VA | U.S. Department of Veterans Affairs

Fargo Veterans Affairs Health Care System

2101 Elm Street North, Fargo, ND 58102-2417

EHRM Infrastructure Upgrades

Issue For Bid Submittal

March 18, 2022

VA Contract Number: 36C26319D0044
VA Project No: 437-21-205
Bancroft-AE Project No: 18-121

BANCROFT ARCHITECTS + ENGINEERS
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DEVELOPMENT OF DESIGN

Fargo Veterans Affairs Health Care System
EHRM Infrastructure Upgrades

VA Contract Number: 36C26319D0044
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Issued For: User and VA approval

By:

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Northbrook, Illinois 60062
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BANCROFT ARCHITECTS + ENGINEERS

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BASIS OF DESIGN: EXECUTIVE SUMMARY

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Executive Summary

- Introduction
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INTRODUCTION

This document is the Design Narrative / Basis of Design (BOD) for the 95% Design Development Submittal, a living document that will evolve through the duration of this project. This document was created starting from the following key elements of developmental discovery:

- BOD Submittal Design Meeting — September 7, 2021
- Site Investigation — September 13 &14, 2021
- 35% VA Review Meeting — October 8, 2021
- 50% VA Review Meeting — November 16, 2021
- 75% VA Review Meeting — January 07, 2022
- 95% VA Review Meeting — February 17, 2022

It is not the BOD's function or intent to document every element of this entire process as it is developed; rather it is to perform as an organized summary of the key developments of the project process. In addition to the BOD, total documentation of the design process consists of project minutes of meetings, numerous design studies and options presented for consideration.

This version of the BOD is being submitted as a BOD Review submittal. Revisions of this document will be submitted with future submittals per project schedule:

The project schedule is as follows:

- 35% Schematic Design — September 28, 2021
- 50% Design Development — November 3, 2021
- 75% Design Development 2 — December 22, 2021
- 95% Construction Documents — February 17, 2022
- 95% Resubmittal — March 04, 2022
- 100% Final Construction Documents — March 18, 2022
- Final Acceptance — March 23, 2022

DESIGN TEAM

The lead firm for the project is Bancroft Architects + Engineers (BAE) and is providing architectural design, mechanical engineering and electrical engineering. Additional Consultants are included in the following Schedule of Design Team Members.

Responsible Person	***Company Name***	***Responsibility***
John Robbins	Bancroft AE	Project Manager / Director of Projects
Darlene Flook	Bancroft AE	Project Manager
Crotan Zakarija	Bancroft AE	Project Architect / Director of Architecture
Dana Auman	Bancroft AE	Project Architect
John King	Bancroft AE	Plumbing Engineer
David Greene	Bancroft AE	Mechanical Engineer / Director of Engineering
David Gamble	Bancroft AE	Mechanical Engineer
Joshua Mikels	Bancroft AE	Electrical Engineer / VP of Engineering
Walter Groszko	Bancroft AE	Electrical Engineer
Hilary P. Clifton	Terracon Consultants, Inc.	Abatement Consultant
Jon Hammer	Terracon Consultants, Inc.	Abatement Consultant
Jim Gusky, PE	Calibre	Civil Engineer
Travis Benjamin, PE	Calibre	Structural Engineer
Bill Macintosh	BrightTree Studios	Security and IT Consultant
Bruce Yoch	BrightTree Studios	Security and IT Consultant/Certified Physical Security Consultant
Andy Cooper	Cooper Commissioning and CCX	Commissioning Consultant
Kyle Hass	Hohbach-Lewin, Inc.	Blast Protection Consultant/Certified Physical Security Consultant
Jeff Scott	FP&C CONSULTANTS	Life Safety & Fire Protection

OVERVIEW

The Fargo VA HCS oversees the provision of health care to more than 34,000 Veterans living in North Dakota, 17 counties in northwest Minnesota, and one northeast South Dakota county. The Fargo VA HCS has approximately 333,000 outpatient visits annually. The Medical Center is affiliated with the University of North Dakota School of Medicine and Health Sciences, providing training to medical students, and Internal Medicine, Psychiatry, and Surgery resident physicians. The facility is also a training facility for nursing and allied health care students.

The Medical Center is located in a quiet north Fargo neighborhood near the Red River within walking distance to a bus stop, parks, walking/bike paths, and a golf course. An outdoor healing garden provides a place for recreation and therapy for Veterans and their families. The Medical Center is also just down the street from North Dakota State University, the Fargodome, restaurants, hotels, and downtown Fargo.

The Fargo VA HCS is continually innovating as evidenced by our many improvement and expansion projects. In recent years, the Fargo VA HCS opened several new and expanded departments, to include:

- New Imaging department with new state-of-the art equipment
- New Community Living Center with 38 private rooms, large recreation and dining atriums,
- and beautiful views of the Red River
- New Primary Care clinic space with 30 additional exam rooms
- New Laboratory
- New Intensive Care & Dialysis Unit
- New Emergency Department
- New CBOCs in Bemidji, Grafton, Minot, Dickinson, and Williston.
- New Community Resource and Referral Center in downtown Fargo.
- New main entrance and lobby.
- New PT/OT and Prosthetics

PROJECT SCOPE

In 2018 the Department of Veterans Affairs (VA) began the replacement of its current Electronic Health Records systems with a new Electronic Health Records system known as the VA EHRM. In July of 2021, Bancroft AE was contracted to provide Architectural/ Engineering design services for the Infrastructure Upgrades to the VA Health Care System in Fargo, ND.

The project focus is to include design for upgrading the fiber optic system throughout the campus buildings to each telecommunication room (TR), provide a redundant fiber run to each TR, provide a new main fiber line coming into the campus from the provider point, run new upgraded ethernet cabling from TRs to data drops, install additional IT outlets, install new electrical outlets throughout the campus, provide additional normal, critical and UPS outlets in TRs, upgrade campus power distribution as required, and increase twenty six TR footprints to meet new standards.

The work shall be conducted within multiple buildings on the campus with most of the work to be within Building 1/9/46. The design shall be in accordance with all current and applicable codes including, NFPA, JC, OSHA, UBC, EPA and the Department of Veterans Affairs publications including the Infrastructure Standard for Telecommunication Spaces and the OEHRM Site Infrastructure and End User Device (EUD) Requirements.

The scope of design services includes Investigative Services, Schematic Design, Design Development, and Construction Documents. The drawings will include but not be limited to:

PROJECT SCOPE (CONT'D)

- Life Safety
- Infection Control (ICRA)
- Civil
- Structural (As Necessary)
- Hazardous Materials Abatement
- Demolition
- Architectural
- Fire Protection
- Plumbing (As Necessary)
- Mechanical
- Electrical
- Information Technology Infrastructure

AREAS OF WORK

Building 1/9/46 Main Hospital: Floors Basement—5PH

Building 3 Administrative Office

Building 10 Boiler Plant

Building 11 Maintenance Garage

Building 12 Warehouse

Building 13 Laundry

Building 30 Administration

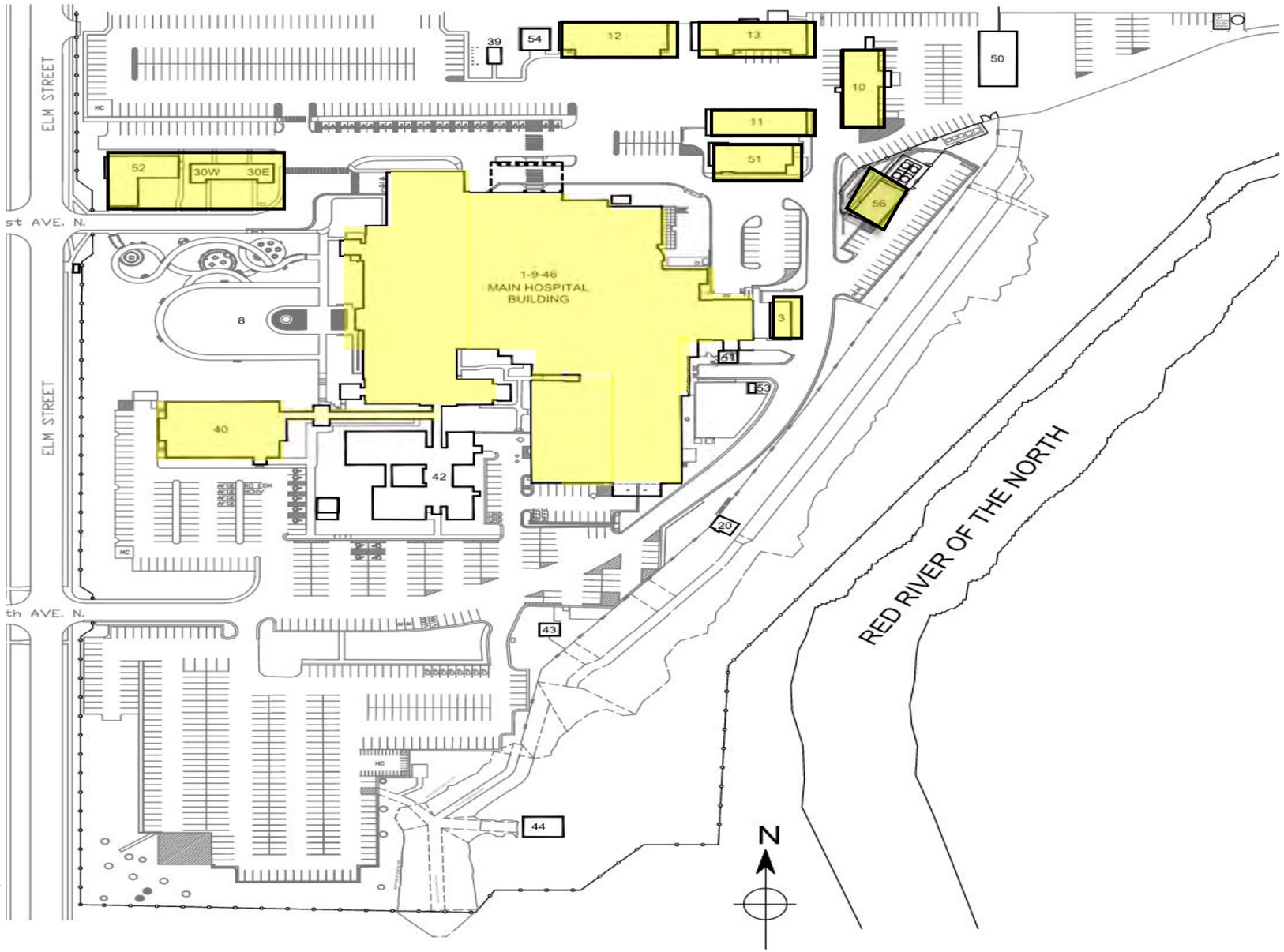
Building 40 VBA Regional Office—Floors 1-2

Building 51 HMRS

Building 52 Administrative Office—Floors 1-2

Building 56 Chiller Plant

Individual rooms to be addressed are presented in the Program Analysis as part of the Architectural Basis of Design that follows in this report.



APPLICABLE CODES & STANDARDS

The following are Codes and Standards that will be used for this project as adopted by the VA:

- VA Directives, Space Planning Criteria, Design Manuals, Master Specifications, VA National CAD Standard Application Guide, and other Guidance on the Technical Information Library (TIL). (http://www.cfm.va.gov/til/)
- NFPA 101 Life Safety Code
- NFPA National Fire Codes with the exception of NFPA 5000 and NFPA 900
- VA Fire Protection Design Manual / 8th Edition—June 1, 2021
- International Building Code (IBC) (Only when specifically referenced in VA Design Documents).
- Occupational, Safety and Health Administration (OSHA) Standards.
- National Electrical Code (NEC)
- International Plumbing Code (IPC).
- Architectural Barriers Act Accessibility Standards (ABAAS) including VA supplement, Barrier Free Design Guide (PG-18-13)
- Building Code Requirements for Reinforced Concrete, American Concrete Institute and Commentary (ACI 318).
- Manual of Steel Construction, Load and Resistance Factor Design Specifications for Structural Steel Buildings, American Institute of Steel Construction (AISC).
- Energy Policy Act of 2005 (EPAct2005).
- International Energy Conservation Code (IECC).
- International Mechanical Code (IMC).
- Underwriter's Laboratories (UL)
- Sheet Metal and Air Conditioning Contractors Association (SMACNA)
- Factory Mutual (FM)
- Executive Order 13423: Strengthening Federal Environmental, Energy, and Transportation Management.
- The Provisions for Construction and Safety Signs. Stated in the General Requirements Section 01010 of the VA Master Construction Specification.
- Ventilation for Acceptable Indoor Air Quality – ASHRAE Standard 62.1 – 2016.
- Safety Standard for Refrigeration Systems – ASHRAE Standard 15 – 2007.

Specific VA Manuals Guidelines and Assessments are used for this project:

- Fargo VA healthcare System Local Design Standards
- VA Fire Protection Design Manual / 8th Edition—June 1, 2021
- VA Office of Electronic Health Record / OEHRM Site Infrastructure and End User Device (EUD) Requirements v2.0—April 15, 2021
- VA OIT Solution Delivery Data Center & Infrastructure Engineering—Basic Guidance: Zone PDU Distribution - July 13, 2020
- VA Office of Information and Technology / Design Narrative for Generic Small Data Center for Main Computer Rooms (MCRs) and other Campus Support Centers (CSCs) - March 25, 2020
- VA Office of Construction & Facilities Management / Physical Security Design Manual / Life Safety Protected Facilities — January 2015
- VA Office of Construction & Facilities Management / Physical Security and Resiliency Design Manual— October 1, 2020 / Revised April 1, 2021
- Infrastructure Standard for Telecommunications Spaces Version 3.1 July 1, 2021 | Solution Delivery-Data Center and Infrastructure Engineering
- Telecommunications and Special Telecom Systems Design Manual February 2016
- VA Office of Construction & Facilities Management / PG-18-9: Space Planning Criteria / Chapter 232: Office of Information & Technology (OIT)—October 3, 2016
- VA Office of Construction & Facilities Management / PG 18-12 Design Guide—-Infrastructure Standard for Telecommunications Spaces (Office of Information & Technology—July 2021

APPLICABLE CODES & STANDARDS (CONT'D)

- VA Office of Construction & Facilities Management / Infrastructure Standard for Telecommunications Spaces Standard Alert 017 R01—October 1, 2020
- EHRM SOCAMES 6 Design Alert 2 / Cable Distance Requirements—April 9, 2020
- HEFP SEP (SOCAMES 6) Design Alert's 1, 3-7.

CONSTRUCTION PLANNING

It is to be anticipated that the EHRM infrastructure upgrades will impact normal operations. This is an important consideration that will need to be paid attention to during the design process. BAE is working with the VA Station staff to identify impacts and to assist in planning strategies to minimize such.

BUDGET

As part of the Design Phase BAE is tasked with identifying 10% worth of Deduct Alternates to ensure that a construction contract can be issued for at or less than the ECC. BAE is continuing to work with the VA Station to identify best options for deduct alternates.

However, at the time of this submittal, the Station and BAE have only jointly identified one deduct alternate. This is identified as "Deduct Alternate No. 1 - Deletion of Work for installation of smoke detectors in Telecommunications Rooms (TRs).

As part of the 95% Submittal the Station has requested the inclusion of exterior stairs on the roof of the main hospital building (Building 1-9-46) for access to condensing units serving the TRs. These are to replace existing access ladders. If acceptable to the Station, these stairs could be identified as Deduct Alternate No. 2.

COST ANALYSIS

The Opinion of Probable Construction Cost (OPCC) for the 95% Design Submittal includes the items listed under the Project Scope of work and in this BOD.

The OPPC costs is developed and further broken down per the building constraints and based on the work at that specific location with the available labor pool and submitted at each subsequent submittal. It is to be noted that the OPCC is developed taking into account building and site constraints and using specific location factors (i.e., available material and labor) relative to latest published RS Means 2021 base rates.

Covid Factor

The opinion of total construction cost and "Covid Factor" with a breakdown of the costs are provided in a separate Opinion of Probable Construction Cost document, Appendix F.

BASIS OF DESIGN: ARCHITECTURAL

2

Architectural Basis of Design

- Summary
- Architectural Design
- Program Analysis
- Building Plan Analysis
- Floor Plans

2 ARCHITECTURAL BASIS OF DESIGN

SUMMARY

The primary focus of this project is to prepare a coordinated design for upgrading the fiber optic system throughout the campus buildings to each telecommunication room (TR), new fiber to each TR, run new upgraded ethernet cabling from TRs to data drops, install additional IT outlets, install new electrical outlets throughout the campus, provide additional normal, critical and UPS outlets in TRs, upgrade campus power distribution as required, and increase twenty six TR footprints to meet new standards.

Upgrades to the existing Main Computer Room (MCR) will be included in the design as required to properly serve the upgrades the TRs. This will include at a minimum UPS to support the TRs, 3-phase power to the TRs and source A fiber to the TRs.

ARCHITECTURAL DESIGN

The baseline architectural portion of the work is providing for demolition of existing walls and doors as necessary to accommodate expanded TR footprints, new walls and new or relocated doors as required. The existing finishes in the designated TR rooms are to be removed to bare walls, which will be prepped for paint and installation of fire-rated backboards. Any existing ceiling assemblies are to be removed. Any existing floor finishes are to be removed and the concrete substrate prepped for installation of static-dissipative tile. Rooms are to be finished out as described in the Room Finish Schedule as part of the contract drawings.

Walls surrounding each TR will be extended as required to the underside of deck above. Walls will be upgraded to be 1-hour rated - including fire-rated sealant at the tops and bottoms of each wall. All existing and new penetrations will receive re-enterable fire stop assemblies.

Target Design Criteria for each TR is as follows:

- In Healthcare/Mission Critical Areas
  - Minimum 100 SF for legacy space TRs to accommodate two (2) racks.
  - Minimum 170 SF for new TRs built as building additions to accommodate four (4) racks.
- All enclosure walls to be one hour rated construction.
  - Code– plus feature requested by the Station.
- All TR doors to be three-quarter hour rated construction.
  - Code– plus feature requested by the Station.
- TR doors to be minimum 3’-0” wide by 8-0” high.
- Doors to be knock-down type frames per Station standard.
- Floors to be Static –dissipative tile.
- No finished ceilings, unless needed to meet fire separation requirements.

Where these criteria cannot be met due to existing construction limitations, BAE is working with the Station to develop a list of variance requests to submit to the EHRM National group. For example, it has been determined that an 8’-0” high door cannot be accommodated in the majority of locations. A variance will need to be requested for these locations.

Due to existing conditions constraints several buildings will not receive full TR enclosures. At those buildings existing telecommunication racks will be replaced with new cabinets or racks (as identified in the Program Analysis later in this report). These include Buildings 10, 11, 12, 13, 30 and 56. This approach has been vetted and approved by the Station and DCIE.

Building 51 was designated by the VA Station to receive a building addition to house a TR. The design developed to date has been vetted and approved by the Station and DCIE.

PROGRAM ANALYSIS

The following spreadsheet was provided to BAE by the Station and has been adopted by the design team to track the required modifications of existing rooms in order to design the new TRs. This spreadsheet was initially verified during the September 13 through 14, 2021 site investigation and has been amended and updated following the 35% and 50% submittal review meetings as required to track development of the baseline design.

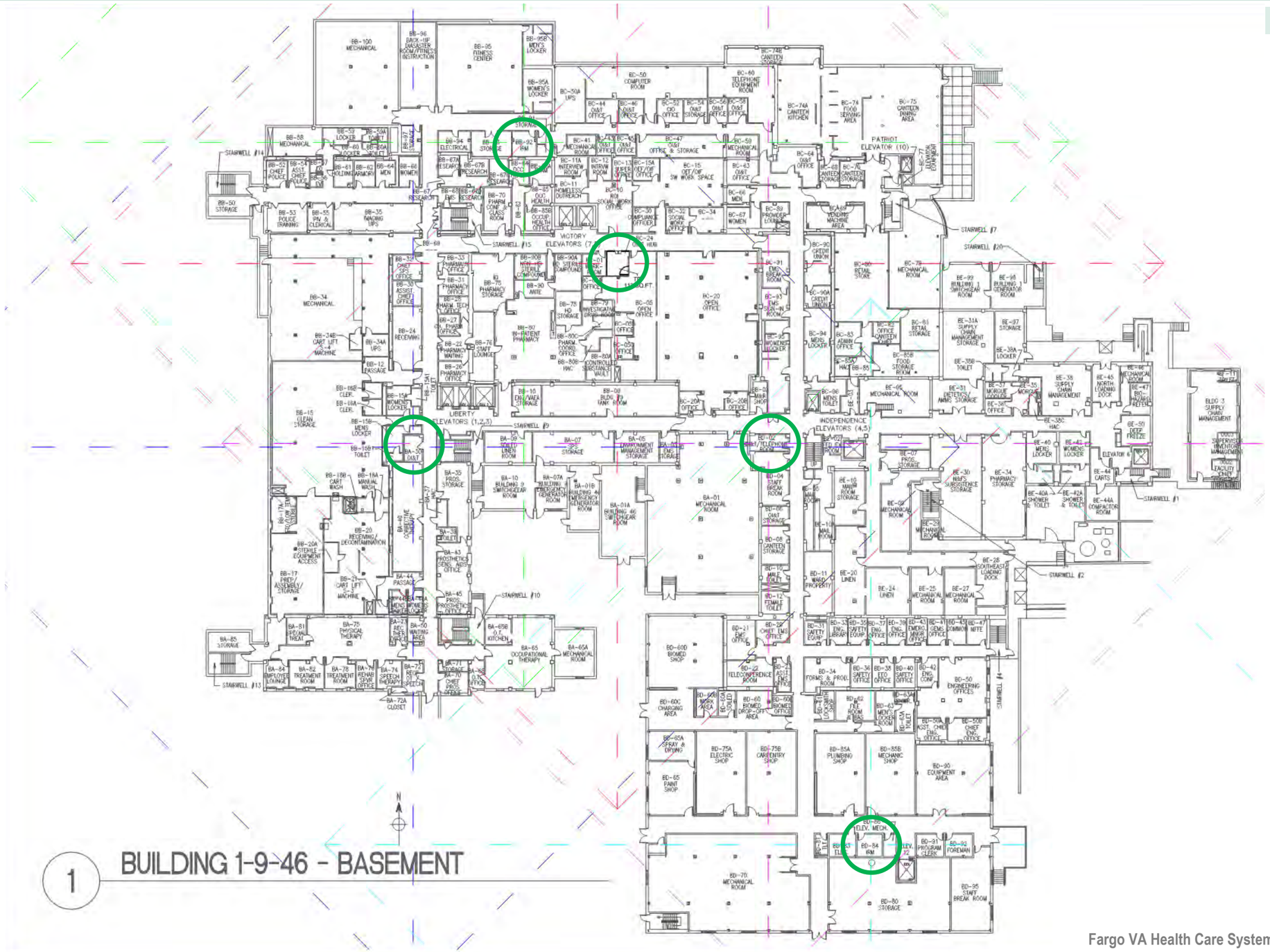
PROGRAM ANALYSIS

Location	Official Station Name	Function	Station #	Bldg	Room	Sq Feet	Expand TR	TR Crosswalk	Rm Impacted	Dept Impact	POC	Request for Variance
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	BA-30	101	No					
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	BB-92	140	No					
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	BC-02	116	Yes	Combine BC-02 and BC-24	BC-24	ITOPS	Ray	
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	BC-24	10	Yes	Combine BC-02 and BC-24	BC-02	ITOPS	Ray	
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	BD-02	129	No					
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	BD-84	105	No					
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	1A-54	56	Yes	Expand into 1A-55	1A-55	PAO	Ross	
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	1B-121B	49	Yes	Expand into the vestibule 1C-100	1C-100	ED	Julianna	
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	1B-24	20	Yes	Move to 1A-54, abandon 1B-24	1A-54	ITOPS	Ray	
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	1B-65	42	Yes	Move to 1A-54, abandon 1B-65	1A-54	ITOPS	Ray	
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	1B-98	11	Yes	Move to 1C-99, abandon 1B-98	1C-99	ITOPS	Ray	
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	1C-99	162	No					
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	1D-158	60	No	Only space to expand is 1D-156, but don't want to displace all of our dentists.				Yes
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	1D-64A	72	Yes	Expand South into corridor and relocate in floor weigh station.	1D-64	PC	Amanda	
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	2A-24	139	Yes	Expand into 2A-22A. Need to fit more racks than the current room can hold.	2A-22A	Surgery	Amy	
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	2C-33	99	Yes	Combine with 2C-33 and 2C-38	2C-38	ITOPS	Ray	
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	2C-37	45	Yes	Move to 2C-33, abandon 2C-37	2C-33	ITOPS	Ray	
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	2C-38	15	Yes	Combine with 2C-33 and 2C-38	2C-33	ITOPS	Ray	
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	2C-90A	60	Yes	Expand into 2C-90	2C-90	WH	Leah	
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	2D-110A	68	Yes	Move to 2D-18 and 2D-19, abandon 2D-110A	2D-18 & 2D-19	CLC	Jacklyn	
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	3B-23	84	Yes	Expand into 3B-25	3B-25	3M	Sara	
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	3C-48	36	Yes	Move to 3B-23 abandon 3C-48	3B-23	3M	Sara	
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	3C-96	80	Yes	Move to 3D-10, abandon 3C-96	3D-10			
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	4A-16	70	Yes	Move to 4B-23, abandon 4A-16	4B-23	MH	Deb	
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	4D-02	42	Yes	Move to 4B-23, abandon 4D-02	4B-23	MH	Deb	
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	4E-19	4	Yes	Move to 4E-15A, abandon 4E-19	4E-15A	MH	Deb	
VA Fargo	Fargo VA Medical Center	Main Hospital	437	1	Penthouse	4	Yes	Build new (3) TR's ; 501, 502 & 503	N/A	ENGR		
VA Fargo	Fargo VA Medical Center	Supply Chain	437	3	0001	4	No	Build New	0001			Yes
VA Fargo	Fargo VA Medical Center	Boiler Plant	437	10	Bldg-10	4	No	45RU Self-Contained Network Cabinet (floor) aka Emcor	Mezzanine	ENGR	Shawn	Yes
VA Fargo	Fargo VA Medical Center	Garage	437	11	1	4	No	24RU Network Cabinet (1/2 floor)	NE Office Space	ENGR	Shawn	Yes
VA Fargo	Fargo VA Medical Center	Warehouse	437	12	Bldg-12	47	No	45RU Telecommunication Channel Rack (floor)				Yes
VA Fargo	Fargo VA Medical Center	Laundry	437	13	0007	4	No	26RU Wall Mounted Telecommunication Enclosure (wall)	0007	EMS	Troy	Yes
VA Fargo	Fargo VA Medical Center	Admin Offices	437	30	Bldg-30	4	No	45RU Network Cabinet (floor)	Basement			Yes
VA Fargo	Fargo VA Medical Center	VBA Regional	437	40	102B	119	Yes	Expand South and take end of corridor	Corridor	VBO	Paula	
VA Fargo	Fargo VA Medical Center	VBA Regional	437	40	--		Yes	Build new TR in 202A and expand South and take end of corridor	202A & Corridor	VBO	Paula	
VA Fargo	Fargo VA Medical Center	Human Resources	437	51	1025	29	Yes	Build 100 sq ft 3 walled addition				
VA Fargo	Fargo VA Medical Center	Admin Offices	437	52	111	61	Yes	expand into 100-C15	100-C15	QSV	Sarah	
VA Fargo	Fargo VA Medical Center	Admin Offices	437	52	211	61	Yes	Turn 211 into TR and expand into 200-C15	200-C15	REC/HIMS	Jim/Jody	
VA Fargo	Fargo VA Medical Center	Chiller Plant	437	56	Bldg-56	4	No	24RU Network Cabinet (1/2 floor)	Current Wall Cabinet	ENGR	Shawn	Yes
Site Building TR Total					35	2156	26					

Yes	Expansion/relocation is required - in scope
No	No expansion/relocation is required - out of scope
No	No expansion/relocation is feasible - out of scope

BUILDING PLAN ANALYSIS

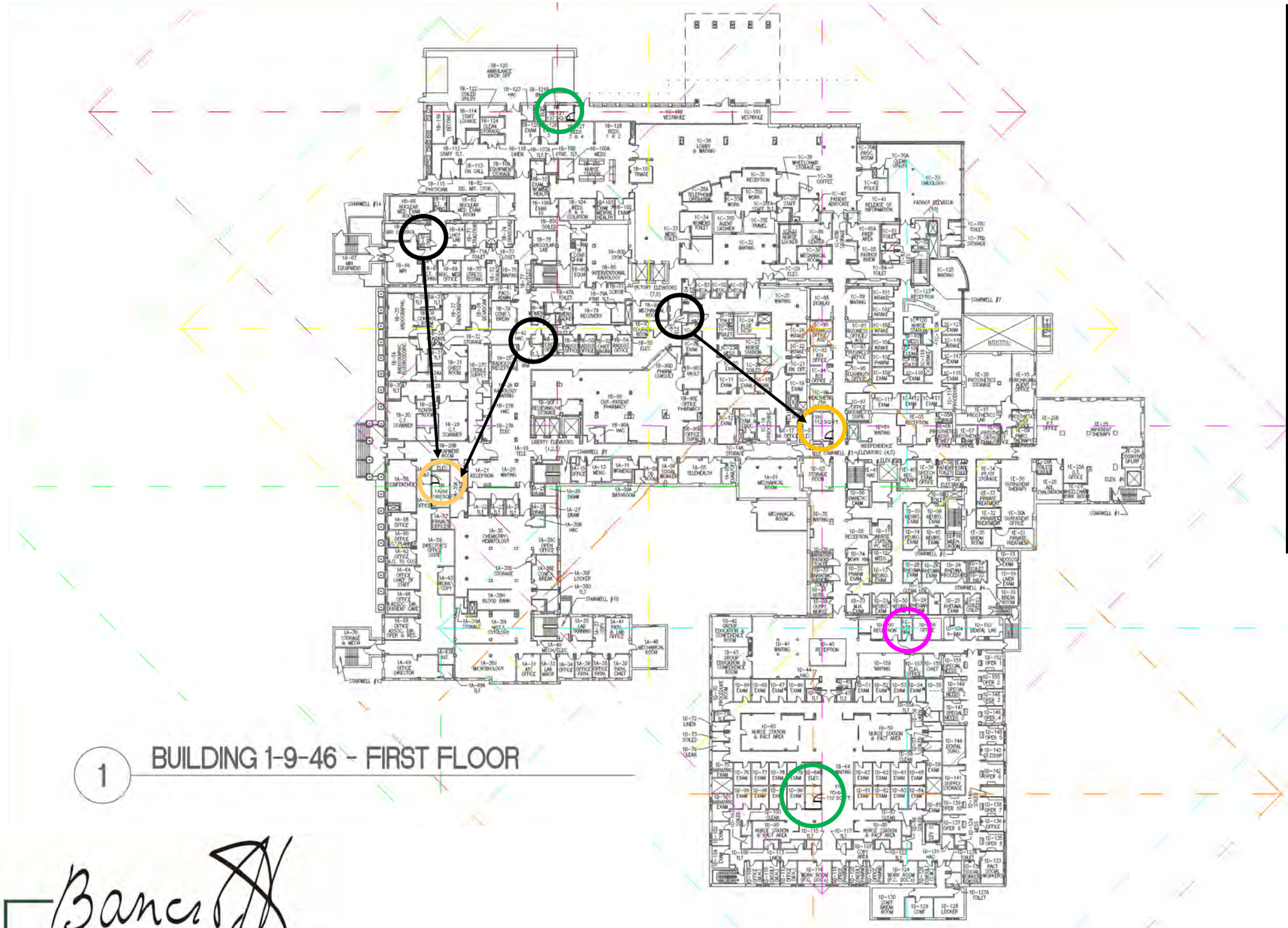
Following the Program Analysis spreadsheet are building floor plans for all buildings to be provided new TRs as part of this Scope of Work. The plans illustrate the locations of all new TRs and free standing server cabinets as part of the baseline design.



