MOUNTING HEIGHTS FOR ELECTRICAL DEVICES

DEVICE	MOUNTING HEIGHTS
LIGHT SWITCHES, WALL MOUNTED OCCUPANCY SENSORS	48" TO CENTERLINE OF BOX. EXCEPTION: 44" MAXIMUM TO TOP ABOVE COUNTERS WHICH ARE 20"-25"D.
WALL MOUNTED EXIT SIGNS	90" TO CENTERLINE OF SIGN OR CENTERED IN WALL AREA BETWEEN TOP OF DOOR AND CEILING.
CEILING MOUNTED EXIT SIGNS	80" TO BOTTOM FIXTURE.
RECEPTACLES	16" TO BOTTOM OF BOX. EXCEPTION: 44" MAXIMUM TO TOP ABOVE COUNTERS WHICH ARE 20"-25"D.
SPECIAL OUTLETS OR RECEPTACLES	16" TO BOTTOM OF BOX OR AS NOTED ON DRAWINGS. EXCEPTION: 44" MAXIMUM TO TOP ABOVE COUNTERS WHICH ARE 20"-25"D.
PLUGMOLD OR WIREMOLD	AS NOTED ON DRAWINGS. EXCEPTION: 44" MAXIMUM TO TOP ABOVE COUNTERS WHICH ARE 20"-25"D.
DATA/COMMUNICATION OR TELEPHONE OUTLETS	16" TO BOTTOM OF BOX.
TELEPHONE OUTLETS - WALL TYPE	54" TO DIAL CENTER (NON-ACCESSIBLE). 48" TO HIGHEST OPERABLE PART (ACCESSIBLE).
FIRE ALARM MANUAL PULL STATIONS	48" TO CENTERLINE OF BOX - NOT MORE THAN 5'-0" FROM EXIT.
FIRE ALARM AUDIBLE ONLY DEVICE	NOT LESS THAN 90" TO TOP OR 6" BELOW CEILING, WHICH EVER IS HIGHER.
FIRE ALARM VISUAL ONLY DEVICE OR A COMBINATION AUDIBLE AND VISUAL DEVICE	80" TO BOTTOM OF DEVICE OR NOT MORE THAN 96" TO TOP.
CARD READER	48" TO HIGHEST OPERABLE PART (SIDE OR FORWARD ACCESS).
INTERCOM STATION	54" TO HIGHEST OPERABLE PART (SIDE ACCESS). 48" HIGHEST OPERABLE PART (FORWARD ACCESS).
SOUND SYSTEM VOLUME CONTROL	54" TO HIGHEST OPERABLE PART (SIDE ACCESS). 48" HIGHEST OPERABLE PART (FORWARD ACCESS).
THERMOSTATS	54" TO HIGHEST OPERABLE PART (SIDE ACCESS). 48" HIGHEST OPERABLE PART (FRONT ACCESS).
TEMPERATURE/HUMIDITY SENSORS	60" TO CENTER LINE OF BOX.

NOTES:

1. ALL DIMENSIONS ARE CONSIDERED FROM FINISHED FLOOR AND, UNLESS NOTED OTHERWISE, SHALL NOT VARY. RAISED FLOORS SHALL BE CONSIDERED FINISHED FLOOR.
2. ALL DIMENSIONS SHALL BE COORDINATED WITH ARCHITECTURAL DETAILS AND MAY BE ADJUSTED TO CONFORM WITH ARCHITECTURAL REQUIREMENTS AS LONG AS NO CODE RESTRICTION IS VIOLATED.
3. OUTLETS INSTALLED LOWER THAN 15" AFF (FORWARD REACH) AND 9" AFF (SIDE REACH) ARE IN VIOLATION OF ADA.

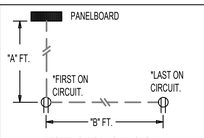
SPECIAL NOTES:

1. EXIT SIGNS SHALL NOT BE INSTALLED IN A MANNER THAT THE SIGN WILL BLOCK FIRE ALARM VISUAL DEVICES.
2. FOR LIGHTING FIXTURES MOUNTING HEIGHTS SEE SCHEDULE AND DRAWINGS.

