27 MARCH 2026

RENOVATE IMAGING & CATHERIZATION LAB IN BUILDING 1

PROJECT #: 570-21-220

VA CENTRAL CALIFORNIA HEALTHCARE SYSTEM
FRESNO, CALIFORNIA

BASIS OF DESIGN

100% SUBMITTAL
CONSTRUCTION DOCUMENTS

SPEESDESIGNBUILD

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EXECUTIVE SUMMARY

The general purpose of this project is to remodel and renovate approximately 10,200 square feet of the existing Imaging area and Catherization Lab located on the second-floor east wing of VA Central California Healthcare system. This will involve the relocation of existing ultrasound and rad fluoro equipment to the renovated Imaging suite. Additionally, the major remodeling of the Catherization Lab will include a new layout for the space and installation of new c-arm equipment. Radiology rooms 1, 2, and 3 will all receive new imaging equipment. Based on the requirements of the VA Imaging Design Guide, the floor plan has been designed to accommodate the requirements of all necessary equipment and their clearance zones.

Modifications include the removal and installation of walls, floors, and ceiling finishes in order to accommodate the Imaging Department layout. New finishes shall match adjacent existing finishes and color schemes in the hallway and supporting spaces, unless otherwise noted. During construction, submittals for these architectural features shall be reviewed by the VA Interior Designer to make final decisions on color, finish pattern, and texture.

This project shall comply with all applicable VA program guides, design guides, requirements, and standards.

ARCHITECTURAL NARRATIVE

EXISTING CONDITIONS

The scope of this project is to upgrade the Catheterization room (Special Procedures Room) located in Building 1, on the second-floor east wing into an Imaging Special Procedures Suite and move the Imaging operations to correct VISN issues and to a more centralized area. Prior to this project, both the CT and MRI suites were renovated. As such those spaces will not be included in the scope of work for this project.

DEMOLITION

The proposed demolition will remove all interior walls, preserving those adjacent to corridors and rooms outside the area of work. Flooring, ceiling tiles, casework, and fixtures will all be removed. Prior to construction, VA staff will remove all portable equipment and furniture from the area of work.

NEW CONSTRUCTION

The new Catherization Lab will be comprised of one large theater lab room, a control room, and equipment room – the catherization lab connect via corridor to the “Pre-Post” procedure patient staging area. In addition to the new spaces, new C-Arm equipment will be installed and include several ceiling mounted equipment booms. Other additional Imaging suites include Rad/Fluoro, Radiology, and Ultrasound rooms.

A number of existing office spaces will be converted to Rad/Fluoro space as a response to the increasing patient numbers needing diagnostic imaging services.

PHASING

Phase I

Phase I is broken down into two sub-phases: “Ia” and “Ib.” Phase Ia consists of modifications to existing MRI support spaces – contractor will construct all necessary work needed to preserve a path of travel for patients to access MRI suite during phase Ib. Phase Ib consists of renovations to existing electrical room (2A07A) and the installation of new electrical panels to support increased load for new imaging equipment. During this phase, the dressing and storage room renovations will be completed, and system components room (2A09B) will be renovated and prepped for the installation of a new air handler per mechanical. As construction transitions from phase I to phase II, ductwork should be

installed by contractors and prepped for connection back to the AHU to minimize disruption to hospital services. Any work between needed to connect hospital systems after completion of Phase I should happen after hours and be coordinated with the COR.

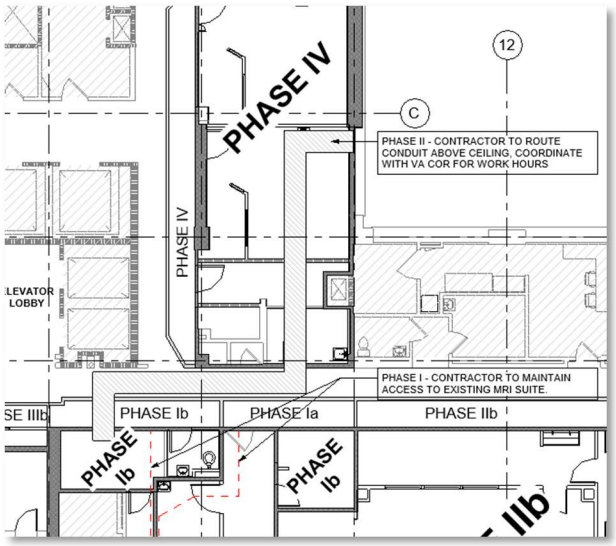
Phase II

Phase II is broken down into three sub-phases: “IIa” “IIb” and “IIc.” Phase IIa consists of all construction activities required to activate the renovated ultrasound suites. Sub-phases during phase II may overlap, but the contractor should strive to complete IIa activities before finishing IIb activities. Architectural, Electrical, and Structural scope between sub-phases is relatively isolated – Mechanical scope is the main driver between activation and completion of sub-phase activities. Construction phasing for duct installation will need to be approved by COR at the start of phase II to minimize hospital disruption.

