FIRE PROTECTION GENERAL NOTES

GENERAL NOTES FOR CONTRACTORS: SEE ALL PROJECT GENERAL NOTES AND OTHER REQUIREMENTS INCLUDING THE LIFE SAFETY AND INFECTION CONTROL WORK LOCATED WITHIN THE GENERAL DRAWINGS SECTION. COMPLY WITH ALL REQUIREMENTS AS THEY ARE A DIRECT PART OF THIS SECTION AS IF THEY WERE DIRECTLY INCLUDED AND PROVIDED HEREIN.

EQUIVALENCY SUBSTITUTIONS: THE 'BASIS OF DESIGN (BOD) COMPLIANCE PROTOCOLS' ARE TO BE FOLLOWED FOR ALL MATERIALS, EQUIPMENT, ASSEMBLIES AND SYSTEMS SPECIFIED AND DETAILED THROUGHOUT ALL DRAWINGS AND SPECIFICATION SECTIONS, WHETHER THE BOD DESIGNATE IS SPECIFICALLY REFERENCED THEREIN OR NOT. SEE THE GENERAL DRAWINGS SECTION FOR THE SPECIFIC BOD COMPLIANCE REQUIREMENTS AND PROTOCOLS TO BE FOLLOWED.

1. THIS CONTRACTOR SHALL REVIEW ENTIRE SET OF CONTRACT DOCUMENTS: INCLUDING BUT NOT NECESSARILY LIMITED TO ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING, FIRE PROTECTION, ELECTRICAL DRAWINGS AND ENTIRE PROJECT MANUAL. THIS CONTRACTOR SHALL ACKNOWLEDGE AND INCLUDE IN THE SCOPE OF WORK (CONTRACT) ALL CONDITIONS PERTINENT TO THE COMPLETION OF THEIR WORK. THE CONTRACTOR SHALL FULLY COORDINATE THEIR WORK WITH THE INSTALLATION OF THEIR WORK WITH THE INSTALLATION OF WORK BY OTHER TRADES AND MAKE NECESSARY FIELD ADJUSTMENTS AS REQUIRED TO ACCOMMODATE THE INSTALLATION. ALL OF THE ABOVE SHALL BE INCLUDED IN THE SCOPE OF WORK AT NO ADDITIONAL CHARGE TO THE VA/GOVERNMENT.

2. THIS CONTRACTOR SHALL CAREFULLY EXAMINE THE DRAWINGS AND SPECIFICATIONS, VISIT THE SITE OF THE WORK AND FULLY INFORM THEMSELVES AS TO ALL CONDITIONS AND MATTERS THAT CAN, IN ANY WAY, AFFECT THE WORK OR THE COST THEREOF. SHOULD THIS CONTRACTOR FIND DISCREPANCIES IN, OR OMISSIONS FROM THE DRAWINGS, SPECIFICATIONS OR OTHER DOCUMENTS, OR BE IN DOUBT AS TO THEIR MEANING, NOTIFY THE VA/CO AT ONCE, IN WRITING, OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND NEW WORK, OR BETWEEN THEIR WORK AND THE WORK OF OTHER TRADES AND OBTAIN CLARIFICATION PRIOR TO SUBMITTING ANY BID. LACK OF SUCH NOTIFICATION SHALL BE CONSTRUED AS TO INDICATE NO DISCREPANCIES OR CONFLICTING CONDITIONS EXIST.

3. THE DRAWINGS INDICATE DIAGRAMMATICALLY THE INTENT, GENERAL CHARACTER, REQUIREMENTS AND LOCATION OF THE WORK SHOWN AND INCLUDED. THE WORK INDICATED BUT HAVING MINOR DETAILS OBVIOUSLY OMITTED SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE VA/GOVERNMENT.

4. THIS CONTRACTOR IS REQUIRED TO BID, AS SPECIFIED, ON THE DRAWINGS WITHOUT DEVIATION FROM THE BOD.

5. IT IS THE INTENT OF THESE DOCUMENTS THAT THE FIRE PROTECTION CONTRACTOR PROVIDE ALL LABOR, MATERIAL, EQUIPMENT AND TOOLS FOR THE COMPLETE INSTALLATION OF ALL WORK SHOWN ON THE PLANS AND/OR DESCRIBED HEREIN, INCLUDING ALL DEVICES, CONTROLS AND APPURTENANCES REQUIRED TO SET NEW SYSTEMS INTO OPERATION.

6. SHOULD CONDITIONS NECESSITATE ANY REARRANGEMENTS, OR IF PIPING CAN BE RUN TO BETTER ADVANTAGE, PREPARE AND SUBMIT SHOP DRAWINGS SHOWING THE CHANGES BEFORE PROCEEDING WITH THE WORK.

7. THIS CONTRACTOR SHALL VERIFY ALL MOUNTING, ALL ARRANGEMENTS, HEIGHTS AND LOCATIONS PRIOR TO ROUGH-IN. ANY MENTION OF A SPECIFIC MOUNTING ARRANGEMENT, WEIGHT OR LOCATION SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO VERIFY THE SPECIFIC REQUIREMENT FURNISHED OR THE OTHER TRADES WORKING IN THE SAME AREA. NO ADDITIONS TO THE CONTRACT SUM WILL BE PERMITTED FOR ITEMS INSTALLED IN WRONG LOCATIONS, IN CONFLICT WITH OTHER WORK, ETC.

8. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL CURRENT FEDERAL BUILDING CODES, REGULATIONS, AND REQUIREMENTS, LOCAL UTILITY COMPANY REQUIREMENTS, NFPA, IPC, AND ASHRAE STANDARDS. ALL COMPONENTS SHALL BE UL LISTED AND FM APPROVED.

9. THIS CONTRACTOR SHALL BE LICENSED, BONDED, INSURED AND CAPABLE OF PERFORMING QUALITY WORKMANSHIP. THIS CONTRACTOR GUARANTEES ALL OF HIS WORK AND MATERIALS FOR THE PERIOD OF ONE YEAR, FROM FINAL ACCEPTANCE BY THE VA/GOVERNMENT.

10. THIS CONTRACTOR SHALL ESTABLISH SAFE WORKING PROCEDURES FOR THE PROTECTION OF THE WORKMEN IN ALL PHASES OF WORK, COMPLYING WITH ALL APPLICABLE PROVISIONS OF CITY, STATE, AND FEDERAL SAFETY LAWS (OSHA) AND AS RECOMMENDED IN THE "MANUAL OF ACCIDENT PREVENTION IN CONSTRUCTION" AS ISSUED BY THE ASSOCIATION OF GENERAL CONTRACTORS OF AMERICA, IN., 20TH AND E. STREETS, N.W. WASHINGTON, D.C.

11. THIS CONTRACTOR IS RESPONSIBLE FOR SCHEDULING THE PURCHASE, DELIVERY, RECEIVING, UNLOADING, UNCRATING, STORING, SETTING IN PLACE, AND PROTECTING ALL NEW EQUIPMENT FURNISHED BY THIS CONTRACTOR AND EQUIPMENT FURNISHED BY VA/GOVERNMENT FROM DAMAGE BY VANDALISM AND WEATHER DURING CONSTRUCTION.

12. THIS CONTRACTOR SHALL PROVIDE A COMPETENT OPERATING TECHNICIAN TO INSTRUCT THE VA/GOVERNMENT IN THE OPERATION AND MAINTENANCE OF THE NEW EQUIPMENT.

13. UPON COMPLETION OF THE WORK, THIS CONTRACTOR SHALL REVIEW AND CHECK THE ENTIRE PORTION OF WORK, CLEAN EQUIPMENT AND DEVICES. REMOVE SURPLUS MATERIALS AND RUBBISH FROM THE PROPERTY AND LEAVE THE WORK IN NEAT AND CLEAN ORDER AND IN COMPLETE WORKING CONDITION. EACH RESPECTIVE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ANY CARTONS, DEBRIS, EQUIPMENT, ETC., INSTALLED BY THIS CONTRACTOR INCLUDING EQUIPMENT FURNISHED BY OTHERS AND UNPACKED OR REMOVED FROM CARTONS BY THIS CONTRACTOR.

14. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL STRUCTURAL STEEL MEMBERS, SLEEVES, AND SHIMS REQUIRED TO LEVEL AND SUPPORT EQUIPMENT AND PIPES.

15. EXISTING SERVICE VALVES AT ALL BRANCH SUPPLY PIPING SHALL REMAIN AS IS. SUCH SERVICE VALVES SHALL BE AS PER THE SPECIFICATIONS AND/OR IN KEEPING WITH THE FACILITY STANDARDS.

16. SPRINKLER HEADS SHALL BE LOCATED IN CEILING GRID IN A SYMMETRICAL PATTERN, COORDINATED WITH OTHER DEVICES MOUNTED IN OR ON THE CEILING. PROVIDE ADDITIONAL SPRINKLER HEADS REQUIRED TO ACHIEVE SYMMETRY. LOCATE SPRINKLER HEADS IN THE CENTER OF CEILING TILES.

17. SPRINKLER CONTRACTOR SHALL PROVIDE A COORDINATED REFLECTED CEILING PLAN AS PART OF THE SUBMITTAL TO THE VA/COR SHOWING SPRINKLER HEAD LOCATIONS COORDINATED WITH CEILING AND ALL OBJECTS MOUNTED IN OR ON THE CEILING.

18. THE SPRINKLER CONTRACTOR SHALL BE A LICENSED, AUTHORIZED INSTALLER OF COMMERCIAL SPRINKLER SYSTEM AND SHALL HAVE HAD A MINIMUM OF THREE (3) YEARS OF EXPERIENCE IN THE INSTALLATION OF SPRINKLER SYSTEMS.

19. THE CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE DESIGN OF THE SPRINKLER SYSTEM AND TO SUBMIT HYDRAULIC CALCULATIONS PER NFPA 13 IN SUBMITTAL OF SHOP DRAWINGS AND FOR THE COMPLETE DESIGN OF THE SPRINKLER SYSTEM. THE SPRINKLER SYSTEM SHALL BE:

    A. A DESIGNED SYSTEM IN ACCORDANCE WITH NFPA 13, 2019 AND SPECIFICATION.

    B. DESIGNED TO CONFORM WITH BUILDING STRUCTURAL, MECHANICAL, AND ELECTRICAL SYSTEM, AS INDICATED AND DESCRIBED ON THE CONTRACT DOCUMENTS.

    C. ACCEPTABLE TO THE FIRE MARSHAL AND OR ALL LOCAL AUTHORITIES HAVING JURISDICTION.

22. THE SPECIFICATIONS, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL TO THE AUTHORITIES HAVING JURISDICTION, FULLY COORDINATED SHOP DRAWINGS OF SPRINKLER HEADS, HANGERS AND SUPPORTS. DESIGN PLAN SHALL BE PREPARED AND SIGNED/SEALED BY A NICET LEVEL III/IV TECHNICIAN OR REGISTERED FIRE PROTECTION ENGINEER IN ACCORDANCE WITH UCF REQUIREMENT.

23. THE SPRINKLER SYSTEM SHALL BE INSPECTED AND TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL FIRE PROTECTION CODE, AND ALL LOCAL AUTHORITIES HAVING JURISDICTION.

24. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TEST OF ANY OR ALL PARTS OF THE WORK AS REQUIRED BY AUTHORITIES HAVING JURISDICTION AND PAY ALL CHARGES FOR SAME.

25. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ACCURATE FLOW TEST DATA OR PERFORMING AN UPDATED FLOW TEST AS PER NFPA 13 AND NFPA 25.

26. AREA SHALL BE DESIGNED IN ACCORDANCE WITH THE REQUIREMENT FOR OCCUPANCY PER NFPA 13.

27. THE AUTOMATIC WET FIRE SPRINKLER SYSTEM SHALL BE INSTALLED IN SUCH A MANNER TO PREVENT THE SYSTEM PIPING OR SPRINKLER HEAD EXPOSURE TO TEMPERATURES LESS THAN 40 DEGREES F.

28. PAINT NEW SPRINKLER PIPING RED AND LABEL PER NFPA 13.

29. CONTRACTOR SHALL PROVIDE COORDINATED PIPE SLEEVE DRAWINGS SHOWING ALL PENETRATIONS THROUGH FLOORS.

30. PROVIDE OR EXTEND STANDPIPE SYSTEM IN ACCORDANCE WITH NFPA 14.

31. ALL FIRE PROTECTION VALVES SHALL BE SUPERVISED.

32. CONTRACTOR SHALL PROVIDED COORDINATED PIPE SLEEVE DRAWINGS SHOWING ALL PENETRATIONS THROUGH FLOORS.

33. INSTALLER QUALIFICATIONS: CONTRACTOR'S RESPONSIBILITY SHALL INCLUDE DESIGNING, FABRICATING AND INSTALLING FIRE-SUPPRESSION SYSTEMS AND PROVIDING PROFESSIONAL ENGINEERING SERVICES NEEDED TO ASSUME ENGINEERING RESPONSIBILITY. CALCULATIONS BASED ON RESULTS OF THE FIRE-HYDRANT FLOW TEST(S) THEY PERFORM.

    A. ENGINEERING RESPONSIBILITY: PREPARATION OF WORKING PLANS, CALCULATIONS, AND FIELD TEST REPORTS BY A NICET LEVEL III/IV TECHNICIAON OR QUALIFIED PROFESSIONAL FIRE PROTECTION ENGINEER.

34. WELDING: QUALIFY PROCESSES AND OPERATORS ACCORDING TO ASME BOILER AND PRESSURE VESSEL CODE, SECTION IX.

35. NFPA STANDARDS: FIRE SUPPRESSION SYSTEM EQUIPMENT, SPECIALTIES, ACCESSORIES, INSTALLATION AND TESTING SHALL COMPLY WITH THE FOLLOWING:

    A. NFPA 13, 2019 INSTALLATION OF SPRINKLER SYSTEMS.
    B. NFPA 101, 2018 LIFE SAFETY CODE.
    C. NFPA 72 , 2019 FIRE ALARM CODE.

36. FIRE-SUPPRESSION SPRINKLER SYSTEM DESIGN SHALL BE APPROVED BY AUTHORITIES HAVING JURISDICTION.

    A. MARGIN OF SAFETY FOR AVAILABLE WATER FLOW AND PRESSURE: 10 PERCENT, INCLUDING LOSSES THROUGH WATER-SERVICE PIPING, VALVES, AND BACKFLOW PREVENTERS.

37. CONTRACTOR SHALL SUBMIT FOR REVIEW TO THE VA/COR A COMPLETE LIST OF ITEMS TO BE FURNISHED AND INSTALLED UNDER THIS CONTRACT, INCLUDING, BUT NOT BE LIMITED TO THE FOLLOWING:

    A. DIMENSIONED SHOP DRAWINGS OF MATERIALS AND FIXTURES. DIMENSIONED SHOP DRAWINGS OF EQUIPMENT AND PIPING PLAN LAYOUT(S).

38. REQUIRED ITEMS TO BE SUBMITTED SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:

    A. PRODUCT DATA.
    B. APPROVED SPRINKLER PIPING DRAWINGS: WORKING PLANS, PREPARED ACCORDING TO NFPA, AND HAVE BEEN APPROVED BY AUTHORITIES HAVING JURISDICTION, INCLUDING HYDRAULIC CALCULATIONS.
    C. FIELD QUALITY-CONTROL TEST REPORTS.
    D. FIELD TEST CERTIFICATES.
    E. OPERATION AND MAINTENANCE DATA.

39. CONTRACTOR SHALL SUBMIT FOR REVIEW TO THE VA/COR A COMPLETE LIST OF ITEMS TO BE FURNISHED AND INSTALLED UNDER THIS CONTRACT. INCLUDING, BUT NOT BE LIMITED TO THE FOLLOWING:

    A. DIMENSIONED SHOP DRAWINGS OF MATERIALS, FIXTURES AND EQUIPMENT.
    B. DIMENSIONED SHOP DRAWINGS OF EQUIPMENT AND PIPING PLAN LAYOUT(S).

40. FLEXIBLE CONNECTORS:

    A. FLEXIBLE CONNECTORS SHALL HAVE MATERIALS SUITABLE FOR SYSTEM FLUID. INCLUDE 175 PSIG MINIMUM WORKING-PRESSURE RATING AND ENDS ACCORDING TO THE FOLLOWING:

        a. NPS 2 AND SMALLER: THREADED.
        b. NPS 2-1/2 AND LARGER: GROOVED FOR USE WITH GROOVED-END PIPE COUPLINGS.

    B. STAINLESS-STEEL-HOSE/STEEL PIPE, FLEXIBLE CONNECTORS: CORRUGATED, STAINLESS-STEEL, INNER TUBING COVERED WITH STAINLESS-STEEL WIRE BRAID. INCLUDE STEEL NIPPLES OR FLANGES, WELDED TO HOSE.

    C. STAINLESS-STEEL-HOSE/STAINLESS-STEEL PIPE, FLEXIBLE CONNECTORS: CORRUGATED STAINLESS-STEEL, INNER TUBING COVERED WITH STAINLESS-STEEL WIRE BRAID. INCLUDE STAINLESS-STEEL NIPPLES OR FLANGES, WELDED TO HOSE.

    D. ALL CONNECTIONS AND FLEXIBLE HOSES SHALL BE FM APPROVED.

FIRE PROTECTION ABBREVIATION LIST

SYMBOL	DESCRIPTION
AFF	ABOVE FINISH FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
DP	DRY PENDENT
DN	DOWN
DS	DATA SHEET
EC	EXTENDED COVERAGE
EX	EXISTING
FHV	FIRE HOSE VALVE
FM	FACTORY MUTUAL
FP	FIRE PROTECTION
FPC	FIRE PROTECTION CONTRACTOR
FT	FEET
GC	GENERAL CONTRACTOR
QR/QRS	QUICK RESPONSE
IN	INCH
K-F	SPRINKLER K-FACTOR
NIC	NOT IN CONTRACT
PC	PLUMBING CONTRACTOR
SPR	SPRINKLER RESPONSE
SR	STANDARD RESPONSE
SS	STANDPIPE SYSTEM
SSP	STANDARD PENDENT SPRINKLER
SSU	STANDARD UPRIGHT SPRINKLER
STND	STANDARD
THR	THREADED

FIRE PROTECTION SYMBOL LIST

SYMBOL	DESCRIPTION
	SCOPE OF WORK BOUNDARY
SP	FIRE SPRINKLER PIPING
D	DRAIN PIPING
SS	STANDPIPE SYSTEM PIPING
	CHECK VALVE
	GATE VALVE WITH TAMPER SWITCH
	CONTROL PANEL
	SWING CHECK VALVE
	OS&Y ZONE CONTROL VALVE W/ TAMPER SWITCH
FS	FLOW SWITCH
PS	PRESSURE SWITCH
TS	TAMPER SWITCH
P	PRESSURE GAUGE
	INSPECTOR TEST
	SIGHT GLASS
	UNION
HS	HORN/STROBE ALARM
	WALL MOUNTED FIRE DEPARTMENT CONNECTION
	FREE STANDING FIRE DEPARTMENT CONNECTION
	DOUBLE CHECK BACKFLOW PREVENTER
	ELBOW 90
	GATE VALVE
	TEE PLAN
	CONTINUATION
	SPRINKLER HEADS TO BE DEMO
	SPRINKLER HEADS TO REMAIN
	SIDEWALL SPRINKLER HEAD
	TEE-ELBOW UP
	FIRE EXTINGUISHER CABINET
	RISER
	HOSEBIB
F	FIRE ALARM PULL STATION
	FIRE ALARMS-HORN
D	SMOKE DETECTORS
S	STROBE LIGHT
	SHUT-OFF VALVE
	GROOVED CAP
	CAPS
	NEW CONNECTION
	DEMO AND CAP EXISTING
	SPRINKLER ZONE

FIRE PROTECTION DESIGN CRITERIA (NFPA 13-2019 EDITION)

HAZARD	AREA	DESIGN CRITERIA AREA	HOSE (GPM)	MAX SPACING PROTECTION AREA	DESIGN BASIS	REMARKS
LIGHT HAZARD GROUP 1	OFFICE AREAS / PUBLIC AREA / CORRIDORS / RESTROOMS /LOBBY / CONFERENCE ROOMS / BREAK ROOM / PATIENT ROOMS	0.10 / 1500 SQFT	100	225 SQFT	NFPA 13 SECTIONS 4.3.2, 19.3.3.2 & TABLE 19.3.3.1.2	NOTES 1, 2, AND 3
ORDINARY HAZARD GROUP 1	ELECTRICAL / MECHANICAL / SERVER / IT SERVER	0.15 / 1500 SQFT	250	130 SQFT	NFPA 13 SECTIONS 4.3.3, 19.3.3.2 & TABLE 19.3.3.1.2	NOTES 1, 2, AND 3
ORDINARY HAZARD GROUP 2	STORAGE	0.2/1500 SQFT	250	130 SQFT	NFPA 13 SECTIONS 4.3.4, 19.3.3.2 & TABLE 19.3.3.1.2	NOTES 1, 2, AND 3

NOTE:
1. HYDRAULIC AREA OF OPERATION SHALL BE INCREASED (CUMULATIVELY) WITHOUT REVISING THE DENSITY FOR THE FOLLOWING APPLICATIONS:
    A. INCREASED BY 30% FOR AREAS WITH SLOPED CEILINGS WITH A PITCH EXCEEDING 1 IN 6 (16.7%) SLOPE IN ACCORDANCE WITH NFPA 13 19.3.3.2.4.
    B. INCREASED BY 30% FOR DRY-PIPE AND DOUBLE INTERLOCK PRE-ACTION SYSTEMS, IN ACCORDANCE WITH NFPA 13 19.3.3.2.5.
    C. INCREASED TO 3,000 SQFT IF THE BUILDING HAS ADJACENT, NON-SPRINKLERED COMBUSTIBLE SPACES.
2. THE ABOVE CRITERIA NOTED DOES NOT PRECLUDE THE USE OF EXTENDED COVERAGE OR LISTED SPECIAL APPLICATION SPRINKLERS THAT ARE DESIGNED AND INSTALLED IN ACCORDANCE WITH THEIR LISTING AND MANUFACTURER REQUIREMENTS.
3. THE HOSE STREAM ALLOWANCE SHALL BE PROVIDED AT THE BASE OF RISER.

FIRE PROTECTION SPRINKLER SCHEDULE

SYMBOL	TYPE	RE.	K-F	FINISH	REMARKS
	SEMI-RECESSED DRY PENDENT	QR	5.6	CHROME	NOTE 1
	SEMI-RECESSED PENDENT	QR	5.6	CHROME	NOTE 2
	UPRIGHT	QR	5.6	BRASS	NOTE 2
	SIDEWALL	QR	5.6	CHROME	NOTE 2
	DRY SIDEWALL	QR	5.6	CHROME	NOTE 2

GENERAL NOTES:
1. SPRINKLER SHALL BE THE APPROPRIATE TEMPERATURE RATING FOR LOCATION AND OCCUPANCY IN ACCORDANCE WITH NFPA 13.
2. SPRINKLER SHALL ALIGN WITH LIGHT FIXTURES AND OTHER CEILING MOUNTED DEVICES. COORDINATE SPRINKLER LOCATIONS WITH ARCHITECT'S REFLECTED CEILING PLAN, AND PROVIDE ADDITIONAL SPRINKLERS WHERE REQUIRED TO MAINTAIN THE CEILING LAYOUT OF ALL DISCIPLINES, FIXTURES, EQUIPMENT AND WORK.

NOTES:
1. PROVIDED WITH LISTED SPRINKLER GUARD FOR INSTALLATION BELOW 7-FT AFF.

FIRE PROTECTION DELEGATED-DESIGN NOTE

THE FIRE PROTECTION CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING AND PROVIDING A COMPLETE, FUNCTIONAL, AND CODE COMPLIANT AUTOMATIC SPRINKLER SYSTEM. REFER TO GENERAL NOTES FOR ADDITIONAL DETAIL CONCERNING DESIGN, FLOW PRESSURE TEST, HYDRAULIC CALCULATIONS PER NFPA 13, 14 TO BE SUMBITTED, COORDINATION AND SHOP DRAWINGS REQUIREMENTS.

100% BID SET	8/9/2021
95% CONSTRUCTION DOCUMENTS	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

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Bancroft Project No. 18-121

Stamp: REGISTERED PROFESSIONAL ENGINEER RAED HAMID PE-28170 DATE 08-09-2021 NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: FIRE PROTECTION - GENERAL NOTES, ABBREVIATIONS, & SYMBOLS

Phase: 100% BID DOCUMENTS

Project Title: CORRECT ISOLATION ROOM ISSUES

Project Number: 437-21-170

Building Number: 1, 46, 9

Approved: Project Director

FULLY SPRINKLERED

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/21 | Checked: DGG | Drawn: HS

Drawing Number: FA-01

VA FORM 08-6231

FIRE PROTECTION DEMOLITION GENERAL NOTES

A. CONTRACTOR TO COORDINATE WITH VA COR FOR ALL FIRE PROTECTION SERVICE OUTAGES.

B. THE FIRE PROTECTION DRAWINGS ARE CONCEPTUAL. FOR GENERAL INFORMATION ONLY AND NOT AN EXACT INDICATOR OF PIPE OR SPRINKLER HEAD LOCATIONS.

C. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO FINISHES OR COMPONENTS NOT SCHEDULED FOR DEMOLITION. DAMAGED ITEMS SHALL BE REPLACED OR REPAIRED TO MEET OR EXCEED FORMER CONDITIONS.

D. GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILING, CEILING TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK BY ALL CONTRACTORS.

E. AREA OF WORK WHERE EXISTING CEILINGS ARE TO BE REMOVED AND NEW FINISH CEILING TO BE INSTALLED, ALL EXISTING MOUNTED ITEMS SHALL BE REMOVED, STORED AND REINSTALLED IN SAME LOCATION.

F. CONTRACTOR IS RESPONSIBLE FOR ALL COST ASSOCIATED WITH CEILING DISASSEMBLY AND REASSEMBLY TO ACCOMMODATE THIS WORK. CONTRACTOR TO SALVAGE, STORE, AND REINSTALL ALL CEILING MOUNTED DEVICES.

G. REMOVE ALL ASSOCIATED CLAMPS, HANGERS, SUPPORTS, ETC., ASSOCIATED WITH PIPING REMOVAL.

H. CONTRACTOR IS RESPONSIBLE FOR ALL MODIFICATIONS TO THE EXISTING PIPING NECESSARY TO PERMIT THE INSTALLATION OF NEW WORK.

L. A TEMPORARY SPRINKLER LINE WITH UPRIGHT HEADS SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF WORK AND REMOVED UPON COMPLETION OF WORK.

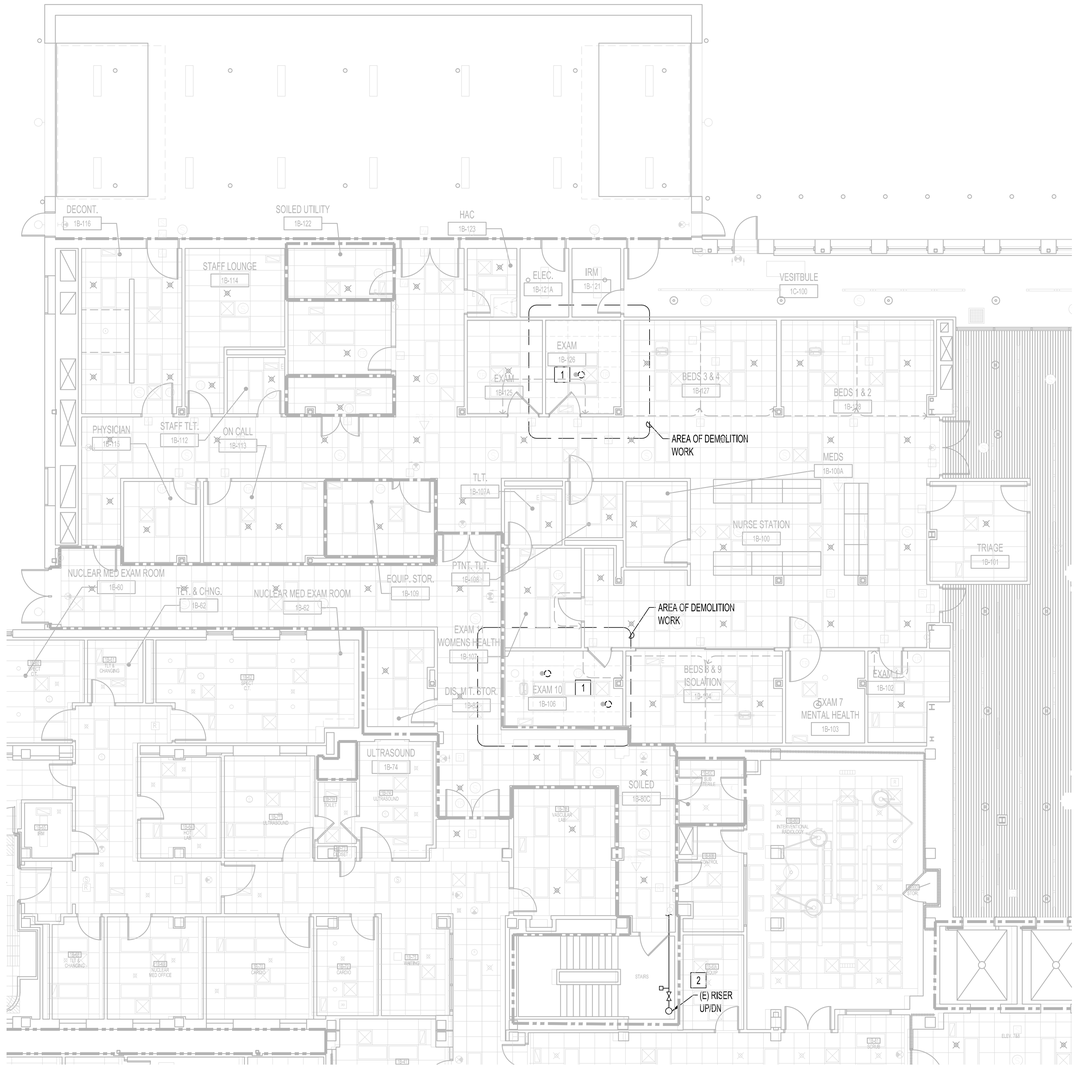
M. COORDINATED PHASE WORK WITH SEQUENCES OUTLINED ON DRAWING 1-GI-09.

X FIRE PROTECTION DEMOLITION KEY NOTES

1. CONTRACTOR TO DEMOLISH AND REMOVE EXISTING SPRINKLER HEAD AND PIPING TO FACILITATE SCOPE OF WORK DURING PHASE 1. TURN SPRINKLER HOODS UPRIGHT DURING CONSTRUCTION.
2. EXISTING FIRE PROTECTION RISER SERVING ZONE URGENT CARE TO REMAIN. FIRE ZONE TO REMAIN IN SERVICE DURING CONSTRUCTION.

FIRE BARRIER LEGEND

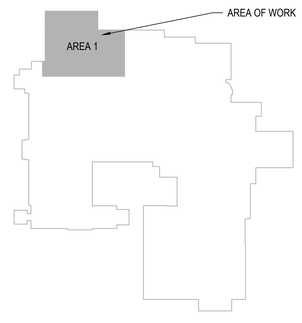
- 1 HR FIRE BARRIER
- 2 HR FIRE BARRIER
- SMOKE BARRIER



NORTH

1 FIRE PROTECTION - FIRST FLOOR - DEMOLITION PLAN - ED

1/8"=1'-0"



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Stamp

REGISTERED PROFESSIONAL ENGINEER
RAED HAMID
PE-28170
DATE 08-09-2021
NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: FIRE PROTECTION - FIRST FLOOR - DEMOLITION PLAN - ED

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/21 | Checked: DGG | Drawn: HS

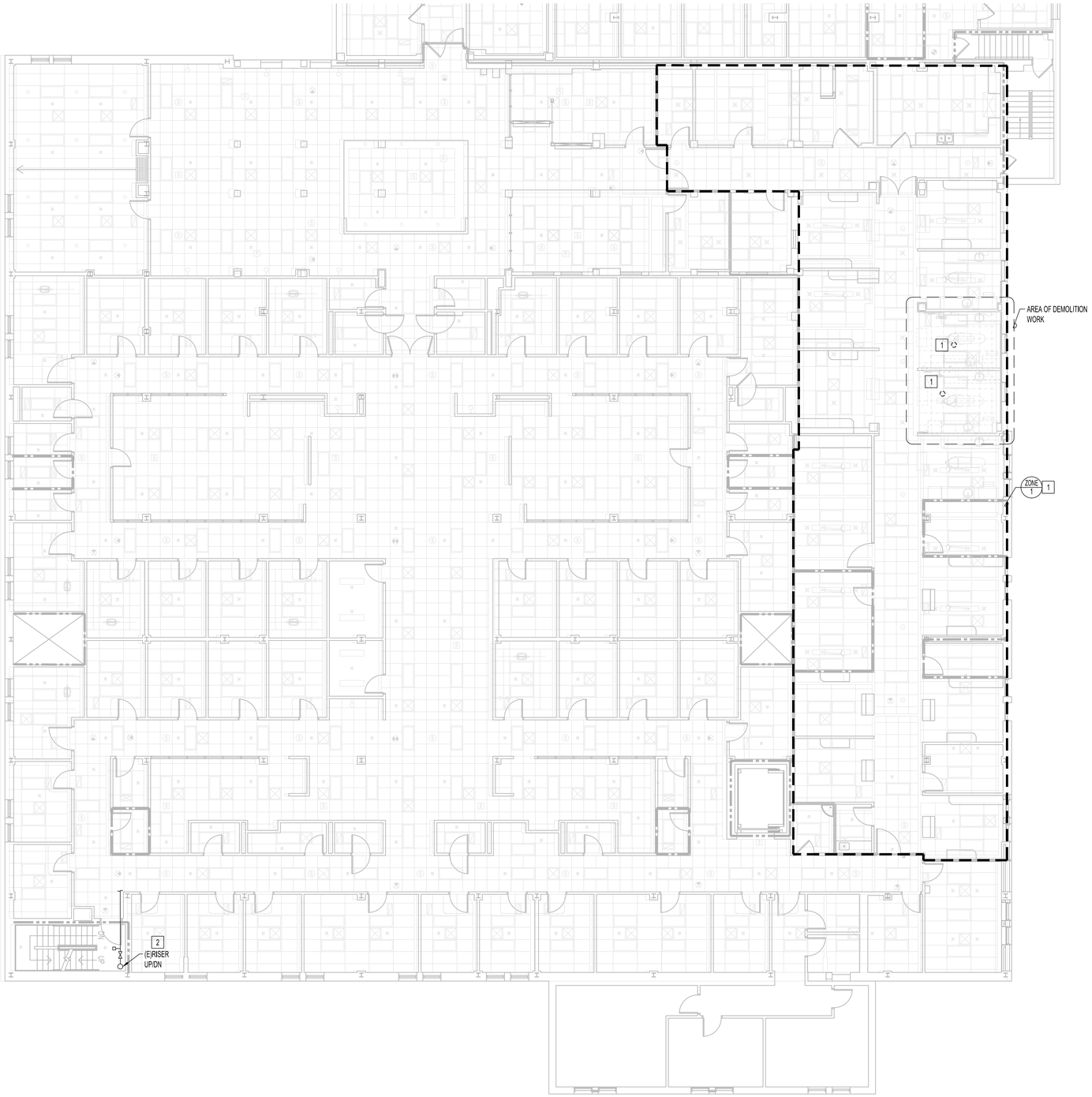
Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: FA-02

28 OF 76

VA FORM 08-6231



NORTH

1 FIRE PROTECTION - BLDG. 1 FIRST FLOOR - DEMOLITION PLAN - DENTAL

1/8"=1'-0"

FIRE PROTECTION DEMOLITION GENERAL NOTES

A. CONTRACTOR TO COORDINATE WITH VA COR FOR ALL FIRE PROTECTION SERVICE OUTAGES.

B. THE FIRE PROTECTION DRAWINGS ARE CONCEPTUAL. FOR GENERAL INFORMATION ONLY AND NOT AN EXACT INDICATOR OF PIPE OR SPRINKLER HEAD LOCATIONS.

C. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO FINISHES OR COMPONENTS NOT SCHEDULED FOR DEMOLITION. DAMAGED ITEMS SHALL BE REPLACED OR REPAIRED TO MEET OR EXCEED FORMER CONDITIONS.

D. GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILING, CEILING TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK BY ALL CONTRACTORS.

E. AREA OF WORK WHERE EXISTING CEILINGS ARE TO BE REMOVED AND NEW FINISH CEILING TO BE INSTALLED, ALL EXISTING MOUNTED ITEMS SHALL BE REMOVED, STORED AND REINSTALLED IN SAME LOCATION.

F. CONTRACTOR IS RESPONSIBLE FOR ALL COST ASSOCIATED WITH CEILING DISASSEMBLY AND REASSEMBLY TO ACCOMMODATE THIS WORK. CONTRACTOR TO SALVAGE, STORE, AND REINSTALL ALL CEILING MOUNTED DEVICES.

G. REMOVE ALL ASSOCIATED CLAMPS, HANGERS, SUPPORTS, ETC., ASSOCIATED WITH PIPING REMOVAL.

H. CONTRACTOR IS RESPONSIBLE FOR ALL MODIFICATIONS TO THE EXISTING PIPING NECESSARY TO PERMIT THE INSTALLATION OF NEW WORK.

I. A TEMPORARY SPRINKLER LINE WITH UPRIGHT HEADS SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF WORK AND REMOVED UPON COMPLETION OF WORK.

J. COORDINATED PHASE WORK WITH SEQUENCES OUTLINED ON DRAWING 1-GI-10.

X FIRE PROTECTION DEMOLITION KEY NOTES

1. CONTRACTOR TO DEMOLISH AND REMOVE EXISTING SPRINKLER HEAD AND PIPING TO FACILITATE SCOPE OF WORK DURING PHASE 1. TURN SPRINKLER HOODS UPRIGHT DURING CONSTRUCTION.

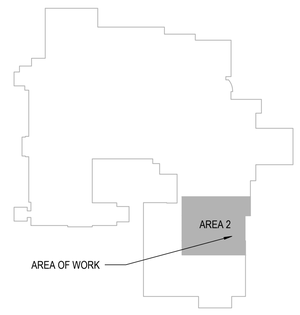
2. EXISTING FIRE PROTECTION RISER SERVING ZONE 2 TO REMAIN.

FIRE BARRIER LEGEND

1 HR FIRE BARRIER

2 HR FIRE BARRIER

SMOKE BARRIER



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95% CONSTRUCTION DOCUMENTS	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

CONSULTANT

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Bancroft Project No. 18-121

Stamp

REGISTERED PROFESSIONAL ENGINEER
RAED HAMID
PE-28170
DATE 08-09-2021
NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: FIRE PROTECTION - FIRST FLOOR - DEMOLITION PLAN - DENTAL

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/21 | Checked: DGG | Drawn: HS

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: FA-03

29 OF 76

VA FORM 08-6231

FIRE PROTECTION DEMOLITION GENERAL NOTES

A. CONTRACTOR TO COORDINATE WITH VA COR FOR ALL FIRE PROTECTION SERVICE OUTAGES.

B. THE FIRE PROTECTION DRAWINGS ARE CONCEPTUAL. FOR GENERAL INFORMATION ONLY AND NOT AN EXACT INDICATOR OF PIPE OR SPRINKLER HEAD LOCATIONS.

C. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO FINISHES OR COMPONENTS NOT SCHEDULED FOR DEMOLITION. DAMAGED ITEMS SHALL BE REPLACED OR REPAIRED TO MEET OR EXCEED FORMER CONDITIONS.

D. GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILING, CEILING TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK BY ALL CONTRACTORS.

E. AREA OF WORK WHERE EXISTING CEILINGS ARE TO BE REMOVED AND NEW FINISH CEILING TO BE INSTALLED, ALL EXISTING MOUNTED ITEMS SHALL BE REMOVED, STORED AND REINSTALLED IN SAME LOCATION.

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G. REMOVE ALL ASSOCIATED CLAMPS, HANGERS, SUPPORTS, ETC., ASSOCIATED WITH PIPING REMOVAL.

H. CONTRACTOR IS RESPONSIBLE FOR ALL MODIFICATIONS TO THE EXISTING PIPING NECESSARY TO PERMIT THE INSTALLATION OF NEW WORK.

I. A TEMPORARY SPRINKLER LINE WITH UPRIGHT HEADS SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF WORK AND REMOVED UPON COMPLETION OF WORK.

J. COORDINATED PHASE WORK WITH SEQUENCES OUTLINED ON DRAWING 1-GI-11.

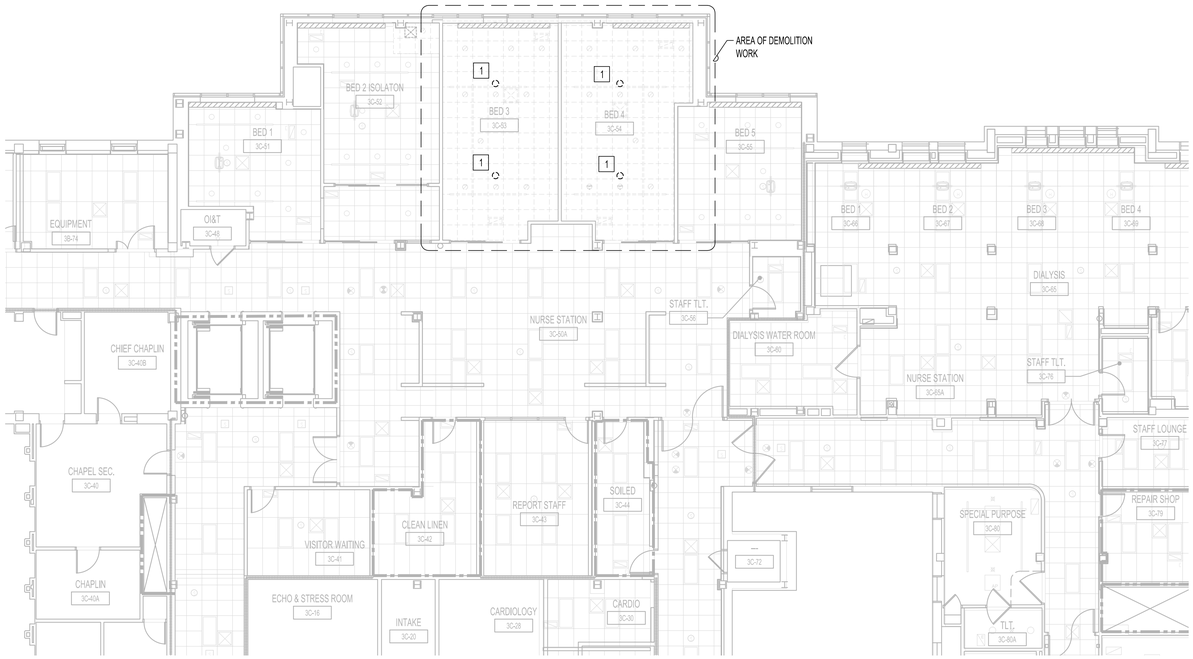
X FIRE PROTECTION DEMOLITION KEY NOTES

1. CONTRACTOR TO DEMOLISH AND REMOVE EXISTING SPRINKLER HEAD AND PIPING TO FACILITATE SCOPE OF WORK DURING PHASE 1. TURN SPRINKLER HOODS UPRIGHT DURING CONSTRUCTION.

2. EXISTING FIRE PROTECTION RISER SERVING ZONE TO REMAIN.

FIRE BARRIER LEGEND

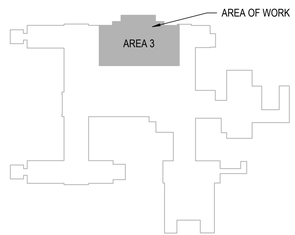
- 1 HR FIRE BARRIER
- 2 HR FIRE BARRIER
- SMOKE BARRIER



NORTH

1 FIRE PROTECTION - THIRD FLOOR - DEMOLITION PLAN - ICU

1/8"=1'-0"



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Revisions:	Date:

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Bancroft Project No. 18-121

Stamp

REGISTERED PROFESSIONAL ENGINEER
RAED HAMID
PE-28170
DATE 08-09-2021
NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: FIRE PROTECTION - THIRD FLOOR - DEMOLITION PLAN - ICU

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/21 | Checked: DGG | Drawn: HS

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: FA-04

30 OF 76

VA FORM 08-6231

FIRE PROTECTION DEMOLITION GENERAL NOTES

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I. A TEMPORARY SPRINKLER LINE WITH UPRIGHT HEADS SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF WORK AND REMOVED UPON COMPLETION OF WORK.

J. COORDINATED PHASE WORK WITH SEQUENCES OUTLINED ON DRAWING 1-GI-12..

X FIRE PROTECTION DEMOLITION KEY NOTES

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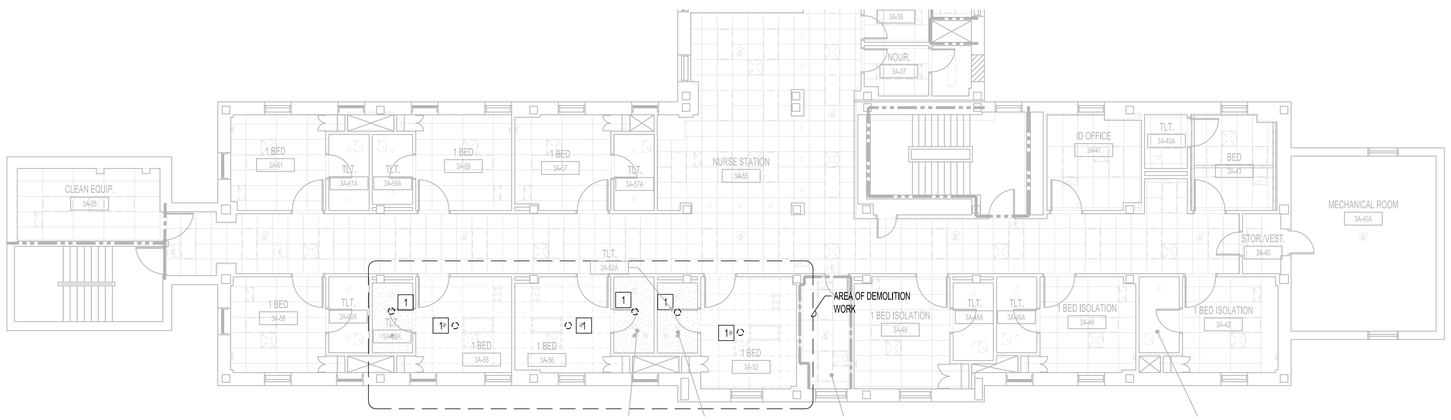
FIRE BARRIER LEGEND

1 HR FIRE BARRIER

2 HR FIRE BARRIER

SMOKE BARRIER



NORTH

1 FIRE PROTECTION - THIRD FLOOR - DEMOLITION PLAN - MNU

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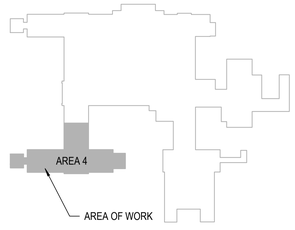

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Bancroft Project No. 18-121

Stamp

REGISTERED PROFESSIONAL ENGINEER
RAED HAMID
PE-20170
DATE: 08-09-2021
NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: FIRE PROTECTION - THIRD FLOOR - DEMOLITION PLAN - MNU

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

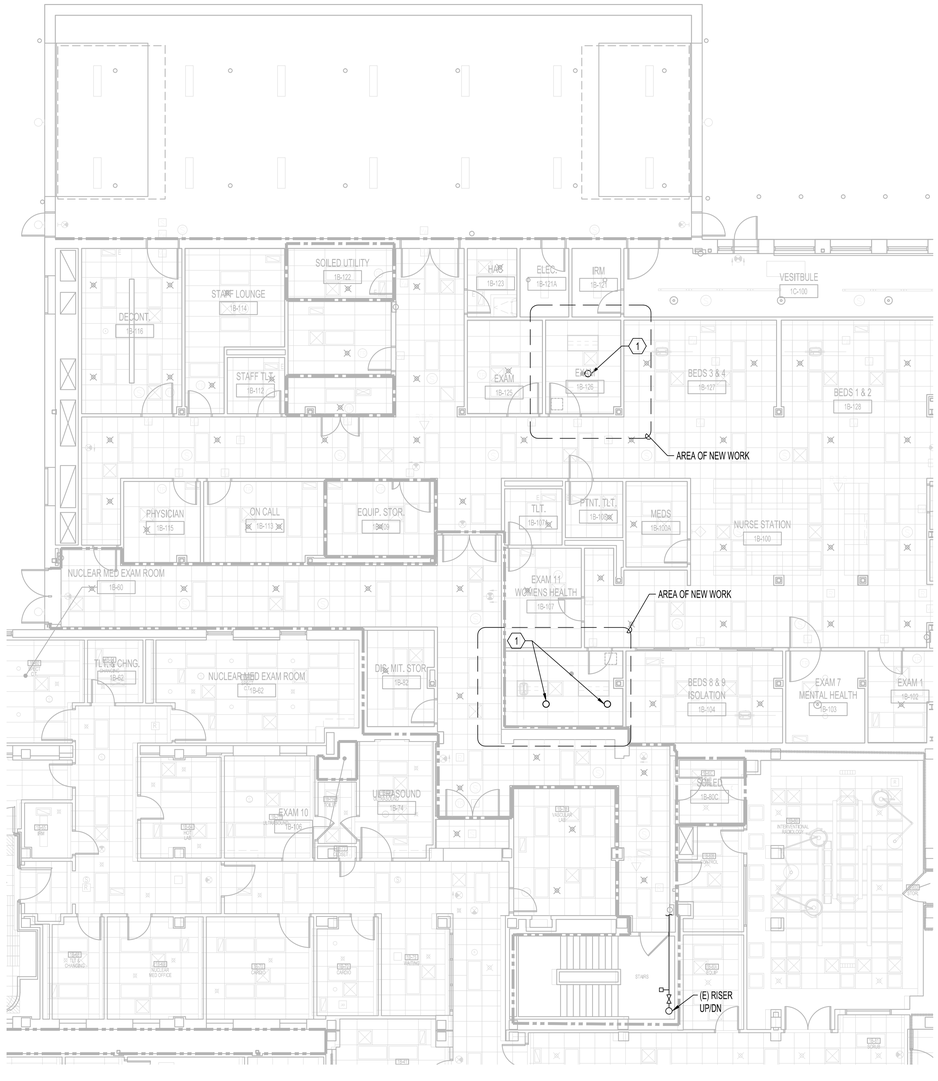
Issue Date: 8/9/21 | Checked: DGG | Drawn: HS

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: FA-05

VA FORM 08-6231



NORTH

1 FIRE PROTECTION - FIRST FLOOR PLAN - ED

1/8"=1'-0"

FIRE PROTECTION GENERAL NOTES

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J. COORDINATED PHASE WORK WITH SEQUENCES OUTLINED ON DRAWING 1-GI-09.

(X) FIRE PROTECTION KEY NOTES

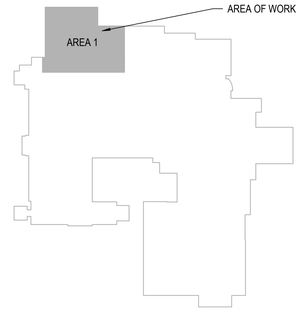
1. PROVIDE AND INSTALL NEW SEMI-RECESSED PENDANT AUTOMATIC SPRINKLER HEADS.