WIRE/CONDUIT SIZING TABLE

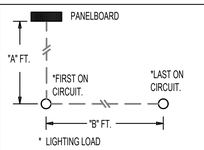
FOR 120V-20A BRANCH CIRCUITS ONLY (UNLESS NOTED OTHERWISE)

IF DISTANCE (A+B) IN FEET IS: (SEE DIAGRAM AT RIGHT)	USE COPPER WIRE IN METALLIC CONDUIT, AWG SIZE AS FOLLOWS ON ENTIRE CIRCUIT AND SIZE CONDUIT ACCORDINGLY. WIRE SIZE	CONDUIT SIZE
0' TO 100'	#12 AWG (MIN.)	3/4"
100' TO 175'	#10 AWG	3/4"
175' TO 300'	#8 AWG	3/4"
300' TO 450'	#6 AWG (MAX.)	1"



FOR 277V-20A BRANCH CIRCUITS ONLY (UNLESS NOTED OTHERWISE)

IF DISTANCE (A+B) IN FEET IS: (SEE DIAGRAM AT RIGHT)	USE COPPER WIRE IN METALLIC CONDUIT, AWG SIZE AS FOLLOWS ON ENTIRE CIRCUIT AND SIZE CONDUIT ACCORDINGLY. WIRE SIZE	CONDUIT SIZE
0' TO 250'	#12 AWG (MIN.) #10 AWG	3/4"
250' TO 400'		3/4"
400' TO 700'	#8 AWG	3/4"
700' TO 1000'	#6 AWG (MAX.)	1"



NOTES:

1. TABLES ARE BASED ON EVENLY DISTRIBUTED LOAD ALLOWING A 3% VOLTAGE DROP AT LAST OUTLET/LIGHT.
2. SIZE OF CONDUCTORS ARE BASED UPON EACH MOTOR BEING FED WITH SEPARATE CONDUIT. IF CONDUCTORS FOR TWO MOTORS (MAX.) ARE TO BE COMBINED IN ONE CONDUIT, INCREASE THE SIZE OF CONDUCTORS AND CONDUITS PER NATIONAL ELECTRICAL CODE (NEC), TO COMPENSATE FOR CONDUCTOR DE-RATING.
3. PROVIDE DEDICATED NEUTRAL FOR EACH CIRCUIT.
4. PROVIDE EQUIPMENT GROUND CONDUCTOR FOR EACH CIRCUIT, SIZE TO COMPLY WITH NEC REQUIREMENTS.
5. FOLLOW "TR RACK UPS WIRING SCHEDULE" FOR WIRING UPS POWER TO RACKS.

ELECTRICAL GENERAL NOTES

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

2. BASIS OF DESIGN PROTOCOLS:

   DESIGN IS BASED ON LISTED MANUFACTURER MENTIONED ON ALL ELECTRICAL AND ALL SPECIAL SYSTEM DRAWINGS INCLUDING BUT NOT LIMITED TO VARIOUS ELECTRICAL EQUIPMENTS, DEVICES, LIGHT FIXTURES, LIGHTING CONTROLS, AND ALL SPECIAL SYSTEM DEVICES. CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL EQUAL PRODUCTS SHALL MEETS OR EXCEEDS THE DESIGN INTENT, PERFORMANCE, OUTLINE DIMENSION, WEIGHT ETC. EQUAL PRODUCT SHOP SUBMITTALS SHALL BE REJECTED UNLESS CONTRACTOR PROVIDES WRITTEN STATEMENT INDICATING IT MATCHES 100% PERFORMANCE SPECS AND ALL ABOVE CRITERIA. EQUAL PRODUCT SHOP SUBMITTAL NOT MEETING ABOVE CRITERIA SHALL BE REVIEWED AND/OR SELECTED EQUAL PRODUCTS REQUIRES RE-DESIGN THAT WILL BE AT THE COST TO THE CONTRACTOR INCLUDING DELAY OF PROJECT DUE TO THIS PROCESS. ALTERNATIVELY EQUAL PRODUCTS ALONG WITH LETTER INDICATING CONTRACTOR IS RESPONSIBLE FOR MEETING DESIGN INTENT/CRITERA SHALL BE SUBMITTED AND APPROVED FROM VA/COR BEFORE BID AND VA/COR APPROVAL PROOF SHALL BE SUBMITTED ALONG WITH SHOP SUBMITTAL FOR REVIEW.