1 BUILDING 1-9-46 - BASEMENT

KEY

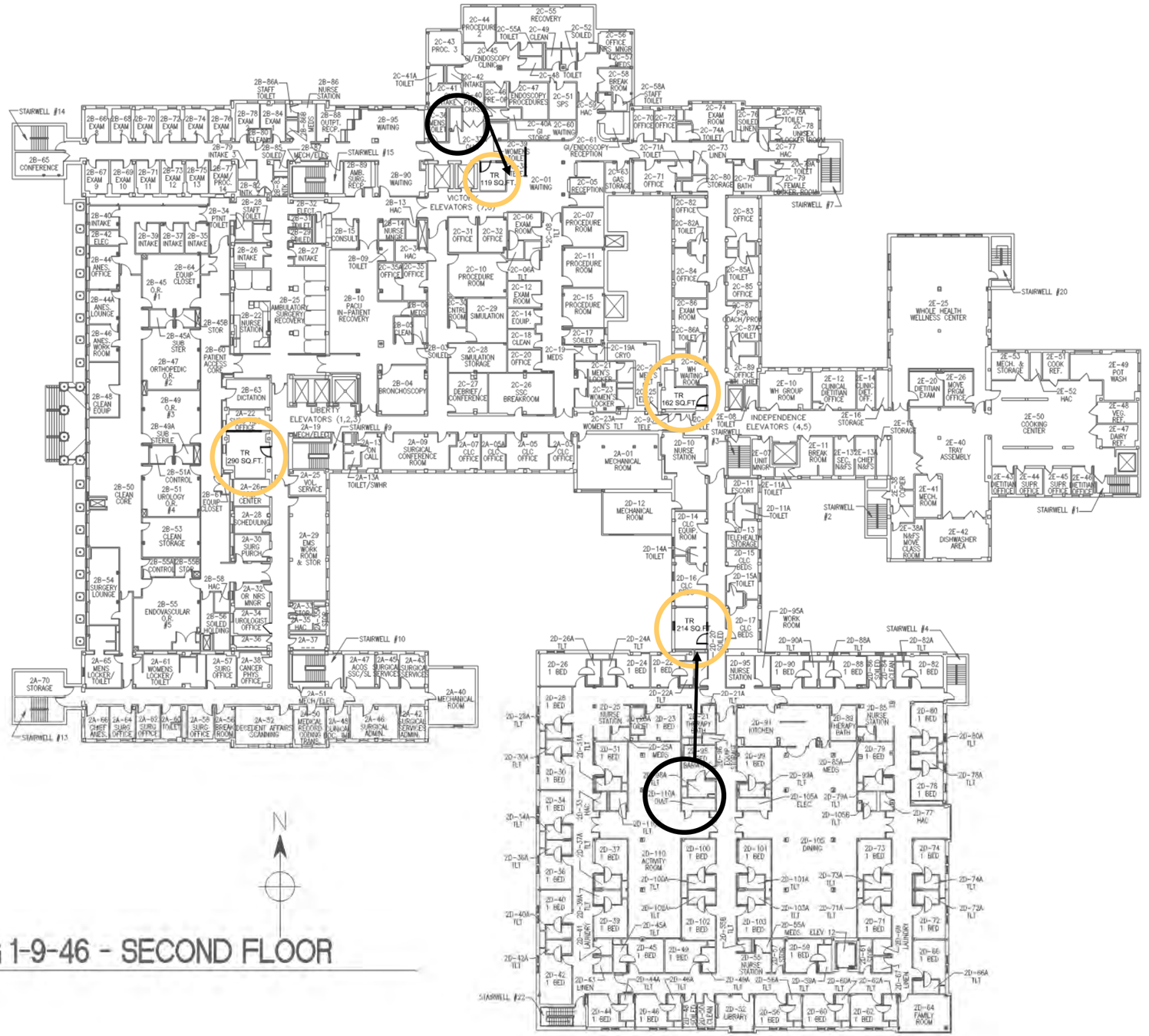
- Modify existing room to meet EHRM TR requirements.
- Combine rooms to create EHRM TR
- Modify existing room: will not meet EHRM TR requirements.
- Replace existing rack with new cabinet or rack as identified in Program Analysis
- Building addition for new EHRM TR
- IT Equipment to be Replaced



1 BUILDING 1-9-46 - FIRST FLOOR

KEY

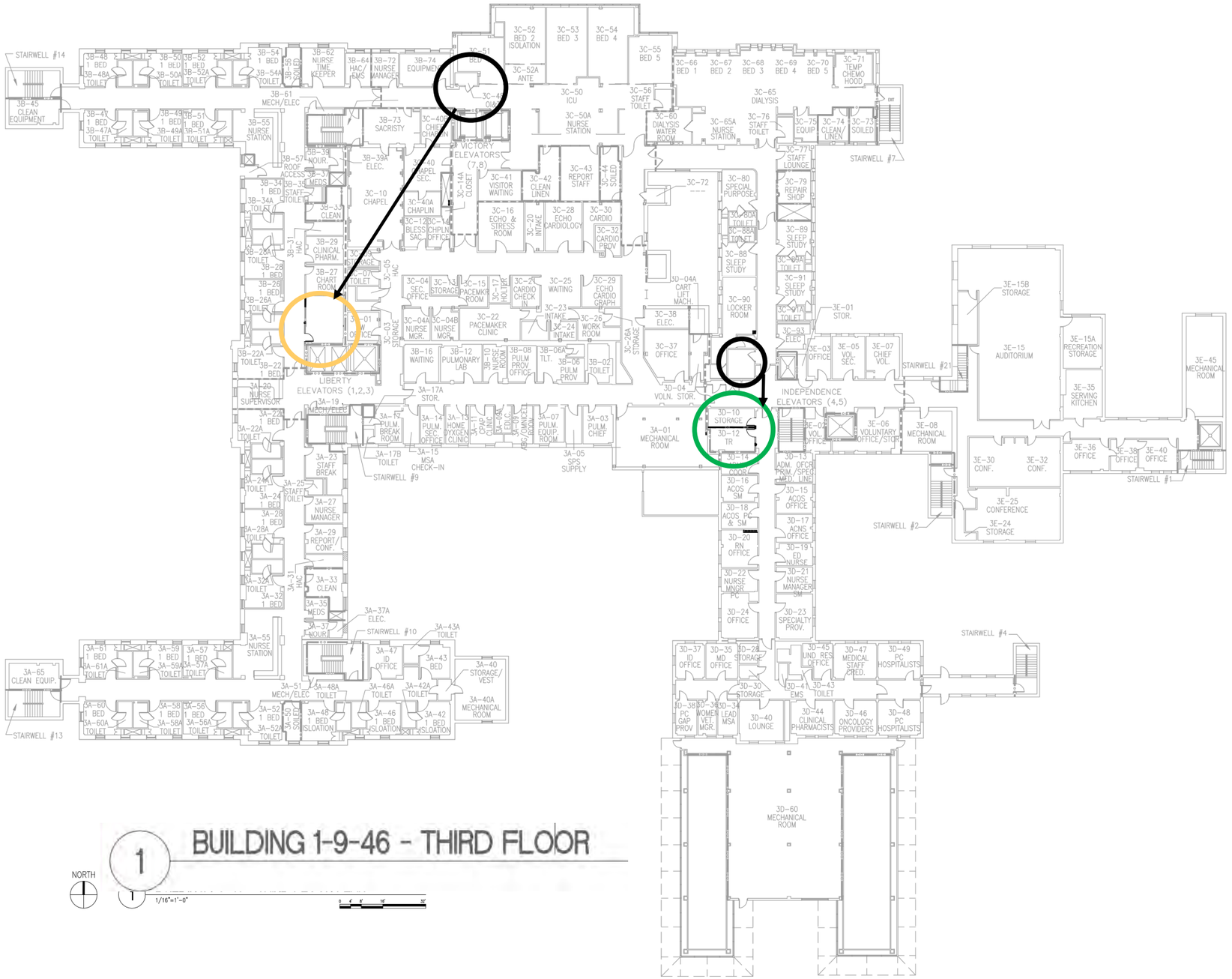
- Modify existing room to meet EHRM TR requirements.
- Combine rooms to create EHRM TR
- Modify existing room: will not meet EHRM TR requirements.
- Replace existing rack with new cabinet or rack as identified in Program Analysis
- Building addition for new EHRM TR
- IT Equipment to be Replaced



1 BUILDING 1-9-46 - SECOND FLOOR

KEY

- ○ Modify existing room to meet EHRM TR requirements.
- ○ Combine rooms to create EHRM TR
- ○ Modify existing room: will not meet EHRM TR requirements.
- ○ Replace existing rack with new cabinet or rack as identified in Program Analysis
- ○ Building addition for new EHRM TR
- ○ IT Equipment to be Replaced



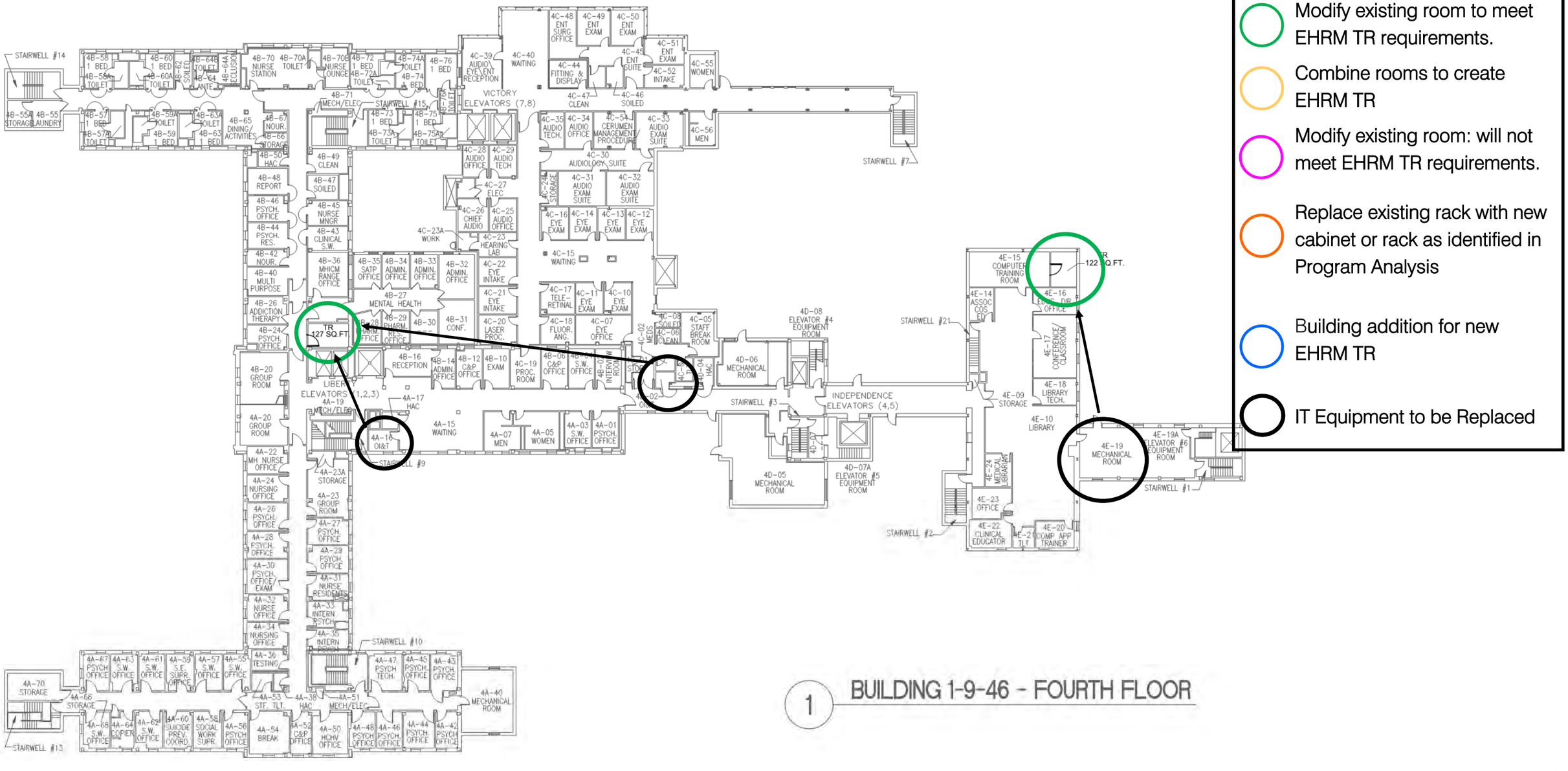
1 BUILDING 1-9-46 - THIRD FLOOR

NORTH

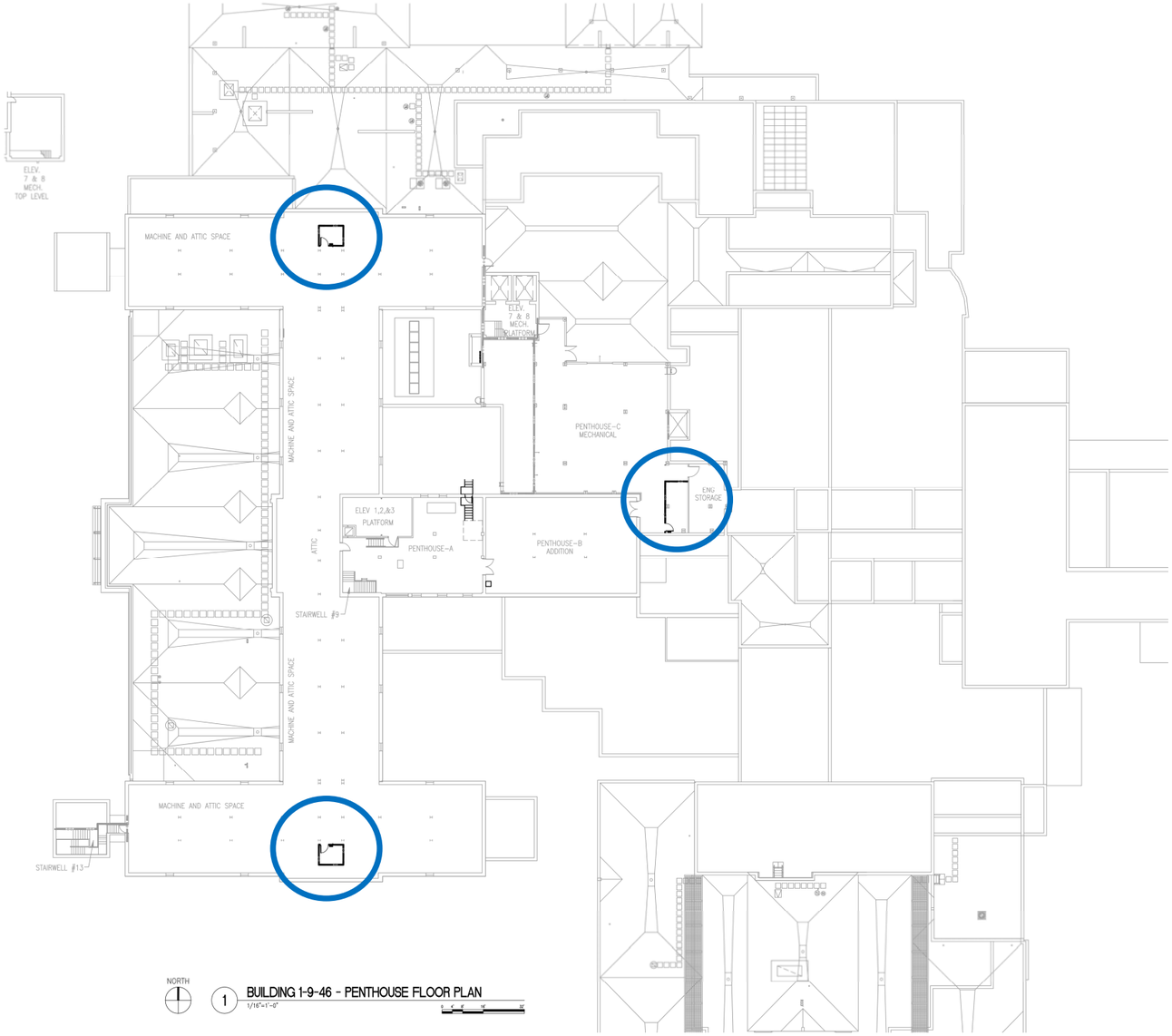
1/16"=1'-0"

KEY

- Modify existing room to meet EHRM TR requirements.
- Combine rooms to create EHRM TR
- Modify existing room: will not meet EHRM TR requirements.
- Replace existing rack with new cabinet or rack as identified in Program Analysis
- Building addition for new EHRM TR
- IT Equipment to be Replaced



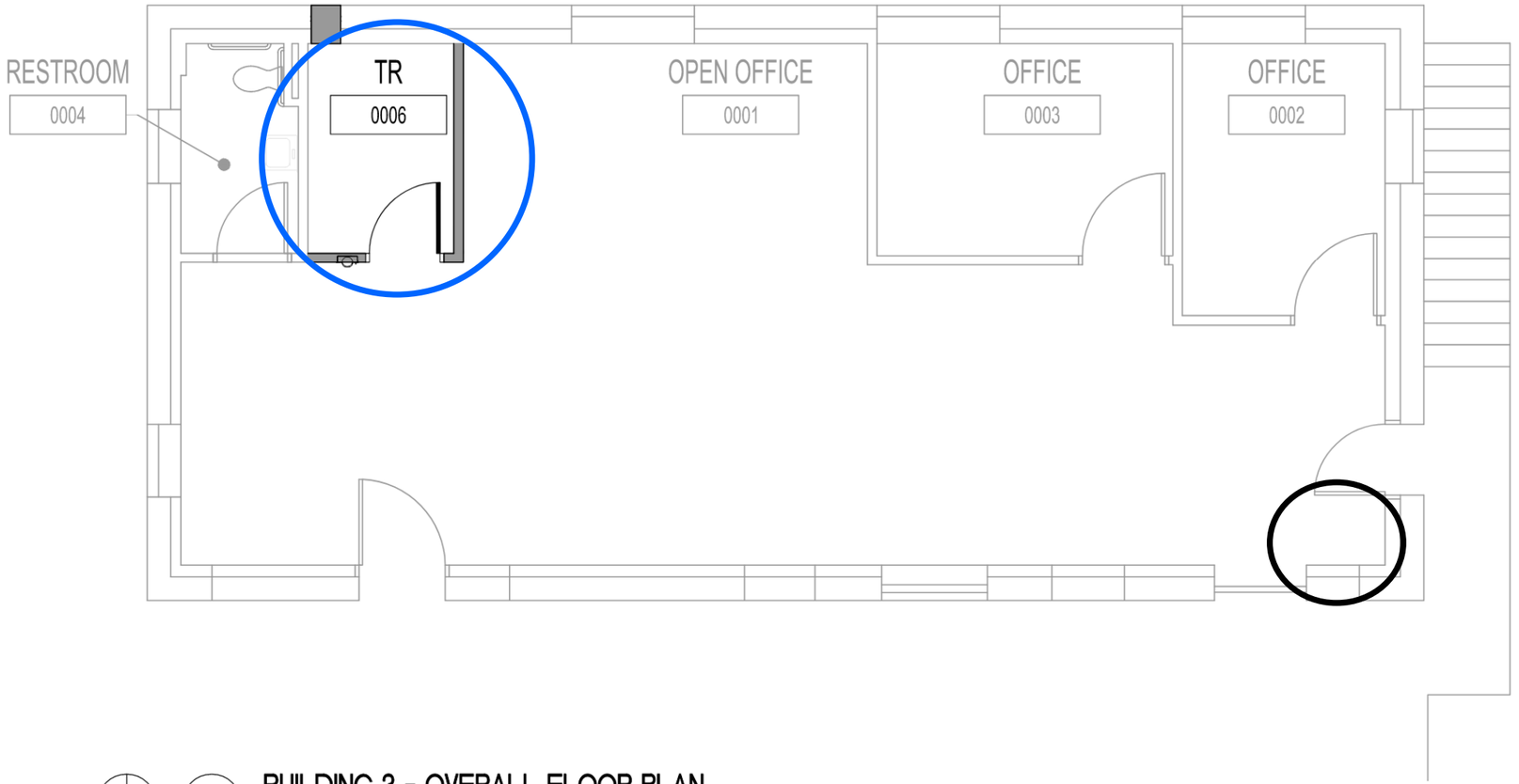
1 BUILDING 1-9-46 - FOURTH FLOOR



KEY

- Modify existing room to meet EHRM TR requirements.
- Combine rooms to create EHRM TR
- Modify existing room: will not meet EHRM TR requirements.
- Replace existing rack with new cabinet or rack as identified in Program Analysis
- Building addition for new EHRM TR
- IT Equipment to be Replaced

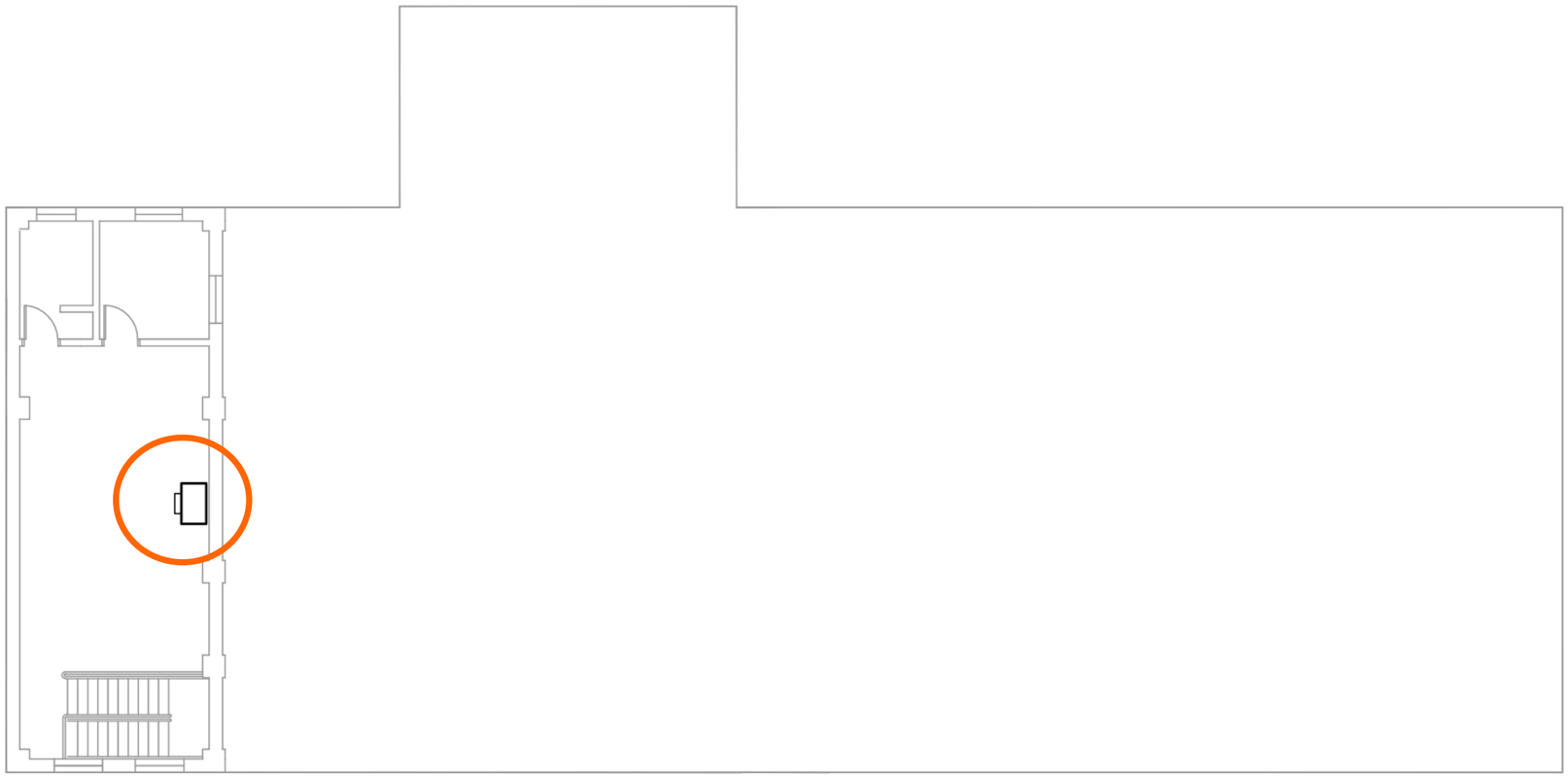
BANCROFT ARCHITECTS + ENGINEERS



N 1 BUILDING 3 - OVERALL FLOOR PLAN
1/4"=1'-0"
0 1' 2' 4' 8'

KEY

- Modify existing room to meet EHRM TR requirements.
- Combine rooms to create EHRM TR
- Modify existing room: will not meet EHRM TR requirements.
- Replace existing rack with new cabinet or rack as identified in Program Analysis
- New room for EHRM TR
- IT Equipment to be Replaced



KEY

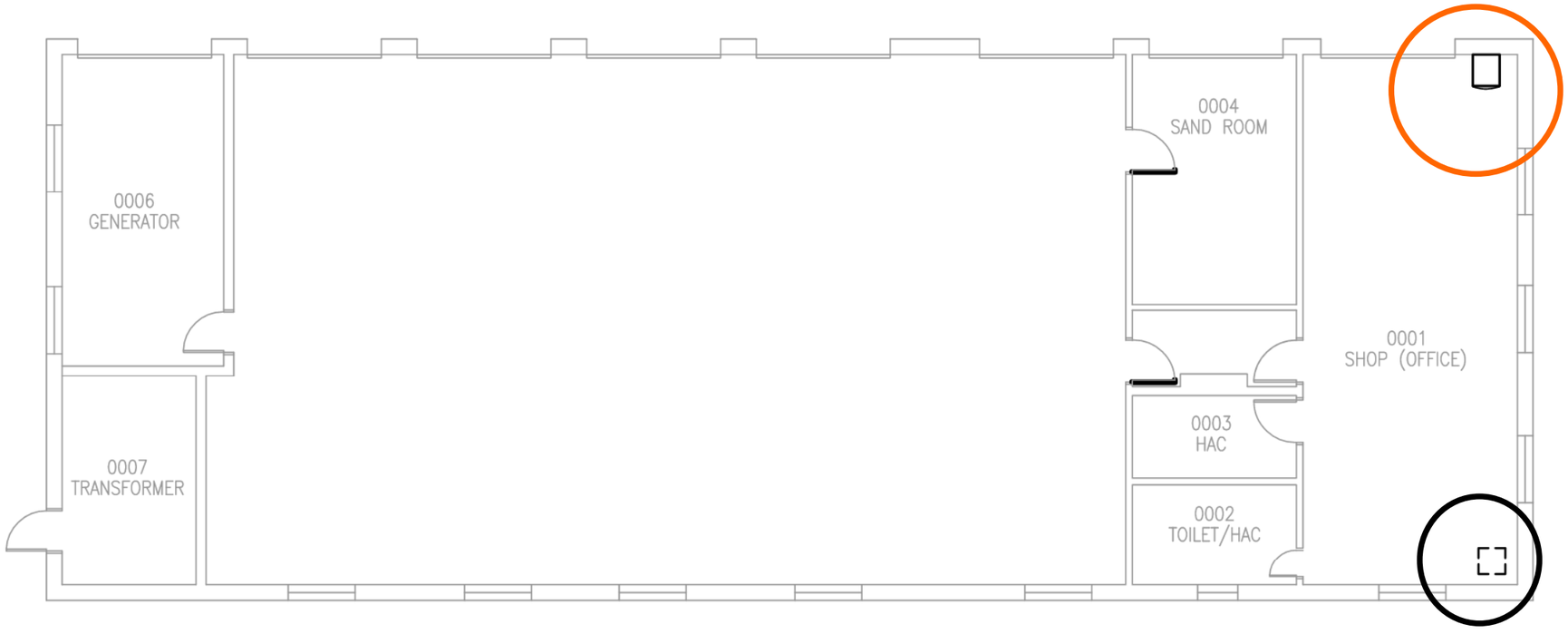
- Modify existing room to meet EHRM TR requirements.
- Combine rooms to create EHRM TR
- Modify existing room: will not meet EHRM TR requirements.
- Replace existing rack with new cabinet or rack as identified in Program Analysis
- Building addition for new EHRM TR
- IT Equipment to be Replaced

N 2 BUILDING 10 - MEZZANINE FLOOR PLAN

1/8"=1'-0"

0 2' 4' 8' 16'

BANCROFT ARCHITECTS + ENGINEERS



KEY

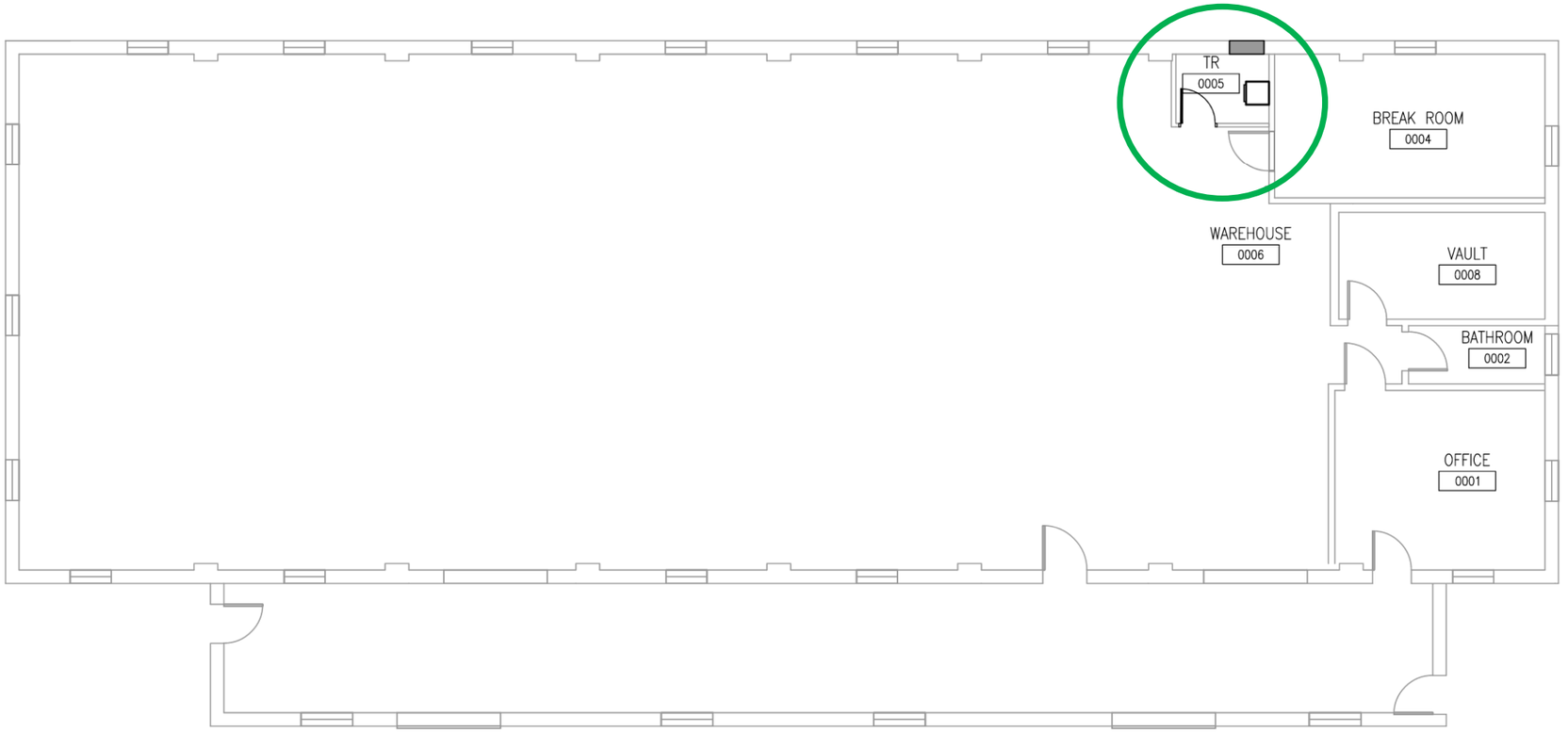
- Modify existing room to meet EHRM TR requirements.
- Combine rooms to create EHRM TR
- Modify existing room: will not meet EHRM TR requirements.
- Replace existing rack with new cabinet or rack as identified in Program Analysis
- Building addition for new EHRM TR
- IT Equipment to be Replaced

N

2 BUILDING 11 - FIRST FLOOR PLAN

1/8"=1'-0"

0 2' 4' 8' 16'



NORTH

1 BUILDING 12 - FIRST FLOOR PLAN

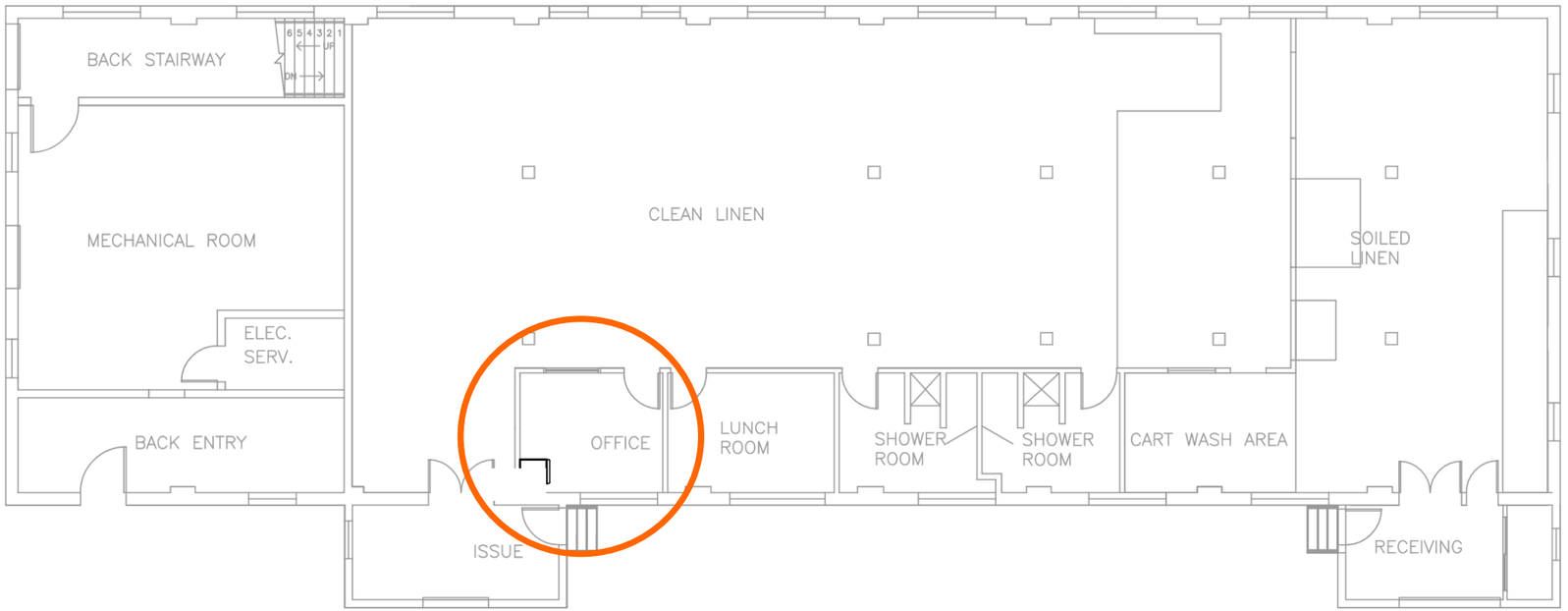
1/8"=1'-0"

0 2' 4' 8' 16'

KEY

- Modify existing room to meet EHRM TR requirements.
- Combine rooms to create EHRM TR
- Modify existing room: will not meet EHRM TR requirements.
- Replace existing rack with new cabinet or rack as identified in Program Analysis
- Building addition for new EHRM TR
- IT Equipment to be Replaced

BANCROFT ARCHITECTS + ENGINEERS



N

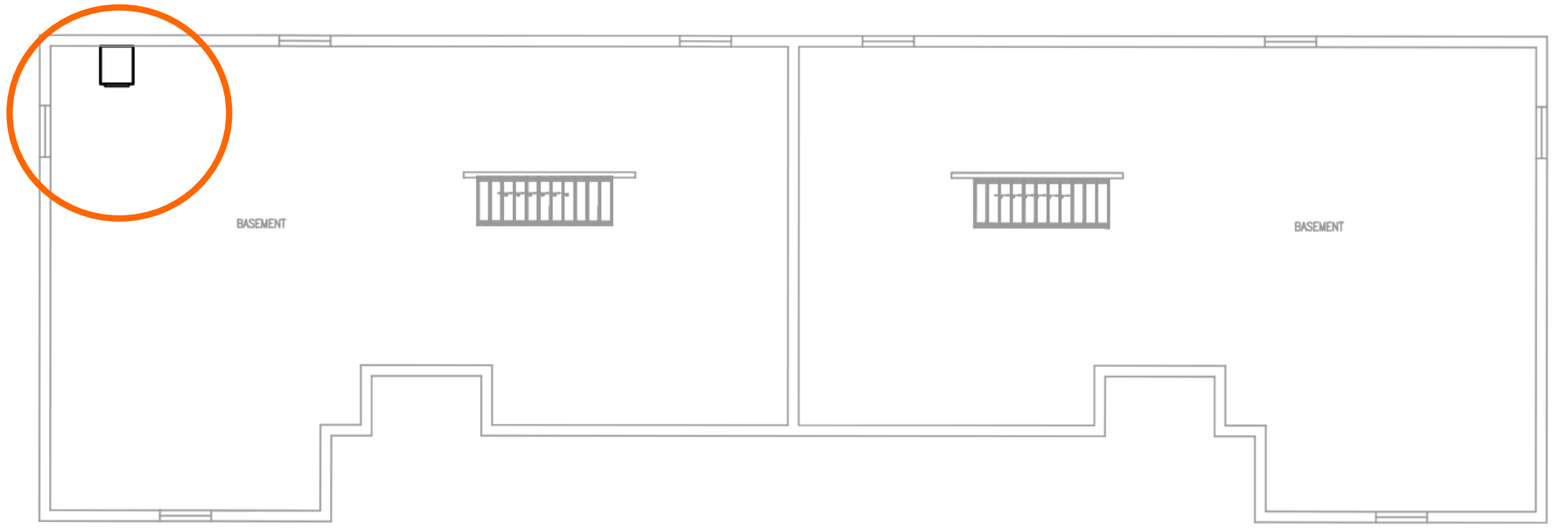
2 BUILDING 13 - FIRST FLOOR PLAN

1/8"=1'-0"

0 2' 4' 8' 16'

KEY

- Modify existing room to meet EHRM TR requirements.
- Combine rooms to create EHRM TR
- Modify existing room: will not meet EHRM TR requirements.
- Replace existing rack with new cabinet or rack as identified in Program Analysis
- Building addition for new EHRM TR
- IT Equipment to be Replaced



KEY

- Modify existing room to meet EHRM TR requirements.
- Combine rooms to create EHRM TR
- Modify existing room: will not meet EHRM TR requirements.
- Replace existing rack with new cabinet or rack as identified in Program Analysis
- Building addition for new EHRM TR
- IT Equipment to be Replaced

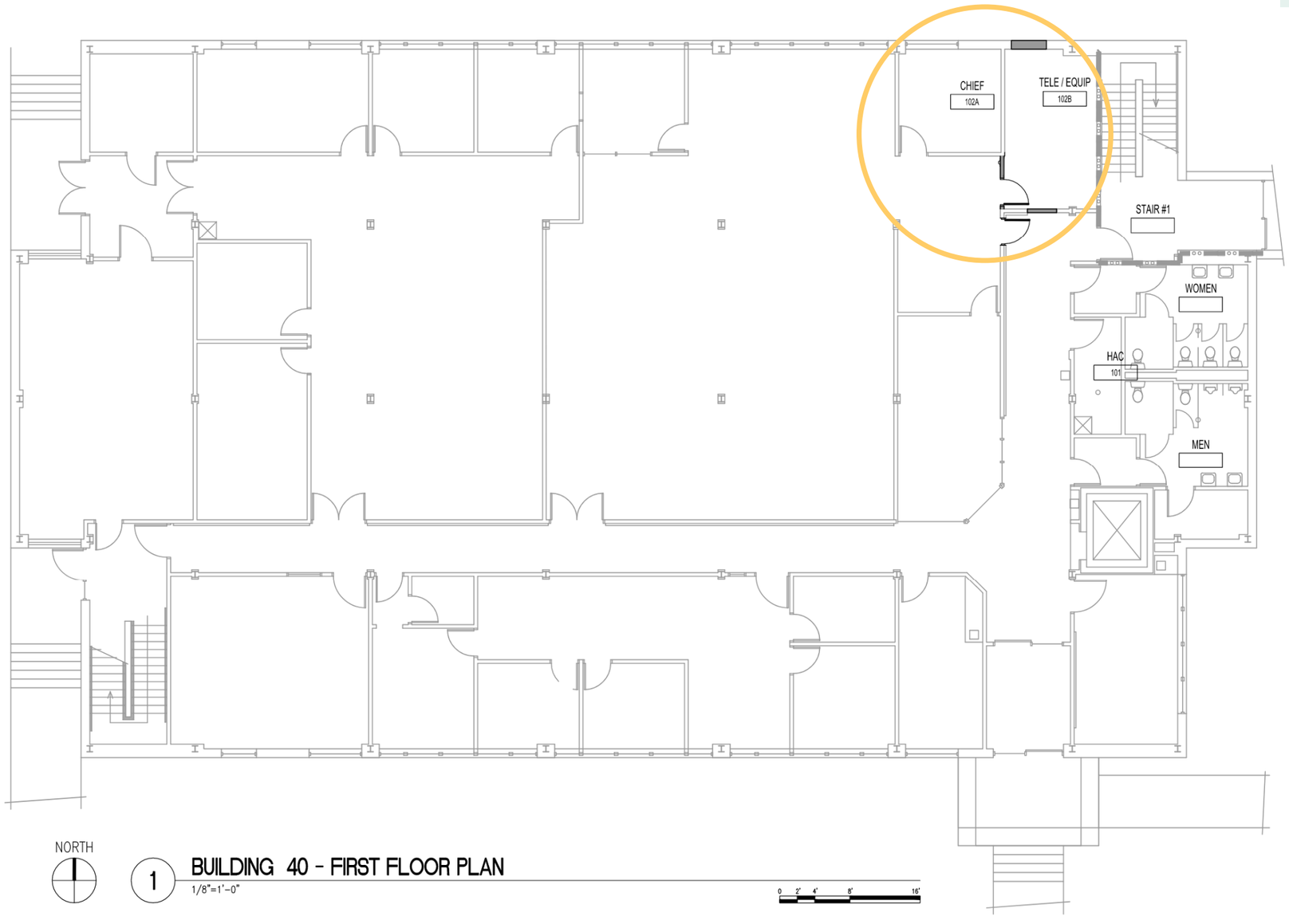
N

2 BUILDING 30 - FLOOR PLAN

1/8"=1'-0"