FIRE BARRIER LEGEND

1 HR FIRE BARRIER

2 HR FIRE BARRIER

SMOKE BARRIER



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Bancroft Project No. 18-121

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REGISTERED PROFESSIONAL ENGINEER
RAED HAMID
PE-28170
DATE 08-09-2021
NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: FIRE PROTECTION - FIRST FLOOR PLAN - ED

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/21 | Checked: DGG | Drawn: HS

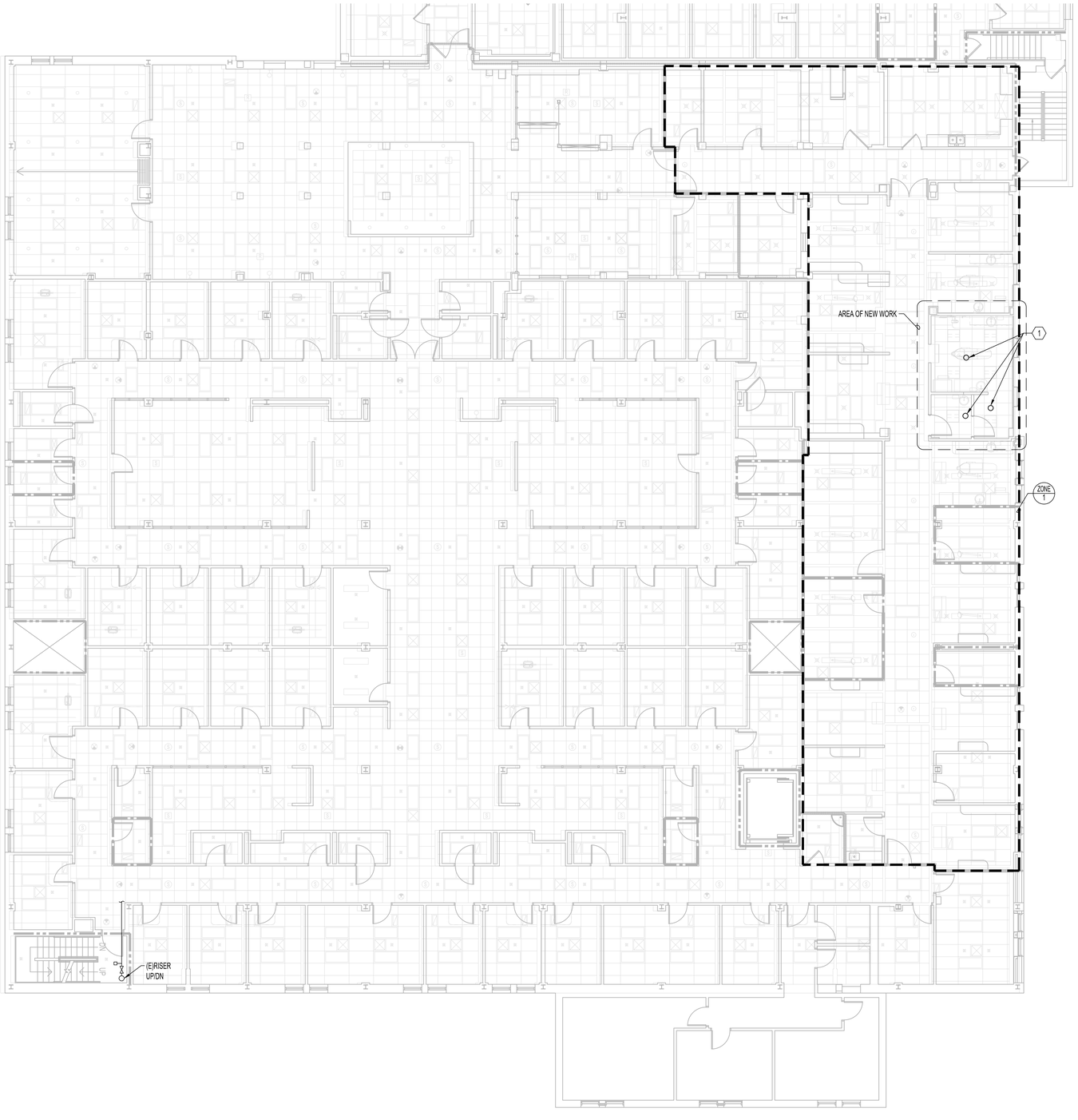
Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: FA-06

32 OF 76

VA FORM 08-6231



NORTH

1 FIRE PROTECTION - BLDG. 1 FIRST FLOOR PLAN - DENTAL
1/8"=1'-0"

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J. COORDINATED PHASE WORK WITH SEQUENCES OUTLINED ON DRAWING 1-GI-10.

FIRE PROTECTION KEY NOTES

X

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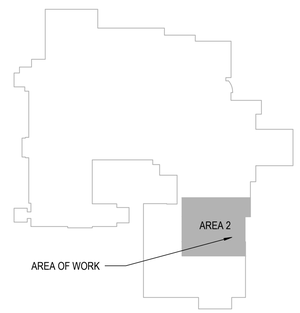
FIRE BARRIER LEGEND

1 HR FIRE BARRIER

2 HR FIRE BARRIER

SMOKE BARRIER



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REGISTERED PROFESSIONAL ENGINEER
RAED HAMID
PE-28170
DATE 08-09-2021
NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: FIRE PROTECTION - FIRST FLOOR PLAN - DENTAL

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/21

Checked: DGG

Drawn: HS

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: FA-07

33 OF 76

VA FORM 08-6231

FIRE PROTECTION GENERAL NOTES

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FIRE PROTECTION KEY NOTES

(X)

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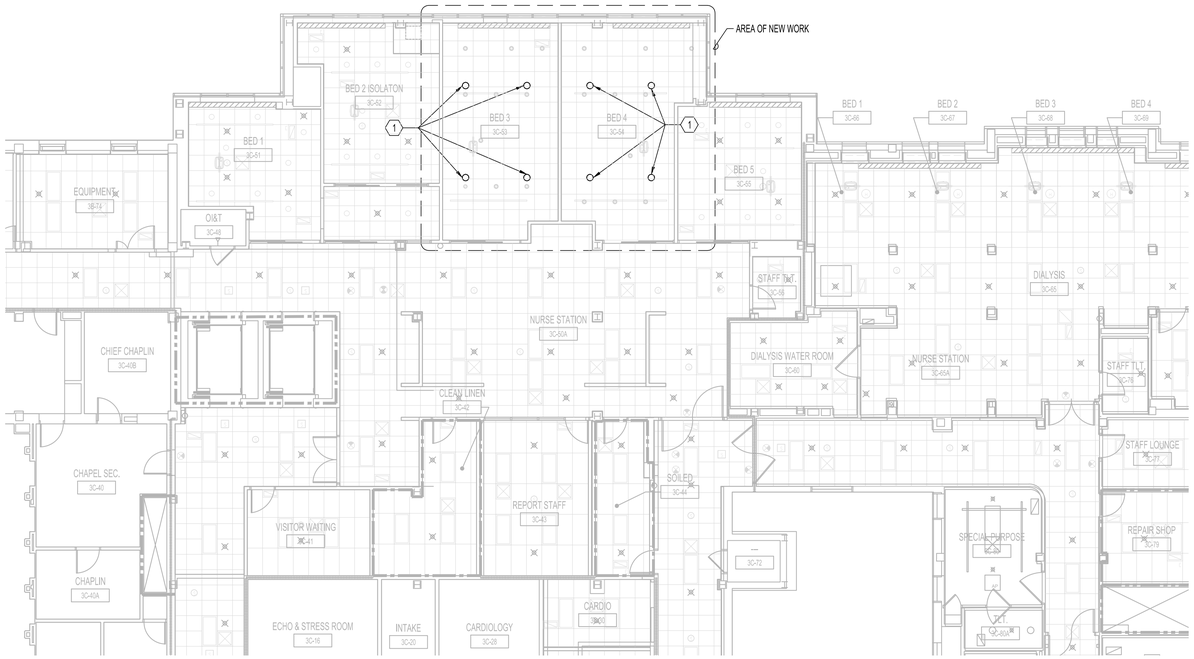
2 HR FIRE BARRIER

SMOKE BARRIER



NORTH

1 FIRE PROTECTION - THIRD FLOOR PLAN - ICU

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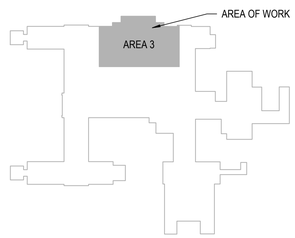

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RAED HAMID
PE-28170
DATE 08-09-2021
NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: FIRE PROTECTION - THIRD FLOOR PLAN - ICU

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/21 | Checked: DGG | Drawn: HS

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: FA-08

VA FORM 08-6231

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FIRE PROTECTION KEY NOTES

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FIRE BARRIER LEGEND

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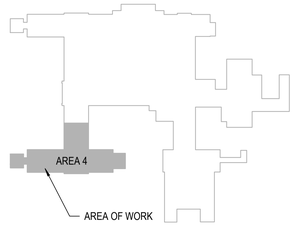
2 HR FIRE BARRIER

SMOKE BARRIER

NORTH

1 FIRE PROTECTION - THIRD FLOOR PLAN - MNU

1/8"=1'-0"



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REGISTERED PROFESSIONAL ENGINEER
RAED HAMID
PE-28170
DATE 08-09-2021
NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: FIRE PROTECTION - THIRD FLOOR PLAN - MNU

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/21 | Checked: DGG | Drawn: HS

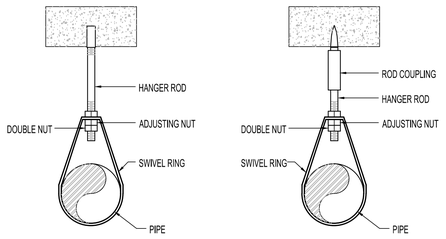
Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: FA-09

35 OF 76

VA FORM 08-6231



HANGER "A" EXPANSION ANCHOR

HANGER "B" POWER DRIVEN STUD

HANGER INSTALLATION REQUIREMENTS

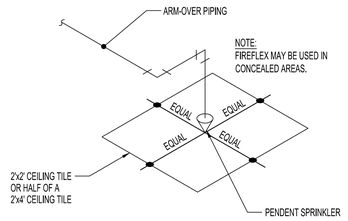
MAXIMUM DISTANCE BETWEEN HANGERS								
NOMINAL PIPE SIZE	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
STEEL PIPE (EXCEPT TREADED LIGHT WALL)	12' 0"	12' 0"	15' 0"	15' 0"	15' 0"	15' 0"	14' 0"	15' 0"
STEEL PIPE TREADED LIGHT WALL	12' 0"	12' 0"	12' 0"	12' 0"	12' 0"	12' 0"	-	-

NOTES:

1. 100 PSI STATIC PRESSURE ON SYSTEM REQUIRES UP-LIFT RESTRAINT WITHIN 12 INCHES HORIZONTALLY OF HEAD FOR ARM-OVERS AND END OF BRANCH LINE.
2. THE UNSUPPORTED LENGTH BETWEEN THE END SPRINKLER AND THE LAST HANGER ON THE LINE SHALL NOT EXCEED 36" FOR 1" PIPE, 48" FOR 1 1/4" PIPE AND 60" FOR 1 1/2" PIPE OR LARGER.
3. THE CUMULATIVE HORIZONTAL LENGTH OF AN UNSUPPORTED ARMOVER TO A SPRINKLER, SPRINKLER DROP, OR SPRIG-UP SHALL NOT EXCEED 24" "MANY CODES AND SPECIFICATIONS REQUIRE PIPE HANGERS TO BE SPACED EVERY 10 FT (3.05M) REGARDLESS OF SIZE. CHECK LOCAL CODES.

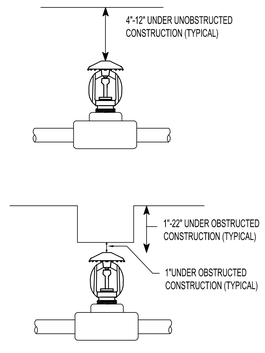
1 TYPICAL PIPE HANGER DETAILS

NTS



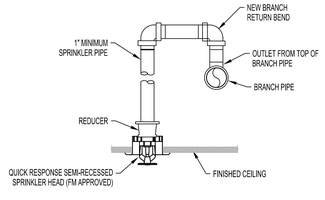
2 TYPICAL CEILING SPRINKLER ARM OVER DETAIL

NTS



4 TYPICAL SPRINKLER FROM DECK OR OBSTRUCTION

NTS



3 RETURN BEND DETAIL

NTS

100% BID SET	8/9/2021
95% CONSTRUCTION DOCUMENTS	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

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REGISTERED PROFESSIONAL ENGINEER
RAED HAMID
PE-28170
DATE 08-09-2021
NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: FIRE PROTECTION - DETAILS

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Project Number: 437-21-170

Building Number: 1, 46, 9

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/21

Checked: DGG

Drawn: HS

Drawing Number: FA-10

VA FORM 08-6231

PLUMBING GENERAL NOTES

SEE ALL PROJECT GENERAL NOTES AND OTHER REQUIREMENTS INCLUDING THE LIFE SAFETY AND INFECTION CONTROL REQUIREMENTS LOCATED WITHIN THE GENERAL DRAWINGS SECTION. COMPLY WITH ALL REQUIREMENTS AS THEY ARE A DIRECT PART OF THIS SECTION AND AS IF THEY WERE DIRECTLY INCLUDED AND PROVIDED BELOW.

EQUIVALENCY SUBSTITUTIONS: THE "BASIS OF DESIGN (BOD) PROTOCOLS" ARE TO BE FOLLOWED FOR ALL EQUIPMENT, MATERIALS AND ASSEMBLIES SPECIFIED AND DETAILED THROUGHOUT ALL DRAWINGS AND SPECIFICATION SECTIONS, WHETHER THE BOD DESIGNATE IS SPECIFICALLY REFERENCED THEREIN OR NOT. SEE THE GENERAL DRAWINGS SECTION FOR THE FULL BOD EQUIVALENCY SUBSTITUTION REQUIREMENTS AND PROTOCOLS TO BE FOLLOWED.

1. THIS CONTRACTOR SHALL REVIEW ENTIRE SET OF CONTRACT DOCUMENTS: INCLUDING BUT NOT NECESSARILY LIMITED TO ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING, FIRE PROTECTION, AND ELECTRICAL DRAWINGS AND ENTIRE PROJECT SPECIFICATIONS. THIS CONTRACTOR SHALL ACKNOWLEDGE AND INCLUDE IN THE SCOPE OF WORK (CONTRACT) ALL CONDITIONS PERTINENT TO THE COMPLETION OF HIS WORK. THIS CONTRACTOR SHALL FULLY COORDINATE HIS/HER WORK WITH THE INSTALLATION OF WORK BY OTHER TRADES AND MAKE NECESSARY FIELD ADJUSTMENTS AS REQUIRED TO ACCOMMODATE THE INSTALLATION. ALL OF THE ABOVE SHALL BE INCLUDED IN THE SCOPE OF WORK.

2. THIS CONTRACTOR SHALL CAREFULLY EXAMINE THE DRAWINGS AND SPECIFICATIONS, VISIT THE SITE OF THE WORK AND FULLY INFORM THEMSELVES AS TO ALL CONDITIONS AND MATTERS THAT CAN, IN ANY WAY, AFFECT THE WORK OR THE COST THEREOF. SHOULD THIS CONTRACTOR FIND DISCREPANCIES IN, OR OMISSIONS FROM THE DRAWINGS, SPECIFICATIONS OR OTHER DOCUMENTS, OR BE IN DOUBT AS TO THEIR MEANING, NOTIFY THE VA/CO AT ONCE, IN WRITING, OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND NEW WORK, OR BETWEEN THEIR WORK AND THE WORK OF OTHER TRADES AND OBTAIN CLARIFICATION PRIOR TO SUBMITTING ANY BID. LACK OF SUCH NOTIFICATION SHALL BE CONSTRUED AS TO INDICATE NO DISCREPANCIES OR CONFLICTS EXIST.

3. THE DRAWINGS INDICATE DIAGRAMMATICALLY THE INTENT, GENERAL CHARACTER, REQUIREMENTS AND LOCATION OF THE WORK SHOWN AND INCLUDED. THE WORK INDICATED, BUT HAVING MINOR DETAILS OBVIOUSLY OMITTED, SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE VA/GOVERNMENT.

4. THE CONTRACTOR IS REQUIRED TO BID, AS SPECIFIED, THE WORK SHOWN ON THE DRAWINGS AND PROVIDED IN THE SPECIFICATIONS WITHOUT DEVIATION, WITH THE EXCEPTION OF ANY BASIS OF DESIGN (BOD) EQUIVALENCY SUBSTITUTIONS. THESE REQUESTED SUBSTITUTIONS WILL NEED TO BE IDENTIFIED, SUBMITTED AND APPROVED BY THE VA/CO AND SHALL BE IN FULL COMPLIANCE WITH THE BASIS OF DESIGN COMPLIANCE PROTOCOLS. SEE GI001.

5. THIS CONTRACTOR IS RESPONSIBLE TO FURNISH AND INSTALL ALL LABOR AND MATERIALS NECESSARY FOR A COMPLETE SYSTEM. WHERE THERE IS NO MENTION OF THE RESPONSIBLE PARTY FOR A SPECIFIC ITEM TO BE FURNISHED OR INSTALLED ON THE DRAWINGS, THE DRAWING'S TRADE CONTRACTOR SHALL BE COMPLETELY RESPONSIBLE FOR ALL RELATED PURCHASES AND LABOR FOR PROVIDING A COMPLETE OPERATING SYSTEM FOR THIS ITEM.

6. WHEN PERFORMING ANY CUTTING OR PATCHING (RESTORE TO ORIGINAL STATE) ALL BUILDING MATERIALS AND FINISHES AS REQUIRED TO PROVIDE A FINISHED PRODUCT THAT IS LIKE NEW AND DOESN'T STAND OUT AS BEING DIFFERENT OR DISTINGUISHABLE AS A PATCH OR REPAIR.

7. THIS CONTRACTOR SHALL VERIFY AND COORDINATE ALL MOUNTING, ARRANGEMENTS, HEIGHTS AND LOCATIONS PRIOR TO ROUGH-IN AS REQUIRED BY THE VA DESIGN GUIDES/MANUALS ALONG WITH THE EXPRESSED DESIGN INTENT PRESENTED WITHIN THESE DOCUMENTS.

8. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL SLEEVES THRU WALLS AND THROUGH FLOORS, INCLUDING CORING IF REQUIRED.

9. PLUMBING CONTRACTOR SHALL VERIFY EXACT LOCATION OF ALL EXISTING SANITARY, STORM AND WATER SUPPLY ON THE SITE PRIOR TO THE PERFORMANCE OF ANY WORK.

10. PROVIDE SERVICE VALVES AT ALL BRANCH SUPPLY PIPING. SUCH SERVICE VALVES SHALL BE AS PER THE SPECIFICATIONS AND IN KEEPING WITH THE VA STANDARDS AND REQUIREMENTS.

11. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL CURRENT GOVERNING LOCAL, COUNTY, STATE, AND FEDERAL BUILDING CODE REQUIREMENTS AND REGULATIONS PLUS COMPLIANCE WITH LOCAL UTILITY COMPANY AND VA REQUIREMENTS.

12. THIS CONTRACTOR SHALL BE LICENSED, BONDED, INSURED AND CAPABLE OF PERFORMING QUALITY WORKMANSHIP.

13. THIS CONTRACTOR SHALL ESTABLISH SAFE WORKING PROCEDURES FOR THE PROTECTION OF ALL PERSONNEL THRU ALL PHASES OF WORK, COMPLYING WITH ALL APPLICABLE PROVISIONS OF CITY, STATE, AND FEDERAL SAFETY LAWS (OSHA) AND AS RECOMMENDED IN THE "MANUAL OF ACCIDENT PREVENTION IN CONSTRUCTION" AS ISSUED BY THE ASSOCIATION OF GENERAL CONTRACTORS OF AMERICA, INC., 20TH AND E. STREETS, N.W. WASHINGTON, D.C.

14. THIS CONTRACTOR IS RESPONSIBLE FOR SCHEDULING THE PURCHASE, DELIVERY, RECEIVING, UNLOADING, UNCRATING, STORING, SETTING IN PLACE, AND PROTECTING OF ALL NEW EQUIPMENT AND MATERIALS FURNISHED BY THIS CONTRACTOR ALONG WITH EQUIPMENT FURNISHED BY THE VA AND INSTALLED BY THIS CONTRACTOR. PROVIDE PROTECTION FROM DAMAGE BY THE CONSTRUCTION, HANDLING, VANDALISM AND WEATHER DURING ALL PHASES OF CONSTRUCTION UNTIL COMPLETION OF THE WORK.

15. THIS CONTRACTOR SHALL SUBMIT SHOP DRAWINGS IN THE NUMBERS REQUIRED BY THE SPECIFICATIONS PRIOR TO THE START OF INSTALLATION FOR VA/COR APPROVAL AND A SUCCESSFUL REVIEW BY THE ARCHITECT/ENGINEER.

16. THIS CONTRACTOR SHALL FURNISH AS-BUILT CONTRACT DOCUMENTS TO THE VA/COR BEFORE FINAL PROJECT CLOSE-OUT CAN OCCUR. THE CONTRACT RECORD AS-BUILT DOCUMENTS SHALL BE PROVIDED IN ELECTRONIC REPRODUCIBLE FORM AND HARD COPY.

17. BEFORE PLACING WATER SYSTEM IN OPERATION, CHLORINATE ENTIRE SYSTEM IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIFICATIONS AND IN CONJUNCTION WITH ALL LOCAL, STATE AND FEDERAL PLUMBING CODES ALONG WITH ALL REQUIREMENTS OF THE VA, BOTH FEDERAL AND LOCAL. WHEN PROPERLY COMPLETED AND APPROVED BY THE VA/COR PROVIDE THE SPECIFIED CERTIFICATION(S).

18. ALL NEW SANITARY PIPING SHALL BE GIVEN A FULL STATIC PRESSURE TEST, METHOD OF TEST AND REQUIREMENTS TO BE MET SHALL BE AS PER THE SPECIFICATIONS AND IN CONJUNCTION WITH ALL LOCAL, STATE AND FEDERAL CODE REQUIREMENTS ALONG WITH ALL REQUIREMENTS OF THE VA, BOTH FEDERAL AND LOCAL.

19. UPON COMPLETION OF THE WORK, THIS CONTRACTOR SHALL REVIEW AND CHECK THE ENTIRE PORTION OF THEIR WORK, CLEAN EQUIPMENT AND DEVICES, REMOVE SURPLUS MATERIALS AND RUBBISH FROM THE PROPERTY, LEAVE THE WORK IN NEAT AND CLEAN ORDER, AND PROVIDE A COMPLETED SYSTEM(S) THAT HAS BEEN FULLY TESTED AND IS IN GOOD WORKING CONDITION. EACH RESPECTIVE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ANY CARTONS, DEBRIS, EQUIPMENT, ETC., INSTALLED BY THIS CONTRACTOR INCLUDING EQUIPMENT FURNISHED BY OTHERS

20. ALL EQUIPMENT/DEVICES SHALL BE AND OF FIRST RATE QUALITY (UNLESS OTHERWISE SPECIFIED) AND IS TO BEAR THE APPROPRIATE NSF, AGA, CSA OR UL APPROVED LABELS, LISTINGS, AND CERTIFICATIONS FOR THE SPECIFIC DESIGN PURPOSE.

21. THE DRAWINGS, SCHEDULES AND SPECIFICATIONS HAVE BEEN PREPARED USING ONE MANUFACTURER FOR EACH PIECE OF EQUIPMENT AS THE BASIS OF DESIGN. BEFORE THE CONTRACTOR PURCHASES EQUIPMENT FROM A SPECIFIED ACCEPTABLE MANUFACTURER, BUT NOT THE SCHEDULED MANUFACTURER USED FOR THE BASE DESIGN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR FULL COMPLIANCE WITH THE PROTOCOLS REQUEST FOR EQUIVALENCY SUBMISSION AND APPROVAL PROCESS THAT NEEDS TO BE COMPLETED SUCCESSFULLY BEFORE SUCH A SUBSTITUTION WILL BE ALLOWED TO OCCUR AND BE SUBMITTED VIA THE SHOP DRAWING PROCESS. AS PART OF THAT PROCESS THE REQUESTING CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING ALL THE DIMENSIONS OF THE EQUIPMENT TO VERIFY THAT IT WILL FIT IN THE SPACE SHOWN ON THE DRAWINGS. MINOR DEVIATIONS IN DIMENSIONS WILL BE PERMITTED, PROVIDED THE RATINGS MEET THOSE SHOWN ON THE DRAWINGS AND EQUIPMENT WILL PHYSICALLY FIT INTO THE SPACE ALLOCATED WITH SUITABLE ACCESS AROUND EQUIPMENT FOR OPERATION AND MAINTENANCE OF THE EQUIPMENT. WHEN EQUIPMENT SUBMITTED FOR REVIEW DOES NOT MEET THE PHYSICAL SIZE OR ARRANGEMENT OF THAT SCHEDULED AND SPECIFIED, CONTRACTOR SHALL BE RESPOSIBLE FOR ANY AND ALL ALTERATIONS REQUIRED TO ACCOMMODATE SUCH EQUIPMENT AT NO ADDITIONAL COST TO THE V.A. CONTRACTOR WILL ALSO BE RESPONSIBLE FOR ALL ADDITIONAL WORK REQUIRED BY OTHER CONTRACTORS TO MAKE CHANGES WHICH WOULD ALLOW THE EQUIPMENT TO FIT IN THE SPACE AND FUNCTION AS INTENDED. SEE FULL BASIS OF DESIGN COMPLIANCE PROTOCOLS ON GI001.

22. GENERAL CONTRACTOR MUST FIELD VERIFY SIZES, CAPACITIES, WEIGHTS, ETC. ON ALL EQUIPMENT. DISCREPANCIES FROM THE ORIGINAL BASIS OF DESIGN ON THE DRAWINGS WILL NOT CONSTITUTE A BASIS FOR CHANGE ORDERS. VERIFY WITH VA/COR FOR ANY AND ALL DISCREPANCIES IF THEY EXIST.

23. IN THE CASE OF CONFLICTS OR DISCREPANCIES WITHIN OR AMONG THE CONTRACT DRAWINGS, THE BETTER QUALITY, MORE STRINGENT REQUIREMENTS OR GREATER QUANTITY AND QUALITY OF WORK, AS DETERMIONED BY THE GOVERNMENT/CO/COR, SHALL BE PROVIDED.

PLUMBING FIXTURE SCHEDULE

MARK	DOMESTIC COLD WATER	DOMESTIC HOT WATER	SANITARY	VENT	REMARKS
SK	1/2"	1/2"	1 1/2"	1 1/4"	RELOCATED SINKS.

NOTES:
1. SIZES LISTED ARE MINIMUM CONNECTIONS REQUIRED TO FIXTURES.

PLUMBING MATERIALS AND PROCEDURES NOTES

DISCIPLINE SPECIFIC

1. DISINFECTION OF POTABLE WATER SYSTEM SHALL BE AT THE VERY MINIMUM AS DESCRIBED BELOW IN ITEMS A THRU D, OR THE MOST AGRESSIVE SYSTEM REQUIRED BY THE FOLLOWING FOR CITED AUTHORITIES:
NEW POTABLE WATER SYSTEMS SHALL BE PURGED OF DELETERIOUS MATTER AND DISINFECTED PRIOR TO UTILIZATION. THE METHOD TO BE FOLLOWED SHALL BE THAT PRESCRIBED BY THE HEALTH AUTHORITY HAVING JURISDICTION OR, IN THE ABSENCE OF A PRESCRIBED METHOD, THE PROCEDURE DESCRIBED IN EITHER AWWA C651 OR AWWA C652 LISTED IN CHAPTER 19, AND AS DESCRIBED IN THE VA SPECIFICATION SECTION. THIS REQUIREMENT SHALL APPLY TO "ONSITE" OR "IN-PLANT" FABRICATION OF A SYSTEM OR TO A MODULAR PORTION OF A SYSTEM.
   A. THE PIPE SYSTEM SHALL BE FLUSHED WITH CLEAN, POTABLE WATER UNTIL DIRTY WATER DOES NOT APPEAR AT THE POINTS OF OUTLET.
   B. THE SYSTEM OR PART THEREOF SHALL BE FILLED WITH A WATER/CHLORINE SOLUTION AT LEAST 50 PARTS PER MILLION (50 mg/l) OF CHLORINE, AND THE SYSTEM OR PART THEREOF SHALL BE VALVED OFF AND ALLOWED TO STAND FOR 24 HOURS; OR THE
   SYSTEM OR PART THEREOF SHALL BE FILLED WITH A WATER CHLORINE SOLUTION AT LEAST 200 PARTS PER MILLION (200mg/l) OF CHLORINE AND ALLOWED TO STAND FOR 3 HOURS. FOLLOWING THE REQUIRED STANDING TIME, THE SYSTEM SHALL BE FLUSHED.
   C. THE SYSTEM SHALL BE FLUSHED WITH CLEAN POTABLE WATER UNTIL THE CHLORINE IS PURGED FROM THE SYSTEM.
   D. THE PROCEDURE SHALL BE REPEATED WHERE SHOWN BY A BACTERIOLOGICAL EXAMINATION THAT CONTAMINATION REMAINS PRESENT IN THE SYSTEM.
2. PIPING SERVICE MARKING:
VINYL CLOTH PRESSURE SENSITIVE MARKERS BLACK LETTER ON WHITE BACKGROUND
   A. PIPES 3" AND LARGER SPACING 30'-0" O.C. PIPES 2 1/2" AND SMALLER SPACING 20'-0" O.C.
   B. INSTALL DIRECTIONAL ARROWS ON ALL PIPING AT SAME SPACING.
3. CONTRACTOR TO VERIFY IN FIELD AND PROVIDE EXTENSIONS REQUIRED TO ADJUST ALL FIXTURES TO GRADE LEVEL TO MAINTAIN INVERTS AS DETERMINED BY ALL FIXTURES RELATED (GREASE TRAPS, MAN HOLES, ETC.).
4. PROVIDE EXTERIOR ACCESS TO ISOLATION VALVES FOR HOT AND COLD WATER SUPPLY CUTOFF.

MATERIALS

1. ALL MATERIALS SHALL BE NEW OF FIRST QUALITY AND UL LISTED FOR THE SPECIFIC DESIGN PURPOSE.
2. SANITARY, VENT, AND STORM LINES SHALL BE SCHEDULE 40 CAST IRON OR COPPER PIPE.
3. DOMESTIC WATER SUPPLY PIPING LOCATED BELOW THE SLAB-ON-GRADE LESS THAN 2" SHALL BE TYPE "K" COPPER LINES 6" AND LARGER SHALL BE STAINLESS STEEL (ASTM 312)
4. THREADED FITTINGS ON GALVANIZED STEEL PIPING SHALL BE 150# CLASS GALVANIZED MALLEABLE IRON FITTING CONFORMING TO ASTM A-197 SPECIFICATION.
5. FURNISH AND INSTALL UNIONS WHERE INDICATED OR AS DEEMED NECESSARY FOR REPAIR OR SERVICE. UNIONS 2" AND SMALLER SHALL BE STANDARD GROUND JOINT BRASS TO IRON SEAT, MALLEABLE IRON, SCREWED. UNIONS 2-1/2" AND LARGER SHALL BE STANDARD CAST IRON FLANGED UNIONS 125# CLASS.
6. HANGERS SHALL BE OF STANDARD WEIGHT STEEL OR IRON ROD AND RING OR CLEVIS TYPE. SEE DETAIL.

PROCEDURES:

1. ALL SUSPENDED HORIZONTAL PIPING SHALL BE SUPPORTED BY HANGERS SPACED NO FURTHER THAN 8'-0" APART. NO PIPING SHALL BE SELF-SUPPORTING NOR BE SUPPORTED FROM EQUIPMENT CONNECTIONS.
2. ALL PARALLEL PIPES (TWO(2) OR MORE) SHALL BE SUPPORTED ON A CHANNEL TYPE TRAPEZE HANGER.
3. SUPPORTS AND HANGERS SHALL BE INSTALLED TO PERMIT FREE EXPANSION AND CONTRACTION IN PIPING SYSTEMS UNLESS PIPE REQUIRES FIRM ANCHOR CONTROL.
4. HORIZONTAL SOIL OR WASTE LINES SHALL BE AT A SLOPE OF NOT LESS THAN 1/8" PER FOOT AND SHALL BE HELD CLOSE TO THE CONSTRUCTION TO MAINTAIN A MAXIMUM OF HEAD ROOM. ALL CHANGES OF DIRECTION AND JUNCTIONS SHALL BE MADE WITH "Y" FITTINGS AND 1/8" BENDS. NO LINES OF ANY KIND SHALL BE LOCATED BELOW FREEZERS. ALL DRAIN LINES SHALL BE PROTECTED FROM FREEZING.
5. HOT AND COLD WATER PIPING SHALL BE PROPERLY PITCHED TO LOW POINTS IN THE SYSTEM WHERE DRAINS SHALL BE INSTALLED.
6. CLEANOUTS SHALL BE PLACED AT ALL DEAD ENDS, AT CHANGES OF DIRECTION, AT 50'-0" INTERVALS ON HORIZONTAL RUNS, OUT OF HIGH TRAFFIC AREAS, (NOT UNDER CASES) ETC. WHERE CLEANOUTS OCCUR IN CONCEALED SPACES, THEY SHALL BE PROVIDED WITH EXTENSIONS TO FLOOR ABOVE OR TO WALLS. A HAND-HOLE TEST TEE SHALL BE PLACED AT THE BASE OF EACH STACK.
7. VENT STACKS EXTENDING UP THROUGH THE ROOF SHALL BE FLASHED WITH SIX POUND SHEET LEAD. FLASHING SHALL EXTEND 12" IN ALL DIRECTIONS FROM THE VENT, CARRIED OVER AND TURNED DOWN THE INSIDE OF THE VENT. ALL SEAMS AND JOINTS OF FLASHING SHALL BE SOLDERED AND PROVEN WEATHERTIGHT. EXTEND VENTS A MIN. OF 12" ABOVE ROOF, AND 30" AWAY FROM PARAPET.
8. ALL SUPPLY PIPING TO BE RUN OVERHEAD, UNLESS NOTED OTHERWISE.
9. ALL SUPPLY PIPING TO BE A MINIMUM OF 3/4" DIA.
10. EACH FIXTURE WILL HAVE A 1/2" X 12" AIR CHAMBER.
11. PROVIDE SERVICE VALVE AT BRANCHES AND AT ALL APPLIANCES.
12. ALL FIXTURES WILL BE FURNISHED WITH INTEGRAL STOPS.
13. ALL FLOOR DRAINS AND FIXTURES TO BE VENTED IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL CODES AND REGULATIONS.
14. ALL HORIZONTAL VENT PIPING SHALL BE RUN ABOVE FINISHED CEILINGS AND SLOPED UP TOWARD MAIN STACK.
15. THE PLUMBING CONTRACTOR WILL NOT INSTALL COMBUSTIBLE PIPING MATERIAL IN OR THROUGH FIRE RATED ASSEMBLIES.
16. HORIZONTAL DRAINAGE PIPING SHALL BE PITCHED NOT LESS THAN 1/4" PER FOOT FOR PIPING 3" DIA. AND UNDER.
17. HORIZONTAL DRAINAGE PIPING SHALL BE PITCHED NOT LESS THEN 1/8" PER FOOT FOR PIPING 4" DIA. AND OVER.
18. ALL EQUIPMENT DEVICES SHALL BE INSTALLED WITH UNIONS IN SUCH A MANNER TO FACILITATE EASY REMOVAL AND MAINTENANCE OF EQUIPMENT WITHOUT DISRUPTING SERVICE AND CAUSING MAJOR PIPING REVISIONS.

PLUMBING FIXTURE SCHEDULE

1. THE PLUMBING FIXTURE AND EQUIPMENT SCHEDULE, IN GENERAL, SPECIFIES THE PLUMBING FIXTURES, EQUIPMENT AND DEVICES: HOWEVER, UNLESS NOTED OTHERWISE, ALL FIXTURES SHALL BE PROVIDED WITH APPLICABLE ACCESSORIES (SUCH AS SUPPLY STOPS, WASTE TRAPS, FIXTURE MOUNTING SUPPORTS, BOLT CAPS, WATER CLOSET SEATS, ETC., AS REQ'D TO COMPLETE THE INSTALLATION.)
2. ALL ITEMS SPECIFIED HEREAFTER SHALL BE NEW, CLEANED AND ADJUSTED FOR THE SPECIFIED DESIGN PURPOSE (UNLESS OTHERWISE SPECIFIED).
3. ALL EQUIPMENT AND DEVICES SHALL BEAR A.G.A., N.S.F., ASME, C.S.A. OR U.L. APPROVED LABELS AND CERTIFICATIONS FOR THE SPECIFIED DESIGN PURPOSE.
4. PLUMBING CONTRACTOR SHALL VERIFY IN FIELD WITH VA/COR ALL FINAL FIXTURE AND EQUIPMENT LOCATIONS AND MOUNTING HEIGHTS REQUIRED FOR THE DESIGN PURPOSE.
5. SUBMIT, AS PER THE SPECIFICATIONS, THE NUMBER OF COPIES OF EACH CATALOG CUT, FOR EACH ITEM, TO BE APPROVED BY THE VA/COR (PRIOR TO THE BEGINNING OF CONSTRUCTION) FOR ALL NEW ITEMS SPECIFIED HEREAFTER.
6. THE CONTRACTOR SHALL SUBMIT EQUIPMENT PRODUCT DATA FOR EACH PIECE OF EQUIPMENT PRIOR TO ORDERING. SUBMIT, AS PER THE SPECIFICATIONS, THE NUMBER OF COPIES FOR APPROVAL BY THE VA/COR THIS CONTRACTOR SHALL ALSO ASSEMBLE PRINTED INSTRUCTIONS FOR THE OPERATION AND MAINTENANCE OF EACH ITEM INSTALLED AND BIND TOGETHER WITH EQUIPMENT CUTS AND CONTROL WIRING DIAGRAMS. DO NOT SUBMIT EQUIPMENT DATA FOR B.O.D. EQUIVALENCY SUBSTITUTION ITEMS UNTIL SUCH TIME AS THE B.O.D. PROTOCOLS PROCESS HAS BEEN COMPLETED AND THE SUBSTITUTION HAS BEEN APPROVED BY BOTH THE CO AND COR.

DRAWING SYMBOLS

2 — DETAIL NUMBER
PL105 — DRAWING NUMBER WHERE DRAWN

PLUMBING SYMBOL LIST

SYMBOL	DESCRIPTION
A/E	ARCHITECT / ENGINEER
AP	ACCESS PANEL
A.O.R.	ARCHITECT OF RECORD
A.F.F.	ABOVE FINISH FLOOR
BFP	BACKFLOW PREVENTER
B.F.F.	BELOW FINISHED FLOOR
CI	CAST IRON (PIPE)
CO	CLEANOUT
CW	COLD WATER
CRP	CHEMICAL RESISTANT PIPE
GW	GREASE WASTE PIPE
HB	HOSE BIBB
HW	HOT WATER
105HW	140° HOT WATER
140HW	105° HOT WATER
HWR	HOT WATER RETURN
105R	105° HOT WATER RETURN
140R	140° HOT WATER RETURN
DN	DOWN
E.O.R.	ENGINEER OF RECORD
EL	ELEVATION
(E)	EXISTING
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
GS	GLYCOL SUPPLY
GR	GLYCOL RETURN
LAV	LAVATORY
MB	MOP BASIN
G	NATURAL GAS
GV	NATURAL GAS VENT
SAN	SANITARY
S	SOIL
SK	SINK
SH	SHOWER
TD	TRENCH DRAIN
TYP.	TYPICAL
105TWC	TEMPERED WATER CIRCULATION RETURN
V	VENT
W.C.	WATER CLOSET
WHA	WATER HAMMER ARRESTER
WCO	WALL CLEANOUT
	EXISTING PIPING TO BE DEMOLISHED
	COLD WATER PIPING
	HOT WATER PIPING
	HOT WATER RETURN PIPING
	VENT
	RISER DOWN
	RISER UP
	REDUCER OR INCREASER
	TOP CONNECTION, 45° OR 90°
	BOTTOM CONNECTION, 45° OR 90°
	SIDE CONNECTION
	CAPPED OUTLET
	STRAINER
FCO	FLOOR CLEAN OUT
	WALL CLEAN OUT
	POINT OF CONNECTION (TO EXISTING)
	POINT OF DEMOLITION (OF EXISTING)
	DIELECTRIC UNION
	SHUT-OFF VALVE
	BUTTERFLY VALVE
	BALL VALVE
	CHECK VALVE (DIRECTION OF FLOW)
	THERMOSTATIC VALVE (HOT WATER RETURN)
	TEMPERATURE/PRESSURE BALANCING MIXING VALVE
	PRESSURE REDUCING VALVE
	PLUMBING EQUIPMENT TAG
	KITCHEN EQUIPMENT TAG

Revisions:	Date:
100% BID SET	8/9/2021
95% CONSTRUCTION DOCUMENTS	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021

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REGISTERED PROFESSIONAL ENGINEER
RAED HAMID
PE-28170
DATE 08-09-2021
NORTH DAKOTA

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

Drawing Title: PLUMBING GENERAL NOTES AND SYMBOLS LIST
Approved: Project Director
Phase: 100% BID DOCUMENTS
FULLY SPRINKLERED
Project Title: CORRECT ISOLATION ROOM ISSUES
Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102
Issue Date: 8/9/21
Checked: DGG
Drawn: IL
Project Number: 437-21-170
Building Number: 1, 46, 9
Drawing Number: PL-01
36 OF 76

VA FORM 08-6231

PLUMBING DEMOLITION GENERAL NOTES

A. CONTRACTOR TO COORDINATE WITH VA COR FOR ALL PLUMBING SERVICE OUTAGES. ALL SHUTDOWNS REQUIRE 3-WEEKS NOTIFICATION.

B. EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND REPORT ANY CONFLICTS BEFORE PROCEEDING.

C. ALL ASSOCIATED PIPING INCLUDING BUT IS NOT LIMITED TO THE FOLLOWING SYSTEMS: CW, HW, HWR, SANITARY, AND VENT PIPING.

D. DOMESTIC PIPING BEING DEMOLISHED TO MAIN SHALL BE CAPPED AT 1.5X THE DIAMETER OF THE BRANCH PIPING. NO DEAD END OR STUBS ARE ALLOWED IN DOMESTIC WATER PIPING. ALL DEAD END PIPING MUST BE REMOVED AND CAPPED AT THE MAIN.

E. REMOVE ALL ASSOCIATED CLAMPS, HANGERS, SUPPORTS, ETC. ASSOCIATED WITH PIPING REMOVAL.

F. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO FINISHES OR COMPONENTS NOT SCHEDULED FOR DEMOLITION. DAMAGED ITEMS SHALL BE REPLACED OR REPAIRED TO MEET OR EXCEED FORMER CONDITIONS.

G. PATCH AND FILL CONCRETE SLAB WHERE PIPING HAS BEEN REMOVED.

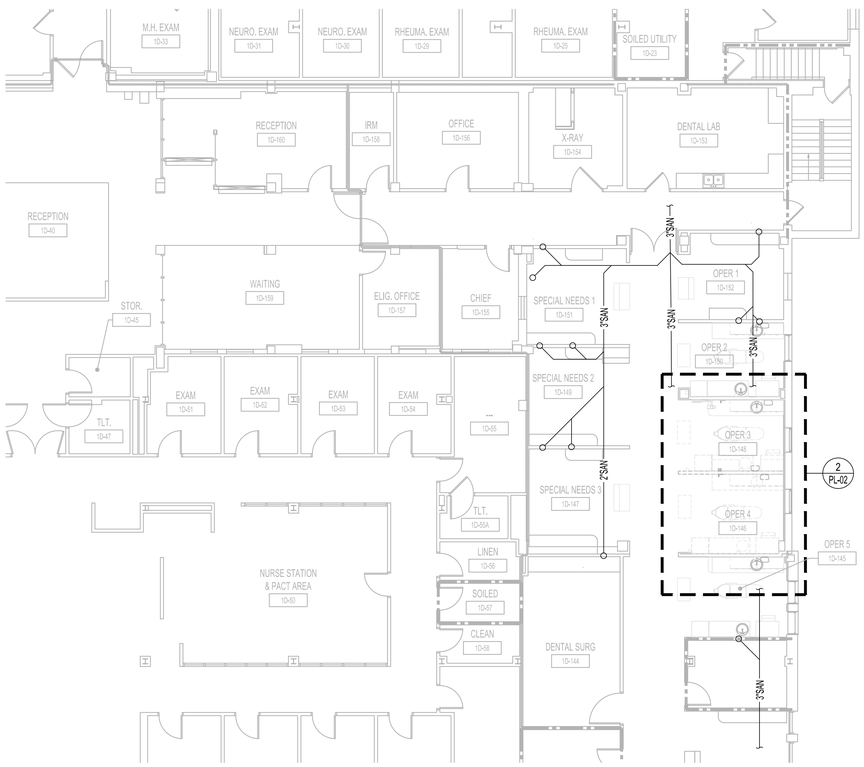
H. PATCH TO MATCH WALLS WHERE DOMESTIC PIPING HAS BEEN REMOVED.

I. ALL EXISTING CW, HW AND HWR PIPING SHALL REMAIN UNLESS OTHERWISE NOTED.

PLUMBING DEMOLITION KEY NOTES

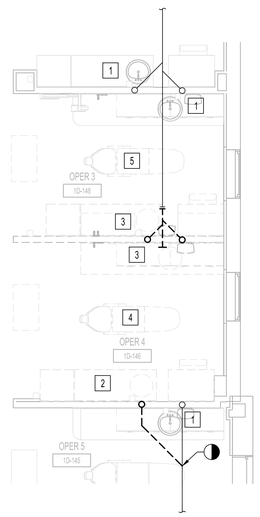
X

1. EXISTING SINK TO REMAIN. PROTECT DURING CONSTRUCTION.
2. DEMOLISH AND REMOVE SINK AND ALL ASSOCIATED PIPING BACK TO MAIN. CAP AND SEAL PIPING.
3. REMOVE AND SALVAGE EXISTING SINK AND FAUCET AND PREPARE FOR REINSTALLATION. DEMOLISH AND REMOVE ALL ASSOCIATED PIPING AS SHOWN. PREPARE PIPING FOR RECONNECTION.
4. DEMOLISH AND REMOVE DENTAL CHAIR AND ALL ASSOCIATED PIPING BACK TO MAIN. CAP AND SEAL PIPING.
5. REMOVE AND SALVAGE EXISTING DENTAL CHAIR AND PREPARE FOR REINSTALLATION. REMOVE, REWORK, AND RECONNECT ALL ASSOCIATED PIPING TO NEW DENTAL CHAIR LOCATION.



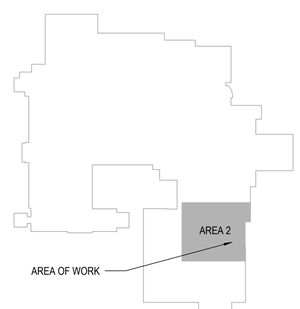
NORTH

1 PLUMBING - FIRST FLOOR - DEMOLITION UNDERFLOOR PLAN - DENTAL
1/8"=1'-0"



NORTH

2 PLUMBING - ENLARGED DENTAL PLAN DEMOLITION
1/4"=1'-0"



100% BID SET	8/9/2021
95% CONSTRUCTION DOCUMENTS	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

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Bancroft Project No. 18-121

Stamp

REGISTERED PROFESSIONAL ENGINEER
RAED HAMID
PE-28170
DATE 08-09-2021
NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: PLUMBING - FIRST FLOOR - DEMOLITION UNDERFLOOR PLAN - DENTAL

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/21 | Checked: DGG | Drawn: HS

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: PL-02

37 OF 76

VA FORM 08-6231

PLUMBING DEMOLITION GENERAL NOTES

A. CONTRACTOR TO COORDINATE WITH VA COR FOR ALL PLUMBING SERVICE OUTAGES. ALL SHUTDOWNS REQUIRE 3-WEEKS NOTIFICATION.

B. EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND REPORT ANY CONFLICTS BEFORE PROCEEDING.

C. ALL ASSOCIATED PIPING INCLUDING BUT IS NOT LIMITED TO THE FOLLOWING SYSTEMS: CW, HW, HWR, SANITARY, AND VENT PIPING.

D. DOMESTIC PIPING BEING DEMOLISHED TO MAIN SHALL BE CAPPED AT 1.5X THE DIAMETER OF THE BRANCH PIPING. NO DEAD END OR STUBS ARE ALLOWED IN DOMESTIC WATER PIPING. ALL DEAD END PIPING MUST BE REMOVED AND CAPPED AT THE MAIN

E. REMOVE ALL ASSOCIATED CLAMPS, HANGERS, SUPPORTS, ETC. ASSOCIATED WITH PIPING REMOVAL.

F. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO FINISHES OR COMPONENTS NOT SCHEDULED FOR DEMOLITION. DAMAGED ITEMS SHALL BE REPLACED OR REPAIRED TO MEET OR EXCEED FORMER CONDITIONS.

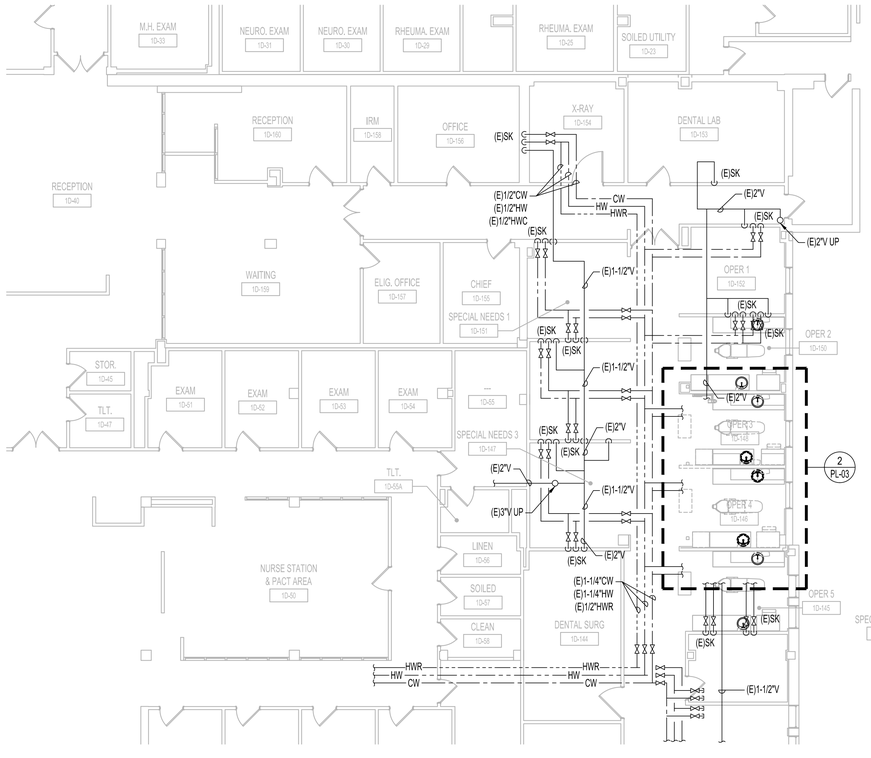
G. PATCH AND FILL CONCRETE SLAB WHERE PIPING HAS BEEN REMOVED.

H. PATCH AND PAINT WALLS WHERE DOMESTIC PIPING HAS BEEN REMOVED.

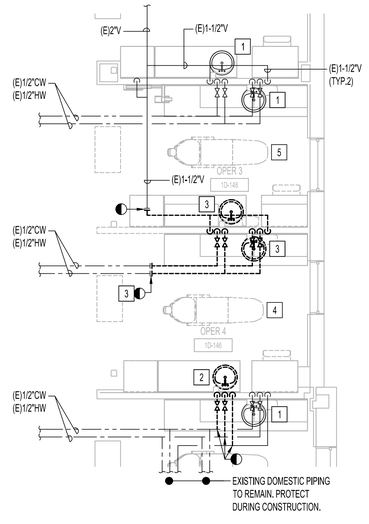
I. ALL EXISTING CW, HW AND HWR PIPING SHALL REMAIN UNLESS OTHERWISE NOTED.

