back-up generator is required.

UPS back up is required for specific equipment. Refer to Telecom and ASR information.

III. STRUCTURAL:

Structural design shall comply with the locally adopted codes as amended by all VA specific criteria listed in this section.

New structural members shall be constructed of concrete, masonry or steel.

Lessor to provide geotechnical report that defines all necessary foundation, retaining wall, slab on grade and seismic design parameters required for the project.

1.1 FOUNDATIONS:

New foundation systems shall be designed in accordance with the recommendations of the geotechnical report for the project.

1.2 FLOOR LOADS:

Minimum uniform and concentrated basic floor design live loads shall conform to the locally adopted codes. Where uniform or concentrated equipment loads exceed the minimum code required uniform live loads, the areas in question shall be designed to meet the specific load conditions.

1.3 ROOF LOADS:

Roof live loads shall be based on geographic locations and local governing building code requirements; however, they shall not be less than 20 psf.

Snow load in Missoula is 30 psf.

1.4 LATERAL LOADS:

Design of new structural element lateral forces shall be in accordance with local building code requirements for wind and seismic forces using importance factors and basic wind speeds associated with the Risk Category assigned to a Business Use medical office building.

1.5 SPECIAL INSPECTIONS:

Lessor shall comply with all special inspection requirements of the Local Authority Having Jurisdiction. Lessor shall obtain services of qualified, independent entities to provide special inspection services during construction. Lessor shall provide copies of the inspectors' reports to the Contracting Officer as evidence of compliance with Codes and the requirements of this solicitation.

IV. ARCHITECTURAL:

1.1 PATIENT ENTRANCES:

Provide canopies over all entrances to outpatient clinic. Main entrance should have a canopy extending over the drive, so vehicles can drive under and drop off patients. Provide 14 feet minimum vertical clearance for vehicular traffic.

1.2 LOADING DOCKS:

Provide loading dock with a canopy over the platform with 14 feet of clearance from grade to the underside of the canopy.

Provide a screen wall to shield the loading dock and approach to the loading dock from view from the front of the site.

1.3 ENCLOSURE SYSTEMS:

Building envelope systems shall be designed with consideration for performance under local climactic conditions, appearance, durability, security, efficiency in construction, and maintenance and operating costs.

Fire resistance of building envelope systems shall be as required by applicable codes for construction type and exposure.

1.4 EXTERIOR WALLS:

Materials and colors shall be consistent with the overall design concept and structural requirements and provide the level of physical security required by this Narrative.

Walls shall prevent moisture penetration. Design of existing moisture and air barriers, wall cavities, flashings & weeps, and other features shall prevent damage to wall components by entry of moisture into building.

Modify existing walls as required for sound transmission control from external sources at sites near airports, freeways, railways, or heavy city traffic.

1.5 FENESTRATION:

Lessor shall provide fenestration (windows) consisting of fixed windows, or glazed storefront or curtain wall, including glazed entrance systems, consistent with the overall design concept. Size windows and select glazing and frame materials to meet the overall building envelope performance and sustainability requirements of this Narrative.

1.6 SAFETY GLAZING:

Glaze windows occurring in Police Operations and security holding room with 7/16" thick laminated glass.

1.7 LOUVERS AND SCREENS:

Provide louvers in wall openings where required for ventilation. Design louvers and anchorage for wind loads in accordance with building codes. Louvers shall bear AMCA certified rating seals for air performance and water penetration ratings.

Provide bird screens on mechanical ventilation supply and exhaust openings in exterior walls. Provide insect screens on the inside of louvered openings in exterior walls where there are no duct connections.

Louvers should be baked enamel matching the exterior color and drainable type construction. Comply with

security requirements in Appendix D1.

1.8 EXTERIOR DOORS:

Entrance doors shall be automatic sliding anodized aluminum construction with safety glazing and shall comply with energy and sustainability requirements.

Swinging exterior doors and frames, except entrance doors, shall be heavy duty, insulated, continuously-welded, flush, hollow steel construction. Exterior doors shall be weather-stripped, self-closing, and open outward. Door hardware shall be selected from pertinent chapters of VA Document PG 18-14 Room Finishes, Doors & Hardware Schedule including Chapter 265. Provide latch guards and hinges with non-removable pins to deter tampering or unauthorized entry.

1.9 AUTOMATIC DOORS:

Design automatic doors to operate manually in event of power failure. Equip controls with safety devices for pedestrian protection. Provide door operator controls and equipment that are easily accessible for maintenance. Design automatic doors to open from both sides.

1.10 ROOFS:

Contractor shall provide a weathertight roofing system utilizing a low-slope, steep-slope, or combination of low and steep-slope systems that comply with all applicable Federal, State, and Local Codes & Ordinances and are installed in accordance with roof system manufacturer's approved instructions.

Roof system shall utilize roof drains, overflow drains, scuppers, or gutters & downspouts as appropriate to roof design and drain into an underground storm water drainage system. All roofs shall slope to roof drains or gutters.

Coordinate roof drainage with site (storm) drainage. Where roof drain leaders do not connect directly to storm drains, provide scuppers under all sidewalks and flatwork to convey storm flow to site drainage system.

Use minimum 8-inch high base flashing at walls and penetrations. Do not use pitch pockets or similar penetration seals.

1.11 EQUIPMENT

Room Content Lists included in Appendix A list equipment items that are to be furnished by either the Lessor, by VA for installation by Lessor, or installation by VA in the Outpatient Clinic. As part of the rental consideration, the Offeror must include supporting construction, HVAC systems, utilities, and electrical distribution systems for both Lessor-furnished equipment and VA-furnished equipment installed by Lessor, or installation by VA in the Outpatient Clinic.

Offeror shall include provisions for necessary support and attachment of equipment items including, but not limited to, structural reinforcement of wall, floor or roof construction, and blocking or backing in walls and ceilings.

Offeror shall provide HVAC systems necessary to supply and exhaust the clinical spaces, laboratories, and other areas that contain special equipment, including provisions for supply or exhaust connections directly to special equipment items when required for installation and/or operation of the equipment, as part of the rental consideration.

Offeror shall provide building equipment and utility systems including but not limited to piping, water treatment equipment, sanitary or laboratory waste systems as required for the installation and operation of the equipment items as part of the rental consideration. Offeror shall provide electrical service necessary for equipment items, including service from emergency source for designated items or locations, as part of the rental consideration.

1.12 LESSOR FURNISHED EQUIPMENT

Equipment items are listed by room type for each functional area within the Outpatient Clinic.

All property placed in, upon, or attached to the premises to be leased, and for which the Government pays by means of lump-sum, shall be and remain the property of the Government, and may be removed or otherwise disposed of by the Government.

1.13 PROVISIONS FOR VA-FURNISHED/VA-INSTALLED EQUIPMENT

As part of the rental consideration, the Offeror shall include supporting construction (backing), HVAC systems, utilities, and electrical distribution as required for VA-furnished and VA-installed equipment to be installed in the Outpatient Clinic.

1.14 VA-FURNISHED/LESSOR INSTALLED EQUIPMENT:

Equipment may include items that are furnished by VA but installed by the Lessor. As part of the rental consideration, the Offeror shall include supporting construction, HVAC systems, utilities, and electrical distribution as required for VA-furnished equipment to be installed by the Lessor.

For equipment designated as installed by the Lessor, the Offeror shall also include installation as part of the rental consideration. Installation shall be defined to include all labor, tools, equipment, and incidental parts (including, but not limited to, screws or bolts for anchoring equipment to substrates, pipe fittings or unions, fiber connections, line cord and plug, solder, Teflon tape, gas connections, pipe joint compound, wire nuts or electrical connectors, electrical wire, etc.) necessary for the equipment to be placed in its final location and to be completely functional.

- Include activities (nodes) in the network analysis schedule for installation by Lessor of VA-furnished equipment.
- Advise Contracting Officer of date(s) work will be ready for installation of equipment a minimum of 90 days in advance.
- Accept delivery of VA-furnished equipment on established dates.
- Jointly with Contracting Officer, inspect the equipment upon delivery to check for damage and confirm quantities.
- Once VA-furnished equipment is accepted by Lessor, the Lessor shall be responsible for protecting and storing the equipment.