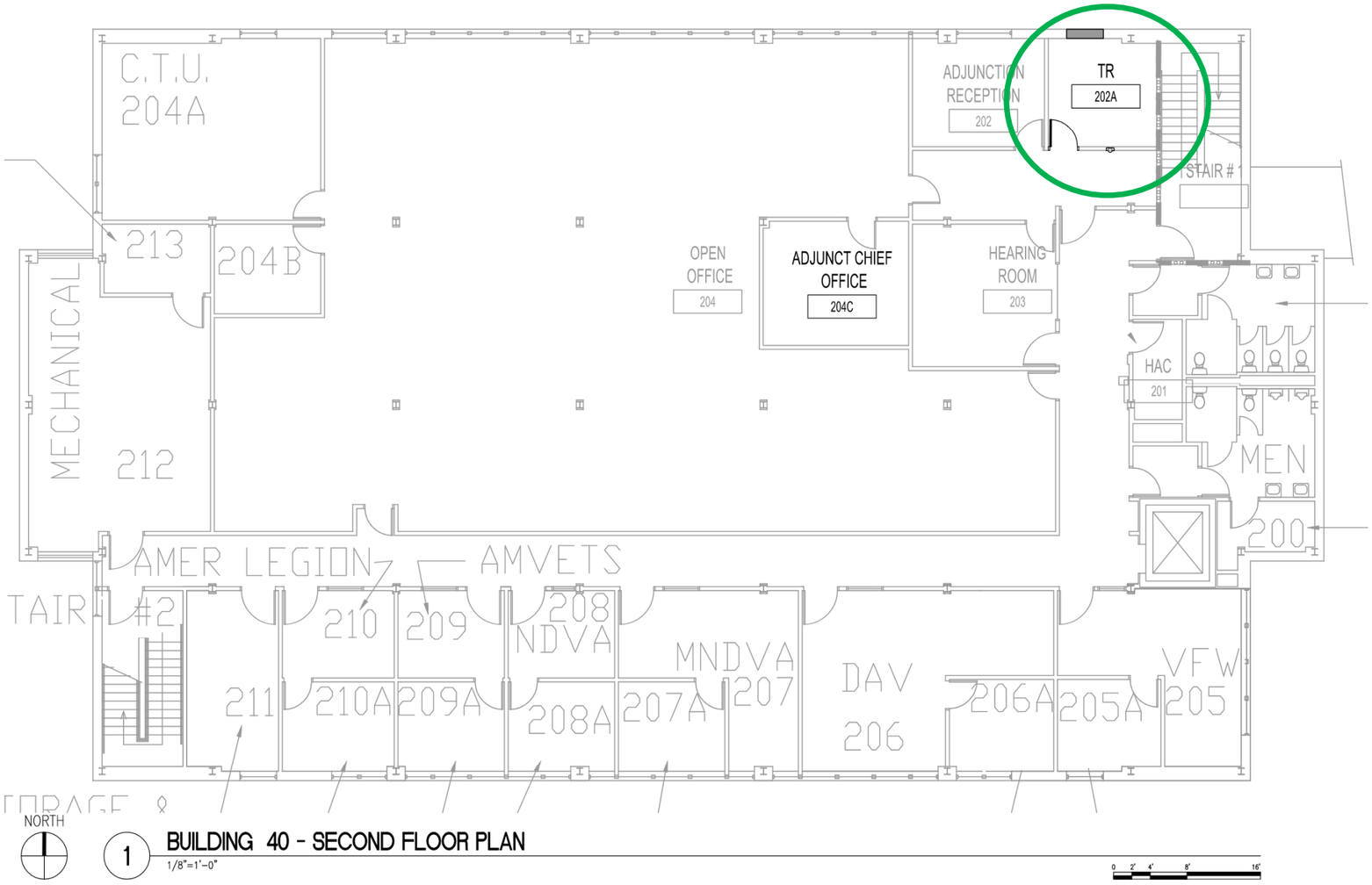
0 2' 4' 8' 16'

BANCROFT ARCHITECTS + ENGINEERS



KEY

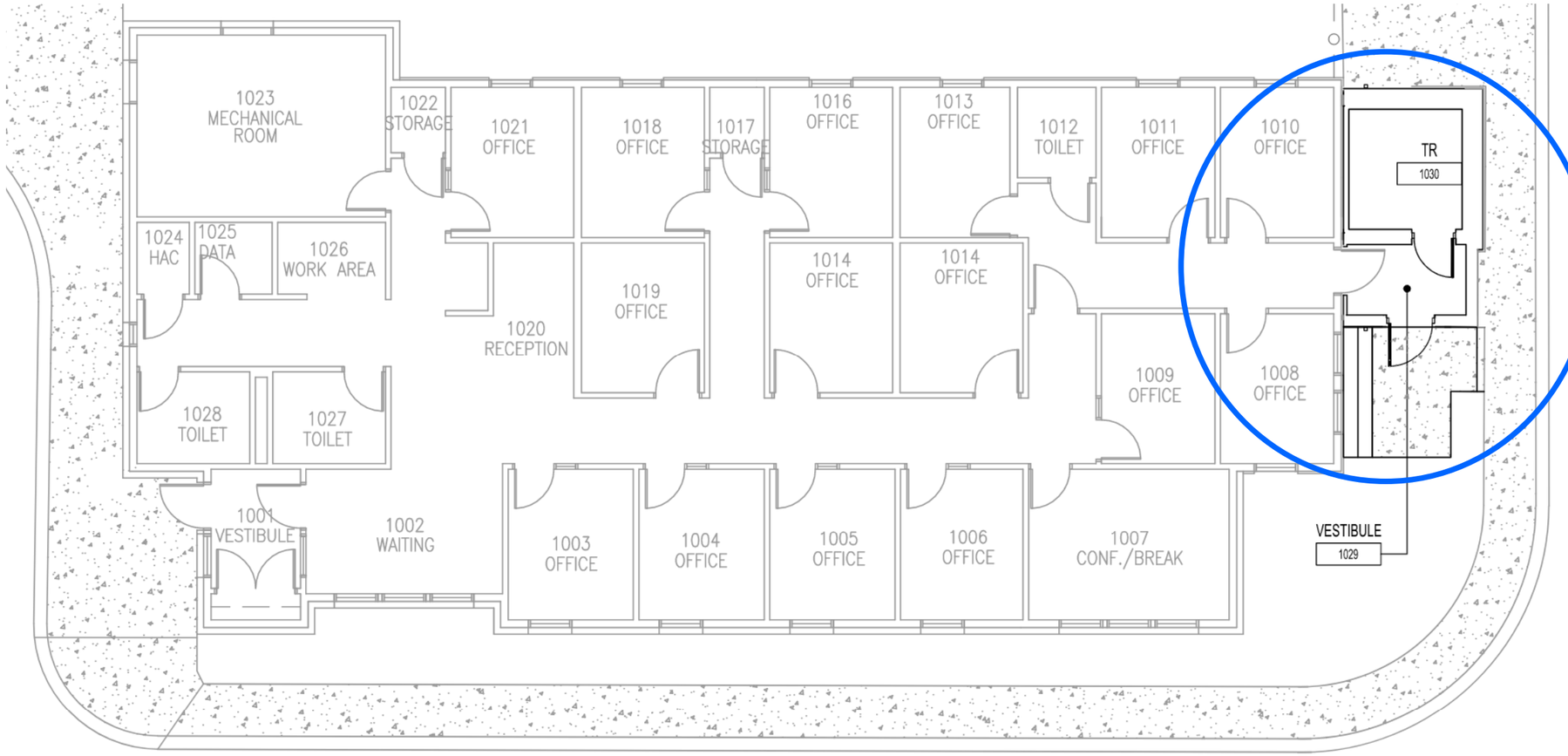
- Modify existing room to meet EHRM TR requirements.
- Combine rooms to create EHRM TR
- Modify existing room: will not meet EHRM TR requirements.
- Replace existing rack with new cabinet or rack as identified in Program Analysis
- Building addition for new EHRM TR
- IT Equipment to be Replaced



KEY

- Modify existing room to meet EHRM TR requirements.
- Combine rooms to create EHRM TR
- Modify existing room: will not meet EHRM TR requirements.
- Replace existing rack with new cabinet or rack as identified in Program Analysis
- Building addition for new EHRM TR
- IT Equipment to be Replaced

BANCROFT ARCHITECTS + ENGINEERS



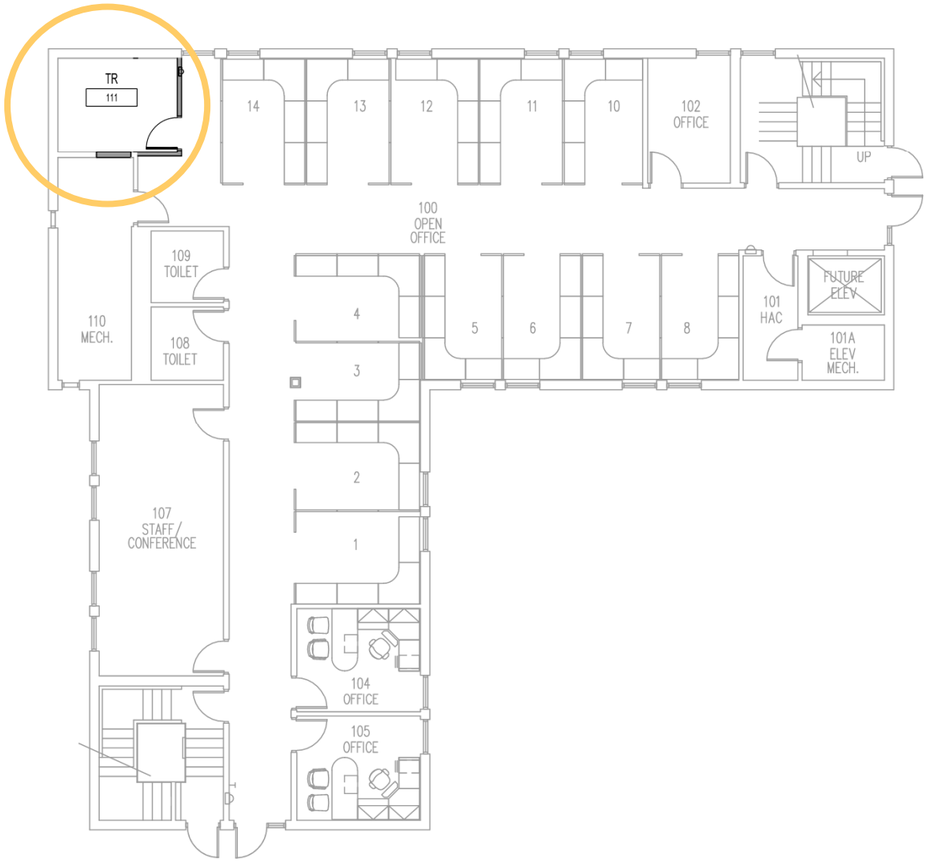
KEY

- Modify existing room to meet EHRM TR requirements.
- Combine rooms to create EHRM TR
- Modify existing room: will not meet EHRM TR requirements.
- Replace existing rack with new cabinet or rack as identified in Program Analysis
- Building addition for new EHRM TR
- IT Equipment to be Replaced

1 BUILDING 51 - FIRST FLOOR PLAN

1/8"=1'-0"

0 2' 4' 8' 16'



N

1 BUILDING 52 - FIRST FLOOR PLAN

1/8"=1'-0"

0 2' 4' 8' 16'

1 BUILDING 52 - SECOND FLOOR PLAN

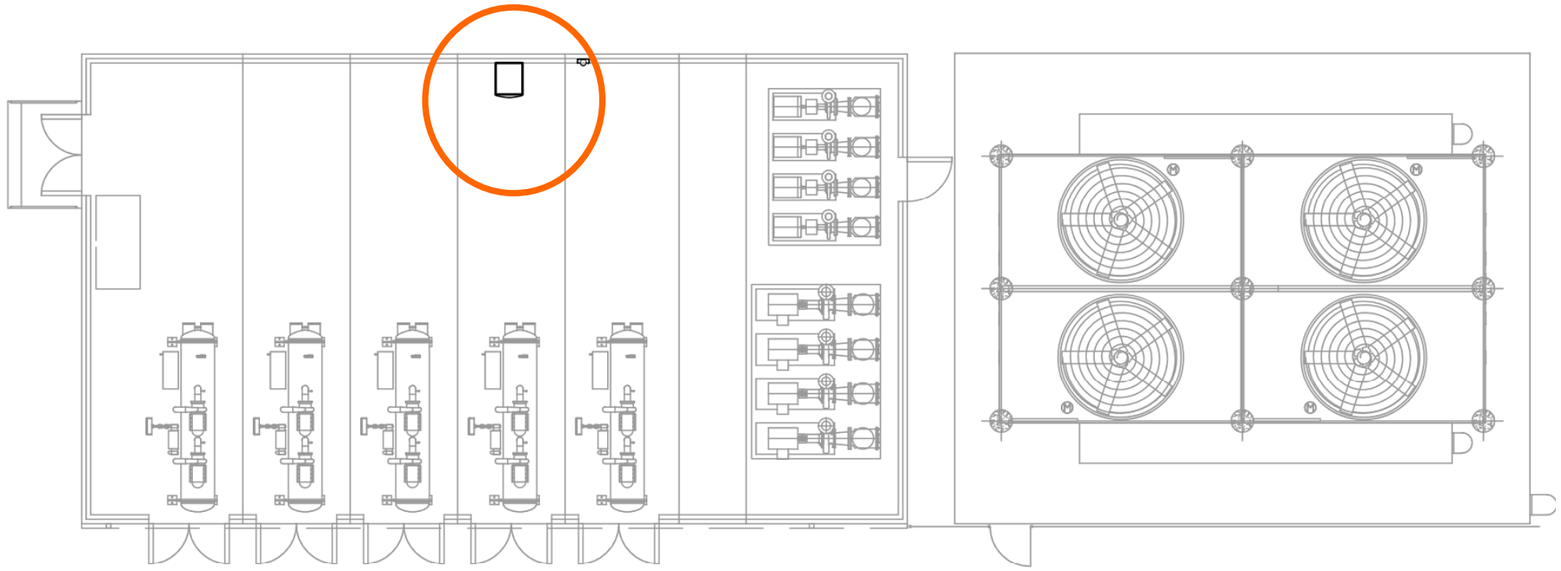
1/8"=1'-0"

0 2' 4' 8' 16'

KEY

- Modify existing room to meet EHRM TR requirements.
- Combine rooms to create EHRM TR
- Modify existing room: will not meet EHRM TR requirements.
- Replace existing rack with new cabinet or rack as identified in Program Analysis
- Building addition for new EHRM TR
- IT Equipment to be Replaced

BANCROFT ARCHITECTS + ENGINEERS



N

2 FLOOR PLAN

1/8"=1'-0"

0 2' 4' 8' 16'

KEY

- Modify existing room to meet EHRM TR requirements.
- Combine rooms to create EHRM TR
- Modify existing room: will not meet EHRM TR requirements.
- Replace existing rack with new cabinet or rack as identified in Program Analysis
- Building addition for new EHRM TR
- IT Equipment to be Replaced

BASIS OF DESIGN: STRUCTURAL, CIVIL & BLAST

3

Structural, Civil and Blast Basis of Design

A. Structural
- Building Codes and References
- Project Description
- Existing Structures
- Site Design Criteria

B. Civil

C. Blast: See Separate Document

BUILDING CODES AND DESIGN REFERENCES

The project will be designed and constructed in accordance with VA program guides, directives, design manuals, and specifications in conjunction with industry standard criteria.

Building Codes and Design References
U.S. Department of Veterans Affairs, Master Specifications PG-18-1
U.S. Department of Veterans Affairs, VHA Program Guide PG-18-3, September 2013
U.S. Department of Veterans Affairs, National CAD Standards and Details PG-18-4
U.S. Department of Veterans Affairs, Construction Standards H-18-3
U.S. Department of Veterans Affairs, VA Directive 7512, 3 August 2017
U.S. Department of Veterans Affairs, Design Manuals PG-18-10
U.S. Department of Veterans Affairs, Design Submission Requirements PG-18-15C
2018 IBC, International Building Code
ACI 318-19, Building Code Requirements for Reinforced Concrete
ACI 360R-10, Specifications Guide to Design of Slabs-On-Ground
ASCE 7-16 Minimum Design Loads for Building and Other Structures
AISC 360-16, American Institute of Steel Construction Inc
AISC 325-17, Steel Construction Manual, 15th Edition
AWS D1.1, Structural Welding Code – Steel
TMS 402/602-16, Building Code Requirements and Specifications for Masonry Structures

PROJECT DESCRIPTION

The purpose of the project is to upgrade the electric distribution, telecommunications distribution, and HVAC system to allow for the new Electronic Health Record Modernization (EHRM) project. This project will include the renovation of multiple spaces within the Fargo VAHCS Campus.

The structural scope includes the review of floor loading and existing primary structural frame to determine if adequate capacity exists for the new occupancies and equipment.

EXISTING STRUCTURES

BUILDING 1

Building 1 is 3-story building with a full basement and a full attic, constructed in 1928. The primary structure is constructed using a reinforced concrete pan joist system. Loads are transferred to regularly spaced concrete columns. The foundation is primarily constructed using spread footings and grade beams. The gabled roof is constructed using a reinforced concrete pan joist system. This roof slab is supported in the center by a concrete frame that transfers roof loads to the columns below.

The provided as-built drawing set for building 1 is incomplete and assumptions on design loads have been made. The VA should review their records to see if the missing information exists in another location.

Using UBC 1927 design live loading, Calibre has assumed the minimum original live loading for this building is 40 PSF. Following direction from the VA, the telecommunication design has removed the UPS from each individual server rack which significantly reduces the anticipated equipment live load. This reduced live load is less that the assumed original design live load and will not require structural reinforcement.

EXISTING STRUCTURES (CONT'D)

BUILDING 9

Building 9 is 4-stories with a full basement and an attic, constructed in 1945. The primary structure is constructed using reinforced concrete pan joist system. Loads are transferred to regularly spaced concrete columns. The foundation is primarily constructed using spread footings and grade beams. The gabled roof is constructed using 2x10 rafters at 14" on center. These rafters are supported in the center by a steel frame transfers roof loads to the columns below.

The existing building drawings for building 9 were damaged on the sheet (9-24) that showed building design loads. The VA should review their records to see if the missing information exists in another location.

Using UBC 1943 design live loading, Calibre has assumed the minimum original live loading for this building is 40 PSF. Following direction from the VA, the telecommunication design has removed the UPS from each individual server rack which significantly reduces the anticipated equipment live load. This reduced live load is less that the assumed original design live load and will not require structural reinforcement.

BUILDING 46

Building 46 is a 5-story addition, constructed in 1983, that connects buildings 1 and 9. Each floor is constructed using a composite steel deck with lightweight structural concrete topping, on steel beams. Loads are transferred to regularly spaced steel columns. The foundation is primarily constructed using reinforced concrete spread footings and grade beams. Portions of the roof are also constructed using composite metal deck on steel beams while other sections only have bare metal deck on top of steel beams.

Building 46 has been expanded multiple times since originally constructed.

As a part of this project, the design team is proposing a new TR located the expanded mechanical penthouse. Per the existing drawing set, this floor slab in this area has adequate capacity for the reduced equipment live load and will not require structural reinforcement.

BUILDING 51

Building 51 is an existing office building that will be getting a small 20'x12' addition to hold the new TR room. The new addition will be a standalone addition separated by an expansion joint from the existing building.

The new addition will be constructed of solid grouted CMU walls (for blast concerns) with steel roof beams and concrete on metal roof deck with over-framing trusses forming a gable roof. The concrete is also added for blast concerns. A 4" concrete slab on grade will be the floor. The foundations will be concrete stem wall and footings bearing on approved subgrade. There is not a project specific geotechnical report so a geotechnical engineer will need to be hired by the owner during the construction phase to confirm bearing capacities match or exceed the assumptions.

OTHER BUILDINGS

The proposed infrastructure upgrades at the other buildings on campus not referenced in this document are not anticipated to affect the existing primary structure. Structural reinforcement or enhancement is not anticipated.

SITE DESIGN CRITERIA

DEAD LOADS

- Roofing & Insulation: 5 PSF
- Deck (Building 51 addition): 60 PSF
- Ceiling/Fireproofing: 5 PSF
- Miscellaneous: 5 PSF
- Structural Beams/Columns: Actual weight

LIVE LOADS

- New TR Equipment: 250 lbs/rack
- New TR Live Load: 40 PSF

SEISMIC DESIGN DATA

a. Building Risk Category = IV

b. Importance Factor = 1.5

c. Soil Site Class = D (assumed)

d. S_S = 0.059g, S_1 = 0.019g, S_{DS} = 0.062g, S_{D1} = 0.03g

e. Seismic Design Category = A

f. Building Frame System: Varies

WIND DESIGN DATA

a. Basic Wind Speed = 125 MPH (ASCE 7)

b. Roughness Category = B

c. Exposure Category = B

d. Importance Factor = 1

SNOW DESIGN DATA

a. Ground Snow Load = 50 PSF

b. Importance Factor = 1.2

c. Exposure Factor Ce = 0.9

d. Thermal Factor Typical Ct = 1

e. Flat roof snow = 50 PSF

f. Building 51 drift and gable roof snow loads shown on structural drawings

CLIMATE DATA

a. Frost Depth = 5’-0”

b. Rainfall Intensity = 3.25” per hour

BUILDING CODES AND DESIGN REFERENCES

The project will be designed and constructed in accordance with VA program guides, directives, design manuals, and specifications in conjunction with industry standard criteria.

U.S. Department of Veterans Affairs, Master Specifications PG-18-1

U.S. Department of Veterans Affairs, VHA Program Guide PG-18-3, September 2013

U.S. Department of Veterans Affairs, National CAD Standards and Details PG-18-4

U.S. Department of Veterans Affairs, Construction Standards H-18-3

U.S. Department of Veterans Affairs, VA Directive 7512, 3 August 2017

U.S. Department of Veterans Affairs, Design Manuals PG-18-10

U.S. Department of Veterans Affairs, Design Submission Requirements PG-18-15C

2018 IBC, International Building Code

ACI 318-19, Building Code Requirements for Reinforced Concrete

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AISC 325-17, Steel Construction Manual, 15th Edition

AWS D1.1, Structural Welding Code – Steel

TMS 402/602-16, Building Code Requirements and Specifications for Masonry Structures

BANCROFT ARCHITECTS + ENGINEERS

PROJECT DESCRIPTION

The purpose of the project is to upgrade the electric distribution, telecommunications distribution and fiber optic systems for the improvements to the new Electronic Health Record Modernization (EHRM) project. This project will include the renovation of multiple spaces within the Fargo VAMC Campus, an expansion to building 51 and additional routing of new infrastructure to better connect the campus internally as well as new and additional connection to existing infrastructure outside of the campus.

The civil scope will include the evaluation of the existing telecommunication and fiber optic routing through the campus via existing utility tunnels, conduits and duct banks and the design of new duct banks to provide improved and secondary services. In addition to the external evaluation and design, a new expansion is being proposed to Building 51. The civil scope will include revised grading and utility connections as needed.

Additional information that will be included with the plans will be construction details and specifications as well as construction staging and activity details.

4

MECHANICAL & PLUMBING BASIS OF DESIGN

- Design Criteria
- Weather Design Conditions
- Calculations
- Mechanical—HVAC
- Demolition—HVAC & Plumbing
- New Work—HVAC & Plumbing

DESIGN CRITERIA

The design of the HVAC systems shall be in accordance with the following codes and standards:

- VA Directives, Space Planning Criteria, Design Manuals, Master Specifications, VA National CAD Standard Application Guide, and other Guidance on the Technical Information Library (TIL). (http://www.cfm.va.gov/til/)
- International Building Code 2021
- International Mechanical Code 2021
- NFPA 101 Life Safety Code 2021
- ASHRAE Standard 170. Ventilation of Health Care Facilities—2017
- ASHRAE Standard 90.1—2019
- ASHRAE Standard 62.1—2019
- Applicable National Fire Protection Association (NFPA) codes
- Sheet Metal and Air Conditioning Contractors Association (SMACNA)
- Underwriter's Laboratories (UL)
- VA HVAC Design Manual—March 1, 2020

WEATHER DESIGN CONDITIONS

Outdoor design weather conditions are based on engineering weather data from VA HVAC Design Manual for Fargo. Winter design condition is the 99.6% occurrence design value. Summer design condition is the 0.4% occurrence design value.

- Outdoor Design Conditions:

  Winter: -19.3° F (-30 F per station directive)

  Summer: 90.7° F (DB), 72° F (WB)

- Indoor design conditions: Computer/Data Rooms - Data Sheet VA HVAC Design Manual

  Heating: 64° F

  Cooling: 81° F (72° F Per station direction as sensed at Thermostat)

Ventilation rates shall be in accordance with the VA HVAC Design Manual 2020 or 2018 IMC.

CALCULATIONS

Building cooling loads are calculated using commercial load calculation computer program (HAP version 5.11) capable of modeling systems over complete 8760-hour annual period, using ASHRAE load calculation techniques. EHRM guidelines Infrastructure Standard for Telecommunication Spaces (ISTS) Version 3.1 apply. Revised guideline recommendations from the Data Center and Infrastructure Engineering (DCIE) for data rack heat gain loads has been implemented as follows:

1 rack=5kW, 2 racks =7.0 kW, 3-racks =8.5 kW, 4 racks =10 kW

MECHANICAL— HVAC

The Mechanical and Plumbing scope of work consists of providing dedicated room cooling to maintain required temperatures in each EHRM telecommunications room space to remove rejected heat from multiple IT data racks. Cooling loads for design are based on each rack maximum load of sensible heat rejection: 1 rack=17.1 MBH, 2 racks =23.8 MBH, 3-racks =29.0 MBH, 4 racks =34.1 MBH, 5 racks=42.6 MBH.

DEMOLITON- HVAC AND PLUMBING

- Existing supply and return grilles from existing supply cooling, return and exhausts systems extended from outside of room are to remain as back up for new dedicated AC systems for each space. Exhaust fans, VAV boxes, reheat coils, related piping and controls shall remain also for back up operation.
- Existing VAV boxes ductwork, grilles and thermostats located in rooms are to remain as back up for new dedicated AC systems for each space.
- Where existing ceilings are to be removed , flexible duct and existing diffusers, registers, and hard ductwork shall be suspended from structure above.
- Sheet Metal and Air Conditioning Contractors Association (SMACNA)
- Relocated existing IT closets shall remain as is with no demolition or new work in the HVAC or plumbing scope of work.

NEW WORK -MECHANICAL / PLUMBING

- New and renovated existing Telecommunication Rooms shall have new dedicated duct free split system cooling only DX air conditioning. This will have a wall mounted fan coil with DX evaporator coil and an outdoor wall or roof mounted air cooled condensing unit.
- Refrigerant piping and control wiring shall connect to indoor and outdoor DX split system components.
- Applied systems shall be variable refrigerant flow (VRF) to match current and future loads. Spaces requiring 3 data racks or more will have 2 systems in each space as per EHRM guidelines and DCIE maximum load directions.
- Split systems shall be manufactured by a air conditioning manufacture with cataloged optional low ambient features to operate and maintain cooling at –40F winter ambient operation. These shall be variable refrigerant flow (VRF) systems to match existing and maximum future loads from data equipment heat of rejection.
- Air conditioning equipment shall have factory installed and include temperature controls BAS interface devices to be viewed and monitored in the MCR for operational status and to send front end signals for all unit component failures and alarm conditions. Indoor units shall have full function programmable thermostats with unit status screen. A temperature and humidity sensor shall be installed at each room location by TC contractor for BAS room temperature and humidity monitoring and adjustable high temperature alarm. Separate rack temperature and humidity to also be viewed and monitored by the BAS in the MCR via separate sensors with locations as directed by data contractor.
- Units shall have wall mounted condensate pumps below indoor sections and an insulated copper condensate drain line to nearest sanitary drain line.
- Drain lines from the evaporator coils and condensate pumps with condensate drain line from unit extended to the indirect waste connections. Mop sinks, floor drains, hubs at sanitary lines. Where required through the wall condensate drain lines shall be 30” above grade with splash blocks below with heat tracing 4’ before termination.
- Per discussions with VA personnel, humidification (small electrode or mist humidifiers) are not to be implemented for IT closet Telecommunication Room applications and will not be in this scope of new work.

5

ELECTRICAL BASIS OF DESIGN

- Design Criteria
- Design Narrative

DESIGN CRITERIA

The design of the Electrical Systems shall be in accordance with the latest published edition of the following codes and standards:

- International Building Code 2021
- Veterans Affairs Electrical Design Manual 2015 (PG-18-10)
- Veterans Affairs Master Specifications (PG-18-1)
- Veterans Affairs Design Guides (PG-18-12)
- National Electrical Code (NEC) – NFPA-70
- National Fire Alarm Code – NFPA-72
- Standard for Healthcare Facilities – NFPA-99
- Standard for the Installation of Stationary Energy Storage Systems—NFPA 855
- Standard for the Installation of Lightning Protection Systems- NFPA 780
- Underwriter's Laboratories (UL)
- National Electric Manufactures Association (NEMA)
- Institute of Electrical and Electronics Engineers (IEEE)
- American National Standards Institute (ANSI)
- ASTM International (Formerly American Society for Testing and Materials)
- Occupational Safety and Health Hazards (OSHA)
- American Institute of Steel Construction (AISC)
- Illuminating Engineering Society of North America (IESNA)
- ASHRAE Standard 90.1
- OEHRM Requirements Specification, June 5, 2019, Ver. 1
- OEHRM Site Infrastructure and End User Device (EUD) Requirements, April 15, 2021, Ver. 2.0
- OIT Infrastructure Standards for Communications Spaces, Ver. 3.1, July 1, 2021
- Generic Small Data Center for Main Computer Rooms (MCR"s) and Other Campus Support Centers, March 25, 2020

DESIGN NARRATIVE

Communications equipment will be relocated from existing IT rooms to the new TR rooms. Bioengineering type services; Nurse Call, Security, etc. will also be relocated to the new TR room. The new TR rooms will be provisioned for OIT and CERNER equipment. UPS and Emergency receptacles are planned to be removed in the future after all equipment is removed from the abandoned IT rooms.

New TR rooms will be provisioned with dedicated UPS power from the large monolithic "A" UPS System that serves the Campus Computer Room, and buildings 1, 9, 40 and 46. Data Center racks will be designed for 5KVA and Telecommunication Room racks will be designed for 3.5KVA, but expected not to exceed 2.5KVA of ultimate load. Because UPS power will be provided from the monolithic UPS System, individual UPS's are not required in buildings 1, 9, 40 and 46. To support the EHRM design requirements, a new monolithic UPS system and new UPS distribution system will be designed. The new "A" UPS System will replace the existing UPS System located in the basement Room BC 50A. The initial "A"

DESIGN NARRATIVE (CONT'D)

New UPS Power Distribution to TR Rooms in Bldgs 1, 9, 40, and 46.

The A UPS System design is a 208/120V, 400KVA UPS System. It will include the following design:

- The initial installation will be configured to feed both the old and new UPS equipment to allow for cutting over equipment from the old to the new UPS with minimum downtimes.
- A 400KVA UPS will be installed for the ultimate buildout. Two 200KVA UPS modules will be initially installed, to power existing and new equipment. One UPS module will be configured to 90KVA to prevent tripping of the existing 400A incoming power. The 2nd 200KVA UPS module will be installed and connected, but kept de-energized. A two year warrantee will be purchased for the 2nd UPS, so that it is in warrantee when energized after standing idle.
- To prepare for cutting over UPS power from old UPS to new UPS, all new and old UPS loads will be terminated to the output of the new UPS. This will involve short outages of existing IT equipment as it is moved to the new UPS.
- The configuration of new and old equipment on UPS will remain, until all old equipment is moved, at which time the old UPS panels and circuits can be removed.
- All output breakers on the new UPS will be metered and monitored to keep the load from exceeding the existing 400A feed from Em gen 9.
- DESCRIPTION OF TEMPORARY CONFIGURATION—Normal and Emergency Power to the UPS will remain from existing Switchgear 9 and Em Gen 9., as this will temporarily support a 90KVA load on the UPS, including battery charging current, until a larger Em Gen is installed. Note that the 2021 UPS load is only 75KVA.
- The new UPS is composed of two 200KVA inverter modules, initially configured for about 23% of the ultimate load. The modules can be reconfigured when UPS load increases.
- A cabinet with VRL batteries sized to provide 14 min UPS uptime, will be initially installed. The stored battery energy will only be 50KWH, so conformance to NFPA 855 is not required.
- When the UPS is configured for more load, stored battery capacity will exceed 70KWH, and NFPA 855 requirements will need to be applied to the battery installation.
- Battery Monitoring System to manage batteries and determine maintenance intervals,
- Each UPS module will contain one Static Transfer Switche, and the UPS Bypass Switch will be housed in its own cabinet,
- A UPS Distribution Panel "EBUPS DSW" will have metering on all output breakers that feed UPS loads, to monitor TR UPS loads, and prevent overload and tripping.
- Basement UPS distribution to the TR rooms, will be directly from the new EBUPS DSW UPS breakers.
- Remaining UPS distribution will be from UPS Distribution panels in building 40, and floors 1, 2, 3, 4 and 5 in buildings 1, 9 and 46.

DESIGN NARRATIVE (CONT'D)

- 1st Floor UPS distribution will be from two 150A UPS panels,
- 2nd Floor UPS distribution will mirror the 1st floor,
- 3rd Floor UPS distribution will be from one 150A panel,
- 4th Floor UPS distribution will be from one 150A panel,
- Penthouse UPS distribution will be from a 150A panel located Penthouse A.
- Each rack will be supplied from a 30A, 3 Phase branch circuit for UPS power.

Remote buildings will have a individual rack mounted UPS's installed in each TR Room rack. Each rack will be provisioned with one 120/208V 3-Phase PDU. When available, emergency power will be provided, otherwise normal power will power all TR room circuits.

- One light fixture in each TR room will be on Emergency Power if available. If Emergency Power is not available, battery backup will be provided.
- One receptacle in each TR room will also be on Emergency Power if available. .

UPS Power Feeders and UPS Panels

- The UPS distribution will be a separate system of dedicated feeders and panels,
- Each UPS panel will be upsized with a 200% Neutral Bus to conduct the 3rd Harmonic currents created by the IT equipment switching power supplies.

Power Distribution to TR Rooms in Outlying Buildings

- Smaller buildings and rooms with minimal telecommunications requirements will be provided with a enclosed wall mounted 24RU wall mounted cabinets. With internal UPS.

One rack in a building with a "harsh" environment, without TR rooms, will be housed in AFCO Defender Basis of Design, enclosed rack. One 30A circuit will be provide power to the internal UPS. Emergency power will feed the UPS if available. An additional 30A 3-phase circuit will power the Heat Removal unit in the AFCO Defender cabinet.

- One light fixture on Emergency Power or battery backup. Remaining lights on Normal Power.
- One receptacle on Emergency Power if available, remaining receptacles on Normal Power.

TR closets will be provided for locations with multiple racks. Each closet will be provisioned as follows:

- Rack mounted UPS, powered from Emergency Power if available,
- One light fixture on Emergency Power or battery backup. Remaining lights on Normal Power.
- One receptacle on Emergency Power if available, remaining receptacles on Normal Power.

6

FIRE PROTECTION BASIS OF DESIGN

- Design Criteria
- General Description of Work
- Life Safety
- CD Checklist

6 FIRE PROTECTION BASIS OF DESIGN

DESIGN CRITERIA

The design of the Fire Protection Systems shall be in accordance with the following codes and standards:

Building Codes

- International Building Code 2021
- International Fire Protection Code 2021

Veterans Administration

- Veterans Administration Fire Protection Design Manual (8th Edition) June 1, 2021
- Veterans Physical Security and Resiliency Design Manual
- Veterans Administration Master Specifications
- Veterans Administration Infrastructure Standard for Telecommunications Spaces
- Veterans Administration Standard Details

National Fire Protection Association (NFPA) (Current Published Editions)

- Pamphlet #13 – 2019: Standard for the Installation of Sprinkler Systems
- Pamphlet #25 – 2020: Standard for the Inspection, Testing and Maintenance of Water-Based Fire Protection Systems
- Pamphlet #75 – 2020: Standard for the Fire Protection of Information Technology Equipment
- Pamphlet #99 – 2021: Health Care Facilities Code
- Pamphlet #101 – 2021: Life Safety Code

Other

- Underwriter's Laboratories (UL)
- Factory Mutual (FM)

GENERAL DESCRIPTION OF WORK

Scope of Work Summary

- Modifications to the existing building(s) sprinkler piping systems in conjunction with architectural and electrical/mechanical modifications to existing room spaces for the purpose of building out new Telecommunication Rooms (TRs).