X PLUMBING DEMOLITION KEY NOTES

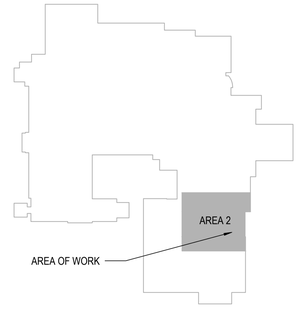
1. EXISTING SINK TO REMAIN. PROTECT DURING CONSTRUCTION.
2. DEMOLISH AND REMOVE SINK AND ALL ASSOCIATED PIPING BACK TO MAIN. CAP AND SEAL PIPING.
3. REMOVE , SALVAGE, AND STORE EXISTING SINK AND FAUCET AND PREPARE FOR REINSTALLATION. DEMOLISH AND REMOVE ALL ASSOCIATED PIPING AS SHOWN. PREPARE PIPING FOR RECONNECTION.
4. DEMOLISH AND REMOVE DENTAL CHAIR AND ALL ASSOCIATED PIPING BACK TO MAIN. CAP AND SEAL PIPING.
5. REMOVE AND SALVAGE EXISTING DENTAL CHAIR AND PREPARE FOR REINSTALLATION. REMOVE, REWORK, AND RECONNECT ALL ASSOCIATED PIPING TO NEW DENTAL CHAIR LOCATION.



1 PLUMBING - FIRST FLOOR - DOMESTIC WATER AND VENT PLAN - DENTAL DEMOLITION PLAN - AREA 2
1/8"=1'-0"



2 PLUMBING - ENLARGED PLAN DEMOLITION
1/4"=1'-0"



100% BID SET	8/9/2021
95% CONSTRUCTION DOCUMENTS	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

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Bancroft Project No. 18-121

Stamp: REGISTERED PROFESSIONAL ENGINEER, RAED HAMID, PE-28170, DATE 08-09-2021, NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: PLUMBING - FIRST FLOOR - DEMOLITION DOMESTIC WATER AND VENT PLAN - DENTAL

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Project Number: 437-21-170

Building Number: 1, 46, 9

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/21 | Checked: DGG | Drawn: HS

Drawing Number: PL-03

VA FORM 08-6231

PLUMBING GENERAL NOTES

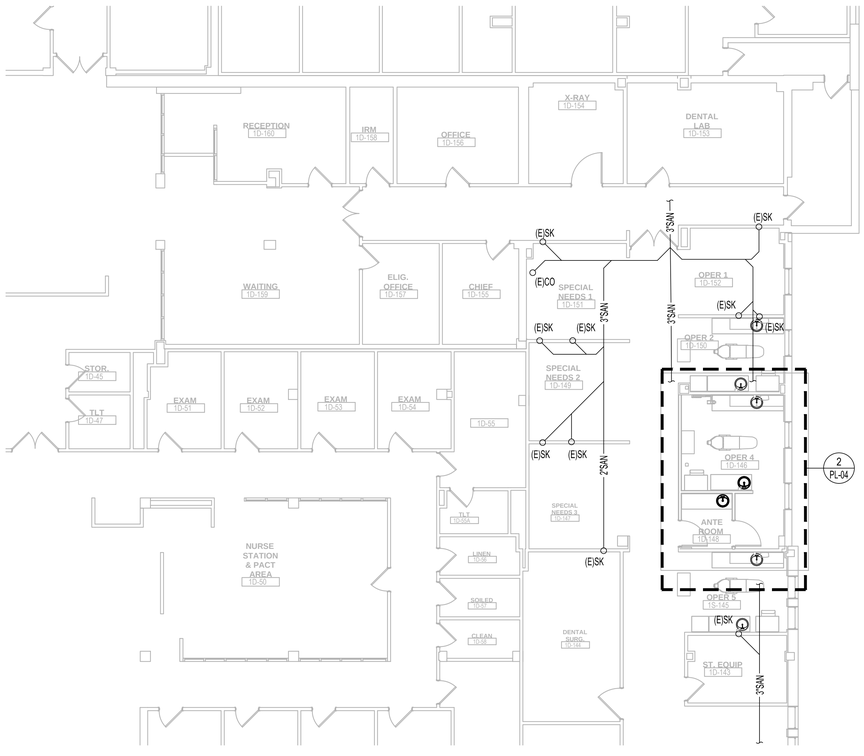
A. REFER TO PLUMBING FIXTURE ROUGH-IN SCHEDULE FOR BRANCH CONNECTION TO FIXTURE.

B. ALL DOMESTIC PIPING TO BE ¾" MINIMUM UNLESS OTHERWISE NOTED.

C. ALL ASSOCIATED PIPING SHALL INCLUDE BUT NOT BE LIMITED TO CW, HW, HWC, SANITARY, AND VENT PIPING.

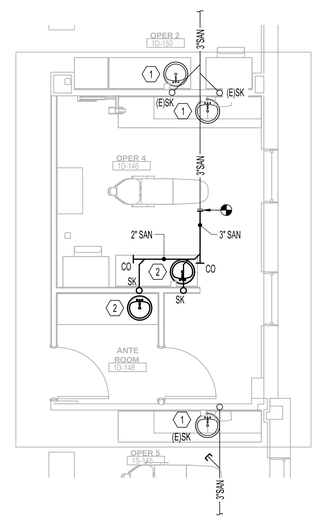
(X) PLUMBING KEY NOTES

1. EXISTING SINK TO REMAIN. PROTECT DURING CONSTRUCTION.
2. CONTRACTOR TO REINSTALL EXISTING SINK AND FAUCET AS SHOWN. REWORK AND REROUTE DOMESTIC PIPING TO FACILITATE SCOPE OF WORK.



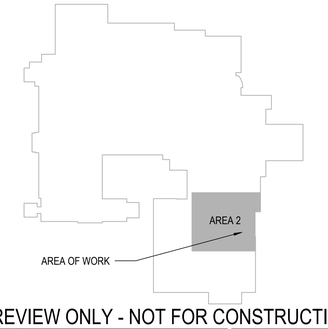
NORTH

1 PLUMBING - FIRST FLOOR - UNDERFLOOR - DENTAL PLAN
1/8"=1'-0"



NORTH

2 PLUMBING - ENLARGED UNDERFLOOR DENTAL PLAN
1/8"=1'-0"



REVIEW ONLY - NOT FOR CONSTRUCTION

95% CONSTRUCTION DOCUMENTS	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

CONSULTANT

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Bancroft Project No. 18-121

Stamp: REGISTERED PROFESSIONAL ENGINEER — RAED HAMID — PE-28170 — DATE 08-09-2021 — NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: PLUMBING - FIRST FLOOR - DENTAL

Approved: Project Director

Phase: 95% CONSTRUCTION DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Project Number: 437-21-170

Building Number: 1, 46, 9

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 7/12/21 | Checked: DGG | Drawn: IL

Drawing Number: PL-04

VA FORM 08-6231

PLUMBING GENERAL NOTES

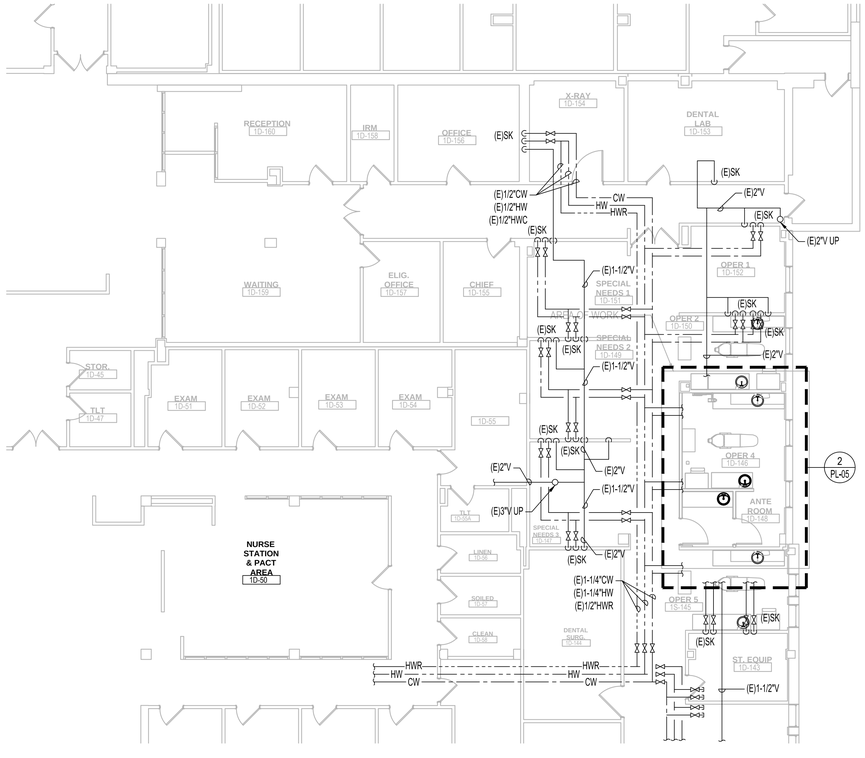
A. REFER TO PLUMBING FIXTURE ROUGH-IN SCHEDULE FOR BRANCH CONNECTION TO FIXTURE.

B. ALL DOMESTIC PIPING TO BE ¾" MINIMUM UNLESS OTHERWISE NOTED.

C. ALL ASSOCIATED PIPING SHALL INCLUDE BUT NOT BE LIMITED TO CW, HW, HWC, SANITARY, AND VENT PIPING.

(X) PLUMBING KEY NOTES

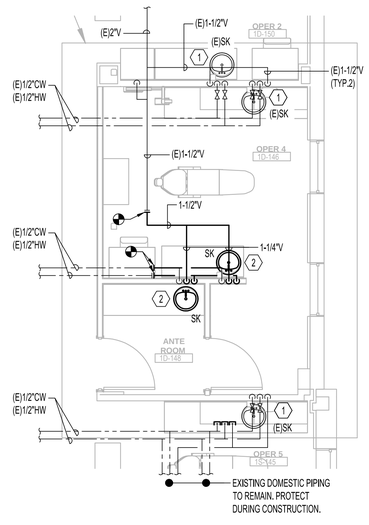
1. EXISTING SINK TO REMAIN. PROTECT DURING CONSTRUCTION.
2. CONTRACTOR TO REINSTALL EXISTING SINK AND FAUCET AS SHOWN. REWORK AND REROUTE DOMESTIC PIPING TO FACILITATE SCOPE OF WORK.



NORTH

1 PLUMBING - FIRST FLOOR - DOMESTIC WATER AND VENT PLAN - DENTAL PLAN - AREA 2

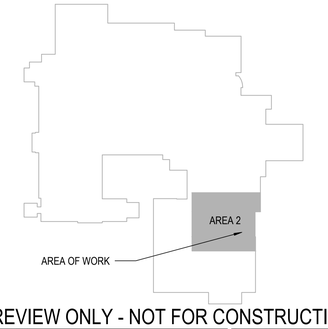
1/8"=1'-0"



NORTH

2 PLUMBING - ENLARGED PLAN

1/8"=1'-0"



REVIEW ONLY - NOT FOR CONSTRUCTION

95% CONSTRUCTION DOCUMENTS	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

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www.bancroft-ae.com
Bancroft Project No. 18-121

Stamp

REGISTERED PROFESSIONAL ENGINEER
RAED HAMID
PE-28170
DATE 08-01-2021
NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: PLUMBING - FIRST FLOOR - DENTAL PLAN

Approved: Project Director

Phase: 95% CONSTRUCTION DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Project Number: 437-21-170

Building Number: 1, 46, 9

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 7/12/21

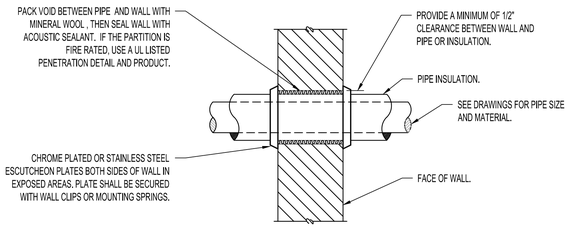
Checked: DGG

Drawn: IL

Drawing Number: PL-05

40 OF 76

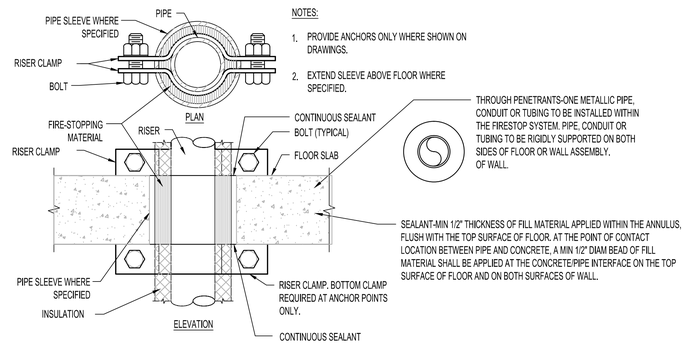
VA FORM 08-6231



NOTES:

1. I.D. OF WALL OPENING TO BE A MIN. OF 1/2" LARGER THAN O.D. OF PIPE OR INSULATION PASSING THROUGH WALL.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF THEIR WALL OPENINGS WITH OTHER TRADES AND/OR CONTRACTORS.
3. PIPE PENETRATIONS OF SMOKE OR FIRE WALLS SHALL BE IN COMPLIANCE WITH NFPA-90A.

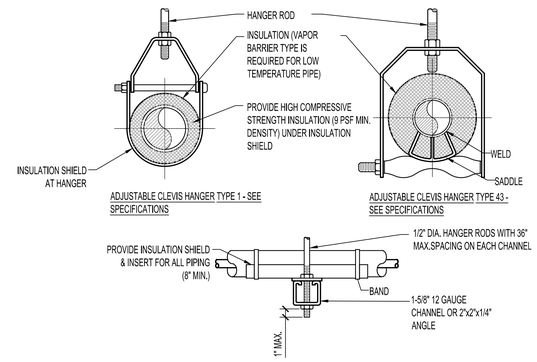
3 PIPE PENETRATION OF INTERIOR WALL DETAIL
NTS



NOTES:

1. PROVIDE ANCHORS ONLY WHERE SHOWN ON DRAWINGS.
2. EXTEND SLEEVE ABOVE FLOOR WHERE SPECIFIED.

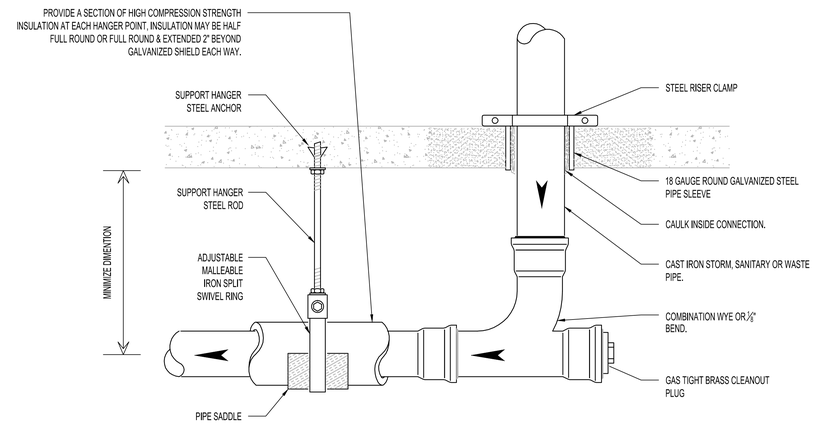
2 SUPPORT/ANCHOR FOR PIPE RISERS
NTS



SIDE VIEW TRAPEZE HANGER FOR UP TO 1000 LB. UNIFORM LOAD

MAXIMUM PIPE/TUBING SUPPORT SPACING									
NOM. SIZE	IN.	THRU 3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
PIPE	FT.	7	7	7	9	10	11	12	14
TUBING	FT.	5 FT	6	7	8	8	9	10	12
NOTE: FOR TRAPEZE HANGER TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.									

1 PIPE HANGERS
NTS



4 SUSPENDED DRAINAGE CLEANOUT DETAIL
NTS

100% BID SET	8/9/2021
95% CONSTRUCTION DOCUMENTS	7/12/2021
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Bancroft Project No. 18-121

Stamp

REGISTERED PROFESSIONAL ENGINEER
RAED HAMID
PE-28170
DATE 08-09-2021
NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: PLUMBING - DETAILS

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

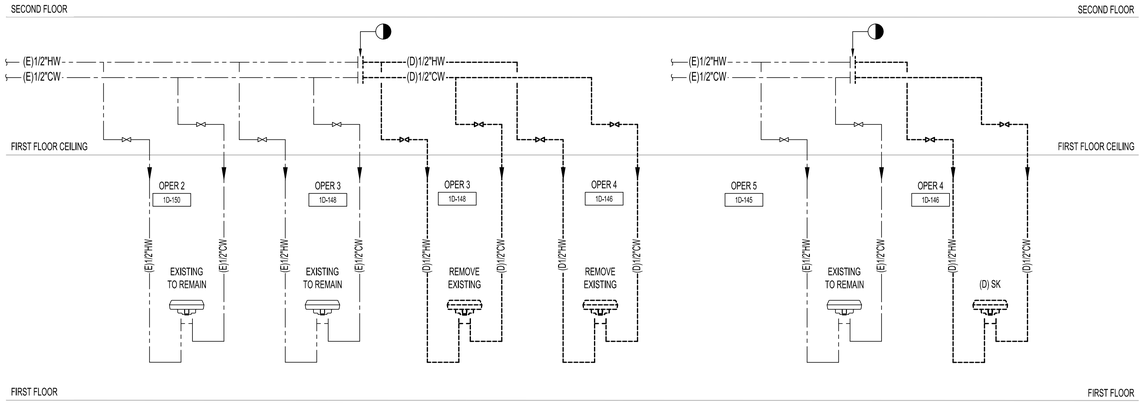
Issue Date: 8/9/21 | Checked: DGG | Drawn: HS

Project Number: 437-21-170

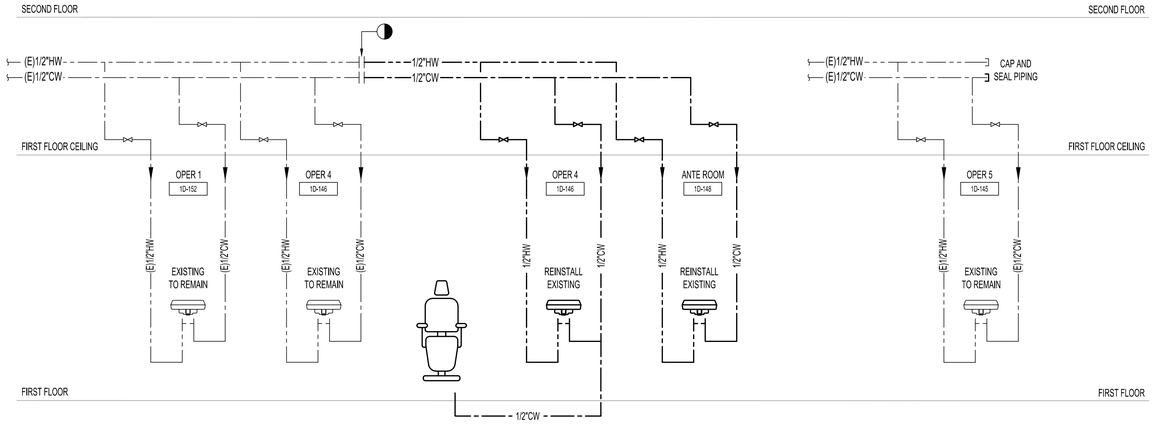
Building Number: 1, 46, 9

Drawing Number: PL-06

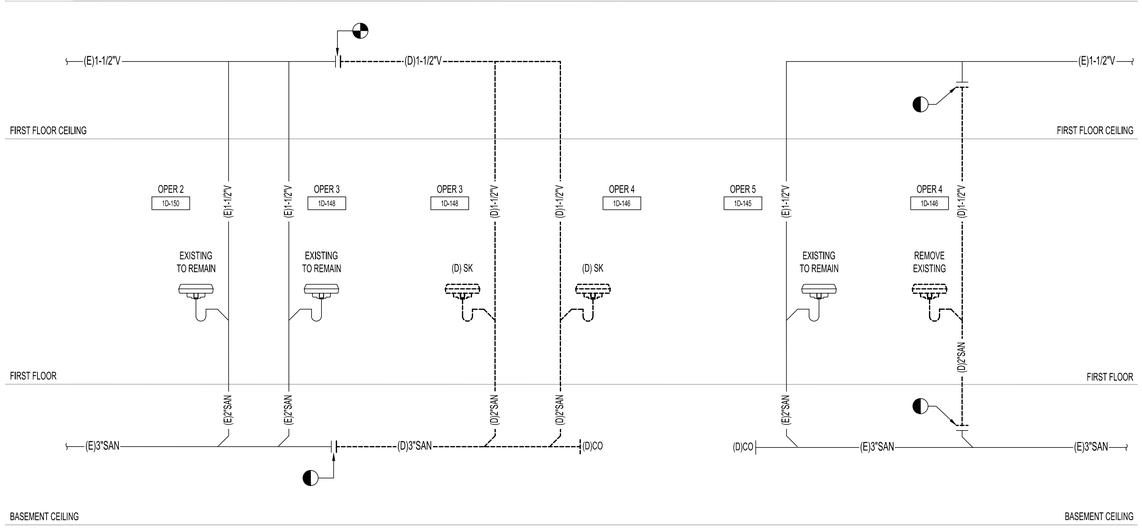
VA FORM 08-6231



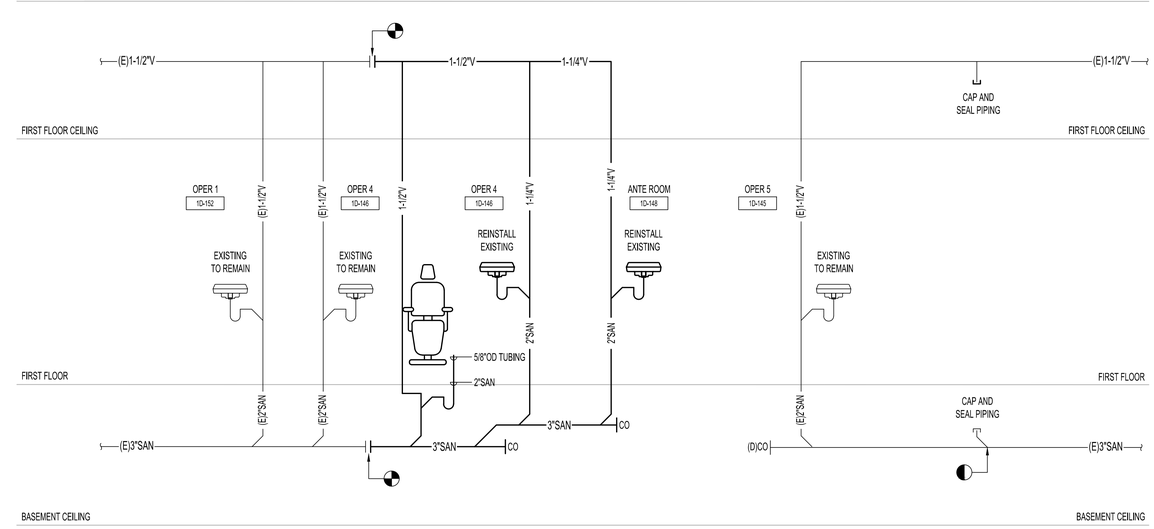
1 PLUMBING - DOMESTIC WATER DEMOLITION RISER DIAGRAM
NTS



2 PLUMBING - DOMESTIC WATER RISER DIAGRAM
NTS



3 PLUMBING - SANITARY AND VENT DEMOLITION RISER DIAGRAM
NTS



4 PLUMBING - SANITARY AND VENT RISER DIAGRAM
NTS

100% BID SET	8/9/2021
95% CONSTRUCTION DOCUMENTS	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
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Revisions:	Date:

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Stamp
REGISTERED PROFESSIONAL ENGINEER
RAED HAMID
PE-28170
DATE 08-09-2021
NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: PLUMBING - RISER DIAGRAMS

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/21 | Checked: DGG | Drawn: HS

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: PL-07

VA FORM 08-6231

MEDICAL GAS GENERAL NOTES

GENERAL NOTES FOR CONTRACTORS: SEE ALL PROJECT GENERAL NOTES AND OTHER REQUIREMENTS INCLUDING THE LIFE SAFETY AND INFECTION CONTROL WORK LOCATED WITHIN THE GENERAL DRAWINGS SECTION. COMPLY WITH ALL REQUIREMENTS AS THEY ARE A DIRECT PART OF THIS SECTION AS IF THEY WERE DIRECTLY INCLUDED AND PROVIDED HEREIN.
EQUIVALENCY SUBSTITUTIONS: THE "BASIS OF DESIGN (BOD) COMPLIANCE PROTOCOLS" ARE TO BE FOLLOWED FOR ALL MATERIALS, EQUIPMENT, ASSEMBLIES AND SYSTEMS SPECIFIED AND DETAILED THROUGHOUT ALL DRAWINGS AND SPECIFICATION SECTIONS, WHETHER THE BOD DESIGNATE IS SPECIFICALLY REFERENCED THEREIN OR NOT. SEE THE GENERAL DRAWINGS SECTION FOR THE SPECIFIC BOD COMPLIANCE REQUIREMENTS AND PROTOCOLS TO BE FOLLOWED.

1. THESE DRAWINGS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO DEFINE EXACT QUANTITIES, DRAWINGS SHALL NOT BE SCALED, THE MEDICAL GAS CONTRACTOR SHALL VERIFY QUANTITIES, SIZES, AND LOCATIONS OF ALL OUTLETS, ALARMS, PIPING, EQUIPMENT, ETC. PRIOR TO ANY CONSTRUCTION. ANY UNFORESEEN CONDITIONS OR EXISTING CONDITIONS NOT AS SHOWN SHALL BE CALLED TO THE IMMEDIATE ATTENTION OF THE VA/COR.
2. THE CONTRACTOR, BY VIRTUE OF COMPLETING THE WORK SHALL BE RESPONSIBLE FOR GUARANTEES THAT ALL INSTALLED SYSTEM WILL FUNCTION PROPERLY AS DESIGNATED BY HIS/HER ORIGINAL CONTRACT. IN THE CASE THAT DISCREPANCY BETWEEN SPECIFICATIONS AND CONTRACT DRAWINGS EXIST, THE MOST STRINGENT SHALL PREVAIL.
3. ALL MEDICAL GAS PIPING AND EQUIPMENT INSTALLATIONS SHALL BE IN STRICT ACCORDANCE WITH NFPA 99 & ASSE 6000.
4. PIPING AND EQUIPMENT LAYOUT ON DRAWINGS IS SCHEMATIC, EXACT LOCATIONS OF PIPING AND EQUIPMENT ARE TO BE COORDINATED WITH BUILDING STRUCTURE AND WORK OF OTHER CONTRACTORS.
5. REFER TO ARCHITECTURAL ELEVATIONS FOR QUANTITY & MOUNTING LOCATION OF OUTLETS, VALVE BOXES, AND ALARM PANEL.
6. SEE THE ARCHITECTURAL PLANS FOR A LEGEND OF WALL PARTITION TYPES. PROVIDE A UL RATED FIRESTOPPING ASSEMBLY TO MEET THE RATING OF THE WALLS REQUIRING SUCH. SEE DETAILS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
7. RUN ALL MEDICAL GAS LINES LEVEL.
8. COORDINATE ALL EQUIPMENT DELIVERY, RIGGING, STORAGE, AND INSTALLATION WITH GENERAL CONTRACTOR & BUILDING CONSTRUCTION CONDITIONS.
9. THESE PLANS HAVE ATTEMPTED TO SHOW CONNECTIONS FOR MEDICAL EQUIPMENT AND VA FURNISHED CONTRACTOR INSTALLED EQUIPMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR AND SHALL COORDINATE ALL CONNECTIONS FOR MEDICAL EQUIPMENT AND VA FURNISHED AND CONTRACTOR INSTALLED EQUIPMENT, AND SHALL PROVIDE THESE REQUIREMENTS IN THEIR SCOPE OF WORK, OR AS REQUIRED BY THE VA/COR.
10. IN THE EVENT OF INCONSISTENCY OR CONFLICT WITHIN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL PROVIDE THE BETTER QUALITY OR GREATER QUANTITY OF WORK, AND COMPLY WITH THE STRICTER REQUIREMENTS.
11. PRIOR TO FABRICATION OR INSTALLATION OF PIPING, THE MEDICAL GAS CONTRACTOR SHALL COORDINATE LOCATIONS & ELEVATIONS OF OTHER EQUIPMENT, INCLUDING, BUT NOT LIMITED TO LIGHT FIXTURES, DIFFUSERS, DUCTWORK, CONDUITS, PIPING, & CEILING GRID. OBTAIN SIGNATURES OF OTHER TRADES ON THE COORDINATION DRAWING.
12. ALL PIPING SHALL BE CONCEALED IN AREAS OF FINISHED CONSTRUCTION.
13. PROVIDE ACCESS PANELS AND DOORS FOR VALVES, EQUIPMENT AND OTHER ITEMS REQUIRING ACCESS THAT ARE CONCEALED BEHIND FINISHED SURFACES. COORDINATE THE LOCATIONS OF ACCESS PANELS AND ACCESS TO ALL EQUIPMENT WITH THE VA/COR, PRIOR TO ROUGH-IN.
14. PROCESS (PROPANE) GAS PIPING - 2" UNDER:
    - PIPE: STANDARD WEIGHT STEEL, THREADED AND COUPLED, ASTM A53.
    - JOINTS: SCREWED.
    - FITTINGS: 150# STEAM - 300# CWP, BLACK MALLEABLE IRON BANDED, ASTM A197, ANSI B16.3.
    - UNIONS: 250# - 500# CWP, BLACK MALLEABLE IRON, ANSI B16.39, GROUND JOINT WITH BRASS SEAT.

MEDICAL GAS SYMBOL LIST

SYMBOL	DESCRIPTION
VAC	VACUUM
MA	MEDICAL AIR
O	OXYGEN
N2O	NITROUS OXIDE
N	NITROGEN
CO2	CARBON DIOXIDE
WAGD	WASTE ANESTHETIC GAS DISPOSAL
	SHUT-OFF VALVE
	CHECK VALVE (DIRECTION OF FLOW)
	PRESSURE RELIEF VALVE
	PRESSURE RELIEF DEVICE
	PRESSURE GAUGE
	PRESSURE TRANSDUCER
	NITROGEN CONTROL PANEL
	VALVE BOX
	CONNECT TO EXISTING
	LIMIT OF DEMOLITION
	PIPE DOWN
	PIPE UP
	BOTTOM CONNECTION
	RISE OR DROP IN PIPE
	DEMO PIPING
AAP	AREA ALARM PANEL
VB	VALVE BOX
GM	GAS MANIFOLD
NCP	NITROGEN CONTROL PANEL
VAC	VACUUM
MA	MEDICAL AIR
O	OXYGEN
NO	NITROUS OXIDE

100% BID SET	8/9/2021
95% CONSTRUCTION DOCUMENTS	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

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Stamp

REGISTERED PROFESSIONAL ENGINEER
RAED HAMID
PE-28170
DATE 08-09-2021
NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: MEDICAL GAS - GENERAL NOTES, ABBREVIATIONS, & SYMBOLS

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

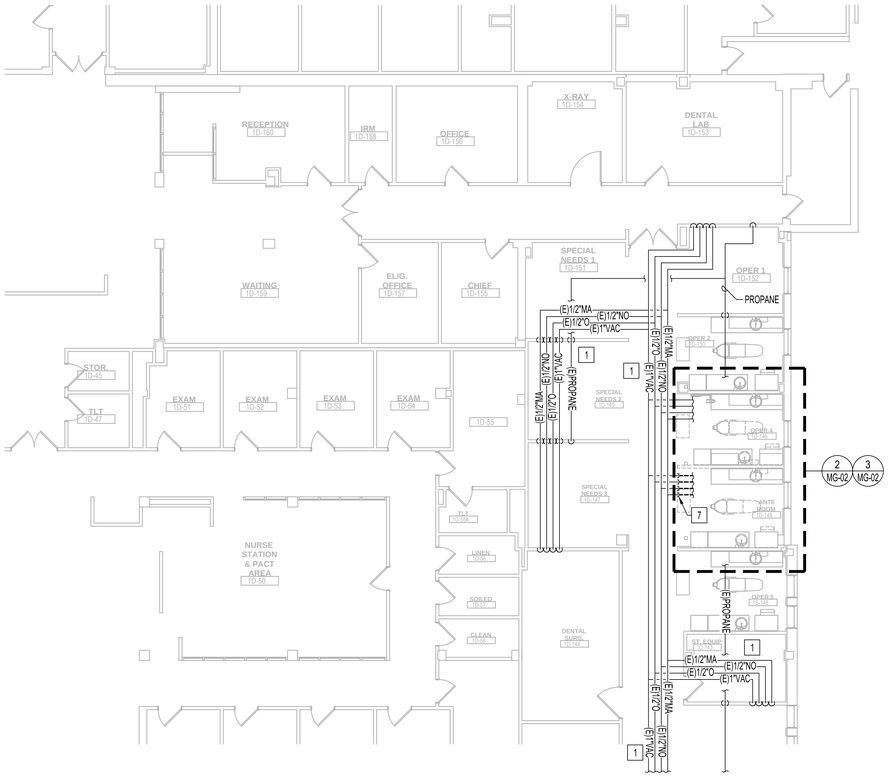
Issue Date: 8/9/21 | Checked: DGG | Drawn: IL

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: MG-01

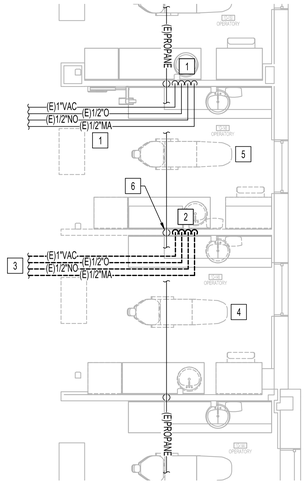
VA FORM 08-6231



NORTH

1 MEDICAL GAS - BLDG. 1 FIRST FLOOR PLAN - AREA 2

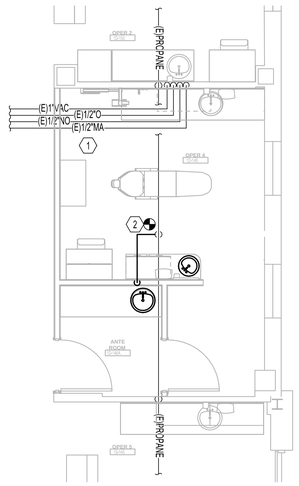
1/8"=1'-0"



NORTH

2 MEDICAL GAS - BLDG. 1 ENLARGED PLAN DEMOLITION

1/4"=1'-0"



NORTH

3 MEDICAL GAS - BLDG. 1 ENLARGED PLAN NEW WORK

1/4"=1'-0"

MEDICAL GAS DEMOLITION GENERAL NOTES

A. CONTRACTOR TO COORDINATE WITH VA COR FOR ALL MEDICAL GAS SERVICE OUTAGES. ALL SHUTDOWNS REQUIRE 3-WEEKS NOTIFICATION.

B. EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND REPORT ANY CONFLICTS BEFORE PROCEEDING.

C. ALL ASSOCIATED PIPING INCLUDING BUT IS NOT LIMITED TO THE FOLLOWING SYSTEMS: O, V, & MA PIPING.

D. REMOVE ALL ASSOCIATED CLAMPS, HANGERS, SUPPORTS, ETC. ASSOCIATED WITH PIPING REMOVAL.

E. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO FINISHES OR COMPONENTS NOT SCHEDULED FOR DEMOLITION. DAMAGED ITEMS SHALL BE REPLACED OR REPAIRED TO MEET OR EXCEED FORMER CONDITIONS.

F. PATCH AND FILL CONCRETE SLAB WHERE OXYGEN, VACUUM, AND MEDICAL AIR PIPING HAS BEEN REMOVED.

G. PATCH TO MATCH WALLS WHERE PIPING HAS BEEN REMOVED.

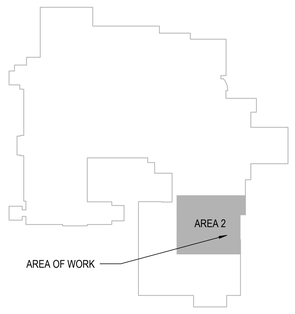
H. ALL EXISTING PIPING SHALL REMAIN UNLESS OTHERWISE NOTED.

[X] MEDICAL GAS DEMOLITION KEY NOTES

1. EXISTING MED GAS PIPING/ NOZZLES TO REMAIN.
2. DISCONNECT AND REMOVE GAS NOZZLES AND ALL ASSOCIATED PIPING .
3. CUT AND CAP PIPING BACK TO MAIN LEAVING NO DEAD LEGS.
4. DEMOLISH AND REMOVE DENTAL CHAIR AND ALL ASSOCIATED PIPING BACK TO MAIN. CAP AND SEAL PIPING.
5. REMOVE AND SALVAGE EXISTING DENTAL CHAIR AND PREPARE FOR REINSTALLATION. REMOVE, REWORK, AND RECONNECT ALL ASSOCIATED PIPING TO NEW DENTAL CHAIR LOCATION.
6. DISCONNECT PROPANE PIPING AND CUT BACK TO MAIN AND READY PIPING FOR RECONNECTION TO NEW.
7. CAP AND SEAL PIPING.

(X) MEDICAL GAS KEY NOTES

1. EXISTING MED GAS PIPING/NOZZLES TO REMAIN.
2. CONNECT AND EXTEND NEW SAME SIZE PROPANE PIPING AT THIS LOCATION AND ROUTE TO WALL AS SHOWN. REFER TO ARCHITECTURE DRAWINGS FOR CONNECTION TO NEW EQUIPMENT.



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Stamp: REGISTERED PROFESSIONAL ENGINEER — RAED HAMID, PE-28170, DATE 08-09-2021, NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: MEDICAL GAS - FIRST FLOOR - DENTAL FLOOR PLAN

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/21 | Checked: DGG | Drawn: HS

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: MG-02

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VA FORM 08-6231

MECHANICAL GENERAL NOTES:

1. THIS CONTRACTOR SHALL REVIEW ENTIRE SET OF CONTRACT DOCUMENTS: INCLUDING BUT NOT NECESSARILY LIMITED TO ALL ARCHITECTURAL, ALL STRUCTURAL, ALL MECHANICAL, ALL ELECTRICAL DRAWINGS AND ENTIRE PROJECT MANUAL. THIS CONTRACTOR SHALL ACKNOWLEDGE AND INCLUDE IN THE SCOPE OF WORK (CONTRACT) ALL CONDITIONS PERTINENT TO THE COMPLETION OF HIS WORK. THIS CONTRACTOR SHALL FULLY COORDINATE HIS WORK WITH THE INSTALLATION OF WORK BY OTHER TRADES AND MAKE NECESSARY FIELD ADJUSTMENTS AS REQUIRED TO ACCOMMODATE THE INSTALLATION. ALL OF THE ABOVE SHALL BE INCLUDED IN THE SCOPE OF WORK AT NO ADDITIONAL CHARGE TO THE VA.

2. THIS CONTRACTOR SHALL CAREFULLY EXAMINE THE DRAWINGS AND SPECIFICATIONS, VISIT THE SITE OF THE WORK AND FULLY INFORM THEMSELVES AS TO ALL CONDITIONS AND MATTERS THAT CAN, IN ANY WAY, AFFECT THE WORK OR THE COST THEREOF. SHOULD THIS CONTRACTOR FIND DISCREPANCIES IN, OR OMISSIONS FROM THE DRAWINGS, SPECIFICATIONS OR OTHER DOCUMENTS, OR BE IN DOUBT AS TO THEIR MEANING, NOTIFY THE VA/CO AT ONCE, IN WRITING, OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND WORK, OR BETWEEN THEIR WORK AND THE WORK OF THEIR TRADES AND OBTAIN CLARIFICATION PRIOR TO SUBMITTING ANY BID. LACK OF SUCH NOTIFICATION SHALL BE CONSTRUED AS TO INDICATE NO DISCREPANCIES OR CONFLICTING CONDITIONS EXIST. ADDITIONAL COMPENSATION WILL NOT BE GRANTED AFTER AWARD OF CONTRACT FOR ANY WORK REQUIRED TO COMPLY WITH THESE REQUIREMENTS.

3. DRAWINGS ARE GENERALLY DIAGRAMMATIC. ROUTING OF PIPING, CONDUITS, RACEWAYS, ETC., AS SHOWN ON DRAWINGS, DOES NOT INTEND TO SHOW EVERY RISE, DROP, OFFSET, FITTING NOR EVERY STRUCTURAL ELEMENT THAT MAY BE ENCOUNTERED DURING THE INSTALLATION OF THIS WORK. EACH CONTRACTOR SHALL MAKE ANY REQUIRED CHANGES FROM THE GENERAL ROUTING SHOWN ON THESE DRAWINGS, SUCH AS OFFSETS, BENDS OR CHANGES IN ELEVATION DUE TO COORDINATION WITH THE WORK OF OTHER TRADES AND BUILDING CONSTRUCTION. ALL CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE VA OR DELAY IN COMPLETION DATE OF THE PROJECT.

4. IT IS THE INTENT OF THESE DOCUMENTS THAT THE MECHANICAL CONTRACTOR PROVIDE ALL LABOR, MATERIAL, EQUIPMENT AND TOOLS FOR THE COMPLETE INSTALLATION OF ALL WORK SHOWN ON THE PLANS AND/OR DESCRIBED HEREIN, INCLUDING ALL DEVICES, CONTROLS AND APPURTENANCES REQUIRED TO SET SYSTEMS INTO OPERATION.

5. SHOULD CONDITIONS NECESSITATE ANY REARRANGEMENTS, OR IF PIPING CAN BE RUN TO BETTER ADVANTAGE, PREPARE AND SUBMIT SHOP DRAWINGS SHOWING THE CHANGES BEFORE PROCEEDING WITH THE WORK. IF SUCH CHANGES ARE APPROVED BY THE VA/COR, THEY SHALL BECOME A PART OF THE CONTRACT AFTER THEIR APPROVAL.

6. THIS CONTRACTOR SHALL VERIFY ALL MOUNTING, ALL ARRANGEMENTS, HEIGHTS AND LOCATIONS PRIOR TO ROUGH-IN. ANY MENTION OF A SPECIFIC MOUNTING ARRANGEMENT, WEIGHT OR LOCATION SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO VERIFY THE SPECIFIC REQUIREMENT FURNISHED OR THE OTHER TRADES WORKING IN THE SAME AREA. NO ADDITIONS TO THE CONTRACT SUM WILL BE PERMITTED FOR ITEMS INSTALLED IMPROPERLY, IN WRONG LOCATIONS, IN CONFLICT WITH OTHER WORK, ETC.

7. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL CURRENT FEDERAL, BUILDING CODES, REGULATIONS, AND REQUIREMENTS, LOCAL UTILITY COMPANY REQUIREMENTS, AND ASHRAE STANDARDS.

8. THIS CONTRACTOR SHALL PAY ALL PERMIT FEES, PLAN REVIEW FEES, LICENSE FEES, INSPECTIONS, AND TAXES APPLICABLE TO THEIR DIVISION AND SHALL BE INCLUDED IN THE BASE BID AS PART OF THEIR CONTRACT.

9. THIS CONTRACTOR SHALL BE LICENSED, BONDED, INSURED AND CAPABLE OF PERFORMING QUALITY WORKMANSHIP. THIS CONTRACTOR GUARANTEES ALL OF HIS WORK AND MATERIALS FOR THE PERIOD AS REQUIRED IN THE SPECIFICATIONS. FROM FINAL ACCEPTANCE BY THE VA/COR.

10. THIS CONTRACTOR SHALL ESTABLISH SAFE WORKING PROCEDURES FOR THE PROTECTION OF THE WORKMEN IN ALL PHASES OF WORK, COMPLYING WITH ALL APPLICABLE PROVISIONS OF CITY, STATE, AND FEDERAL SAFETY LAWS (OSHA) AND AS RECOMMENDED IN THE "MANUAL OF ACCIDENT PREVENTION IN CONSTRUCTION" AS ISSUED BY THE ASSOCIATION OF GENERAL CONTRACTORS OF AMERICA, IN., 20TH AND E. STREETS, N.W. WASHINGTON, D.C.

11. CONTRACTOR SHALL CHECK DRAWINGS OF OTHER TRADES TO VERIFY THAT SPACES IN WHICH THEIR WORK WILL BE INSTALLED ARE CLEAR OF OBSTRUCTIONS. WORK SHALL BE INSTALLED TO MAINTAIN MAXIMUM HEADROOM AND SPACE CONDITIONS AT ALL POINTS IN THE BUILDING. WHERE HEADROOM OR SPACE CONDITIONS APPEAR INADEQUATE, CONTRACTOR SHALL NOTIFY VA/COR BEFORE PROCEEDING WITH THE INSTALLATION OF THEIR WORK.

12. THE SEQUENCE FOR THE INSTALLATION OF ALL WORK SHALL BE COORDINATED BETWEEN ALL CONTRACTORS ON THE PROJECT AND IN STRICT ACCORDANCE WITH VA STIPULATIONS AS DIRECTED BY SAME.

13. CONTRACTOR SHALL BE RESPONSIBLE AND PAY FOR ALL CORING, CUTTING, PATCHING, REPAIRING, REFINISHING AND REMOVAL/REPLACEMENT OF NEW OR EXISTING BUILDING CONSTRUCTION REQUIRED TO ACCOMMODATE THE INSTALLATION OR REMOVAL OF THEIR WORK. CONTRACTOR SHALL XRAY ALL SLABS PRIOR TO CORING. ALL PATCHING, REPAIRING AND REFINISHING WORK SHALL BE PERFORMED BY THOSE REGULARLY INVOLVED IN THAT TRADE AND SHALL MATCH THE ADJACENT CONSTRUCTION AS CLOSELY AS POSSIBLE. CARE SHALL BE TAKEN SO AS NOT TO DAMAGE ANY EXISTING BUILDING CONSTRUCTION OR ITEMS THAT ARE TO REMAIN. ANY EXISTING FINISHES THAT ARE DAMAGED DURING THE INSTALLATION OF NEW WORK OR REMOVAL OF EXISTING WORK SHALL BE REPAIRED, REPLACED AND PAID FOR BY THE INSTALLING CONTRACTOR, TO THE SATISFACTION OF THE VA/COR. REFER TO ARCHITECTURAL DRAWINGS FOR EXISTING BUILDING CONSTRUCTION THAT IS TO REMAIN AND, THEREFORE, SUBJECT TO PATCHING, REPAIRING, REFINISHING, AND REMOVAL/REPLACEMENT. WHERE THERE IS EVIDENCE THAT WORK OF ONE TRADE WILL INTERFERE WITH WORK OF OTHER TRADES, ALL TRADES SHALL MEET ON JOB SITE TO WORK OUT SPACE CONDITIONS AND MAKE SATISFACTORY ADJUSTMENTS TO INSTALLATION OF THE NEW WORK. CONTRACTORS SHALL VERIFY EXACT LOCATIONS OF ALL DEVICES AND EQUIPMENT WITH FIELD CONDITIONS, SHOP DRAWINGS, AND WORK OF OTHER TRADES PRIOR TO ROUGH-IN. EACH CONTRACTOR SHALL BE RESPONSIBLE, AT THEIR OWN EXPENSE, FOR THE REMOVAL AND REINSTALLATION OF ANY PART OF THEIR WORK IF SAME WAS INSTALLED WITHOUT CONSULTING WITH OTHER TRADES BEFORE INSTALLING THEIR WORK.

14. CONTRACTOR SHALL STORE ALL MATERIALS AND EQUIPMENT SHIPPED TO THE SITE IN A PROTECTED AREA. IF MATERIAL IS STORED OUTSIDE OF THE BUILDING, IT MUST BE STORED OFF THE GROUND A MINIMUM OF SIX INCHES (6") SET ON 6 X 6 PLANKS AND/OR WOOD PALLETS. ALL MATERIAL AND EQUIPMENT MUST BE COMPLETELY COVERED WITH WATERPROOF TARPS OR VISQUIN. ALL PIPING AND DUCTWORK WILL HAVE THE ENDS CLOSED TO KEEP OUT DIRT AND OTHER DEBRIS. NO EQUIPMENT WILL BE ALLOWED TO BE STORED OUTSIDE THE BUILDING ON THE SITE UNLESS IT IS SUPPORTED OFF THE GROUND AND COMPLETELY PROTECTED WITH WEATHERPROOF COVERS.

15. THIS CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AS REQUIRED IN THE SPECIFICATIONS PRIOR TO THE START OF INSTALLATION FOR VA/COR APPROVAL AND THE SUCCESSFUL REVIEW BY THE ARCHITECT/ENGINEER.

16. THIS CONTRACTOR SHALL FURNISH AS-BUILT DRAWINGS TO THE VA BEFORE FINAL PAYMENT WILL BE ISSUED. THE AS-BUILT DRAWINGS SHALL BE SUBMITTED IN ELECTRONIC REPRODUCIBLE FORM.

17. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE STARTUP AND TESTING OF ALL EQUIPMENT.

18. THIS CONTRACTOR SHALL PROVIDE A COMPETENT OPERATING TECHNICIAN TO INSTRUCT THE VA IN THE OPERATION AND MAINTENANCE OF THE EQUIPMENT.

19. UPON COMPLETION OF THE WORK, THIS CONTRACTOR SHALL REVIEW AND CHECK THE ENTIRE PORTION OF WORK, CLEAN EQUIPMENT AND DEVICES. REMOVE SURPLUS MATERIALS AND RUBBISH FROM THE PROPERTY AND LEAVE THE WORK IN NEAT AND CLEAN ORDER AND IN COMPLETE WORKING CONDITION. EACH RESPECTIVE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ANY CARTONS, DEBRIS, EQUIPMENT, ETC., INSTALLED BY THIS CONTRACTOR INCLUDING EQUIPMENT FURNISHED BY OTHERS AND UNPACKED OR REMOVED FROM CARTONS BY THIS CONTRACTOR.

20. ALL ITEMS THAT REQUIRE ACCESS, SUCH AS FOR OPERATING, CLEANING, SERVICING, MAINTENANCE, AND CALIBRATION, SHALL BE EASILY AND SAFELY ACCESSIBLE BY PERSONS STANDING AT FLOOR LEVEL, OR STANDING ON PERMANENT PLATFORMS, WITHOUT THE USE OF PORTABLE LADDERS. EXAMPLES OF THESE ITEMS INCLUDE, BUT ARE NOT LIMITED TO: ALL TYPES OF VALVES, FILTERS AND STRAINERS, TRANSMITTERS, CONTROL DEVICES. PRIOR TO COMMENCING INSTALLATION WORK, REFER CONFLICTS BETWEEN THIS REQUIREMENT AND CONTRACT DRAWINGS TO THE VA/COR FOR RESOLUTION. FAILURE OF THE CONTRACTOR TO RESOLVE, OR POINT OUT ANY ISSUES WILL RESULT IN THE CONTRACTOR CORRECTING AT NO ADDITIONAL COST TO THE VA.

21. UNLESS INDICATED OTHERWISE, THE ARCHITECT/ENGINEER MAKES NO REPRESENTATION AS TO WHETHER OR NOT ANY HAZARDOUS OR CONTAMINATED MATERIALS (INCLUDING BUT NOT LIMITED TO ASBESTOS, PCB'S, LEAD, CONTAMINATED SOILS, ETC.) ARE PRESENT WITHIN THE EXISTING BUILDING OR ON THE SITE. WORK SHOWN ON THE DRAWINGS AND/OR INDICATED IN THE SPECIFICATIONS SHALL NOT BE CONSTRUED TO CALL FOR CONTACT WITH ANY OF THESE MATERIALS. IF THESE MATERIALS ARE ENCOUNTERED OR SUSPECTED, THE CONTRACTOR SHALL NOT DISTURB THEM AND SHALL CONTACT THE VA/COR IMMEDIATELY.