- Provide any additional transportation to move equipment to final location.
- Uncrate, assemble, and install equipment, and dispose of packaging materials.
- Demonstrate proper operation of equipment to the Contracting Officer.

V. INTERIOR CONSTRUCTION, FINISHES, AND INTERIOR:

1.1 PROGRAM, FLOORPLAN, DESIGN, AND HEALING ENVIRONMENTS:

The Conceptual Floor Plan included in Appendix B provided in this Solicitation shall be used as the basis for the planning and functional layout of the facility. The completed building shall accommodate VA's space program and interior functional requirements. Offerors are advised that the conceptual plans have been developed using VA Space Planning Criteria and information from VA Outpatient Clinic (SOC/CBOC) Design Guide in conjunction with the parent Medical Center. The conceptual floor plan is a diagrammatic representation of the required spaces within the PFD with some consideration regarding departmental and interdepartmental adjacencies. The conceptual floor plan shall not be considered the required layout.

1.2 SPACE PLANNING AND FUNCTIONAL LAYOUT:

The Conceptual Floor Plan included in Appendix B provided in this Solicitation shall be used as the basis for the planning and functional layout of the facility. The completed building shall accommodate VA's space program and interior functional requirements. Offerors are advised that the conceptual plans have been developed using VA Space Planning Criteria and information from VA Outpatient Clinic (SOC/CBOC) Design Guide in conjunction with the parent Medical Center. The conceptual floor plan is a diagrammatic representation of the required spaces within the PFD with some consideration regarding departmental and interdepartmental adjacencies. The conceptual floor plan shall not be considered the required layout.

1.3 ROOM NUMBERING:

Lessor shall provide room numbers prior to design development for VA approval.

The Lessor shall work closely with VA to establish the room numbering system to be used for the facility and electrical panel breaker identification.

1.4 CIRCULATION SYSTEMS:

The Conceptual Floor Plan in this RLP defines the basic elements of the interior circulation systems and their relation to the functional plan within VA occupied space. The Lessor is responsible for the final design of horizontal and vertical circulation systems including building support space and common areas within the Building during Design Development. Lessor shall integrate the design of circulation systems with building entrances, functional elements, wayfinding systems (refer to INTERIOR DESIGN CRITERIA) and signage (refer to INTERIOR SIGNAGE).

Circulation system components include entrances, lobbies, corridors, and vertical circulation (stairs and elevators if proposed project has multiple floors).

Minimum width of major corridors serving multiple departments and building entrances and lobbies shall be 6 feet in width, minimum except where greater widths are required to comply with egress requirements.

1.5 ROOM HEIGHTS:

Lessor is responsible for coordinating ceiling heights, structural members, and proper clearances needed to install mechanical and electrical systems. Heights shall not be less than 9'-0". Required room heights are not to be reduced to accommodate ductwork runs originating out of shafts, corridors or chases.

1.6 MENTAL HEALTH:

Design and construct areas to be used by outpatient mental health functions to incorporate the following features.

Provide exterior door serving PRRC and Suicide Prevention as indicated on the Conceptual Plans.

- Minimize dead ends or blind spots in corridors.
- Maximize visibility from staff stations.
- Place doors in offices where staff will consult with patients so that either patient or staff can exit the room without having to pass by the other to get out. Based on layout, this tends to put the door more in the center of the room.
- Provide locks on all exam room doors.
- Patient toilet doors that are in-swinging shall be equipped with hardware that allows them to open out in an emergency

1.7 PARTITIONS:
Non-bearing interior partitions shall be capable of supporting equipment and furnishings specified for the clinic. For special requirements, use framing sizes or systems as appropriate. Walls to achieve minimum STC rating as indicated below. Where pipe spaces are required, size partition framing thickness to conceal piping. Installation of metal studs shall comply with ASTM C754. Provide support required for equipment, furnishings, and work of other trades

1.8 INTERIOR DOORS:
VA Document PG 18-14 Room Finishes, Doors & Hardware indicates sizes and types of doors required. Doors shall be of flush design.

Fire rated door and frame assemblies shall comply with NFPA 80.

Doors installed in all Group Rooms shall swing out in accordance with FGI 2.11-3.2.5.3. Such doors shall be recessed from the corridor to maintain corridor width and hazard to passersby in the corridor.

1.9 FINISH HARDWARE:
Door hardware shall be selected from pertinent chapters of VA Document PG 18-14 Room Finishes, Doors & Hardware Schedule including Chapter 265. Verify all hardware selections and locking systems with VA and RE prior to ordering and installation. Insert hardware shall be able to accept key core of Medical Center's choice.

1.10 SOUND TRANSMISSION CLASS:
The sound resistant enclosures of spaces shall be designed to assure speech privacy at walls for patient/ work discussion and achieve minimum STC rating, per FGI standards.

VI. INTERIOR DESIGN AND FINISHES:

Interior finishes shall meet minimum specifications defined in lease Agreement. Floor coverings shall be classified for commercial use and when identified shall be classified for heavy duty use. Interior floor finishes shall meet all code requirements for slip resistance and sustainability standards, per the lease agreements.

Accessible and barrier free design shall be incorporated throughout the building. Floor changes shall be minimized to prevent trip hazards. When selecting finishes, an emphasis shall be places on infection considerations. Select durable interior finishes shall comply with VA PG-18-14 room finishes, door hardware schedule. Interior finishes shall meet minimum specifications defines in the lease agreement. Floor coverings shall be classified for commercial use and when identified shall be classified for heavy duty use. Interior finishes shall meet all code requirements for slip resistance and sustainability standards, per the lease agreement.

Accessible and barrier free design shall be incorporated throughout the building. Floor material changes shall be minimized to prevent trip hazards. When selecting finishes, an emphasis shall be placed on infection prevention considerations. Selected products that withstand the disinfecting chemicals products. Select products with inherent antimicrobial qualities such as copper or silver fibers, products that withstand impact and promote the image of clean and new, products that have flat surfaces and promote clean-ability.

The interior design shall create a classic and timeless interior emphasis on a therapeutic environment. The layout of the space shall minimize dead end corridors and blind spots and maximize visibility from staff stations. The layout shall create circulation paths that are clear and well defined. The designer shall use repetition of layout for simplicity

1 INTERIOR FINISHES:

Interior finishes shall be provided as indicated in VA Program Guide 18-14 Room Finishes, Doors & Hardware Schedule including Chapter 265. Refer to VA Design Guide for Mental Health Facilities including Sections 3.4, 4.3, and 4.4 for additional guidance. VA must review and approve any deviation from this document prior to start of final construction documents.

The Interior Design concept and materials, finishes, colors, patterns, and textures must be approved by the Contracting Officer

VII. INTERIOR DESIGN CRITERIA:

1. Goal:
   The primary objective of the interior design is to provide a therapeutic environment. Finishes, fixtures, and furnishings that maintain the safety and security of the facility need to be integrated into the design without detracting from this primary objective. A warm, welcoming and familiar environment can help calm patients and promote their participation in treatment and their rehabilitation and recovery. The facility is to provide a supportive interior environment that is conducive to healing both the patient's mind and body, is respectful of the public monies, promotes staff performance, and expresses high quality design

2. Concept:
   The design is to pivot from the facility's mission and its patient profile. This includes a working knowledge of the profile and characteristics of the veteran as a patient population and the distinct profile of the users of said facility and said project. VA patients are often long-term, high repeaters with multi-medical problems. Each user group will reveal the degree of need for the design to address aging, physical and mental disabilities, abusiveness, loss of function and perceptual ability.