Priority department activation for this phase:

1. Ultrasound suites (sub-phase IIa)
2. Cath Lab (sub-phase IIb)
3. Pre-Operative & Recovery bays / Cardiology Work (sub-phase IIc)

In addition to the major construction activities, electrical conduit will be routed to the new electrical room.



Phase III

Construction activities for phase III include all work necessary to activate new reception (2A06), supporting offices (2A02C, 2A05, and 2A05A), and renovated waiting area at elevators. Radiology Suite #3 (2A02B) will be also activated at the completion of this phase.

Phase IV

Phase IV is the final phase of construction and encompasses all construction activities required to activate new Radiology suite #1 (2B04) and #2 (2B02), as well as supporting spaces such as a charging alcove, storage, and omnicell med room. At the end of this phase, all renovated spaces should be activated.

INFECTION CONTROL RISK ASSESSMENT (ICRA) NARRATIVE

See specification 01 35 26 – Safety Requirements for specific ICRA class requirements.

TYPE OF CONSTRUCTION PROJECT ACTIVITY

Type C construction is applicable to this project.

PATIENT RISK GROUP

The Catherization Lab is classified as the high-risk group, while all other surrounding diagnostic imaging areas of level two classified as medium-risk groups.

CLASS OF PRECAUTIONS

ICRA classes II, III, and IV are all within project scope and are documented on AS-series sheets.

FIRE & LIFE SAFETY NARRATIVE

CODE ANALYSIS

International Building Code (IBC) 2018.

International Existing Building Code (IEBC) 2018.

National Fire Protection Agency (NFPA) 101 Life Safety Code.

NFPA National Fire Codes, with the exception of NFPA 5000 and NFPA 900.

Due to the new layout of the rooms in the clinic – new egress paths have been outlined in the Fire and Life Safety drawings on sheet AS201 in the construction drawings. Smoke and fire barriers are designed and constructed as required by the NFPA and IBC codes.

Contractor will be held responsible for coordinating all medical equipment, utility, and HVAC interruptions with the project COR and imaging staff. Shutdowns will occur at off hours in order to mitigate disruption to clinical operation of the facility and the imagining department.

FIRE PROTECTION NARRATIVE

The existing sprinkler systems shall be modified in the spaces to fit the new room layouts. The existing sprinklers will be temporarily modified to provide fire protection during construction. Design of the fire-suppression-system equipment, specialties, accessories, installation, and testing shall comply with NFPA 13, "Installation of Sprinkler Systems."

Fire protection shall be phased in accordance with the drawings. All system shutdowns shall be closely coordinated with the VA 2 weeks prior to a shutdown.

INTERIOR DESIGN NARRATIVE

Interior design will match finishes present in the corridor and adjacent spaces. All material and finish decisions will be approved by the VA interior designer prior to installation.

STRUCTURAL NARRATIVE

DESIGN LOADS

A summary of the criteria upon which the structural design is based is outlined below.

Live Loads

The floor live load is 50 psf plus the specified medical equipment.

Wind Loads

The design wind speed is 105 mph for any exterior elements.

Snow Loads

The ground snow load at this site is 0 for this project.

Seismic Loads

The Short-period Spectral Response Acceleration is 0.611g and the 1-Second Spectral Response Acceleration is 0.335g. Per ASCE 7-16, the Seismic Occupancy Category is IV. The Soil Site Class is assumed to be Class D. These parameters result in a Seismic Design Category of D for the Medical Center. The anchorage of the mechanical equipment will be checked for seismic loads, but no seismic evaluation will be made for the entire building.

Existing Level 2 and 3 Framing

Level 2 and level 3 are 4 1/2 inch concrete decks. The concrete decks are supported by steel wide flange beams at 7'o/c. The beams are supported by steel wide flange columns. All the steel members in the building have been encased in rectangular concrete sections with approximal a 2" cover. Structural supports in the ceiling will be attached to the concrete encasement.

Existing Lateral System

The original building constructed in 1947 is designed as a steel moment frame. In 1981 braces were added as a seismic retrofit. Any new openings in the existing walls will be located around the existing braces. The existing lateral frame will not be modified.

Existing Interior Wall Framing-Non bearing

The framing of the existing walls is light gauge steel studs. New non-bearing wall framing will be constructed out of the same material.

Special Inspections

Special inspections, testing, and observations are as required per IBC Chapter 17 for, structural steel.