Design Criteria & Code Basis

- The following evaluation and recommendations for fire protection for this project are based on requirements of the Eighth Edition of the VA Fire Protection Design Manual (VAFPDM), NFPA 101 - Life Safety Code (2021 Edition) and the current editions in effect for the remaining NFPA codes and standards applicable to the scope of this work.
- The level of rehabilitation work under this project will be modifications based on the reconfiguration of the existing spaces identified for build-out as new or modified TRs. The existing means of egress for spaces outside of the areas of work will not be altered and will remain usable during the course of this project.
- Telecommunication Rooms (TRs) are required to be protected with wet pipe automatic sprinkler protection per Section 3.7.C of the VAFPDM. Quick response sprinklers are permitted for TRs.
- All sprinkler pipes in TR's will be painted Red.
- Section 3.7.E of the VAFPDM does not require smoke detection coverage for TRs. The designated new TR spaces are not typically arranged with smoke detection coverage. Per request of the Fargo VAHCS, smoke detection is being specified for each TR space. TR Room smoke detectors are being specified as supervisory alarm devices per the direction of the Fargo VA. New dedicated space cooling units will be provided in each TR. These units will serve the TR only and do not require duct smoke detection.

(Cont'd) Design Criteria & Code Basis

- The fire alarm systems will be required to be placed on test status in accordance with the facility impairment procedures during work on the automatic sprinkler systems.

Sprinkler Systems

- The existing building automatic sprinkler installations are observed meet the requirements of NFPA 13 and VA guidelines. Existing quick response, semi-recessed pendent or upright sprinklers are typically installed throughout the areas of work.
- Buildings 10, 11 and 13 are to have data racks installed in existing sprinklered room spaces. No modifications for sprinklers are required for these spaces. Building 56 is a non-sprinklered building. Additional smoke detection is not specified for these spaces.
- Existing sprinkler locations in new TR spaces will be relocated, where required, for compliant coverage for the new configuration of rooms. Relocation of sprinklers will require reworking existing sprinkler piping. Existing sprinkler branch lines will require modifications outside of the rooms of work only at locations noted on the drawings. Where applicable new sprinklers will be added to existing modified branch lines to provide compliant coverage per NFPA 13. All new or relocated (new) sprinklers will be upright quick response type installed with UL listed sprinkler guards. Sprinkler piping will be relocated where practical to not be located directly above the locations designated for new TR equipment racks.
- Sprinkler modifications indicated include maintaining compliant sprinkler coverage outside of the TR rooms in adjacent spaces where existing wall boundaries are altered.
- Several of the new TR spaces to be modified have suspended ceilings and are arranged with pendent sprinklers. All finished TRs will be open to the deck with no suspended ceilings.
- Sprinkler work will be specified to modify TR space sprinklers to the upright position prior to the removal of suspended ceiling tiles to maintain compliant sprinkler coverage of the room during the period of construction. This approach may require a second stage of piping modifications to occur for completion of a final sprinkler coverage coordination with the mechanical/electrical changes to occur.
- The scope of this work specifies sprinkler piping modifications required for compliant protection for existing TRs which will be abandoned. Changes in these rooms consist of alterations or removal of existing suspended ceilings.
- As noted above, modifications to the existing sprinkler piping systems consists of modifying a limited amount of sprinkler piping in each area of work. The hydrostatic testing requirements for the sprinkler system modifications will be specified to be conducted at the system working pressure in lieu of the 200 psi hydrostatic test pressure required for new piping systems as permitted by NFPA 13: 29.7.
- The piping modifications required for this scope of work will not alter the hydraulic characteristic of the existing sprinkler system coverage for the space. Hydraulic calculations will not be specified to be submitted for this work.

Portable Fire Extinguishers

- The VAFPDM Section 3.7.E requires each TR to be provided with a CO2 or clean agent type fire extinguisher. The extinguishers are required to be located outside of the TR in semi-recessed cabinets to be accessible for inspection and maintenance, within a 75 feet travel distance of the room.

LIFE SAFETY

Egress

- The areas of work will occur in rooms which open to health care corridors or in business office areas. The access to existing required exits will not be affected by this work.

Compartmentation

- The project scope of work requires all TRs to be enclosed within 1-hour fire barriers per direction of the Fargo VA.
- Typical health care corridor walls which adjoin the TR spaces are constructed of materials to meet the performance for a 1-hour fire barrier rating. Existing walls in business areas are typically not identified as fire barriers, however existing construction of materials observed also meets the performance for a 1-hour fire barrier rating.
- This project requires existing walls that enclose all TRs which do not currently extend to the deck above to be infilled with a 1-hour fire barrier extending to the floor assembly or roof assembly above the TR.
- New TRs will be provided with new access door openings. TR door openings (new and existing) require a minimum 45-minute rated self-closing fire door and frame.

Firestopping

- Firestopping for new and existing horizontal and vertical penetrations in all TR floors, ceilings and walls will be implemented. Additionally, routing of new cabling outside of TRs through fire rated floors requires firestopping.
- All penetrations into the TR's are to be an assembly that will allow 100% fill and be easily adjusted for new cabling and removal of old. Size and number of assemblies should be designed at 60% fill, when project is complete. All four walls should have at least (1) assembly. GC should fill all existing unprotected openings.

LIFE SAFETY (CONT'D)

The following is a summary of the anticipated automatic sprinkler modifications required for each TR:

Automatic Sprinkler Modifications

Building/Floor	TR Room #	Sprinklers	Sprinkler Zone	Existing Ceiling	Modify Sprinklers	Construction Comments
Medical Bldg -Basement	BB-92	(2) upright	B9 Bsmt	Open to deck	No	
	BA-30	(1) upright	B9 Bsmt	Open to deck		
	BC-02	(1) upright (1) pendent	B46 Bsmt NW	BC-02 Open to deck; BC-24 suspended ceiling	Yes	Combine BC-02 & BC-24; structure is fireproofed
	BD-02	(2) upright	B46 Bsmt CTR	Plaster ceiling at underside of deck	Yes	Remove plaster ceiling
	BD-84	(1) upright	B1 Bsmt SE	Open to deck	No	Existing penetration firestopping needed
Medical Bldg - First Floor	1D-64A	(1) upright	B9 1st SW	Open to deck	Yes	Room will expand
	1D-158	(1) upright	B1 1st SE	Open to deck	No	
	1C-99	(2) upright	B1 1st CTR	Open to deck	No	Existing penetration firestopping needed
	1A-54/55	(1)upright 1A-54 (1) pendent 1A-55	B9 1st North	1A-54 Open to deck; 1A-55 suspended ceiling	Yes	Combine 1A-54 & 1A-55
	1B-121B	(1) upright	B1 1st East	Open to deck	Yes	Expand room to corridor; structure is fireproofed
Medical Bldg - Second Floor	2C-33	(1) upright (1) pendent	B46 2nd	2C-33 Open to deck; 2C-38 suspended ceiling	Yes	Combine 2C-33 & 2C-38; structure is fireproofed; firestopping needed at floor sleeves
	2C-90	(2) pendent	B1 2nd CTR	Suspended ceiling	Yes	
	2D-18	(1) pendent	B1 2nd CTR	Suspended ceiling	Yes	Combine 2D 18&19
	2D-19	(2) pendent	B1 2nd CTR	Suspended ceiling	Yes	
	2A-22A	(2) pendent	B9 2nd South	Suspended ceiling	Yes	Combine 22A&24; north wall of 22A is partial height
	2A-24	(2) upright	B46 2nd Floor	Open to deck	Yes	

LIFE SAFETY (CONT'D)

Automatic Sprinkler Modifications						
Building/Floor	**TR Room #**	**Sprinklers**	**Sprinkler Zone**	**Existing Ceiling**	**Modify Sprinklers**	**Construction Comments**
Medical Bldg - Third Floor	3B-23	(1) upright	B9 3rd North	Open to deck	Yes	Combine 23&25
	3B-25	(1) pendent	B9 3rd North	Suspended ceiling	Yes	
	3D-10	(2) pendent	B1 3rd CTR	Suspended ceiling	Yes	Abandoned branch lines above ceiling. Existing penetration fire-stopping needed. Install new room sprinklers for 3d-10 and adjacent 3D-10A
Medical Bldg - Fourth Floor	4B-23	(1) pendent	B9 4th East	Suspended ceiling	Yes	North wall is built with a single layer of sheetrock above ceiling. Existing penetration firestopping needed
	4E-15A	(1) pendent	B1 4th West	Suspended ceiling	Yes	Two walls are partial height
Medical Bldg - Penthouse	New Room TR 501	Attic dry pipe sprinkler - extend to new TR	B9- 5th Floor Attic	New room build-out with deck below existing roof level	Yes	Extend existing dry pipe sprinkler protection to new TR. New piping must be pitched to drain to connection take-off
	New Room TR 502	Wet pipe sprinkler - extend to new TR	B9- 5th Floor Attic	New room build-out with deck below existing roof level	Yes	Extend existing dry pipe sprinkler protection to new TR. New piping must be pitched to drain to connection take-off
	New Room TR 503	Wet pipe sprinkler - extend to new TR	B46- 4th Floor Eye Clinic	New room build-out open to existing roof level	Yes	Existing sprinklers do not require relocation. Replace existing sprinklers (3)
Bldg 3-Upper Floor	New interior TR Room	Wet pipe sprinkler ceiling coverage	B3	Suspended ceiling	Yes	Modify existing wet pipe sprinkler protection to cover new TR and adjacent open office
Building 12 Warehouse	Existing Room	(1) pendent	B12	Suspended ceiling	Yes	Modify existing wet pipe sprinkler protection to cover new TR and adjacent exit vestibule
Bldg 51 Admin	New exterior TR location	Wet pipe sprinkler - extend to new TR	B51		Yes	

LIFE SAFETY (CONT'D)

Automatic Sprinkler Modifications						
Building/Floor	**TR Room #**	**Sprinklers**	**Sprinkler Zone**	**Existing Ceiling**	**Modify Sprinklers**	**Construction Comments**
Bldg 52-First Floor	111	1 upright	B52	Open to deck	Yes	Expand TR space into open office area. Modify adjacent sprinkler coverage.
Bldg 52-Second Floor	211	1 upright	B52	Open to deck	Yes	Expand TR space into open office area. Modify adjacent sprinkler coverage.
Bldg 40 VBA-First Floor	102B	(1) upright	VBA 1st Floor	Open to deck	Yes	Room to expand. Modify adjacent sprinkler coverage.
Bldg 40 VBA-Second Floor	202A	(1) pendent	VBA 2nd Floor	Suspended ceiling	Yes	
Bldg 11 Maint Bldg	Cabinet installation only	Wet pipe sprinkler ceiling coverage			No	
Bldg 10-Boiler Plant	Cabinet installation only	To be sprinklered - Wet pipe sprinkler ceiling coverage			No	
Bldg 13- Laundry Bldg	Cabinet installation only	Wet pipe sprinkler			No	
Bldg 56-Chiller Plant	Cabinet installation only	Non-sprinklered			Not Applicable	

LIFE SAFETY (CONT'D)

Automatic Sprinkler Modifications

ROOMS TO BE MOVED OUT OF:

Building/Floor	Existing TR Room #	Sprinklers	Sprinkler Zone	Existing Ceiling	Modify Sprinklers	Construction Comments
Medical Bldg - First Floor	1B-65	Yes	B9 1st North		No	
	1B-98	Yes	B46 1st Floor		No	
	1B-24	(1) pendent	B9 1st North	No	Yes	
Medical Bldg - Second Floor	2D-110	(2) upright	B1 2nd Zone 1	No	No	
	2C-37	(1) pendent	B46 2nd Floor	Partially installed	Yes	
Medical Bldg - Third Floor	3C-96	(1) sidewall	B1 3rd CTR	Partially installed	Yes	
	3C-48	(1) upright	B46 3rd Floor	No	No	
Medical Bldg - Fourth Floor	4A-16	(1) pendent	B9 4th CTR	Yes - to be replaced?	Yes	
	4D-02	(1) upright	B1 4th Eye	No	No	

CD CHECKLIST: 95%

FIRE PROTECTION	SD	DD	CD	Applicable	Check	Date	Comments
Fire protection narrative:[1]							
Fire and smoke separation	X			Yes	JAS	02/18/22	Classification of area of TR work areas separation requirements is a 1-hour fire barrier. This approach is described in the narrative.
Fire sprinkler/standpipe system	X			Yes	JAS	02/18/22	Modifications to existing sprinkler zone piping is described in narrative. Scope consists of relocating existing sprinklers.
Size of fire pumps	X			NA	JAS	02/18/22	Existing facility fire pump or building fire service. TR modifications do not require a hydraulic analysis.
Water supply available/max. demand	X			NA	JAS	02/18/22	TR modifications do not require a hydraulic analysis.
Water flow testing results				NA		02/18/22	TR modifications do not require a hydraulic analysis.
Fire alarm systems[2]	X			NA	JAS	02/18/22	System identified in Specification 28 31 00
Existing to be modernized	X			NA	JAS	02/18/22	TR upgrades require no modification to the existing fire alarm system control equipment. TR spaces are specified to be provided with new smoke detection as an Add Alternate.
Base loop system for interface of new construction	X			NA	JAS	02/18/22	
Size of air handling unit	X			Yes	JAS	02/18/22	New cooling systems to be installed will sertve a single room area. HVAC changes will not require fire alarm interfaces.
Exit paths from each zone	X			NA	JAS	02/18/22	Existing small room modifications do not affect life safety circulation.
Distances to stairs	X			NA	JAS	02/18/22	Existing small room modifications do not affect existing travel distances.
Occupancy of each area	X			NA	JAS	02/18/22	Existing small room modifications within various occupancy types. Work areas are not hazardous rooms.
Exit calculations for each floor	X			NA	JAS	02/18/22	Existing small room modifications do not affect occupancy calculations.
Smoke control features	X			NA	JAS	02/18/22	

CD CHECKLIST: 95% (Cont'd)

FIRE PROTECTION	SD	DD	CD	Applicable	Check	Date	Comments
Smoke control features	X			NA	JAS	02/18/22	
Floor Plans/Drawings:[3 & 4]						02/18/22	
Sprinkler zones	X			Yes	JAS	02/18/22	Described in narrative and by notes on drawings.
Fire alarm zones	X			Yes	JAS	02/18/22	Described in narrative. Existing fire alarm zones will not be modified.
Smoke zones	X			Yes	JAS	02/18/22	Existing small room modifications occur within existing smoke zones. Work does not affect existing smoke zone boundaries.
Building water supply	X			NA	JAS	02/18/22	Modifications do not require a water supply evaluation.
Interior sprinkler supply lines	X			Yes	JAS	02/18/22	Work involves changes to existing sprinkler arm-over lines only.
Standpipes	X			NA	JAS	02/18/22	Existing standpipes will not be altered.
Fire extinguisher cabinets	X	X	X	Yes	JAS	02/18/22	Layout to be determined by Architect.
Fireproofing of structural members	X			NA	JAS	02/18/22	Corrections for existing fireproofing to be determined by Architect.
Sprinkler/standpipe riser supply piping		X	X	NA		02/18/22	Existing standpipes will not be altered.
Termination of sprinkler main and inspector test drains		X	X	NA		02/18/22	Sprinkler modifications do not affect the existing drain piping arrangements.
Sprinkler alarm valves		X	X	NA		02/18/22	Sprinkler modifications do not affect the existing alarm monitoring arrangements.
Waterflow and tamper switches		X	X	NA		02/18/22	Sprinkler modifications do not affect the existing alarm monitoring arrangements.
Sprinkler system fire department connections		X	X	NA		02/18/22	
Sprinkler design hazards per NFPA 13		X	X	Yes	JAS	02/18/22	Light Hazard protection indicated
Exit signs and emergency lighting		X	X	NA		02/18/22	Areas of work do not required exit signs. Emergency lighting to be provided.
Occupied areas not protected by automatic sprinklers		X	X	NA		02/18/22	
Calculations	X	X	X	NA	JAS	02/18/22	The project scope of sprinkler modifications does not alter the existing hydraulic characteristic of the existing piping systems. Hydraulic calculations are not required for sprinkler relocations.
Estimated capacities for proposed air handling units in cubic meters (cubic feet) per minute		X	X		JAS	02/18/22	Mechanical modifications do not require changes or adding fire alarm detection or control

CD CHECKLIST: 95% (Cont'd)

FIRE PROTECTION	SD	DD	CD	Applicable	Check	Date	Comments
Location of:						02/18/22	
Fire alarm system		X	X	NA		02/18/22	Existing - no change
Annunciator panels		X	X	NA		02/18/22	Existing - no change
Pull stations		X	X	NA		02/18/22	Existing - no change
Flow switches		X	X	NA		02/18/22	Existing - no change
Audio-visual devices		X	X	NA		02/18/22	Existing - no change
Smoke detectors		X	X			02/18/22	Add Alternate indicated
Duct smoke detectors		X	X	NA		02/18/22	Existing - no change
Smoke dampers		X	X	NA		02/18/22	Existing - no change
Fire dampers		X	X	NA		02/18/22	Existing - no change
Fire alarm risers[5]		X	X	NA		02/18/22	Existing - no change
Exit signs		X	X	NA		02/18/22	Existing - no change
Emergency lighting		X	X	NA		02/18/22	Existing - no change
Fire sprinklers		X	X	NA		02/18/22	Existing - no change
Standpipes		X	X	NA		02/18/22	Existing - no change
Fire hydrants		X	X	NA		02/18/22	Existing - no change
Fire pumps		X	X	NA		02/18/22	Existing - no change
Post indicator valves		X	X	NA		02/18/22	Existing - no change
Sectional valves		X	X	NA		02/18/22	Existing - no change
Fire extinguisher cabinets		X	X	NA		02/18/22	Existing - no change
Electromagnetic door hold open devices		X	X	NA		02/18/22	Existing - no change

CD CHECKLIST: 95% (Cont'd)

FIRE PROTECTION	SD	DD	CD	Applicable	Check	Date	Comments
Wall sections indicating fire resistive ratings		X	X	NA		02/18/22	Existing - no change
Staff sleeping rooms		X	X	NA		02/18/22	
Excavation plan signage		X	X	NA		02/18/22	
Door and window schedule with fire rating or fire rated glazing			X	YES		02/18/22	See Architectural Schedules
Zoning of each fire alarm initiating device			X	Yes	JAS	02/18/22	Zoning for new smoke detectors is indicated
Details:						02/18/22	
Fire pump system (capacity and pressure)			X	NA		02/18/22	
Elevation and isometric view of fire pump			X	NA		02/18/22	
Stairwell sign			X	NA		02/18/22	
Annunciator panel			X	NA		02/18/22	
Interconnection of fire alarm system with						02/18/22	
Smoke dampers			X	NA		02/18/22	
Air handlers			X	NA		02/18/22	
Elevator controls			X	NA		02/18/22	
Kitchen fire extinguishing and fire pump system			X	NA		02/18/22	
HVAC system with smoke duct detectors			X	NA		02/18/22	
Single line riser diagram for fire alarm system			X	NA		02/18/22	
Height/configuration of storage racks and shelving			X	NA		02/18/22	
Specifications			X	Yes	JAS	02/18/22	Sections 21 08 00 21 13 13 & 28 31 00 Provided

CD CHECKLIST: 95% (Cont'd)

NOTES:

1 Indicate NFPA 220 and UBC fire resistive rating of the building, NFPA 101 occupancy type, and fire protection code analysis to access compliance with NFPA 101

2 Determine type, features, age, reliability, compliance with present day codes, capacity, zoning, supervision, control panel and power supplies, initiating devices and circuits, and auxiliary functions for existing fire alarm system. Indicate manufacturer, model number, voltage, and wiring style of existing alarm systems and devices. Provide recommendations for the proposed fire alarm work.

3 Provide information to meet JCAHO requirements; e.g. location of all fire rated barriers, smoke barriers, exit signs, fire extinguishers, manual pull stations, smoke detectors, and sprinkler flow switches. Show all interim life safety measures such as temporary systems Fire Alarm, Sprinkler, and Smoke.

4 At DD Submission, add room names, room numbers, door locations and swings, smoke and fire rated partitions, sprinkler/standpipe risers to floor plans. Identify psychiatric areas on drawings so areas for institutional type heads are identified. Add location of all valves (post indicator, sectional) and backflow preventer if provided.

5 Show new equipment and/or the necessary changes involved if modification to the existing system is required. Include any recommendations where certain requirements of VA criteria might be waived, in order to allow the existing equipment to be reused.

7

Telecommunications and Electronic Security Basis of Design

- References and Design Criteria
- Telecommunications Spaces
- Modifications to Existing Telecommunication Spaces
- Horizontal Distribution / 100-Ohm Balance Twisted-Pair Cable
- Wireless Access Points
- Backbone Distribution / Optical Fiber and Copper UTP
- Grounding and Bonding
- Physical Security
- Telecommunications Site Routing Plan

REFERENCES AND DESIGN CRITERIA

Design will be in accordance with current (as of Notice of Award date), VA Design Guides, VA Manuals, FGI 2018, NFPA, OSHA, and all other applicable standards including, but not limited to:

- U.S Department of Veterans Affairs Office of Construction & Facilities Management Technical Information Library (TIL).
- U.S Department of Veterans Affairs Office of Electronic Health Record Modernization OEHRM Site Infrastructure and End User Devices (EUD) Requirements Version 2.0 April 15, 2021
- U.S Department of Veterans Affairs Office of Information & Technology (OIT) Infrastructure Standards for Telecommunications Spaces Version 3.1 July 1, 2021
- U.S. Department of Veterans Affairs Office of Construction & Facilities Management Telecommunications and Special Telecommunications Systems Design Manual, February 2016
- U.S. Department of Veterans Affairs Office of Construction & Facilities Management Standards Alert 003C2B-SA-017 R01b, August 1, 2021
- The U.S. Department of Veterans Affairs, Physical Security and Resiliency Design Manual, October 1, 2020 – Revised September 1, 2021
- SOCAMES 6 Design Alert
- ANSI/NECA/BICSI 568, Standard for Installing Commercial Building Telecommunications Cabling
- ANSI/NECA/BICSI 568, Standard for Installing Commercial Building Telecommunications Cabling
- TIA TBS-162-A, Telecommunication Cabling Guidelines for Wireless Access Points
- ANSI/NECA/BICSI 607-C, Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises November 2015
- 802.3at-2009 - IEEE Standard for Information technology-- Local and metropolitan area networks-Amendment 3: Data Terminal Equipment (DTE) Power via the Media Dependent Interface (MDI) Enhancements
- 802.11ac-2013 - IEEE Standard for Information technology--Telecommunications and information exchange between systems— Amendment 4: Enhancements for Very High Throughput for Operation in Bands below 6 GHz.
- ISO/IEC 61935-1, Specification for the testing of balanced and coaxial information technology cabling - Part1: Installed balanced cabling as specified in ISO/IEC 11801 and related standards.
- International Organization for Standardization (ISO):
- ISO/IEC 14763-2, Information technology – Implementation and operation of customer premises cabling – Part 2: Planning and installation
- ISO/IEC 30129, Information Technology – Telecommunications bonding networks for buildings and other structures
- National Fire Protection Association (NFPA) - NFPA 70®, National Electrical Code® (NEC®)
- Telecommunication Industry Association (TIA):
- ANSI/TIA-455-78B; Optical Fibers – Part 1-40: Measurement Methods and Test Procedures – Attenuation
- ANSI/TIA-526-7-A; Measurement of Optical Power Loss of Installed Single-Mode Fiber
- Cable Plant, Adoption of IEC 61280-4-2 edition 2: Fiber-Optic Communications Subsystem Test Procedures – Part 4-2: Installed Cable Plant – Single-Mode Attenuation and Optical Return Loss Measurement

REFERENCES AND DESIGN CRITERIA (CONT'D)

- ANSI/TIA-526-14-C, Optical Power Loss Measurement of Installed Multimode Fiber Cable Plant; Modification of IEC 61280-4-1 edition 2, Fiber-Optic Communications Subsystem Test Procedures- Part 4-1: Installed Cable Plant-Multimode Attenuation Measurement.
- ANSI/TIA-568.0-D, Generic Telecommunications Cabling for Customer Premises
- ANSI/TIA-568.2-D, Balanced Twisted-Pair Telecommunications Cabling and Components Standards
- ANSI/TIA-569-D, Telecommunications Pathways and Spaces
- ANSI/TIA-606-C, Administration Standard for Telecommunications Infrastructure
- ANSI/TIA-607-D, Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises
- ANSI/TIA-1152-A, Requirements for Field Test Instruments and Measurements for Balanced Twisted-Pair Cabling

TELECOMMUNICATION SPACES

Main Computer Room / Data Center

- The existing Main Computer Room (BC-50) shall remain in-use through this project. A new telecommunication channel rack shall be implemented to augment the existing MDA row (core distribution) to support new backbone distribution throughout the facility.

Entrance Room

- The existing entrance room aka Telephone Equipment Room (BC-60) shall remain in-use through this project. Connectivity between the service provider point of presence and the facility distribution area shall be analyzed and augmented as required to support required bandwidth standards.
- Room 102B at Building 40 is designed to house a second redundant Entrance Facility. Service for this second entrance room is to be established at a later time.

Telecom Rooms

- All Telecom Rooms shall be brought up to OEHRM standards including new telecommunication racks.
- Plywood backboard will be installed on a minimum of three walls. The backboard shall be 4 feet x 8 feet AC Grade ¾" trade size fire-rated plywood, mounted vertically, with the bottom of the plywood mounted 6 inches above the finished floor with the best side toward the room. Plywood shall be void-free with the A-side facing out. All plywood shall be finished with two coats of high-gloss fire-retardant paint on the face and edges, painting over the fire-rated stamp is not permitted. All plywood shall be painted prior to installation of any equipment. All plywood shall be permanently fastened to the wall by means of wall anchors utilizing galvanized, zinc plated, or stainless-steel hardware with a flat head. Finished installation shall have flush appearance with countersunk screw heads to prevent splitting of the plywood. – with the following exceptions:
  - ◊ Building 10 will receive a self-contained network cabinet, EMCOR or similar
  - ◊ Building 11 will receive a single sheet (approx. 4' x 8' pending existing conditions) AC Grade ¾" trade size fire-rated plywood to support a wall mounted Telecommunication Enclosure
  - ◊ Building 12 will receive a single sheet (approx. 4' x 8' pending existing conditions) AC Grade ¾" trade size fire-rated plywood to support a wall mounted Telecommunication Enclosure
  - ◊ Building 13 will receive a single sheet (approx. 4' x 8' pending existing conditions) AC Grade ¾" trade size fire-rated plywood to support a wall mounted Telecommunication Enclosure
  - ◊ Building 30 will receive a single sheet (approx. 4' x 8' pending existing conditions) AC Grade ¾" trade size fire-rated plywood to support a wall mounted Telecommunication Enclosure

Telecom Rooms (Cont'd)

- ◊ Building 56 will receive a single sheet (approx. 4' x 8' pending existing conditions) AC Grade ¾" trade size fire-rated plywood to support a wall mounted Telecommunication Enclosure

- All horizontal cable tray shall be basket type cable tray. Ladder rack type tray is only permitted to be installed at vertical locations.
- A minimal 18" wide by 4" tall basket style cable tray cable will be mounted around the perimeter of the room and across the top of any equipment racks. Cable tray will be secured to walls and ceiling structure using appropriate mounting hardware – with the following exceptions:
  - ◊ Building 10 will receive a self-contained network cabinet, EMCOR or similar and utilize conduit for cable pathways.
  - ◊ Building 11 will utilize conduit pathways
  - ◊ Building 12 will utilize conduit pathways
  - ◊ Building 13 will utilize conduit pathways
  - ◊ Building 30 will utilize existing cable pathways
  - ◊ Building 56 will utilize existing conduit pathways
- All telecommunication channel racks, telecommunication cabinets, and telecommunication enclosures are to be white in color.
- All telecommunication channel racks, telecommunication cabinets, and telecommunication enclosures shall be properly anchored to the floor.
- Telecommunication Channel Racks (Ortronics MightyMo OR-MM2073038-W – or approved equal) sufficient to support active network switchgear, power distribution units, uninterruptable power supplies, optical fiber patch panels, balance twisted pair patch panels, and required cable management shall be provided with an allowance for 40% future capacity within each Telecom Room – with the following exceptions:
  - ◊ Building 10 will receive a self-contained air-conditioned network cabinet, EMCOR or similar
  - ◊ Building 11 will receive a 26U network cabinet.
  - ◊ Building 13 will receive a wall mounted Telecommunication Enclosure
  - ◊ Building 30 will receive a 42U Telecommunication Enclosure
  - ◊ Building 56 will receive a 26U network cabinet.
- Vertical Cable Managers will be provided at the end of each row and in between each rack. – with the following exceptions:
  - ◊ Building 10 will receive a self-contained telecommunication cabinet, EMCOR or similar with horizontal cable managers.
  - ◊ Building 11 will receive a 26U network cabinet with horizontal cable managers.
  - ◊ Building 13 will receive a wall mounted Telecommunication Enclosure with horizontal cable managers.
  - ◊ Building 30 will receive a 42U Telecommunication Enclosure with horizontal cable managers.
  - ◊ Building 56 will receive a 26U network cabinet with horizontal cable managers.
- Cat 6A CU horizontal cabling will be terminated on 1U 48 port angled patch panels, eliminating the need for horizontal cable managers between patch panels.
- The upper most section of the first rack will be utilized for vertical optical fiber patch panels.
- Buildings 1, 9, 40, and 46: The bottom section of each rack will be utilized Owner Furnished Owner Installed (OFIO) active network components.
- Buildings 3, 10, 11, 12, 13, 30, 51, 52, and 56: The bottom section of each rack will be utilized to house UPS units. The area directly above the UPS and PDU units will be reserved for Owner Furnished Owner Installed (OFOI) active network components.
- Horizontal cable managers will be provided on top of and below each active network switch.
- The balance of the rack space will be utilized for horizontal CU patch panels.

Telecom Rooms (Cont'd)

- All racks will be equipped with vertical power distribution units (APC AP8861 or Approved Equal) with the following exceptions:
  - ◊ Building 10 will receive a self-contained telecommunication cabinet, EMCOR or similar with horizontal power distribution units.
  - ◊ Building 11 will receive a 26U network cabinet with horizontal power distribution units.
  - ◊ Building 13 will receive a wall mounted Telecommunication Enclosure with horizontal power distribution units.
  - ◊ Building 30 will receive a 42U Telecommunication Enclosure with horizontal power distribution units.
  - ◊ Building 56 will receive a 26U network cabinet with horizontal power distribution units.
- All racks will include a horizontal rack Grounding Bar (RGB) located at the top rear of the rack.
- All metallic components will be bonded as per section 4.2.8 of the VA Infrastructure Standard for Telecommunication Spaces, Version 3.1, July 1, 2021
- UPS Power
  - ◊ Buildings 1, 9, 40, and 46: Will be served from a centrally located Monolithic UPS unit
  - ◊ Buildings 3, 10, 12, 51, and 52: Each rack or cabinet will contain one (1) 5 KW, 208V Uninterruptable Power Supply (UPS) (Eaton BladeUPS – or approved equal) units with NEMA L21-20P Input and L21-20R output.
  - ◊ Buildings 11, 13, and 56: Each cabinet will contain one (1) 2880VA metered L5-30 input/output Uninterruptable Power Supply (UPS) (APC SMX3000RMLV2U – or approved equal) units as per VA TE Guidelines.
  - ◊ Building 30: Network cabinet withing the basement level of building 30 will contain one (1) 2880VA metered L5-30 input/output Uninterruptable Power Supply (UPS) (APC SMX3000RMLV2U – or approved equal) units as this building lacks three phase power.
- Zone Power Distribution Units will not be utilized on this project.
  - ◊ Buildings 1, 9, 40, and 46: will contain two vertical rack PDUs. One energized by a centralized monolithic UPS, one energized by wall outlet.
  - ◊ Buildings 3, 10, 12, 51, and 52: Will contain two vertical PDUs per rack. One energized by UPS, one energized by wall outlet. Rack Mounted UPS units will plug directly into local electrical outlets
  - ◊ Buildings 11,13, 30, and 56: Will include two horizontal rack PDUs per rack. One energized by UPS, one energized by wall outlet. Rack Mounted UPS units will plug directly into local electrical outlets.

MODIFICATIONS TO EXISTING TELECOMMUNICATION SPACES

- Modifications to existing spaces shall insure that all existing systems, regardless of if they are directly associated with this project, remain fully functional.
- Plans for extending services to existing systems effected by this project shall be accounted for within the design documents.
- Existing services and systems currently residing in Telecommunication spaces that are planned to be abandoned will remain in place. This project shall ensure that systems remaining within these spaces are not disrupted and are maintained through the project.
- Existing Radio and Paging Equipment, currently housed within Building 1 Penthouse, will not be relocated as part of this scope of work.

HORIZONTAL DISTRIBUTION / 100-OHM BALANCE TWISTED-PAIR CABLE

- No horizontal UTP cable shall exceed 95 meters.
- All horizontal cabling shall be plenum rated.
- All horizontal cabling throughout the facility, rated CAT 6 and below, will be replaced including work area jacks and patch panels. All cabling new shall be plenum rated Cat 6A. Horizontal cabling shall conform with section 4.4.8 of the VA Infrastructure Standard for Telecommunication Spaces, Version 3.1, July 1, 2021 - with following exception:
    - ◊ Building 30 – Existing horizontal cabling to remain and be re-terminated within a new network cabinet being installed within the basement level of Building 30.
- The installation of all new CAT 6A cabling between the Telecom Room patch panel and end-user outlet (EUD) will utilize existing pathways where feasible. This includes utilizing existing non-continuous cable support (aka J-hooks) or raceways through interstitials and above ceilings. Where existing pathway are found to be inadequate, the installation of flex-conduit or Electrical Metal Tubing (EMT) conduit will be utilized. Conduit is required within hollow walls. Conduit is not required within accessible ceilings. Any conduit used will be marked appropriately with “low-voltage/data” at regular intervals to be visible in interstitial spaces with minimal effort. Conduit will be utilized in areas where cable is exposed to risk of damage, such as mechanical areas.
- The use of non-continuous cable supports (aka J-hooks) shall be limited to cable bundles of 12 cables or less and distances of less than 50 feet.
- In accordance with VA Infrastructure Standard for Telecommunication Spaces, Version 3.1, July 1, 2021 Section 4.4.1, Unshielded Twisted Pair cabling will be CAT 6A terminated to IEEE 568-B guidelines.
- Un-terminated "future capacity" cables are not permitted. All installed cables shall be terminated at each end and documentation, labeling and (where applicable) test results provided. This applies to all permanently installed cable types.
- All in-building copper cabling will be terminated and labeled in accordance with section 5.1.5 of the VA Infrastructure Standard for Telecommunication Spaces, Version 3.1, July 1, 2021
- Cabling will be terminated to CAT 6A modular jacks capable of accepting and functioning with other modular (i.e.: RJ11) plugs without damage to the jack.
- Patch panels conforming to EIA/ECA 310-3 dimensions and suitable for mounting in standard equipment racks, with 48 RJ45 jacks aligned in two horizontal rows per patch panel will be provided and installed by vendor.
- Cabling will be combed and dressed neatly in all locations within the service bays.
- Installed cabling will utilize the following color scheme:

Permanent Cabling Jacket Colors	Patch Cabling Colors
Data – Blue	Voice – Gray
Nurse Call – Green	PC – Yellow
Philips Telemetry – Orange	BioMed – Green
Guest Wi-Fi – White	Wireless – Blue
Voice – White	Printer – Red
Get Well Network – Purple	Video/TMED - Black
Verizon – White	
Fire Alarm – Red	
BAS – Black	
Video Surveillance – Purple	

WIRELESS ACCESS POINTS

- All cabling to all wireless access points will be replaced with CAT6A cabling and terminated to single-jack surface-mounted outlet or modular plug terminated link (MPTL) in the drop-ceiling nearest the access point. No wireless access points will be replaced. All cabling for wireless access points will be labeled in accordance with section 5.1.5 of the VA Infrastructure Standard for Telecommunication Spaces, Version 3.1, July 1, 2021
- .CAT6A cable to AP compliant with VA Telecommunications and Special Telecommunications Systems Design Manual and TIA TBS-162-A, Telecommunication Cabling Guidelines for Wireless Access Points.

(CONT'D) WIRELESS ACCESS POINTS

- 10 ft. service loop will be provided at each WAP location.
- The provision, installation, programming, and certification of access points will not be by contractor. All access points will remain in place, and the contractor will replace cabling only.

BACKBONE DISTRIBUTION / OPTICAL FIBER AND COPPER UTP

- Backbone cabling shall conform with section 4.4.11 of the VA Infrastructure Standard for Telecommunication Spaces, Version 3.1 July 1, 2021.
- All backbone fiber will terminate via fusion splice LC type cassettes within lockable fiber distribution panels.

Redundant and Diverse Pathways

- This scope of work shall include installation of a single optical fiber to each TR (Path "A").
- A forthcoming project will include the installation of a redundant and diverse optical fiber to each TR (Path "B").
- Care shall be taken to ensure that installation of Path "B" does impede or compromise the diverse installation of Path "B". Installation of Path "A" cabling shall be done in a way that allows for maximum separation of the diverse pathways including installing cabling as tight as possible to one side of a corridor.