3. Function:
   Functional requirements dictate maintainable colors, textures, patterns, material selections, combination of materials, and installation techniques. Materials must be chosen for longevity and good appearance retention

4. Signage and Wayfinding:
   A "wayfinding" process shall be designed into the project. Patients, visitors, and staff need to know where they are, what their destination is, how to get there, and how to return to their origination point. Identification, personalization of occupied spaces, and orientation are all to be addressed in the design. Wayfinding is to be thought of broadly as building elements, color, texture, and pattern cues, as well as a coordinated set-up for separate contracted signage and artwork. Refer to Section V for Signage criteria.

5. Guidelines:
   Design attention shall be given to all spaces. Areas which could initiate the design may be the lobby or administrative suite, but extensions of the same quality and variety are required for the corridors, staff areas, and patient areas. The design must offer a distinctive and clear lead for the planning and selecting of interior furnishings. Designs that narrow choices of procurement furnishings are inappropriate. A working understanding of the limits of government

sources is to be considered. This consideration will produce a good environment for the furnishings.
Designs that use "lifetime of the building" materials in colors, patterns, and designs that transcend time are endorsed. Trendy colors and patterns are to be restricted to cycle replacement materials, such as paint and wall coverings.

1.1 HANDRAILS AND WALL GAURDS

Except in administrative areas, provide handrails and wall guards on both sides of all corridors.

Handrail/Wall Guard Combination shall consist of snap-on covers of resilient material, minimum 0.078-inch thick, free-floated on a continuous, extruded aluminum retainer, minimum 0.072-inch thick, anchored to wall at maximum 32 inches on center.

1.2 HOLDING ROOM & ARMORY

Construct walls for holding room with 5/8-inch abuse-resistant GWB over security mesh on metal studs as specified for plaster finish. Walls shall meet Level 3 Ballistic standards in the armory. Metal lath or plaster base is unacceptable as security mesh. Security mesh shall be flattened, expanded metal manufactured from high strength, low alloy steel and shall conform to ASTM F 1267, Type 11, Class 1, Mill finish.

- Mesh designation: 3/4 #13F
- Mesh Design Size: 0.923 x 2.10 inch
- Mesh Opening Size: 0.688 x 1.781 inch
- 13 meshes per foot, 74% open area
- Mesh Strand Width: 0.106 inch
- Mesh Strand Thickness: 0.078 inch
- Weight: 0.75 pounds per square foot

Provide manufacturer's attachment clips and use recommended fasteners to secure mesh to wall framing

The Holding Room should be contiguous with Security Operations Room and contain a shatterproof observation window in the door. The door shall open outward. The holding room shall not have exterior windows. Provide a full width bench with a padded vinyl seat cushion that is secured to the metal frame support with tamper resistant screws. Bench to have a full width metal frame and cross supports. Bench legs to be anchored to the floor with concrete expansion anchors. All metal to be painted with rust inhibiting paint.

VIII. FIRE PROTECTION:

1.1 FIRE EXTINGUISHERS:

Portable fire extinguishers shall be provided, inspected, and maintained by the Lessor in accordance with National Fire Protection Association (NFPA) 10, Standard for Portable Fire Extinguishers. Recessed cabinets shall be provided in occupied areas.

1.2 AUTOMATIC SPRINKLER SYSTEMS:

Automatic sprinkler systems shall be installed in 100% of the outpatient clinic building and any accessory buildings. Installation shall comply with NFPA 13. Sprinklers shall be installed throughout the building, including but not limited to, telecommunications rooms, offices, exam rooms, waiting rooms, restrooms, loading docks, electrical rooms/ closets, vaults, mechanical room, storage areas, and janitor's closets.

In addition to the aforementioned criteria, the following requirements apply:

- CPVC Piping is not allowed.

- Smoke Zones shall match Zone Valve areas Design:

The design shall comply with the requirements of NFPA 13, Joint Commission Standards and FGI (Facility Guidelines Institute): Guidelines for Design and Construction of Outpatient Facilities. The automatic sprinkler system shall be hydraulically designed by any design approach allowed by NFPA 13. A minimum safety factor of 10% shall be provided in the hydraulic calculations. Sprinkler systems shall be designed based on available water supply without fire pump operating, where possible.

Installation:

The installation shall comply with the requirements of NFPA 13. Sprinklers shall be provided throughout the building.

Standpipes shall be Class I hose connections. Where necessary, provide a fire pump to supplement the fire flow and pressure. The installation of the fire pump shall comply with the requirements of NFPA 20. The fire pump shall be an electric motor driven, horizontal split case centrifugal type. The fire pump shall be provided with both a test header and flowmeter. Relief valves, if provided, shall be recirculated back to the suction side of the pump. Jockey pumps shall be rated for no less than 60 GPM. Fire pumps shall start automatically at 10 psi below the jockey pump start pressure. Fire pumps shall be manually shut down.

Design wet pipe sprinkler systems. Do not use pre-action type systems. Sprinkler densities shall comply with NFPA 13, except in rooms containing movable/mobile shelving (high density storage) where the density shall be Ordinary Hazard (Group 2).

Rooms containing bulk supply storage shall be classified as defined by NFPA 13. Do not use shelving which obstructs sprinkler water from penetrating down through racks. No storage within 18 inches of any sprinkler head.

Install quick response sprinklers (QRS) in all areas, except where specifically prohibited (e.g., high temperature areas as defined in NFPA 13). The installation of flow control (on/off) sprinkler heads is not permitted. Coordinate with architectural, mechanical and electrical work and show smoke zone boundaries, hazard classification, density, and other special requirements on drawings.

Match sprinkler zones with fire or smoke (compartments) and fire alarm evacuation zones. Provide a flow switch, isolation valve, tamper switch, and pressure gauge for each zone. Notification shall comply with NFPA 72. Determine and identify on drawings the location of fire pump, risers, all valves, fire department connections, drains, and points of connection with underground fire service main.

IX. PLUMBING:

1.1 PLUMBING DESIGN SCOPE:

All plumbing systems shall be designed in compliance with the IPC, state and local codes, ASHRAE 90.1-2013, ASHRAE 188, Joint Commission Standards, and FGI (Facility Guidelines Institute): Guidelines for Design and Construction of Outpatient Facilities.

The plumbing design scope includes the following systems, which are detailed following this list.

- Water Distribution System
- Domestic Hot Water System, including Recirculation

- Sewer/Vent/Waste System inside buildings
- Potable Water Treatment System
- Roof Drainage System
- Interior Fuel Gas System
- Sub Soil Drainage System
- Legionella Mitigation

1.1.1 WATER DISTRIBUTION SYSTEM:

Size the piping for the hot and cold-water systems per criteria specified in the IPC including backflow preventers, water hammer arrestors, and trap primers. Provide wall hydrants (a maximum of 200 feet apart at the building exterior perimeter) at loading docks and at building entrances, with a minimum of one wall hydrant on each exterior wall. Provide ¾" hose bibs in mechanical rooms and in blood collection room for floor washdown.

Maintain a minimum pressure of 35 PSI at the plumbing fixtures on the top floor. Where required, provide a domestic water booster system. The electrical supply shall be coordinated with the electrical engineer for all electronic faucets and flush valves, trap primers, solenoid valves, pumps, alarm panels, hot water heaters, and other appliances and equipment requiring electrical power.

1.1.2 DOMESTIC HOT WATER SYSTEM, INCLUDING RECIRCULATION:

Size the hot water circulation system, including pumps, based on the heat loss method as outlined in the ASHRAE GUIDE AND DATA BOOK, not to exceed 5 °F heat loss. Limit dead legs to 10 ft. Provide balancing and check valves on each circulation circuit. The system shall be tested and balanced for proper temperature maintenance including no short circuits.

1.1.3 SEWER/VENT/WASTE SYSTEMS INSIDE BUILDING:

Design sewer/vent/waste systems in accordance with IPC and ASPE. "Solvent" combination waste and vent systems are not allowed. Provide cleanouts according to the IPC. Identify all cleanouts on plans and riser diagrams.

1.1.4 POTABLE AND SPECIAL WATER TREATMENT SYSTEMS:

Potable water provided to the building shall meet minimal EPA and/or state standards for contaminants. If potable water does not meet EPA and/or state standards, Lessor shall take action necessary to reduce contamination to acceptable levels. Lessor shall test potable water periodically to ensure that it continues to meet EPA and state standards.