PLUMBING NARRATIVE

Piping and plumbing fixtures shall comply with VA standards (VA Plumbing Design Manual (March 1, 2026)). Unless otherwise shown on the floor plans, all plumbing fixtures in the scope of work areas shall be demolished. Existing riser piping in walls that are being demolished shall be rerouted to new walls. All new plumbing fixtures shall be tied into the existing waste, vent, and domestic hot and cold water systems. All new domestic water distribution piping will be Type L Copper Pipe. All new sanitary and vent piping shall be cast iron no hub piping,.

The medical gas systems serving the existing rooms shall be modified and rerouted to serve the new rooms requiring medical gas. Medical gas in the Cath lab shall be tied into the boom arm. The Cath lab shall be provided with a new zone valve box and area alarm panel.

Plumbing and medical gas shall be phased in accordance with the drawings. All system shutdowns shall be closely coordinated with the VA 2 weeks prior to a shutdown.

HVAC NARRATIVE

The existing 2nd floor areas in the scope of work are served by various systems. AHU-8 in the sub-basement serves multiple floors but it also serves the southwest area of work on the plans, as well as the fluoroscopy room and waiting room. AHU-8 is a 100% outside air constant volume air handling unit that delivers semi-conditioned air to the spaces. The supply air ductwork has coils for each zone that further condition the air as required. The coils as well as the AHU are part of a 2-pipe changeover system that is manually changed over from cooling to heating in the fall and switched back in the spring. The existing coils and ductwork serving the areas in scope are in extremely poor condition and shall be demolished. The number of new coils increases from the existing number to comply with VA HVAC Design Manual zoning requirements. AHU-9, which is located in the 3rd floor mechanical room, serves the rest of the rooms in scope other than the existing special procedures room. AHU-9 and the associated coils operate the same as AHU-8. The duct coils will also need to be demolished and replaced with new coils that work for the new room layout and zoning requirements. Because the systems are 100% outside air, all rooms are exhausted and do not have return air. A central exhaust fan on the roof serves most of the floors, including floor 2. The exhaust ductwork will need to be demolished and reworked as shown on the plan.

The existing special procedures operating room is served by an existing Trane AHU with DX heating and cooling served by a DX heat pump on the roof. The AHU and associated heat pump shall be demolished. The humidifier and electric preheating coil shall also be demolished. The new Cath lab shall be served by a new Semi-custom AHU. The new AHU requires year-round chilled water. The closest chilled water available of sufficient capacity is in the exterior chase going down to the subbasement. Chilled water piping shall be routed from the AHU and tied into the chilled water mains in the chase. The chilled water system shutdown shall be closely coordinated with VA. The AHU shall be provided with electric preheating and reheating coils since there is not year round heating water available in sufficient capacity or proximity to the Cath lab. This was closely coordinated and confirmed with VA. The AHU also has humidification and HEPA filtration. The AHU is sized for 100% outside air for Emergency Epidemic mode in accordance with the VA HVAC Design Manual requirements. There is a separate exhaust fan that has the ability to exhaust through a HEPA filter bank in Emergency Epidemic mode. The HEPA filters are required because the exhaust cannot feasibly be routed to 10 feet above the roof.

All new equipment and coils shall be provided with new controls that are tied into the existing buildings Johnson Controls MetaSys which is located in Building 2 centralized boiler plant control room.

Mechanical work shall be phased in accordance with the phasing area drawings. All system shutdowns shall be closely coordinated with the VA 2 weeks prior to a shutdown.

ELECTRICAL NARRATIVE

Scope of work consists of electrical design to support a renovated space to accommodate new imaging equipment and associated supporting electrical equipment, relocation of three radiology imaging rooms and associated control room, relocation of restrooms, and renovation of ultrasound rooms. The affected project area consists of 10,200 square feet. Procedural and clinical space will occupy 7,400 square feet and the remaining 2,800 square feet will be administrative. Coordination with an on-going EHRM project will also be required; new telecommunications will be cabled back to the EHRM TR closet. The electrical design shall include the following:

1) Provide Hospital grade GFCI receptacles.
2) Provide LED luminaires and required controls.
3) Provide special systems as required.
    a. Fire alarm
    b. Security
    c. Nurse call
    d. Telecommunications
4) Provide electrical for medical equipment.
5) Provide electrical to support mechanical systems.

EXISTING CONDITIONS

The existing space is currently consisting of 10,200 square feet of procedural, clinical, and administrative space on the second floor of Building 1.

The existing electrical panels on the 2nd floor will remain.

The existing fire alarm control panel (FACP) providing service to the field devices in the area of work is located on the first floor.

PROJECT UPGRADES

Back-up/Emergency Power – A new generator is not required for the remodel since we are utilizing the existing campus essential equipment branch generation system power which has adequate capacity for the loads. The remodeled area will utilize existing panelboards where possible to re-feed new normal power loads.