22. IT IS MANDATORY THAT THE COMPLETE EXISTING BUILDING REMAIN IN CONTINUOUS AND NON-INTERRUPTED OPERATION DURING REMODELING/ALTERING OF SAID EXISTING BUILDING. THE SPECIFIC AREA(S) BEING REMODELED/ALTERED AT ANY SCHEDULED TIME ARE OBVIOUSLY EXCLUSIVE OF THIS STATEMENT. SERVICES TO EXISTING BUILDING SHALL BE KEPT IN CONTINUOUS OPERATION INCLUDING POWER, SIGNAL SYSTEMS, LIGHTING, TELEPHONE, HEATING, COOLING, VENTILATING, TEMPERATURE CONTROL, SEWERS AND HOT AND COLD WATER. ANY ABSOLUTELY NECESSARY INTERRUPTION OF THESE SERVICES TO ACCOMPLISH CONTRACT WORK SHALL BE ARRANGED WITH THE VA/COR A MINIMUM OF TEN (10) WORKING DAYS IN ADVANCE. SUCH INTERRUPTIONS SHALL BE KEPT TO AN ABSOLUTE MINIMUM AS FAR AS TIME INTERVAL IS INVOLVED AND TEMPORARY SERVICES SHALL BE FURNISHED AND INSTALLED UNDER THIS CONTRACT WHERE NECESSARY TO ACCOMPLISH THIS PURPOSE. TEMPORARIES SHALL BE REMOVED BY THE CONTRACTOR ONLY AFTER NEW PERMANENT SERVICES ARE INSTALLED AND FULLY OPERATIONAL.

23. IN CASE OF CONFLICTS OR DISCREPANCIES WITHIN OR AMONG THE CONTRACT DRAWINGS, THE BETTER QUALITY, MORE STRINGENT REQUIREMENTS, OR GREATER QUANTITY OF WORK, AS DETERMINED BY THE GOVERNMENT/CONTRACTING OFFICER, SHALL BE PROVIDED.

MECHANICAL EQUIPMENT NOTES:

1. ALL EQUIPMENT/DEVICES SHALL BE AND OF FIRST RATE QUALITY (UNLESS OTHERWISE SPECIFIED) AND IS TO BEAR THE APPROPRIATE AGA, CSA OR UL APPROVED LABELS, LISTINGS, AND CERTIFICATIONS FOR THE SPECIFIC DESIGN PURPOSE.

2. ALL EQUIPMENT SOUND LEVELS SHALL NOT EXCEED 50 DB AT PROPERTY LINE.

3. ALL INTERCONNECTING WIRING AT UNIT SHALL BE FACTORY PRE-WIRED AND REQUIRE ONLY ONE (1) POWER CONNECTION TO THE UNIT BY THE ELECTRICAL CONTRACTOR. DISCONNECT SWITCH SHALL BE BY THE ELECTRICAL CONTRACTOR.

4. SUBMIT THE REQUIRED NUMBER OF COPIES OF EACH CATALOG CUT, FOR THE EQUIPMENT SPECIFIED, TO THE VA/COR FOR APPROVAL AND TO THE ARCHITECT /ENGINEER FOR HIS/HER SUCCESSFUL REVIEW PRIOR TO THE BEGINNING OF CONSTRUCTION. THIS CONTRACTOR SHALL ALSO ASSEMBLE PRINTED INSTRUCTIONS FOR THE OPERATION AND MAINTENANCE OF EACH ITEM INSTALLED AND BIND TOGETHER WITH EQUIPMENT CUTS AND CONTROL WIRING DIAGRAMS. SUBMIT THE REQUIRED NUMBER OF COPIES TO THE VA/COR FOR HIS/HER SUCCESSFUL REVIEW.

5. THE DRAWINGS, SCHEDULES AND SPECIFICATIONS HAVE BEEN PREPARED USING ONE MANUFACTURER FOR EACH PIECE OF EQUIPMENT AS THE BASIS OF DESIGN INCLUDING ALL DIMENSIONAL DESIGN. IF THE CONTRACTOR PURCHASES EQUIPMENT FROM A SPECIFIED ACCEPTABLE MANUFACTURER, BUT NOT THE SCHEDULED MANUFACTURER USED FOR THE BASE DESIGN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING ALL THE DIMENSIONS OF THE EQUIPMENT TO VERIFY THAT IT WILL FIT IN THE SPACE SHOWN ON THE DRAWINGS. MINOR DEVIATIONS IN DIMENSIONS WILL BE PERMITTED, PROVIDED THE RATINGS MEET THOSE SHOWN ON THE DRAWINGS AND EQUIPMENT WILL PHYSICALLY FIT INTO THE SPACE ALLOCATED WITH SUITABLE ACCESS AROUND EQUIPMENT FOR OPERATION AND MAINTENANCE OF THE EQUIPMENT. WHEN EQUIPMENT SUBMITTED FOR REVIEW DOES NOT MEET THE PHYSICAL SIZE OR ARRANGEMENT OF THAT SCHEDULED AND SPECIFIED, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ALTERATIONS REQUIRED TO ACCOMMODATE SUCH EQUIPMENT AT NO ADDITIONAL COST TO THE VA. CONTRACTOR WILL ALSO PAY ALL COSTS FOR ADDITIONAL WORK REQUIRED BY OTHER CONTRACTORS AND THE VA TO MAKE CHANGES WHICH WOULD ALLOW THE EQUIPMENT TO FIT IN THE SPACE AND TO FUNCTION AS INTENDED.

6. CONTRACTOR AND/OR MANUFACTURER SHALL VERIFY THAT THE CHARACTERISTICS OF THE EQUIPMENT HE SUBMITS FOR REVIEW MEET THE CAPACITY AND DUTY SPECIFIED. WHEN EQUIPMENT SUBMITTED FOR REVIEW REQUIRES MODIFICATIONS TO THE WORK OF OTHER CONTRACTORS, SUBMITTING CONTRACTOR SHALL PAY FOR ALL COSTS FOR ADDITIONAL WORK REQUIRED BY OTHER CONTRACTORS, VA, ARCHITECT OR ENGINEER TO MAKE CHANGES WHICH WOULD ALLOW THE EQUIPMENT FUNCTION SAFELY AND PROPERLY.

7. CONTRACTOR MUST FIELD VERIFY SIZES, CAPACITIES, WEIGHTS, HORSE POWERS, ETC. ON ALL EQUIPMENT. NOTIFY THE VA/COR IF ANY DISCREPANCIES EXIST BETWEEN THE ACTUAL FIELD CONDITIONS AND THE DRAWINGS.

ENGINEERING DISCIPLINE REFERENCE NOTES

SEE ALL PROJECT GENERAL NOTES AND OTHER REQUIREMENTS INCLUDING THE LIFE SAFETY AND INFECTION CONTROL WORK LOCATED WITHIN THE GENERAL DRAWINGS SECTION. COMPLY WITH ALL REQUIREMENTS AS THEY ARE A DIRECT PART OF THIS SECTION AS IF THEY WERE DIRECTLY INCLUDED AND PROVIDED HEREIN.

EQUIVALENCY SUBSTITUTIONS: THE "BASIS OF DESIGN (BOD) COMPLIANCE PROTOCOLS" ARE TO BE FOLLOWED FOR ALL MATERIALS, EQUIPMENT, ASSEMBLIES AND SYSTEMS SPECIFIED AND DETAILED THROUGHOUT ALL DRAWINGS AND SPECIFICATION SECTIONS, WHETHER THE BOD DESIGNATE IS SPECIFICALLY REFERENCED THEREIN OR NOT. SEE THE GENERAL DRAWINGS SECTION FOR THE SPECIFIC BOD COMPLIANCE REQUIREMENTS AND PROTOCOLS TO BE FOLLOWED.

HVAC SYMBOLS AND ABBREVIATIONS

AD	ACCESS DOOR
A.F.F.	ABOVE FINISHED FLOOR
BAS	BUILDING AUTOMATION SYSTEM
BHP	BRAKE HORSEPOWER
BOP	BOTTOM OF PIPE
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
CC	COOLING COIL
CFM	CUBIC FEET PER MINUTE
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
D	DRAIN LINE
DB	DRY BULB
DN.	DOWN
(E)	EXISTING
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EF	EXHAUST FAN
ESP	EXTERNAL STATIC PRESSURE
EWT	ENTERING WATER TEMPERATURE
F	FAHRENHEIT
FPF	FINS PER FOOT
FPM	FEET PER MINUTE
FV	FACE VELOCITY
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
HP	HORSEPOWER
HWC	HOT WATER COIL
HTS	HIGH TEMPERATURE HOT WATER SUPPLY
HTR	HIGH TEMPERATURE HOT WATER RETURN
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
LAT	LEAVING AIR TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MCA	MINIMUM CIRCUIT AMPS
MOCP	MAXIMUM OVERCURRENT PROTECTION
NK	NECK
NTS	NOT TO SCALE
PCR	PUMPED CONDENSATE RETURN
PD	PRESSURE DROP
PH	PHASE
PHC	PREHEAT COIL
PSI	POUNDS PER SQUARE INCH
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SF	SUPPLY FAN
SP	STATIC PRESSURE
TC	TEMPERATURE CONTROL
TSP	TOTAL STATIC PRESSURE
TYP.	TYPICAL
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
WB	WET BULB
W.C.	WATER COLUMN
WG	WATER GAUGE

	BUTTERFLY VALVE
	GLOBE VALVE
	GATE VALVE
	CHECK VALVE
	BALL VALVE (2" & SMALLER) BUTTERFLY VALVE (2 1/2" & LARGER)
	3 WAY CONTROL VALVE
	2 WAY CONTROL VALVE
	CIRCUIT BALANCING VALVE W/BALANCING PORTS (8" AND UNDER) CIRCUIT FLOW INDICATOR W/BALANCING PORTS AND MEMORY STOP BUTTERFLY VALVE FOR BALANCING (10" AND ABOVE)
S	SOLENOID VALVE
	PRESSURE REDUCING VALVE
	PLUG VALVE (GAS COCK)
	PRESSURE RELIEF VALVE (PIPE TO FLOOR DRAIN)
HOSE THREADED	DRAIN VALVE WITH HOSE THREADED OUTLET
	AUTOMATIC BALL OR BUTTERFLY VALVE
	PIPE UNION (OR FLANGES IF 2 1/2" OR LARGER PIPE)
	CONCENTRIC PIPE REDUCER OR INCREASER
T	STEAM TRAP ASSEMBLY
PS	PRESSURE SWITCH (WITH THREAD OR WELD-O-LET)
	PRESSURE GAUGE AND NEEDLE VALVE
FS	FLOW SWITCH (WITH THREAD OR WELD-O-LET)
	THERMOMETER (WITH PIPE WELL)
	THERMOMETER WELL
	TEMPERATURE WELL WITH DDC SENSOR
P	PRESSURE WELL WITH DDC SENSOR
	PRESSURE/TEMPERATURE PLUG WITH CAP
	STRAINER
	STRAINER WITH BLOWDOWN VALVE
	REFRIGERANT EXPANSION VALVE
	DIRECTION OF FLOW
PITCH	PITCH OF PIPE (DOWN)
	PIPE ELBOW (TURNED UP)
	PIPE ELBOW (TURNED DOWN)
	PIPE TEE DOWN (DROP)
	PIPE TEE UP
	PIPE TEE UP OR ANGLE
	PIPE TEE DOWN OR ANGLE
NC	NEW CONNECTION
	PIPING, DUCTWORK, OR EQUIPMENT TO BE REMOVED
HWS	(HEATING) HOT WATER SUPPLY
HWR	(HEATING) HOT WATER RETURN
HTS	HIGH TEMPERATURE (HEATING) HOT WATER SUPPLY
HTR	HIGH TEMPERATURE (HEATING) HOT WATER RETURN
HPS	HIGH PRESSURE STEAM SUPPLY (ABOVE 60 PSI)
HPR	HIGH PRESSURE CONDENSATE RETURN (ABOVE 60 PSI)
MPS	MEDIUM PRESSURE STEAM SUPPLY (15 TO 60 PSI)
MPR	MEDIUM PRESSURE CONDENSATE RETURN (15 TO 60 PSI)
LPS	LOW PRESSURE STEAM (UP TO 15 PSIG)
LPR	LOW PRESSURE CONDENSATE (UP TO 15 PSIG)
MU	MAKE-UP WATER
PCR	PUMPED CONDENSATE RETURN
VC	VACUUM CONDENSATE
D	DRAIN LINE
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
GHS	40% PROPYLENE GLYCOL HOT WATER SUPPLY
GHR	40% PROPYLENE GLYCOL HOT WATER RETURN

	FLEXIBLE DUCT CONNECTION
	MANUAL SINGLE BLADE OR OPPOSED BLADE DAMPER
	MOTOR OPERATED DAMPER
FSD	VERTICAL FIRE/SMOKE DAMPER WITH ACCESS DOOR
FD	HORIZONTAL FIRE DAMPER
	AIR FLOW
12x24	DUCT SIZE FREE AREA (1ST FIGURE, SIDE OF DUCT SHOWN)
	CROSS-SECTION OF SUPPLY OR OUTSIDE AIR INTAKE DUCT
	CROSS-SECTION OF RETURN DUCT
	CROSS-SECTION OF EXHAUST DUCT
R D	INCLINED RISE (R) OR DROP (D)
	90° ELBOW WITH TURNING VANES
	90° BRANCH TAKE-OFF W/45 DEGREE ENTRY
	ROUND FLEXIBLE DUCT
	SQUARE OR RECTANGLE DUCT TRANSITION
	SQUARE OR RECTANGLE TO ROUND DUCT TRANSITION
	ROOF MOUNTED EXHAUST FAN OR VENTILATOR
XXX-1	EQUIPMENT TAG
T	WALL THERMOSTAT OR TEMPERATURE SENSOR
T	WALL THERMOSTAT OR TEMPERATURE SENSOR WITH GUARD
H	WALL HUMIDISTAT
Ø	ROUND
	NEW CONNECTION POINT
DSD	DUCT SMOKE DETECTOR
#	KITCHEN EQUIPMENT TAG

DIFFUSER TAG

S-SUPPLY
R-RETURN
E-EXHAUST
XX
DIFFUSER/GRILLE IDENTIFICATION
DIFFUSER/GRILLE SIZE
DIFFUSER/GRILLE AIRFLOW RATE
_CFM

THESE LISTS OF SYMBOLS AND ABBREVIATIONS ARE GENERAL. NOT ALL SYMBOLS AND ABBREVIATIONS MAY BE APPLICABLE TO THIS PROJECT.

100% BID SET	8/9/2021
95% CONSTRUCTION DOCUMENTS	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

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Bancroft Project No. 18-121

Stamp: REGISTERED PROFESSIONAL ENGINEER, RAED HAMID, PE-28170, DATE 08-09-2021, NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: MECHANICAL GENERAL NOTES, SYMBOLS, & ABBREVIATIONS

Phase: 100% BID DOCUMENTS

Project Title: CORRECT ISOLATION ROOM ISSUES

Project Number: 437-21-170

Building Number: 1, 46, 9

Approved: Project Director

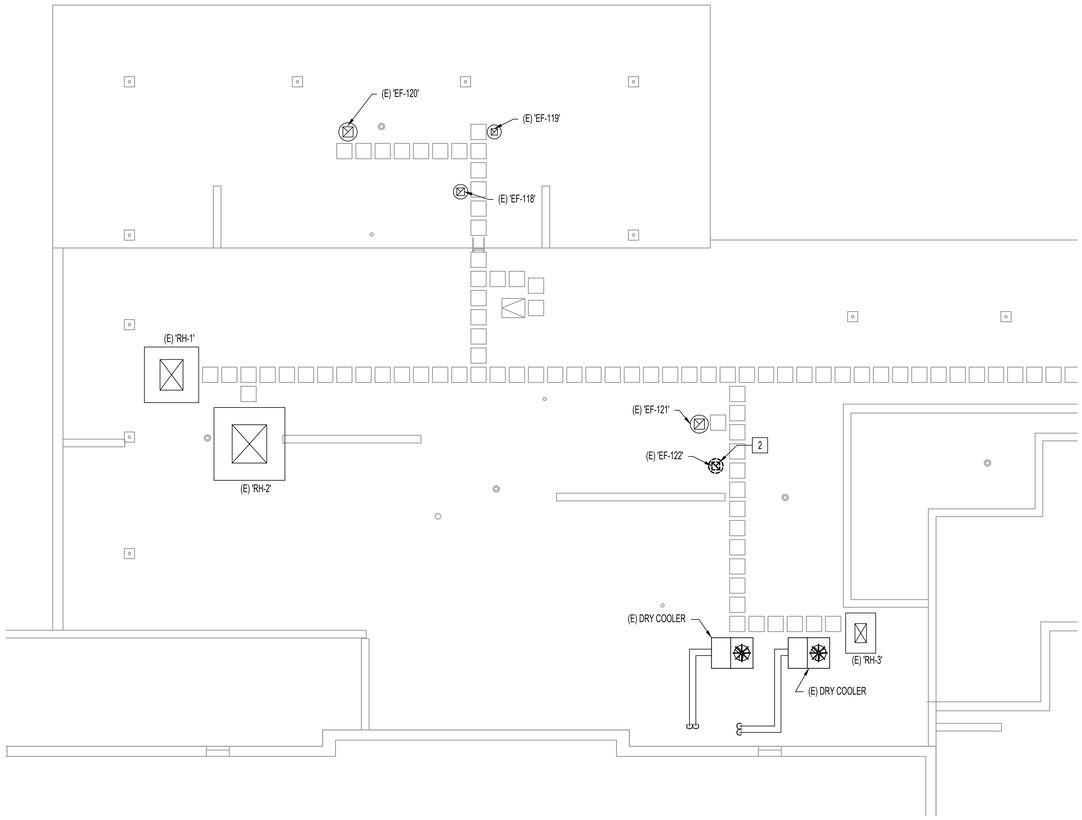
FULLY SPRINKLERED

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/21 | Checked: DGG | Drawn: IL

Drawing Number: MH-01

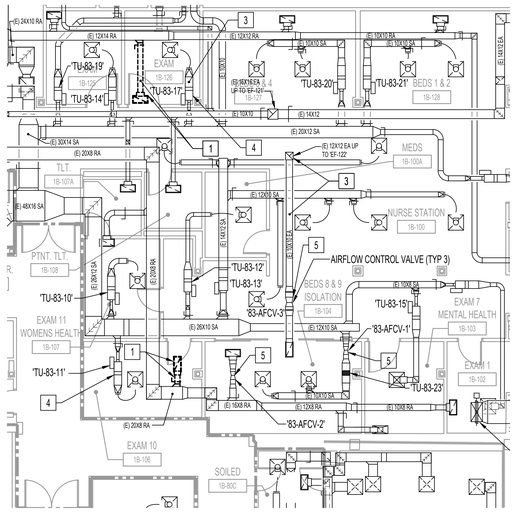
VA FORM 08-6231



NORTH

2 MECHANICAL - ROOF LEVEL - DEMOLITION PLAN - ED

1/8"=1'-0"



NORTH

1 MECHANICAL - FIRST FLOOR - VENTILATION DEMOLITION PLAN - ED

1/8"=1'-0"

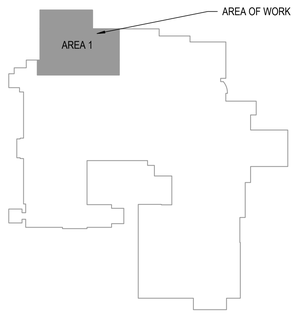
MECHANICAL DEMOLITION GENERAL NOTES

A. ANY DUCTWORK THAT IS EXISTING TO REMAIN, WHETHER OR NOT SHOWN ON THESE DRAWINGS, THAT IS CRUSHED OR DAMAGED IN ITS CURRENT CONDITION OR AS A RESULT OF CONSTRUCTION, SHALL BE REPLACED WITH NEW AT NO ADDITIONAL COST.

B. ALL EXISTING TEMPERATURE CONTROLS AND VISUAL ROOM AIRFLOW DIRECTION MONITOR ABOVE, DIGITAL ROOM DIFFERENTIAL PRESSURE CONTROLLER BELOW, TO REMAIN TO BE REUSED.

X MECHANICAL DEMOLITION KEY NOTES

1. REMOVE DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED TO POINT SHOWN. CAP OPENING AT MAIN DUCTWORK WHERE APPLICABLE.
2. REMOVE EXISTING ROOF MOUNTED EXHAUST FAN AND ASSOCIATED DUCTWORK AND CONTROLS. PREPARE FOR NEW CONNECTION IN PLACE OF EXHAUST FAN ON ROOF. REPLACE CURB AND PATCH ROOF AS REQUIRED.
3. EXISTING DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. TO REMAIN IN CONTRACT.
4. EXISTING VAV BOX AND ASSOCIATED HANGERS, HYRDRONIC REHEAT COIL, DUCTWORK, PIPING, VALVES, AND CONTROLS TO REMAIN TO BE REVISED IN CONTRACT AREA.
5. EXISTING AFCV (AIR FLOW CONTROL VALVE) AND ASSOCIATED HANGERS, HYDRONIC REHEAT COIL, DUCTWORK, PIPING, VALVES, AND CONTROLS TO REMAIN TO BE REVISED IN CONTRACT AREA.



Revisions:	Date:
100% BID SET	8/9/2021
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65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021

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Bancroft Project No. 18-121

Stamp

REGISTERED PROFESSIONAL ENGINEER
RAED HAMID
PE-28170
DATE 08-09-2021
NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: MECHANICAL - DEMOLITION PLANS - ED

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/21 | Checked: DGG | Drawn: IL

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: MH-02

44 OF 76

VA FORM 08-6231

MECHANICAL DEMOLITION GENERAL NOTES

A. ANY DUCTWORK THAT IS EXISTING TO REMAIN, WHETHER OR NOT SHOWN ON THESE DRAWINGS, THAT IS CRUSHED OR DAMAGED IN ITS CURRENT CONDITION OR AS A RESULT OF CONSTRUCTION, SHALL BE REPLACED WITH NEW AT NO ADDITIONAL COST.

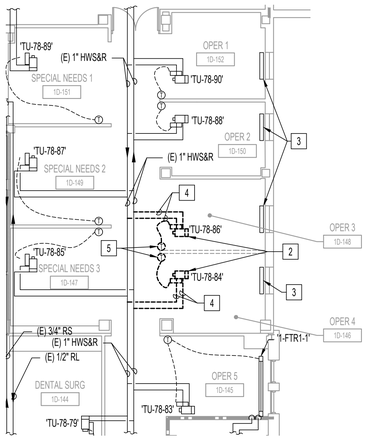
B. REMOVE ALL DUCTWORK, DIFFUSERS, GRILLES, INCLUDING ASSOCIATED INSULATION, HANGERS, SUPPORTS, ETC. SHOWN DASHED UNLESS NOTED OTHERWISE.

C. REMOVE ALL HWS AND HWR PREHEAT COIL PIPING INCLUDING ASSOCIATED INSULATION, HANGERS, SUPPORTS, VALVES, ETC. SHOWN DASHED UNLESS NOTED OTHERWISE.

D. ALL EXISTING TEMPERATURE CONTROLS AND VISUAL ROOM AIRFLOW DIRECTION MONITOR ABOVE, DIGITAL ROOM DIFFERENTIAL PRESSURE CONTROLLER BELOW, TO REMAIN TO BE REUSED.

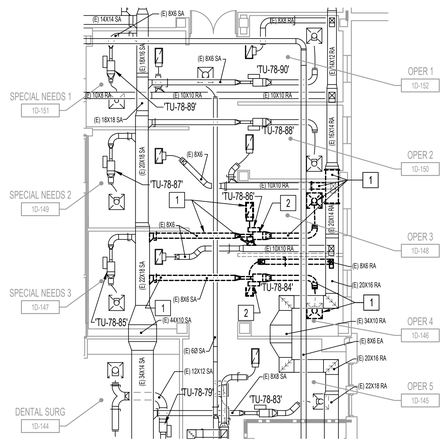
X MECHANICAL DEMOLITION KEY NOTES

1. REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED TO POINT SHOWN. CAP OPENING AT MAIN DUCTWORK WHERE APPLICABLE.
2. REMOVE EXISTING VAV BOX AND ASSOCIATED DUCTWORK, PIPING, VALVING, CONTROLS, ETC. CAP THE VAV INLET DUCTWORK AT MEDIUM PRESSURE MAIN.
3. EXISTING HEATING TERMINALS TO REMAIN.
4. REMOVE EXISTING HWS AND HWR PIPING SERVING EXISTING PREHEAT COILS. CAP PIPING AT MAINS.
5. REMOVE EXISTING THERMOSTAT AND RELATED CONTROL WIRING.



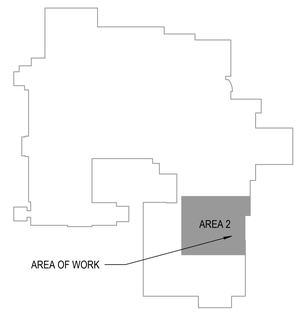
NORTH

2 MECHANICAL - FIRST FLOOR - PIPING DEMOLITION PLAN - DENTAL
1/8"=1'-0"



NORTH

1 MECHANICAL - FIRST FLOOR - VENTILATION DEMOLITION PLAN - DENTAL
1/8"=1'-0"



100% BID SET	8/9/2021
95% CONSTRUCTION DOCUMENTS	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

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www.bancroft-ae.com
Bancroft Project No. 18-121

Stamp: REGISTERED PROFESSIONAL ENGINEER — RAED HAMID, PE-28170, DATE 08-09-2021, NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: MECHANICAL - DEMOLITION PLANS - DENTAL

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

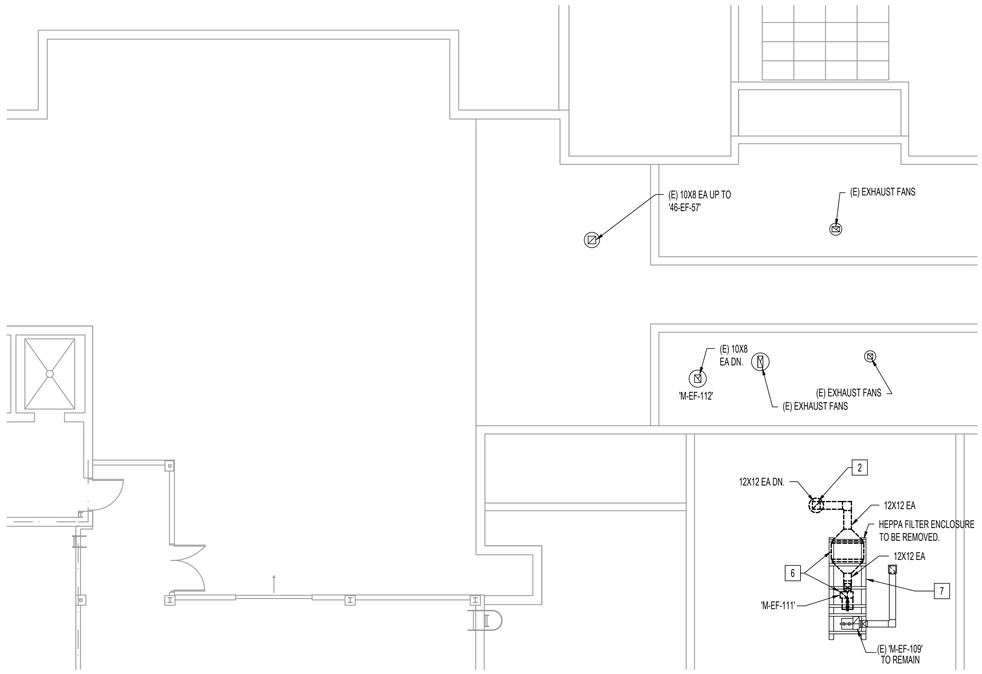
Issue Date: 8/9/21 | Checked: DGG | Drawn: IL

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: MH-03

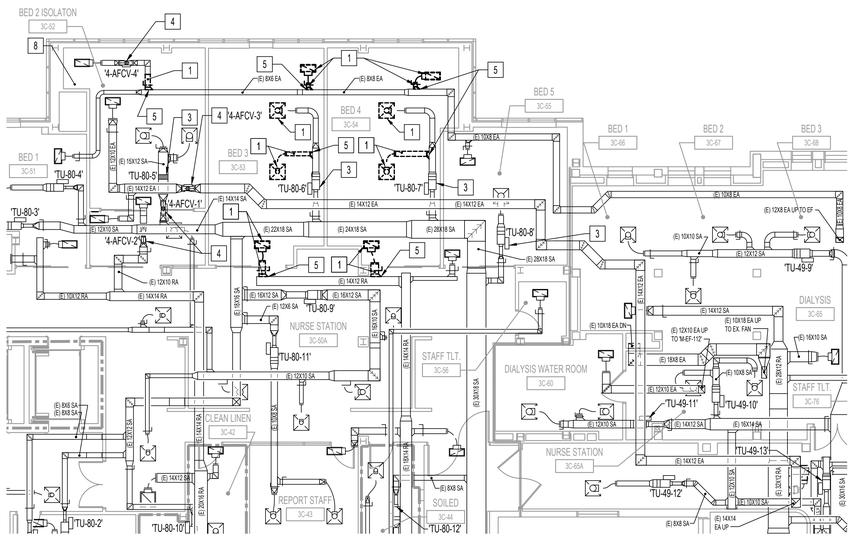
VA FORM 08-6231



NORTH

2 MECHANICAL - ROOF LEVEL - DEMOLITION PLAN - ICU

1/8"=1'-0"



NORTH

1 MECHANICAL - THIRD FLOOR - VENTILATION DEMOLITION PLAN - ICU

1/8"=1'-0"

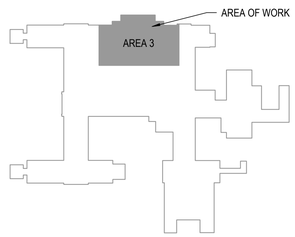
MECHANICAL DEMOLITION GENERAL NOTES

A. ANY DUCTWORK THAT IS EXISTING TO REMAIN, WHETHER OR NOT SHOWN ON THESE DRAWINGS, THAT IS CRUSHED OR DAMAGED IN ITS CURRENT CONDITION OR AS A RESULT OF CONSTRUCTION, SHALL BE REPLACED WITH NEW AT NO ADDITIONAL COST.

B. ALL EXISTING TEMPERATURE CONTROLS AND VISUAL ROOM AIRFLOW DIRECTION MONITOR ABOVE, DIGITAL ROOM DIFFERENTIAL PRESSURE CONTROLLER BELOW, TO REMAIN TO BE REUSED.

X MECHANICAL DEMOLITION KEY NOTES

1. REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED. CAP OPENING AT MAIN DUCTWORK WHERE APPLICABLE.
2. REMOVE DUCT DOWN TO CURB.
3. EXISTING VAV BOX AND ASSOCIATED HANGERS, HYRDRONIC REHEAT COIL, DUCTWORK, PIPING, VALVES, AND CONTROLS TO REMAIN TO BE REVISED IN CONTRACT AREA.
4. EXISTING AFCV (AIR FLOW CONTROL VALVE) AND ASSOCIATED HANGERS, HYDRONIC REHEAT COIL, DUCTWORK, PIPING, VALVES, AND CONTROLS TO REMAIN TO BE REVISED IN CONTRACT AREA.
5. PATCH MAIN DUCTWORK AIRTIGHT WHERE BRANCH DUCTWORK HAS BEEN REMOVED.
6. REMOVE EXISTING ROOF EXHAUST FAN M-EF-111 AND ASSOCIATED DUCTWORK AND HEPA FILTER BOX.
7. EQUIPMENT RAILS, SUPPORTS, ETC. TO REMAIN TO BE REUSED IN NEW WORK SCOPE.
8. ISOLATION ROOM 3C-52 TO REMAIN FULLY OPERATIONAL UNTIL WORK IS COMPLETED IN NEW NEGATIVE ROOMS 3C-53 AND 3C-54.



100% BID SET	8/9/2021
95% CONSTRUCTION DOCUMENTS	7/12/2021
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35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

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Bancroft Project No. 18-121

Stamp: REGISTERED PROFESSIONAL ENGINEER RAED HAMID PE-26170 DATE: 08-09-2021 NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: MECHANICAL - DEMOLITION PLANS - ICU

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/21 | Checked: DGG | Drawn: IL

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: MH-04

46 OF 76

VA FORM 08-6231

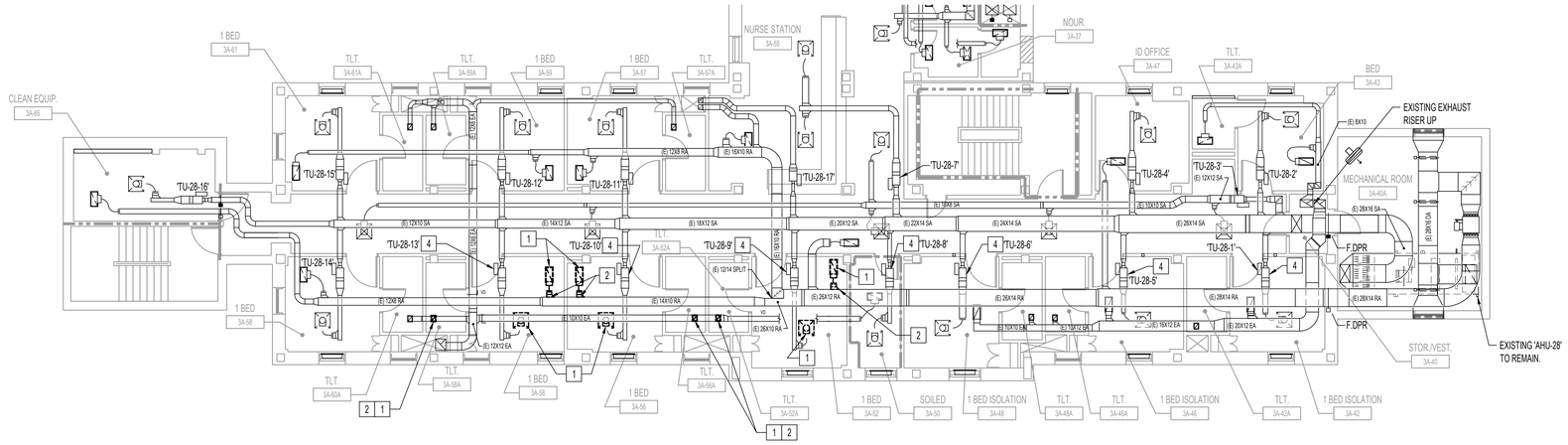
MECHANICAL DEMOLITION GENERAL NOTES

A. ANY DUCTWORK THAT IS EXISTING TO REMAIN, WHETHER OR NOT SHOWN ON THESE DRAWINGS, THAT IS CRUSHED OR DAMAGED IN ITS CURRENT CONDITION OR AS A RESULT OF CONSTRUCTION, SHALL BE REPLACED WITH NEW.

B. ALL EXISTING VISUAL ROOM AIRFLOW DIRECTION MONITOR ABOVE, DIGITAL ROOM DIFFERENTIAL PRESSURE CONTROLLER BELOW, TO REMAIN TO BE REUSED.

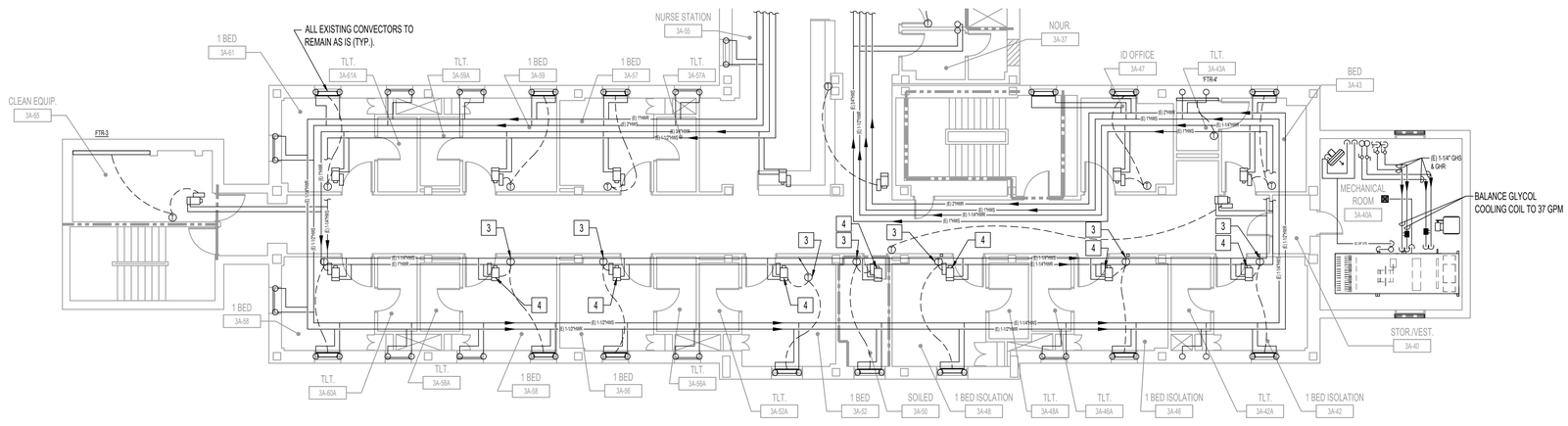
X MECHANICAL DEMOLITION KEY NOTES

1. REMOVE ALL DUCTWORK, DIFFUSERS, REGISTERS, HANGERS, INSULATION, ETC. SHOWN DASHED.
2. CAP DUCT OPENINGS.
3. EXISTING THERMOSTAT AND RELATED CONTROL WIRING TO REMAIN.
4. EXISTING VAV BOX AND ASSOCIATED HANGERS, HYRDRONIC REHEAT COIL, DUCTWORK, PIPING, VALVES, AND CONTROLS TO REMAIN TO BE REVISED IN CONTRACT AREA.



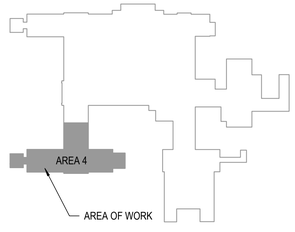
1 MECHANICAL - THIRD FLOOR - VENTILATION DEMOLITION PLAN - MNU

1/8"=1'-0"



2 MECHANICAL - THIRD FLOOR - PIPING DEMOLITION PLAN - MNU

1/8"=1'-0"



100% BID SET	8/9/2021
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Bancroft Project No. 18-121

Stamp: REGISTERED PROFESSIONAL ENGINEER RAED HAMID PE-28170 DATE 08-09-2021 NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Approved: Project Director

Drawing Title: MECHANICAL- DEMO PLANS - MNU

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Project Number: 437-21-170

Building Number: 1, 46, 9

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/21 | Checked: DGG | Drawn: IL

Drawing Number: MH-05

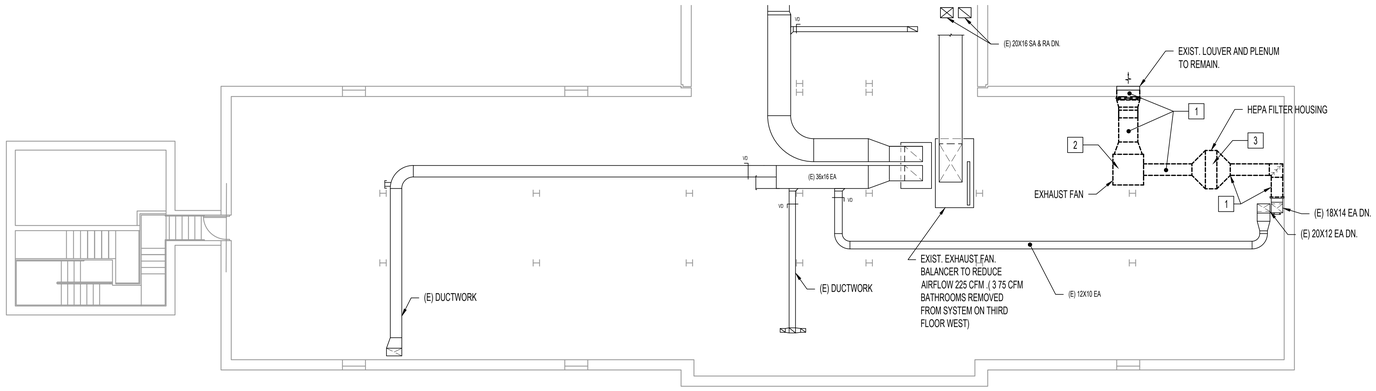
VA FORM 08-6231

MECHANICAL DEMOLITION GENERAL NOTES

A. ANY DUCTWORK THAT IS EXISTING TO REMAIN, WHETHER OR NOT SHOWN ON THESE DRAWINGS, THAT IS CRUSHED OR DAMAGED IN ITS CURRENT CONDITION OR AS A RESULT OF CONSTRUCTION, SHALL BE REPLACED WITH NEW.

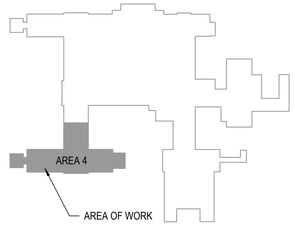
X MECHANICAL DEMOLITION KEY NOTES

1. REMOVE EXISTING EXHAUST DUCTWORK AND ASSOCIATED HANGERS, DAMPERS AND SUPPORTS TO POINT SHOWN AND AT LOUVER PLENUM TO SUPPORTS FROM POINT SHOWN TO LOUVER PLENUM. LOUVER PLENUM TO REMAIN.
2. REMOVE EXISTING SINGLE WHEEL UTILITY SET EXHAUST FAN AND ASSOCIATED SUPPORTS , FLEX CONNECTS, CONTROLS, PADS ETC. IN ITS ENTIRETY.
3. REMOVE EXISTING EXISTING HEPA FILTER CABINET, SUPPORTS STATIC PRESSURE SENSORS AND CONTROLS.



NORTH

1 MECHANICAL - ATTIC LEVEL - DEMOLITION PLAN - MNU
1/8"=1'-0"



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Revisions:	Date:

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Stamp

REGISTERED PROFESSIONAL ENGINEER
RAED HAMID
PE-28170
DATE 08-09-2021
NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: MECHANICAL - ATTIC DEMOLITION PLAN - MNU

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

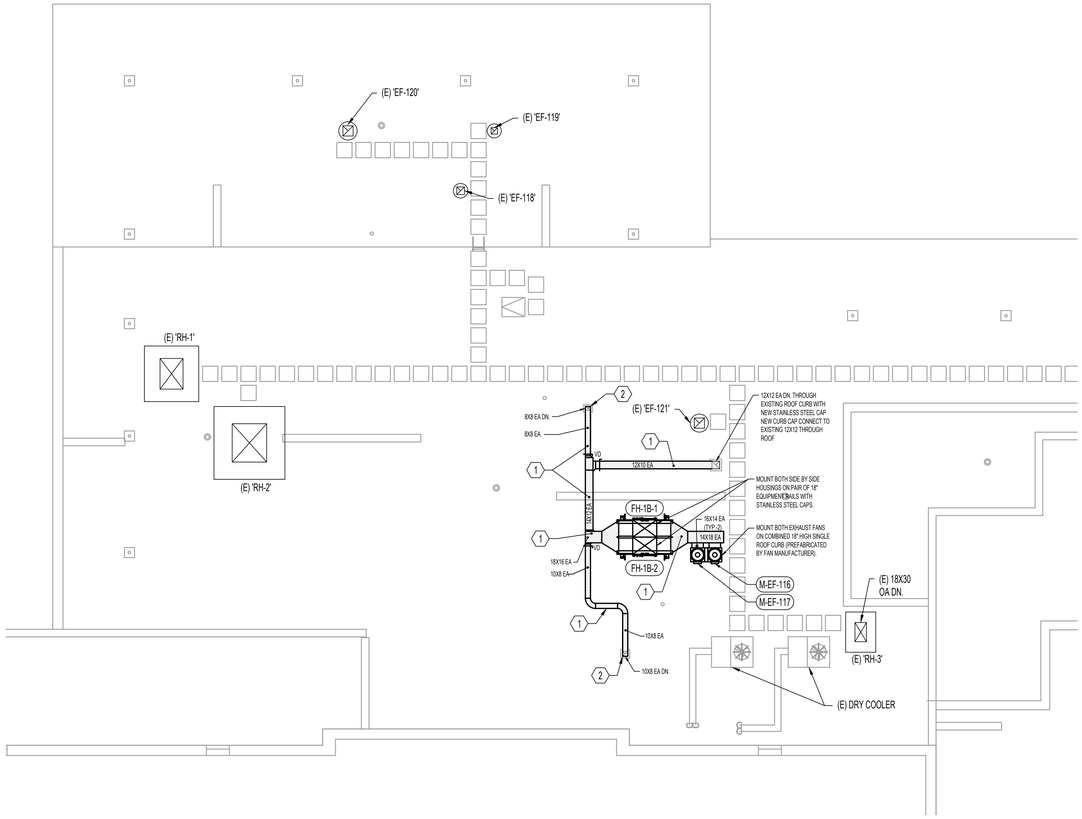
Issue Date: 8/9/21 | Checked: DGG | Drawn: IL

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: MH-06

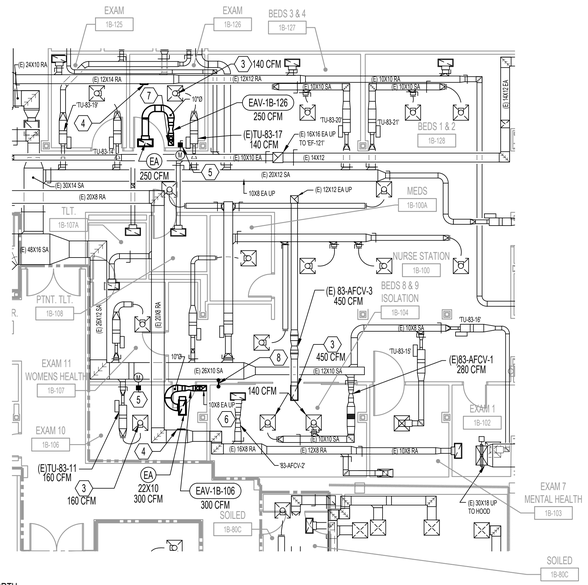
VA FORM 08-6231



NORTH

2 MECHANICAL - ROOF PLAN - ED

1/8"=1'-0"



NORTH

1 MECHANICAL - FIRST FLOOR - VENTILATION PLAN - ED

1/8"=1'-0"

MECHANICAL GENERAL NOTES

A. CLEAN AND SEAL ALL EXISTING DUCTWORK THAT WILL BE REUSED.

B. PROVIDE BALANCING DAMPER AT ALL SUPPLY DIFFUSER AND RETURN/EXHAUST GRILLES WHETHER OR NOT SHOWN ON DRAWINGS.

C. COORDINATE CEILING MOUNTED GRILLES AND DIFFUSERS WITH SPRINKLER HEADS, LIGHTING FIXTURES AND ALL CEILING MOUNTED DEVICES. REFER TO ARCHITECTURAL CEILING GRID DRAWINGS FOR LOCATIONS.

D. CEILING ACCESS SHALL BE PROVIDED FOR ALL HVAC EQUIPMENT AND COMPONENTS LOCATED ABOVE THE CEILING THAT REQUIRE OPERATING, CLEANING, SERVICING, MAINTENANCE, AND CALIBRATION.

E. DURING CONSTRUCTION, PROVIDE TEMPORARY CLOSURES ON ALL SUPPLY AND RETURN AIR DUCT OPENINGS BY SEALING WITH A DISPOSABLE POLYETHYLENE SHEETING TO PREVENT CONSTRUCTION DUST FROM ENTERING DUCTWORK SYSTEM OR AIR TERMINAL UNITS.

F. INSTALL EXHAUST AIR VALVES PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE ALL NECESSARY MAINTENANCE AND SERVICE ACCESS FOR THE CONTROL BOX AND ACTUATOR PER MANUFACTURER'S RECOMMENDATIONS. MOUNT VALVES 12" ABOVE CEILING WITH CONTROL PANEL/ACTUATOR FACING DOWN.

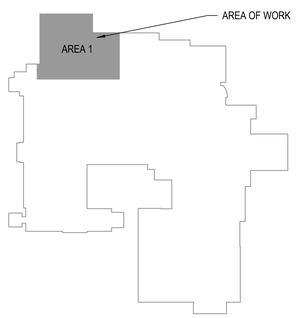
G. VAV TERMINAL UNIT LOCATIONS SHALL BE MARKED ON THE CEILING GRID WHERE THE VAV IS LOCATED.

H. CONTRACTOR SHALL REPAIR AND/OR REPLACE ALL INSULATION AT EXISTING SHEET METAL DUCTWORK WHICH BECOMES DAMAGED DURING CONSTRUCTION ACTIVITIES AND SHALL REPAIR OR REPLACE ANY INSULATION AT NEW AND OLD DUCT CONNECTIONS AND ANY MISSING OR DAMAGED INSULATION ON REUSED OR EXISTING DUCTWORK.

I. EXISTING TEMPERATURE CONTROLS SERVING HEATING TERMINALS, VAV BOXES, AIR FLOW CONTROL VALVES AND REHEAT COILS IN EXISTING ISOLATION ROOMS, ANTE ROOMS OR NEGATIVE ROOMS SHALL REMAIN. CONTROLS SHALL BE ALTERED WITH PROGRAMING AND/OR DEVICES TO PROVIDE INTENT OF SEQUENCE OF OPERATIONS AND REPLACEMENT OF EXISTING FANS TO MAINTAIN NEGATIVE ENVIRONMENT.

(X) MECHANICAL KEY NOTES

1. ALL EXPOSED ROOF DUCTWORK TO BE STAINLESS STEEL. ALL EXPOSED ROOF MOUNTED DUCTWORK TO BE INSULATED. PER SPECIFICATION 230711 FOR EXPOSED ROOF MOUNTED DUCTWORK AS IT APPLIES TO RETURN DUCTWORK APPLICATIONS.
2. NEW EXHAUST DUCT ELBOW DN. THROUGH NEW ROOF CURB.
3. BALANCE EXISTING GRILLE / DIFFUSER TO AIRFLOW RATE INDICATED.
4. CAP EXISTING DUCT AT THIS LOCATION (REFER TO DEMOLITION DRAWING MH-02).
5. NEW VISUAL DIGITAL ROOM DIFFERENTIAL PRESSURE MONITOR SERVING THIS ROOM.
6. EXISTING RETURN AIR 83-AFCV-2 IN ROOM IN ROOM 1B-04 SHALL REMAIN CLOSED AT ALL TIMES DURING FAN OPERATION AS PER EXISTING ORIGINAL DESIGN SEQUENCE.
7. 8X8 EXHAUST AIR DUCT UP THRU ROOF.
8. EXISTING VISUAL DIGITAL ROOM DIFFERENTIAL PRESSURE MONITOR TO REMAIN.