Provide water treatment as required to meet EPA and/or state drinking water standards, and to meet special water use needs

1.1.5 ROOF DRAINAGE SYSTEM:

Provide primary and secondary roof drain systems per IPC Roof drains shall be sized per IPC with applicable local amendments. Insulate roof drain bowls, vertical piping to the bowl and horizontal piping located under the roof and above lay-in or hard ceilings. Coordinate connection of roof drainage piping to storm drain site piping. Point of connection of building roof drain piping to site piping is at 5'- 0" outside the building perimeter

1.1.6 INTERIOR FUEL GAS SYSTEM:

Design in accordance with NFPA 54 or IFGC, as required and as modified by local codes.

1.1.7 SEISMIC RESTRAINT SYSTEMS:

Earthquake-resistive design for plumbing equipment and piping shall comply with the requirements of the local building code. Exceptions: When allowed by local code, seismic restraint may be omitted for the following installations:

- Piping in mechanical equipment rooms less than 1¼ inch.
- All other piping less than 2½ inch.
- Equipment weighing less than 400 pounds support and attached directly on the floor.
- Equipment weighing less than 50 pounds [9 kg] suspended from the roof or floor or hung/supported from the wall.

1.1.8 LEGIONELLA MITIGATION:

VA to clarify requirements regarding Legionella Mitigation, if any. Comply with ASHRAE Guideline 12-2000, Minimizing the Risk of Legionellosis Associated with Building Water Systems.

There are currently no EPA enforceable regulations governing the levels of Legionella bacteria in potable water systems; however, EPA has issued a Maximum Contaminant Level Goal (MCLG) of 0 ppm. Municipal water supplies and wells can carry Legionella, so it is a given that the bacteria will be introduced into the facility potable water system at some time. The challenge is to limit the amplification of the bacteria to less than lethal levels.

Legionella bacterial amplification occurs when bio-films exist in water storage tanks and dead-end piping legs which allow for growth sites, and when temperature and pH levels are optimum for growth. Infection can occur when patients inhale atomized droplets while showering, drinking or receiving respiratory treatment.

1.2 PIPING DESIGN:

Provide means to easily remove and disinfect all outlet devices such as showerheads and faucets, etc. Utilize self-draining showerheads. Provide a 3/4" ball valve at the end of each piping section as a means to drain heated (above 140 °F) flushing hot water that will be used for initial and supplemental disinfection. Ball valve shall be within 50 feet [15.24 meters] of a floor sink, floor drain, sink, or lavatory.

1.3 PLUMBING FIXTURES, TRIM AND EQUIPMENT:

Provide plumbing fixtures, trim and equipment as required by the IPC.

1.3.1 PLUMBING FIXTURES:

Water closets, urinals, sinks and lavatories shall be vitreous china or stainless steel. Bariatric water closets shall be rated at 1,000-pound capacity. Service sinks (mop sink/basin) shall be floor-mounted cast terrazzo, (a combination of Portland cement and grey marble chips).

1.3.2 PLUMBING TRIM:

Faucets and showerheads shall be of chromed brass, monel, or stainless steel; plastic trim is not permitted. Faucets shall be laminar flow; aerators are not permitted.

All exposed piping, including drain piping shall be chrome plated, including piping enclosed with ADA compliant safety shield.

X. MECHANICAL:

1.1 MECHANICAL CONTROL SYSTEMS (SHELL):

A complete automatic temperature control system shall be provided. The direct digital control (DDC) system shall be a complete system suitable for heating, ventilating, and air conditioning (HVAC) system provided. The system shall have read access for the VA. The system shall have a GUI interface that includes a floor plan that shows the location and status of the controlled equipment. It shall be expandable and capable of accepting additional points.

Provide humidification and electronics where necessary for the reliable function of the production equipment.

Provide temperature and Humidification monitoring in supply, medication storage, and communication rooms.

Non-Patient Support Areas

Cooling 75

Deg. F Heating

70 Deg. F RH

max 60%

RH min 20%

ACH max 6

ACH min 2

Mental Health Clinic

Cooling 75 Deg. F

Heating 70 Deg. F

RH max 60%

RH min 20%

ACH max 6

ACH min 2 Patient

Exam Rooms

Cooling 75 Deg. F Heating

70 Deg. F RH max 60%

RH min 20%

ACH max 6

ACH min 2

1.2 HVAC DESIGN:

The HVAC systems shall be designed in accordance with the IMC, state and local codes, ASHRAE 90.1-2013, ASHRAE 170, Joint Commission Standards and FGI (Facility Guidelines Institute): Guidelines for Design and Construction of Outpatient Facilities. The HVAC systems be capable of providing year-round comfort and proper ventilation during all weather conditions noted below.

The HVAC design calculations shall be based on the following parameters:

A. Outdoor Design Conditions

Reference: Latest Edition of ASHRAE Handbook of Fundamentals. Cooling

Mode – Air Handling Unit (Minimum Outdoor Air)

1%, Monthly Design Dry bulb and Mean Coincident Wet bulb Temperatures.

Cooling Mode – Air Handling Unit (100% Outdoor Air):

1%, Monthly Design Wet bulb and Mean Coincident Dry bulb Temperatures.

Heating Mode

99%, Annual Design Dry bulb Temperature

B. Indoor Design Conditions

Health Care Functions

Reference: Latest Edition of ASHRAE Standard 170 (Ventilation of Health Care Facilities) and FGI (Facility Guidelines Institute): Guidelines for Design and Construction of Outpatient Facilities. Base the design on the following parameters listed for each unique specialty function:

- Inside Design Temperature (Dry bulb)
- Inside Design Humidity (Percentage Relative Humidity)
- Pressure Relationship to Adjacent Areas (Measured as Volumetric Air Difference)
- Minimum Total and Outdoor Air Changes per Hour
- Return Air or Exhaust to Outdoors

Support Functions

- Offices
- Classrooms
- Conference Rooms
- Entrance Lobby
- Waiting Area
- Lounge

- Circulation Spaces

1. 70 ˚F @ 30% Relative Humidity (Heating Mode)
2. 75 ˚F @ 50% Relative Humidity (Cooling Mode)

Unoccupied Mode

Non-sensitive areas shall be provided with a night setback, 55 to 88 F.

C. Heating and Cooling Capacities

Using the methodology given in the latest edition of ASHRAE Handbook of Fundamentals, the Engineer shall provide computerized calculations showing computation of the cooling and heating capacities of the occupied spaces. The Engineer shall coordinate with the project-specific ancillaries – Latest Edition of ASHRAE Handbook of Applications (Health Care Facilities) and obtain such data as equipment load, exhaust air volume, pressurization requirements, and the required hours of the system operation per day to establish the cooling and heating capacities and system zoning.

Calculation Details

The computerized calculations shall show such entities as:

- Room-By-Room Peak Cooling and Heating Loads
- Room-By-Room Air Balance Sheets, showing supply, return, exhaust, make-up, and relief air volumes
- Zone cooling and heating loads (a zone is defined as a central cooling and heating apparatus serving a group of rooms)
- Psychometric Analysis

1.3 HVAC SYSTEM SELECTION CRITERIA – AIR SIDE:

- All-Air Systems
- Use of PTAC (Packaged Terminal Air Conditioners), Terminal Heat Pumps, Variable Refrigerant Flow (VRF), and Fan Coils Units are NOT permitted

AHU Components and Specifications:

General All components may not be required at each location and for each application. Filtration Refer to ASHRAE 170

Air Terminal Units:

Provide pressure-independent, DDC-controlled, variable air volume (VAV) and constant volume (CV) terminal units. Provide integral reheat coils. Provide capability to adjust the air volume between the high and low limits or by the DDC controls. Provide acoustic internal lining for the terminal units

1.4 REFRIGERATION SYSTEMS – CHILLED WATER AND DIRECT-EXPANSION:(DX) SYSTEMS:

Equipment efficiencies shall be in compliance with the DOE, FEMP program, and ASHRAE 90.1-2013.