Intra-Building optical fiber and multi-pair copper

- The MDA located within COMPUTER ROOM BC-50 will connect directly to each Telecommunication Room.
- Intra-Building optical fiber shall be plenum rated armored cable.
- Intra-Building multi-pair copper shall be plenum rated.Each Telecommunication Room within Buildings 1, 9, 40, and 46 will receive new optical fiber backbone cabling consisting of one (1) 24 strand OM4 multimode fiber optic cable, one (1) 12 strand OS1 single mode fiber optic cable, and one (1) 25 pair Cat 5e cable served from the new MDA established at MCR/DC B409.
- 25 pair Cat 5e cable will be installed to each TR.
  - ◊ Terminated at rack mounted 110blocks at Telephone Equipment Room BC-60.
  - ◊ Terminated at rack mounted 24 port Cat5e patch panels (one pair per port) at the TR.
- Routing plan for Buildings 1, 9, 40, and 46 shall take into consideration potential locations of future new MCR.
- A service loop of 300 feet shall be provided and neatly coiled at the MCR and BC-60 for TRs BA-92, BC-02, 1B-121, 1B-65 to help facilitate the future MCR relocation.

Inter-building optical fiber and multi-pair copper

- The MDA located with COMPUTER ROOM BC-50 will connect directly to each Telecommunication Room in all campus buildings outside of the computer room building.
- Inter-building optical fiber and multi-pair copper shall be indoor / outdoor rated cable suitable for installation within underground duct bank.
- Each Telecommunication Room (or Telecommunication Cabinet) withing Buildings 3, 10, 11, 12, 13, 30, 51, 52, and 56 will receive one (1) 24 strand OS2 single mode fiber optic cable and one (1) 25 pair Cat 5e cable with fiber optic cable served from the existing MDA at COMPUTER ROOM BC-50 and Cat 5e cable served from the Entrance Facility located at TELEPHONE EQUIPMENT ROOM BC-60
- This fiber optic cable shall consist of a single jacket, non-armored loose tube fiber cable when installed within conduit.
- As this cable will transition between outdoor and indoor installation, the cable shall be rated accordingly for indoor/outdoor applications.
- Existing pathways and duct banks shall be utilized, as to the extent possible, for installation of new fiber optic cable.

(Cont'd) Inter-building optical fiber and multi-pair copper

- 25 pair Cat 5e cable will be installed to each TR.
    - ◊ Terminated at rack mounted 110blocks at Telephone Equipment Room BC-60.
    - ◊ Terminated at rack mounted 24 port Cat5e patch panels (one pair per port) at the TR.
    - ◊ When Cat 5e cable transitions outside of Building 1, 9, 40, or 46, Building Entrance Terminals (BETs) lighting arrestor blocks will be provided at Room BC-60 and each TR. 25 pair Cat 5e will terminate on the BETs prior to terminating on the patch panel or 110 block. BETs shall properly grounded.
- A service loop of 300 feet shall be provided and neatly coiled at the MCR for optical fiber serving TRs within Buildings 10, 11, 12, 13, 30, 51, 52, and 56 to help facilitate the future MCR relocation. Care shall be taken to ensure cable is properly dressed and supported.

GROUNDING AND BONDING

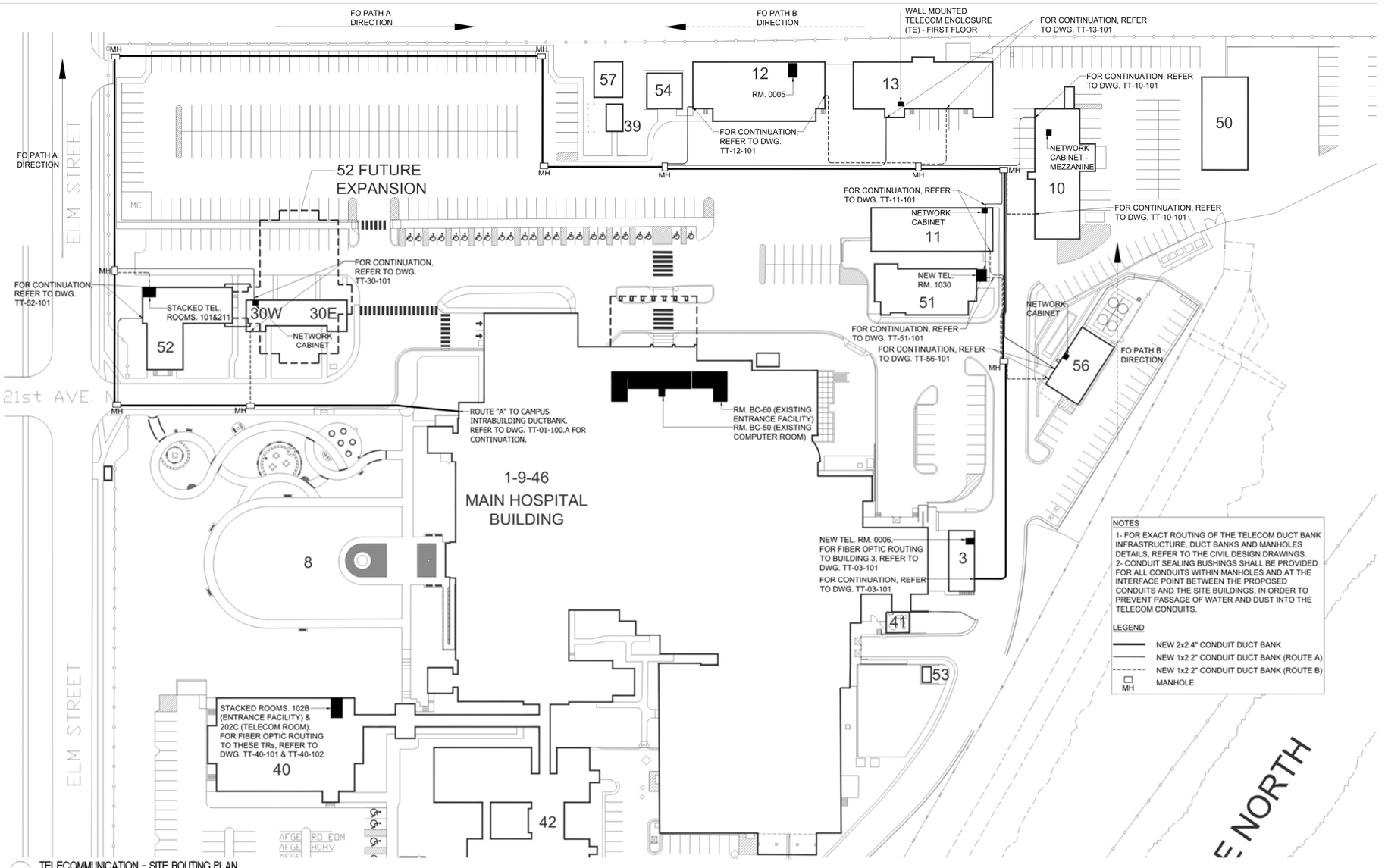
- A new telecommunication grounding system shall be established based on ANSI/TIA-607-D, Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises.
    - A single telecommunication grounding system will be established to support buildings 1, 9, 40, and 46.
    - Separate telecommunication grounding systems will be established to support Buildings 3, 10, 11, 12, 13, 30, 51, 52, and 56.
- Grounding and Bonding shall conform to section 4.2.8 of the VA Infrastructure Standard for Telecommunication Spaces, Version 3.1, July 1, 2021.
- All telecommunication spaces are to be bonded according to ANSI/TIA-607-C Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises, local codes, the VA Electrical Design Manual, National Electrical Code, and National Electrical Safety Code.

PHYSICAL SECURITY

- All rooms and spaces undergoing modifications and upgrades will include physical security enhancements complying with requirements dictated by the U.S. Department of Veterans Affairs, Physical Security and Resiliency Design Manual, October 1, 2020 – Revised September 1, 2021, and the U.S. Department of Veterans Affairs, Physical Security Design Manual for Mission Critical Facilities, January 2015
- Contractor shall verify existing conditions and promptly report any drawing discrepancies to the project COR and Architect.
- Project coordination – No systems or components shall be disrupted out of project sequence; Contractor shall coordinate all service disruptions with the project COR.
- Doors associated with Telecommunication spaces shall be equipped with dual authentication type card reader, door contacts/position switches, and required electronic locking hardware.
- Telecommunication spaces shall contain security surveillance cameras as well as motion detectors.
- Project scope includes modifications and additions to an existing access control system. Contractor to provide all labor and materials, including components, programming, licensing, and professional services, required for a fully functional system.
- Contractor shall match existing systems already in-use, to include manufacturer product and turn-key components that will comply with the expansion of that systems normal operation. Verify and include software updates and licensing as required to match and expand the operation capacity of each added device and/or new equipment.
- The existing access control system is SoftwareHouse. Modifications to the existing system must be fully compliant with the existing platform.

PHYSICAL SECURITY (CONT'D)

- The existing access control system shall be expanded as required to support added devices.
- In addition to the expansion of existing access control panels, new panels will be required at the following locations:
  - Building 1: TR 503
  - Building 3: TR 0001
  - Building 10: Mezzanine Area
  - Building 11: Open Office Area
  - Building 12: TR 0005
  - Building 13: Office 101
  - Building 30: Basement
  - Building 56: Chiller Plant
- All new access control panels shall be provided with a minimum of 25% spare capacity.
- All TRs will have a dual authentication keypad/card reader that is compatible with the new VA PIV USAccess cards. Basis of design is the most current PIV 2-factor keypad from SIGNO.
- Motion detectors shall integrate with the access control system, providing individual alarms, utilizing hardwired inputs into the access control system.
- A complete network-based video surveillance solution, including all cameras, recording devices and licenses shall be provided.
- Video surveillance cameras and recording devices shall be NDAA compliant.
- Each video surveillance camera shall be provided with lens capable of being individually positioned (pan, tilt, roll, and twist) along a circular track.
- Coordinate final placement of surveillance cameras to avoid cable tray, cabling, and other objects that may impede the field of view. Final location shall be approved by project COR.
- All equipment shall be bonded to the grounding system in that room in accordance with specification section 27 05 26.



1 TELECOMMUNICATION - SITE ROUTING PLAN
1/32"=1'-0"

ISSUE FOR BID	03-18-22
Revisions:	Date:

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Bancroft Project No: 18-121

STAMP

Office of Construction and Facilities Management
VA U.S. Department of Veterans Affairs

Drawing Title: TELECOMMUNICATION - SITE ROUTING PLAN
Phase: ISSUE FOR BID
Project Title: EHRM INFRASTRUCTURE UPGRADES
Project Number: 437-21-205
Building Number: 01, 09, 46
Location: FARGO VA HEALTH CARE SYSTEM
Drawing Number: TT-00-002
SHEET of 281
Issue Date: 3/18/2022
Checked: BY
Drawn: CF

8

Appendices

- Appendix A - Terracon
  Asbestos and Lead Plans: 8-2 - 8-11
  Asbestos and Lead Survey Plans and Report
  (Printed as a Separate Document)
- Appendix B - Hohbach-Lewin,Inc.
  Blast No Longer Part of BOD
  (*Separate Document)*
- Appendix C - Calibre Engineering
  Structural Calculations
  (Printed as a Separate Document)
- Appendix D -
  Mechanical Calculations and Cut Sheets
  (Printed as a Separate Document)
- Appendix E—Meeting Minutes
- Appendix F -
  OPCC *(Printed as a Separate Document)*

As part of the Fargo Veterans Administration Hospital Electronic Health Record Modernization (EHRM) Upgrade Project (Project), Terracon Consultants Inc. (Terracon) performed a Limited Asbestos and Lead-Based Paint Survey (Survey) of areas proposed to be impacted by the Project. Field work was completed from September 14 through September 16, November 17, 2021, from January 20 through 21, 2022, and February 9, 2022. The following materials were identified that may impact work in project areas:

ASBESTOS CONTAINING MATERIAL

- 15 linear feet of magnesia pipe insulation on an 8-inch outside diameter pipe was identified in Room BD-02 of the main Hospital building. This is considered a Regulated Asbestos Containing Material (RACM).
- 196 square feet of black carpet mastic was identified in Room 3B-25 of the main Hospital building. This is considered a Category 1 Non-Friable Material in its current condition.

LEAD-BASED PAINT

- Brown paint on the bathroom door in Building 10 was identified to contain lead above 1.0 mg/cm^2 threshold and therefore is considered Lead-Based Paint.

Terracon

BUILDING 1/9/46

LEVEL BASEMENT

BASEMENT FLOOR PLAN
SCALE: 1:250

Table 1 – Identified Asbestos-Containing Materials by Homogenous Area (HA)

HA No.	Material Description	Location	Percent and Type Asbestos	NESHAP Category	Condition	OSHA Classification	Estimated Quantity
40 (samples 118, 119, 120)	Magnesia pipe insulation associated with 8" O.D. pipe	Main building, room BD-02	5% chrysotile 12% crocidolite	RACM	Not Damaged	TSI	15 LF
50 (samples 168, 169, 170)	Black mastic, associated with multicolored carpet	Main building, room 3B-25	5% chrysotile	Category I non-friable	Not Damaged	Miscellaneous	196 SF

Table 2: Identified Lead-Based Paint (LBP) >1.0 mg/cm²

Sample Nos.	Location	Paint Color	Paint Substrate	Surface Condition	Results (mg/cm²)
165-168	Building 10, bathroom door	Brown	Wood	Intact	3.71215 - >5.0

Table 3: Identified Lead-Containing Paint (LBP) <1.0 mg/cm²

Sample Nos.	Location	Paint Color	Paint Substrate	Surface Condition	Results (mg/cm²)
27-29	Main building, BD-02	Peach	Plaster	Fair	0.15519 - 0.18238
48, 50	Main building, 1C-99	Tan	Plaster	Good	0.0022 - 0.06375
67, 68, 70	Main building, 2C-90	Tan	GWB	Good	0.00333 - 0.00423
71, 74, 75	Main building, 2A-24	Tan	GWB	Good	0.00208
78	Main building, 2A-22A	Tan	GWB	Good	0.00238
94	Main, building, 2D-19	Tan	GWB	Good	0.30734
99	Main building, 3C-06	Tan	GWB	Good	0.00108
111, 112	Main building, 3B-23	Tan	Plaster	Good	0.08524 - 112
125	Main building, 4E-15A	Tan	Metal	Good	0.00787 – 0.02254
140	Building 12, IRM	White	Brick	Intact	0.00751
162	Building 12, Break Room, door	Green	Metal	Intact	0.03597
170, 171	Building 10, Upper Mezzanine	White	Brick	Intact	0.01521 – 0.50088
179	Building 11, Shop	Tan	Brick	Intact	0.03891
180	Building 11, Shop	White	Plaster	Intact	0.03582
181	Building 11, HAC	Blue	Plaster	Intact	0.0274

LEGEND
- 170 IDENTIFIED ASBESTOS ACM LOCATIONS
- 170 APPROXIMATE ASBESTOS SAMPLE LOCATION
- 32 APPROXIMATE LEAD SAMPLE LOCATION
- 27 IDENTIFIED LCP (<1 MG/CM²) LOCATION
- 27 IDENTIFIED LBP LOCATION

ISSUE FOR BID	03-18-22
Revisions:	Date:

CONSULTANT: Terracon Consulting Engineers and Scientists

ARCHITECT/ENGINEER OF RECORD: BANCROFT ARCHITECTS + ENGINEERS

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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: EHRM BUILDING - BASEMENT FLOOR PLAN - ASBESTOS AND LEAD SAMPLE LOCATIONS

Phase: ISSUE FOR BID

Project Title: EHRM INFRASTRUCTURE UPGRADES

Project Number: 437-21-205

Building Number:

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 3/18/2022 | Checked: | Drawn:

SHEET of 281

Drawing Number: H100

Terracon

BUILDING 1/9/46

LEVEL 1

FIRST FLOOR PLAN
SCALE: 1:250

Table 1 – Identified Asbestos-Containing Materials by Homogenous Area (HA)

HA No.	Material Description	Location	Percent and Type Asbestos	NESHAP Category	Condition	OSHA Classification	Estimated Quantity
40 (samples 118, 119, 120)	Magnesia pipe insulation associated with 8" O.D. pipe	Main building, room BD-02	5% chrysotile 12% crocidolite	RACM	Not Damaged	TSI	15 LF
55 (samples 168, 169, 170)	Black mastic associated with multicolored carpet	Main building, room 3B-25	5% chrysotile	Category I non-friable	Not Damaged	Miscellaneous	196 SF

Table 2: Identified Lead-Based Paint (LBP) >1.0 mg/cm²

Sample Nos.	Location	Paint Color	Paint Substrate	Surface Condition	Results (mg/cm²)
165-168	Building 10, bathroom door	Brown	Wood	Intact	3.71215 - >5.0

Table 3: Identified Lead-Containing Paint (LBP) <1.0 mg/cm²

Sample Nos.	Location	Paint Color	Paint Substrate	Surface Condition	Results (mg/cm²)
27-29	Main building, BD-02	Peach	Plaster	Fair	0.15519 - 0.18238
48, 50	Main building, 1C-99	Tan	Plaster	Good	0.0022 - 0.06375
67, 68, 70	Main building, 2C-90	Tan	GWB	Good	0.00333 - 0.00423
71, 74, 75	Main building, 2A-24	Tan	GWB	Good	0.00208
78	Main building, 2A-22A	Tan	GWB	Good	0.00238
94	Main building, 2D-19	Tan	GWB	Good	0.30734
99	Main building, 3C-96	Tan	GWB	Good	0.00106
111, 112	Main building, 3B-23	Tan	Plaster	Good	0.08524 - 112
125	Main building, 4E-15A	Tan	Metal	Good	0.00787 – 0.02254
140	Building 12, IRM	White	Brick	Intact	0.00751
162	Building 12, Break Room, door	Green	Metal	Intact	0.03597
170, 171	Building 10, Upper Mezzanine	White	Brick	Intact	0.01521 – 0.50088
179	Building 11, Shop	Tan	Brick	Intact	0.03891
180	Building 11, Shop	White	Plaster	Intact	0.03582
181	Building 11, HAC	Blue	Plaster	Intact	0.0274

LEGEND
- 170 IDENTIFIED ASBESTOS ACM LOCATIONS
- 170 APPROXIMATE ASBESTOS SAMPLE LOCATION
- 32 APPROXIMATE LEAD SAMPLE LOCATION
- 27 IDENTIFIED LCP (<1 MG/CM²) LOCATION
- 27 IDENTIFIED LBP LOCATION

BANCROFT ARCHITECTS + ENGINEERS

ISSUE FOR BID	03-18-22
Revisions:	Date:

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ARCHITECT/ENGINEER OF RECORD: BANCROFT ARCHITECTS + ENGINEERS, Bancroft Project No. 18-121

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Office of Construction and Facilities Management
VA U.S. Department of Veterans Affairs

Drawing Title: EHRM BUILDING - FIRST FLOOR PLAN - ASBESTOS AND LEAD SAMPLE LOCATIONS	Phase: ISSUE FOR BID	Project Title: EHRM INFRASTRUCTURE UPGRADES	Project Number: 437-21-205
			Building Number
SHEET of 281		Location: FARGO VA HEALTH CARE SYSTEM	Drawing Number: H101
		Issue Date: 3/18/2022 / Checked / Drawn	

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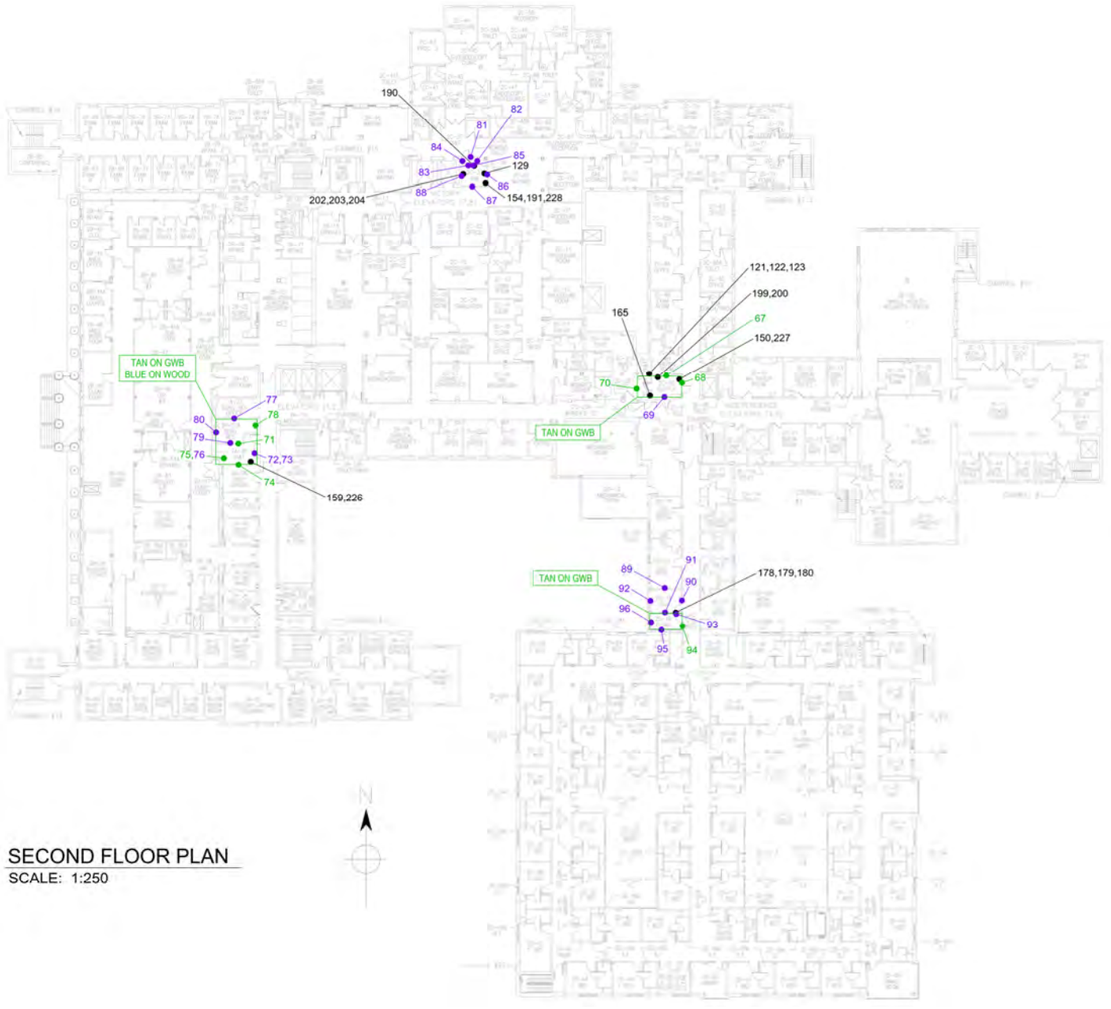
BUILDING 1/9/46

LEVEL 2



SECOND FLOOR PLAN
SCALE: 1:250

Table 1 – Identified Asbestos-Containing Materials by Homogenous Area (HA)

HA No.	Material Description	Location	Percent and Type Asbestos	NESHAP Category	Condition	OSHA Classification	Estimated Quantity
40 (samples 118, 119, 120)	Magnesia pipe insulation associated with 8" O.D. pipe	Main building, room BD-02	5% chrysotile 12% crocidolite	RACM	Not Damaged	TSI	15 LF
55 (samples 168, 169, 170)	Black mastic associated with multicolored carpet	Main building, room 3B-25	5% chrysotile	Category I non-friable	Not Damaged	Miscellaneous	196 SF

Table 2: Identified Lead-Based Paint (LBP) >1.0 mg/cm²

Sample Nos.	Location	Paint Color	Paint Substrate	Surface Condition	Results (mg/cm²)
165-168	Building 10, bathroom door	Brown	Wood	Intact	3.71215 - >5.0

Table 3: Identified Lead-Containing Paint (LBP) <1.0 mg/cm²

Sample Nos.	Location	Paint Color	Paint Substrate	Surface Condition	Results (mg/cm²)
27-29	Main building, BD-02	Peach	Plaster	Fair	0.15519 - 0.18238
48, 50	Main building, 1C-99	Tan	Plaster	Good	0.0022 - 0.06375
67, 68, 70	Main building, 2C-90	Tan	GWB	Good	0.00333 - 0.00423
71, 74, 75	Main building, 2A-24	Tan	GWB	Good	0.00208
78	Main building, 2A-22A	Tan	GWB	Good	0.00238
94	Main, building, 2D-19	Tan	GWB	Good	0.30734
99	Main building, 3C-96	Tan	GWB	Good	0.00108
111, 112	Main building, 3B-23	Tan	Plaster	Good	0.08524 - 112
125	Main building, 4E-15A	Tan	Metal	Good	0.00787 – 0.02254
140	Building 12, IRM	White	Brick	Intact	0.00751
162	Building 12, Break Roomm, door	Green	Metal	Intact	0.03597
170, 171	Building 10, Upper Mezzanine	White	Brick	Intact	0.01521 – 0.50088
179	Building 11, Shop	Tan	Brick	Intact	0.03891
180	Building 11, Shop	White	Plaster	Intact	0.03582
181	Building 11, HAC	Blue	Plaster	Intact	0.0274

LEGEND
- 170 IDENTIFIED ASBESTOS ACM LOCATIONS
- 170 APPROXIMATE ASBESTOS SAMPLE LOCATION
- 32 APPROXIMATE LEAD SAMPLE LOCATION
- 27 IDENTIFIED LCP (<1 MG/CM²) LOCATION
- 27 IDENTIFIED LBP LOCATION

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Revisions:	Date:

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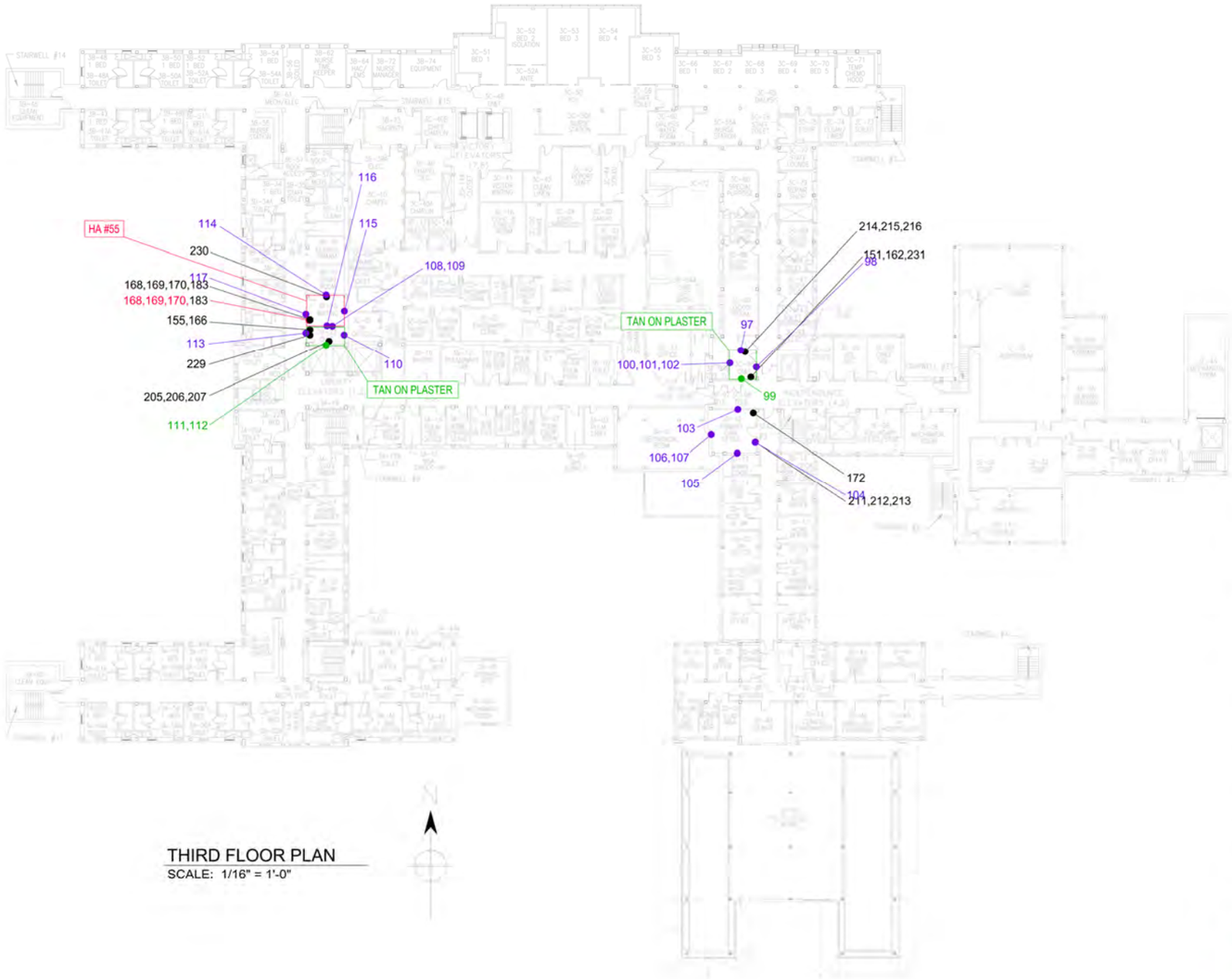
Office of Construction and Facilities Management
VA U.S. Department of Veterans Affairs

Drawing Title: EHRM BUILDING - SECOND FLOOR PLAN - ASBESTOS AND LEAD SAMPLE LOCATIONS
Phase: ISSUE FOR BID
Project Title: EHRM INFRASTRUCTURE UPGRADES
Project Number: 437-21-205
Building Number:
Location: FARGO VA HEALTH CARE SYSTEM
Drawing Number: H102
SHEET of 281
Issue Date: 3/18/2022
Checked:
Drawn:

Terracon

BUILDING 1/9/46

LEVEL 3



THIRD FLOOR PLAN
SCALE: 1/16" = 1'-0"

Table 1 – Identified Asbestos-Containing Materials by Homogenous Area (HA)

HA No.	Material Description	Location	Percent and Type Asbestos	NESHAP Category	Condition	OSHA Classification	Estimated Quantity
40 (samples 118, 119, 120)	Magnesia pipe insulation associated with 8" O.D. pipe	Main building, room BD-02	5% chrysotile 12% crocidolite	RACM	Not Damaged	TSI	15 LF
55 (samples 168, 169, 170)	Black mastic associated with multicolored carpet	Main building, room 3B-25	5% chrysotile	Category I non-friable	Not Damaged	Miscellaneous	196 SF

Table 2: Identified Lead-Based Paint (LBP) >1.0 mg/cm²

Sample Nos.	Location	Paint Color	Paint Substrate	Surface Condition	Results (mg/cm²)
165-168	Building 10, bathroom door	Brown	Wood	Intact	3.71215 - >5.0

Table 3: Identified Lead-Containing Paint (LBP) <1.0 mg/cm²

Sample Nos.	Location	Paint Color	Paint Substrate	Surface Condition	Results (mg/cm²)
27-29	Main building, BD-02	Peach	Plaster	Fair	0.15519 - 0.18238
48, 50	Main building, 1C-99	Tan	Plaster	Good	0.0022 - 0.06375
67, 68, 70	Main building, 2C-90	Tan	GWB	Good	0.00333 - 0.00423
71, 74, 75	Main building, 2A-24	Tan	GWB	Good	0.00208
78	Main building, 2A-22A	Tan	GWB	Good	0.00238
94	Main, building, 2D-19	Tan	GWB	Good	0.30734
99	Main building, 3C-96	Tan	GWB	Good	0.00108
111, 112	Main building, 3B-23	Tan	Plaster	Good	0.08524 - 112
125	Main building, 4E-15A	Tan	Metal	Good	0.00787 – 0.02254
140	Building 12, IRM	White	Brick	Intact	0.00751
162	Building 12, Break Room, door	Green	Metal	Intact	0.03597
170, 171	Building 10, Upper Mezzanine	White	Brick	Intact	0.01521 – 0.50088
179	Building 11, Shop	Tan	Brick	Intact	0.03891
180	Building 11, Shop	White	Plaster	Intact	0.03582
181	Building 11, HAC	Blue	Plaster	Intact	0.0274

LEGEND
- 170 IDENTIFIED ASBESTOS ACM LOCATIONS
- 170 APPROXIMATE ASBESTOS SAMPLE LOCATION
- 32 APPROXIMATE LEAD SAMPLE LOCATION
- 27 IDENTIFIED LCP (<1 MG/CM²) LOCATION
- 27 IDENTIFIED LBP LOCATION

BANCROFT ARCHITECTS + ENGINEERS

ISSUE FOR BID	03-18-22
Revisions:	Date:

CONSULTANT: Terracon Consulting Engineers and Scientists
PROJECT NO. M121701
881 8th ST. NE Unit K WEST FARGO, ND 58078
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ARCHITECT/ENGINEER OF RECORD: BANCROFT ARCHITECTS + ENGINEERS

STAMP

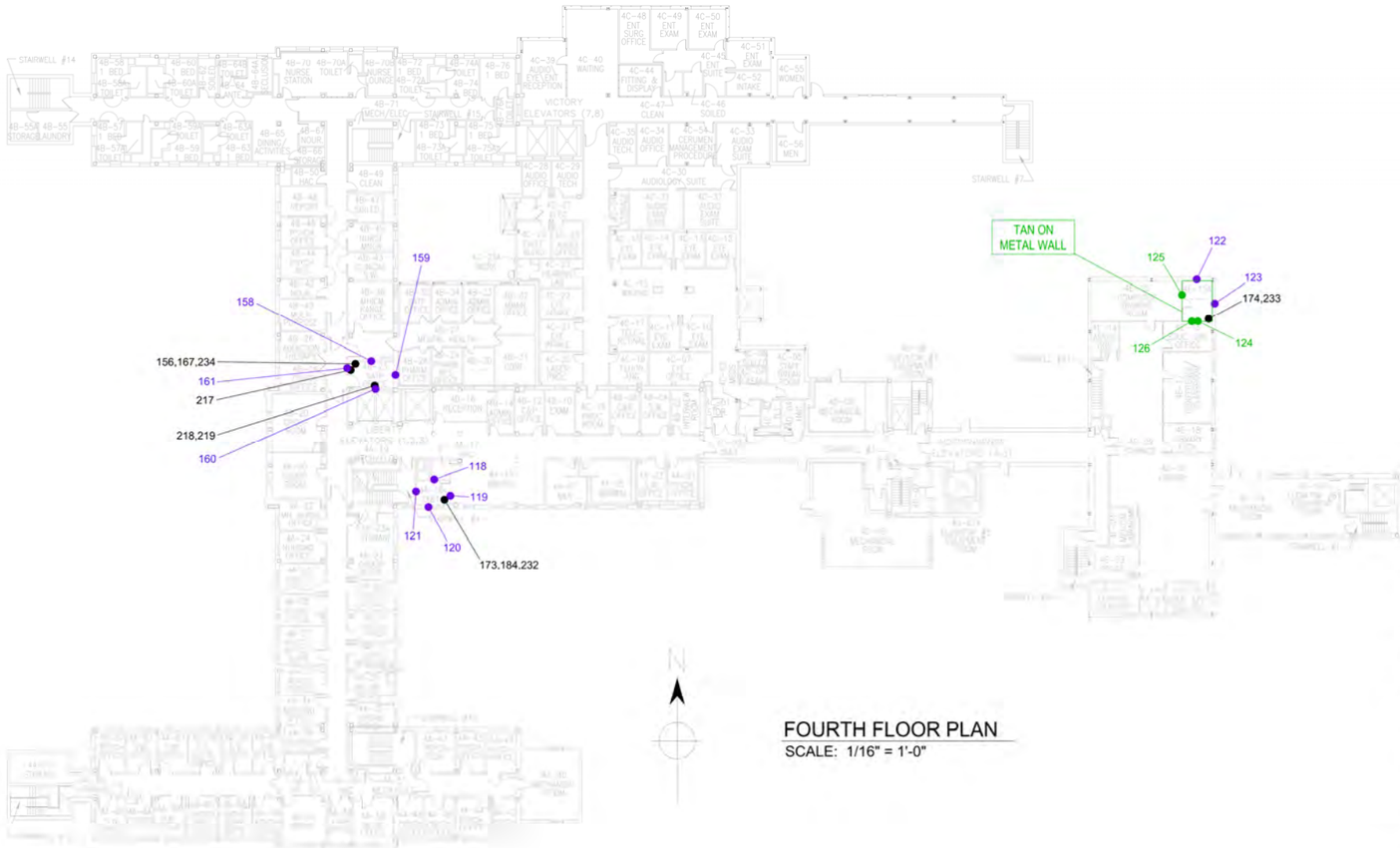
Office of Construction and Facilities Management
VA U.S. Department of Veterans Affairs

Drawing Title: EHRM BUILDING - THIRD FLOOR PLAN - ASBESTOS AND LEAD SAMPLE LOCATIONS	Phase: ISSUE FOR BID	Project Title: EHRM INFRASTRUCTURE UPGRADES	Project Number: 437-21-205
SHEET of 281		Location: FARGO VA HEALTH CARE SYSTEM	Building Number
		Issue Date: 3/18/2022 / Checked / Drawn	Drawing Number: H103