100% BID SET	8/9/2021
95% CONSTRUCTION DOCUMENTS	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

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Bancroft Project No. 18-121

Stamp

REGISTERED PROFESSIONAL ENGINEER
RAED HAMID
PE-28170
DATE 08-09-2021
NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: MECHANICAL - ROOF & FLOOR PLANS - ED

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

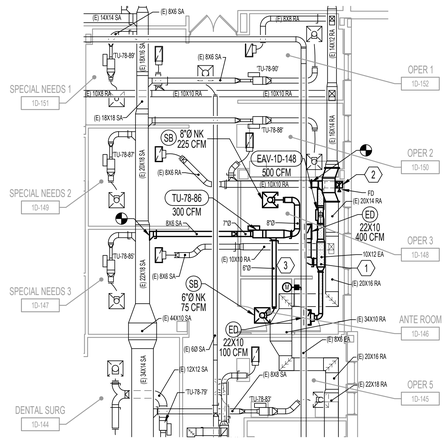
Issue Date: 8/9/21 | Checked: DGG | Drawn: IL

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: MH-07

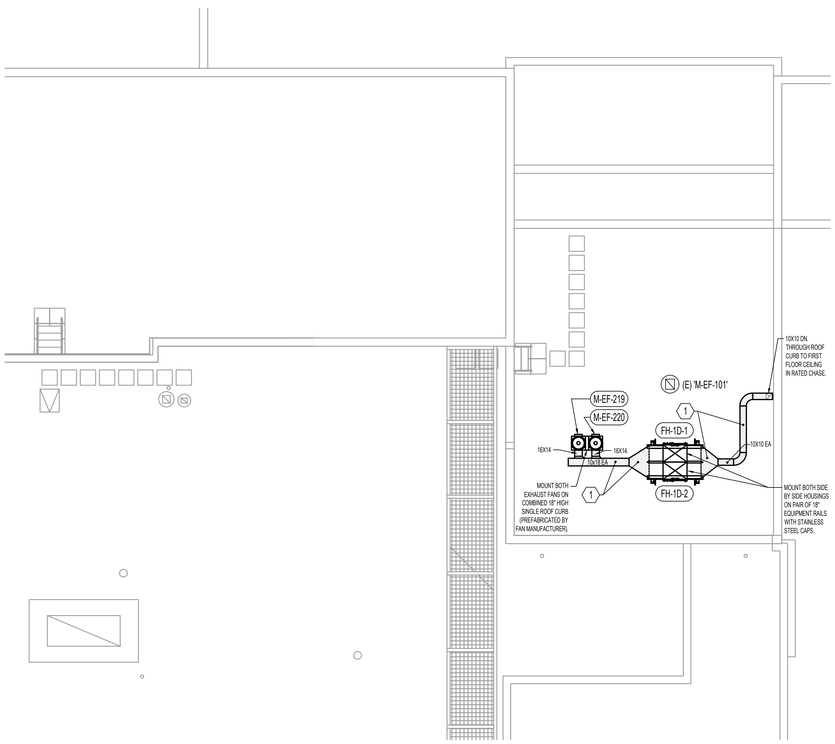
VA FORM 08-6231



NORTH

1 MECHANICAL - FIRST FLOOR - VENTILATION PLAN - DENTAL

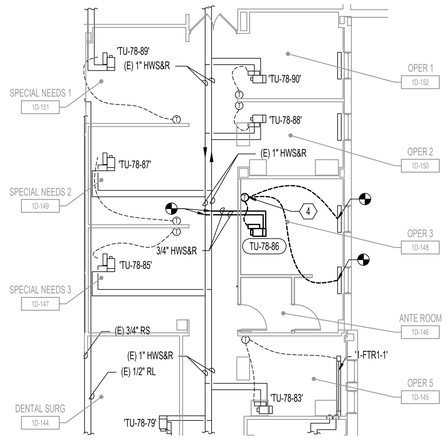
1/8"=1'-0"



NORTH

3 MECHANICAL - ROOF PLAN - DENTAL

1/8"=1'-0"



NORTH

2 MECHANICAL - FIRST FLOOR - PIPING PLAN - DENTAL

1/8"=1'-0"

MECHANICAL GENERAL NOTES

A. CLEAN AND SEAL ALL EXISTING DUCTWORK THAT WILL BE REUSED.

B. PROVIDE BALANCING DAMPER AT ALL BRANCHES FROM MAIN DUCT SERVING SUPPLY DIFFUSERS AND RETURN / EXHAUST GRILLES WHETHER OR NOT SHOWN ON DRAWINGS.

C. COORDINATE CEILING MOUNTED GRILLES AND DIFFUSERS WITH SPRINKLER HEADS, LIGHTING FIXTURES AND ALL CEILING MOUNTED DEVICES. REFER TO ARCHITECTURAL CEILING GRID DRAWINGS FOR LOCATIONS.

D. CEILING ACCESS SHALL BE PROVIDED FOR ALL HVAC EQUIPMENT AND COMPONENTS LOCATED ABOVE THE CEILING THAT REQUIRE OPERATING, CLEANING, SERVICING, MAINTENANCE, AND CALIBRATION.

E. DURING CONSTRUCTION, PROVIDE TEMPORARY CLOSURES ON ALL SUPPLY AND RETURN AIR DUCT OPENINGS BY SEALING WITH A DISPOSABLE POLYETHYLENE SHEETING TO PREVENT CONSTRUCTION DUST FROM ENTERING DUCTWORK SYSTEM OR AIR TERMINAL UNITS.

F. ALL NEW EXHAUST DUCTWORK SERVING THE ISOLATION ROOMS, ANTE ROOMS AND ISOLATION ROOM, (SHOWN HATCHED) SHALL BE CONSTRUCTED OF MIN. 18 GAGE ALL WELDED STAINLESS STEEL. REFER TO SPECIFICATIONS SECTION 233100.

G. CLEARLY LABEL ALL EXHAUST DUCTWORK SERVING ISOLATION ROOM SUITES AS "COMMUNICABLE DISEASE CONTAMINATED AIR".

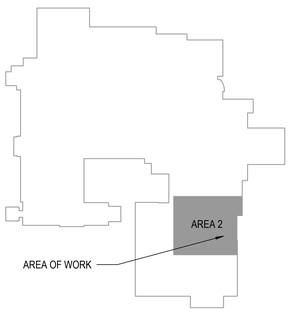
H. INSTALL EXHAUST AIR VALVES PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE ALL NECESSARY MAINTENANCE AND SERVICE ACCESS FOR THE CONTROL BOX AND ACTUATOR PER MANUFACTURER'S RECOMMENDATIONS. MOUNT VALVES 12" ABOVE CEILING WITH CONTROL PANEL/ACTUATOR FACING DOWN.

I. VAV TERMINAL UNIT LOCATIONS SHALL BE MARKED ON THE CEILING GRID WHERE THE VAV IS LOCATED.

J. CONTRACTOR SHALL REPAIR AND/OR REPLACE ALL INSULATION AT EXISTING SHEET METAL DUCTWORK WHICH BECOMES DAMAGED DURING CONSTRUCTION ACTIVITIES AND SHALL REPAIR OR REPLACE ANY INSULATION AT NEW AND OLD DUCT CONNECTIONS AND ANY MISSING OR DAMAGED INSULATION ON REUSED OR EXISTING DUCTWORK.

(X) MECHANICAL KEY NOTES

1. ALL EXPOSED ROOF DUCTWORK TO BE STAINLESS STEEL. ALL EXPOSED ROOF MOUNTED DUCTWORK TO BE INSULATED. PER SPECIFICATION 230711 FOR EXPOSED ROOF MOUNTED DUCTWORK AS IT APPLIES TO RETURN DUCTWORK APPLICATIONS.
2. 10X10 UP THROUGH SECOND FLOOR CHASE TO ROOF.
3. NEW VISUAL DIGITAL ROOM DIFFERENTIAL PRESSURE MONITOR IN THIS ROOM.
4. NEW THERMOSTAT SERVING 'TU-78-86'. COMBINE EXISTING PERIMETER HEATING CONTROL VALVES TO CONTROLS. FOR SEQUENCE OF OPERATION SEE DRAWING MH-17.



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Bancroft Project No. 18-121

Stamp

REGISTERED PROFESSIONAL ENGINEER
RAED HAMID
PE-28170
DATE 08-09-2021
NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: MECHANICAL - ROOF & FLOOR PLANS - DENTAL

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/21 | Checked: DGG | Drawn: IL

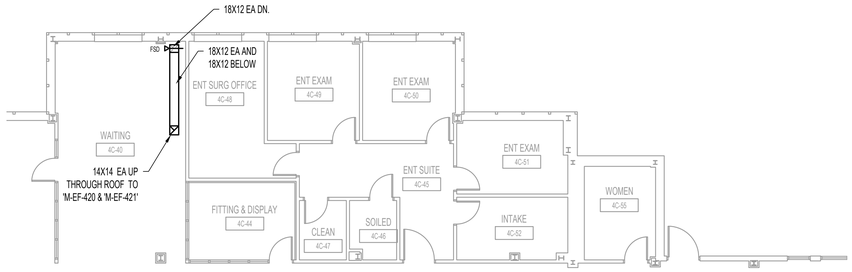
Project Number: 437-21-170

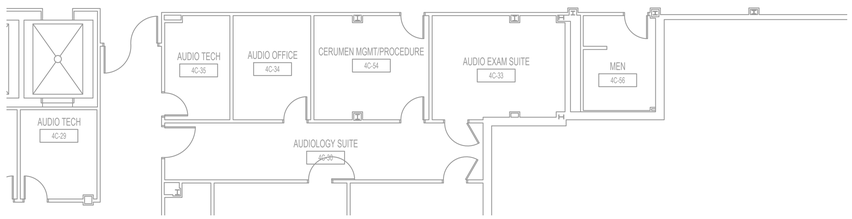
Building Number: 1, 46, 9

Drawing Number: MH-08

50 OF 76

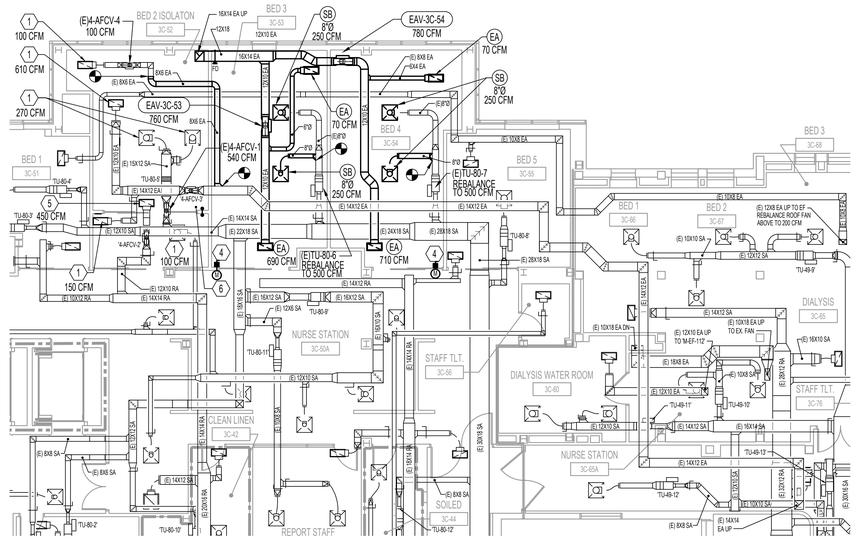
VA FORM 08-6231





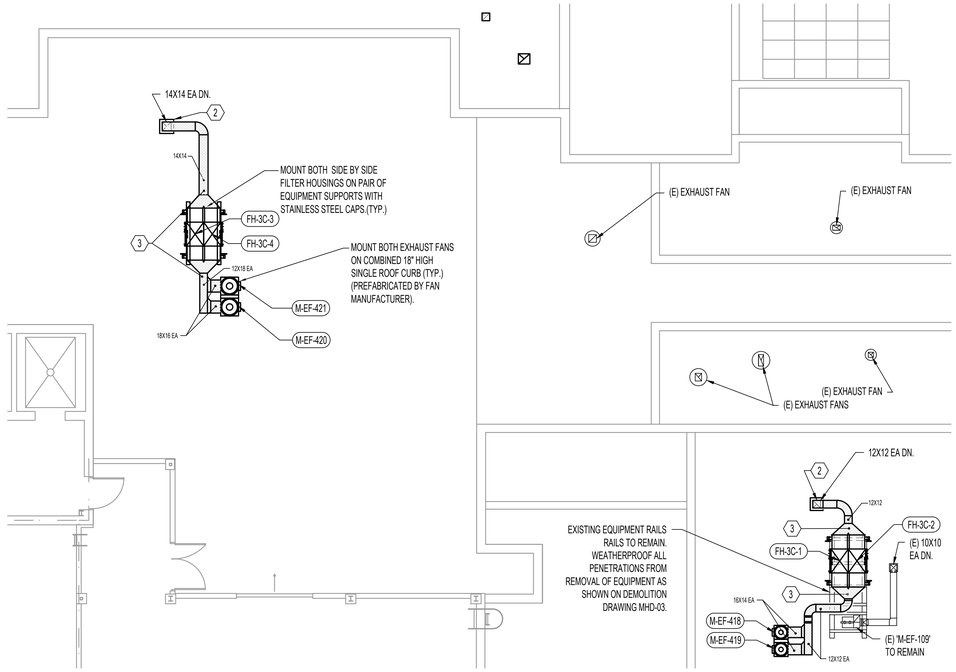
NORTH

3 MECHANICAL - FOURTH FLOOR - VENTILATION PLAN - ICU
1/8"=1'-0"



NORTH

1 MECHANICAL - THIRD FLOOR - VENTILATION PLAN - ICU
1/8"=1'-0"



NORTH

2 MECHANICAL - ROOF PLAN - ICU
1/8"=1'-0"

MECHANICAL GENERAL NOTES

A. CLEAN AND SEAL ALL EXISTING DUCTWORK THAT WILL BE REUSED.

B. PROVIDE BALANCING DAMPER AT ALL SUPPLY DIFFUSER AND RETURN/EXHAUST GRILLES BRANCHES FROM MAIN DUCT WHETHER OR NOT SHOWN ON DRAWINGS.

C. COORDINATE CEILING MOUNTED GRILLES AND DIFFUSERS WITH SPRINKLER HEADS, LIGHTING FIXTURES AND ALL CEILING MOUNTED DEVICES. REFER TO ARCHITECTURAL CEILING GRID DRAWINGS FOR LOCATIONS.

D. CEILING ACCESS SHALL BE PROVIDED FOR ALL HVAC EQUIPMENT AND COMPONENTS LOCATED ABOVE THE CEILING THAT REQUIRE OPERATING, CLEANING, SERVICING, MAINTENANCE, AND CALIBRATION.

E. DURING CONSTRUCTION, PROVIDE TEMPORARY CLOSURES ON ALL SUPPLY AND RETURN AIR DUCT OPENINGS BY SEALING WITH A DISPOSABLE POLYETHYLENE SHEETING TO PREVENT CONSTRUCTION DUST FROM ENTERING DUCTWORK SYSTEM OR AIR TERMINAL UNITS.

F. ALL NEW EXHAUST DUCTWORK SERVING THE ISOLATION ROOMS, ANTE ROOMS AND ISOLATION ROOM BATHROOMS, (SHOWN HATCHED) SHALL BE CONSTRUCTED OF MIN. 18 GAGE ALL WELDED STAINLESS STEEL. REFER TO SPECIFICATIONS SECTION 233100.

G. CLEARLY LABEL ALL EXHAUST DUCTWORK SERVING ISOLATION ROOM SUITES AS "COMMUNICABLE DISEASE CONTAMINATED AIR" EVERY 50 FEET.

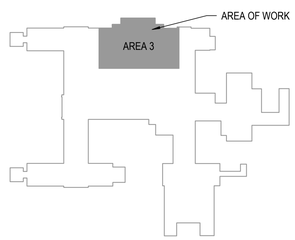
H. INSTALL EXHAUST AIR VALVES PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE ALL NECESSARY MAINTENANCE AND SERVICE ACCESS FOR THE CONTROL BOX AND ACTUATOR PER MANUFACTURER'S RECOMMENDATIONS. MOUNT VALVES 12" ABOVE CEILING WITH CONTROL PANEL/ACTUATOR FACING DOWN.

I. VAV TERMINAL UNIT LOCATIONS SHALL BE MARKED ON THE CEILING GRID WHERE THE VAV IS LOCATED.

J. CONTRACTOR SHALL REPAIR AND/OR REPLACE ALL INSULATION AT EXISTING SHEET METAL DUCTWORK WHICH BECOMES DAMAGED DURING CONSTRUCTION ACTIVITIES AND SHALL REPAIR OR REPLACE ANY INSULATION AT NEW AND OLD DUCT CONNECTIONS AND ANY MISSING OR DAMAGED INSULATION ON REUSED OR EXISTING DUCTWORK.

(X) MECHANICAL KEY NOTES

1. BALANCE EXISTING GRILLE / DIFFUSER TO AIRFLOW RATE INDICATED.
2. EXHAUST ELBOW DN. THROUGH NEW ROOF CURB.
3. ALL EXPOSED ROOF DUCTWORK TO BE STAINLESS STEEL. ALL EXPOSED ROOF MOUNTED DUCTWORK TO BE INSULATED. PER SPECIFICATION 230711 FOR EXPOSED ROOF MOUNTED DUCTWORK AS IT APPLIES TO RETURN DUCTWORK APPLICATIONS.
4. NEW VISUAL DIGITAL ROOM DIFFERENTIAL PRESSURE MONITOR TO SERVE THIS ROOM.
5. EXISTING RETURN GRILLE TO REMAIN AS IS WITH THE ORIGINAL CONTROLS TO REMAIN CLOSED DURING ISOLATION MODE OPERATION PER ORIGINAL CONTROL SEQUENCE.
6. EXISTING VISUAL DIGITAL ROOM DIFFERENTIAL PRESSURE MONITOR TO SERVE THIS ROOM.
7. MOUNT NEW SUPPORTS AND FILTER HOUSING UNITS TO EXISTING ROOF RAILS. PROVIDE ADDITIONAL (3) 5' LONG 4" STAINLESS STEEL CHANNELS TO SECURE FILTER HOUSING TO EXISTING STRUCTURE.



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35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

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ARCHITECT/ENGINEER OF RECORD

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Bancroft Project No. 18-121

Stamp: REGISTERED PROFESSIONAL ENGINEER — RAED HAMID, PE-28170, DATE 08-09-2021, NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: MECHANICAL - ROOF & FLOOR PLANS - ICU

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/21 | Checked: DGG | Drawn: IL

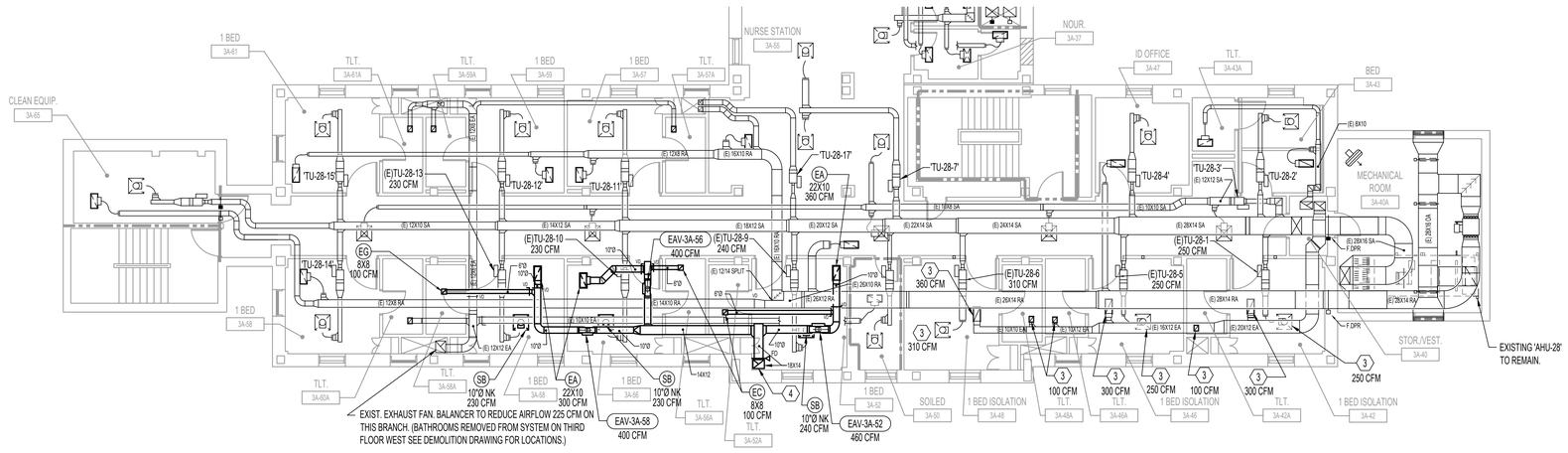
Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: MH-09

51 OF 76

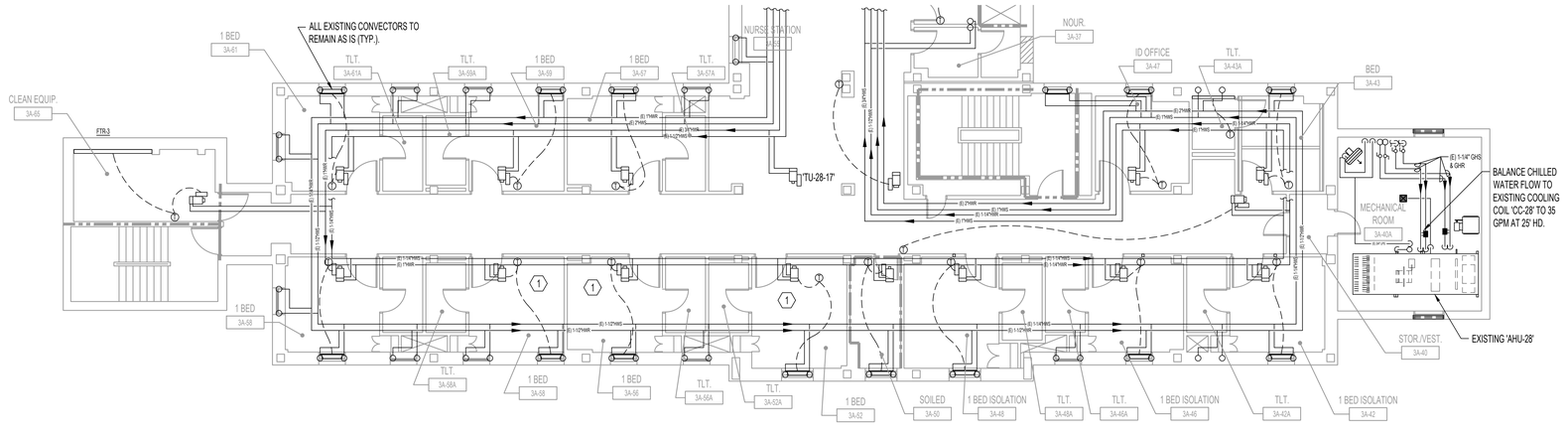
VA FORM 08-6231



NORTH

1 MECHANICAL - THIRD FLOOR - VENTILATION PLAN - MNU

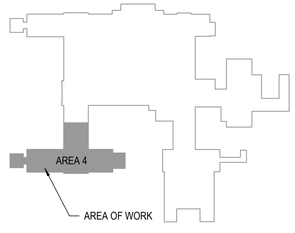
1/8"=1'-0"



NORTH

2 MECHANICAL - THIRD FLOOR - PIPING PLAN - MNU

1/8"=1'-0"



MECHANICAL GENERAL NOTES

A. CLEAN AND SEAL ALL EXISTING DUCTWORK THAT WILL BE REUSED.

B. PROVIDE BALANCING DAMPER AT ALL SUPPLY DIFFUSER AND RETURN/EXHAUST GRILLES WHETHER OR NOT SHOWN ON DRAWINGS.

C. COORDINATE CEILING MOUNTED GRILLES AND DIFFUSERS WITH SPRINKLER HEADS, LIGHTING FIXTURES AND ALL CEILING MOUNTED DEVICES. REFER TO ARCHITECTURAL CEILING GRID DRAWINGS FOR LOCATIONS.

D. CEILING ACCESS SHALL BE PROVIDED FOR ALL HVAC EQUIPMENT AND COMPONENTS LOCATED ABOVE THE CEILING THAT REQUIRE OPERATING, CLEANING, SERVICING, MAINTENANCE, AND CALIBRATION.

E. DURING CONSTRUCTION, PROVIDE TEMPORARY CLOSURES ON ALL SUPPLY AND RETURN AIR DUCT OPENINGS BY SEALING WITH A DISPOSABLE POLYETHYLENE SHEETING TO PREVENT CONSTRUCTION DUST FROM ENTERING DUCTWORK SYSTEM OR AIR TERMINAL UNITS.

F. ALL NEW EXHAUST DUCTWORK SERVING THE ISOLATION ROOMS, ANTE ROOMS AND ISOLATION ROOM BATHROOMS, (SHOWN HATCHED) SHALL BE CONSTRUCTED OF MIN. 16 GAGE ALL WELDED STAINLESS STEEL. REFER TO SPECIFICATIONS SECTION 233100.

G. CLEARLY LABEL ALL EXHAUST DUCTWORK SERVING ISOLATION ROOM SUITES AS "COMMUNICABLE DISEASE CONTAMINATED AIR" EVERY 50 FEET.

H. INSTALL EXHAUST AIR VALVES PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE ALL NECESSARY MAINTENANCE AND SERVICE ACCESS FOR THE CONTROL BOX AND ACTUATOR PER MANUFACTURER'S RECOMMENDATIONS. MOUNT VALVES 12" ABOVE CEILING WITH CONTROL PANEL/ACTUATOR FACING DOWN.

I. VAV TERMINAL UNIT LOCATIONS SHALL BE MARKED ON THE CEILING GRID WHERE THE VAV IS LOCATED.

J. CONTRACTOR SHALL REPAIR AND/OR REPLACE ALL INSULATION AT EXISTING SHEET METAL DUCTWORK WHICH BECOMES DAMAGED DURING CONSTRUCTION ACTIVITIES AND SHALL REPAIR OR REPLACE ANY INSULATION AT NEW AND OLD DUCT CONNECTIONS AND ANY MISSING OR DAMAGED INSULATION ON REUSED OR EXISTING DUCTWORK.

I. EXISTING TEMPERATURE CONTROL WIRING AND CONTROL VALVES SERVING EXISTING HEATING TERMINALS INTERLOCKED WITH EXISTING VAV BOXES IN EXISTING NEGATIVE AND PATIENT ROOMS SHALL REMAIN. CONTROLS SHALL BE ALTERED WITH PROGRAMING AND/OR DEVICES TO PROVIDE INTENT OF SEQUENCE OF OPERATIONS AND SHALL BE PART OF NEGATIVE ROOM CONTROL SEQUENCE.

(X) MECHANICAL KEY NOTES

1. NEW VISUAL DIGITAL ROOM DIFFERENTIAL PRESSURE MONITOR IN THIS ROOM.

100% BID SET	8/9/2021
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Stamp

REGISTERED PROFESSIONAL ENGINEER
RAED HAMID
PE-28170
DATE 08-09-2021
NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: MECHANICAL - FLOOR PLANS - MNU

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Project Number: 437-21-170

Building Number: 1, 46, 9

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/21 | Checked: DGG | Drawn: IL

Drawing Number: MH-10

52 OF 76

VA FORM 08-6231

MECHANICAL GENERAL NOTES

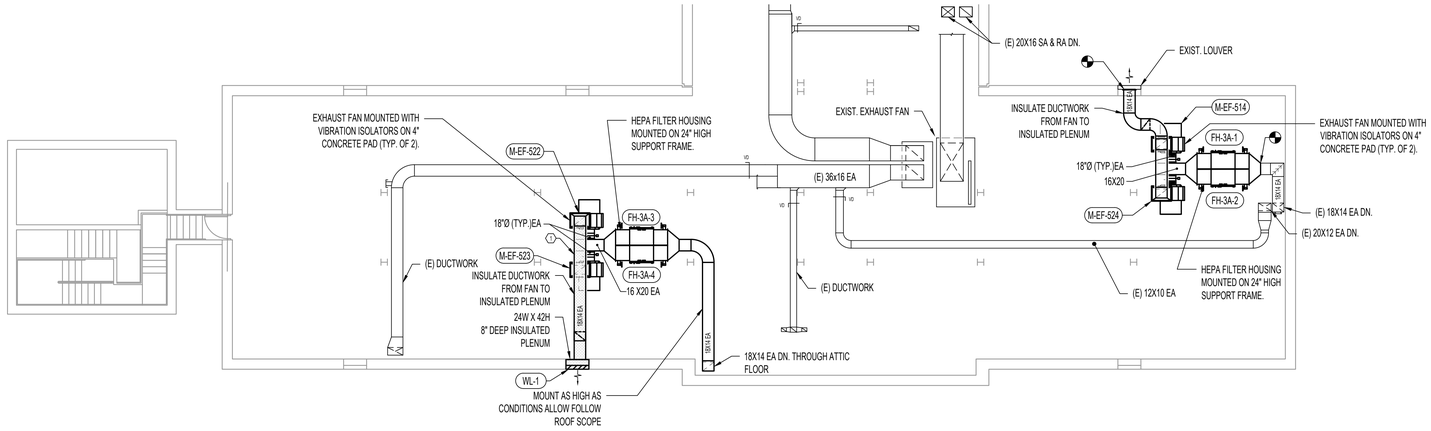
A. CEILING ACCESS SHALL BE PROVIDED FOR ALL HVAC EQUIPMENT AND COMPONENTS LOCATED ABOVE THE CEILING THAT REQUIRE OPERATING, CLEANING, SERVICING, MAINTENANCE, AND CALIBRATION.

B. DURING CONSTRUCTION, PROVIDE TEMPORARY CLOSURES ON ALL EXISTING DUCT OPENINGS BY SEALING WITH A DISPOSABLE POLYETHYLENE SHEETING TO PREVENT CONSTRUCTION DUST FROM ENTERING DUCTWORK SYSTEM OR AIR TERMINAL UNITS.

C. CONTRACTOR SHALL REPAIR AND/OR REPLACE ALL INSULATION AT EXISTING SHEET METAL DUCTWORK WHICH BECOMES DAMAGED DURING CONSTRUCTION ACTIVITIES AND SHALL REPAIR OR REPLACE ANY INSULATION AT NEW AND OLD DUCT CONNECTIONS AND ANY MISSING OR DAMAGED INSULATION ON REUSED OR EXISTING DUCTWORK.

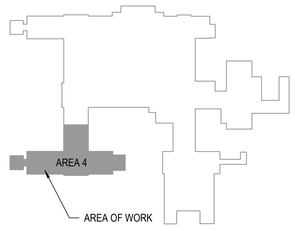
(X) MECHANICAL KEY NOTES

1. SYSTEM SERVING NEW NEGATIVE PRESSURE ROOMS (3A-52,52A,56,56A,58,& 58A) ON THE WEST SIDE OF 3RD FLOOR MNU SHALL BE INSTALLED FIRST. THE EXISTING THREE NEGATIVE ROOMS ON THE 3RD FLOOR SHALL REMAIN OPERATIONAL UNTIL WORK ON THE NEW ROOMS HAS BEEN COMPLETED.



NORTH

1 MECHANICAL - ATTIC LEVEL - FLOOR PLAN - MNU
1/8"=1'-0"



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Stamp
REGISTERED PROFESSIONAL ENGINEER
RAED HAMID
PE-20170
DATE 08-09-2021
NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: MECHANICAL - ATTIC PLAN - MNU

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/21 | Checked: DGG | Drawn: IL

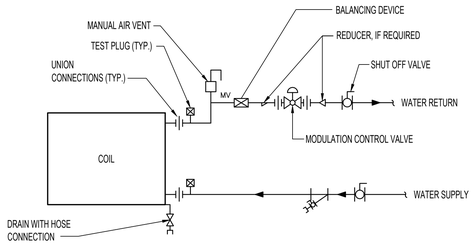
Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: MH-11

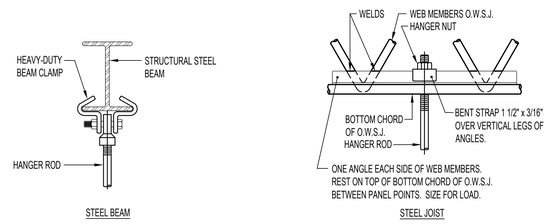
53 OF 76

VA FORM 08-6231



3 TERMINAL UNIT HOT WATER COILS - PIPING CONNECTIONS

NTS



PIPE HANGERS AND SUPPORTS

SUPPORT HORIZONTAL STEEL AND COPPER PIPING AS FOLLOWS:

NOMINAL PIPE SIZE	DISTANCE BETWEEN SUPPORTS	HANGER ROD DIAMETERS HANGER ROD DIAMETERS 3/8"
1/2"	6'	3/8"
3/4 TO 1-1/2"	6'	1/2"
2" TO 2-1/2"	10'	1/2"
3" AND 4"	12'	5/8"
6" TO 12"	14'	7/8"

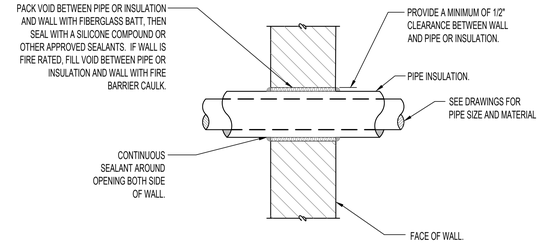
PLACE HANGER WITHIN 1 FOOT OF EACH HORIZ. ELBOW. SUPPORT HORIZ. SOIL WASTE AND STORM PIPE NEAR EACH HUB, WITH 5 FEET MAXIMUM SPACING BETWEEN HANGERS.
VERTICAL PIPING:

1. SUPPORT VERTICAL WATER PIPING AT EVERY FLOOR.
2. SUPPORT VERTICAL SOIL PIPE AT EACH FLOOR AT HUB.

WHERE SEVERAL PIPES CAN BE INSTALLED IN PARALLEL AND AT SAME ELEVATION PROVIDE MULTIPLE OR TRAPEZE HANGERS.
WHERE PRACTICAL, SUPPORT RISER PIPING INDEPENDENTLY OF CONNECTED HORIZ. PIPING.

2 PIPE HANGER DETAILS

NTS

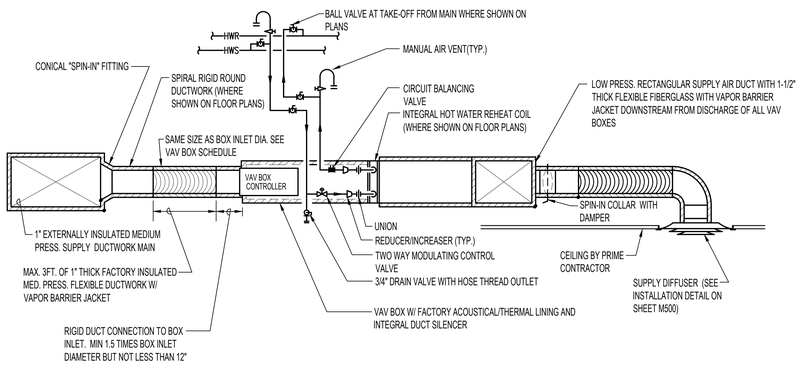


NOTES:

1. I.D. OF WALL OPENING TO BE A MIN. OF 1/2" LARGER THAN O.D. OF PIPE OR INSULATION PASSING THROUGH WALL.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF THEIR WALL OPENINGS WITH OTHER TRADES AND/OR CONTRACTORS.
3. PIPE PENETRATIONS OF SMOKE OR FIRE WALLS SHALL BE IN COMPLIANCE WITH NFPA-90A.

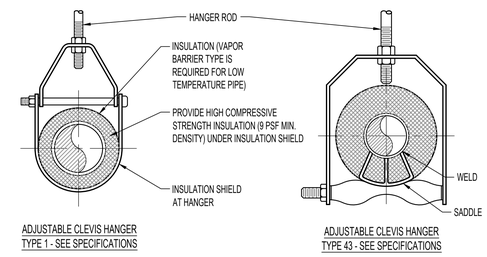
1 PIPE PENETRATION OF INTERIOR WALL DETAIL

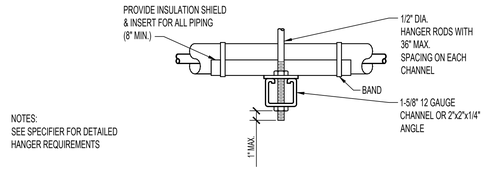
NTS



5 VAV BOX PIPING DETAIL

NTS





NOTES:
SEE SPECIFIER FOR DETAILED HANGER REQUIREMENTS

SIDE VIEW TRAPEZE HANGER FOR UP TO 1000 LB. UNIFORM LOAD

MAXIMUM PIPE/TUBING SUPPORT SPACING									
NOM. SIZE	IN.	THRU 3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
PIPE	FT.	7	7	7	9	10	11	12	14
TUBING	FT.	5 FT	6	7	8	8	9	10	12
NOTE: FOR TRAPEZE HANGER TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.									

4 PIPE HANGERS

NTS

100% BID SET	8/9/2021
95% CONSTRUCTION DOCUMENTS	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

CONSULTANT

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Bancroft Project No. 18-121

Stamp: REGISTERED PROFESSIONAL ENGINEER, RAED HAMID, PE-28170, DATE 08-09-2021, NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: MECHANICAL - DETAILS

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

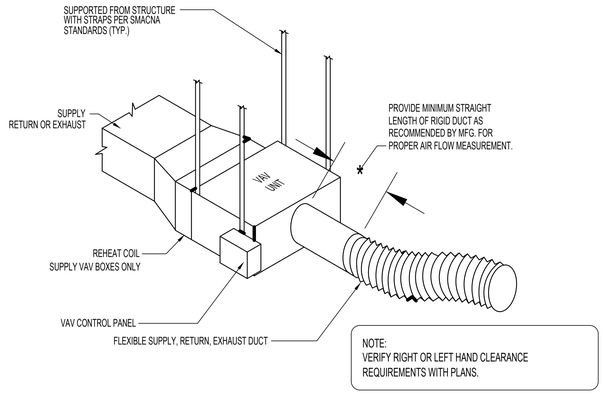
Issue Date: 8/9/21 | Checked: DGG | Drawn: IL

Project Number: 437-21-170

Building Number: 1, 46, 9

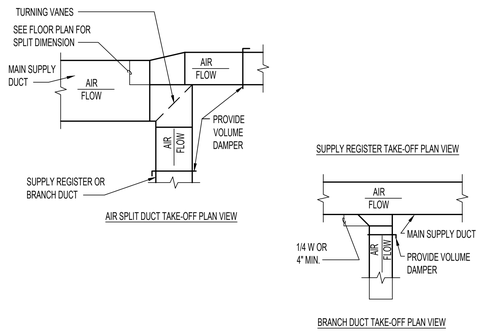
Drawing Number: MH-12

VA FORM 08-6231

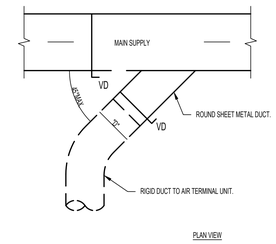


NOTE:
VERIFY RIGHT OR LEFT HAND CLEARANCE REQUIREMENTS WITH PLANS.

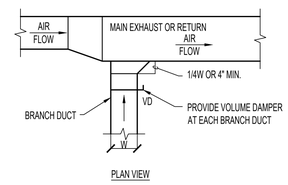
3 VAV BOX INSTALLATION
NTS



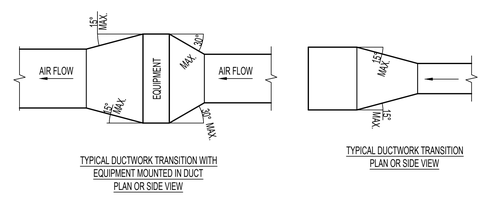
2 SUPPLY DUCTWORK TAKE-OFFS
NTS



1 SUPPLY DUCT TAKEOFF - AIR TERMINAL UNIT
NTS

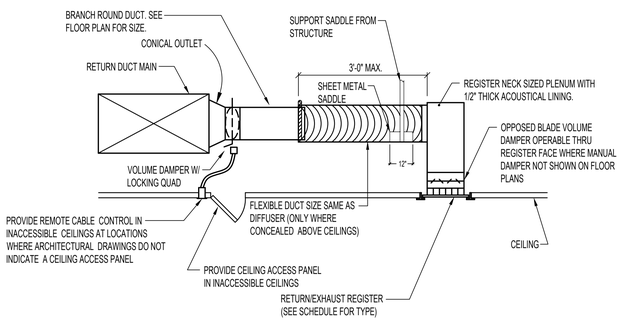


4 EXHAUST OR RETURN BRANCH DUCTWORK
NTS

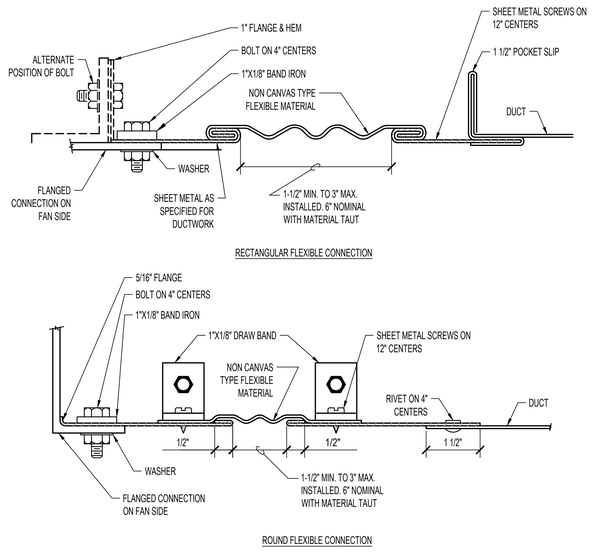


NOTE:
1. UNLESS OTHERWISE INDICATED ON PLANS, MAXIMUM ANGLES SHOWN SHALL APPLY.

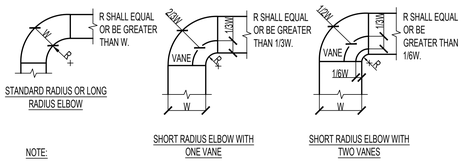
5 DUCTWORK TRANSITIONS
NTS



8 EXHAUST GRILLE INSTALLATION DETAIL
NTS



7 DUCTWORK FLEXIBLE CONNECTION DETAIL
NTS



NOTE:
1. THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND.
2. ALL STANDARD RADIUS ELBOWS CAN BE SUBSTITUTED WITH SHORT RADIUS ELBOWS. ALL SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED AND FASTENED AS RECOMMENDED BY SMACNA.

6 DUCTWORK RADIUS ELBOWS
NTS

100% BID SET	8/9/2021
95% CONSTRUCTION DOCUMENTS	7/12/2021
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Stamp
REGISTERED PROFESSIONAL ENGINEER
RAED HAMID
PE-28170
DATE 08-09-2021
NORTH DAKOTA

Office of Construction and Facilities Management

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Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

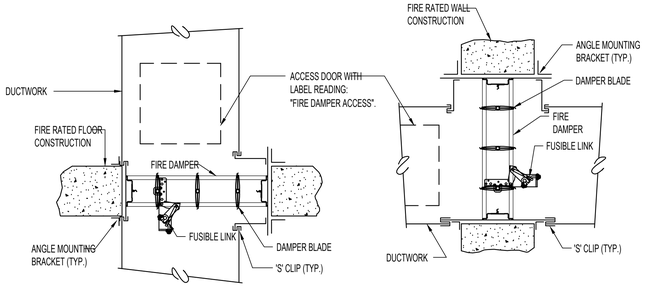
Issue Date: 8/9/21 | Checked: DGG | Drawn: IL

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: MH-13

VA FORM 08-6231



FLOOR DAMPER

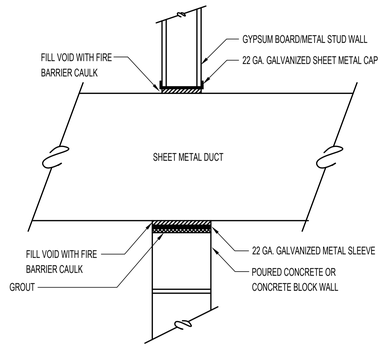
WALL DAMPER

NOTES:

1. ACCESS DOORS TO BE SIZED/LOCATED SUCH THAT RESETTING FIRE DAMPER LINK CAN BE ACCOMPLISHED VIA ACCESS DOOR.
2. MINIMUM SIZE IS 12"x12". PROVIDE MULTIPLE ACCESS DOORS AT WIDE DUCTS.
3. COORDINATE GENERAL CONTRACTOR FURNISHED/INSTALLED WALL OR CEILING ACCESS PANELS REQUIRED AT OTHERWISE INACCESSIBLE LOCATIONS.

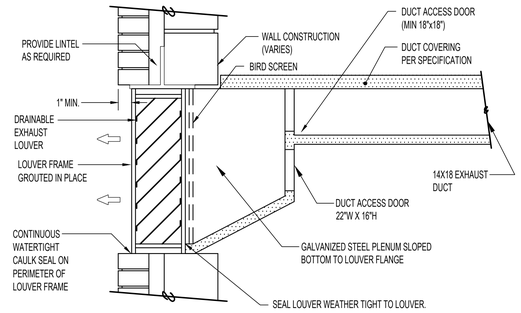
3 FIRE DAMPER

NTS



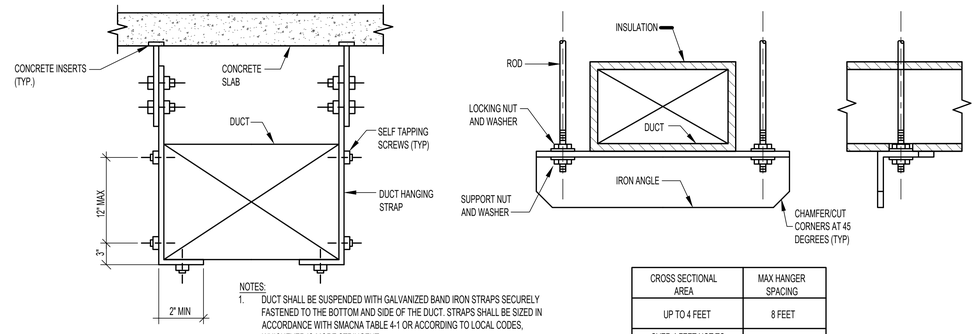
2 DUCT SLEEVE THRU INTERIOR WALL DETAIL

NTS



1 DUCT CONNECTION TO WALL LOUVER DETAIL

NTS



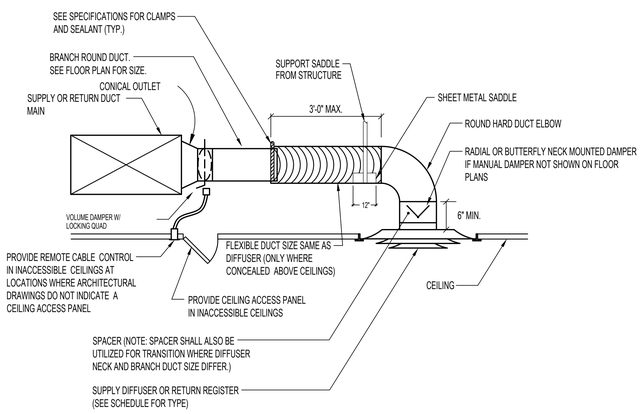
NOTES:

1. DUCT SHALL BE SUSPENDED WITH GALVANIZED BAND IRON STRAPS SECURELY FASTENED TO THE BOTTOM AND SIDE OF THE DUCT. STRAPS SHALL BE SIZED IN ACCORDANCE WITH SMACNA TABLE 4-1 OR ACCORDING TO LOCAL CODES, WHICHEVER IS MORE STRINGENT.
2. DUCTS WIDER THAN 60 INCHES SHALL BE SUPPORTED BY TRAPEZE ANGLES IN ACCORDANCE WITH SMACNA TABLE 4-1.

CROSS SECTIONAL AREA	MAX HANGER SPACING
UP TO 4 FEET	8 FEET
OVER 4 FEET NOT TO EXCEED 10 FEET	6 FEET
OVER 10 FEET	4 FEET

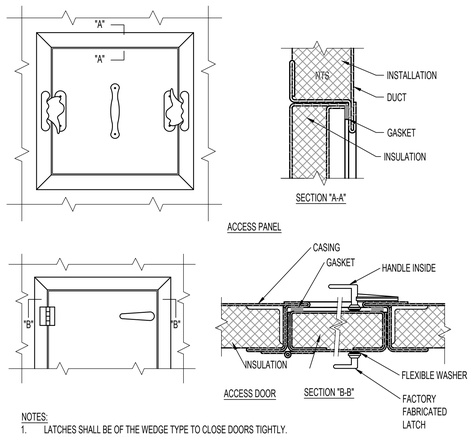
1 RECTANGULAR DUCT INSTALLATION DETAIL

NTS



6 DIFFUSER INSTALLATION DETAIL

NTS

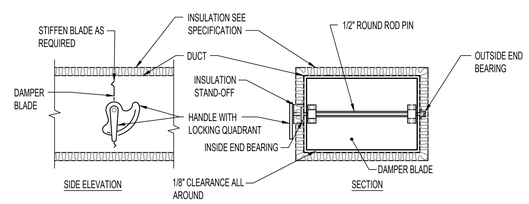


NOTES:

1. LATCHES SHALL BE OF THE WEDGE TYPE TO CLOSE DOORS TIGHTLY.
2. HINGES ON THE ACCESS DOORS SHALL HAVE NON-CORROSIVE PINS.
3. SEE SMACNA 2005, FIGURE 9-15

5 ACCESS PANEL AND DOOR DETAIL

NTS



NOTE:

1. DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
2. DETAIL SHOWS SINGLE BLADE DAMPER. DAMPER INSTALLATION SHALL BE SIMILAR FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.

4 VOLUME DAMPER DETAIL

NTS

100% BID SET	8/9/2021
95% CONSTRUCTION DOCUMENTS	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

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Stamp: REGISTERED PROFESSIONAL ENGINEER — RAED HAMID — PE-28170 — DATE 08-09-2021 — NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: MECHANICAL - DETAILS

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Project Number: 437-21-170

Building Number: 1, 46, 9

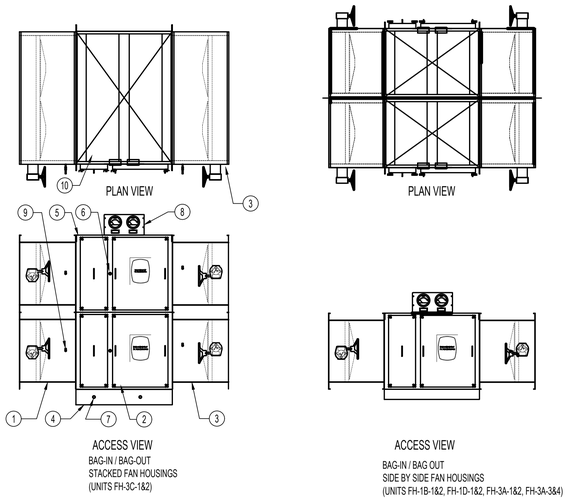
Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/21 | Checked: DGG | Drawn: IL

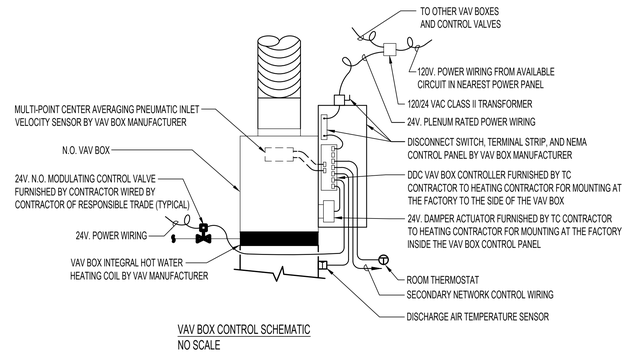
Drawing Number: MH-14

VA FORM 08-6231

SYSTEM COMPONENT SCHEDULE:	
1	BUBBLE TIGHT DAMPER
2	HOUSING SECTION
3	BUBBLE TIGHT DAMPER
4	MOUNTING BASE
5	LIFTING LUG
6	UPSTREAM SAMPLE PORT-3/8" HALF COUPLING
7	DRAIN-1/2" NPT SST BALL VALVE AND SST PLUG
8	GAGE PANEL
9	3/8" DECON PORT W/SST BALL VALVE & PLUG
10	WEATHER HOOD



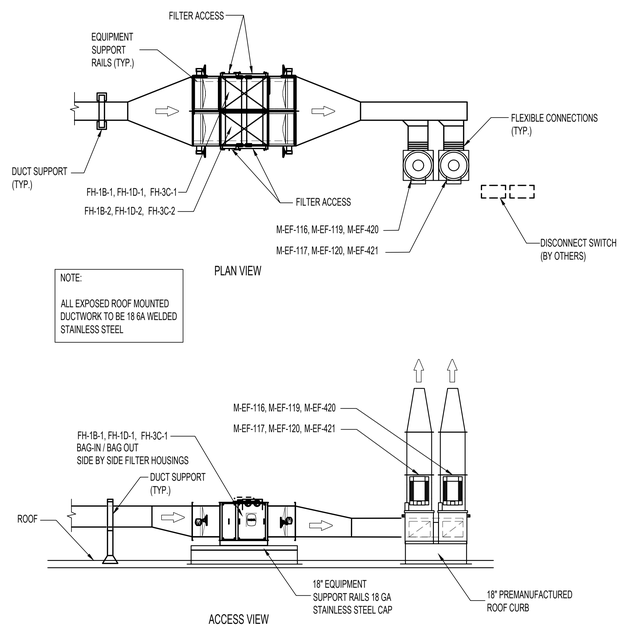
2 HEPA FILTER HOUSING DETAIL
NTS



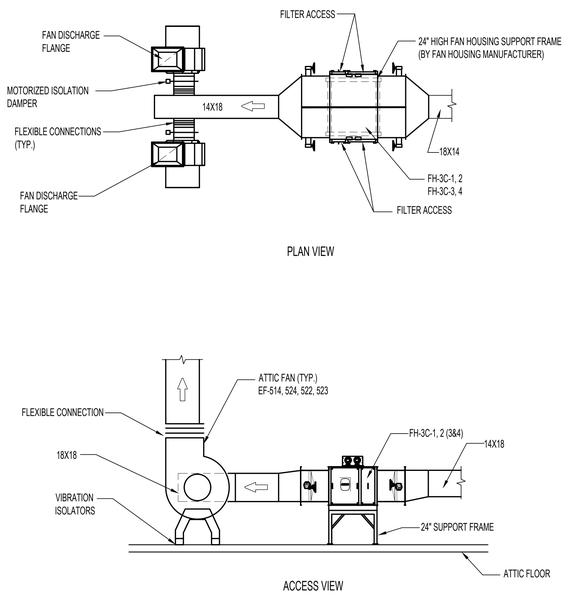
VAV BOX CONTROL SCHEMATIC
NO SCALE

NOTES:
1. ALL WORK SHOWN ABOVE SHALL BE BY THE TC CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE.
2. VAV BOX SHALL BE COMPLETE WITH BOX MANUFACTURER'S STANDARD AIRFLOW VELOCITY PRESSURE SENSOR.