1.5 CHILLED WATER SYSTEMS:

Provide multiple chillers (at least two) to ensure reliability and efficient part load operation.

Chiller Controls:

Each chiller shall be equipped with a factory-installed and tested microprocessor for the safety and operating controls. The microprocessor shall be able to interface with the building DDC (Direct Digital Controls) controls with a BACNET open protocol arrangement.

Chilled Water Piping/Pumping System:

Provide a fully functional chilled-water piping and pumping system complete with accessories and devices, such as variable-speed drives, flowmeter, and temperature and pressure sensors. Selection of the piping and pumping arrangement shall be project-specific.

Water Treatment:

Provide a complete and fully functional water treatment system using non-toxic chemicals approved by EPA and local authorities.

System Volume:

Ensure there is a minimum of 5 gallons per ton of chilled water to provide sufficient thermal mass to the system

1.6 DIRECT-EXPANSION (DX) SYSTEMS:

Use of DX systems, packaged or split-system, is permitted, provided the occupants comfort is not compromised due to lack dehumidification at part load conditions. The Engineer shall address this issue by including the required control strategy and system configuration, such as:

- Multiple Compressors (single compressor units are NOT acceptable)
- Low-Ambient Operation
- Hot Gas Bypass
- Customized Refrigerant Piping Design (if required to avoid stratification)

Use of DX systems, packaged or split-system, is recommended, for single zone systems which have different load profiles than surrounding spaces, e.g. computer rooms, electrical rooms, telephone equipment rooms provided.

1.7 HEATING SYSTEMS:

HEATING SYSTEMS:

Provide either a heating hot water or electric heat to meet the space heating and domestic hot water heating demand.

Miscellaneous Terminal Heating Devices:

Provide thermostatically-controlled terminal heating devices, such as unit heaters and cabinet heaters, to heat the miscellaneous spaces, such as:

- Mechanical Equipment Rooms (MERs)
- Toilets with exposed perimeter

1.8 APPLICATIONS:

Air-Conditioning Systems – Miscellaneous Areas:

Provide dedicated and thermostatically-controlled air-conditioning systems for the critical spaces identified below.

- Server Rooms (OIT/Telecom/Data Closet/etc.)

Design conditions shall be 75 ˚F dry bulb temperature (cooling), 65 ˚F dry bulb temperature (heating), with individual room temperature control.

General Exhaust Systems:

Ventilate spaces, such as toilets, janitor's closet, soiled utility rooms, and bathrooms, at the rate specified in ASHRAE Standard 62.1 and ASHRAE 170. Maintain negative air balance in the spaces.

XI. ELECTRICAL:

The Electrical systems shall be designed in accordance with the latest NEC Code., state and local codes, ASHRAE 90.1-2013, and FGI (Facility Guidelines Institute): Guidelines for Design and Construction of Outpatient Facilities. The Lessor shall provide all the necessary electrical facilities for the project. Supply voltage for this facility shall be 480/277-volt, 3 phase, 4 wire. Lessor shall request for the local utility to provide the new service voltage. It is expected that electrical systems will meet their primary objective of providing appropriate and reliable interior and exterior electrical, lighting, and auxiliary systems and services necessary to the safety and comfort to the veterans, employees, and visitors. In addition, the systems shall be safe, easily accessible for repairs and maintenance, and energy-efficient.

1.1 RACEWAYS AND WIRING:

Install all wiring in raceways. All wiring shall be copper. All circuits and branch circuits shall have a separate equipment grounding conductor of appropriate size per the NEC. No more than 3 branch circuits are allowed to run in one homerun. Utilize minimum conduit size of ¾" inch. (Data wiring shall not be mixed with other systems.) All junction boxes (J-boxes) shall be color-coded as directed by SRE. All J-boxes shall be labeled on cover as to circuit, and what is in box.

1.2 LIGHTNING PROTECTION SYSTEM:

Perform risk analysis per NFPA 780, Annex L and provide a lightning protection system, where Nd>Nc. Submit calculations, including all assumptions. The Lessor shall use the following fixed factors in the calculation: C3 = 2.0, C4 = 1.0, C5 = 5.0. All other factors shall be project-specific. All cables, Air Terminals, rods, and components shall be copper, and use exothermic weld joints. Master label shall be required for lightening protection system.

1.3 RECEPTACLE CIRCUITS:

No more than 6 receptacles shall be installed on a single circuit. Receptacles shall be Hospital grade in all clinical type spaces, Commercial grade in office / general areas. All receptacles will be labeled with their panel number and circuit number designation

1.4 ESSENTIAL ELECTRICAL SYSTEMS:

Risk Assessment category for this facility is determined to be Category 3

No EES (Essential Electrical System) is required for Category 3 facilities.

It is recommended that emergency backup power be provided for the following Life Safety loads

Life Safety Branch:

The Life Safety Branch shall supply power to loads per NFPA 70 and 99, including:

- Alarm and alerting systems, such as fire alarm
- Automatic doors, used for building egress.
- Exit signs.
- Illumination of means of egress
- Nurse Staff Stations: Task illumination

- Telecommunications systems, where used for issuing instructions during emergency conditions, including public address systems.

1.5 ELECTRICAL EQUIPMENT:

Electrical distribution components shall have copper bussing. Each panelboard shall contain a main disconnect and 25% spare breakers in addition to a main breaker disconnect. All electric panels will have their circuit log sheets completely filled in. All electric panels will have a 36-inch area in front of each panel clearly marked with black and yellow stripped tape to designate nothing is to be positioned in front of the panel.

XII. TELECOMMUNICATIONS:

1.1 TELECOMMUNICATIONS: CABLE PATHWAYS, WIRING, CABLES, AND INFRASTRUCTURE PLANT; AND SPECIAL TELECOMMUNICATIONS SYSTEMS:

Telecommunications Outlets: Provide as required for space layouts

Outlet boxes shall be equipped with full covered wall faceplates and four (4) each modular Category Six RJ-45 jacks.

Special Systems Specific Requirements:

Provide systems as determined by project requirements. Not all systems may be required, and not all required systems may be listed below. Refer to Appendix A for description of room contents.

Nurse Call:

Provide Nurse call system as required. Provide emergency nurse call stations in all non-public patient bathrooms for each toilet.

1.2 PUBLIC ADDRESS (PA):

Provide public address and mass notification (PA) system(s) as required. System(s) shall be as manufactured by Bogen, JBL, Dukane, or approved equivalent, as updated to most current technology or manufacturer. Ceiling mounted speakers shall be located a maximum of 20lf center to center in all corridors, and in rooms and waiting areas. The system shall be capable of being dialed into from any telephone for paging. Provide two (2) ea. microphones for paging from the telephone operators Call Center. System shall have the capability of paging each floor of the building separately, or to page the entire building.

1.3 INTERCOMMUNICATION SYSTEM:

Provide intercommunications system(s) as required. System(s) shall be as manufactured by Bogen, Aiphone, Leviton, or approved equivalent, as updated to most current technology or manufacturer.

Provide appropriate intercommunication systems at designated facility ingress and egress points connected to the Security Service Control Room.

1.4 RADIO ENTERTAINMENT DISTRIBUTION (RED):

Provide radio entertainment distribution (RED) systems as required. System(s)

shall be as manufactured by Bogen, JBL, Dukane, or approved equivalent, as updated to most current technology or manufacturer.

All loudspeakers shall be of the recessed or ceiling type in lieu of surface-mounted type, wherever possible.

Loudspeakers in each day room, TV lounge, waiting room, and other designated areas that also contain PA speakers may be combined within the same speaker back box and grille, and use the same speaker cone, as long as each speaker

function contains a separate matching transformer and voice coil for each service (i.e., one transformer and associated voice coil for RED and one transformer and associated voice coil for PA). This consolidation practice is an acceptable alternate to two individual speakers, back boxes, grilles, and mounts in these locations. Also, provide volume and selector controls in each of the aforementioned RED only areas at their Reception Room desk.