Terracon

BUILDING 1/9/46

LEVEL 4



FOURTH FLOOR PLAN
SCALE: 1/16" = 1'-0"

Table 1 – Identified Asbestos-Containing Materials by Homogenous Area (HA)

HA No.	Material Description	Location	Percent and Type Asbestos	NESHAP Category	Condition	OSHA Classification	Estimated Quantity
40 (samples 118, 119, 120)	Magnesia pipe insulation associated with 8" O.D. pipe	Main building, room BD-02	5% chrysotile 12% crocidolite	RACM	Not Damaged	TSI	15 LF
55 (samples 168, 169, 170)	Black mastic associated with multicolored carpet	Main building, room 3B-25	5% chrysotile	Category I non-friable	Not Damaged	Miscellaneous	196 SF

Table 2: Identified Lead-Based Paint (LBP) >1.0 mg/cm²

Sample Nos.	Location	Paint Color	Paint Substrate	Surface Condition	Results (mg/cm²)
165-168	Building 10, bathroom door	Brown	Wood	Intact	3.71215 - >5.0

Table 3: Identified Lead-Containing Paint (LBP) <1.0 mg/cm²

Sample Nos.	Location	Paint Color	Paint Substrate	Surface Condition	Results (mg/cm²)
27-29	Main building, BD-02	Peach	Plaster	Fair	0.15519 - 0.18238
48, 50	Main building, 1C-99	Tan	Plaster	Good	0.0022 - 0.06375
67, 68, 70	Main building, 2C-90	Tan	GWB	Good	0.00333 - 0.00423
71, 74, 75	Main building, 2A-24	Tan	GWB	Good	0.00208
78	Main building, 2A-22A	Tan	GWB	Good	0.00238
94	Main, building, 2D-19	Tan	GWB	Good	0.30734
99	Main building, 3C-96	Tan	GWB	Good	0.00108
111, 112	Main building, 3B-23	Tan	Plaster	Good	0.08524 - 112
125	Main building, 4E-15A	Tan	Metal	Good	0.00787 – 0.02254
140	Building 12, IRM	White	Brick	Intact	0.00751
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170, 171	Building 10, Upper Mezzanine	White	Brick	Intact	0.01521 – 0.50088
179	Building 11, Shop	Tan	Brick	Intact	0.03891
180	Building 11, Shop	White	Plaster	Intact	0.03582
181	Building 11, HAC	Blue	Plaster	Intact	0.0274

LEGEND

- 170 IDENTIFIED ASBESTOS ACM LOCATIONS
- 170 APPROXIMATE ASBESTOS SAMPLE LOCATION
- 32 APPROXIMATE LEAD SAMPLE LOCATION
- 27 IDENTIFIED LCP (<1 MG/CM²) LOCATION
- 27 IDENTIFIED LBP LOCATION

ISSUE FOR BID	03-18-22
Revisions:	Date:

CONSULTANT
Terracon Consulting Engineers and Scientists
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Bancroft Project No. 18-121

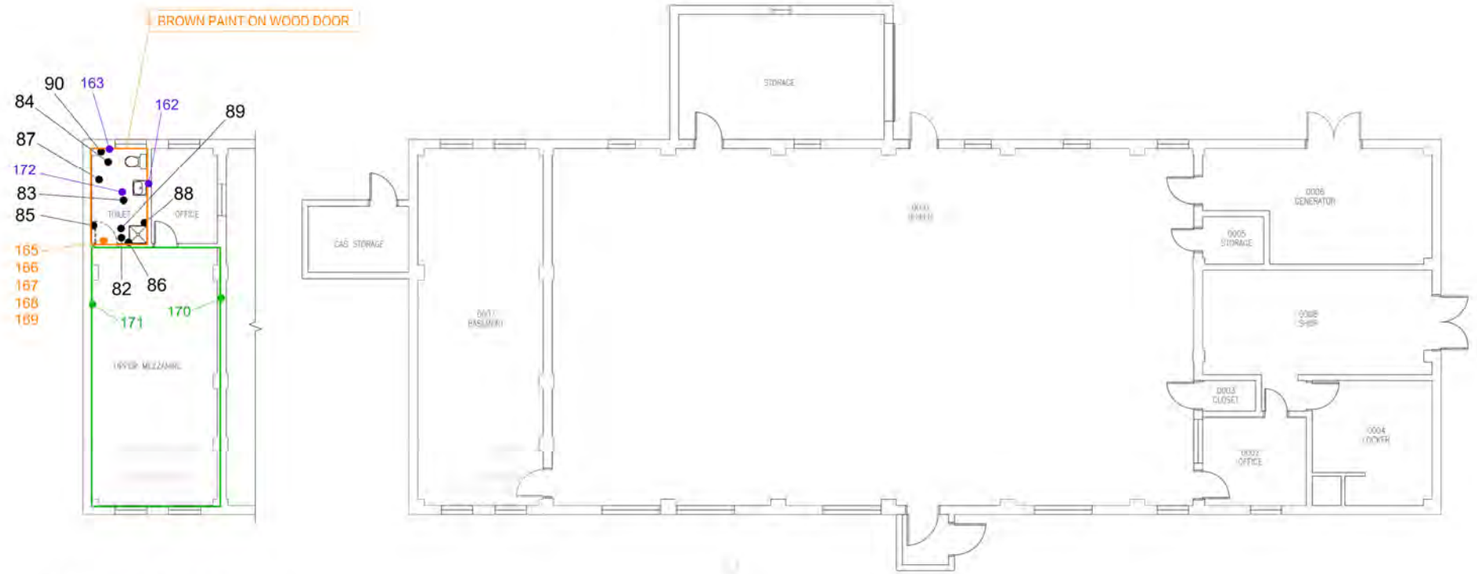
STAMP

Office of Construction and Facilities Management
VA U.S. Department of Veterans Affairs

Drawing Title: EHRM BUILDING - FOURTH FLOOR PLAN - ASBESTOS AND LEAD SAMPLE LOCATIONS
Phase: ISSUE FOR BID
Project Title: EHRM INFRASTRUCTURE UPGRADES
Project Number: 437-21-205
Building Number:
Location: FARGO VA HEALTH CARE SYSTEM
Issue Date: 3/18/2022
Checked:
Drawn:
Drawing Number: H104
SHEET of 281

Terracon

BUILDING 10



MEZZANINE FLOOR PLAN
SCALE: 3/16" = 1'-0"

FIRST FLOOR PLAN
SCALE: 3/16" = 1'-0"

LEGEND

- 170 IDENTIFIED ASBESTOS ACM LOCATIONS
- 170 APPROXIMATE ASBESTOS SAMPLE LOCATION
- 32 APPROXIMATE LEAD SAMPLE LOCATION
- 27 IDENTIFIED LCP (<1 MG/CM²) LOCATION
- 27 IDENTIFIED LBP LOCATION

Table 1 – Identified Asbestos-Containing Materials by Homogenous Area (HA)

HA No.	Material Description	Location	Percent and Type Asbestos	NESHAP Category	Condition	OSHA Classification	Estimated Quantity
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55 (samples 168, 169, 170)	Black mastic associated with multicolored carpet	Main building, room 3B-25	5% chrysotile	Category I non-friable	Not Damaged	Miscellaneous	196 SF

Table 2: Identified Lead-Based Paint (LBP) >1.0 mg/cm²

Sample Nos.	Location	Paint Color	Paint Substrate	Surface Condition	Results (mg/cm²)
165-168	Building 10, bathroom door	Brown	Wood	Intact	3.71215 - >5.0

Table 3: Identified Lead-Containing Paint (LBP) <1.0 mg/cm²

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94	Main, building, 2D-19	Tan	GWB	Good	0.30734
99	Main building, 3C-96	Tan	GWB	Good	0.00108
111, 112	Main building, 3B-23	Tan	Plaster	Good	0.08524 - 112
125	Main building, 4E-15A	Tan	Metal	Good	0.00787 – 0.02254
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181	Building 11, HAC	Blue	Plaster	Intact	0.0274

ISSUE FOR BID	03-18-22
Revisions:	Date:

CONSULTANT: Terracon Consulting Engineers and Scientists

ARCHITECT/ENGINEER OF RECORD: Bancroft Architects + Engineers

STAMP

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: BUILDING 10 - ASBESTOS AND LEAD SAMPLE LOCATIONS

Phase: ISSUE FOR BID

Project Title: EHRM INFRASTRUCTURE UPGRADES

Project Number: 437-21-205

Building Number:

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 3/18/2022 | Checked | Drawn

Drawing Number: H105

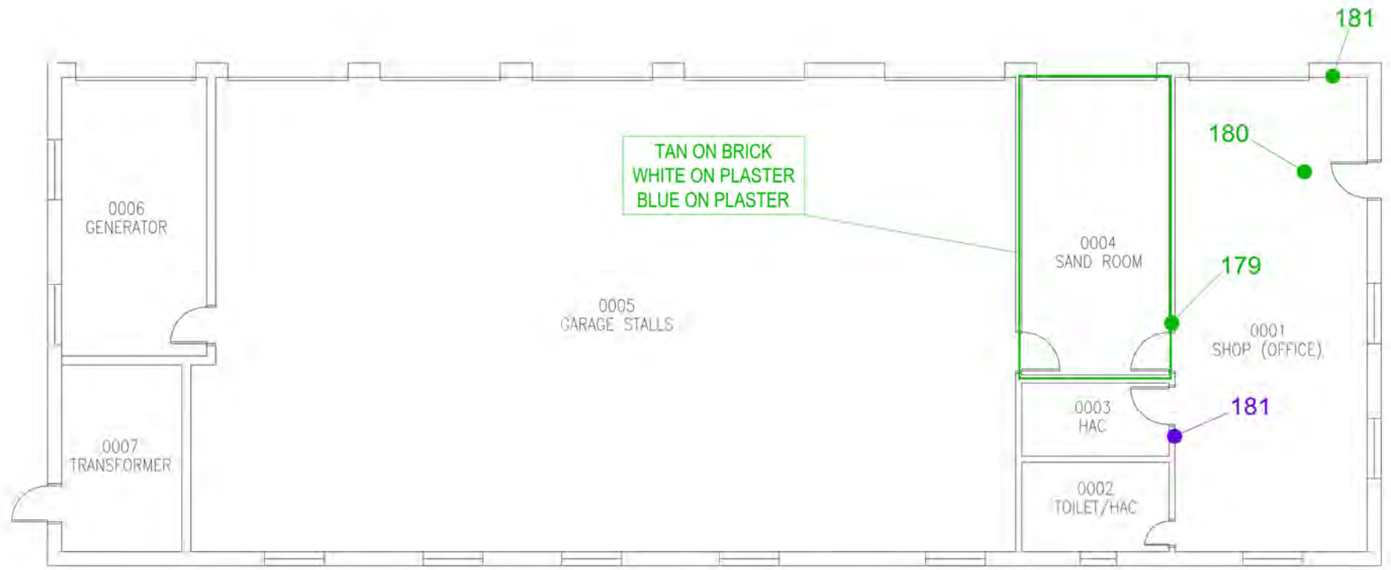
SHEET of 281

Bancroft

BANCROFT ARCHITECTS + ENGINEERS

Terracon

BUILDING 11



FLOOR PLAN

SCALE: 1/4" = 1'-0"

LEGEND

- 170 IDENTIFIED ASBESTOS ACM LOCATIONS
- 170 APPROXIMATE ASBESTOS SAMPLE LOCATION
- 32 APPROXIMATE LEAD SAMPLE LOCATION
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181	Building 11, HAC	Blue	Plaster	Intact	0.0274

ISSUE FOR BID	03-18-22
Revisions:	Date:

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Bancroft Project No: 18-121

STAMP:

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: BUILDING 11 - ASBESTOS AND LEAD SAMPLE LOCATIONS	Phase: ISSUE FOR BID	Project Title: EHRM INFRASTRUCTURE UPGRADES	Project Number: 437-21-205
SHEET of 281		Location: FARGO VA HEALTH CARE SYSTEM	Building Number
		Issue Date: 3/18/2022 Checked Drawn	Drawing Number: H106

Terracon

BUILDING 12

N

FLOOR PLAN
SCALE: 1/8" = 1'-0"

LEGEND

- 170 IDENTIFIED ASBESTOS ACM LOCATIONS
- 170 APPROXIMATE ASBESTOS SAMPLE LOCATION
- 32 APPROXIMATE LEAD SAMPLE LOCATION
- 27 IDENTIFIED LCP (<1 MG/CM²) LOCATION
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Table 3: Identified Lead-Containing Paint (LBP) <1.0 mg/cm²

Sample Nos.	Location	Paint Color	Paint Substrate	Surface Condition	Results (mg/cm²)
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180	Building 11, Shop	White	Plaster	Intact	0.03582
181	Building 11, HAC	Blue	Plaster	Intact	0.0274

ISSUE FOR BID	03-18-22
Revisions:	Date:

CONSULTANT
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ARCHITECT/ENGINEER OF RECORD
BANCROFT ARCHITECTS + ENGINEERS
Bancroft Project No: 18-121

STAMP

Office of Construction and Facilities Management
VA U.S. Department of Veterans Affairs

Drawing Title: BUILDING 12 - ASBESTOS AND LEAD SAMPLE LOCATIONS
SHEET of 281
Phase: ISSUE FOR BID
Project Title: EHRM INFRASTRUCTURE UPGRADES
Location: FARGO VA HEALTH CARE SYSTEM
Issue Date: 3/18/2022
Checked:
Drawn:
Project Number: 437-21-205
Building Number:
Drawing Number: H107

BANCROFT ARCHITECTS + ENGINEERS

Please See Separate Document

APPENDIX A

Limited Pre-Renovation Asbestos and Lead-Based Paint Survey

Project No. 437-21-205EHRM Infrastructure Upgrades
Fargo Veteran Administration Healthcare System
2101 Elm Street North
Fargo, Cass County, North Dakota 58102
March 18, 2022
Terracon Project No. M1217071
Appendix A from the Basis of Design

Prepared for:
Bancroft Architects + Engineers
Northbrook, IL

Prepared by:
Terracon Consultants, Inc.
West Fargo, North Dakota

terracon.com

Terracon

Environmental ■ Facilities ■ Geotechnical ■ Materials

No Longer part of BOD—For Security Reasons

Please see Separate Document

Please See Separate Document

Calibre

APPENDIX C

Fargo VAMC EHRM Infrastructure Upgrade
Fargo, North Dakota
Project # 437-21-205

Structural Calculations Package
Issue for Bid
March 18, 2022

Design prepared under the supervision of Ed Sabia, PE

Please See Separate Document

VA | U.S. Department of Veterans Affairs

Fargo VA Health Care System

2101 Elm Street North

Fargo, ND 58102

VA Contract No. 36C26319D0044
VA Station Project No. 437-21-205
Bancroft-AE Project No. 18-121

EHRM Infrastructure Upgrades

BASIS OF DESIGN - APPENDIX D

A: Room Equipment Heat Gain Verification

B: : Mechanical Cut Sheets

ISSUE FOR BID
March 18, 2022

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee Road | Northbrook, Illinois 60062
Office: 847-952-9362 | www.bancroft-ae.com

MEETING MINUTES

Project Name: EHRM Infrastructure Upgrades Fargo ND VA HCS	**Project No:** 437-21-205 **Bancroft No:** 18-121		
Meeting Milestone/Purpose: BOD 10% Review	**Date:** September 7, 2021 3:00 p.m. (CDT)	**Meeting Location:** VA – Virtual	
Attendees: Indicates not in attendance: **	**Company**	**Phone**	**E-mail**
Anthony Wilson	VA / CO-Post-Award	xxx-xxx-xxxx	Anthony.Wilson3@va.gov
Christ Moorer	(VHACLE)	xxx-xxx-xxxx	christ.moorer@va.gov
Ronald A. Tollefson	VA / COR-Post-Award	701-232-3241 #3866	ronald.tollefson@va.gov
Clifford Halvorson	VA /	701-232-3241 #3905	clifford.halvorson@va.gov
Brady Wiesner	VA /	701-232-3241 #3335	brady.wiesner@va.gov
Raymond Nelson	VA / Area Manager	701-232-3241 #7914	raymond.nelson2@va.gov
Ricki Keller	VA/ IT Specialist	701-232-3241 #7818	rickie.Keller@va.gov
Jose Barbosa	VA/ Contractor	xxx-xxx-xxxx	jose@varadaconsulting.com
Jeffrey Zuczek	VA/	xxx-xxx-xxxx	jeffrey.zuczek@va.gov
John Robbins	Bancroft AE / Project Manager	224-265-2120	jrobbins@bancroft-ae.com
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Dana Auman	Bancroft AE / Project Architect	224-265-2115	dauman@bancroft-ae.com
Walter Groszko	Bancroft AE / Project Electrical Eng	224-366-1220	wgroszko@bancroft-ae.com
Bruce Yoch	BrightTree	xxx-xxx-xxxx	byoch@brighttreestudios.com

Item	Action Item	Comments and Notes	Group/Person Responsible	Target Completion Date
1		VA prepared f "redline" review w/ comments and will share on SharePoint		
2		VA requested identification of Certified Physical Security Specialist. Bruce Yoch of BriteTree confirmed he was, and Kyle Hass of Hobach-Lewin is as well. Will be indicated in BOD	BAE	
3		Station infrastructure for which EHRM waivers will be required: **No second entrance room for service provider.* **No redundant fiber source from MCR to TR's. (No physical space capability.)* **BAE will assist Station in preparing written waivers document to submit to ERHM.*	VA	
4		35% to be added to Schematic line	BAE	
5		Codes and Standards: VA requests BAE delete those that are not applicable to this specific project.		
6		VA noted that the Main Hospital is actually three buildings and will need to be identified as such in future documents. Building Nos. are 1, 9 and 46.		
7		VA noted that Building 42 is the UND School of Medicine and is not affiliated with the VA. This building will not be part of the Scope of Work.		
8		VA noted that a new TR will be required to be constructed at the Main Hospital penthouse level (5th Floor). The COR will provide a plan subsequent to this meeting.		
9		VA Station requires (1) whole campus UPS, located in basement level of the Main Hospital Building. Currently there are more than one UPS located throughout the campus.		
10		VA noted that there is currently only single-phase power throughout Building 1/9/46 and will need to be changed to 3-phase power for all new TR's. 3-phase exists only in the MCR currently.		
11		VA indicated that there is presently no redundancy. In the future the Station will have redundant UPS throughout the campus. BAE to plan accordingly as part of this design.		
12		VA requires CAT6A cable installation only.		
13		The VA Station noted that each building is tracked individually, including Buildings 1, 9 and 46, and requests that the OPCC be broken down accordingly by Building. BAE will confirm but anticipates that this will be feasible.	BAE	
14		BOD 1-5, VA notes that the site plan Scope of Work is to include Building 40, the link between Building 40 and the Main Hospital, and the link between the Main Hospital and the UND School of Medicine.	BAE	

Item	Action Item	Comments and Notes	Group/Person Responsible	Target Completion Date
15		BOD 2-9, BAE can eliminate Building Connectivity Requirements schedule all buildings that are not in the Scope of Work. **VA Station will review schedule further and provide BAE any additional clarifications and corrections by start of 9.13 through 9.14 site investigation visit.*	VA	
16		BOD 2-1, VA requests a further breakdown of architectural design goals related to the MCR and TR's.		
17		VA Station confirmed that the "08182021 EHRM Space TR X-Matrix" document is current as of this meeting date. The program analysis schedules provided in the BOD report are to be updated accordingly.	BAE	
18		BOD 3-1 All seismic codes/references can be omitted.	BAE	
19		BOD 4-1, BAE to confirm weather design conditions are accurate for Fargo.	BAE	
20		BOD 4-2, correct Infrastructure Standard for Telecommunications Spaces is now Version 3.1.	BAE	
21		BOD 4-4, VA add references Factory Mutual for fire protection design criteria as well as Underwriter's Laboratories.	BAE	
22		BOD 4-4, text of "General" paragraph two is cut off.	BAE	
23		Bruce Yoch/BrightTree requested the following. ** Access Control manufacturer and preferred vendor* ** Video Surveillance Solution and preferred vendor* ** During Site Visit: Place tape to cover any IP addresses in MCR prior to teams arrival so that information is not inadvertently captures when taking pictures.* ** Vertical Cable Plan*	VA	
24		BAE requests VA COR to confirm and schedule for September 13 and 14 site investigation: **Design team has access to existing MCR and all existing TR's.* **Design team has access to all existing electrical closets.* **Design team has access to all existing mechanical rooms serving the MCR and TR's.*	VA	
25		Design team will check in on September 13 at 8:00 a.m. at the main entrance to the Main Hospital building. Will meet Ron Tollefson		

MEETING MINUTES

Project Name: EHRM Infrastructure Upgrades Fargo ND VA HCS	**Project No:** 437-21-205 **Bancroft No:** 18-121	BANCROFT ARCHITECTS + ENGINEERS
Meeting Milestone/Purpose: Scope of Work Changes	**Date**: October 19, 2021 2:00 p.m. (CDT)	**Meeting Location:** Teams

Attendees: Indicates not in attendance: **	Company	Phone	E-mail
Christ Moorer	PCAS- CS	xxx-xxx-xxxx	christ.moorer@va.gov
Ronald A. Tollefson	VA / COR-Post-Award	701-232-3241 #3866	ronald.tollefson@va.gov
Clifford Halvorson	VA / Alternate COR	701-232-3241 #3905	clifford.halvorson@va.gov
Brady Wiesner	VA /	(701) 232-3241 ext: 3335	brady.wiesner@va.gov
John Robbins	Bancroft AE / Project Manager	224-265-2120	jrobbins@bancroft-ae.com
Darlene Flook	Bancroft AE / Project Manager	224-875-6881	dflook@ bancroft-ae.com

Item	Action Item	Comments and Notes	Group/Person Responsible	Target Completion Date
1		James Cullum has granted permission to use Emcor Defender air-conditioned Server-Racks (. https://www.emcorenclosures.com/product/defender/) for non-Clinical spaces, instead of expanding TR rooms.		
2		Buildings 10 (Boiler Plant), 11 (Maintenance Garage), 13 (Laundry) 56 (Chiller Plant) and 3 (Admin) will use the cabinets.		
3		A variation will not be needed. A Summary Variation Report will be required at the end of the Design Phase.	BAE	
4		Building 51 will keep TR addition, but will be reduced to 100 SqFt	BAE	
5		Building 30 is required to receive Fiber	BAE	
6		Correct BOD/Plans to reflect 100 SqFt for non-clinical TR rooms and 170 SqFt for Clinical/Mission Critical rooms.	BAE	
7		Next OPCC to show "Covid Factor" Construction cost increase.	BAE	
8		BAE to look at an alternative location for the Penthouse TR and also consider access to roof still needed.	BAE	
9		VA to give detailed report on all non-IT Clinical/Security components that will be moved from old TR/OIT rooms to new rooms.	VA	
10		Old TR's BAE will specify wall finishes, floor transition and light fixture. BAE recommends no drop in ceiling and leave open.	BAE	
11		BAE will engage with Forensic Roof Company to diagnose leak on slanted metal roof.	BAE	
12		Modifications will be required for the above items with justification on additional design fees and consultants, but Schedule cannot change.	BAE	

Weekly Progress Updates

Meeting Agenda / Minutes
Attendee List

Bancroft Project No.:	18-121
Client:	VA- Fargo
Project Name:	EHRM
Client Project No.:	437-21-205

BANCROFT ARCHITECTS + ENGINEERS

Attendee Name	Organization	Title	Email address	Phone No.	MEETINGS Meeting Number 1 10/21/21	2 10/28/21	3 11/04/21
(RT) Rpnald Tollefson	Fargo VAMC	COR	ronald.tollefson@va.gov	701-232-3241 #3866			
(CH) Cliff Halvorson	Fargo VAMC	Alt. COR	clifford.halvorson@va.gov	701-232-3241 #3905			
(DF) Darlene Flook	BAE	PM	dflook@bancroft-ae.com	224-875-6881	X		
(DA) Dana Auman	BAE	PA	dauman@bancroft-ae.com	224-265-2115	X		
(JM) Jimmy McAllister	BAE	Architect	jmcallister@bancroft-ae.com	224-577-1600	X		

Meeting Agenda / Minutes

Bancroft Project No.:	18-121
Client:	VA- Fargo
Project Name:	EHRM
Client Project No.:	437-21-205

BANCROFT ARCHITECTS + ENGINEERS

Item Identification:
A = Architectural
M = Mechanical/HVAC
E = Electrical
P = Plumbing
O = Other Project Items

NOTE: Closed / completed items will be grayed out and carried for ONE meeting cycle, then removed from current list.

Item	Topic	Description / Discussion	By whom	By when
O-1-1	50% Review	Virtual or On-Site Page Turn. This will determine date of next Investigation site visit. (Nov 4-5 or Nov 18-19)	VA	
A-1-2	TR Room Addtions	Building 51 Proposaed location	VA	
O-2-3	TR/OIT Room Review	On track for receiving infomraiton	VA	
E-1-4	Grounding	Will remove from the Modification - BrightTree to arrange layout.	BAE	
A-2-5	Bldg 10 ,11 13, 3 & 56	Clarification on leaving New Server Rack in same position or are we eclosing.	VA	
A-3-6	Penthoue TR Rack	Can we get picures of of areas, BAE will direct exact areas.	VA	
O-3-7	OIT Questions	Door Size for TR Rooms, additional questions.	VA	

Meeting Agenda / Minutes
Attendee List

Bancroft Project No.:	18-121
Client:	VA- Fargo
Project Name:	EHRM
Client Project No.:	437-21-205

BANCROFT ARCHITECTS + ENGINEERS

Attendee Name	Organization	Title	Email address	Phone No.	MEETINGS Meeting Number 1 10/21/21	2 10/28/21	3 11/04/21
(RT) Rpnald Tollefson	Fargo VAMC	COR	ronald.tollefson@va.gov	701-232-3241 #3866		X	
(CH) Cliff Halvorson	Fargo VAMC	Alt. COR	clifford.halvorson@va.gov	701-232-3241 #3905		X	
(CM) Christ Moorer	Fargo VAMC	CS	Christ.Moorer@va.gov				
(DF) Darlene Flook	BAE	PM	dflook@bancroft-ae.com	224-875-6881		X	
(DA) Dana Auman	BAE	PA	dauman@bancroft-ae.com	224-265-2115		X	
(JM) Jimmy McAllister	BAE	Architect	jmcallister@bancroft-ae.com	224-577-1600			

Weekly Progress Updates

Meeting Agenda / Minutes

Bancroft Project No.:	18-121
Client:	VA- Fargo
Project Name:	EHRM
Client Project No.:	437-21-205

BANCROFT ARCHITECTS + ENGINEERS

Item Identification:
A = Architectural
M = Mechanical/HVAC
E = Electrical
P = Plumbing
O = Other Project Items

NOTE: Closed / completed items will be grayed out and carried for ONE meeting cycle, then removed from current list.

Item	Topic	Description / Discussion	By whom	By when
O-1-1	50% Review	Virtual (11.12) or On-Site Page Turn. (Note: any site visits should be a deduct) This will determine date of next Investigation site visit. (Nov 4-5 or Nov 18-19) Visit can align with 75%Page Turn.	VA	10.21.21
A-1-2	TR Room Addtions	Building 51 Proposaed location. VA will take measurements and get back with best location.	VA	10.21.21
O-2-3	TR/OIT Room Review	On track for receiving infomraiton. [illegible]	VA	10.21.21
E-1-4	Grounding	Will remove from the Modification - BrightTree to arrange layout. VA-ok	BAE	10.21.21
A-2-5	Bldg 10 ,11 13, 3 & 56	Clarification on leaving New Server Rack in same position or are we eclosing. [illegible]	VA	10.21.21
A-3-6	Penthouse TR Rack	Can we get picures of of areas, BAE will direct exact areas. For 50% will show TR on roof as planned, next SI visit; will look at new locations.	VA	10.21.21
O-3-7	OIT Questions	Door Size for TR Rooms, additional questions. [illegible]	VA	10.21.21
O-4-8	UPS- OPCC	OPCC will price the enitial UPS system for 50%, to bealigned with the plans.		

MEETING MINUTES

Project Name: EHRM Infrastructure Upgrades Fargo ND VA HCS	**Project No:** 437-21-205 **Bancroft No:** 18-121	
Meeting Milestone/Purpose: Scope of Work Changes. UPS and Generator Changes	**Date:** November 05, 2021 9:00 a.m. (CDT)	**Meeting Location:** Teams

Attendees: Indicates not in attendance: **	Company	Phone	E-mail
Ronald A. Tollefson	VA / COR-Post-Award	701-232-3241 #3866	ronald.tollefson@va.gov
Clifford Halvorson	VA / Alternate COR	701-232-3241 #3905	clifford.halvorson@va.gov
Darlene Flook	Bancroft AE / Project Manager	224-875-6881	dflook@ bancroft-ae.com
Walter	Bancroft AE / Sr Electrical Engineer	630-939-0049	wgroszko@bancroft-ae.com
Dana Auman	Bancroft AE / Project Architect	847-877-1831	Dauman@bancroft-ae.com

Item	Action Item	Comments and Notes	Group/Person Responsible	Target Completion Date
1		Will proceed with Monolithic Design, not an EHRM standard.	BAE	11.16.21
2		(RT) Agreed to 90KVA "Small Data Center" design that includes the EHRM JSA and EDS loads	VA	11.16.21
3		EATON Basis of Design may be two units but still constitute "N" design,	VA	11.16.21
4		Agreed, Modular UPS design will be expandable, but initially sized for existing load	VA	11.16.21
5		(WG) Will design UPS Feeders up through building to power TR rooms,	BAE	11.16.21
6		(RT) Clarified, each TR rack will be feed by only one UPS receptacle that feeds one Vertical PDU, (meaning no Rack redundancy)	VA	11.16.21
7		BLDG 46 generator will be sized starting at 1 MVA, and made one size larger to accommodate future loads, (1.25 or 1.5)	VA	11.16.21
8		Final generator will be sized based on %Harmonics from two 500KVA UPS Systems operating at 50% load each	VA	11.16.21
9		VA agreed. BLDG 46 Em Generator will be upgraded based on related VA projects around BLDG 46	VA	11.16.21
10		(RT) stated New Data Center location is not known at this time.	VA	11.16.21
11		BAE design will focus on NEW UPS in existing location, and NEW Em generator feeding existing Data Center location	BAE	11.16.21
12		Existing location to be looked at on next Site Investigation.	BAE	11.16/17.21
13		Changes will need to be discussed with Consultants and Team to incorporate into design	BAE	11.08.21
14	Priority	Modification needed and EHRM Variance	VA	11.11.21

MEETING MINUTES

Project Name: EHRM Infrastructure Upgrades Fargo ND VA HCS	**Project No:** 437-21-205 **Bancroft No:** 18-121	
Meeting Milestone/Purpose: PAGE TURN General notes and questions	**Date:** November16, 2021 1:00 p.m. (CDT)	**Meeting Location:** Fargo On-site and TEAMS

Attendees: Indicates in attendance via TEAMS: **	Company	Phone	E-mail
Ronald A. Tollefson	VA / COR-Post-Award	701-232-3241 #3866	ronald.tollefson@va.gov
Clifford Halvorson	VA / Alternate COR	701-232-3241 #3905	clifford.halvorson@va.gov
Darlene Flook	Bancroft AE / Project Manager	224-875-6881	dflook@ bancroft-ae.com
Walter Groszko	Bancroft AE / Sr Electrical Engineer	630-939-0049	wgroszko@bancroft-ae.com
Dana Auman	Bancroft AE / Project Architect	847-877-1831	Dauman@bancroft-ae.com
Kyle Haas	Hohbach-Lewin, Inc.	415-968-1731	khaas@hohbach-lewin.com
Bruce Yoch	BrightTree STUDIOS	412.225.6749	byoch@brighttreestudios.com
Aaron Mangione	Calibre Engineering	720-704-8488	amangione@calibre-engineering.com
Jimmy McAllister **	Bancroft AE / Project Manager		jmcallister@bancroft-ae.com
Hilary P. Clifton **	Terracon	701-282 9633	Hilary.Clifton@terracon.com
Travis Benjamin **	Calibre Engineering	303-) 952-1875	tbenjamin@calibre-engineering.com
Anthony Wilson **	VHACLE/CO		Anthony.Wilson3@va.gov

MEETING MINUTES		
Project Name: EHRM Infrastructure Upgrades Fargo ND VA HCS	**Project No:** 437-21-205 **Bancroft No:** 18-121	Bancroft ARCHITECTS + ENGINEERS
Meeting Milestone/Purpose: PAGE TURN General notes and questions	**Date:** November16, 2021 1:00 p.m. (CDT)	**Meeting Location:** Fargo On-site and TEAMS

Item	Action Item	Comments and Notes	Group/Person Responsible	Target Completion Date
1		**BOD: Blast** Blast Narrative to reference Appendix. Coordinate w/BAE Remove Sandroom Update TR's that are now Emcore Cabinets Remove screening statement Add changes for 75%		
2		**BOD: OPCC** Fix appendix Need 1/9/46 split in costs. Use each TR as reference of which bldg. work will be listed under		
3		**BOD: General** QAQC revisions Bldg 3 ,remove cabinet add TR Replace Matrix, has been updated by COR. Fix circle colors 2-6 etc. as it pertains to TR Bldg. 12, do not expand TR, construct full fire-rated enclosure. IT/Security- Change J-Hook comment Terracon update errors on plans Meeting notes, highlight dates Smoke devices are to be designed for TR's and noted as a deduct-alternate.		
4		**Drawings - HVAC:** Temperature should be at 70 degrees Min Add humidity alarm		
5		**Drawings - IT/Security:** Maximize racks BC-60 is where copper line will terminate Bldg. 30 remove rack Leave 2Ft. service loop at each pull Need plan for "B" route BrightTree looking into Card Access for racks. New Concrete Vaults (4) conduits to be used in Fiber run. A, B Spare, Spare Need loop for Fiber A & B (future) TR -Plywood to be specified on all (4) walls Do not use existing sleeves	;	
6		**Drawings - Fire Protection:** Need locations of recessed Fire Extinguisher Cabinets If sprinkler heads are not moving in TR's then, heads to be replaced with new Guard to be specified on all heads All pipes to be Red Deduct-alternate- Smoke detectors in all TR's		
7		**Drawings - Electrical:** 1/9/46 will receive Monolithic UPS System confirmed Out-Buildings will receive UPS in racks Overhead light fixture to change to correct symbol Move room numbers so they do not interfere with layout Fix Building Key Station confirmed direction to proceed w/Monolithic UPS design. Station confirmed direction to tie UPS to Building 9 Generator. Stationed confirmed direction to design for a new Generator to now handle UPS design. This may require enlarging building footprint housing Generator. Will also require a MOD. Station noted that Generator will need to be located out of the existing floodplain. Station requesting a (2) story addition above existing Bldg.9 Generator Room. The new Generator will be located on the 2nd Level (above floodplain) The ATS components will be located on first floor. The existing Generator Room (0 Level) will be abandoned, and VA will determine future use.		
8		**Drawings - Architectural/General:** Need to include note of a scalable # for horizontal/vertical openings to be fire-stopped Bldg . 30 no upgrades Bldg. 56 & 30 are not sprinklered Fix Drawing Index for all drawings; use "0" for Basement not "B", Add Sheet # of # Add GC note Concrete Patching for Vertical openings, so GC has a # (i.e.; 200 SqFt) Add GC note; recommendation of (2) Superintendents on site, one to always be present to avoid work stop. G101 -Include ICRA/PCRA/ILSM on sheet Note to GC; responsible for full underground survey of campus prior to site demolition. Use ground penetrating Radar as GC is responsible for any line/pipe that is nicked/damaged. Language will be included in Specification Section 02-21-13 Site Surveys and Drawings. Project considered Class IV, will need anterooms for construction. TR- Plywood to be specified on all (4) walls		
		Station requests the 2-story Generator addition be constructed to accommodate a future 3rd floor.		
9		**Drawings - Civil/Structural:** DM01- Adjust line weights CU01 - Add note to Manhole Spec, CentryLink or Equal to		
10		**Drawings - ALL:** Condense plans into a few pages as possible. All Consultants- remove notes that do not pertain to project. Shift plans to make sure nothing is cut off Show rated walls		
11		**Building 12** Ron awaiting permission to make room smaller than the standard.		
12		**Building 51** Corridor needs to be heated New design for TR was approved		

MEETING MINUTES		
Project Name: EHRM Infrastructure Upgrades Fargo ND VA HCS	**Project No:** 437-21-205 **Bancroft No:** 18-121	
Meeting Milestone/Purpose: PAGE TURN General notes and questions	**Date**: November16, 2021 1:00 p.m. (CDT)	**Meeting Location:** Fargo On-site and TEAMS

13		**TR's-** Ron to confirm door finishes Phillips equipment to remain in abandoned TR's Walls without receptacles, add one. Lighting Sensors in TR's If rooms are too tight, do not add extra rack. 2' min clearance if necessary BrightTree: Structural Engineers will need plans highlighting rooms with additional racks. TR Floor finish to be sealed concrete only. No anti-static coating (per Station directive)		
14		**Existing Finishes-** Ron to send list		
15		**Existing OIT/Non- IT equipment-** Ron to send completed list		

Meeting Agenda / Minutes
Attendee List

Bancroft Project No.:	**18-121**
Client:	**VA- Fargo**
Project Name:	**EHRM**
Client Project No.:	**437-21-205**
Contract No.:	**36C26319D0044**

					MEETINGS		
					Meeting Number		
					1	2	3
Attendee Name	**Organization**	**Title**	**Email address**	**Phone No.**	10/21/21	10/28/21	12/02/21
(RT) Ronald Tollefson	Fargo VAMC	COR, Engineering Department	ronald.tollefson@va.gov	701-232-3241 #3866	X	X	X
(CH) Cliff Halvorson	Fargo VAMC	Alt. COR, Engineering Department	clifford.halvorson@va.gov	701-232-3241 #3905	X		X
(CM) Christ Moorer	VA,VHA	CS	Christ.Moorer@va.gov		X		X
(AW) Anthony Wilson	VA,VHA	CO	Anthony.Wilson3@va.gov				X
(BW) Brady Wiesner	Fargo VAMC	Assistant Chief, Engineering Service	Brady.Wiesner@va.gov				X
(DF) Darlene Flook	BAE	PM	dflook@bancroft-ae.com	224-875-6881	X	X	X
(DA) Dana Auman	BAE	PA	dauman@bancroft-ae.com	224-265-2115	X	X	
(JM) Jimmy McAllister	BAE	Architect	jmcallister@bancroft-ae.com	224-577-1600	X	X	X

Meeting Agenda / Minutes

Bancroft Project No.:	18-121
Client:	VA- Fargo
Project Name:	EHRM
Client Project No.:	437-21-205

Item Identification: A = Architectural M = Mechanical/HVAC E = Electrical P = Plumbing O = Other Project Items	NOTE: Closed / completed items will be grayed out and carried for ONE meeting cycle, then removed from current list.