1 VAV BOX CONTROL SCHEMATIC DIAGRAM
NTS



4 ROOF MOUNTED PLUME FAN AND FILTER HOUSING ARRANGEMENT
NTS



3 (MNU) NEGATIVE ROOM CENTRIGFUGAL FAN ARRANGEMENT
NTS

100% BID SET	8/9/2021
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VA FORM 08-6231

VENTURI EXHAUST VALVE SCHEDULE

SYMBOL	ROOM NOs. SERVED	BASIS OF DESIGN		TYPE	REDUNDANT FANS SERVED	FAIL POSITION	Δp in-wg	VALVE DATA				REMARKS
		MANUFACTURER	MODEL					CFM	VALVE SIZE	LENGTH (INCHES)	HEIGHT (INCHES)	
EAV-1B-126	ED-EXAM 1B-126	PHOENIX	EXV	EXHAUST CV	M-EF-116 & 117	OPEN	0.6	250	8"	27.7	14.5	1,2,3,4
EAV-1B-106	ED-EXAM 10 1B-106	PHOENIX	EXV	EXHAUST CV	M-EF-116 & 117	OPEN	0.6	300	8"	27.7	14.5	1,2,3,4
EAV-1D-148	DENTAL-OPER 3 1D-148	PHOENIX	EXV	EXHAUST CV	M-EF-219 & 220	OPEN	0.6	500	8"	27.7	14.5	1,2,3,4
EAV-3C-53	ICU-BED 3 3C-53	PHOENIX	EXV	EXHAUST CV	M-EF-420 & 421	OPEN	0.6	760	10"	27.7	14.5	1,2,3,4
EAV-3C-54	ICU-BED 4 3C-54	PHOENIX	EXV	EXHAUST CV	M-EF-420 & 421	OPEN	0.6	780	10"	27.7	14.5	1,2,3,4
EAV-3A-424648	MNU-1 BED ISOLATION 3A-42,46,48,42A,46A,48A	PHOENIX	EXV	EXHAUST CV	M-EF-514 & 524	OPEN	0.6	1,260	12"	27.7	14.5	1,2,3,4
EAV-3A-52	MNU-1 BED ISOLATION 3A-52 & 3A-52A	PHOENIX	EXV	EXHAUST CV	M-EF-523 & 524	OPEN	0.6	460	8"	27.7	14.5	1,2,3,4
EAV-3A-56	MNU-1 BED ISOLATION 3A-56 & 3A-56A	PHOENIX	EXV	EXHAUST CV	M-EF-523 & 524	OPEN	0.6	400	8"	27.7	14.5	1,2,3,4
EAV-3A-58	MNU-1 BED ISOLATION 3A-58 & 3A-58A	PHOENIX	EXV	EXHAUST CV	M-EF-523 & 524	OPEN	0.6	400	8"	27.7	14.5	1,2,3,4

NOTES:
1. OTHER ACCEPTABLE MANUFACTURERS: VA APPROVED EQUAL AS PER THE BOD EQUIVALENCY PROTOCOLS.
2. SEE DRAWINGS FOR MECHANICAL SCHEMATIC CONTROL AND SEQUENCES.
3. PROVIDE VALVE SPRING ASSEMBLY DESIGNED FOR LOW PRESSURE IN THE HORIZONTAL FLOW ORIENTATION. ALL VALVES TO BE PRESSURE INDEPENDENT WITH FACTORY SET MIN. AND MAX. CFM SETTINGS.MAX SETTING AT 20% OF LISTED CV AIR FLOW. (READILY FIELD ADJUSTABLE)
4. ALL VALVES ARE TO BE FAILSAFE. ALL INTERIOR SURFACES EXPOSED TO AIRFLOW SHALL BE STAINLESS STEEL CONSTRUCTION.

EXHAUST FAN SCHEDULE

EQUIPMENT TAG	QTY.	BASIS OF DESIGN		LOCATION	AREA SERVED	TYPE	DRIVE	TOTAL WEIGHT (2)FANS &PLENUM (LBS)	CFM	SP (IN.)	MAXIMUM dBA	FAN RPM	BHP	PREMIUM EFFICIENT MOTOR				CONTROL TYPE	NOTES
		MANUFACTURER	MODEL											HP	RPM	PHASE	VOLT		
M-EF-116 & M-EF-117	2	GREENHECK	VEKTOR-H-12	ROOF	ED - NEGATIVE ROOMS	CURB MOUNTED FUME UPBLAST -OUTDOOR	DIRECT	835	1,000	4.20	79.0	3,564	1.54	2	3500	3	208	BAS	1,2,3,4,5,6,7,8
M-EF-219& M-EF-220	2	GREENHECK	VEKTOR-H-10	ROOF	DENTAL - ISOLATION ROOM	CURB MOUNTED FUME UPBLAST -OUTDOOR	DIRECT	790	500	3.35	75.0	3,563	0.61	1	3500	3	208	BAS	1,2,3,4,5,6,7,8
M-EF-418& M-EF-419	2	GREENHECK	VEKTOR-H-12	ROOF	ICU - ISOLATION ROOM	CURB MOUNTED FUME UPBLAST -OUTDOOR	DIRECT	835	860	3.9	79.0	3,487	1.4	2	3500	3	208	BAS	1,2,3,4,5,6,7,8
M-EF-420 & M-EF-421	2	GREENHECK	VEKTOR-H-20	ROOF	ICU - NEGATIVE ROOMS	CURB MOUNTED FUME UPBLAST -OUTDOOR	DIRECT	1,450	1,530	4.2	77.0	1,912	3.26	5	1770	3	208	BAS	1,2,3,4,5,6,7,8
M-EF-514 & M-EF-524	2	GREENHECK	USF-15	EAST AREA "A"ATTIC	MNU - NEGATIVE ROOMS 3A-42,3A-46 & 3A-48	CENTRIFUGAL UTILITY SET UPBLAST - INDOOR	DIRECT	260 (EACH FAN W/ MOTOR)	1,260	4.2	95.0	2,426	1.45	2	3500	3	208	BAS	1,2,3,5,6,7,8,9
M-EF-522 & EF-523	2	GREENHECK	USF-15	WEST AREA "A"ATTIC	MNU - ISOLATION -NEGATIVE ROOMS 3A-52,3A-56 & 3A-58	CENTRIFUGAL UTILITY SET UPBLAST - INDOOR	DIRECT	260 (EACH FAN W/ MOTOR)	1,260	4.2	95.0	2,426	1.45	2	3500	3	208	BAS	1,2,3,5,6,7,8,9

NOTES:
1. OTHER ACCEPTABLE MANUFACTURERS: VA APPROVED EQUALS
2. PROVIDE WITH THE FOLLOWING OPTIONS: (2)- 24V MOTORIZED ISOLATION DAMPERS AND AIR FLOW STATION INTEGRAL TO FAN . (ALL ELECTRONIC DEVICES AND LOW VOLTAGE WIRING BY TC CONTRACTOR).
3. PROVIDE VIBRATION ISOLATION FACTORY INSTALLED FOR ALL FANS.
4. PROVIDE PRE-FABRICATED ROOF MOUNTED 18"(MIN.) TALL EQUIPMENT SUPPORT RAILS.
5. FANS SHALL HAVE LAB COAT,RA7023 COATING ON ALL FAN AND PLENUM PARTS.
6. PROVIDE NEMA 3R DISCONNECT FOR ROOF MOUNTED FANS LOCATED OUTDOORS. PROVIDE NEMA 1 FOR FANS IN ATTIC LOCATIONS. PROVIDE VFD FOR EACH FAN TO BE FIELD MOUNTED INDOORS. SEE ELECTRICL DRAWINGS FOR LOCATIONS.VFD S TO BE SIZED FOR REQUIRED LISTED MOTOR HORSEPOWER.
7. MOTORIZED DAMPER POWER SHALL BE FROM FAN CIRCUIT VIA INTEGRAL TRANSFORMER.
8. PROVIDE ALL FANS LISTED AND INCLUDED MANUFACTURERS SUPPLIED ITEMS WITH A MINIMUM OF 3 YEAR PARTS WARRANTY.
9. CENTRIFUGAL UTILITY SETS TO HAVE MOTOR COVERS AND FRAMES FOR MOUNTING ON 4"HOUSEKEEPING PAD IN ATTIC BY OTHERS.

DIFFUSER, GRILLE, AND REGISTER SCHEDULE

EQUIPMENT TAG	BASIS OF DESIGN MANUFACTURER	MODEL	TYPE	NOMINAL FACE SIZE	MATERIAL	MAX. N.C.	NOTES
A	TITUS	350F	35 DEG. DEFLECTION REGISTER	VARIES	ALUMINUM	30	1,2,3,5,7
B	TITUS	OMNI	SQUARE PANEL FACE	VARIES	STEEL	30	1,2,3,4
C	TITUS	350F	35 DEG. DEFLECTION REGISTER	VARIES	ALUMINUM	30	1,2,3,6,7
D	TITUS	350RL-SS	35 DEG. DEFLECTION REGISTER	VARIES	STAINLESS STEEL	30	1,3,5,7

NOTES:
1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS.
2. FINISH AS SELECTED BY ARCHITECT.
3. COORDINATE FRAME TYPE WITH CEILING/WALL TYPE AND ARCHITECT.
4. PROVIDE LAY-IN TYPE 3 FRAME FOR 2'X2' MODULAR LAY-IN CEILINGS.
5. PROVIDE WITH FLANGE FRAME FOR 1/2 TILE 2'-2' MODULAR LAY-IN CEILING. 316 STAINLESS STEEL CONSTRUCTION.
6. PROVIDE FLANGED FRAME WITH CONCEALED FASTENING AT ALL HARD CEILING LOCATIONS.
7. PROVIDE 12" HIGH PLENUM NECK SIZE OF SAME MATERIAL OF GRILLE.

WALL LOUVER SCHEDULE

EQUIPMENT TAG	LOCATION	SERVICE	BASIC OF DESIGN MANUFACTURER	MODEL	TYPE	SIZE (IN.)			CFM	FREE AREA VELOCITY (FPM)	P.D. (IN. W.G.)	WATER PENETRATION VELOCITY (FPM)	NOTES
						W	H	D					
LV-1	ATTIC	EXHAUST	RUSKIN	EFD	EXTRUDED ALUMINUM DRAINABLE	24	42	4	1260	650.0	0.05	950	1,2,3,4

NOTES:
1. OTHER MANUFACTURERS; VA APPROVED EQUALOTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFIECTIONS.
2. PROVIDE WITH FLANGED FRAME AND ALUMINUM BIRDSCREEN.
3. COLOR AND KYNAR FINISH TO BE SELECTED BY ARCHITECT.
4. WATER PENETRATION VELOCITY IF BASED ON 0.01 OUNCES/SQ.FT. WITH A 48"x48" LOUVER AND A TEST PERIOD OF 15 MIN.

BAG IN/BAG OUT REDUNDANT HEPA FILTER HOUSING SCHEDULE

TAG	SERVICE	LOCATION	MANUFACTURER	CFM MAX CAPACITY EACH	TYPE	% Efficiency ASHRAE STANDARDS 52.1 / 52.2	FILTER MODULE NOMINAL SIZE			FILTER MODULE ARRANGEMENT			PREFILTER, HEPA FILTER AND BAG-IN BAG-OUT HOUSING MODEL NUMBERS	MAXIMUM PRESSURE DROP (IN WG)		TOTAL HOUSING FINAL PRESSURE DROP (IN WG)	REMARKS
							HEIGHT (IN)	WIDTH (IN)	DEPTH (IN)	TOTAL NUMBER OF FH UNITS	NUMBER FILTER MODULES HIGH	NUMBER FILTER MODULES WIDE		CLEAN	DIRTY		
FH-1B-1 & FB-1B-2	M-EF-116 & M-EF-117	ROOF	AAF/FLANDERS	1,000	PREFILTER	40% / MERV-9	24	24	4	2	1	1	MEGAPLEAT M9	0.25	1.00	3	1,2,3,4,5,6,7,8,9;10,11
					HEPA	99.99%	24	24	11.5	2	1	1	MEGACEL I (eFRM MEDIA)	1.00	2.00		
					HOUSING								BF1-1H1W-4GGF-304-D3				
FH-1D-1 & FH-1D-2	M-EF-119 & M-EF-120	ROOF	AAF/FLANDERS	500	PREFILTER	40% / MERV-9	24	24	4	2	1	1	MEGAPLEAT M9	0.25	1.00	3	1,2,3,4,5,6,7,8,9;10,11
					HEPA	99.99%	24	24	11.5	2	1	1	MEGACEL I (eFRM MEDIA)	1.00	2.00		
					HOUSING								BF1-1H1W-4GGF-304-D3				
FH-3A-1 & FH-3A-2	M-EF-514 & M-EF-524	AREA "A" ATTIC EAST	AAF/FLANDERS	1,260	PREFILTER	40% / MERV-9	24	24	4	2	1	1	MEGAPLEAT M9	0.25	1.00	3	1,2,3,4,5,6,7,8,9;10,12
					HEPA	99.99%	24	24	11.5	2	1	1	MEGACEL I (eFRM MEDIA)	1.00	2.00		
					HOUSING								BF1-1H2W-4GGF-304-D3				
FH-3A-3 & FH-3A-4	M-EF-522 & M-EF-523	AREA "A" ATTIC WEST	AAF/FLANDERS	1,260	PREFILTER	40% / MERV-9	24	24	4	2	1	1	MEGAPLEAT M9	0.25	1.00	3	1,2,3,4,5,6,7,8,9;10,12
					HEPA	99.99%	24	24	11.5	2	1	1	MEGACEL I (eFRM MEDIA)	1.00	2.00		
					HOUSING								BF1-1H2W-4GGF-304-D3				
FH-3C-1 & FH-3C-2	M-EF-418 & M-EF-419	ROOF	AAF/FLANDERS	860	PREFILTER	40% / MERV-9	24	24	4	2	1	1	MEGAPLEAT M9	0.25	1.00	3	1,2,3,4,5,6,7,8,9;10,11
					HEPA	99.99%	24	24	11.5	2	1	1	MEGACEL I (eFRM MEDIA)	1.00	2.00		
					HOUSING								BF1-1H2W-4GGF-304-D3				
FH-3C-1 & FH-3C-4	M-EF-418 & M-EF-419	ROOF	AAF/FLANDERS	1,530	PREFILTER	40% / MERV-9	24	24	4	2	1	1	MEGAPLEAT M9	0.25	1.00	3	1,2,3,4,5,6,7,8,9;10,11
					HEPA	99.99%	24	24	11.5	2	1	1	MEGACEL I (eFRM MEDIA)	1.00	2.00		
					HOUSING								BF1-1H2W-4GGF-304-D3				

NOTES:
1. OTHER ACCEPTABLE MANUFACTURERS: VA APPROVED EQUAL.
2. PROVIDE STATIC PRESSURE TAPS AND WEATHER PROOF MAGNEHELIC GAGES TO READ ACROSS PREFILTER AND HEPA FILTER BANKS INDIVIDUALLY.
3. PROVIDE SEPARATE ACCESS DOORS FOR PREFILTERS AND HEPA FILTERS.
4. PROVIDE STATIC PRESSURE TAPS AND PROVIDE WEATHER COVER.
5. PROVIDE LIFTING LUGS & STAINLESS STEEL MOUNTING BASE.
6. PROVIDE UPSTREAM AEROSOL SAMPLE PORT FACTORY INSTALLED ON HOUSING, UPSTREAM INJECTION PORT AND DOWNSTREAM SAMPLE PORT SHIPPED LOOSE FOR FIELD INSTALLATION PER MANUFACTURERS RECOMMENDATIONS.
7. PROVIDE 3" DECON PORTS W/ CAPS.
8. EACH UNIT MUST HAVE A REDUNDANT TIER THAT CAN BE ISOLATED FOR DECONTAMINATION AND/OR FILTER CHANGE PROCESSES.
9. EACH TIER MUST BE SEPARATELY DUCTED AND HAVE INLET AND OUTLET BUBBLE-TIGHT DAMPERS THAT ARE EQUAL TO FLANDERS DBTM-FB-304-**.
10. HOUSING AND FILTERS MUST BE MANUFACTURED UNDER STRICT GUIDELINES THAT CONFORM TO ASME NQA-1.
11. PROVIDE PREFABRICATED 18" HIGH SUPPORT FRAME FOR INDOOR FILTER HOUSINGS.
12. SEE SPECIFICATIONS AND DETAILS FOR ADDITIONAL REQUIREMENTS

VAV BOX WITH HOT WATER REHEAT SCHEDULE

EQUIPMENT TAG	LOCATION	BASIS OF DESIGN		SYSTEM	AIRFLOW (CFM)		APPROX. DIMENSIONS (IN.)					HOT WATER COIL							NOISE LEVEL(NC)		INTEGRAL SOUND ATTENUATOR	NOTES
		MANUFACTURER	MODEL		MIN.	MAX.	INLET SIZE	OUTLET SIZE	H	L	W	HEATING CFM	CAPACITY (MBH)	EAT (°F)	LAT (°F)	EWT (°F)	GPM	ROWS	RADIATED	DISCHARGE		
TU-78-86	FIRST FLOOR 1D-148	TITUS	DESV	AHU-78	300	300	7	12x10	#N/A	#N/A	12.0	300	13.0	55	95	170	0.7	2	15	24	NO	1,2,3,4,5,6,7,8,9

NOTES:
1. OTHER ACCEPTABLE MANUFACTURERS: VA APPROVED EQUAL AS PER THE BOD EQUIVALENCY PROTOCOLS.
2. BOX SHALL BE LINED WITH 1" FIBER-FREE INSULATION.
3. SOUND LEVELS (NC) AST FULL AIR FLOW WITH 0.75" INLET STATIC PRESSURE AND 0.5" DISCHARGE PRESSURE. NOISE CRITERIA (NC) SOUND INFORMATION IS BASED ON ARI-880-98.
4. REGARDLESS OF HOT WATER COIL AIR PRESSURE DROP, AVAILABLE DISCHARGE STATIC PRESSURE SHALL NOT BE LESS THAN 0.375" AT AIR FLOW RATE SCHEDULED.
5. HOT WATER COIL WATER PRESSURE DROP SHALL NOT EXCEED 5' AND AIR PRESSURE DROP SHALL NOT EXCEED 0.3" WG.
6. TEMPERATURE CONTROLS CONTRACTOR TO FIELD MOUNT THE DDC CARD/CONTROLLER AND DAMPER ACTUATOR.
7. PROVIDE WITH ACCESS DOORS FOR REHEAT COIL AND CONTOLS CABINET.
8. COORDINATE LEFT HANDED/RIGHT HANDED COIL CONNECTIONS WITH DESIGN DRAWINGS AND EXISTING FIELD CONDITIONS
9. PROVIDE NECESSARY 24V POWER SUPPLY FOR CONTROLLER POWER. (REPLACES EXISTING VAV BOX)

100% BID SET	8/9/2021
95% CONSTRUCTION DOCUMENTS	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

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Stamp: REGISTERED PROFESSIONAL ENGINEER RAED HAMID PE-28170 DATE 08-09-2021 NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: MECHANICAL - SCHEDULES

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

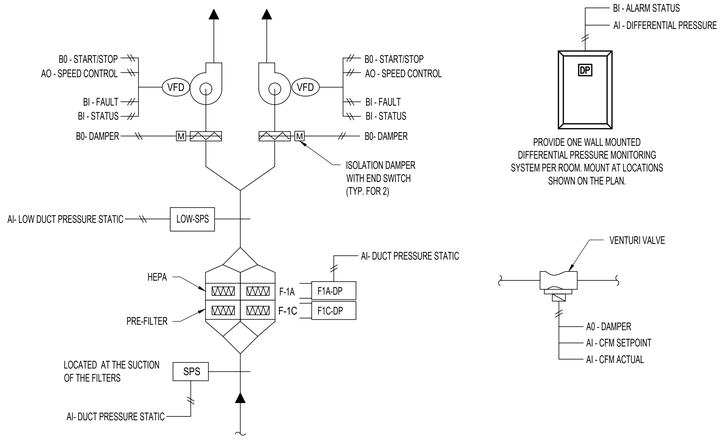
Issue Date: 8/9/21 | Checked: DGG | Drawn: IL

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: MH-16

VA FORM 08-6231



1 NEGATIVE ROOM EXHAUST FAN - ED / DENTAL / ICU / MNU

NTS

EXHAUST FANS

1. EXHAUST FAN SHALL RUN CONTINUOUSLY. EXHAUST FAN IS DESIGN AS A N+1 SYSTEM. THE SECOND FAN IS FOR REDUNDANCY PURPOSES.
2. THE CONTROLLER SHALL MEASURE THE DUCT MOUNTED STATIC PRESSURE AND MODULATE THE EXHAUST FAN VFD SPEED TO MAINTAIN SETPOINT 1.2" (ADJ.) THE EXHAUST FAN VFD SPEED SHALL NOT DROP BELOW 20%(ADJ).

   ALARMS SHALL BE PROVIDE AS FOLLOWS:
   - HIGH DUCT MOUNTED STATIC PRESSURE: IF THE MOUNTED STATIC PRESSURE IS 50%(ADJ.) GREATER THAN SETPOINT.
   - LOW DUCT STATIC PRESSURE : IF THE BUILDING STATIC PRESSURE IS 25%(ADJ.) LESS THAN SETPOINT.
   - EXHAUST FAN VFD FAULT.
3. THE EXHAUST AIR DAMPER SHALL OPEN ANYTIME THE UNIT RUNS AND SHALL CLOSE ANYTIME THE UNIT STOPS. THE EXHAUST AIR DAMPER SHALL CLOSE 30 SEC (ADJ.) AFTER THE FAN STOPS. THE FAN SHALL BE ENABLED AFTER THE DAMPER STATUS HAS BEEN PROVEN.

   ALARMS SHALL BE PROVIDE AS FOLLOWS:
   - DAMPER FAILURE: COMMAND OPEN, BUT THE STATUS IS CLOSED.
   - DAMPER IN HAND: COMMANDED CLOSED, BUT THE STATUS IS OPEN.
4. THE EXHAUST FAN SHALL OPERATE IN A LEAD/STANDBY FASHION. THE LEAD FAN SHALL RUN FIRST. ON FAILURE OF THE LEAD FAN, THE STANDBY FAN SHALL RUN AND THE LEAD FAN SHALL TURN OFF. THE BAS SYSTEM SHALL INDICATE AN ALARM UPON FAILURE. THE DESIGNATED LEAD FAN SHALL ROTATE UPON ONE OF THE FOLLOWING CONDITIONS:
   - WEEKLY
   - MONTHLY

GENERAL NOTES:

1. EACH ZONE HAS AN AIR VALVE AND CONTROLLER. AIR VALVE SHALL MODULATE OPEN AND CLOSE TO MAINTAIN NEGATIVE AIR PRESSURE -0.01" ADJ BETWEEN THE NEGATIVE ROOM AND THE CORRIDOR BY MODULATING THE EXHAUST VALVE SERVING THE SPACE. ROOMS SHALL HAVE A PERMANENTLY INSTALLED DEVICE AND/OR MECHANISM TO CONSTANTLY MONITOR THE DIFFERENTIAL AIR PRESSURE BETWEEN THE NEGATIVE ROOM AND THE CORRIDOR. A LOCAL VISUAL MEANS SHALL BE PROVIDED TO INDICATE WHENEVER NEGATIVE DIFFERENTIAL PRESSURE IS NOT MAINTAINED.

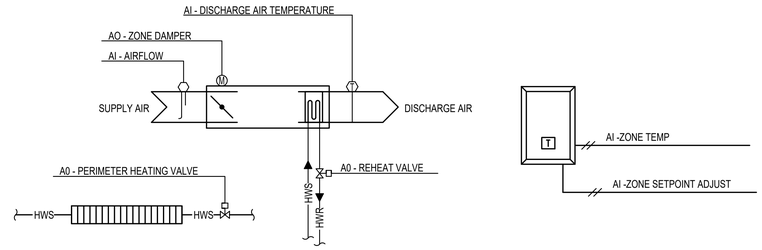
ROOM PRESSURIZATION CONTROL

1. THE CONTROLLER SHALL CONTINUOUSLY MEASURE THE ACTUAL ROOM SUPPLY AIR CFM.
2. THE CONTROLLER CALCULATES THE REQUIRED ROOM SUPPLY AIR CFM NECESSARY TO MAINTAIN THE PRE-DETERMINED FLOW TRACKING DIFFERENTIAL AIRFLOW BY SUBTRACTING THE FLOW TRACKING DIFFERENTIAL CFM SET POINT FROM THE TOTAL ROOM EXHAUST CFM.
3. THE CONTROLLER SHALL MODULATE THE ROOM SUPPLY AIR CFM TO ENSURE THAT THE FLOW TRACKING DIFFERENTIAL CFM IS ALWAYS MAINTAIN.

FILTER SYSTEM

1. THE CONTROLLER SHALL CONTINUOUSLY MONITOR THE FILTER PRESSURE DROP ACROSS EACH FILTER SECTION.

   ALARMS SHALL BE PROVIDE AS FOLLOWS:
   - PRE-FILTER DIFFERENTIAL STATIC PRESSURE EXCEEDS 1.0" W.G. (ADJ.)
   - HEPA-FILTER DIFFERENTIAL STATIC PRESSURE EXCEEDS 2.0" W.G (ADJ.)



2 VARIABLE TERMINAL AIR BOX WITH PERIMETER HEATING

NTS

SEQUENCE OF OPERATION

VARIABLE TERMINAL AIR BOX

1. GENERAL
   A. THE UNIT SHALL RUN CONTINUOUSLY AND SHALL MAINATAIN TEMPERATURE BELOW:
2. TEMPERATURE CONTROL
   A. OCCUPIED MODE: THE UNIT SHALL MAINTAIN
      a. A 75°F (ADJ) COOLING SETPOINT
      b. A 72°F (ADJ) HEATING SETPOINT

   B. THE UNIT SHALL MAINTAIN ZONE SETPOINTS BY CONTROLLING THE AIRFLOW THROUGH ONE OF THE FOLLOWING.

   C. BOX CONTROL:
      b. WHEN THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT, THE ZONE DAMPER SHALL MODULATE BETWEEN THE MINIMUM OCCUPIED AIRFLOW (ADJ) AND THE MAXIMUM COOLING AIRFLOW (ADJ) UNTIL THE ZONE IS SATISFIED.
      c. WHEN THE ZONE TEMPERATURE IS BETWEEN THE COOLING SETPOINT AND THE HEATING SETPOINT, THE ZONE DAMPER SHALL MAINTAIN THE MINIMUM ZONE AIRFLOW (ADJ).
      d. WHEN THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT, THE CONTROLLER SHALL ENABLE HEATING VALVE, MODULATE THE ZONE DAMPER, AND PERIMETER RADIATION CONTROL VALVE TO MAINTAIN HEATING SETPOINT.
3. PERIMETER HEATING COIL VALVE
   A. THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND MODULATE THE PERIMETER HEATING VALVE OPEN ON DROPPING TEMPERATURE TO MAINTAIN ITS HEATING SETPOINT.

NEGATIVE EXHAUST FAN POINTS LIST

	HARDWARE POINTS				SOFTWARE POINTS					
POINT NAME	AI	AO	BI	BO	AV	BV	SCHED	TREND	ALARM	SHOW ON GRAPHIC
EXHAUST FAN 1 VFD SPEED		X						X		X
EXHAUST FAN 1 START/STOP				X				X		X
EXHAUST FAN 1 STATUS			X					X		X
EXHAUST FAN 1 VFD FAULT			X					X		X
EXHAUST AIR DAMPER 1				X				X		X
EXHAUST FAN 2 VFD SPEED		X						X		X
EXHAUST FAN 2 START/STOP				X				X		X
EXHAUST FAN 2 STATUS			X					X		X
EXHAUST FAN 2 VFD FAULT			X					X		X
EXHAUST AIR DAMPER 2				X				X		X
EXHAUST AIR DUCT STATIC PRESSURE	X							X	X	X
EXHAUST AIR LOW DUCT STATIC PRESSURE	X							X		X
WALL MOUNTED DIFFERENTIAL PRESSURE SESNOR	X							X		X
WALL MOUNTED PRESSURE SESNOR ALARM									X	
VENTURI VALVE DAMPER		X						X		X
VENTURI VALVE SETPOINT	X									X
VENTURI VALVE AIRFLOW	X							X		X
PREFILTER STATUS	X									
PREFILTER CHANGE REQUIRED									X	X
HEPA FILTER STATUS	X							X		
HEPA CHANGE REQUIRED									X	X

VARIABLE TERMINAL AIR BOX POINTS LIST WITH PERIMETER HEATING

	HARDWARE POINTS				SOFTWARE POINTS					
POINT NAME	AI	AO	BI	BO	AV	BV	SCHED	TREND	ALARM	SHOW ON GRAPHIC
DISCHARGE AIR TEMPERATURE	X							X		X
ZONE SETPOINT ADJUST	X									X
AIRFLOW	X							X		X
ZONE TEMPERATURE	X							X		X
HOT WATER HEATING VALVE		X						X		X
PERIMETER HOT WATER HEATING VALVE		X						X		X
ZONE DAMPER		X						X		X
AIRFLOW SETPOINT					X			X		X
COOLING/HEATING SETPOINT					X			X		X
DISCHARGE AIR TEMPERATURE HEATING LIMIT					X					
HEATING/COOLING MODE						X		X		
HIGH DISCHARGE AIR TEMPERATURE									X	
HIGH ZONE TEMPERATURE									X	
LOW DISCHARGE AIR TEMPERATURE									X	
LOW ZONE TEMPERATURE									X	

100% BID SET	8/9/2021
95% CONSTRUCTION DOCUMENTS	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

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Stamp

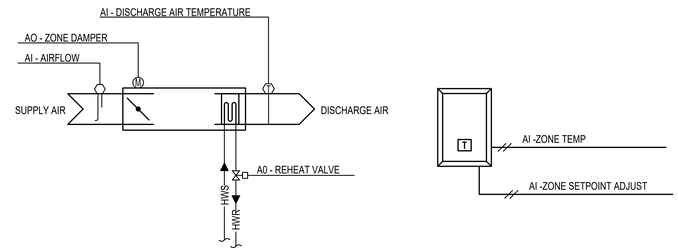
REGISTERED PROFESSIONAL ENGINEER
RAED HAMID
PE-28170
DATE 08-09-2021
NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: MECHANICAL - TEMPERATURE CONTROLS	Phase: 100% BID DOCUMENTS	Project Title: CORRECT ISOLATION ROOM ISSUES	Project Number: 437-21-170
			Building Number: 1, 46, 9
Approved: Project Director	FULLY SPRINKLERED	Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102	Drawing Number: MH-17
		Issue Date: 8/9/21 · Checked: DG · Drawn: IL	59 OF 76

VA FORM 08-6231



1 VARIABLE TERMINAL AIR BOX
NTS

SEQUENCE OF OPERATION

VARIABLE TERMINAL AIR BOX

1. GENERAL
   A. THE UNIT SHALL RUN CONTINUOUSLY AND SHALL MAINATAIN TEMPERATURE BELOW:

2. TEMPERATURE CONTROL
   A. OCCUPIED MODE: THE UNIT SHALL MAINTAIN
      a. A 75°F (ADJ) COOLING SETPOINT
      b. A 72°F (ADJ) HEATING SETPOINT

   B. THE UNIT SHALL MAINTAIN ZONE SETPOINTS BY CONTROLLING THE AIRFLOW THROUGH ONE OF THE FOLLOWING.

   C. BOX CONTROL:
      b. WHEN THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT, THE ZONE DAMPER SHALL MODULATE BETWEEN THE MINIMUM OCCUPIED AIRFLOW (ADJ) AND THE MAXIMUM COOLING AIRFLOW (ADJ) UNTIL THE ZONE IS SATISFIED.
      c. WHEN THE ZONE TEMPERATURE IS BETWEEN THE COOLING SETPOINT AND THE HEATING SETPOINT, THE ZONE DAMPER SHALL MAINTAIN THE MINIMUM ZONE AIRFLOW (ADJ).
      d. WHEN THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT, THE CONTROLLER SHALL ENABLE HEATING VALVE, MODULATE THE ZONE DAMPER, AND PERIMETER RADIATION CONTROL VALVE TO MAINTAIN HEATING SETPOINT.

VARIABLE TERMINAL AIR BOX POINTS LIST

	HARDWARE POINTS				SOFTWARE POINTS					
POINT NAME	AI	AO	BI	BO	AV	BV	SCHED	TREND	ALARM	SHOW ON GRAPHIC
DISCHARGE AIR TEMPERATURE	X							X		X
ZONE SETPOINT ADJUST	X									X
AIRFLOW	X							X		X
ZONE TEMPERATURE	X							X		X
HOT WATER HEATING VALVE		X						X		X
ZONE DAMPER		X						X		X
AIRFLOW SETPOINT					X			X		X
COOLING/HEATING SETPOINT					X			X		X
DISCHARGE AIR TEMPERATURE HEATING LIMIT					X					
HEATING/COOLING MODE						X		X		
HIGH DISCHARGE AIR TEMPERATURE									X	
HIGH ZONE TEMPERATURE									X	
LOW DISCHARGE AIR TEMPERATURE									X	
LOW ZONE TEMPERATURE									X	

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35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

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DATE 08-09-2021
NORTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: MECHANICAL - TEMPERATURE CONTROLS

Phase: 100% BID DOCUMENTS

Project Title: CORRECT ISOLATION ROOM ISSUES

Project Number: 437-21-170

Building Number: 1, 46, 9

Approved: Project Director

FULLY SPRINKLERED

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/21 | Checked: DG | Drawn: IL

Drawing Number: MH-18

VA FORM 08-6231

GENERAL SYMBOLS

	KEY NOTE INDICATOR
	DRAWING REVISION INDICATOR

CIRCUIT DESIGNATIONS

LIGHTING	
	CAPITAL LETTER INDICATES FIXTURE TYPE
NL A # a	NUMERAL INDICATES CIRCUIT NUMBER*
	SMALL LETTER INDICATES CONTROL SWTICH
POWER	NIGHT LIGHT
#	NUMERAL INDICATES CIRCUIT NUMBER*
	*SEE NOTES ON ASSOCIATED DRAWINGS FOR PANEL DESIGNATION

LINE TYPES

	NEW WORK SCOPE OF WORK
	EXISTING SCOPE OF WORK
	DEMOLITION SCOPE OF WORK

CONDUIT AND WIRING

	BRANCH CIRCUIT RUN CONCEALED
	BRANCH CIRCUIT RUN UNDER FLOOR
C	BRANCH CIRCUIT DOWN
	BRANCH CIRCUIT UP
2A-1,3,5	HOME RUN TO PANEL 2A CKTS 1,3, & 5
	FLEXIBLE CONDUIT

ELECTRICAL DEVICES

(MOUNTING HEIGHT TO CENTER LINE OF BOX UNLESS NOTED OTHERWISE)

$ $3	SINGLE-POLE, DOUBLE-POLE, 3-WAY AND 4-WAY SWITCHES (48"AFF)
S^D	LOCAL WALL DIMMER SWITCH (48" AFF)
	WALL MOUNTED OCCUPANCY SENSOR SWITCH; DUAL TECHNOLOGY (PASSIVE INFRARED/ULTRASONIC)
OS	CEILING MOUNTED OCCUPANCY/VACANCY SENSOR; DUAL TECHNOLOGY (PASSIVE INFRARED/ULTRASONIC)
	DUPLEX RECEPTACLE (18"AFF)
	EMERGENCY DUPLEX RECEPTACLE
	DOUBLE DUPLEX RECEPTACLE (18" AFF)
	EMERGENCY DOUBLE DUPLEX RECEPTACLE (18" AFF)
	DUPLEX RECEPTACLE - CEILING MOUNTED
	DOUBLE DUPLEX RECEPTACLE - CEILING MOUNTED
	SIMPLEX RECEPTACLE (18" AFF)
	DUPLEX RECEPTACLE MOUNTED 6" ABOVE COUNTER OR BACKSPLASH
GFCI	GFCI DUPLEX RECEPTACLE
GFCI/WP	GFCI DUPLEX RECEPTACLE WITH WHILE-IN-USE WEATHERPROOF COVER
FSD	FIRE SMOKE DETECTOR

ELECTRICAL LIGHTING FIXTURE SYMBOLS

	2X4 FIXTURE - RECESSED, SURFACE, OR PENDANT MOUNTED - TYPE AS SPECIFIED
	2X4 CRITICAL BRANCH FIXTURE - RECESSED, SURFACE, OR PENDANT MOUNTED - TYPE AS SPECIFIED
	2X4 LIFE SAFETY BRANCH FIXTURE - RECESSED, SURFACE, OR PENDANT MOUNTED - TYPE AS SPECIFIED
	2X2 FIXTURE - RECESSED, SURFACE, OR PENDANT MOUNTED - TYPE AS SPECIFIED
	2X2 CRITICAL BRANCH FIXTURE - RECESSED, SURFACE, OR PENDANT MOUNTED - TYPE AS SPECIFIED
	2X2 LIFE SAFETY BRANCH FIXTURE - RECESSED, SURFACE, OR PENDANT MOUNTED - TYPE AS SPECIFIED
	1X4 FIXTURE - RECESSED, SURFACE, OR PENDANT MOUNTED - TYPE AS SPECIFIED
	1X4 CRITICAL BRANCH FIXTURE - RECESSED, SURFACE, OR PENDANT MOUNTED - TYPE AS SPECIFIED
	1X4 LIFE SAFETY BRANCH FIXTURE - RECESSED, SURFACE, OR PENDANT MOUNTED - TYPE AS SPECIFIED
	SELF CONTAINED EMERGENCY LIGHTING UNIT - TYPE AS SPECIFIED
	COMBINATION EXIT SIGN & SELF CONTAINED EMERGENCY LIGHTING UNIT - TYPE AS SPECIFIED
	EXIT SIGN - CEILING MOUNTED - TYPE AS SPECIFIED
	EXIT SIGN - WALL MOUNTED - TYPE AS SPECIFIED

COMMUNICATION DEVICES

(MOUNTING HEIGHT TO CENTER LINE OF BOX UNLESS NOTED OTHERWISE)

#	DATA OUTLET (18" AFF); DOUBLE GANG BACK BOX WITH SINGLE GANG PLASTER RING WITH 1"C AND PULL STRING TO ACCESSIBLE CEILING. PROVIDE NYLON BUSHING ON END OF CONDUIT FOR PROTECTION OF WIRE. NUMERAL INDICATES NUMBER OF JACKS
#	ABOVE COUNTER DATA OUTLET (6" ABOVE COUNTER OR BACKSPLASH); DOUBLE GANG BACK BOX WITH SINGLE GANG PLASTER RING WITH 1"C AND PULL STRING TO ACCESSIBLE CEILING. PROVIDE NYLON BUSHING ON END OF CONDUIT FOR PROTECTION OF WIRE. NUMERAL INDICATES NUMBER OF JACKS
#	DATA OUTLET - FLOOR MOUNTED BOX. PROVIDE 1"C WITH PULL STING TO ACCESSIBLE CEILING. PROVIDE INSULATED NYLON BUSHING ON END OF CONDUIT FOR PROTECTION OF WIRE. NUMERAL INDICATES NUMBER OF JACKS
WP	CCTV CAMERA - FIXED; PROVIDE DOUBLE GANG BACK BOX WITH SINGLE GANG PLASTER RING. 3/4" CONDUIT WITH PULL STRING TO ACCESSIBLE CEILING; WP = WEATHERPROOF
WP	CCTV CAMERA - 360° PTZ; PROVIDE DOUBLE GANG BACK BOX WITH SINGLE GANG PLASTER RING. 3/4" CONDUIT WITH PULL STRING TO ACCESSIBLE CEILING; WP = WEATHERPROOF

POWER DISTRIBUTION

	PANELBOARD
	TRANSFORMER
#	MOTOR CONNECTION - NUMERAL INDICATES HP
30/25/3P/3R	DISCONNECT SWITCH - FUSED; FRAME/FUSE/POLE/NEMA RATING (NEMA 1 UON)
30/INF/3P/3R	DISCONNECT SWITCH - NON-FUSED; FRAME/NON-FUSED/POLE/NEMA RATING (NEMA 1 UON)
	DISCONNECT SWITCH - MOTOR/STARTER COMBINATION
$M	MOTOR-RATED SWITCH
VFD	VARIABLE FREQUENCY DRIVE
GRA	GENERATOR REMOTE ANNUNCIATOR PANEL
CP	CONTROL PANEL
J	JUNCTION BOX OR PULL BOX
J	WALL MOUNTED JUNCTION BOX OR PULL BOX
J	FLOOR BOX

ELECTRICAL ABBREVIATIONS

A	AMP	M	MANUAL MOTOR STARTER
AA	AUTOMATIC ALTERNATOR	mA	MILLIAMPERES
AC	ALTERNATING CURRENT	MC	METAL CLAD CABLE
ACU	AIR CONDITIONER UNIT	MCC	MOTOR CONTROL CENTER
AF	AMPERAGE FRAME	MCP	MOTOR CIRCUIT PROTECTOR
AFF	ABOVE FINISHED FLOOR	MEZZ	MEZZANINE
ANN	ANNUNCIATOR	MF-( )	MAIN FEEDER-( ) ID
AS	AMMETER SWITCH	MGD	MILLION GALLONS PER DAY
AT	AMPERE TRIP	MM	MOTORIZED MODULE
AX	AUXILIARY DELAY	MS	MOTOR STARTER
		MTD	MOUNTED
BKR	BREAKER	MTR	MOTORIZED TIMING RELAY
		MUAU	MAKE UP AIR UNIT
CB	CIRCUIT BREAKER	MX	MOTOR AUXILIARY RELAYS
COL	COLUMN		
CL	CENTERLINE	(N)	NEW
CKT	CIRCUIT	NAC	NOTIFICATION APPLIANCE CIRCUIT
CP(P OR L)	CLOSE ON FALLING (PRESSURE OR LEVEL)	NP	NAMEPLATE
CR(P OR L)	CLOSE ON RISING (PRESSURE OR LEVEL)	NF	NON FUSED
CH	CONVECTION HEATER	NFSS	NON FUSED SAFETY SWITCH
COMPT	COMPARTMENT	N.C.	NORMALLY CLOSED
COND	CONDUCTOR	N.O.	NORMALLY OPEN
CDT	CONDUIT	No.	NUMBER
C-( )	CONTRACT-( ) ID	OHD	OVERHEAD DOOR
CPT	CONTROL POWER TRANSFORMER	( )OL	OVERLOAD ( ) NUMBER OF
CR-( )	CONTROL RELAY-( ) ID	P	PRESSURE
I/I	CURRENT TO CURRENT TRANSDUCER	( )P	POLES ( ) NO OF POLES
I/P	CURRENT TO PNEUMATIC TRANSDUCER	Ø or PH	PHASE
		P/I	PNEUMATIC TO CURRENT TRANSDUCER
CT	CURRENT TRANSFORMER	PLC	PROGRAMMABLE LOGIC CONTROLLER
D	EXISTING TO BE DEMOLISHED	PRE	POWER ROOF EXHAUSTER
DC	DIRECT CURRENT	PS	PRESSURE SWITCH
DF	DUST FILTER	PT	POTENTIAL TRANSFORMER
DIA	DIAMETER	PTAC	PACKAGE TERMINAL AIR CONDITIONER
DISTR	DISTRIBUTION		
DP	DIFFERENTIAL PRESSURE	PTR	PNEUMATIC TIMING RELAY
DS	DISCONNECT SWITCH	PVC	POLYVINYL CHLORIDE
DPDT	DOUBLE POLE, DOUBLE THROW		RIGID CONDUIT
		PVC-RSC	PVC COATED RIGID STEEL CONDUIT
(E)	EXISTING TO REMAIN		
EBB	ELECTRIC BASED BOARD	PWV	POWER WALL VENTILATOR
EC	ELECTRICAL CONTRACTOR		
ECH	ELECTRIC CEILING HEATER	QTY	QUANTITY
EDH	ELECTRIC DUCT HEATER		
EF	ELECTRIC FIN	R	RELOCATED
EMT	ELECTRIC METALLIC TUBING	RAC	RIGID ALUMINUM
ER	EXISTING TO BE REMOVED AND RELOCATED	RECPT	RECEPTACLE
		REQ	REQUIRED
ETM	ELAPSED TIME METER	RMS	ROOT MEAN SQUARE
EUH	ELECTRIC UNIT HEATER	RSC	RIGID STEEL CONDUIT
EWC	ELECTRIC WATER COOLER	RTU	REMOTE TERMINAL UNIT
F	FLOW	SAF	SUPPLY AIR FAN
FDR	FEEDER	STP	SHIELDED TWISTED PAIR
FLA	FULL LOAD AMPS	SL	STOP LOCKOUT
FMC	FLEXIBLE METALLIC CONDUIT	SMC	SMART MOTOR CONTROLLER
FOS	FAST-OFF-SLOW	SPD	SURGE PROTECTIVE DEVICE
F-S	FAST-SLOW	SPDT	SINGLE POLE, DOUBLE THROW
FT	FEET	SS	SELECTOR SWITCH
F-R	FORWARD REVERSE	S/S	START/STOP
FR	FRAME	S/SL	START/STOP LOCKOUT
FUSS	FUSED SAFETY SWITCH	SV	SOLENOID VALVE
FVNR	FULL VOLTAGE NON-REVERSING	SYM	SYMMETRICAL
		SYS	SYSTEM
G	GREEN		
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	T or TSTAT	THERMOSTAT
		T-( )	TELEPHONE CONDUIT-( )
GPM	GALLONS PER MINUTE	TCC	TIME-CLOSE CONTACT
GND	GROUND	TEMP	TEMPERATURE
GRV	GRAVITY RELIEF VENT	TC	TEMPERATURE CONTRACTOR
GUH	GAS UNIT HEATER	TOC	TIME-OPEN CONTACT
		TR	TIMING RELAY
HOA	HAND-OFF-AUTOMATIC	TRI	SHIELDED TRIPLE CABLE
HP	HORSEPOWER	TS	TEMPERATURE SWITCH
HV	HOUSE VACUUM	TSP	TWISTED SHIELDED PAIR
HZ	HERTZ	TYP	TYPICAL
ID	IDENTIFICATION NUMBER	UF	UNDERGROUND FEEDER
IC	INTERRUPTING CAPACITY	UH	UNIT HEATER
IF	INFRARED HEATER	UON	UNLESS OTHERWISE NOTED
IMC	INTERMEDIATE METAL CONDUIT		
INF	IN LINE FAN	VA	VOLT - AMPERE
I/O	INPUT/OUTPUT	VAC	VOLTS ALTERNATING CURRENT
IT	INTERCHANGEABLE TRIP OR INSTANTANEOUS TRIP	VDC	VOLTS DIRECT CURRENT
		VFD	VARIABLE FREQUENCY DRIVE
		VS	VOLTMETER SWITCH
JB	JUNCTION BOX	VT	VOLTAGE TRANSFORMER
kcmil	THOUSAND CIRCULAR MILS	W	WATT
KUH/EUH	ELECTRIC UNIT HEATER	WH	WATER HEATER
KVA	KILOVOLT AMPERE	WP	WEATHERPROOF
KV	KILOVOLT		
KVAR	KILOVOLT AMPERES REACTIVE		
KW	KILOWATT		
L	LEVEL		
LC	LOUVER CONTROLLER		
LFMC	LIQUID-TIGHT FLEXIBLE METAL CONDUIT		
LM	LOUVER MOTOR		
LP( )-( )	LIGHTING CIRCUIT ( )		
LP( )	LIGHTING PANELBOARD		
LS	LIMIT SWITCH		
LV	LOUVER		

GENERAL PROJECT NOTES

1. THIS IS A COMPLETE LIST OF ELECTRICAL SYMBOLS AND ABBREVIATIONS FOR REFERENCE ONLY. SYMBOLS SHOWN ON THIS DRAWING MAY NOT APPEAR ON THE FOLLOWING DRAWINGS.
2. THE CONTRACTOR SHALL COORDINATE ALL REQUIRED SHUTDOWNS ON EXISTING UTILITIES WITH THE VA IN ORDER TO MINIMIZE IMPACT TO OTHER AREAS.
3. PERFORM ALL WORK IN COMPLIANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES, REGULATIONS, AND STANDARDS ADOPTED BY THE AUTHORITY HAVING JURISDICTION. IF CONFLICTS EXIST BETWEEN THESE ENGINEERING DOCUMENTS AND CODES, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN.
4. ALL WIRING SHALL BE IN CONDUIT. MINIMUM CONDUIT SIZE SHALL BE 3/4". MINIMUM CONDUCTOR SIZE SHALL BE #12 AWG. ALL NEW CIRCUITS SHALL BE PROVIDED WITH AN INDIVIDUAL NEUTRAL AND GROUNDING CONDUCTOR WITH THE PHASE CONDUCTOR.
5. THE ELECTRICAL DRAWINGS ARE SCHEMATIC IN NATURE. BEFORE STARTING THE WORK THE CONTRACTOR SHALL REVIEW ALL OTHER DISCIPLINE DRAWINGS AND VERIFY FIELD CONDITIONS AND SHALL MAKE ANY REQUIRED MINOR ADJUSTMENTS WITHOUT EXTRA COST TO THE OWNER. ANY MAJOR DISCREPANCIES FOUND SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER.
6. ALL INTERIOR CONDUITS SHALL BE EMT.
7. CONDUCTORS #10 AND SMALLER SHALL BE SOLID COPPER. CONDUCTORS #8 AND LARGER SHALL BE STRANDED COPPER. UNLESS NOTED OTHERWISE, CONDUCTORS INSULATION SHALL BE DUAL RATED AT THHN/THWN.
8. ALL DEVICES, EQUIPMENT MATERIAL AND LABOR SHALL BE PROVIDED BY THE CONTRACTOR UNLESS NOTED OTHERWISE.
9. ALL ELECTRICAL EQUIPMENT AND DEVICES SHALL BE MOUNTED AS PER EQUIPMENT AND DEVICE MANUFACTURER RECOMMENDATIONS.
10. CONTRACTOR SHALL PROVIDE SUBMITTALS TO THE VA FOR REVIEW AND APPROVAL OF ALL ELECTRICAL EQUIPMENT AND DEVICES DESCRIBED IN THE SUBMITTAL REGISTER. SUBMITTALS SHALL INCLUDE CUT SHEETS, DIMENSIONS, WIRING DIAGRAMS, ACCESSORIES, OPERATION MANUALS, AND ALL NECESSARY INFORMATION FOR REVIEWER TO MAKE A SOUND EVALUATION.
11. PROVIDE STARTUP OF ALL ELECTRICAL SYSTEMS AND COORDINATE WITH ARCHITECT/ENGINEER FOR VA STARTUP WITNESSING.
12. PROVIDED LAMINATED PLASTIC NAMEPLATES FOR EACH EQUIPMENT ENCLOSURE. EACH NAMEPLATE SHALL IDENTIFY EQUIPMENT FUNCTION. PANELBOARD CONNECTED AND CIRCUIT NUMBER. NAMEPLATE SHALL BE MELAMINE PLASTIC (0.125 INCHES THICK), WHITE LETTERS ON BLACK BACKGROUND. MINIMUM SIZE OF LETTERS SHALL BE 2.5 INCHES. IN ADDITION TO EQUIPMENT TAGGING, CONTRACTOR SHALL PROVIDE ARC-FLASH WARNING SIGNS FOR PANELBOARDS. CONTRACTOR SHALL FOLLOW FARGO VA EQUIPMENT LABELING STANDARDS.
13. PROVIDE COMPUTER PRINTED ON WHITE WRAPAROUND PAPER WITH CLEAR PLASTIC PROTECTION TAIL FOR ALL WIRE MARKERS. MARKER SHALL STATE PANELBOARD NAME AND CIRCUIT NUMBER ON ALL WIRES IN JUNCTION/PULL BOXES AND IN EQUIPMENT TERMINAL BOXES.
14. PROVIDE PUNCHED TAPE LABELS ON ALL WIRING DEVICES. EQUIPMENT SHALL BE LAMINATED BLACK PHENOLIC RESIN WITH A WHITE CORE WITH ENGRAVED LETTERING. MATCH EXISTING STYLES AND COLORS FOR IDENTIFICATION. SHALL BE ½" BLACK TAPE WITH WHITE RAISED LETTERS. TAPE LABELS SHALL STATE PANELBOARD NAME AND CIRCUIT NUMBER.
15. PROVIDE TYPED DIRECTORIES ON ALL PANELBOARDS. BALANCE ALL LOADS ON PANELBOARD WITHIN 10% OF EACH OTHER.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A COMPLETE SET OF RECORD DRAWINGS TO THE VA AT THE END OF THE CONSTRUCTION.
17. ALL MATERIALS AND EQUIPMENT TO BE INSTALLED SHALL BE NEW AND FREE OF DEFECTS. ALL ELECTRICAL EQUIPMENT SHALL COMPLY WITH NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA) STANDARDS AND SHALL BE UL LABELED. ALL ELECTRICAL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN A WORKMANLIKE MANNER.
18. ALL CONNECTORS AND SPLICES FOR CABLE SIZE #10 AWG AND SMALLER SHALL BE INSULATED, PRESSURE-TYPE. FOR LARGER SIZE CONDUCTORS USE BOLTED CLAMPS WITH INSULATING TAPE.
19. PROVIDE INSULATION AND CONTINUITY TEST OF ALL 1000V AND LESS WIRES AND CABLES. USE TESTING PROCEDURES DESCRIBED IN INTERNATIONAL ELECTRICAL TESTING AGENCY (NETA) STANDARDS. REPLACE ANY CABLES WITH INSULATION RESISTANCE LESS THAN 100 MEGA OHMS (MOHMS). TEST ALL GROUND FAULT CIRCUIT INTERRUPTING (GFCI) RECEPTACLES. TEST ALL GROUNDING ELECTRODE SYSTEMS WITH FALL OF POTENTIAL METHOD. MAKE RESISTANCE MEASUREMENTS 48 HOURS AFTER LAST RAIN FALL. MAXIMUM RESISTANCE TO GROUND SHALL BE 5 OHMS.