Music should be piped into exam rooms, with switches outside of the room (located within work room) to help maintain privacy.

1.5 CABLE TELEVISION (CATV):
Lessor to provide cable television.

1.6 SECURITY SURVEILLANCE TELEVISION (SSTV):
Provide SSTV systems as required. System(s) shall be as manufactured by Access, Bosch, or Pelco, as updated to most current technology or manufacturer.

Security Management and Control, and Centralized Police Security Management Systems (aka Security Management Telecommunications System SMTS):

Provide SMTS systems as required. System(s) shall be as manufactured by Lockheed, Viper, Access Gold, Casi-Rusco, or approved equivalent, as updated to most current technology or manufacturer.

Guest wireless to be paid for by Lessor. Including installation, service, content. Pre and Post wireless survey to be provided by Lessor along with installation of AP's, for both guest wireless and VAMC wireless.

- Electronic Access and Door Control – Dyna Lock, Locknetics, Sentrol, or approved equivalent, as updat- ed to most current technology or manufacturer.
- Motion Intrusion Detection – Security Metrics, Ademco, Honeywell, or approved equivalent, as updat- ed to most current technology or manufacturer.
- Patient (also Staff) Annunciator/Locator System – Viking, Radiance, Secur Trak, Patient Central, or ap- proved equivalent, as updated to most current technology or manufacturer.
- Duress Alarm and Emergency Notification System – Code Blue Pole Systems or approved equivalent, as updated to most current technology or manufacturer. Under no circumstance shall the telephone system be used to provide duress alarm functions. Provide a marquee display in the Police Operations Room and the telephone operators Call Center to display location where a duress alarm is initiated. Marquee shall be red letters/numbers on black background. Marquee nominal size shall be 4"H X 24"W.

<u>Duress-Panic Alarms shall meet the following:</u>

- Housing shall be a rugged corrosion-resistant housing of stainless steel or Acrylonitrile Butadiene Styrene (ABS) molded plastic or similar material that is weather and dust proof.
- Actuating device shall include a plunger button whose head is recessed from the face/front edge of the housing and be designed to avoid accidental activation.
- Alarm switch/button shall lock-in upon activation until manually reset with key or manufacturer provided device.
- The switch shall be a positive-acting, double-pole, and double-throw switch.
- Duress/Panic alarms shall meet UL 305 Standard for Panic Alarms. To reduce the possibility of false alarms and ensure installation functionality UL 636 Standard for Holdup Alarms standards shall be met.
- System requires silent alarm notification of activated device to a monitoring station, and to pagers to be carried

- by personnel. Lessor shall provide 10 pagers that will provide an audible and visual alert when a panic alarm button has been activated. The volume of the audible alert shall be adjustable. The visual display shall
- indicate the specific location of the panic alarm button that has been activated. They shall annunciate at the Access Control System and Database Management, monitored by a central station. Provide a marquee display in the Police Operations Room and the telephone operators Call Center room to display location where duress-panic alarm has been activated. Marquee shall be red letters/numbers on black background. Marquee nominal size shall be 4"H X 24" W.
- Shall be capable of being mounted for hand use in a manner that is unable to be viewed by the public. After modular furniture workstations are installed by VA, Lessor shall extend panic alarm wiring to workstation and permanently mount alarm switch/button under the underside of the workstation counter to right or left-hand side of where employee would be positioned. In some rooms the alarm switch/button, where there is not a workstation, will be mounted adjacent to the room door at 40" AFF to the bottom of the de- vice. The system shall automatically notify the police officers, via a pager, when an alarm switch/button is activated. The Lessor shall provide nine (9) each pagers as part of the system. The pager shall give a visible indication of the location of the activated alarm. These systems shall be hardwired.
- Wiring will be four (4) conductor #18 American Wire Gauge (AWG).
- Duress-Panic Alarm Technical Characteristics:
  - Temperature Range 0° to 110°F (-17.8°C to 43.3°C)
  - Nominal Voltage 12 V DC @ 6 mA
  - Current Max 8 mA
  - Operational Voltage 7 V DC to 15 V DC
  - Operational life Rated for 10,000 activations
  - Battery Activations 500
  - Actuator Dual button plunger with activation lock
  - LED Bi-color – on and activated

1.7 RADIO PAGING SYSTEM:

Provide radio paging system (identified as Public Safety Operation) as required. System(s) shall be as manufactured by Motorola, Johnson, Kenwood, or approved equivalent, as updated to most current technology or manufacturer.

1.8 TWO-WAY RADIO SYSTEM:

Provide two-way radio systems as required. System(s) shall be as manufactured by Motorola, Johnson, Vertex Standard, or approved equivalent, as updated to most current technology or manufacturer.

1.9 VIDEO TELECONFERENCING SYSTEM (VTS):

Provide VTS systems as required. System(s) shall be as manufactured by Polycom, Tandberg, HP, or approved equivalent, as updated to most current technology or manufacturer.

1.10 SATELLITE SYSTEM:

Provide VTS systems as required. System(s) shall be as manufactured by Scientific Atlanta, Blonder Tongue, Pico Macom, or approved equivalent, as updated to most current technology or manufacturer.

1.11 TV/MONITOR:

In each conference room, provide an HDMI cable (nominal length 30') from the television location to a box, with cover plate, located 18" AFF, at location to be determined, in each conference room, to permit television to be used as a presentation monitor connected to a computer.

1.12 CELL PHONE BOOSTER:

Install cell phone booster system to allow no drop calls in or out of the building (Use Verizon unless informed differently).

1.13 WIRELESS:

Construct building for wireless capabilities. The Wireless LAN system (WLAN) shall be designed to provide 100% coverage with established signal strength and through put heat maps as identified by a wireless pre and post survey. WLAN Access Points (WAPs) are anticipated to be Power-Over-Ethernet (POE). WLAN infrastructure shall include Category 6 cable form the WAP location to the Data Patch Panel and Data Switches in the nearest Telecommunications Room. Lessor shall perform wireless pre and post survey of clinic in accordance with attached survey document entitled, "Wireless Survey", and provide copy to VA. Lessor should provide and install APs for both guest and VAMC wireless

XIII. TELECOMMUNICATIONS/SPECIAL SYSTEMS ROOMS AND SPACE REQUIREMENTS:

When required, CCTV server to be installed within the Police Area.

1.1 TELEPHONE EQUIPMENT ROOM (TER):

Location:

The TER shall be located within a cable distance of 100 feet [30 m] of the Telephone Console Room (if provided). It should be located close to the DEMARC and MCR rooms (if provided).

Configuration:

Space shall be per the following table: Minimum Telephone Equipment Room Size

NUMBER OF LINES	ROOM SIZE SQ FT [SQ M] (GEN
SIZE) 200 to 300	168 [11] (12' X 14')

A minimum of 3 feet shall be provided around each cabinet unless the cabinets are installed joined or side by side where the 3-foot rule applies around the entire assembly. Minimum suspended ceiling height shall be 8 feet above finish floor. The TER shall be a minimum of 12 feet x 14 feet

Provide a metal insulated door equipped with a deadbolt key lock and/or electronic lock with keypad. Also, each door shall be provided with an intrusion alarm to be annunciated locally, at the Facility's Engineering Control Room, Security Police Control Console, and one other continuously-manned location (i.e., Telephone Operator or MAS Emergency Room Desk). Provide fire treated backboards on all walls shall be provided to limit interconnection wire and cable length from backboard to the room wire management system and planned cabinets. Backboards shall be located so as to allow unobstructed access to entrance and exit cable ducts, internal room wire management system, cabinets and doors.

Room height shall be a minimum of 9 feet above finished floor. Rooms shall not have a suspended ceiling.

Sufficient space should be provided for UPS equipment. Room Envelope:

Room shall be enclosed with fire-rated construction in accordance with NFPA 75.

TIP Wire/Cable Interface Area:

Within the TER there will be an area designated that houses and locates all TIP conduit and cable pathway terminations coming into the room from TRs, HE room, MCR, and either the single or duplicated Entrance Rooms (DEMARC). This area will house the distribution cable management system.