Item	Topic	Description / Discussion	By whom	By when
O-5-9	Generator Direction	How to proceed. (RT) reported that the Generator addition will be part of the MCR project, at a later date. (RT) Awaiting load numbers from BAE - ME & EE, to include cooling loads for 1/9/46 generators.	VA	
O-6-10	Penthouse TR	Consensus on Roof Top TR or (2) individual TR Rooms (RT) Gave direction, to proceed with the Roof Top TR. It was requested that the load be reduced on materials used, so reinforcement in of below columns could be avoided. Will discuss with Calibre. If weight cannot be reduced can tubular steel be used instead for reinforcing columns.	VA	
O-7-11	Various TR 's	(RT) Will look into if variances from PDSM are needed on Level 4 TR and Level 1 TR		
O-8-12	EMCOR Cabinets	(RT) Stated , OCIE reported from Iowa City, that the cabinets are not approved. Floor mounted (Cemetery Facility Guidelines) cabinets will be used. With the exception of the Boiler House cabinet. That will be Emcor		
M-1-13	TR In-line cooling	(RT) reiterated, those are not desired by IT Team and standard cooling is to be used.		

Weekly Progress Updates

Meeting Agenda / Minutes
Attendee List

Bancroft Project No.:	**18-121**
Client:	**VA- Fargo**
Project Name:	**EHRM**
Client Project No.:	**437-21-205**
Contract No.:	**36C26319D0044**

BANCROFT ARCHITECTS + ENGINEERS

					MEETINGS		
					Meeting Number		
					3	4	5
Attendee Name	**Organization**	**Title**	**Email address**	**Phone No.**	12/02/21	12/09/21	12/16/21
(RT) Ronald Tollefson	Fargo VAMC	COR, Engineering Department	ronald.tollefson@va.gov	701-232-3241 #3866	X	X	
(CH) Cliff Halvorson	Fargo VAMC	Alt. COR, Engineering Department	clifford.halvorson@va.gov	701-232-3241 #3905	X		
(CM) Christ Moorer	VA,VHA	CS	Christ.Moorer@va.gov		X	X	
(AW) Anthony Wilson	VA,VHA	CO	Anthony.Wilson3@va.gov		X	X	
(BW) Brady Wiesner	Fargo VAMC	Assistant Chief, Engineering Service	Brady.Wiesner@va.gov		X		
(DF) Darlene Flook	BAE	PM	dflook@bancroft-ae.com	224-875-6881	X	X	
(DA) Dana Auman	BAE	PA	dauman@bancroft-ae.com	224-265-2115		X	
(JM) Jimmy McAllister	BAE	Architect	jmcallister@bancroft-ae.com	224-577-1600	X		

Meeting Agenda / Minutes

Bancroft Project No.:	18-121
Client:	VA- Fargo
Project Name:	EHRM
Client Project No.:	437-21-205

BANCROFT ARCHITECTS + ENGINEERS

Item Identification:	NOTE: Closed / completed items will be grayed out and carried for ONE meeting cycle, then removed from current list.
A = Architectural	
M = Mechanical/HVAC	
E = Electrical	
P = Plumbing	
O = Other Project Items	

Item	Topic	Description / Discussion	By whom	By when
O-5-9	Generator Direction	How to proceed. (RT) reported that the Generator addition will be part of the MCR project, at a later date. (RT) Awaiting load numbers from BAE - ME & EE, to include cooling loads for 1/9/46 generators.	VA	Meeting to discuss W/Walter 12.9.21
O-6-10	Penthouse TR	Consensus on Roof Top TR or (2) individual TR Rooms (RT) Gave direction, to proceed with the Roof Top TR. It was requested that the load be reduced on materials used, so reinforcement t of below columns could be avoided. Will discuss with Calibre. If weight cannot be reduced can tubular steel be used instead for reinforcing columns.	VA	
O-7-11	Various TR 's	(RT) Will look into if variances from PDSM are needed on Level 4 TR and Level 1 TR. (RT) has said we will address these varience issues at the end of the project.		
O-8-12	EMCOR Cabinets	(RT) Stated , DCIE reported from Iowa City, that the cabinets are not approved. Floor mounted (Cemetery Facility Guidelines) cabinets will be used. With the exception of the Boiler House cabinet. That will be Emcor. (RT) stated we shall look at if these cabinets can be wall mouted. Does Emcor cabinet have a filter?		
M-1-13	TR In-line cooling	(RT) reiterated, those are not desired by IT Team and standard cooling is to be used.		
O-9-14	Schedule	BAE has requested an adjustment to the schedule, to accommodate the changes that were just approved. RFI 012 (RT) Agrees with scheudle change and will submitt Schedule and Paperwork to (AW) & (CM) for scheudle approval.	BAE	
O-10-15	RFI's	Still waiting for responses to the following RFI's. All if which are critical for the Consultants and Mechanical to proceed. RFI 016 - Building 51 Finishes RFI 013 - Building 46 Roof RFI 015 - Condesor Unit Locations RFI 014 - Racks vs. cooling RFI 013 - There are no other drawings for this roof area. RFI 014- What Dave stated in RFI, is the direction that will be taken. with the exception 2.5KW per rack. The only rooms with 5-6 racks should be Room# 1A54 & 2A 22/24 (serves OR) RFI 015- Calibre does not have current locaitons of units, that (RT) and Dave discussed. Dave to give new outline to Calibre. RFI 016- Ron getting finishes together	BAE	

MEETING MINUTES

Project Name: EHRM Infrastructure Upgrades Fargo ND VA HCS	**Project No:** 437-21-205 **Bancroft No:** 18-121	
Meeting Milestone/Purpose: EHRM: Racks vs. Cooling Requirements RFI 014	Date: December 09, 2021 1:30 p.m. (CDT)	**Meeting Location:** Teams

Attendees: Indicates not in attendance: **	Company	Phone	E-mail
Bruce Yoch	BrightTree Studios	412.225.6749	byoch@brighttreestudios.com
David Gamble	Bancroft AE / Sr Mechanical Engineer	224.875-6896	dgamble@bancroft-ae.com
Darlene Flook	Bancroft AE / Project Manager	224-875-6881	dflook@ bancroft-ae.com
Walter Groszko	Bancroft AE / Sr Electrical Engineer	630-939-0049	wgroszko@bancroft-ae.com
Dana Auman	Bancroft AE / Project Architect	847-877-1831	Dauman@bancroft-ae.com

Room #	# of Racks	Notes
		Below is a list of Room numbers with their quantity of racks @ 2.3KW per/rack
BD-02	(2)	
BB-92	(3)	
BD-84	(2)	
BA-30	(3)	
BC-02	(3)	
MCR/Data Center	(1)	No power required
1B-121	(1)	
1A-54	(5)	
1C-99	(3)	
1D-64A	(3)	
1D-158	(2)	12.16.21 Bruce can only fit (1)
2A-24	(5)	Serving OR's
2C-33	(3)	
2C-90A	(4)	
2D-18	(4)	
3B-23	(4)	
3D-10	(4)	
4B-23	(3)	Roof Repair
4E-15A	(3)	
502 Penthouse TR	(4)	
Building 3	(1)	
Building 10 Mezzanine	Emcor (1)	
Building 11	TE	Floor or Wall
Building 12	(1)	Wall unit or move wall to make unit fit
Building 13	TE	Floor or Wall
Building 30	TE	Floor or Wall
Building 40 LL 102B	(4)	
Building 40 UL 202A	(3)	
Building 51Addition 1030	(2)	
Building 52 111	(2)	
Building 52 211	(2)	
Chiller Plant	TE	Floor or Wall

BANCROFT ARCHITECTS + ENGINEERS

Meeting Agenda / Minutes Attendee List

Bancroft Project No.:	**18-121**
Client:	**VA- Fargo**
Project Name:	**EHRM**
Client Project No.:	**437-21-205**
Contract No.:	**36C26319D0044**

BANCROFT ARCHITECTS + ENGINEERS

					MEETINGS		
					Meeting Number		
					3	4	5
Attendee Name	**Organization**	**Title**	**Email address**	**Phone No.**	12/02/21	12/09/21	**12/16/21**
(RT) Ronald Tollefson	Fargo VAMC	COR, Engineering Department	ronald.tollefson@va.gov	701-232-3241 #3866	X	X	X
(CH) Cliff Halvorson	Fargo VAMC	Alt. COR, Engineering Department	clifford.halvorson@va.gov	701-232-3241 #3905	X		
(CM) Christ Moorer	VA,VHA	CS	Christ.Moorer@va.gov		X	X	
(AW) Anthony Wilson	VA,VHA	CO	Anthony.Wilson3@va.gov		X	X	
(BW) Brady Wiesner	Fargo VAMC	Assistant Chief, Engineering Service	Brady.Wiesner@va.gov		X		X
(DF) Darlene Flook	BAE	PM	dflook@bancroft-ae.com	224-875-6881	X	X	X
(DA) Dana Auman	BAE	PA	dauman@bancroft-ae.com	224-265-2115		X	
(JM) Jimmy McAllister	BAE	Architect	jmcallister@bancroft-ae.com	224-577-1600	X		
(CR) Connor Rollins	BAE	Architect	crollins@bancroft-ae.com				X
(PP) Petko Petrovich	BAE	Project Architect	ppetrovich@bancroft-ae.com				X

Meeting Agenda / Minutes

Bancroft Project No.:	18-121
Client:	VA- Fargo
Project Name:	EHRM
Client Project No.:	437-21-205

BANCROFT ARCHITECTS + ENGINEERS

Item Identification:	NOTE: Closed / completed items will be grayed out and carried for ONE meeting cycle, then removed from current list.
A = Architectural	
M = Mechanical/HVAC	
E = Electrical	
P = Plumbing	
O = Other Project Items	

Item	Topic	Description / Discussion	By whom	By when
O-9-14	Schedule	BAE has requested an adjustment to the schedule, to accommodate the changes that were just approved. RFI 012 (RT) Agrees with schedule change and will submit Schedule and Paperwork to (AW) & (CM) for schedule Approval.	BAE	
O-10-15	RFI's	Still waiting for responses to the following RFI's. All if which are critical for the Consultants and Mechanical to proceed. RFI 016 - Building 51 Finishes RFI 013 - Building 46 Roof RFI 015 - Condesor Unit Locations RFI 014 Racks vs. cooling RFI 013 - There are no other drawings for this roof area. RFI 014- What Dave stated in RFI, is the direction that will be taken. with the exception 2.5KW per rack. The only rooms with 5-6 racks should be Room# 1A54 & 2A 22/24 (serves DR) RFI 015- Calibre does not have current locaitons of units, that (RT) and Dave discussed. Dave to give new outline to Calibre. RFI 016- Ron getting finishes together	BAE	
A-4-16	Rooftop TR Options	Option 1; Construct the TR as planned. This would require the below. *Reinforce Colums below for several floors *Existing roof would need to be re-built as the bar joists would also not support weight and snow-drifting loads. *33 ft. steel spans would need to be brought to the roof via tower crane (footing for this would also be an exspense) Option 2: Construct a TR that goes through the gabled roof to the West of 1st proposed. *This would not require re-build of roof below *BAE is not certain of the area below gabled roof. *A door with roof access and a latter will still be installed for condenser unit access. Option 3: Build as originally proposed, 2 TR's at each end of the Penthouse to meet the	VA	

MEETING MINUTES			
Project Name: EHRM Infrastructure Upgrades Fargo ND VA HCS	**Project No:** 437-21-205 **Bancroft No:** 18-121		
Meeting Milestone/Purpose: PAGE TURN – 75% Submittal. General notes and questions	**Date**: January 07, 2022 8 :30a.m. – 3:00p.pm (CDT)	**Meeting Location:** Fargo On-site and TEAMS	
Attendees: Indicates in attendance via TEAMS: **	**Company**	**Phone**	**E-mail**
Ronald A. Tollefson	VA / COR-Post-Award	701-232-3241 #3866	ronald.tollefson@va.gov
Christ Moore**	VA / CS		christ.moorer@va.gov
Brandon Meske**	VA/ Information Technology Specialist		Brandon.Meske@va.gov
Ricki Keller**	VA/ Deputy Assistant Secretary for Information and Technology		Rickie.Keller@va.gov
Todd G. Dalzell**	VA/ Project Engineer		Todd.Dalzell@va.gov
Darlene Flook**	Bancroft AE / Project Manager	224-875-6881	dflook@ bancroft-ae.com
Dana Auman	Bancroft AE / Project Architect	847-877-1831	Dauman@bancroft-ae.com
Dick Englemen	Bancroft AE/ Sr Cost Estimator	224-265-0326	dengleman@bancroft-ae.com
David Gamble**	Bancroft AE/ Sr Mechanical Engineer	207-245-5830	dgamble@bancroft-ae.com
Josh Mikels**	Bancroft AE / VP of Engineering		jmikels@bancroft-ae.com
Bruce Yoch	BrightTree Studios	412.225.6749	byoch@brighttreestudios.com
Aaron Mangione**	Calibre Engineering	720-704-8488	amangione@calibre-engineering.com
Travis Benjamin **	Calibre Engineering	303- 952-1875	tbenjamin@calibre-engineering.com
Kyle Haas**	Hohbach-Lewin, Inc.	415-968-1731	khaas@hohbach-lewin.com
Mona **	Hohbach-Lewin, Inc.		mzahedi@hohbach-lewin.com
Jeff Scott**	FP&C		jscott@fpc-consultants.com

Item	Action Item	Comments and Notes	Group/Person Responsible	Target Completion Date
1		**95% Submittal Notes:** • Spec book – turn of text edits • Spec book – submit one copy only • Drawings – 2 full size, 1 half size • Drawings - Subcontractor logos in border file • Room BC-60 – no remodel work as part of Scope of Work		
2		**BOD – OPCC:** • Change title to include appendix letter • Pg 4/Line 32- Added duct banks around perimeter costs, includes hauling out material • End budget amount went up 2.2 mil, DE explained multiplier 10% to catch things missed or added. Building Costs are 12.2% higher. • Building Break-outs 1/9/46 -to be corrected		
3		**BOD – General:** • Table of Contents & Executive Summary missing • 1.5 design alerts repeated • 2.1 Executive Summary missing • 2.5 Circles deleted • 2.6 Circles to be corrected • 2.7 IT Equipment to be replaced, change to, to be relocated • 2.9 Missing Arrow • Building 52 Missing • Appendix – Picture of Cover for each & state each document is a separate document • Terracon Appendix Tables missing, explain samples better • Appendix B – Blast. Distance around building clarity. • Missing Calibre Calculations • Abatement Appendix : No Building 1-9-46 Penthouse level samples taken by Terracon? (Not included in report or in BOD.) If not, survey needed. • Abatement Appendix: Lead containing paint in BD-02? Terracon to verify. If not, lead containing paint spec section can be removed. • Building 52 drawings provided by Station. To be forwarded to Calibre Civil asap.		
4		**BOD - IT/Security:** • Open IT racks can be against walls if sides are accessible. Rack to be changed to open sided. Station to request variance from OEHRM to deviate from rack design requirements to go to open sides.		

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4		• Fiber pathway - add note to account for source b future pathway for cable, even if just at opposite sides of corridor if 60' spacing cannot be accomplished. Source B needs to be one side of corridor, A on the other side		
5		**BOD – Mechanical:** • Temperature and humidity are to be Monitored and Alarmed		
6		**BOD – Electrical:** • UPS Power Distribution, change statement.	;	
7		**BOD- Fire Protection:** • All TR's openings are to be fire-stopped, not just new.		
8		**BOD - Architecture:** • Plywood in TR's to be placed vertically. • BOD page 2-14 – Hold on review comment until COR talks to IT •		

9		**Drawings - Architectural/General:**
		• COR to verify with Station engineers as to whether the steam tunnel may be used as part of the site fiber routing. Note: Asbestos in tunnel
		• All designated vertical cores on architectural –Indicate three cores
		  ○ 1 for Source A fiber
		  ○ 1 for electrical
		  ○ 1 for future Source B fiber
		• Regarding fiber routing through Healing Garden:
		  ○ Spec for contractor to photograph prior to work to document final appearance to be restored.
		  ○ Spec for 2 year warranty of work.
		• Demolition note to be provided –
		  ○ Assume 1,000 SF of hard plaster ceiling above drop ceilings to be removed.
		  ○ Assume ICRA protection required for this Work.
		• Prior to the page turn, the Station engineering group leadership vetoed locating the Penthouse TR east of the elevator machine room (south of the current proposed TR addition). This leaves placing the TR locations at the north and south ends of the original building penthouse level.
		• Penthouse -exterior access stairs installed as part of the Scope. Deduct Alternate		

10		**Drawings - Civil/Structural:** • Need note telling GC to consider traffic routing on demo plan. • Specify conduit seals at manholes. • Look into high-water alarms.		
		• Fix Builing # overlap • Legend- fix light to dark re; water main • Show outline of Building 52Note 4- GC reusing existing conduit, delete. • CF100 Asset Schedule. Delete. Change title • Missing drawing # on grading plan, need key • CU100 Overall utility Plan. Show reference only. GC to verify locations. • CU106 where does vault enter hospital? • CU107 mis-labeled buildings • Rebar is talked about but not shown. Spacing not given. • Centrelink – note or approved equal		

11		**Drawings – Fire Protection:**
		• Smoke detectors. Per COR – to be incorporated into the design with removal from scope as part of a deduct alternate.
		• Method of installing smoke detectors,
		  ○ COR questions whether terminal strips are acceptable to the VA.
		  ○ COR to contact Station and national VA fire protection engineers to confirm.
		• S-003 – Quality assurance note 3 – to be eliminated
		• COR notes that clean agent fire extinguishers apparently have same appearance as type ABC fire extinguishers. Would like BAE to investigate a way to distinguish between types so that later extinguishers will not be mistakenly exchanged from their proper locations.
		• Branch line key needs to be fixed
		• Key Plan to be on all plans
		• General notes #4 sprinkler head Factory Mutual not UL
		• All pipes are Red
		• FXO412 Existing to move. No pipe shown, can it be deleted
		• Detail 5 need to define
		• VA/Ron to email National Life Safety w/drawing about servicing Smoke Detectors.		

12		**Drawings – IT/Security:** • Use 4x8 plywood in all out-buildings (not 4x4) Vertically. • Extend areas of work to include extended lengths of cable tray as requested by VA review comments. • Wireless access point - make note for 10' service loop • Room 1B-121 – Must have 2 racks. ○ Shift door to garage. • Room 1A-54 – 6 racks required.		

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		• Room 1C-99 – 5 racks required. • OIT Rooms – IT equipment to be migrated – o Do not designate "to be abandoned". o Note for non-IT equipment to remain operational. • Room 1D-64A – 4 racks required. • Room 2A-24 – 6 racks required. o Back of racks to be 36% off wall. • Room 2D-18 – Flip door location. • Room 3B-23 – 5 racks required. • Room 4B-23 – 4 racks required. • Room 4E-15A – Remove 1 rack. • TT-00-001 o Add See detail TT-xxx at symbols with details o Delete pay phones o Reference "VA" instead of COR o #9 delete "fire rated" and add "on both sides" o #12 further clarify 295 feet maximum o #13 add service loop language for WAP o Rack details o All walls are to be rated • TT-00-002 o Clarify cores o Revise per site visit o Specifications should provide detail for landscaping • TT-01-100.A o Add analog frame rack in BC-60. To terminate Cat5e onto. o Ron to send analog rack pic from St Cloud • TT-01-100.C o Mover text out to white space o Revise text re. Rated partition (common for all sheets with this note) o Extend cable tray at bottom left into room to right o Cable counts - see spreadsheet that Ron provided - some discrepancies • TT-01-101.B o Review/revise areas served • TT-01-101.C o Extend tray per Ron's notes • Add table for sleeves with cable count. Allow for future expansion.		
		• TT-01-103.A o Fix detail 5/xxx. Should be 4 • TT-01-103.C o Extend cable tray per Ron's notes o Clean up fire rated pathways at cable tray - bold lines hide these • TT-01-105.A o Avoid elevator equipment room- this will be changed anyways… o Clean up detail 2/TT-01-105.A • TT-01-401 o Match architectural o Use square for demo keynotes o General notes still say 50% • TT-01-402 o Delete BAE note at rack • Add note to provide xx number of extender brackets - based on Cisco sku that Ron will provide • TT-TD504 o eliminate some of the details to create typical for each rack (one with UPS, one without) • TT-TD505 o change 110 blocks to rack mounted o TT-TD506 o change Emcore to 45 RU • Expand general notes to require expanding ACS and VMs platforms • Replace all card readers with new • Add ACS panel to penthouse • Add ACS to building 3 • Ad CRs and DCs to cabinets in out buildings		
13		**Drawings – Structural:** • SC001 Change note to be project specific o Note #4 GC to look @ all drawings o Note #11 STEM reference UOM missing from abbreviation o Note to GC about Truss design/supplier • SC002 detail 1 where is rebar being used? o Note for People to be moved for reinforcing • Concrete o Note #2 Testing lab, GC to select.		

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		○ Notes 5.6.7 Who is verifying. • Post installed anchor notes #3- Need general note for condensing units • S003 Statement VA employs inspector, delete – VA AHJ • S5101 GC needs proper signage , note to be directed to life safety plan • S5130 Too much white space ○ Plans should read L-R, Top-Bottom ○ Detail #4 No dims on how deep ○ Note about frost depth ○ More details to be added		
14		**Abatement:** • HA001 Need report #, zoom in on room • G002A Drawing Index , Fix #'s • GI201 Fix Map		
15		**Building 11:** • Change cemetery rack to floor mounted half rack. ○ Removable sides ○ No fans ○ All sides, front, back vented ○ No glass (preferred)		
16		**Building 12** • Wall mounted half rack • Removable sides • No fans • All sides and front vented • No glass (preferred)		
17		**Building 13:** • Wall mounted half rack • Same features as above		
18		**Building 30:** • Floor mounted full rack • Same features as Building 11		
19		**Building VBA 40:** • Go back to two racks		
20		**Building 51:** • Flip racks •		
21		**Building 56:** • Floor mounted half rack – • Same features as Building 11		

Weekly Progress Updates

Meeting Agenda / Minutes
Attendee List

Bancroft Project No.:	**18-121**
Client:	**VA- Fargo**
Project Name:	**EHRM**
Client Project No.:	**437-21-205**
Contract No.:	**36C26319D0044**

BANCROFT ARCHITECTS + ENGINEERS

					MEETING Meeting Number		
					6	7	8
Attendee Name	**Organization**	**Title**	**Email address**	**Phone No.**	12/15/21	01/19/22	01/27/22
(RT) Ronald Tollefson	Fargo VAMC	COR, Engineering Department	ronald.tollefson@va.gov	701-232-3241 #3866	X	X	
(CH) Cliff Halvorson	Fargo VAMC	Alt. COR, Engineering Department	clifford.halvorson@va.gov	701-232-3241 #3905		X	
(CM) Christ Moorer	VA,VHA	CS	Christ.Moorer@va.gov				
(AW) Anthony Wilson	VA,VHA	CO	Anthony.Wilson3@va.gov				
(BW) Brady Wiesner	Fargo VAMC	Assistant Chief, Engineering Service	Brady.Wiesner@va.gov		X		
(DF) Darlene Flook	BAE	PM	dflook@bancroft-ae.com	224-875-6881	X	X	
(DA) Dana Auman	BAE	PA	dauman@bancroft-ae.com	224-265-2115		X	
(JM) Jimmy McAllister	BAE	Architect	jmcallister@bancroft-ae.com	224-577-1600			
(CR) Connor Rollins	BAE	Architect	crollins@bancroft-ae.com		X		
(PP) Petko Petrovich	BAE	Project Architect	ppetrovich@bancroft-ae.com		X		

Meeting Agenda / Minutes

Bancroft Project No.:	18-121
Client:	VA- Fargo
Project Name:	EHRM
Client Project No.:	437-21-205

BANCROFT ARCHITECTS + ENGINEERS

Item Identification: A = Architectural M = Mechanical/HVAC E = Electrical P = Plumbing O = Other Project Items	NOTE: Closed / completed items will be grayed out and carried for ONE meeting cycle, then removed from current list.

Item	**Topic**	**Description / Discussion**	**By whom**	**By when**
A-4-16	Rooftop TR Options	[illegible] *A door with roof access and a latter will still be installed for condenser unit access. **Option 3: Build as originally proposed, 2 TR's at each end of the Penthouse to meet the requirements. ADDED: A third TR on East Side.**	VA	
O-11-17	Penthouse TR's	Penthouse TR's will only be outlined in 95%, since decision came after Page-Turn. On-Site measurements and investigative walkthroughs will be done day before 95% Page-Turn		
M-02-18	Mehcanical in TR's	Questions from VA: Mechanical Is there a required amount of air changes for TRs? If there is how are we accomplishing this? As far as I know we are just recycling air inside the TR itself. My maintenance foreman was asking me about the TRs and what their required hourly air changes are. I have never seen anything about air changes, but I have also not dug into the VA HVAC design manual much. **We the AC splits in our design we are providing minimally 20 to 30 air changes depending on room sizes and number of units to accommodate cooling requirements. There is no ventilation requirements per the HVAC design guide to provide outside air in TR spaces.**	Dave Gamble	
O-12-19	Civil Design	Land Survey was just received 1.18.22 COB, Civil Design will try and caatch up. Full execution may need to be after 95%		

BANCROFT ARCHITECTS + ENGINEERS

Weekly Progress Updates

Meeting Agenda / Minutes
Attendee List

Bancroft Project No.:	**18-121**
Client:	**VA- Fargo**
Project Name:	**EHRM**
Client Project No.:	**437-21-205**
Contract No.:	**36C26319D0044**

BANCROFT ARCHITECTS + ENGINEERS

					MEETING		
					Meeting Number		
					6	7	8
Attendee Name	**Organization**	**Title**	**Email address**	**Phone No.**	12/15/21	01/03/22	01/27/22
(RT) Ronald Tollefson	Fargo VAMC	COR, Engineering Department	ronald.tollefsonj@va.gov	701-232-3241 #3866	X	X	X
(CH) Cliff Halvorson	Fargo VAMC	Alt. COR, Engineering Department	clifford.halvorson@va.gov	701-232-3241 #3905		X	
(CM) Christ Moorer	VA,VHA	CS	Christ.Moorer@va.gov				
(AW) Anthony Wilson	VA,VHA	CO	Anthony.Wilson3@va.gov				
(BW) Brady Wiesner	Fargo VAMC	Assistant Chief, Engineering Service	Brady.Wiesner@va.gov		X		
(DF) Darlene Flook	BAE	PM	dflook@bancroft-ae.com	224-875-6881	X	X	X
(DA) Dana Auman	BAE	PA	dauman@bancroft-ae.com	224-265-2115		X	X
(JM) Jimmy McAllister	BAE	Architect	jmcallister@bancroft-ae.com	224-577-1600			
(CR) Connor Rollins	BAE	Architect	crollins@bancroft-ae.com		X		
(PP) Petko Petrovich	BAE	Project Architect	ppetrovich@bancroft-ae.com		X		
(LH) Laurie Hoffman	BAE	Architect					X
(ES) Ed Sabia	Calibre	Structural Engineer					X
(TB) Travis Benjamin	Calibre	Structural Engineer					X

Meeting Agenda / Minutes

Bancroft Project No.:	18-121
Client:	VA- Fargo
Project Name:	EHRM
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		We the AC splits in our design we are providing minimally 20 to 30 air changes depending on room sizes and number of units to accommodate cooling requirements. There is no ventilation requirements per the HVAC design guide to provide outside air in TR spaces.		
O-12-19	Civil Design	Land Survey was just received 1.18.22 COB, Civil Design will try and caatch up. Full execution may need to be after 95%		
O-13-20		Penthouse Roof Access: Ed Sabia/Calibre options for Stairs. **Door Access will be given from Penthouse window.** **Ron: A stair is just needed for access for the many Split-unit's Equipment access/snow removal.** **Calibre: Suggests roof to North-East and the intermediate roof adjacent to the lower roof at which door access only is to be provided). Ron/ COR concurred with the design recommendation. BAE: to provide Calibre outline of where stairs will lay. Ron accepted supplemental submittal after 95% submittal.**		
O-14-21		**RFI's. Rom will have RFI 030, by 1.28.22 3:30; RFI 031 Door Handle, Ron waiting on Locksmith to answer.**		
O-15-22		Schedule **Team will be on site 02.17.21 for 95% Review. Team will come a day earlier 02.16.22 for site reviews of Penthouse TR locations and Electrical/Mechanical review.**		

Weekly Progress Updates

Meeting Agenda / Minutes
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Bancroft Project No.:	**18-121**
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Contract No.:	**36C26319D0044**

BANCROFT ARCHITECTS + ENGINEERS

					MEETING Meeting Number		
					7	8	9
Attendee Name	**Organization**	**Title**	**Email address**	**Phone No.**			02/03/22
(RT) Ronald Tollefson	Fargo VAMC	COR, Engineering Department	ronald.tollefson@va.gov	701-232-3241 #3866	X	X	X
(CH) Cliff Halvorson	Fargo VAMC	Alt. COR, Engineering Department	clifford.halvorson@va.gov	701-232-3241 #3905	X		
(CM) Christ Moorer	VA,VHA	CS	Christ.Moorer@va.gov				
(AW) Anthony Wilson	VA,VHA	CO	Anthony.Wilson3@va.gov				
(BW) Brady Wiesner	Fargo VAMC	Assistant Chief, Engineering Service	Brady.Wiesner@va.gov				
(DF) Darlene Flook	BAE	PM	dflook@bancroft-ae.com	224-875-6881	X	X	X
(DA) Dana Auman	BAE	PA	dauman@bancroft-ae.com	224-265-2115			X
(JM) Jimmy McAllister	BAE	Architect	jmcallister@bancroft-ae.com	224-577-1600			
(CR) Connor Rollins	BAE	Architect	crollins@bancroft-ae.com				
(PP) Petko Petrovich	BAE	Project Architect	ppetrovich@bancroft-ae.com				
(LH) Laurie Hoffman	BAE	Architect					
(ES) Ed Sabia	Calibre	Structural Engineer					
(TB) Travis Benjamin	Calibre	Structural Engineer					

Weekly Progress Updates

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Item	Topic	Description / Discussion	By whom	By when
O-16-23	Building 51	Review of Building 51 Revisions/Alternate Plans	BAE	

BANCROFT ARCHITECTS + ENGINEERS

Weekly Progress Updates

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BANCROFT ARCHITECTS + ENGINEERS

					Meeting Number		
					9	10	11
Attendee Name	**Organization**	**Title**	**Email address**	**Phone No.**	02.10.22		
(RT) Ronald Tollefson	Fargo VAMC	COR, Engineering Department	ronald.tollefson@va.gov	701-232-3241 #3866	X		
(CH) Cliff Halvorson	Fargo VAMC	Alt. COR, Engineering Department	clifford.halvorson@va.gov	701-232-3241 #3905	X		
(CM) Christ Moorer	VA,VHA	CS	Christ.Moorer@va.gov				
(AW) Anthony Wilson	VA,VHA	CO	Anthony.Wilson3@va.gov				
(BW) Brady Wiesner	Fargo VAMC	Assistant Chief, Engineering Service	Brady.Wiesner@va.gov				
(DF) Darlene Flook	BAE	PM	dflook@bancroft-ae.com	224-875-6881	X		
(DA) Dana Auman	BAE	PA	dauman@bancroft-ae.com	224-265-2115	X		
(JM) Jimmy McAllister	BAE	Architect	jmcallister@bancroft-ae.com	224-577-1600			
(WG) Walter Groszko	BAE	Project Electrical Engineer	wgroszko@bancroft-ae.com	630-939-0049			
(DE) Dick Engleman	BAE	Senior Cost Estimator	dengleman@bancroft-ae.com	224-265-0326			

Weekly Progress Updates

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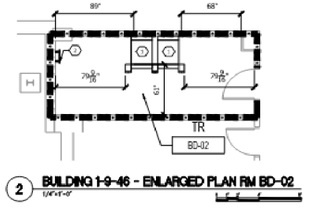
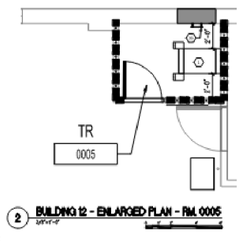
Item	Topic	Description / Discussion	By whom	By when
O-16-23	Building 51	Review of Building 51 Revisions/Alternate Plans	BAE	
O-24	BrightTree Page-Turn Attendance	Extent of comments to BrightTree's drawings. Should BT be onsite for Page-Turn	VA	
O-25	BrightTree DCIE Comment	BrightTree needs further direction regarding this comment. Is this in regards to the locations where we were directed to place the back of the racks up against the wall. Sheet MH-01-401 (applies to multiple). Racks in TRs should not abut the wall. Center the racks, providing 3' clearance on at least 3 sides and as much is as left on the remaining side to allow technicians to access the lashing points on the network channel racks. " I guess this might get a couple inches on the other end of the rack so please have Bruce and Dana adjust." This situation occurs at the following two locations: Building 1 / TR BD-02 - in this room we can pull the racks off of the wall to provide 36" to the front and aprox 25 to the rear. Building 12 / TR 0005 - in this room, the best we can do is provide 36" on the front side of the rack.	VA	
O-25	BrightTree DCIE Comment	 image.png		
O-25	BrightTree DCIE Comment	 imag		
O-26	Building 51	Road and Sidewalk will not be changed. During construction, sidewalk, curb and small portion of road will be sectioned-off for excavation etc.		
O-27	Electrical	See Notes sent with Agenda.		
O-28	OPCC	Discuss Increase in the OPCC		

MEETING MINUTES			
Project Name: EHRM Infrastructure Upgrades Fargo ND VA HCS	Project No: 437-21-205 Bancroft No: 18-121		
Meeting Milestone/Purpose: PAGE TURN – 95% Rejection General notes and questions	Date: February 17, 2022 8:00am – 4:00pm (CDT)	Meeting Location: Fargo On-site and TEAMS	
Attendees: Indicates in attendance via TEAMS: **	Company	Phone	E-mail
Ronald A. Tollefson	VA / COR-Post-Award	701-232-3241 #3866	ronald.tollefson@va.gov
Clifford Halvorson	VA / Alternate COR	701-232-3241 #3905	clifford.halvorson@va.gov
Shawn J. Bergan	VA		
Brady N. Wiesner	VA		
Raymond A. Nelson	VA/ Area Mgr, D3 MW, T1, FAR		
Rickie J. Keller	VA/ IT Spec, D3 MW, T1, FAR		
Brandon M. Meske **	VA/		
Darlene Flook	Bancroft AE / Project Manager	224-875-6881	dflook@ bancroft-ae.com
Dana Auman	Bancroft AE / Project Architect	847-877-1831	Dauman@bancroft-ae.com
Walter Groszko**	Bancroft AE / Sr Electrical Engineer	630-939-0049	wgroszko@bancroft-ae.com
Mark Tomuta**	Bancroft AE / Mechanical Engineer		mtomuta@bancroft-ae.com
Dick Englemen	Bancroft AE / Senior Cost Estimator	224-265-0326	dengleman@bancroft-ae.com
Mona Zahedi**	Hohbach-Lewin, Inc.	415-968-1732	mzahedi@hohbach-lewin.com
Bruce Yoch	BrightTree STUDIOS	412.225.6749	byoch@brighttreestudios.com
Aaron Mangione**	Calibre Engineering	720-704-8488	amangione@calibre-engineering.com

File Name: K:\CCG_PROJECTS\2018\18-121 36C26319D0044 VISN 23 IDIQ (North Dakota + Iowa)\437-21-205 EHRM Fargo, ND\200- Communication\201-Meeting Minutes