DRAWING INDEX - ELECTRICAL

E-1	ELECTRICAL NOTES, SYMBOL AND LEGEND
E-2	ELECTRICAL - DEMOLITION PLAN - ED
E-3	ELECTRICAL - DEMOLITION PLAN - ED ROOF
E-4	ELECTRICAL - DEMOLITION PLAN - DENTAL LIGHTING
E-5	ELECTRICAL - DEMOLITION PLAN - DENTAL POWER
E-6	ELECTRICAL - DEMOLITION PLAN - ICU LIGHTING
E-7	ELECTRICAL - DEMOLITION PLAN - MNU LIGHTING
E-8	ELECTRICAL - ROOF PLAN - ED
E-9	ELECTRICAL - FLOOR PLANS - DENTAL
E-10	ELECTRICAL - FLOOR PLAN - DENTAL ROOF
E-11	ELECTRICAL - ROOF PLAN - ICU
E-12	ELECTRICAL - ATTIC PLAN - MNU
E-13	ELECTRICAL DETAILS
E-14	PANEL SCHEDULES AND PARTIAL ONE-LINE

100% BID DOCUMENT	8/9/2021
95% DESIGN DEVELOPMENT	7/12/2021
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Stamp

JOSHUA R. MIKELL LICENSE No. 74045 STATE OF FLORIDA PROFESSIONAL ENGINEER

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL NOTES, SYMBOL AND LEGEND	Phase: 100% BID DOCUMENTS	Project Title: CORRECT ISOLATION ROOM ISSUES	Project Number: 437-21-170
			Building Number: 1, 46, 9
Approved: Project Director	FULLY SPRINKLERED	Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102	Drawing Number: E-1
		Issue Date: 8/9/2021 · Checked: CC · Drawn: FK	61 of 76

VA FORM 08-6231

GENERAL NOTES

A. EXISTING CONDITIONS BASED ON FIELD OBSERVATION. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND REPORT DISCREPANCIES TO ENGINEER PRIOR TO DISTURBING EXISTING INSTALLATION.

B. UNLESS OTHERWISE NOTED, THE DEMOLITION SCOPE OF WORK CALLS FOR REMOVAL AND RE-INSTALLATION OF EXISTING LIGHT FIXTURES WITHIN THE BOUNDARIES OF THE PROJECT AREA. THE ELECTRICAL DRAWINGS DO NOT NECESSARILY REFLECT ALL ACTUAL ELECTRICAL DEVICES TO BE DEMOLISHED AND/OR ACTUAL LOCATIONS OF DEVICES.

C. ALL DEMOLISHED EQUIPMENT SHALL BE PRESENTED TO VA FOR FIRST RIGHT OF REFUSAL.

D. PROVIDE JUNCTION BOXES, WIRE, CABLING, CONDUIT, ETC. AS REQUIRED TO MAINTAIN CONTINUITY TO EXISTING TO REMAIN DEVICES, EQUIPMENT, ETC.

E. ALL UNUSED OR ABANDONED WIRE, CONDUIT, CABLING, ETC. SHALL BE REMOVED TO POINT OF ORIGIN.

F. COORDINATE ALL REQUIRED EQUIPMENT SHUTDOWNS WITH THE VA REPRESENTATIVE PRIOR TO PROCEEDING TO DISCONNECT EQUIPMENT.

G. CIRCUIT CONTINUITY SHALL BE MAINTAINED TO ALL AREAS NOT PART OF THE PROJECT DURING AND AFTER CONSTRUCTION. PROVIDE TEMPORARY LIGHTING DURING CONSTRUCTION.

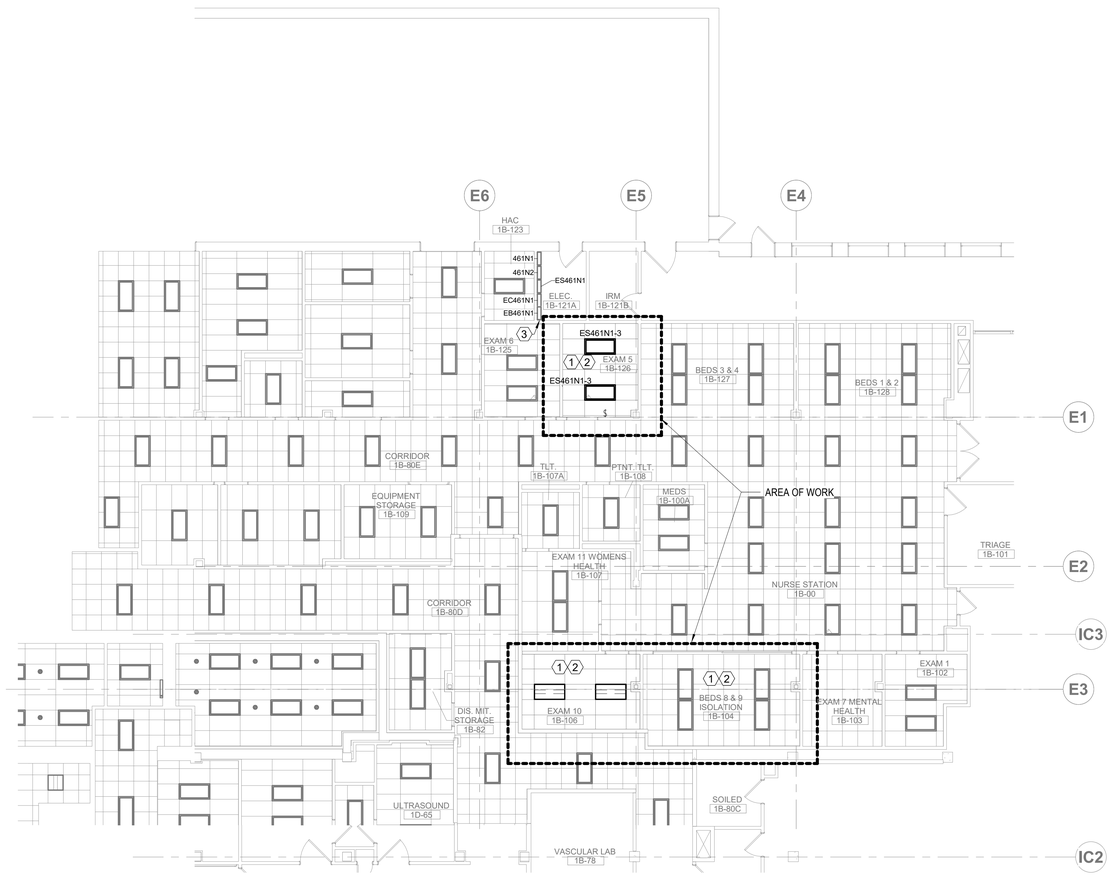
H. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AS REQUIRED TO KEEP THE PROJECT PROGRESSING.

(X) ELECTRICAL DEMOLITION PLAN KEYNOTES

1. ALL LIGHT FIXTURE AND CEILING DEVICES SHALL BE TAKEN DOWN DURING CONSTRUCTION AND SHALL BE PLACED BACK TO THE ACOUSTIC DROP CEILING ONCE THE RENOVATION OF THE HVAC SYSTEM IS COMPLETED. CONTRACTOR SHALL CLEAN AND RELAMP FIXTURE PRIOR TO INSTALLATION.

2. CONTRACTOR SHALL CIRCUIT TRACE EXISTING LIGHT FIXTURE TO SAFELY REMOVE AND DISCONNECT FROM THE CEILING GRID. CONTRACTOR SHALL LABEL EXISTING CIRCUIT IN LIGHT SWITCH PER VA STANDARDS.

3. DISCONNECT AND REMOVE (2) 15A/2P SPARE CIRCUIT BREAKERS, (CIRCUITS 2,4 AND 6,8) FROM PANEL EB461N1. PROVIDE (1) 20A/3P AND (1) 20A/1P CIRCUIT BREAKERS TO PROVIDE POWER TO NEW EXHAUST FAN LOCATED ON ED ROOF. REFER TO DRAWING E-8 FOR ADDITIONAL INFORMATION.

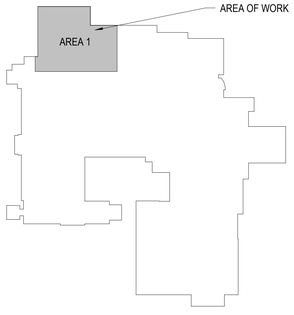


N

1 **ELECTRICAL - DEMOLITION PLAN - ED**

1/8" = 1'-0"

0 4' 8' 16'



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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - DEMOLITION PLAN - ED	Phase: 100% BID DOCUMENTS	Project Title: CORRECT ISOLATION ROOM ISSUES	Project Number: 437-21-170
Approved: Project Director	FULLY SPRINKLERED	Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102	Building Number: 1, 46, 9
		Issue Date: 8/9/2021 / Checked: CC / Drawn: FK	Drawing Number: E-2

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VA FORM 08-6231

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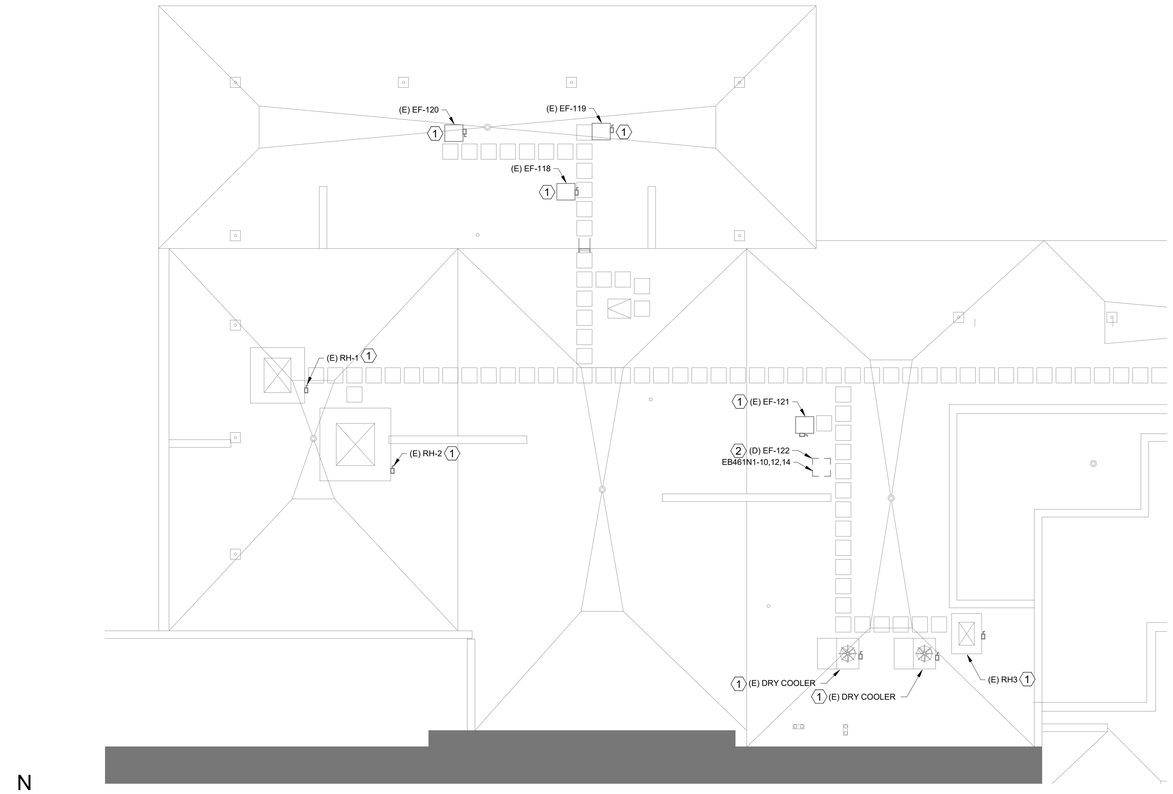
G. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AS REQUIRED TO KEEP THE PROJECT PROGRESSING.

(X) ELECTRICAL DEMOLITION PLAN KEYNOTES

1. EXHAUST FAN IS EXISTING TO REMAIN, UON.
2. DISCONNECT AND REMOVE EXHAUST FANS WITH ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE. EXHAUST FAN IS BEING FED FROM PANEL EB461N1-10,12,14 IN ELECTRICAL ROOM 1B-121A FIRST FLOOR.



1 **ELECTRICAL - DEMOLITION PLAN - ED ROOF**

1/8" = 1'-0"

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Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/2021 | Checked: CC | Drawn: FK

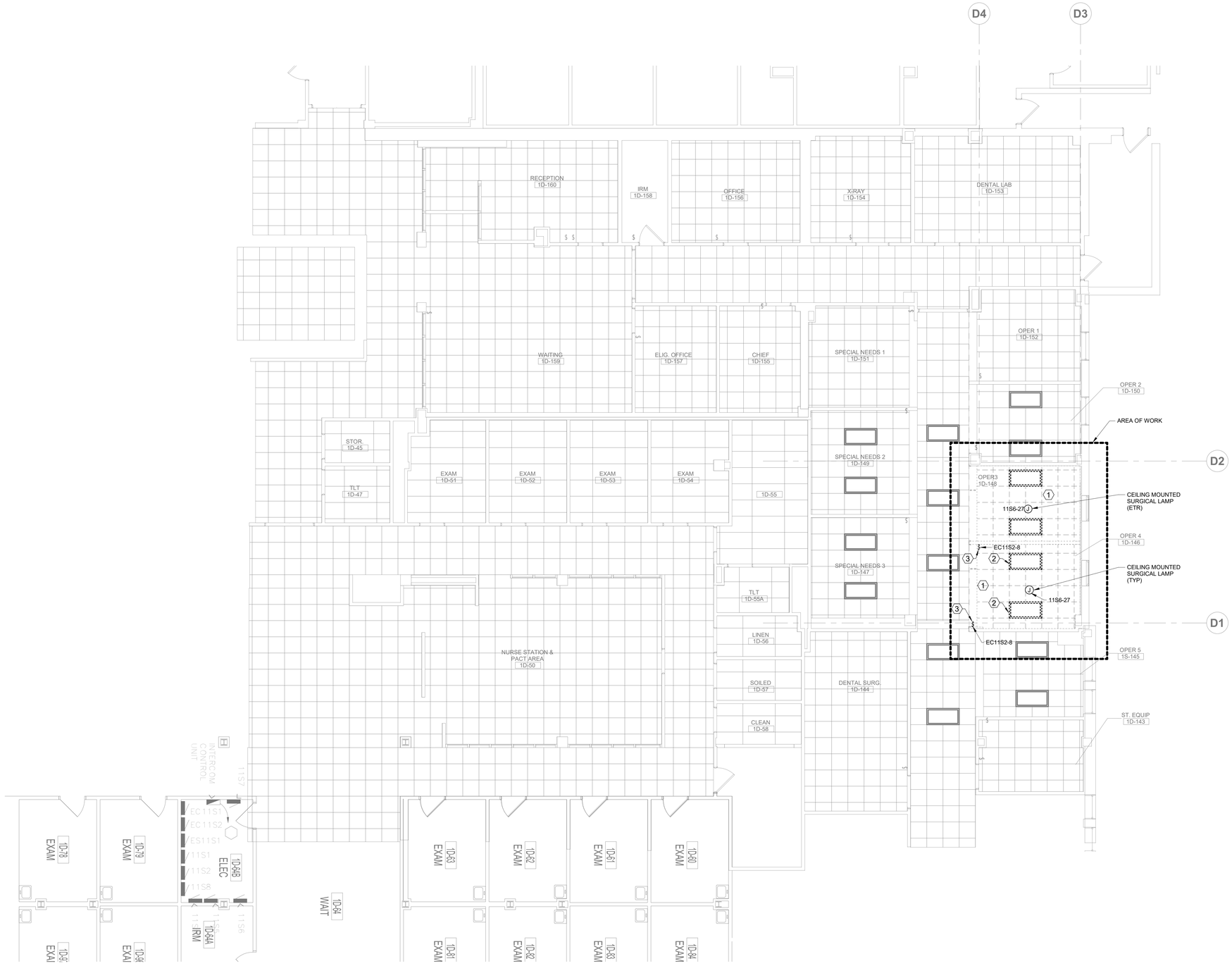
Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: E-3

63 of 76

VA FORM 08-6231



GENERAL NOTES

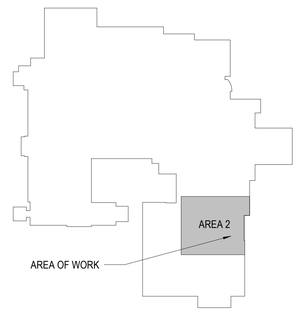
A. UNLESS OTHERWISE NOTED, ALL LIGHT FIXTURES AND CONTROLS ARE EXISTING TO REMAIN. THE ELECTRICAL DRAWINGS DO NOT NECESSARILY REFLECT ALL ACTUAL ELECTRICAL DEVICES TO BE DEMOLISHED AND/OR ACTUAL LOCATIONS OF DEVICES.

B. COORDINATE ALL REQUIRED EQUIPMENT SHUTDOWNS WITH THE VA REPRESENTATIVE PRIOR TO PROCEEDING TO DISCONNECT EQUIPMENT.

C. CIRCUIT CONTINUITY SHALL BE MAINTAINED TO ALL AREAS NOT PART OF THE PROJECT DURING AND AFTER CONSTRUCTION. PROVIDE TEMPORARY LIGHTING DURING CONSTRUCTION IF NEEDED.

(X) ELECTRICAL DEMOLITION PLAN KEYNOTES

1. ALL LIGHT FIXTURES, EXAM LIGHTS AND CEILING DEVICES SHALL BE TEMPORARY REMOVED DURING CONSTRUCTION. EXISTING LIGHT FIXTURES, EXAM LIGHTS AND CEILING DEVICES SHALL BE PLACED BACK TO THE CEILING ONCE THE RENOVATION OF THE HVAC MODIFICATION IS COMPLETE. CLEAN AND RELAMP FIXTURES PRIOR TO INSTALLATION.
2. EXISTING LIGHT FIXTURES TO BE RELOCATED. REFER TO DRAWING E-9 FOR ADDITIONAL INFORMATION.
3. DISCONNECT AND REMOVE EXISTING LIGHT SWITCH.



N

1 ELECTRICAL - FIRST FLOOR - DEMOLITION LIGHTING PLAN - DENTAL

3/16" = 1'-0"

0 4' 8' 12'

100% BID DOCUMENT	8/9/2021
95% DESIGN DEVELOPMENT	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

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Bancroft Project No. 16-128

Stamp: JOSHUA R. MIKELS, LICENSE No. 74045, STATE OF FLORIDA, PROFESSIONAL ENGINEER

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - DEMOLITION PLAN - DENTAL LIGHTING

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/2021 | Checked: CC | Drawn: FK

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: E-4

VA FORM 08-6231

GENERAL NOTES

A. EXISTING CONDITIONS BASED ON FIELD OBSERVATION. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND REPORT DISCREPANCIES TO ENGINEER PRIOR TO DISTURBING EXISTING INSTALLATION.

B. ALL DEMOLISHED EQUIPMENT SHALL BE PRESENTED TO VA FOR FIRST RIGHT OF REFUSAL.

C. PROVIDE JUNCTION BOXES, WIRE, CABLING, CONDUIT, ETC. AS REQUIRED TO MAINTAIN CONTINUITY TO EXISTING TO REMAIN DEVICES, EQUIPMENT, ETC.

D. ALL UNUSED OR ABANDONED WIRE, CONDUIT, CABLING, ETC. SHALL BE REMOVED TO POINT OF ORIGIN.

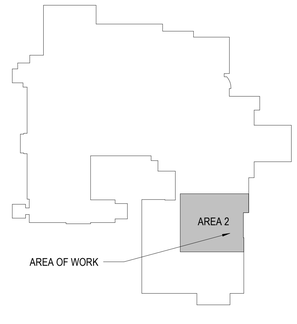
E. COORDINATE ALL REQUIRED EQUIPMENT SHUTDOWNS WITH THE VA REPRESENTATIVE PRIOR TO PROCEEDING TO DISCONNECT EQUIPMENT.

F. CIRCUIT CONTINUITY SHALL BE MAINTAINED TO ALL AREAS NOT PART OF THE PROJECT DURING AND AFTER CONSTRUCTION. PROVIDE TEMPORARY LIGHTING DURING CONSTRUCTION.

G. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AS REQUIRED TO KEEP THE PROJECT PROGRESSING.

(X) ELECTRICAL DEMOLITION PLAN KEYNOTES

1. ELECTRICAL DEVICE(S) SHOWN AS BEING DEMOLISHED SHALL BE TAKEN BACK TO NEAREST JUNCTION BOX WITH ASSOCIATED CONDUIT AND WIRING. POWER SOURCE IS LOCATED IN ELECTRICAL ROOM 1D-64B..
2. MAINTAIN BRANCH CIRCUIT 27 AND 29 IN PANEL 11S6 FOR RE-USE ON NEW WORK. FOR MORE INFORMATION REFER TO SHEET E-9.
3. EXISTING X-RAY CONTROLS AND ASSOCIATED DEVICES TO BE RELOCATED.
4. DENTAL CHAIR TO BE TEMPORARILY REMOVED FOR RENOVATION. MAINTAIN BRANCH CIRCUIT AND REFER TO NEW WORK PLAN FOR REQUIRED WORK.
5. EQUIPMENT COLUMN WITH ASSOCIATED POWER, JBOX, DATA OUTLETS TO BE REMOVED.
6. DENTAL CHAIR WITH ASSOCIATED JBOX, CONDUIT, AND WIRING TO BE REMOVED.



1 ELECTRICAL - FIRST FLOOR -DEMOLITION POWER PLAN - DENTAL

3/16" = 1'-0"

0 4' 8' 16'

100% BID DOCUMENT	8/9/2021
95% DESIGN DEVELOPMENT	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - DEMOLITION PLAN - DENTAL POWER

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

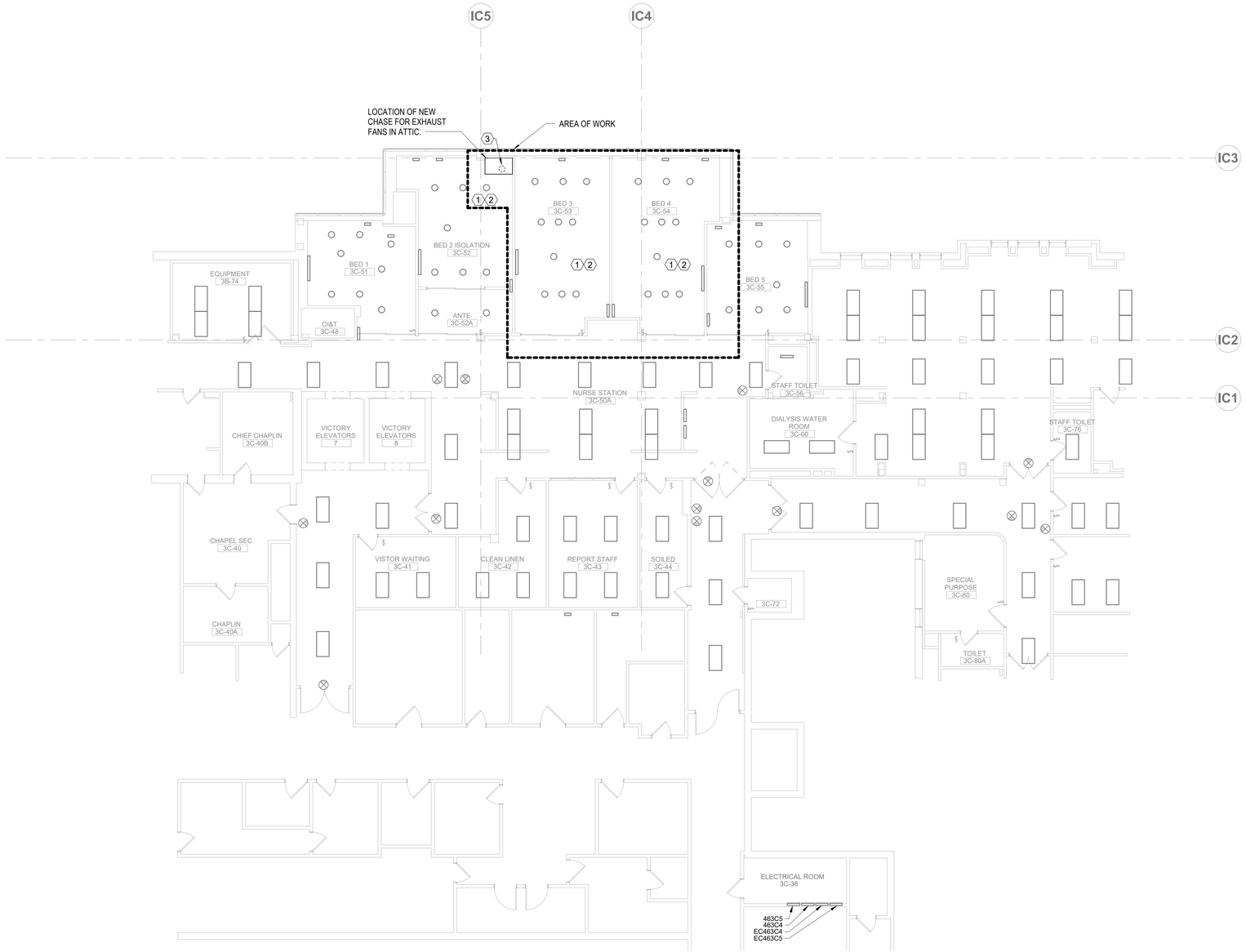
Issue Date: 8/9/2021 | Checked: CC | Drawn: FK

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: E-5

VA FORM 08-6231



N

1 **ELECTRICAL - THIRD FLOOR - DEMOLITION LIGHTING PLAN - ICU**

1/8" = 1'-0"

0 4' 8' 16'

GENERAL NOTES

A. UNLESS OTHERWISE NOTED, ALL LIGHT FIXTURES AND CONTROLS ARE EXISTING TO REAMIN. THE ELECTRICAL DRAWINGS DO NOT NECESSARILY REFLECT ALL ACTUAL ELECTRICAL DEVICES TO BE DEMOLISHED AND/OR ACTUAL LOCATIONS OF DEVICES.

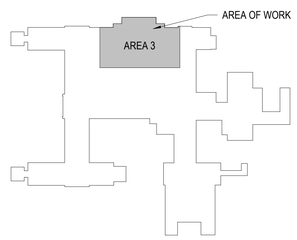
B. CONTRACTOR SHALL OBTAIN ALL EXISTING ELECTRICAL DRAWINGS OF THE AREA FROM THE VA BEFORE STARTING THE DEMOLITION WORK.

C. COORDINATE ALL REQUIRED EQUIPMENT SHUTDOWNS WITH THE VA REPRESENTATIVE PRIOR TO PROCEEDING TO DISCONNECT EQUIPMENT.

D. CIRCUIT CONTINUITY SHALL BE MAINTAINED TO ALL AREAS NOT PART OF THE PROJECT DURING AND AFTER CONSTRUCTION. PROVIDE TEMPORARY LIGHTING DURING CONSTRUCTION IF NEEDED.

(X) ELECTRICAL DEMOLITION PLAN KEYNOTES

1. CONTRACTOR SHALL CIRCUIT TRACE EXISTING LIGHT FIXTURES AND CEILING DEVICES TO ROOM 3C-38 LOCATED IN PANEL 463C5.
2. ALL LIGHT FIXTURES AND CEILING DEVICES SHALL BE TAKEN DOWN DURING CONSTRUCTION AND PLACED BACK ON THE CEILING. CONTRACTOR SHALL CLEAN AND RELAMP FIXTURES PRIOR TO INSTALLATION.
3. LIGHT FIXTURE TO BE DEMOLISHED FOR NEW CHASE.



100% BID DOCUMENT	8/9/2021
95% DESIGN DEVELOPMENT	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
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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: ELECTRICAL - DEMOLITION PLAN - ICU LIGHTING

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/2021 | Checked: CC | Drawn: FK

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: E-6

66 of 76

VA FORM 08-6231

GENERAL NOTES

A. UNLESS OTHERWISE NOTED, ALL LIGHT FIXTURES AND CONTROLS ARE EXISTING TO REAMIN. THE ELECTRICAL DRAWINGS DO NOT NECESSARILY REFLECT ALL ACTUAL ELECTRICAL DEVICES TO BE DEMOLISHED AND/OR ACTUAL LOCATIONS OF DEVICES.

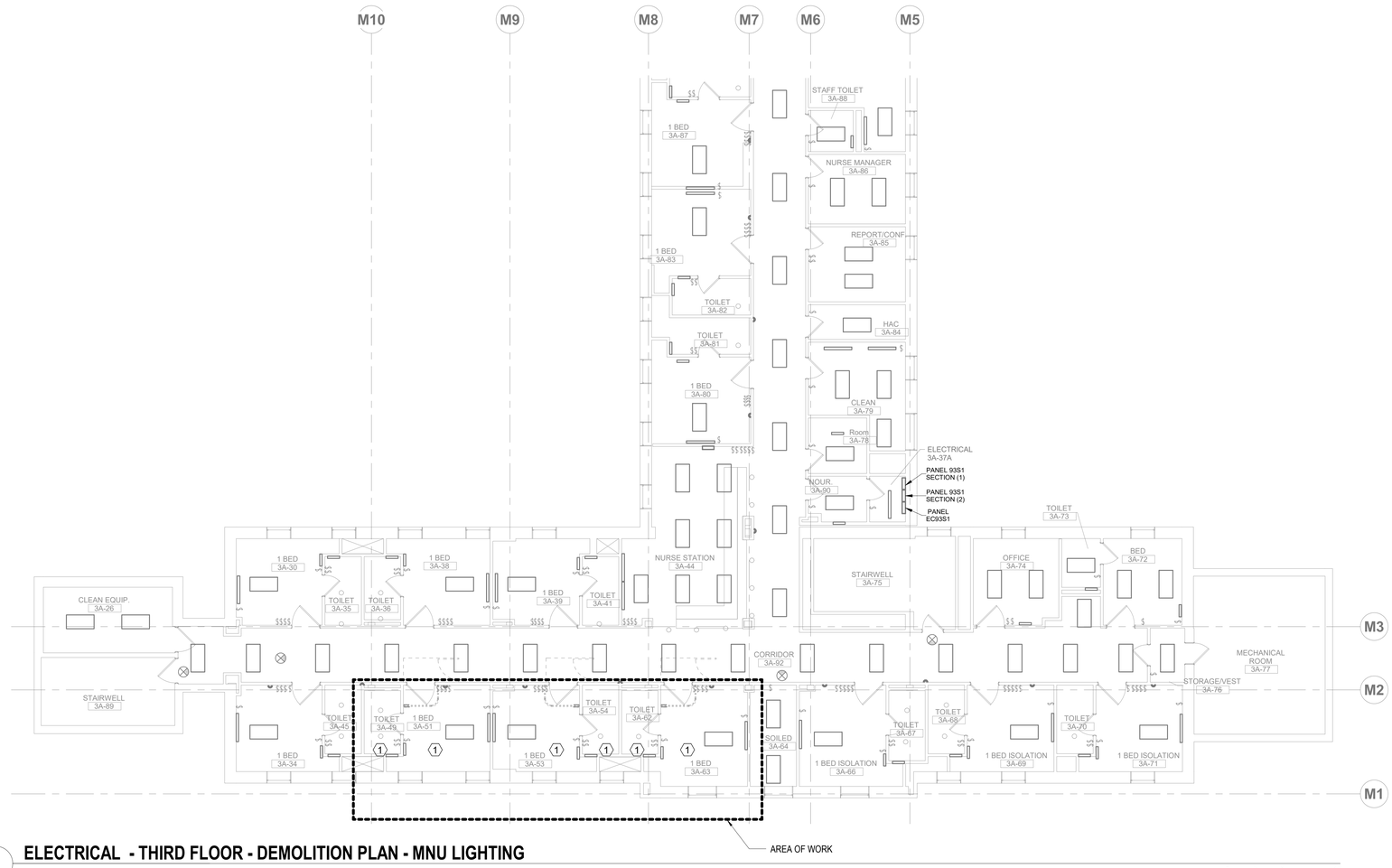
B. CONTRACTOR SHALL OBTAIN ALL EXISTING ELECTRICAL DRAWINGS OF THE AREA FROM THE VA BEFORE STARTING THE DEMOLITION WORK.

C. COORDINATE ALL REQUIRED EQUIPMENT SHUTDOWNS WITH THE VA REPRESENTATIVE PRIOR TO PROCEEDING TO DISCONNECT EQUIPMENT.

D. CIRCUIT CONTINUITY SHALL BE MAINTAINED TO ALL AREAS NOT PART OF THE PROJECT DURING AND AFTER CONSTRUCTION. PROVIDE TEMPORARY LIGHTING DURING CONSTRUCTION IF NEEDED.

(X) ELECTRICAL DEMOLITION PLAN KEYNOTES

1. ALL LIGHT FIXTURES, AND/OR CEILING MOUNTED DEVICES SHALL BE TEMPORARILY REMOVED DURING CONSTRUCTION. CONTRACTOR SHALL USE EXTREME CARE TO DISCONNECT AND REMOVE THE EXISTING LIGHT FIXTURES FROM THE GYPSUM CEILING. CONTRACTOR SHALL PROVIDE NEW FLANGE KITS OR TRIM RINGS AS REQUIRED FOR THE RE-USE OF THE EXISTING DOWN LIGHTS ONCE THE RENOVATION OF THE HVAC MODIFICATION IS COMPLETE. CONTRACTOR SHALL CLEAN AND RELAMP PRIOR TO INSTALLTION.

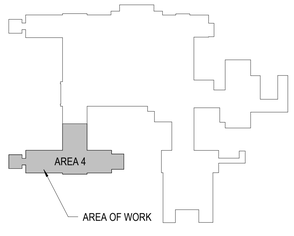


N

1 **ELECTRICAL - THIRD FLOOR - DEMOLITION PLAN - MNU LIGHTING**

1/8" = 1'-0"

0 4' 8' 16'



100% BID DOCUMENT	8/9/2021
95% DESIGN DEVELOPMENT	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - DEMOLITION PLAN - MNU LIGHTING

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/2021 | Checked: CC | Drawn: FK

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: E-7

67 of 76

VA FORM 08-6231

GENERAL NOTES

A. EXISTING CONDITIONS BASED ON FIELD OBSERVATION. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND REPORT DISCREPANCIES TO ENGINEER PRIOR TO DISTURBING EXISTING INSTALLATION.

B. PROVIDE JUNCTION BOXES, WIRE, CABLING, CONDUIT, ETC. AS REQUIRED TO MAINTAIN CONTINUITY TO EXISTING TO REMAIN DEVICES, EQUIPMENT, ETC.

C. COORDINATE ALL REQUIRED EQUIPMENT SHUTDOWNS WITH THE VA REPRESENTATIVE PRIOR TO PROCEEDING TO DISCONNECT EQUIPMENT.

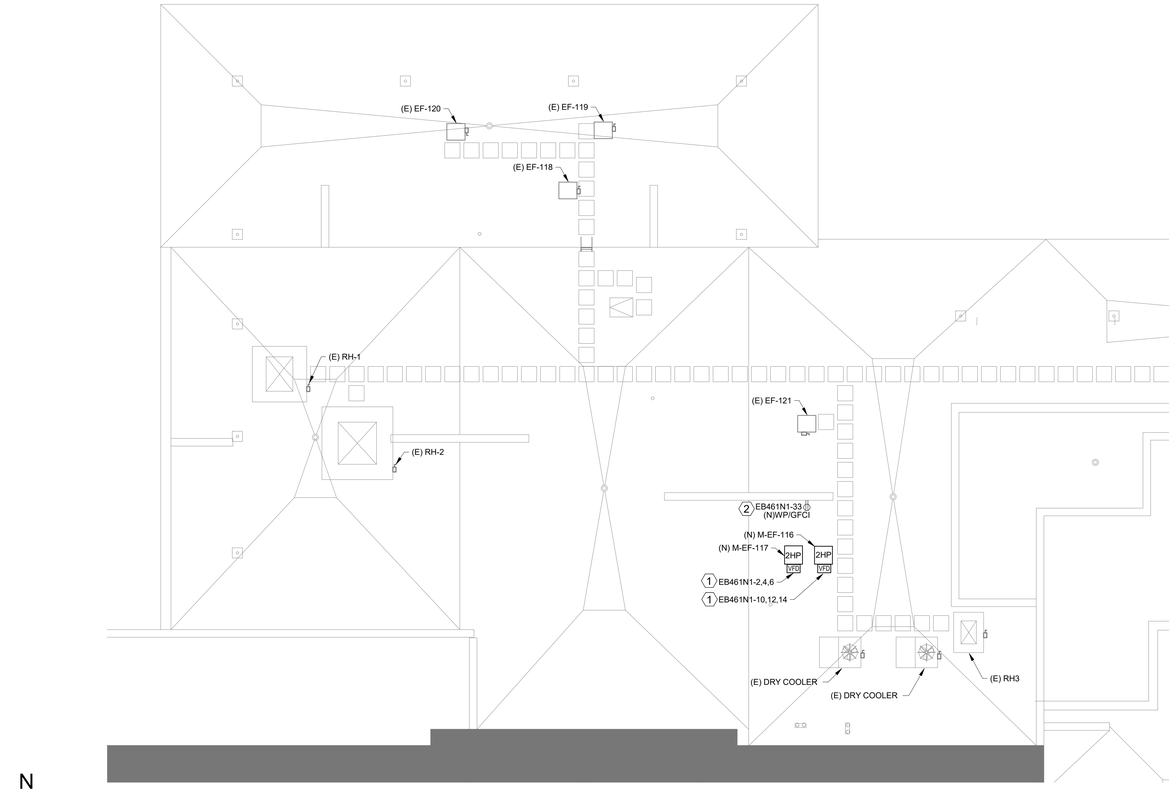
D. CIRCUIT CONTINUITY SHALL BE MAINTAINED TO ALL AREAS NOT PART OF THE PROJECT DURING AND AFTER CONSTRUCTION. PROVIDE TEMPORARY LIGHTING DURING CONSTRUCTION.

E. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AS REQUIRED TO KEEP THE PROJECT PROGRESSING.

F. REFER TO SCHEDULE SHEET FOR MORE INFORMATION ON EQUIPMENT CONNECTIONS.

(X) ELECTRICAL RENOVATION NOTES

1. PROVIDE STEEL CHANNEL FOR VFD/DISCONNECT. VFD/DISCONNECT SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR AND WIRED BY THE ELECTRICAL CONTRACTOR. COORDINATE WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN AND INSTALLATION. CONTRACTOR SHALL FOLLOW FARGO VA EQUIPMENT LABELING STANDARDS.
2. UTILIZE EXISTING SPARE 20A/1P SPARE CIRCUIT BREAKER TO PROVIDE POWER TO WP/GFCI RECEPTACLE.



N

1 **ELECTRICAL - SECOND FLOOR - ROOF PLAN - ED**

1/8" = 1'-0"

0 4' 8' 16'

100% BID DOCUMENT	8/9/2021
95% DESIGN DEVELOPMENT	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - ROOF PLAN - ED

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/2021 | Checked: CC | Drawn: FK

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: E-8

VA FORM 08-6231

ⓧ ELECTRICAL RENOVATION NOTES

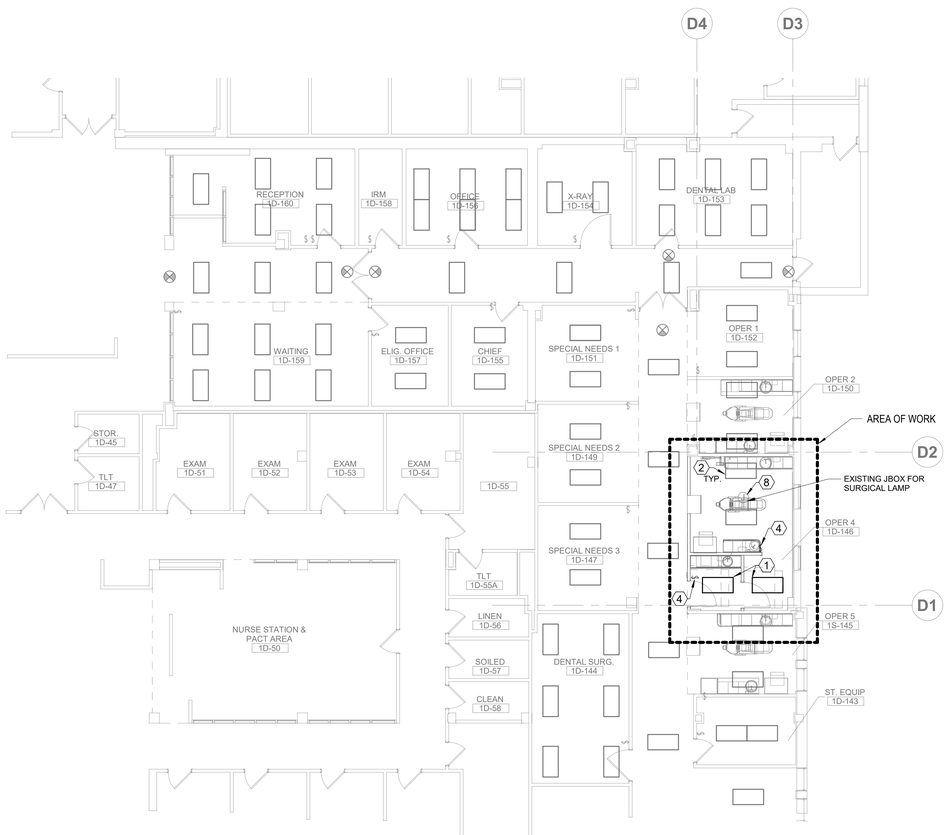
1. NEW LOCATION OF EXISTING LIGHT FIXTURE. EXTEND BRANCH CIRCUIT AS NEEDED.
2. LIGHT FIXTURES ARE EXISTING TO REMAIN, UON.
3. ALL DEVICES ARE EXISTING TO REMAIN, UON.
4. PROVIDE DIMMER SWITCH. EXTEND CONDUIT AND WIRING TO EXISTING CIRCUIT EC11S2-8.
5. CONTRACTOR SHALL EXTEND CONDUIT AND WIRING DUE TO SHIFTING OF DENTAL CHAIR.
6. NEW LOCATION OF X-RAY EQUIPMENT COLUMN. CONTRACTOR SHALL EXTEND CONDUIT AND WIRING TO ASSOCIATED DEVICES AND EQUIPMENT. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS WITH MANUFACTURER PRIOR TO INSTALLATION.
7. RE-USE EXISTING CIRCUIT 27 AND 29 IN PANEL 11S6 TO POWER NEW RECEPTACLES.
8. CONTRACTOR SHALL RELOCATE EXISTING SURGICAL LIGHT TO ACCOMADATE NEW LOCATION OF DENTAL CHAIR.
9. RE-USE EXISTING CIRCUIT 45 IN PANEL EC11S2 FOR EMERGENCY RECEPTACLES.

GENERAL NOTES

A. ALL SERVICE INTERRUPTIONS TO THE EXISTING FACILITY MUST BE SCHEDULED AT LEAST THREE WEEKS IN ADVANCE AND BE KEPT TO A MINIMUM. COORDINATE ALL POTENTIAL DISTRIBUTIONS AND OUTAGE REQUIREMENTS WITH VA.

B. REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

C. DEVICES LABELED AS (N) ARE NEW.

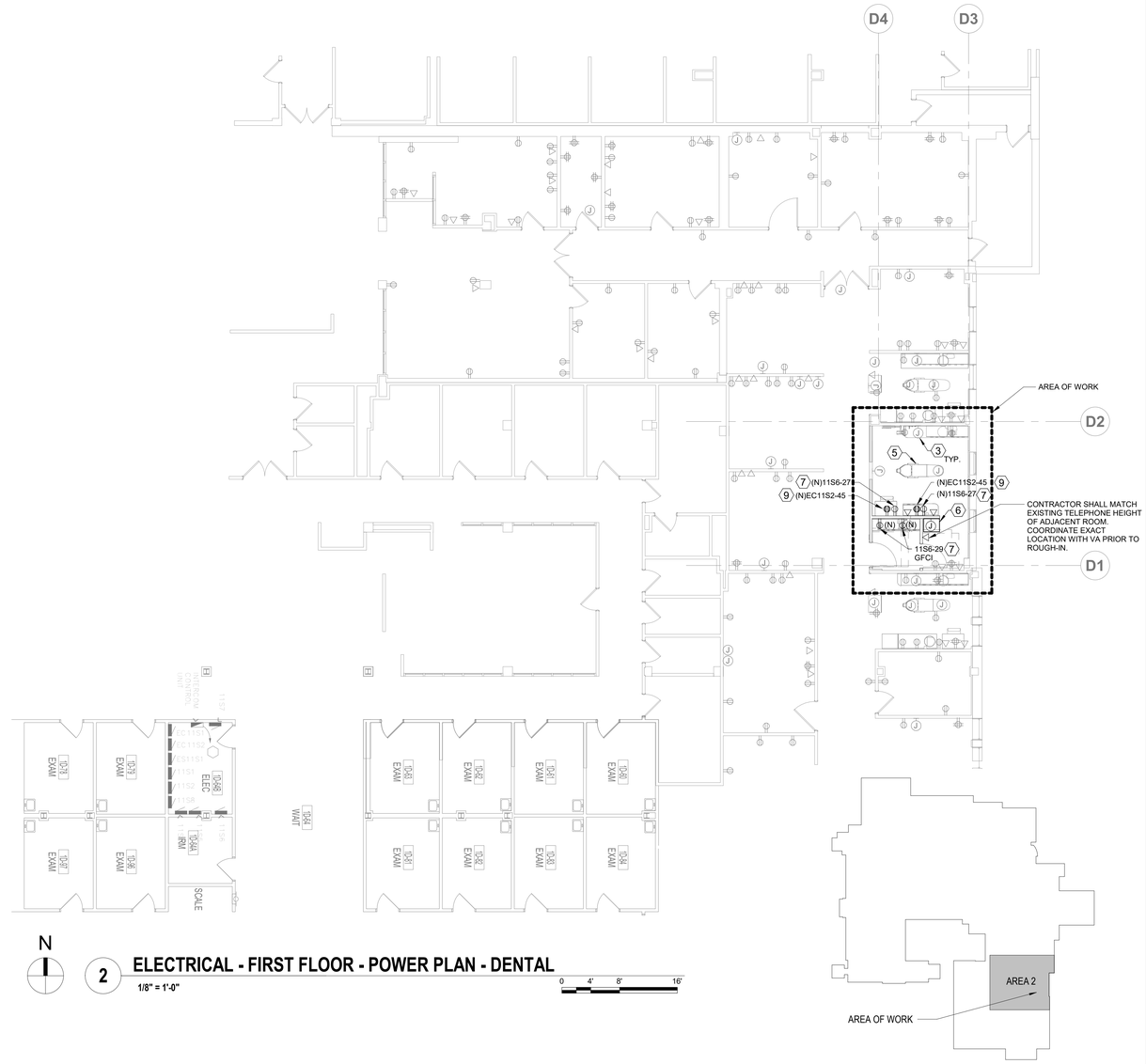


N

1 **ELECTRICAL - FIRST FLOOR - LIGHTING PLAN - DENTAL**

1/8" = 1'-0"

0 4' 8' 16'



N

2 **ELECTRICAL - FIRST FLOOR - POWER PLAN - DENTAL**

1/8" = 1'-0"

0 4' 8' 16'

100% BID DOCUMENT	8/9/2021
95% DESIGN DEVELOPMENT	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

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Stamp

JOSHUA R. MIKELL LICENSE No. 74045 STATE OF FLORIDA PROFESSIONAL ENGINEER

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - FLOOR PLANS - DENTAL

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

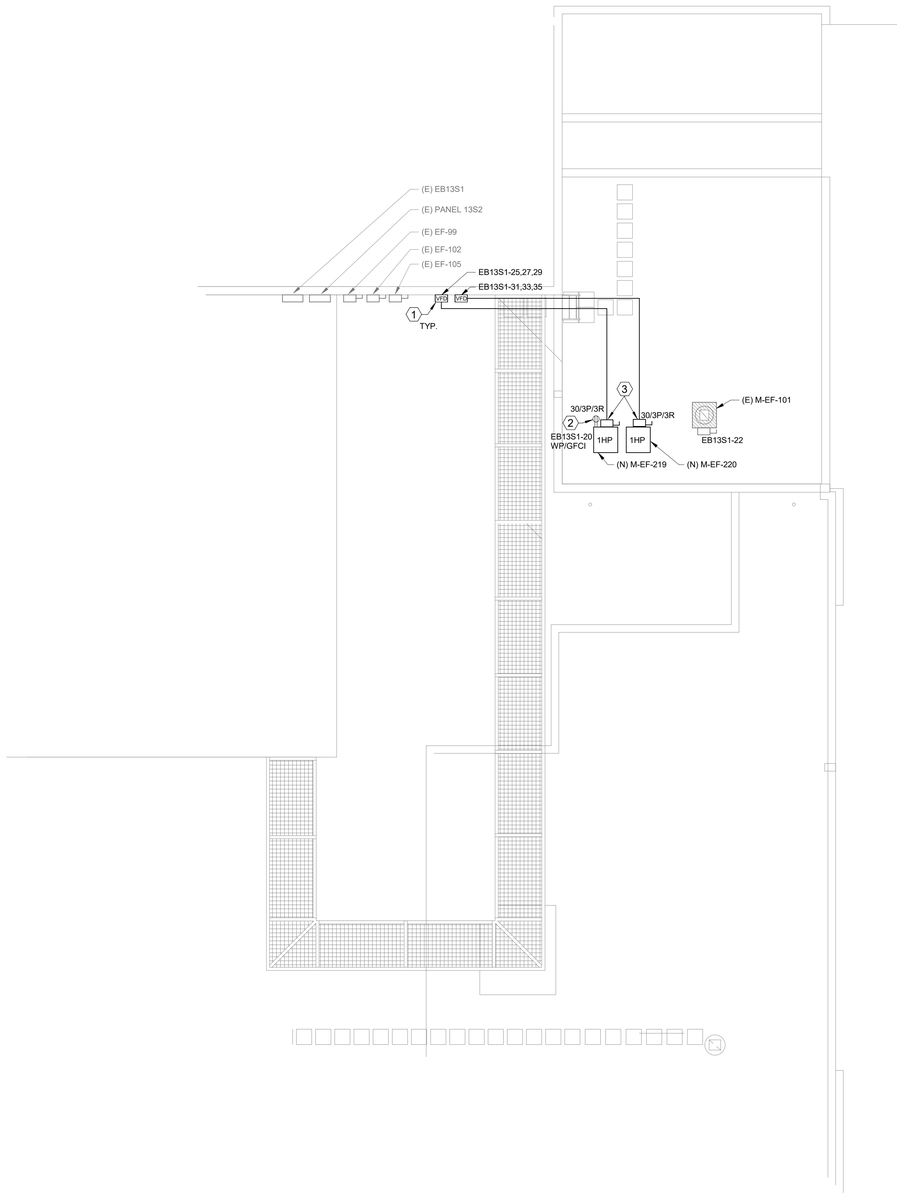
Issue Date: 8/9/2021 | Checked: CC | Drawn: FK

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: E-9

VA FORM 08-6231



N

1 **ELECTRICAL - FLOOR PLAN - DENTAL ROOF**

1/8" = 1'-0"

0 4' 8' 16'

GENERAL NOTES

A. EXISTING CONDITIONS BASED ON FIELD OBSERVATION. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND REPORT DISCREPANCIES TO ENGINEER PRIOR TO DISTURBING EXISTING INSTALLATION.

B. PROVIDE JUNCTION BOXES, WIRE, CABLING, CONDUIT, ETC. AS REQUIRED TO MAINTAIN CONTINUITY TO EXISTING TO REMAIN DEVICES, EQUIPMENT, ETC.

C. COORDINATE ALL REQUIRED EQUIPMENT SHUTDOWNS WITH THE VA REPRESENTATIVE PRIOR TO PROCEEDING TO DISCONNECT EQUIPMENT.

D. CIRCUIT CONTINUITY SHALL BE MAINTAINED TO ALL AREAS NOT PART OF THE PROJECT DURING AND AFTER CONSTRUCTION. PROVIDE TEMPORARY LIGHTING DURING CONSTRUCTION.

E. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AS REQUIRED TO KEEP THE PROJECT PROGRESSING.

F. REFER TO SCHEDULE SHEET FOR MORE INFORMATION ON EQUIPMENT CONNECTIONS.

(X) ELECTRICAL RENOVATION PLAN KEYNOTES

1. PROVIDE STEEL CHANNEL FOR VFD / DISCONNECT. VFD/DISCONNECT SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR AND WIRED BY THE ELECTRICAL CONTRACTOR. COORDINATE WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN AND INSTALLATION.
2. UTILIZE EXISTING SPARE 20A/1P SPARE CIRCUIT BREAKER TO PROVIDE POWER TO WP/GFCI RECEPTACLE. PROVIDE STEEL CHANNEL AS REQUIRED.
3. DISCONNECTS SHALL BE PROVIDED BY MECHANICAL CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR. CONTRACTOR SHALL PROVIDE STEEL CHANNEL FOR DISCONNET(S).

100% BID DOCUMENT	8/9/2021
95% DESIGN DEVELOPMENT	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021
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Bancroft Project No. 16-128

Stamp

JOSHUA R. MIKELS LICENSED No. 74045 STATE OF FLORIDA PROFESSIONAL ENGINEER

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - FLOOR PLAN - DENTAL ROOF

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/2021 | Checked: CC | Drawn: FK

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: E-10

VA FORM 08-6231

GENERAL NOTES

A. DRAWINGS ARE SCHEMATIC IN NATURE, DO NOT SCALE FROM THESE DRAWINGS.

B. EXISTING CONDITIONS BASED ON FIELD OBSERVATION. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND REPORT DISCREPANCIES TO ENGINEER PRIOR TO DISTURBING EXISTING INSTALLATION.

C. UNLESS OTHERWISE NOTED, THE DEMOLITION SCOPE OF WORK CALLS FOR THE REMOVAL AND DISPOSAL OF ALL ELECTRICAL EQUIPMENTAS SHOWN. THE ELECTRICAL DRAWINGS DO NOT NECESSARILY REFLECT ALL ACTUAL ELECTRICAL DEVICES TO BE DEMOLISHED AND/OR ACTUAL LOCATIONS OF DEVICES.

D. ALL DEMOLISHED EQUIPMENT SHALL BE PRESENTED TO VA FOR FIRST RIGHT OF REFUSAL.

E. PROVIDE JUNCTION BOXES, WIRE, CABLING, CONDUIT, ETC. AS REQUIRED TO MAINTAIN CONTINUITY TO EXISTING TO REMAIN DEVICES, EQUIPMENT, ETC.

F. ALL UNUSED OR ABANDONED WIRE, CONDUIT, CABLING, ETC. SHALL BE REMOVED TO POINT OF ORIGIN.

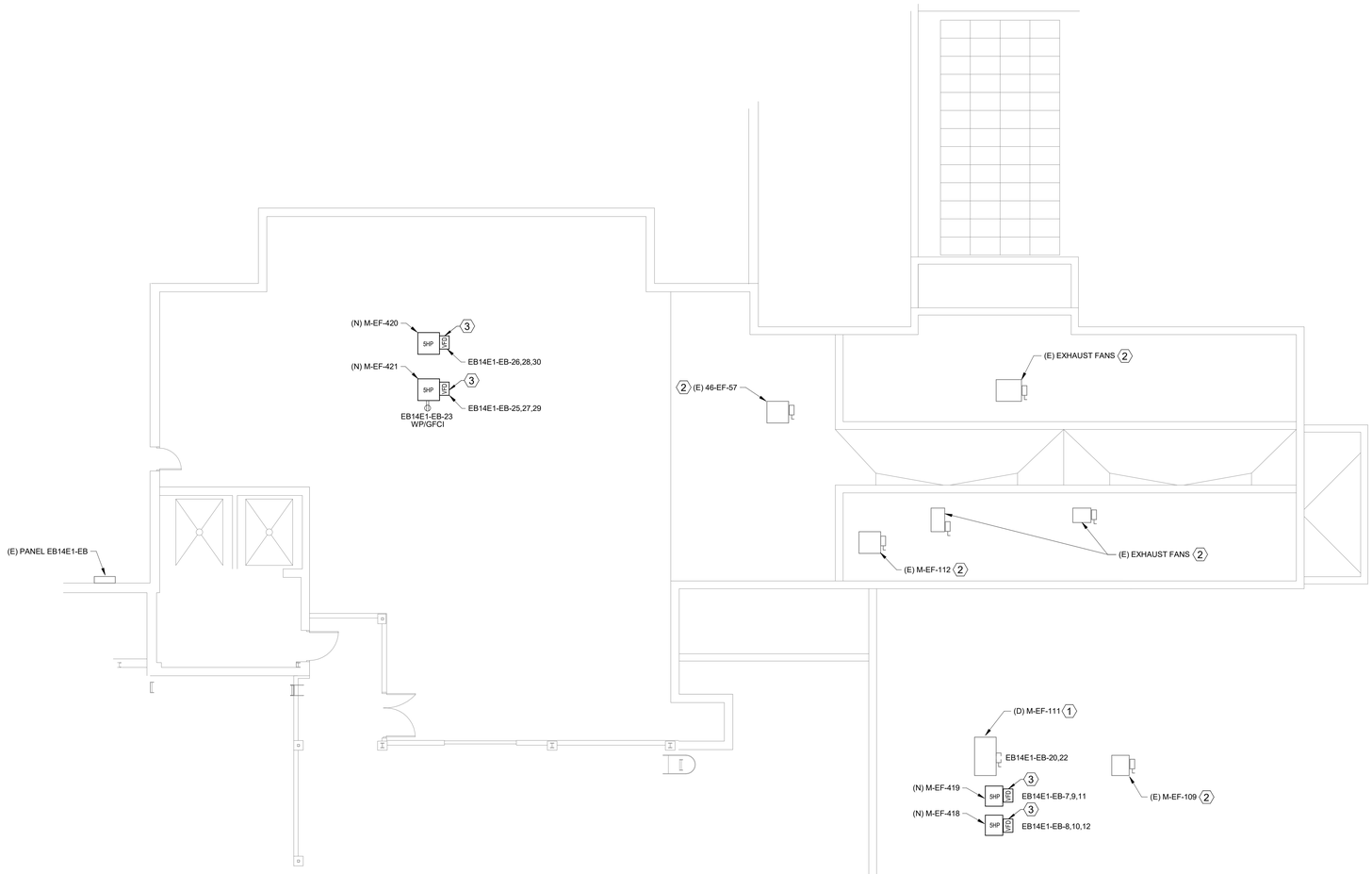
G. COORDINATE ALL REQUIRED EQUIPMENT SHUTDOWNS WITH THE VA REPRESENTATIVE PRIOR TO PROCEEDING TO DISCONNECT EQUIPMENT.

H. CIRCUIT CONTINUITY SHALL BE MAINTAINED TO ALL AREAS NOT PART OF THE PROJECT DURING AND AFTER CONSTRUCTION. PROVIDE TEMPORARY LIGHTING DURING CONSTRUCTION.

I. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AS REQUIRED TO KEEP THE PROJECT PROGRESSING.

(X) ELECTRICAL PLAN KEYNOTES

1. ELECTRICAL DEVICE(S) WITH ASSOCIATED CONDUIT AND WIRING SHALL BE DEMOLISHED BACK TO SOURCE IN MECHANICAL ROOM.
2. EXHAUST FAN ARE EXISTING TO REMAIN, UON.
3. PROVIDE STEEL CHANNEL FOR VFD/DISCONNECT.VFD/DISCONNECT SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR AND WIRED BY THE ELECTRICAL CONTRACTOR. COORDINATE WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN AND INSTALLATION.



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1 **ELECTRICAL - ROOF PLAN - ICU**

1/8" = 1'-0"

0 4' 8' 16'

100% BID DOCUMENT	8/9/2021
95% DESIGN DEVELOPMENT	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

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Bancroft Project No. 16-128

Stamp

JOSHUA R. MIKELS LICENSE No. 74045 STATE OF FLORIDA PROFESSIONAL ENGINEER

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - ROOF PLAN - ICU

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

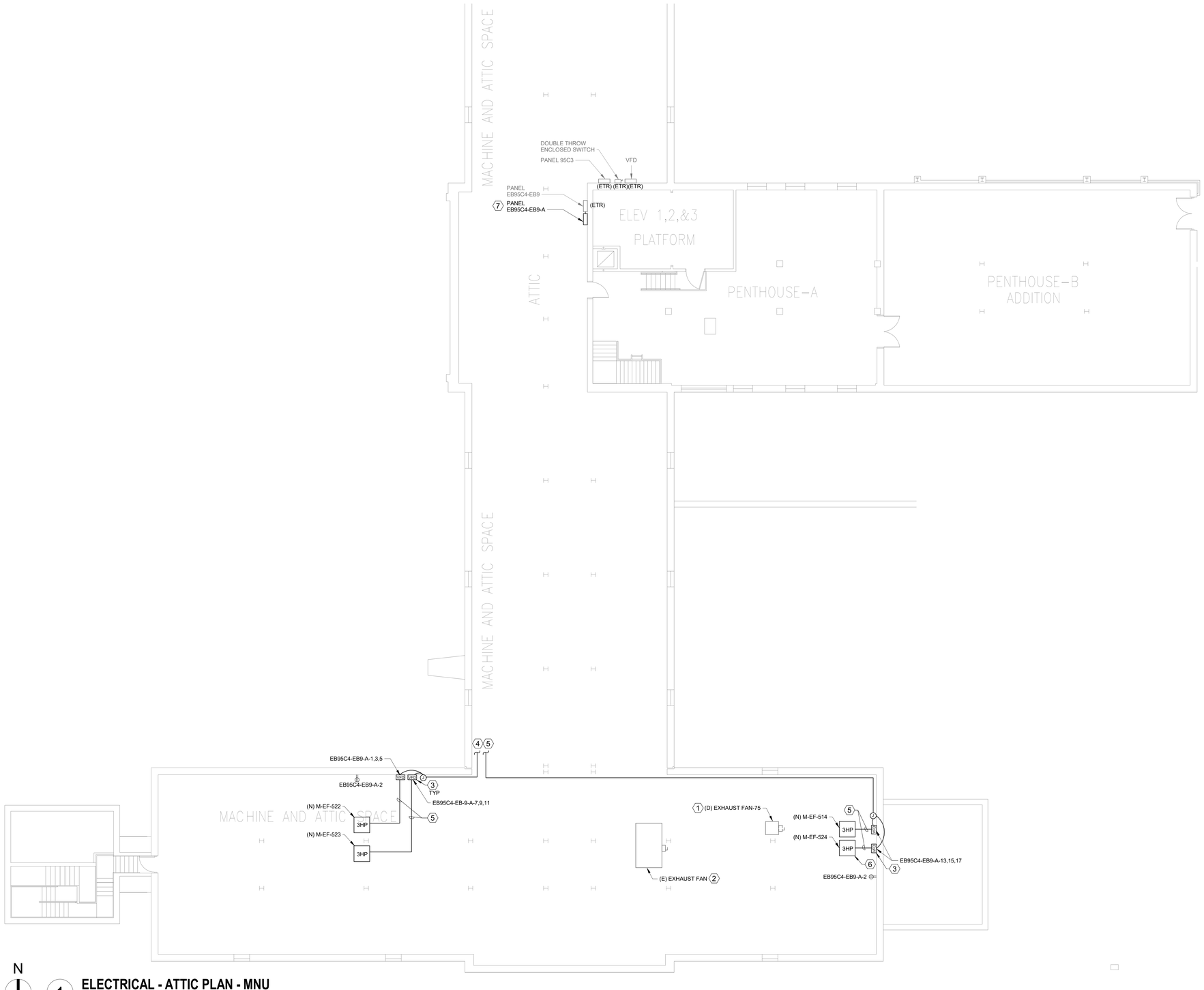
Issue Date: 8/9/2021 | Checked: CC | Drawn: FK

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: E-11

VA FORM 08-6231



N

1 **ELECTRICAL - ATTIC PLAN - MNU**

1/8" = 1'-0"

0 4' 8' 16'

GENERAL NOTES

A. EXISTING CONDITIONS BASED ON FIELD OBSERVATION. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND REPORT DISCREPANCIES TO ENGINEER PRIOR TO DISTURBING EXISTING INSTALLATION.

B. ALL DEMOLISHED EQUIPMENT SHALL BE PRESENTED TO VA FOR FIRST RIGHT OF REFUSAL.

C. PROVIDE JUNCTION BOXES, WIRE, CABLING, CONDUIT, ETC. AS REQUIRED TO MAINTAIN CONTINUITY TO EXISTING TO REMAIN DEVICES, EQUIPMENT, ETC.

D. ALL UNUSED OR ABANDONED WIRE, CONDUIT, CABLING, ETC. SHALL BE REMOVED TO POINT OF ORIGIN.

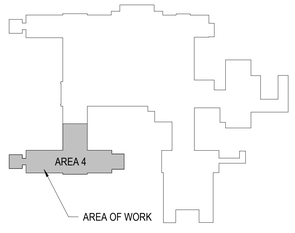
E. COORDINATE ALL REQUIRED EQUIPMENT SHUTDOWNS WITH THE VA REPRESENTATIVE PRIOR TO PROCEEDING TO DISCONNECT EQUIPMENT.

F. CIRCUIT CONTINUITY SHALL BE MAINTAINED TO ALL AREAS NOT PART OF THE PROJECT DURING AND AFTER CONSTRUCTION. PROVIDE TEMPORARY LIGHTING DURING CONSTRUCTION.

G. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AS REQUIRED TO KEEP THE PROJECT PROGRESSING.

(X) ELECTRICAL KEYNOTES

1. REMOVE DISCONNECT SWITCH FOR EXHAUST FAN WITH ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE LOCATED IN PANEL EB95C4-EB9-37,39,41. EXHAUST FAN SHALL BE REMOVED BY MECHANICAL CONTRACTOR.
2. EXHAUST FAN IS EXISTING TO REMAIN, UON.
3. PROVIDE STEEL CHANNEL FOR VFD/DISCONNECT. VFD/DISCONNECT SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR AND WIRED BY THE ELECTRICAL CONTRACTOR. COORDINATE WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN AND INSTALLATION.
4. RUN (2) SETS OF 3#10+10G IN 3/4" C. CONDUIT SHALL BE HIGH AS POSSIABLE IN ATTICE SPACE TO KEEP PATHWAYS OPEN.
5. RUN 3#10+10G IN 3/4"C. CONDUIT SHALL BE HIGH AS POSSIABLE IN ATTICE SPACE TO KEEP PATHWAYS OPEN.
6. EXHAUST FANS SHALL ALTERNATE WHILE RUNNING. BOTH EXHAUST FANS SHALL NEVER RUN AT THE SAME TIME. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
7. NEW SUB-PANEL. REFER TO ONE-LINE DIAGRAM FOR ADDITIONAL INFORMATION.



100% BID DOCUMENT	8/9/2021
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35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

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Stamp

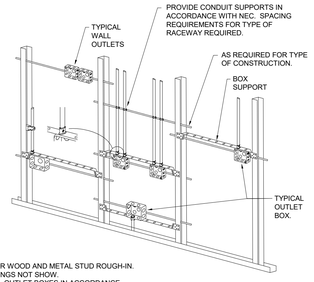
JOSHUA R. MIKELS LICENSED No. 74045 STATE OF FLORIDA PROFESSIONAL ENGINEER

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

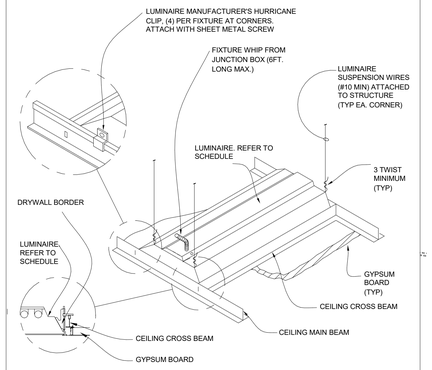
Drawing Title: ELECTRICAL - ATTIC PLAN - MNU	Phase: 100% BID DOCUMENTS	Project Title: CORRECT ISOLATION ROOM ISSUES	Project Number: 437-21-170
			Building Number: 1, 46, 9
Approved: Project Director	FULLY SPRINKLERED	Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102	Drawing Number: E-12
		Issue Date: 8/9/2021 · Checked: CC · Drawn: FK	72 of 76

VA FORM 08-6231

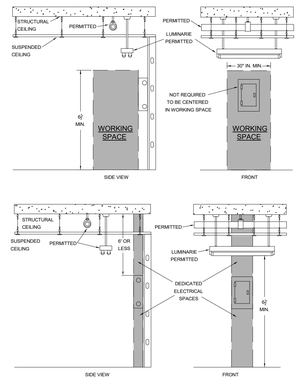


NOTES:
1. TYPICAL FOR WOOD AND METAL STUD ROUGH-IN.
2. PLASTER RINGS NOT SHOW.
3. LOCATE ALL OUTLET BOXES IN ACCORDANCE WITH ARCHITECTURAL AND MECHANICAL DRAWINGS, AND WITH ALL APPLICABLE SHOP DRAWINGS.
4. IN ACCORDANCE WITH UBC 4304 OUTLETS ON OPPOSITE SIDES OF WALLS OR PARTITIONS IN THE SAME STUD SPACE MUST BE SEPARATED BY A MIN. OF 24" HORIZONTAL DISTANCE.
5. TOENAILING OF OUTLET BOXES DIRECTLY TO THE STUDS WILL NOT BE ACCEPTED.
6. OUTLETS SHOWN TOGETHER ON PLAN SHALL BE INSTALLED TOGETHER.

2 TYPICAL ROUGH-IN NTS



1 LAY-IN TROFFER - GYPBOARD CEILING NTS



4 DEDICATED AND WORKING ELECTRICAL SPACES NTS

NAMEPLATE COLOR SHALL FOLLOW VA STANDARDS:
LIFE SAFETY - YELLOW
CRITICAL - RED
EQUIPMENT - GREEN
NORMAL - BLACK

LETTER (FILL) COLOR
EMERGENCY - WHITE
NORMAL - WHITE

LETTERING SHALL BE 1/4" HIGH

INDICATED VOLTAGE, NO. OF PHASES, NO OF WIRES

HEM
120/208V, 3PH, 4W
FED FROM MSB BKR. 11
SCA 36,921A 01/03/12

ATTACH NAMEPLATE WITH 2 SCREWS

INDICATES WHERE THIS EQUIPMENT IS FED FROM (TRANSFER SWITCHES WILL HAVE TWO LINES.)

CALCULATED AVAILABLE FAULT CURRENT

NOTE:
1. CONTRACTOR SHALL PROVIDE ARC FLASH LABEL(S) PER VA FARGO STANDARDS.

3 ELECTRICAL EQUIPMENT NAMEPLATE NTS

100% BID DOCUMENT	8/9/2021
95% DESIGN DEVELOPMENT	7/12/2021
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JOSHUA R. MIKELS
No. 74045
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL DETAILS

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

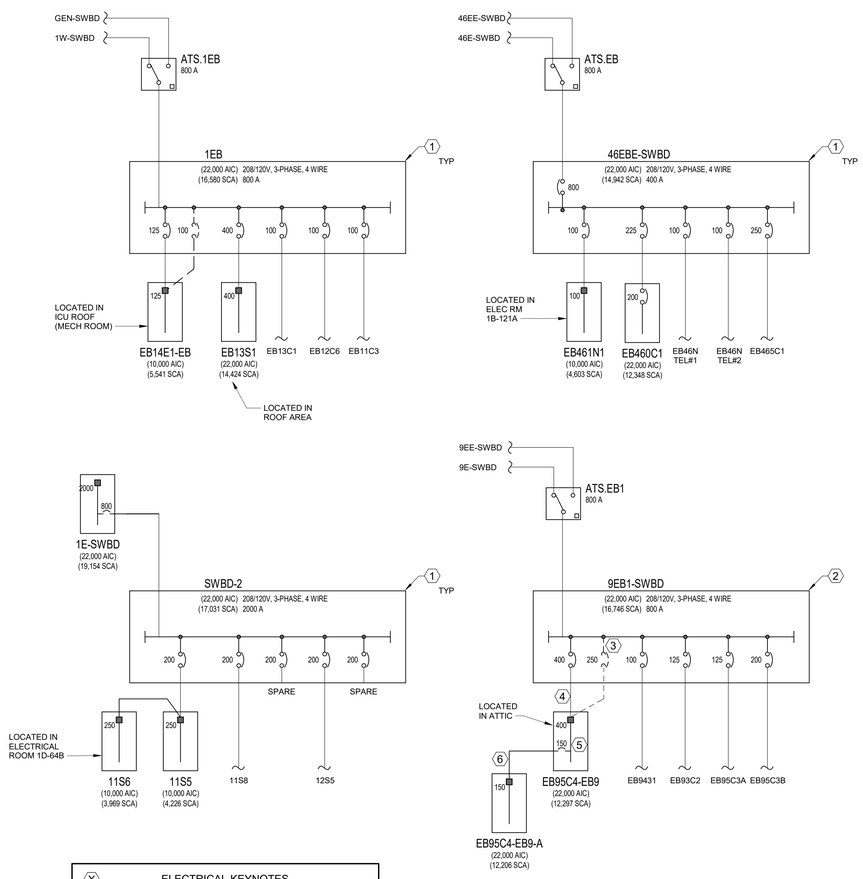
Issue Date: 8/9/2021 | Checked: CC | Drawn: FK

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: E-13

VA FORM 08-6231



ELECTRICAL KEYNOTES

1. ALL ELECTRICAL EQUIPMENT ARE EXISTING TO REMAIN, UON.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING LOCATION OF DISTRIBUTION PANEL "9EB1-SWBD".
3. DISCONNECT AND REMOVE EXISTING 250A/3P CIRCUIT BREAKER WITH ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE.
4. RUN (2) SETS OF 4#3/0 + #3EG IN 2 1/2"C. PANELBOARD IS APPROXIMATELY 50 FEET FROM 9EB1-SWBD.
5. PROVIDE 150A/3P CIRCUIT BREAKER TO PROVIDE POWER TO NEW SUB-PANEL.
6. REFER TO PANEL SCHEDULE FOR WIRE AND CONDUIT SIZE.
7. CONTRACTOR SHALL FIELD VERIFY EXISTING LOCATION OF DISTRIBUTION PANEL "1-EB".
8. CONTRACTOR SHALL UTILIZE EXISTING CONDUIT AND WIRING TO PROVIDE POWER TO EXISTING PANELBOARD "EB-14E1-EB". CONTRACTOR SHALL VERIFY FEEDERS AND CONDUIT PRIOR TO ROUGH IN. (4#1 + 6EG IN 1 1/2"C APPROPRIATELY).

1 ELECTRICAL PARTIAL ONE-LINE

NOT TO SCALE

PANEL: EB13S1 PANELBOARD SCHEDULE EXISTING PANEL

#	Description	Trip	Poles	Options	Wire and Conduit	A	B	C	A	B	C	Wire and Conduit	Options	Poles	Trip	Description	#
1	EXISTING LOAD	20 A	3		--	960 VA			7200 VA			--		3	150 A	EXISTING LOAD	2
3	--	--	--		--		960 VA			7200 VA		--		--	--	--	4
5	--	--	--		--			960 VA			7200 VA	--		--	--	--	6
7	EXISTING LOAD	15 A	3		--	720 VA			720 VA			--		3	15 A	EXISTING LOAD	8
9	--	--	--		--		720 VA			720 VA		--		--	--	--	10
11	--	--	--		--			720 VA			720 VA	--		--	--	--	12
13	EXISTING LOAD	15 A	3		--	720 VA			720 VA			--		3	15 A	EXISTING LOAD	14
15	--	--	--		--		720 VA			720 VA		--		--	--	--	16
17	--	--	--		--			720 VA			720 VA	--		--	--	--	18
19	EXISTING LOAD	15 A	3		--	720 VA			180 VA			C2-20		1	20 A	RCPT-DENTAL ROOF PLAN	20
21	--	--	--		--		720 VA			0 VA		--		1	20 A	SPARE	22
23	--	--	--		--			720 VA			0 VA	--		1	20 A	SPARE	24
25	**M-EF-220 1HP**	**15 A**	**3**		**C3-15**	552 VA			0 VA			--		1	20 A	SPARE	26
27	--	--	--		--		552 VA			0 VA		--		1	20 A	SPARE	28
29	--	--	--		--			552 VA			0 VA	--		1	20 A	SPARE	30
31	**M-EF-219 1HP**	**15 A**	**3**		**C3-15**	552 VA			0 VA			--		1	20 A	SPARE	32
33	--	--	--		--		552 VA			0 VA		--		1	20 A	SPARE	34
35	--	--	--		--			552 VA			0 VA	--		1	20 A	SPARE	36
37	SPARE	20 A	1		--	0 VA			0 VA			--		1	20 A	SPARE	38
39	SPARE	20 A	1		--		0 VA			0 VA		--		1	20 A	SPARE	40
41	SPARE	20 A	1		--			0 VA			0 VA	--		1	20 A	SPARE	42

Load Description	Connected Load (VA)	Demand Factor	Estimated Demand...
Lighting	0 VA	0.000%	0 VA
Receptacle	180 VA	100.000%	180 VA
Motor	0 VA	0.000%	0 VA
HVAC	0 VA	0.000%	0 VA
Equipment	0 VA	0.000%	0 VA
Heating	0 VA	0.000%	0 VA
Kitchen Equipment	0 VA	0.000%	0 VA
Elevator	0 VA	0.000%	0 VA
Continuous Load	0 VA	0.000%	0 VA
Non-continuous Load	0 VA	0.000%	0 VA

Connected Load	Load (VA)	Amps (A)
Phase A:	13044...	109 A
Phase B:	12864...	107 A
Phase C:	12864...	107 A
Total Conn. Load:	38772 VA	
Total Est. Demand:	38772 VA	
Total Conn.:	108 A	
Total Est. Demand:	108 A	

Panel Options	
Voltage:	208Y/120V, 3Ø, 4W
Mains:	400 A
Rating:	22k AIC
Minimum Bus...	400 A
Mounting:	Recessed
Enclosure Type:	Type 1
Isolated Ground:	NO
Sub-feed Lugs:	NO
Feed-thru Lugs:	NO

Circuit Breaker Options	
AFCI	Arc Fault Circuit Interrupter
GFCI	GFCI-Personnel (4-6 mA)
GF-E	GFCI-Equipment (30 mA)
GFP	Ground Fault Protection
ST	Shunt Trip
L-ON	CB Lock in Closed Position
L-OFF	CB Lock in Open Position
TC/TC	Timeclock On/Timeclock Off
PC/TC	Photocell On/Timeclock Off
PC/PC	Photocell On/Photocell Off

Notes

1. NEW BREAKERS ARE SHOWN WITH BOLD TEXT. NEW BREAKERS SHALL MATCH TYPE AND AIC RATING OF EXISTING.

PANEL: EB95C4-EB9 PANELBOARD SCHEDULE EXISTING PANEL

#	Description	Trip	Poles	Options	Wire and Conduit	A	B	C	A	B	C	Wire and Conduit	Options	Poles	Trip	Description	#
1	EXISTING LOAD	50 A	3		--	2400 VA			720 VA			--		3	15 A	EXISTING LOAD	2
3	--	--	--		--		2400 VA			720 VA		--		--	--	--	4
5	--	--	--		--			2400 VA			720 VA	--		--	--	--	6
7	EXISTING LOAD	15 A	3		--	720 VA			1440 VA			--		3	30 A	EXISTING LOAD	8
9	--	--	--		--		720 VA			1440 VA		--		--	--	--	10
11	--	--	--		--			720 VA			1440 VA	--		--	--	--	12
13	EXISTING LOAD	30 A	3		--	1440 VA			2400 VA			--		3	50 A	EXISTING LOAD	14
15	--	--	--		--		1440 VA			2400 VA		--		--	--	--	16
17	--	--	--		--			1440 VA			2400 VA	--		--	--	--	18
19	EXISTING LOAD	15 A	3		--	720 VA			720 VA			--		3	15 A	EXISTING LOAD	20
21	--	--	--		--		720 VA			720 VA		--		--	--	--	22
23	--	--	--		--			720 VA			720 VA	--		--	--	--	24
25	EXISTING LOAD	30 A	3		--	1440 VA			960 VA			--		1	20 A	EXISTING LOAD	26
27	--	--	--		--		1440 VA			960 VA		--		1	20 A	EXISTING LOAD	28
29	--	--	--		--			1440 VA			960 VA	--		1	20 A	EXISTING LOAD	30
31	EXISTING LOAD	60 A	3		--	2880 VA			2400 VA			--		3	50 A	EXISTING LOAD	32
33	--	--	--		--		2880 VA			2400 VA		--		--	--	--	34
35	--	--	--		--			2880 VA			2400 VA	--		--	--	--	36
37	**EB95C4-EB9-A**	**150 A**	**3**		**C4-150**	4176 VA			960 VA			--		3	20 A	EXISTING LOAD	38
39	--	--	--		--		3816 VA			960 VA		--		--	--	--	40
41	--	--	--		--			3816 VA			960 VA	--		--	--	--	42

Load Description	Connected Load (VA)	Demand Factor	Estimated Demand...
Lighting	0 VA	0.000%	0 VA
Receptacle	360 VA	100.000%	360 VA
Motor	0 VA	0.000%	0 VA
HVAC	11448 VA	100.000%	11448 VA
Equipment	0 VA	0.000%	0 VA
Heating	0 VA	0.000%	0 VA
Kitchen Equipment	0 VA	0.000%	0 VA
Elevator	0 VA	0.000%	0 VA
Continuous Load	0 VA	0.000%	0 VA
Non-continuous Load	0 VA	0.000%	0 VA

Connected Load	Load (VA)	Amps (A)
Phase A:	23376...	195 A
Phase B:	23016...	192 A
Phase C:	23016...	192 A
Total Conn. Load:	69408 VA	
Total Est. Demand:	69408 VA	
Total Conn.:	193 A	
Total Est. Demand:	193 A	

Panel Options	
Voltage:	208Y/120V, 3Ø, 4W
Mains:	400 A
Rating:	22k AIC
Minimum Bus...	400 A
Mounting:	RECESSED
Enclosure Type:	Type 1
Isolated Ground:	NO
Sub-feed Lugs:	NO
Feed-thru Lugs:	NO

Circuit Breaker Options	
AFCI	Arc Fault Circuit Interrupter
GFCI	GFCI-Personnel (4-6 mA)
GF-E	GFCI-Equipment (30 mA)
GFP	Ground Fault Protection
ST	Shunt Trip
L-ON	CB Lock in Closed Position
L-OFF	CB Lock in Open Position
TC/TC	Timeclock On/Timeclock Off
PC/TC	Photocell On/Timeclock Off
PC/PC	Photocell On/Photocell Off

Notes

1. NEW BREAKERS ARE SHOWN WITH BOLD TEXT. NEW BREAKERS SHALL MATCH TYPE AND AIC RATING OF EXISTING.

PANEL: EB95C4-EB9-A PANELBOARD SCHEDULE NEW PANEL

#	Description	Trip	Poles	Options	Wire and Conduit	A	B	C	A	B	C	Wire and Conduit	Options	Poles	Trip	Description	#
1	EF-3A-1 3HP	20 A	3		C3-30	1272 VA			360 VA			C2-20		1	20 A	RCPT-MNU ATTIC	2
3	--	--	--		--		1272 VA			0 VA		--		1	20 A	SPARE	4
5	--	--	--		--			1272 VA			0 VA	--		1	20 A	SPARE	6
7	EF-3A-2 3HP	20 A	3		C3-30	1272 VA			0 VA			--		1	20 A	SPARE	8
9	--	--	--		--		1272 VA			0 VA		--		1	20 A	SPARE	10
11	--	--	--		--			1272 VA			0 VA	--		1	20 A	SPARE	12
13	EF ATTIC (2) 3HP	20 A	3		C3-30	1272 VA			0 VA			--		1	20 A	SPARE	14
15	--	--	--		--		1272 VA			0 VA		--		1	20 A	SPARE	16
17	--	--	--		--			1272 VA			0 VA	--		1	20 A	SPARE	18
19	SPARE	20 A	1		--	0 VA			0 VA			--		1	20 A	SPARE	20
21	SPARE	20 A	1		--		0 VA			0 VA		--		1	20 A	SPARE	22
23	SPARE	20 A	1		--			0 VA			0 VA	--		1	20 A	SPARE	24
25	SPD	30 A	3		--	0 VA			0 VA			--		--	--	SPACE	26
27	--	--	--		--		0 VA			0 VA		--		--	--	SPACE	28
29	--	--	--		--			0 VA			0 VA	--		--	--	SPACE	30

Load Description	Connected Load (VA)	Demand Factor	Estimated Demand...
Lighting	0 VA	0.000%	0 VA
Receptacle	360 VA	100.000%	360 VA
Motor	0 VA	0.000%	0 VA
HVAC	11448 VA	100.000%	11448 VA
Equipment	0 VA	0.000%	0 VA
Heating	0 VA	0.000%	0 VA
Kitchen Equipment	0 VA	0.000%	0 VA
Elevator	0 VA	0.000%	0 VA
Continuous Load	0 VA	0.000%	0 VA
Non-continuous Load	0 VA	0.000%	0 VA

Connected Load	Load (VA)	Amps (A)
Phase A:	4176 VA	35 A
Phase B:	3816 VA	32 A
Phase C:	3816 VA	32 A
Total Conn. Load:	11808 VA	
Total Est. Demand:	11808 VA	
Total Conn.:	33 A	
Total Est. Demand:	33 A	

Panel Options	
Voltage:	208Y/120V, 3Ø, 4W
Mains:	150 A
Rating:	22k AIC
Minimum Bus...	150 A
Mounting:	RECESSED
Enclosure Type:	Type 1
Isolated Ground:	NO
Sub-feed Lugs:	NO
Feed-thru Lugs:	NO

Circuit Breaker Options	
AFCI	Arc Fault Circuit Interrupter
GFCI	GFCI-Personnel (4-6 mA)
GF-E	GFCI-Equipment (30 mA)
GFP	Ground Fault Protection
ST	Shunt Trip
L-ON	CB Lock in Closed Position
L-OFF	CB Lock in Open Position
TC/TC	Timeclock On/Timeclock Off
PC/TC	Photocell On/Timeclock Off
PC/PC	Photocell On/Photocell Off

Notes

1. NEW BREAKERS SHALL MATCH TYPE AND AIC RATING OF EXISTING.

PANEL: EB461N1 PANELBOARD SCHEDULE EXISTING PANEL

#	Description	Trip	Poles	Options	Wire and Conduit	A	B	C	A	B	C	Wire and Conduit	Options	Poles	Trip	Description	#
1	EF-118	20 A	1		--	960 VA			901 VA			**C3-20**		**3**	**20 A**	**M-EF-116 2HP**	2
3	EF-119	20 A	1		--		960 VA			901 VA		--		--	--	--	4
5	COILING WINDOWN	20 A	1		--			960 VA			901 VA	--		--	--	--	6
7	COILING WINDOWN	20 A	1		--	960 VA			960 VA			--		**1**	**20 A**	**SPARE**	8
9	COILING WINDOWN	20 A	1		--		960 VA			901 VA		**C3-20**		**3**	**20 A**	**M-EF-117 2HP**	10
11	COILING WINDOWN	20 A	1		--			960 VA			901 VA	--		--	--	--	12
13	RECEPTACLE 1B-120	20 A	1		--	960 VA			901 VA			--		--	--	--	14
15	DOOR POWR SUPPLY...	20 A	1		--		960 VA			960 VA		--		1	20 A	EF-123	16
17	CUH-1	20 A	1		--			960 VA			960 VA	--		1	20 A	CO2 PANEL 1B-12-	18
19	DOOR POWER CB-105	20 A	1		--	180 VA			960 VA			--		1	20 A	HEAT TAPE CANOPY	20
21	DOOR POWER CB-102	20 A	1		--		180 VA			960 VA		--		1	20 A	HEAT TAPE CANOPY	22
23	DOOR POWER 1B-121B	20 A	1		--			180 VA			960 VA	--		2	30 A	A/C UNIT 1B-124 ROOF	24
25	DOOR POWER 1C-40	20 A	1		--	180 VA			960 VA			--		--	--	--	26
27	DOOR POWER 1C-35B	20 A	1		--		180 VA			960 VA		--		1	20 A	EF-120	28
29	DOOR POWER 1C-38	20 A	1		--			180 VA			960 VA	--		1	20 A	EF-121	30
31	DOOR POWER 1C-38D	20 A	1		--	180 VA			0 VA			--		1	20 A	SPARE	32
33	RCPT - ROOF PLAN- ED	20 A	1		C2-20		180 VA			0 VA		--		1	20 A	SPARE	34
35	SPARE	20 A	1		--			0 VA			0 VA	--		1	20 A	SPARE	36
37	SPARE	20 A	1		--	0 VA			0 VA			--		1	20 A	SPARE	38
39	SPARE	20 A	1		--		0 VA			0 VA		--		1	20 A	SPARE	40
41	SPARE	20 A	1		--			0 VA			0 VA	--		1	20 A	SPARE	42
43	SPARE	20 A	1		--	0 VA			0 VA			--		1	20 A	SPARE	44
45	SPARE	20 A	1		--		0 VA			0 VA		--		1	20 A	SPARE	46
47	SPARE	20 A	1		--			0 VA			0 VA	--		1	20 A	SPARE	48
49	SPARE	20 A	1		--	0 VA			0 VA			--		1	20 A	SPARE	50
51	SPARE	20 A	1		--		0 VA			0 VA		--		1	20 A	SPARE	52
53	SPARE	20 A	1		--			0 VA			0 VA	--		1	20 A	SPARE	54

Load Description	Connected Load (VA)	Demand Factor	Estimated Demand...
Lighting	0 VA	0.000%	0 VA
Receptacle	180 VA	100.000%	180 VA
Motor	0 VA	0.000%	0 VA
HVAC	0 VA	0.000%	0 VA
Equipment	0 VA	0.000%	0 VA
Heating	0 VA	0.000%	0 VA
Kitchen Equipment	0 VA	0.000%	0 VA
Elevator	0 VA	0.000%	0 VA
Continuous Load	0 VA	0.000%	0 VA
Non-continuous Load	0 VA	0.000%	0 VA

Connected Load	Load (VA)	Amps (A)
Phase A:	8102 VA	68 A
Phase B:	8102 VA	68 A
Phase C:	7922 VA	66 A
Total Conn. Load:	24126 VA	
Total Est. Demand:	24126 VA	
Total Conn.:	67 A	
Total Est. Demand:	67 A	

Panel Options	
Voltage:	208Y/120V, 3Ø, 4W
Mains:	100 A
Rating:	10k AIC
Minimum Bus...	100 A
Mounting:	RECESSED
Enclosure Type:	Type 1
Isolated Ground:	NO
Sub-feed Lugs:	NO
Feed-thru Lugs:	NO

Circuit Breaker Options	
AFCI	Arc Fault Circuit Interrupter
GFCI	GFCI-Personnel (4-6 mA)
GF-E	GFCI-Equipment (30 mA)
GFP	Ground Fault Protection
ST	Shunt Trip
L-ON	CB Lock in Closed Position
L-OFF	CB Lock in Open Position
TC/TC	Timeclock On/Timeclock Off
PC/TC	Photocell On/Timeclock Off
PC/PC	Photocell On/Photocell Off

Notes

1. NEW BREAKERS ARE SHOWN WITH BOLD TEXT. NEW BREAKERS SHALL MATCH TYPE AND AIC RATING OF EXISTING.

PANEL: EB14E1-EB PANELBOARD SCHEDULE EXISTING PANEL

#	Description	Trip	Poles	Options	Wire and Conduit	A	B	C	A	B	C	Wire and Conduit	Options	Poles	Trip	Description	#
1	AHU-49	70 A	3		--	3360 VA			1440 VA			--		3	30 A	RF-49	2
3	--	--	--		--		3360 VA			1440 VA		--		--	--	--	4
5	--	--	--		--			3360 VA			1440 VA	--		--	--	--	6
7	**M-EF-419 2HP**	**20 A**	**3**			1273 VA			1273 VA			C3-30		**3**	**20 A**	**M-EF-418 2HP**	8
9	--	--	--		--		1273 VA			1273 VA		--		--	--	--	10
11	--	--	--		--			1273 VA			1273 VA	--		--	--	--	12
13	SPARE	20 A	1		--	0 VA			0 VA			--		1	20 A	SPARE	14
15	EXISTING LOAD	20 A	1		--		960 VA			0 VA		--		1	20 A	SPARE	16
17	EXISTING LOAD	20 A	1		--			960 VA			960 VA	--		1	20 A	EXISTING LOAD	18
19	SPACE	--	--		--	0 VA			960 VA			--		2	20 A	EXISTING LOAD	20
21	EXISTING LOAD	20 A	1		--		960 VA			960 VA		--		--	--	--	22
23	**RCPT-ICU ROOF**	**20 A**	**1**		**C2-20**			180 VA			0 VA	--		**--**	**--**	SPACE	24
25	**M-EF-421 5HP**	**25 A**	**3**		**C3-30**	2004 VA			2004 VA			**C3-30**		**3**	**25 A**	**M-EF-420 5HP**	26
27	**--**	**--**	**--**		**--**		2004 VA			2004 VA		--		--	--	--	28
29	**--**	**--**	**--**		**--**			2004 VA			2004 VA	--		--	--	--	30

Load Description	Connected Load (VA)	Demand Factor	Estimated Demand...
Lighting	0 VA	0.000%	0 VA
Receptacle	180 VA	100.000%	180 VA
Motor	0 VA	0.000%	0 VA
HVAC	0 VA	0.000%	0 VA
Equipment	0 VA	0.000%	0 VA
Heating	0 VA	0.000%	0 VA
Kitchen Equipment	0 VA	0.000%	0 VA
Elevator	0 VA	0.000%	0 VA
Continuous Load	0 VA	0.000%	0 VA
Non-continuous Load	0 VA	0.000%	0 VA

Connected Load	Load (VA)	Amps (A)
Phase A:	12314...	103 A
Phase B:	14234...	120 A
Phase C:	13454...	114 A
Total Conn. Load:	40002 VA	
Total Est. Demand:	40002 VA	
Total Conn.:	111 A	
Total Est. Demand:	111 A	

Panel Options	
Voltage:	208Y/120V, 3Ø, 4W
Mains:	MLO
Rating:	22k AIC
Minimum Bus...	125 A
Mounting:	Surface
Enclosure Type:	Type 1
Isolated Ground:	NO
Sub-feed Lugs:	NO
Feed-thru Lugs:	NO

Circuit Breaker Options	
AFCI	Arc Fault Circuit Interrupter
GFCI	GFCI-Personnel (4-6 mA)
GF-E	GFCI-Equipment (30 mA)
GFP	Ground Fault Protection
ST	Shunt Trip
L-ON	CB Lock in Closed Position
L-OFF	CB Lock in Open Position
TC/TC	Timeclock On/Timeclock Off
PC/TC	Photocell On/Timeclock Off
PC/PC	Photocell On/Photocell Off

Notes

1. NEW BREAKERS ARE SHOWN WITH BOLD TEXT. NEW BREAKERS SHALL MATCH TYPE AND AIC RATING OF EXISTING.

COPPER WIRE AND CONDUIT SCHEDULE

Designation	Parallel Runs	3 Phase, 4 Wire Conductors (AWG/kcmil)	3 Phase, 4 Wire Equipment Ground (AWG/kcmil)	3 Phase, 4 Wire Conduit	3 or 1 Phase, 3 Wire Conductors (AWG/kcmil)	3 or 1 Phase, 3 Wire Equipment Ground (AWG/kcmil)	3 or 1 Phase, 3 Wire Conduit	1 Phase, 2 Wire Conductors (AWG/kcmil)	1 Phase, 2 Wire Equipment Ground (AWG/kcmil)	1 Phase, 2 Wire Conduit
C_-15	1				-	-	-	2 # 14	1 # 12	3/4"
C_-20	1	4 # 12	1 # 12	3/4"	3 # 12	1 # 12	3/4"	2 # 12	1 # 12	3/4"
C_-30	1	4 # 10	1 # 10	3/4"	3 # 10	1 # 10	3/4"	2 # 10	1 # 10	3/4"
C_-40	1	4 # 8	1 # 10	1"	3 # 8	1 # 10	3/4"	2 # 8	1 # 10	3/4"
C_-60	1	4 # 6	1 # 10	1"	3 # 6	1 # 10	1"	2 # 6	1 # 10	1"
C_-70	1	4 # 4	1 # 8	1-1/2"	3 # 4	1 # 8	1"	2 # 4	1 # 8	1"
C_-90	1	4 # 3	1 # 8	1-1/2"	3 # 3	1 # 8	1-1/2"	2 # 3	1 # 8	1"
C_-100	1	4 # 3	1 # 8	1-1/2"	3 # 3	1 # 8	1-1/2"	2 # 3	1 # 8	1"
C_-110	1	4 # 2	1 # 6	1-1/2"	3 # 2	1 # 6	1-1/2"	2 # 2	1 # 6	1-1/2"
C_-125	1	4 # 1	1 # 6	2"	3 # 1	1 # 6	1-1/2"	2 # 1	1 # 6	1-1/2"
C_-150	1	4 # 1/0	1 # 6	2"	3 # 1/0	1 # 6	1-1/2"	2 # 1/0	1 # 6	1-1/2"
C_-175	1	4 # 2/0	1 # 6	2"	3 # 2/0	1 # 6	1-1/2"	2 # 2/0	1 # 6	1-1/2"
C_-200	1	4 # 3/0	1 # 6	2"	3 # 3/0	1 # 6	2"	2 # 3/0	1 # 6	2"
C_-225	1	4 # 4/0	1 # 4	3"	3 # 4/0	1 # 4	2"	-	-	-

Notes

1. All conductors indicated in schedule shall be copper.
2. Designation followed with "/" indicates conductor size increased due to voltage drop.
3. Designation followed with "SE" indicates service entrance conductors with no ground.
4. C1-15 shall apply to residential applications only.

100% BID DOCUMENT	8/9/2021
95% DESIGN DEVELOPMENT	7/12/2021
65% DESIGN DEVELOPMENT	5/24/2021
35% SCHEMATIC DESIGN	4/1/2021
Revisions:	Date:

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Stamp

JOSHUA R. MILLER LICENSE No. 74045 STATE OF FLORIDA PROFESSIONAL ENGINEER

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: PANEL SCHEDULES AND PARTIAL ONE-LINE

Approved: Project Director

Phase: 100% BID DOCUMENTS

FULLY SPRINKLERED

Project Title: CORRECT ISOLATION ROOM ISSUES

Location: Fargo VA Medical Center, 2101 Elm Street North, Fargo, ND 58102

Issue Date: 8/9/2021 | Checked: CC | Drawn: FK

Project Number: 437-21-170

Building Number: 1, 46, 9

Drawing Number: E-14

VA FORM 08-6231