This area shall be a minimum of 12 feet x 8 feet x 8 feet in addition to the minimum area required by the Telephone Equipment Room.

Heating, Ventilation, and Air Conditioning:

Design Conditions: 64 ˚F to 75 ˚F dry bulb temperature, 30 to 55% relative humidity.

HVAC load calculations shall include the rectifiers and associated batteries. Cooling requirements shall be based on system design with 30% reserve capacity. Cooling equipment shall be dedicated to the room.

Power:

A UPS is recommended for backup power for Telecommunications spaces. UPS system must provide power for a period of 4 hours. Power shall be distributed by Power Distribution Units (PDUs).

UPS equipment shall be sized based on the equipment requirements, plus future anticipated growth. The initial design load shall not be less than 30% and not more than 70% of the UPS capacity. The Lessor provides 1 large UPS per VAMC specifications for the facility for telecom and special closet. Maintained by Lessor per original equipment manufacturer specifications.

The UPS shall be monitored by the PCR SMS for power, alarms, and alarm history. The UPS shall have dry contacts or external alarm and control from the PCR SMS and one “C” contact for local computer signaling. The UPS shall be provided with computer system shutdown software and hardware connectivity as required. System shall supply all power to Main Telephone/Data Room and Remote Telephone/Data Rooms

The sharing of the TCER’s UPS is NOT allowed, except for Remote Telephone/Data Rooms.

The room shall be equipped with dedicated electrical panel(s) capable of providing 208/120V, 3-phase, 4-wire power, with capacity designed for the equipment load plus future capacity. Each panel shall contain 20% spare electrical capacity and spare circuit breaker space.

Provide a minimum of one quadraplex receptacle (two duplex) for each 8 linear feet of wall space. Emergency Power

Off (EPO) push buttons shall be installed according to NFPA 75.

Lighting:

In addition to room lighting, provide battery-powered lighting in accordance with NFPA 75 and 101 installed in public restrooms

Grounding:

The Telephone Equipment Room shall be provided with a building earth ground connection by a clearly marked copper equipotential bus bar (Telecommunications Main Ground Bar (TMGB)).

The TMGB shall be directly connected to the facility’s electrical ground via a mechanically and electrically protected minimum #1/0 AWG stranded copper equipotential grounding conductor. An AC electrical equipment grounding

conductor is not acceptable for this function and will not be approved.

Security:

Each door shall have a color security surveillance camera that connects to a color monitor in the IT Chief's Office and is routed to the PCR.

A MID system shall be installed within the TER. The system shall be controlled and monitored by the PCR SMS.

An emergency voice-operated sound system shall be installed within the TER, terminated in the PCR SMS and the IT Chief's Office.

A duress alarm button shall be placed every 10 linear feet [3 linear meters] within the TER, annunciating to the PCR SMS and ECR, in addition to the Telephone Console Room and one additional continuously-manned location. Provide wireless pagers with system as directed.

1.2 PUBLIC ADDRESS (PA)

Provide public address and mass notification (PA) system(s). System(s) shall be most current technology or manufacturer. System shall be capable of being zoned by area as requested by the VA. At a minimum provide a system with a capacity of 12 zones plus an all call. Exterior speakers shall be a separate zone.

1.3 NURSE CALL SYSTEM

Provide a nurse call system as required for exam rooms, public toilets, procedure rooms, and radiology rooms identified by local clinic staff. Master stations shall be placed in manned nursing/reception areas

1.4 STRUCTURED CABLING SYSTEM:

Lessor is to provide Category 6A structured cabling system throughout the clinic per Appendix E (IT). VA network and Non-VA networks shall terminate in separate rooms. Provide wireless access point cabling outlets through out the clinic for VA provided and installed WAP Units.

1.5 NON-VA NETWORKS:

The facility will contain Non-VA networks for CBOC contractor and the Lessor. Non-VA modems and routers shall be located in the Demarc room, not the VA IT rooms. The Non-VA networks shall utilize wireless connectivity, only hard-wired, to prevent interface with VA wireless antennas. A guest wifi system shall be managed and provided by the Lessor and not located in the tenant IT closets.

Non-VA network infrastructure, including outlets, cabling pathways, patch panels, wire management, racks and other components of the Non-VA network system shall be provided with the facility construction.

All Non-VA active equipment such as servers, switches, wireless access points, PC's, etc. will not be included in the building construction scope but will be furnished using other sources.

1.6 SECURITY SYSTEMS:

Access control: For the electronic access control system provide card readers compliant with FIPS 201. System must network with the Cheyenne VA Physical Access Control System which is the Continental Access 3000 system.

CCTV system shall be IP based with cameras located at entrances and exits and on the perimeter of the

building, monitoring shall be on site. The system shall be capable of recording a minimum of 30-frames per-second simultaneously across all cameras. Storage will be sized such that 120 days storage retention is possible with motion detection disabled and compression on the "normal" setting. The system must be networked such that it can be viewed form the Cheyenne VA Medical Center.

Intrusion detection system shall be provided with flush mounted annunciator panels for the clinic. The system will connect to the facilities existing security management system and will include lights, buzzer, silencing switch, and visual indication of intrusion location. Keypads shall be provided to arm and disarm the system.

System shall link with other VA networks.

1.7 SPECIAL ELECTRONIC SYSTEMS:

Audio-visual rough-in conduit and back boxes shall be installed within the training and meeting rooms and throughout the production floor at approximately eighteen (18) locations. Rough-in shall be provided for the projectors and electronic screens or larger format monitors as required by the user. Display type shall be dependent on room size and shall be selected by the A/V designer. Floor Boxes shall be installed with in rooms serving telecommunications requirements and A/V cabling.

1.8 NON-VA NETWORKS

The facility will contain Non-VA networks for CBOC contractor and the Lessor. Non-VA modems and routers shall be located in the Demarc room, not the VA IT rooms. The Non-VA networks shall utilize wireless connectivity, only hard-wired, to prevent interface with VA wireless antennas. A guest Wi-Fi system shall be managed and provided by the Lessor and not located in the tenant IT closets.

Non-VA network infrastructure, including outlets, cabling pathways, patch panels, wire management, racks and other components of the Non-VA network system shall be provided with the facility construction.

All Non-VA active equipment such as servers, switches, wireless access points, PC's, etc. will not be included in the building construction scope but will be furnished using other sources.

XIV. GENERAL SITE REQUIREMENTS

Provide passive barriers, protection for site utility equipment, at building entrance, and other areas requiring additional protection from vehicles. Passive vehicle barrier shall be selected on the appropriateness of the architecture of the facility and specifics of the site and natural environment. Natural or man-made barriers may be used.

- Landscaping examples include berms, gullies, boulders, trees and other terrain.
- Hardscaping examples include benches and planters.
- Structural examples include walls, bollards and cables.

1.1 EXTERIOR YARDS:

Provide exterior or yard for outdoor activities and dining to offer seating opportunities. Outdoor areas shall be designed with diversity of landscape and hardscape elements to create an environment capable of accommodating a variety of activities.

1.2 SITE DESIGN CRITERIA:

1.2.1 CIRCULATION:

Provide a driveway to the building drop-off with access to the parking areas. The drop-off shall have canopy cover designed to accommodate public bus and shuttle services. Design patient exterior areas that are conveniently

accessible from the building without vehicular crossings and are oriented to the most favorable site climatic conditions.

1.2.2 GRADING DESIGN:

Coordinate surface grades with architectural, structural, and mechanical design to provide proper surface drainage. All grading shall be in conformance with the site specific Geotech report and Larimer County standards and specifications.

- The maximum slope for mowing machinery is 25%.
- Slopes over 6% should have erosion protection.
- Payload is drastically reduced on heavy trucks sustaining grades over 3%. Ideal maximum s u s - tained grade for safe operation of trucks and automobiles is 6%.
- Colorado Department of Public Health and Environment Permits are required for site and grading work.