A new 800 Amp; 480/277-Volt distribution board will be added to the 2nd floor electrical room to serve the new Cath Lab, Rad Fluoro, (3) Radiology Rooms and isolation panels. The new feeder will originate from an existing transformer and ATS-SPS1 that is currently serving temporary SPS trailers and an electric water heater while the SPS area is being renovated. The existing EQH-Temp SPS panel will be disconnected and removed and an 800 amp – 3 pole, service entrance rated Nema 3R enclosed circuit breaker installed to serve the new Panel C-EDP-2 to be installed on the 2nd floor.

An active harmonic filter will be provided to support the new radiology, Cath lab and Rad Fluoro equipment transient voltage requirements.

Lighting - Provide lighting levels in designated spaces per Appendix A of the VA Electrical Design Manual, section 4.2.5 of the VA Lighting Design Manual, and section 4.16 of the VA Surgical and Endovascular Services Design Guide. We will use the Illuminating Engineering Society (IES) standards for all areas not covered by Appendix A; reference table below. We will provide high efficiency LED luminaires with energy saving control and switching scenarios. We will closely coordinate luminaire types, layout and switching configurations utilizing antimicrobial finishes where required to meet the patient room requirements; occupancy sensors will be specified to reduce energy waste when the spaces are not being used.

Location/Area	**Foot-Candles**
Bathrooms	30
Office Space	40
Utility Rooms (Storage, Laundry, Electrical, Etc.)	40
Exam Rooms	50

Table 1: IES Minimum Lighting Level Recommendations

Receptacles – We will provide ‘hospital grade’ duplex-grounded receptacles and no more than 6 duplex receptacles on a single circuit. Electrical receptacle cover plates or electrical supplied from the emergency system shall be distinctively colored or marked for identification. Ground fault interrupters shall comply with NFPA 70. Receptacles shall comply with the VA Electrical Design Manual for Hospital Projects and local energy codes.

Conduits - Conduits shall be rigid where used in damp or exposed locations, or where specifically required by the NEC. PVC conduits shall be used where routed underground. Electrical metallic

tubing shall be used in dry concealed locations and in furred, ceiling spaces. Flexible conduits shall be used for final connections to recessed luminaires, motor driven equipment and vibrating equipment. PVC Schedule 40 conduits shall be used for concrete encased feeders. PVC Schedule 80 conduits shall be used for direct buried branch circuits. Conduit shall not be used as a ground path; all electrical circuits shall contain a ground wire. All IT/special system conduit minimum size shall be 1”; all other minimum conduit size shall be 3/4-inches.

Conductors – We will provide copper conductors with 600-volt insulation for low voltage distribution. Conductors No. 8 and larger shall be stranded, type THWN. Smaller conductors shall be a solid type THHN/THWN. Aluminum conductors will not be permitted. Conductors for use in high temperature locations shall be insulated as required by the NEC. The minimum size of power conductors shall be No. 12.

Fire Alarm System – We will provide new fire alarm field devices in compliance with NFPA 101, NFPA 72, and the VA Fire Protection Design Manual as required for the affected areas. The field devices shall be integrated into the existing facility’s Simplex fire alarm system. The existing fire alarm control panels will be provided with new communication cards/modules as necessary. If required due to system configuration, devices in the same loop/zone outside of the SOW of this project will be replaced as required.

Security – We will relocate surveillance and access control systems and provide new devices as necessary per NFPA 101 and the VA Design Manuals for the renovation. The systems shall maintain integration into the existing facility’s systems; new access control card readers shall be specified to match existing installed base. The devices in the remodeled areas will be replaced with current field devices.

Nurse Call - We will provide new nurse call devices per the VA Design Manuals for the renovation. The systems shall be integrated into the existing facility’s systems; nurse call devices shall be specified to match existing installed base. The devices in the remodeled areas will be replaced with current field devices; to do this, the existing nurse call control panels will be provided with new communication cards/modules. If required due to system configuration, devices in the same loop/zone outside of the SOW of this project will be replaced as required.

Telecommunications - We will include design of cabling and installation of wi-fi access points as located by VA ITOS. Data distribution and outlets will also be provided as required by the VA design manual for hospital projects and the VA design manual for IT infrastructures and will depend on final room layouts. All ethernet cabling shall be CAT 6A to match facility cabling standards. This design will be coordinated with the on-going EHRM project; all cabling of new devices in this projects' design will be routed to the new Telecommunications Room (TR) per the current EHRM project and VA direction; the New TR will be located on the second floor as depicted in the drawings.

Appendix A

Codes and Standards

1. NEC 70 Article 517 Health Care Facilities
2. Veterans Affairs Electrical Design Manual for Hospitals
3. Veterans Affairs Fire Protection Design Manual
4. Veterans Affairs Design Guide, Surgical and Endovascular Services
5. Veterans Affairs Design Guide, Office and Information Technology