Jimmy McAllister **	Bancroft AE / Project Manager		jmcallister@bancroft-ae.com
Jon Hammer **	Terracon	970-397-5289	Jon.Hammer@terracon.com
Ed Sabia**	Calibre Engineering	303-951-8943	esabia@calibre-engineering.com
Travis Benjamin **	Calibre Engineering	303- 952-1875	tbenjamin@calibre-engineering.com
Jeff Scott**	FP&C CONSULTANTS	816-872-6098	jscott@fpc-consultants.com

BANCROFT ARCHITECTS + ENGINEERS

Item	Action Item	Comments and Notes	Group/Person Responsible	Target Completion Date
1		**BOD:** Remove all references to Estimated Costs		
2		**BOD: OPCC** 2 Mil Covid factor, based on market fluctuations Locality factor based at 10%, can drop depending on competitive bidding at time of Bid Total went up, due to Electrical, Cable Trays and Civil		
3		**Drawings/ General:** Consultants print drawings to check backgrounds, PDF's are not aways true. Check all key plans are dark enough Friday, 2/25/22 - 12:00 Noon/CST. Set of in-progress drawing pdfs due to BAE for internal QA/QC review and Cost Estimating. BAE will provide a dated border file for your use for the in-progress drawings. Wednesday, March 2 – 8:00sm/CST. 95% Resubmittal drawings due to BAE.Dated 3/4/22.BAE will provide a dated border file for the drawings. Friday, March 4 – 12:00 Noon/CST. Responses to 95% Submittal drawing comments due to BAE. Reduce white space on drawings		
4		**Drawings - Abatement:** HA001/Detail 1 Bldg background too light. HA002, can be eliminated Abetment material can be handled in Anteroom, use Edge Guard infection control system.		
5		**Drawings - Fire Protection/Life Safety:** Remove references to smoke detectors as a deduct alternate. Supervisory Alarms Make Rm #'s darker on key plan Move Key Note (Diamond 3) to better identify sprinkler head FX-01-412 Bldg 9 North zone, not West Make sure existing pipes are called out Rm 503 to be Fire rated ICRA/PCRA/ILSM sample to be placed in Plan	;	
		Drawings - Civil: C100 path needs to change to match others BAE to include note for GC- remove fence for temp. NW entrance		

6		Make steam tunnel more prominent Building 11, change demo that goes through bldg., stop at bldg., change note 8 to NW entrance. Add GC note, "drawings not guaranteed for accuracy" Building 51, leave rock w/trickle pan. Calibre to spec. Building 12 & 13, identify loading docks Chiller plant , note retaining wall Calibre, fix random numbers on plans CU102, building 39 missing Stam Tunnel notes, Bruce/BrightTree to coordinate with Calibre CU104 begin plans to work clockwise around site Vaults/Duct Banks are large, Bruce/BrightTree and Aarron/Calibre to coordinate stacking and making smaller.		
7		**Drawings – Structural:** General Note: "GC to look at all drawings" Calibre to look at text overlap, fix S101 show sidewalk/road, note to civil Check detail naming Fix floating numbers on plans Stairs on roof, are to be 4' Openings through masonry walls for cables – lintels needed. To be coordinated between telecom, structural and architectural.		
8		**Drawings - Architectural/General:** Index flip Mechanical and Elec, order good G1002 Special notes: #7 add #'s Include ICRA/PCRA/ILSM on sheet Buildings 12 & 13, loading dock locations. Show phasing All penetrations 2hrs Add note; 10% pf ceiling removal impairs sprinkler system Ceiling Legend, remove sprinkler heads Fix electrical symbols for demo, check other symbols as well Fire extinguisher cabinets, all rated A-100.2 add note , which signage indicates area Notes calling out Chase details 102.4 add hatch notes Details needed on how to enter building, vault to bldg		

		Penthouse TR 503 – Coordinate with BrightTree as to final room size. Penthouse Level roof access door – min. 7'-0" high access door. Clarify TR plywood/gypsum partition type A-25101 Shift Fire Ext Cabinet A301 Legend for wall details Note to GC: All wood to be treated Remove plumbing Notes A302 add Fire Ext Cabinet height QAQC check grammar Finish Schedule: Storage LVT Finish Signage: Fix Signage room's, Bldg 10 add Fire Ext sign Rockwool Insulation Detail for Cable Tray penetrations into older/brick walls, how supported?		
9		**Drawings – Electrical:** Building 1-9-46 – all power to TRs to be routed to panels within same building Remove unnecessary notes that do not pertain to project (have been told on each submission) Shrink room call-out lines to just room, not surrounding rooms Call-outs on conduits, some missing. Use different line-types Key Note: Tell all room numbers, Walter to send Ron, panel notes page Check ceiling fixtures are consistent 2 cooling units on wall, each to different panels, redundancy Add emergency power to open walls in TR Reduce white space on drawings 3D10 Show power for office wall All cooling to be on Emergency Power No UPS on Penthouse, cannot use. Rm 501 verify panel, 502 needs to be on Emergency not critical Bldg 10, Ron to get new layout to Walter Bldg 11 Remove other project name, check current panel # Bldg 12 show Panel on lighting plan Bldg 30 full rack coordinate w/Bruce 40-101 call out Surge Protection Device Bldg 51 coordinate w/Mechanical heater in vestibule Bldg. 52 Fix Key note #6 Bldg 56 Show panel in room, fix common notes, no emergency power E501 Remove defender canine #5		

		E601 Asterisk on schedule, no note. Denote or remove. Panel naming convention follow Va		
10		**Drawings – Mechanical:** QAQC ADDRESS ALL NOTES WRITTEN ON PLAN THERMOSTAT NOTES CONFUSING Locations are same, change symbol to clarify To many locations not showing chase. Pipe exposed? Security grates not shown on most drawings No BAS details? Show where floor drains go Valves not shown on condensing units Check Electrical notes are coordinated with Electrical Equipment Schedule: units mounted by whom? Notes calling out Chase details Revisit all chase locations Building 51 Condenser to sit on concrete pad north of the building addition. Heater needed in vestibule. Lighting in TRs – General note: Light positions shown are for diagrammatic purposes only. GC shall coordinate with COR for their final positions. M01-100 Avoid SPS storage/ SPS 400 2C90- Remove humidifier, replace w/straight duct Bldg 3, no flex duct through walls		
11		**Drawings IT-** Room B2-02 – third rack not needed. Floor mounted cabinets, show bolt details Wall mounted cabinets, top 6' A.F.F. Bldg 30 full cabinet Remove all references to TV in notes Check background line weights Detail of conduit up to Buildings, detail on how to bring fiber into bldgs. Ron to send basement ACAD plans Fox leader lines Indicate what dashed lines are Cable trays to have 2hr sleeves Make sure Cable Tray details are same as plans Revise rates wall legend Extra data drops in TR for phones		

		Detail for Cable Tray penetrations into older/brick walls, how supported? Change cable trays, as Ron noted in meeting More details on wall penetrations		

Meeting Agenda / Minutes
Attendee List

Bancroft Project No.:	**18-121**
Client:	**VA- Fargo**
Project Name:	**EHRM**
Client Project No.:	**437-21-205**
Contract No.:	**36C26319D0044**

					Meeting Number		
					10	11	12
Attendee Name	**Organization**	**Title**	**Email address**	**Phone No.**	02.10.22	02.24.22	03.03.22
(RT) Ronald Tollefson	Fargo VAMC	COR, Engineering Department	ronald.tollefson@va.gov	701-232-3241 #3866	X	X	
(CH) Cliff Halvorson	Fargo VAMC	Alt. COR, Engineering Department	clifford.halvorson@va.gov	701-232-3241 #3905	X		
(CM) Christ Moorer	VA,VHA	CS	Christ.Moorer@va.gov			X	
(AW) Anthony Wilson	VA,VHA	CO	Anthony.Wilson3@va.gov				
(BW) Brady Wiesner	Fargo VAMC	Assistant Chief, Engineering Service	Brady.Wiesner@va.gov				
(DF) Darlene Flook	BAE	PM	dflook@bancroft-ae.com	224-875-6881	X	X	
(DA) Dana Auman	BAE	PA	dauman@bancroft-ae.com	224-265-2115	X	X	X
(JM) Jimmy McAllister	BAE	Architect	jmcallister@bancroft-ae.com	224-577-1600			
(WG) Walter Groszko	BAE	Project Electrical Engineer	wgroszko@bancroft-ae.com	630-939-0049			
(DE) Dick Engleman	BAE	Senior Cost Estimator	dengleman@bancroft-ae.com	224-265-0326			

Weekly Progress Updates

Meeting Agenda / Minutes

Bancroft Project No.:	18-121
Client:	VA- Fargo
Project Name:	EHRM
Client Project No.:	437-21-205

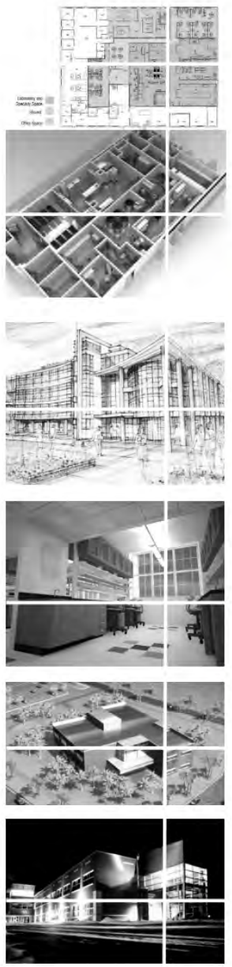
Item Identification:
A = Architectural
M = Mechanical/HVAC
E = Electrical
P = Plumbing
O = Other Project Items

NOTE: Closed / completed items will be grayed out and carried for ONE meeting cycle, then removed from current list.

Item	Topic	Description / Discussion	By whom	By when
O-29		Nothing Discussed 02.24.22		
O-30	ReSubmittal 95%	Comments, Drawings and BOD/OPCC all due to arrive tomorrow	BAE	
O-31	MOD	Need clarification on MOD request	VA	
		1.This looks like the timeline of what has happened and your costs so far, what we need to pay you for. You also need to estimate your time for the 95% and 100% of these buildings designs. Add those two dollar figures together and that will then be the total design costs for what is being done. 2.The other number is the total design costs of what is no longer being done. So I need to see your estimated hours and design effort for the 50%, 75%, 95%, & 100% if all four of these buildings had remained with the original design intent of full TRs. Add all of them together and that would have been the total of what was going to be done. 3.Subtract the costs of what is being done from what was going to be done and the remainder will be the amount of the deduct. 2 – 1 = DEDUCT AMOUNT	VA	

APPENDIX F

Please see OPCC Details Booklet for full report.



U.S. Department of Veterans Affairs

Opinion of Probable Construction Cost -Appendix "F"

EHRM INFRASTRUCTURE UPGRADES

Fargo VA Health Care System

2101 Elm Street North
Fargo, ND 58102-2417

BUILDING NUMBER
1-9-46, 3, 10, 11, 12, 13, 30,40, 51, 52, 56

CONTRACT NUMBER
36C26319D0044

PROJECT NUMBERS
Project No. 437-21-205
BAE #: 18-121

Bancroft Architects + Engineers

ISSUE SUBMISSION PHASE
IFB OPCC

DATE:
3/18/2022

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee Road
Northbrook, IL 60062

BANCROFT ARCHITECTS + ENGINEERS

SOCAMES 6 Design Alert 1

Problem

During a recent construction activity of cable upgrades to an existing telecommunication room (TR) at an Initial Operating Capability (IOC) site, it was discovered during cable testing procedures that some of the cables being upgraded were greater in length to the end user device than standards allows.

Background

ANSI/TIA-568.D, “Balanced Twisted-Pair Telecommunications Cabling and Components” (Sep 2018) version of industry standards for telecommunication room fixed cabling installation, limits the total length of a network Unshielded Twisted Pair (UTP) cable segment to 100 meters. The 100 meters is broken down as 10 meters for patch cables and 90 meters for total fixed cabling. Cable length requires a three-dimensional assessment to ensure that the fixed cables being installed do not exceed the specified UTP cable segment of 90 meters of fixed cable length.

There are several scenarios that require an assessment to occur to ensure that a telecommunication rooms UTP cable segments do not exceed 90 meters.

Scenario 1: The installation of a new telecommunication room to serve an area.

Scenario 2: The relocation of an existing telecommunication room to serve an area.

Scenario 3: The installation of new cabling upgrades in a telecommunication room that will remain in place to serve an area.

Scenario 4: An existing telecommunication room that will not receive any cabling upgrades.

Solution

To ensure that an assessment is performed for each of the four telecommunication room scenarios listed above, our office in conjunction with the SD-DCIE team is providing a recommended three-dimensional estimation approach that can be shared with your respective facility leads and design team to verify all telecommunication rooms do not exceed the specified UTP cable segment of 90 meters.

Step 1: Ensure you have an accurate floor plan that depicts the locations of the telecommunication rooms serving the facility.

Step 2: Utilizing AutoCAD or rule, center on the location of the telecommunication room being assessed. From the center of the room project out lines, 80 meters in length from that point, in the plan north, south, east and west respectively.

Step 3: At the end each of the 80 meters lines created, connect a line 45 degrees from that point out to the next end point creating a diamond.

Step 4: Validate that all areas served by that telecommunication room fall within the parameters of the diamond overlay.

Step 5: If the area served by that telecommunication room is within the diamond overlay then the distance, as provided by the estimation tool, is adequate for that telecommunication room.

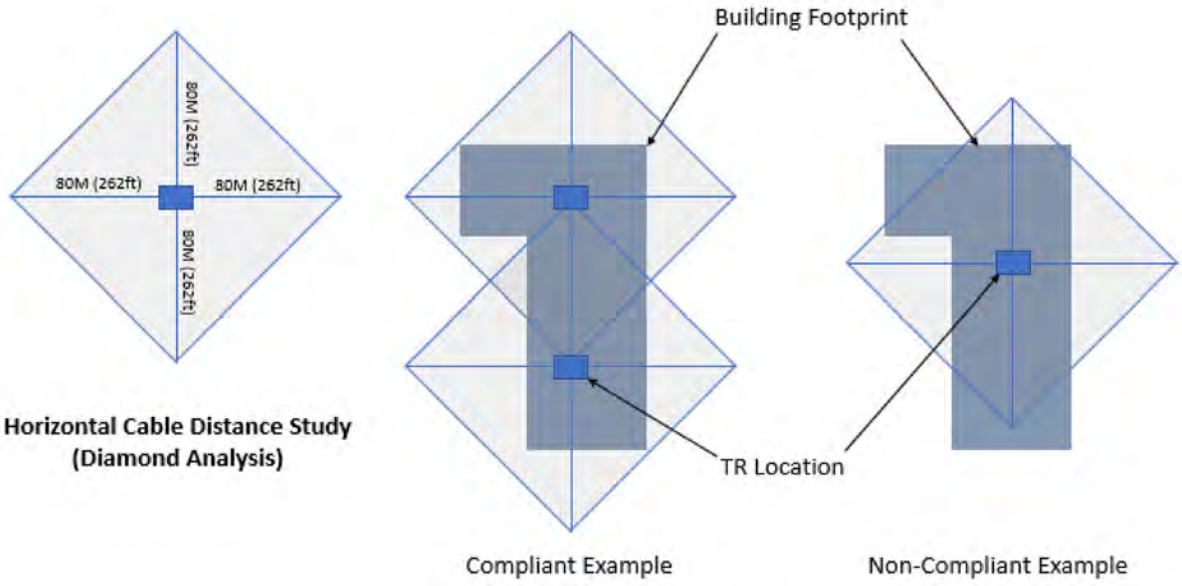
Step 6: If the area served by that telecommunication room is outside the diamond overlay then the distance, as provided by the estimation tool, is inadequate for that telecommunication room and further investigation is required by electronically testing the cable lengths to see if they pass or physical measurement. Any UTP cabling that does not pass testing protocols and is too long will need to have further design considerations to remedy the distance issue.

Notes

Since it is necessary to account for vertical cable distance, installation of slack for bypassing obstructions, cable management, bend radii and other in-situ obstacles 80 meters is utilized instead of the 90 meters acceptable length. This is to provide a realistic estimation of coverage of the representative telecommunication room.

This estimation tool is a recommended approach to validate fixed cable lengths meet the standards. Designers and installers remain responsible for ensuring actual cable distances do not exceed the limits in the standards.

Below is a diagram of an example demonstrating the use of the estimation tool.



HEFP SEP (SOCAMES 6) Design Alert 2

Problem

VA OEHRM previously required an on-site or near campus Help Desk during Go-Live. To better serve facilities during Go-Live, the Help Desk will now be remote and supported out of Kansas City.

Background

VHA HEFP SEP provided guidance in the ***Electronic Health Record Modernization Training and Support Space, HEFP SEP Space Planning Job Aid,*** 11/10/2020 revised 1/27/2021, that required 1,800 square feet of space for the Help Desk as part of the Command Center.

Solution

The ***Electronic Health Record Modernization Training and Support Space, HEFP SEP Space Planning Job Aid,*** has been updated to reflect the new requirements. The requirement for Help Desk space within the Go-Live Command Center was deleted, therefore, space is not needed for this activity.

Notes

Please use this link, ***Electronic Health Record Modernization Training and Support Space, HEFP SEP Space Planning Job Aid***, 11/10/2020 revised 3/16/2021 to find the most up-to-date information.

HEFP SEP (SOCAMES 6) Design Alert 3

Problem

VA OEHRM previously planned for 3.5 classes per end user and either 8 seats per class with social distancing or 15 seats per class without social distancing. However, during the recent VHA EHRM Strategic Review, it was determined that each end user shall have 5 classes and that there will be either 8 seats per class with social distancing or 12 seats per class without social distancing. The changes described result in a larger space need.

Background

VHA HEFP SEP provided guidance in the ***Electronic Health Record Modernization Training and Support Space, HEFP SEP Space Planning Job Aid,*** 11/10/2020 revised 1/27/2021, that required 3.5 classes per end user and either 8 seats per class with social distancing or 15 seats per class without social distancing. VA OEHRM and VHA determined that more class time per end user and a decrease in the overall class size are needed.

Solution

The ***Electronic Health Record Modernization Training and Support Space, HEFP SEP Space Planning Job Aid,*** has been updated to reflect the new requirements. The following classroom calculations were revised.

Previous classroom calculations:

Standard Room Calculations
VAMC Total rooms = Number of end users x **3.5 classes per end user / 15 seats per class** / 8 weeks of EUT / 5 days of training per week
CBOC Total rooms = Number of end users x **3.5 classes per end user / 15 seats per class** / 8 weeks of EUT / 5 days of training per week.
Social Distanced Room Calculations
VAMC Total rooms = Number of end users x 3.5 classes per end user / 8 seats per class / 8 weeks of EUT / 5 days of training per week

CBOC Total rooms = Number of end users x 3.5 classes per end user / 8 seats per class / 8 weeks of EUT / 5 days of training per week.

New classroom calculations:

Standard Room Calculations
VAMC Total rooms = Number of end users x **5 classes per end user / 12 seats per class** / 8 weeks of EUT / 5 days of training per week
CBOC Total rooms = Number of end users x **5 classes per end user / 12 seats per class** / 5 weeks of EUT / 5 days of training per week.
Social Distanced Room Calculations
VAMC Total rooms = Number of end users x 5 classes per end user / 8 seats per class / 8 weeks of EUT / 5 days of training per week
CBOC Total rooms = Number of end users x 5 classes per end user / 8 seats per class / 5 weeks of EUT / 5 days of training per week.

Notes

Please use this link, ***Electronic Health Record Modernization Training and Support Space, HEFP SEP Space Planning Job Aid***, 11/10/2020 revised 4/20/2021 to find the most up-to-date information.

HEFP SEP (SOCAMES 6) Design Alert 4

Problem

Clarification to the field is needed regarding the design of space for Telecommunications Rooms (TRs) in existing facilities for the Electronic Health Record Modernization (EHRM) initiative. The design reference, *Infrastructure Standards for Telecommunications Spaces – Version 3.0* requires 170 sq ft TRs for clinical spaces. However, due to existing space and structural constraints, HEFP SEP requires, at a minimum, only 100 sq ft TRs for clinical spaces in **existing** buildings.

Background

The *Infrastructure Standards for Telecommunications Spaces – Version 3.0* was developed by the Solution Delivery-Data Center and Infrastructure Engineering (OIT SD-DCIE) team and published to the TIL August 21, 2020. HEFP SEP identifies the following references as standards for all Information Technology (IT) physical infrastructure design and construction projects: *Infrastructure Standards for Telecommunications Spaces – Version 3.0* and *VA OEHRM Site Infrastructure and End User Device Requirements.* These references are discussed and provided to each station during and after their scheduled scoping session to identify the work needed to modernize IT infrastructure across the enterprise.

During the site scoping sessions, HEFP SEP uses the Generic Floor Plan for TRs (Two Rack Requirement), detail 3, page 155 in Appendix B-7 of the *Infrastructure Standards for Telecommunications Spaces – Version 3.0* to communicate and coordinate space requirements for **existing** TRs to support EHRM. The baseline TR template is a 10 ft x 10 ft (100 sq ft) generic floor plan with two 2 ft x 4 ft racks to house the IT infrastructure.

Infrastructure Standards for Telecommunications Spaces – Version 3.0 specifies that a clinical TR should have a generic floor plan layout of 170 sq ft to support four 2 ft x 4 ft racks. This specification for clinical TRs has created a conflict with the standardized baseline TR of 100 sq ft that HEFP SEP works with the sites to achieve.

HEFP SEP discussed the conflict in TR size requirements with the OIT SD-DCIE team. HEFP SEP identified that due to VAMC/CBOC space deficits, **existing** building footprints, and the number of TRs, it is difficult to meet the 170 sq ft space requirement without a detrimental impact to healthcare operations. Furthermore, based on the average number of end users associated with each TR, most TRs only house 2 racks and require 100 sq ft of space. HEFP SEP and OIT SD-DCIE agreed that the 100 sq ft baseline standard was the practical approach in **existing** buildings.

Solution

All EHRM projects that require TR work in **existing** spaces shall minimally use the Generic Floor Plan for TRs (Two Rack Requirement), detail 3, page 155 in Appendix B-7 of the *Infrastructure Standards for Telecommunications Spaces – Version 3.0* which requires a 10 ft x 10 ft space to support two 2 ft x 4 ft racks. Room dimensions shall be increased by 20 sq ft for any additional 2 ft x 4 ft racks.

All new construction of clinical spaces should adhere to the standards as written.

Notes

Please use this link, https://www.cfm.va.gov/til/dguide/OIT-InfrastrucStdTelecomSpaces.pdf to locate the current version of Infrastructure Standard for Telecommunication Spaces – Version 3.0 published August 21, 2020.

HEFP SEP Design Alert 5

Problem

Clarification is required regarding the need to replace or install new fire suppression systems in the data center during design and construction of Electronic Health Record Modernization (EHRM) facility infrastructure projects and the need for a third-party fire engineer review of HEFP SEP EHRM Infrastructure Upgrades Projects.

Background

On June 1, 2021 the new Fire Protection Design Manual was published and posted to the Technical Information Library (TIL). The manual contains fire protection engineering design for Department of Veterans Affairs facilities. EHRM facility infrastructure projects, and specifically work conducted in the Data Centers, may require an upgrade or replacement of the existing fire suppression system in accordance with NFPA 75 as stated in the Fire Protection Design Manual Paragraph 3.7.

Solution

VHA field engineers are required to ensure that the Architect-Engineer designer of record applies all applicable NFPA 75 requirements for work needed in the Data Center. Field engineers should use the Healthcare Environment and Facilities Programs (HEFP) Fire Code Plan Review Contract to review all EHRM Infrastructure Upgrades and Data Center projects. The fire code plan review should focus on compliance with the newly published Fire Design Manual dated June 1, 2021 and ensure that all associated NFPA fire and life safety codes are indicated in the designs.

Guidance to the Architect-Engineer is as follows:

For EHRM Infrastructure Upgrade and Data Center projects, the work conducted in the Data Centers (which will upgrade spaces to an ANSI/TIA-942-B, Rating 3) generally requires compliance with all requirements of NFPA 75. The most design intensive of these requirements is the addition of a gaseous fire suppression system as described in the Fire Protection Design Manual, Paragraph 3.7. Compliance with NFPA 75 is also likely to involve, but not necessarily be limited to, these additional retrofit requirements:

- Revise the sprinkler protection in the computer room to a dedicated sprinkler zone.
- Ensure a minimum 1-hour boundary around the computer room.

- Combination smoke/fire dampers at the duct penetrations through the 1-hour boundary of the computer room.
- Electrical power off button(s) at computer room exit(s).
- HVAC power off button(s) at computer room(s).

Notes

Please use this link, Fire Code Plan Reviews | Healthcare Environment and Facilities Programs (va.gov) to request third-party fire engineer review for your EHRM upgrades projects.

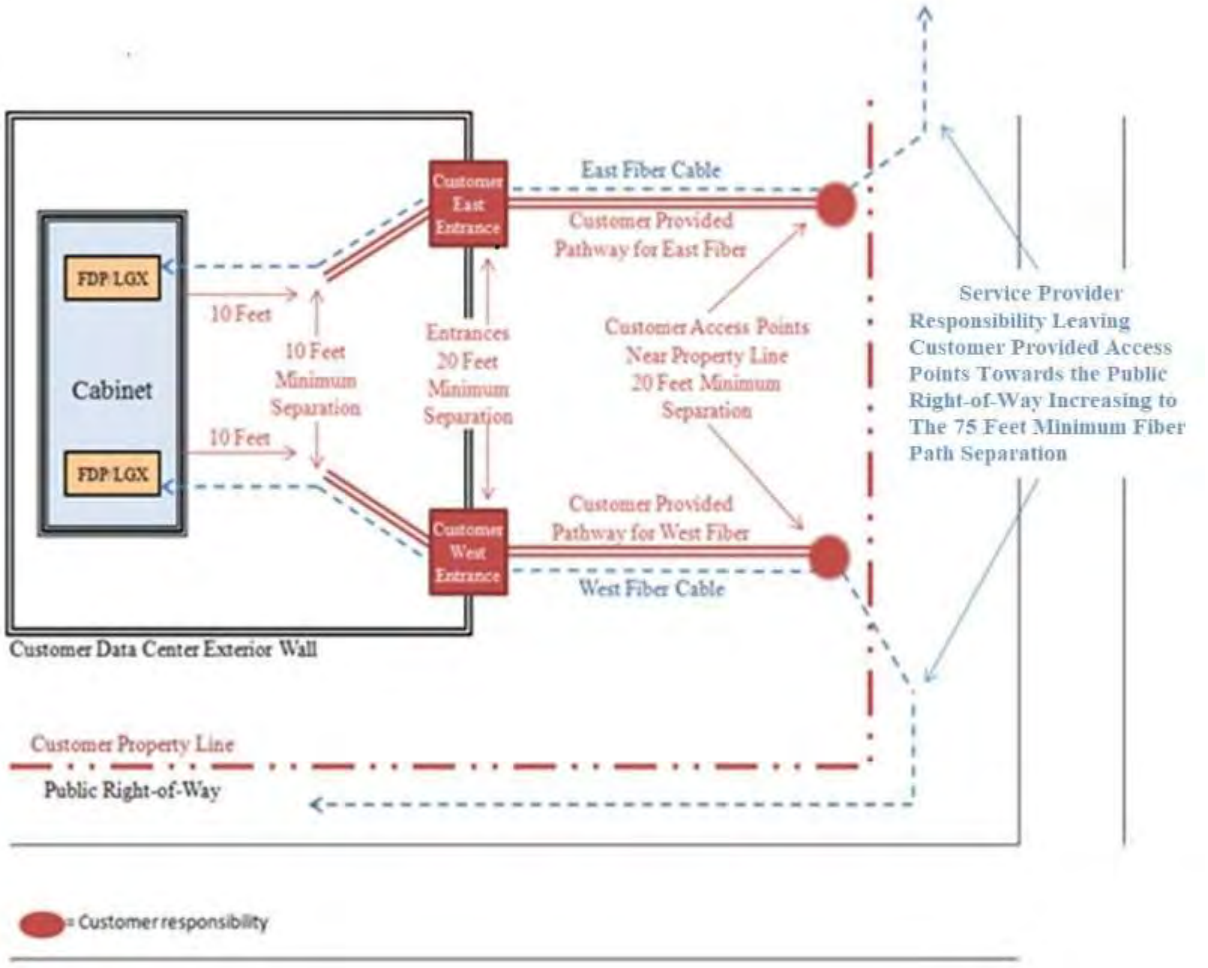
HEFP SEP (SOCAMES 6) Design Alert 6

Problem

HEFP SEP is working with OIT to create a process for installation of the additional geographically diverse path for the Wide Area Network (WAN) to ensure compliance with the VA OERHM Site Infrastructure Requirements (SIEUDR), version 2.0, paragraph 2.1.1.2.B (see below). However, HEFP SEP determined that there is currently no national OIT or OEHRM process to coordinate this work with the OIT contracted providers.

2.1.1.2 VAMC Sites

B. Facility shall have end-to-end, geographically diverse and carrier-diverse circuits with minimum fiber pathways separation: service provider public rights-of-way 75 ft, Egress 20 ft, and cabinet 10 ft. See below Figure 1.



Background

HEFP SEP completed scoping sessions in preparation for the Cerner deployment. HEFP SEP is in the process of finalizing scoping at all sites by November 2021. During these scoping sessions, HEFP SEP validates whether a site has a geographically diverse path to meet the requirement cited above. If the site did not have existing geographically diverse WAN paths, HEFP SEP identified this as a deficiency, included design and construction of the WAN paths in the scope of work and allocated funding in the ROM IGCE the scoping session. The purpose was to ensure the work was included in the scope and provide a magnitude cost estimate to design and construct the secondary conduit run to meet this requirement.

HEFP SEP has discovered that there is currently no national OIT or OEHRM process to coordinate this work with the OIT contracted providers. HEFP SEP is in discussions with OIT and OEHRM to clarify the process of working with OIT contracted providers so that guidance can be provided to the field. Without a clear process to work with OIT contracted providers, it is difficult, and sometimes not possible, to identify the location of the provider's entrance at the property boundary and the resulting pathway to the main service entrances.

Solution

Due to the contractual discussions OIT must have with the WAN providers to coordinate this work, HEFP SEP cannot provide adequate guidance to field engineers to ensure that this requirement is met.

To prevent delay and ambiguity in meeting this requirement, if a VAMC is unable to identify or locate the boundary entrance point, HEFP SEP recommends that the site discontinue this effort in current EHRM NRM projects and de-scope this work from the design and/or construction contracts (whichever applies). At this time, HEFP SEP will not provide updated IGCEs, but VAMCs may adjust cost estimates, as they find appropriate.

If a site has successfully coordinated this work with OIT and included diverse pathways in their designs, please reach out directly to James Cullum and Mike Vulpis so that HEFP SEP can ensure OIT agrees on a case-by-case basis.

When HEFP SEP clarifies the OIT process for implementing this requirement with contracted providers, our office will schedule supplementary scoping sessions with the field to scope this work under a separate EHRM NRM project.

Notes

Please use this link, VHA HEFP EHRM - 00 VA OEHRM Site Infrastructure Requirements - 2.0 Signed.pdf - All Documents (sharepoint.com) to locate the current version of OERHM Site Infrastructure Requirements – 2.0.

HEFP SEP (SOCAMES 6) Design Alert 7

Problem

There are specific circumstances when construction of a conditioned Telecommunication Room (TR) is infeasible or impractical in non-clinical buildings such as engineering/maintenance buildings, warehouses, temporary modular trailers and quarters that were converted to administrative space. In cases where existing space, structural or other constraints do not practically allow for construction of a TR, the use of a Telecommunication Enclosure (TE) is appropriate.

Background

HEFP SEP has seen a considerable increase in variance requests to deviate from the 80 square foot TR space standard as defined in the *Infrastructure Standards for Telecommunications Spaces* (ISTS). The variance requests specifically address low use, non-clinical TRs where expansion or new construction are not viable solutions due to space and/or environmental constraints.

Solution

The site should make every reasonable effort to comply with the current ISTS standard for all TRs in non-clinical buildings. However, where space and/or environmental constraints cannot support a new TR, both a Standard TE and Non-Standard TE are available for consideration under the conditions described below.

A Variance is NOT REQUIRED for a STANDARD TE (fan-cooled) if all the following criteria are met:

1. **Space Classification:** The space is one of the following:
   a) Parking structures
   b) Technical spaces such as warehouses, kitchens, laundries, mechanical/electrical plant buildings, chiller or boiler plants, garages, and paint shops
   c) Historical quarters converted to administrative use
   d) Buildings with no VA staffing presence and no requirements for connectivity to the VA LAN or guest Wi-Fi
   e) Temporary modular trailers. *Temporary* buildings and trailers must be validated as temporary, with a planned removal date and no history of previous deferred or cancelled removal plans.

HEFP SEP (SOCAMES 6) Design Alert 7

2. **Usage:** Usage is limited to a maximum of 96 Work Area Outlets (WAOs). Each data jack in a workspace telecommunications outlet, wired back to the patch panels in the TE, is considered a WAO for these purposes. Where 1-48 WAOs are planned, a 12RU (half-height) standardized TE is used. Where 49-96 WAOs are planned, a 26RU (full height) standardized TE is used.
3. **Environment:** Spaces meet the environmental envelope conditions for a TR, as described in Figure 19 and Table 24 of the Infrastructure Standard for Telecommunications Spaces. Ambient air conditions in the space are between 41°F-95°F dry bulb, 8-80% RH, and dew point less than 82.4°F, measured at the intake point of the TE.

Standard TE's (or equal) are provided below:

12RU - https://www.chatsworth.com/en-us/products/cabinets-enclosures-containment/wall-mount-cabinets/swing-frame/cube-it-wall-mount-cabinet/11900-e24

26RU - https://www.chatsworth.com/en-us/products/cabinets-enclosures-containment/wall-mount-cabinets/swing-frame/cube-it-wall-mount-cabinet/12419-e48

If all the above criteria are met, except for paragraph *4. Environment*, a NON-STANDARD (Environmentally Conditioned) TE may be considered, and a Variance is REQUIRED. To request a NON-STANDARD TE Variance:

1. Determine if another space in the building meets the environmental and physical security criteria for the installation of a standardized TE. If so, a standardized TE shall be relocated to the environmentally appropriate space in the building.
2. If no other spaces in the building meet the environmental and physical security criteria, submit a Variance request to DCIE for installation of a non-standard (environmentally conditioned) TE. Select which non-standard TE is proposed for use and submit the installation plan, showing the location on an as-built drawing.
3. A sampling of vendors that may meet the intent of a non-standard (environmentally conditioned) TE solution include:
    a. Liebert (Vertiv) MCR Mini Computer Room Enclosure https://www.vertiv.com/en-us/products-catalog/facilities-enclosures-and-racks/integrated-solutions/mcr---mini-computer-room-enclosure/
    b. Hoffman Spectracool – A side-mount A/C unit capable of attaching to many common manufacturer's cabinets (comes in a variety of sizes) https://hoffman.nvent.com/sites/g/files/hdkjer316/files/acquiadam/2021-05/Spec-00728.pdf?asset_type=Spec

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c. EIC Solutions Protector Series, Wall-Mount Enclosure S723616 Wall-mount AC Enclosure - 72"H x 36"W x 16"D with EIC Solutions CB Series, Compressor-Based, Side-Mount, Hazardous Location Enclosure CBIQ6000V16XP2 - 6,000 BTU Hazardous Location Air Conditioner https://www.eicsolutions.com/protector-series-air-conditioned-electronic-enclosures/ and https://www.eicsolutions.com/product/cbiq6000v16xp2/

Notes

Variance request information is in the *Infrastructure Standard for Telecommunication Spaces (ISTS)* standard, Section 1.3.1 and Appendix A.

Once approved, the designer of record **MUST** incorporate the approved TE into the design documents.

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Problem

A conflict was noted between the Infrastructure Standard for Telecommunication Spaces (ISTS) v3.1 and the HVAC Design Manual concerning design parameters for temperature and relative humidity ranges in Telecommunication Spaces.

Background

This Design Alert provides temporary guidance on temperature and relative humidity design ranges for Telecommunication Spaces. This Design Alert will remain in effect until the Infrastructure Standard for Telecommunications Spaces and the HVAC Design Manual publish updates that reconcile the temperature and relative humidity parameters.

Solution

The HVAC Design Manual requires a dry bulb temperature of 64° F for heating and 81° F for cooling and a relative humidity of 30% RH to 60% RH for Telecommunication Spaces, (pp. 6-106 for Data Centers and pp. 6-109 for TRs). These temperatures are supply temperatures. The ISTS requires rack inlet temperatures in telecommunications rooms between 41°F and 95°F and between 72°F and 80.6°F in computer rooms with a relative humidity range of 8% to 80%. Please use the Computational Fluid Dynamics (CFD) Modeling Guide for CRAC and rack inlet temperature design in Data Centers while meeting the more stringent of the two standards. To summarize, AC supply temperature set points must be between 64°F and 81°F per the HVAC Design Manual while maintaining rack inlet temperatures between 72°F and 80.6°F in computer rooms. Relative humidity in all telecommunications spaces will be maintained at the more stringent HVAC Design Manual requirements of 30% to 60%.