Provide complete dimensioned layouts for vehicular and pedestrian pavement, structures, and other components of the site and landscape design. Establish control for the layout by a base control line with dimensions from this line. Small scope projects may use property lines for control. Larger projects require coordinates on a grid system.

1.3 DESIGN OF VEHICULAR AND PEDESTRIAN PAVEMENT:

1.3.1 PAVEMENT CONSTRUCTION:

Design pavement sections of all roads, service areas, fire apparatus vehicle accessibility areas, and parking areas for the maximum anticipated traffic loads and existing soil conditions per Larimer County standards and specifications.

Construct service areas for truck dock at grade with lift, bulk oxygen storage, utility buildings, and similar facilities of reinforced concrete. Principal roads and primary service roads shall include 12’-0” travel lanes for two-way traffic (24’-0” wide between faces of curbs) or required widths by local fire protection district. Secondary service roads shall be 12’-0” between faces of curbs. Consider two-way traffic lanes where possible. One-way traffic plans shall have a minimum width of 12’-0”. Concrete or Asphalt pavement to be determined by site specific Geotech report.

1.3.2 CURBS AND GUTTER:

Design all roads with integral concrete curbs and gutters per local standards and specifications. Substitute free-standing or extruded curbs only when justified.

1.3.3 CURB RADII:

The radii of curbs at road intersections should be 30’-0” preferred, 25’-0” minimum.

1.3.4 CURB ACCESS RAMPS (CURB CUTS):

Provide curb ramps to accommodate people with disabilities as well as lawnmowers and snow storage.

1.3.5 PAVEMENT MARKING AND SIGNING:

Provide locations and details of pavement striping and signing for parking, roadways, crosswalks, accessible parking and routes, and other special areas. Speed limit shall be marked on pavement in each aisle of parking areas and on roadways. Actual speed limits will be provided by VA.

1.3.6 PEDESTRIAN PAVEMENT CONSTRUCTION:

Design walkways to provide clearly-defined, unobstructed, direct routes through the site, interconnecting site and building entryways, curb ramps, parking areas, pedestrian landscaped features, such as open area plazas, courts, atriums, and other site elements.

Construct walks of concrete. Reinforce the concrete pavement if sub-base conditions warrant. Where pedestrian and vehicular pavements meet, thicken the subbase material.

Design walks to accommodate people with disabilities.

1.4 TRUCK DOCK

Design adequate space for truck maneuverability and parking of facility equipment, including trash dumpsters. Provide wheel path diagram to support turning movements of facility parking equipment, delivery, and waste removal vehicles.

1.5 PARKING FACILITIES:

Develop sufficient new parking so that the total number of facility spaces will be the greater of 550 spaces, or as required by local codes. Provide 125 staff parking spaces in a separate parking area from patient parking areas. Provide parking spaces for physically disabled people (handicapped) based on 10% of total provided spaces, all of which are van accessible spaces. Locate these parking spaces convenient to an entrance accessible by physically disabled people.

Provide a parking tabulation on the contract drawings indicating the total number of VA facility parking spaces with subtotals for standard spaces, accessible spaces, motorcycle spaces, and van accessible spaces. Locate accessible parking spaces convenient to an accessible building entrance.

Provide parking tabulations for motorcycle parking on the contract drawings. Indicate the total number of spaces provided, using a ratio of one parking space for every 60 auto spaces. Motorcycle parking spaces shall be 4.5 feet wide x 8 feet long. Spaces are to be sized per code unless requested otherwise by the Station.

Police should have one dedicated parking spot near the main building entry and one spot in the rear of the building near the police department.

1.6 EQUIPMENT PADS:

Locate utility transformers, cooling towers, generators, generator fuel tanks, gaseous tank storage, and other equipment pads away from patient and visitor entries and outdoor activity areas, preferably adjacent to service area. To prevent injury to patients and personnel, enclose pad area with chain link fencing, and provide signage indicating warning to heart pacemaker patients. Barriers and fencing shall comply with the requirements of the serving electric utility and local codes where applicable.

1.7 SITE AMENITIES:

1.7.1 FLAGPOLE:

The Lessor shall provide 3 flagpoles at a location to be approved by the Contracting Officer. Flagpoles must extend at least 35 feet above the ground and shall be equipped with rope and hardware for two flags. The Government will provide the flags. This requirement will be waived if determined inappropriate by the Government. Exterior lighting (two each light fixtures spaced a minimum of 20 feet apart, mounted on the building or at grade) shall be provided to illuminate the flags at night. Automatic switching for light fixtures shall be provided. Provide concrete pad (washed river-rock finish) minimum 150 sf. The concrete pad shall be connected to the building with a sidewalk.

Foundation for flagpoles shall be installed per manufacturer's recommendations, as appropriate to the local geotechnical conditions.

1.7.2 CANOPIES AND COVERED WALKWAYS:

Provide Canopy at Main Entrance and Loading Dock. Canopies are to accommodate high vehicle heights for vehicle clearances. Underside of canopies shall be enclosed to prevent bird roosting – and shall be designed for high winds per code requirements.

Provide minimum 4'-0" x 6'-0" canopy over all exterior entrances to the building except for the Main Entrance, walk to exterior MRI Pad, Ambulance Drop Offs and Loading Dock, which have other requirements for canopies at these locations. A drive under canopy will be at the front entrance for patient drop off/pick up and shall be long enough to accommodate 4 cars under the canopy. Canopies for vehicles must be a minimum of 14 feet clear at lowest point.

Coordinate site lighting with walkways. Provide fixtures below canopies where necessary to maintain illumination levels for exterior walkways.

1.8 UTILITIES:

Provide separate metering for Outpatient Clinic and Veterans Center for all systems and utilities.

1.8.1 WATER DISTRIBUTION SYSTEM:

Connection fees, meter, and system impact fees, as required by the water provider to connect to the existing water distribution system, are the responsibility of the Lessor. Replace water lines from valves/meters to building replacing parking lot paving as required to match existing. Replace fire protection from main riser through distribution. Ensure continued service to existing building tenant.

1.8.2 ELECTRICAL SERVICE:

The Lessor shall provide all the necessary electrical facilities for the project. Supply voltage for this facility shall be 480/277 volt, 3-phase, 4 wire. Should the existing on-site service power be 208/120 volts, 3-phase, 4 wire, Lessor shall request for the local utility to provide the new service voltage. New service size is estimated to be 1,400 amps @ 480 volts. Provide underground secondary-voltage electrical service from the serving electric utility. All requirements of the electric utility shall be met, including location of service source, above-ground and underground equipment locations, required easements and/or rights- of-access, above-ground equipment protection and screening requirements, location of required service disconnecting means and/or remote operation for service disconnecting means, as required by the local Authority Having Jurisdiction or utility, meter location and provisions for meter-reading access, co-location of service conductors in common trench with other utility services, and all other applicable requirements of the electric utility.

1.8.3 TELECOMMUNICATIONS SERVICES:

Provide telephone service from the serving telephone provider. Provide cable television service from the serving provider. Provide guest wireless system through public areas in entire clinic, includes installation/ maintenance/service cost. Minimum T3 Service. System shall contain strict content filter and terms of agreement with renewable 24-hour IP lease. Provide a minimum of 2 service connections (one for dedicated VA connection and one for public connection

XV. COMMISSIONING REQUIREMENTS

In addition to system commissioning requirements called out in the Facility Guidelines Institute (FGI), the developer shall also test and commission all sound rated walls required by FGI. FGI can be found on the CEOSH website. Please see the following link: http://vaww.ceosh.med.va.gov/01HE/Pages/ FGI.shtml The final HVAC test and balance report be completed by an independent third-party.

XVI. MAINTENANCE REQUIREMENTS

Lessor shall maintain utilities and equipment as prescribed by local codes and references listed in Appendix D. Lessor shall provide records of the maintenance in the format and frequency required by the VAMC to ensure compliance with TJC.

XVII. ENVIRONMENTAL MANAGEMENT PLAN

The Lessor shall be responsible for providing services relating to environmental management. Please see Appendix C2 for specified requirements.