   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 "G" GENERAL DRAWINGS SECTION FOR THE FULL BOD EQUIVALENCY SUBSTITUTION REQUIREMENTS AND PROTOCOLS TO BE FOLLOWED.

3. CODES:

   THE WORK SHALL COMPLY WITH ALL APPLICABLE, MUNICIPAL, STATE, NATIONAL CODES, AND ALL VA APPLICABLE DESIGN MANUALS STANDARDS REQUIREMENTS. WHERE THE CONSTRUCTION DOCUMENTS INDICATE MORE RESTRICTIVE REQUIREMENTS THE CONSTRUCTION DOCUMENTS SHALL GOVERN. HOWEVER, THE CONSTRUCTION DOCUMENTS SHALL NOT BE INTERPRETED AS AUTHORITY TO VIOLATE ANY CODE OR REGULATION.

   ALL WORK, MATERIAL, AND EQUIPMENT SHALL COMPLY WITH ALL REQUIREMENTS OF THE LATEST EDITIONS AND INTERIM AMENDMENTS OF THE NATIONAL ELECTRICAL CODE (N.E.C.), NATIONAL ELECTRICAL SAFETY CODE, OSHA, AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND ORDINANCES. ALL ELECTRICAL EQUIPMENT PROVIDED UNDER THIS CONTRACT SHALL BE NEW (EXCEPT WHERE OTHERWISE NOTED) AND SHALL SHALL BEAR THE MARK OF NATIONALLY RECOGNIZED TESTING LABORATORY, WHEN APPLICABLE. ALL EQUIPMENT OF THE SAME TYPE AND CAPACITY SHALL BE BY THE SAME MANUFACTURER.

4. DRAWINGS AND SPECIFICATIONS:

   THE CONTRACTOR SHALL BE RESPONSIBLE FOR READING AND COMPLYING WITH BOTH THE DRAWINGS AND SPECIFICATIONS. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN THE DRAWINGS, NOTES, SPECIFICATIONS, OR CODES, THE REFERENCE WHICH PROVIDES THE MORE COMPLETE OR HIGHER STANDARD SHALL PREVAIL UNLESS OTHERWISE CLARIFIED BY OWNER.

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

5. INTERPRETATION OF THE DOCUMENTS:

   CAREFULLY COMPARE THE DRAWINGS AND SPECIFICATIONS, CHECKING MEASUREMENTS AND CONDITIONS UNDER WHICH THIS INSTALLATION IS TO BE MADE. FOR CLARIFICATION BETWEEN VARIOUS DRAWINGS, BETWEEN DRAWINGS OR SPECIFICATION, OR BETWEEN SECTIONS OF THE SPECIFICATION, THE MATTER SHALL BE REFERRED TO THE VA/COR FOR CLARIFICATION AND APPROVAL BEFORE ANY WORK IS EXECUTED. THE CONTRACTOR SHALL STATE IN THEIR PROPOSAL ANY EXCEPTIONS NECESSARY TO MAKE THIS A COMPLETE, READY TO USE INSTALLATION. IF NOT STATED IN THEIR BID, IT WILL NOT BE CONSIDERED EXTRA.

   ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, IN A NEAT AND WORKABLE MANNER CONSISTENT WITH RECOGNIZED GOOD PRACTICE, AND SHALL BE SUBJECT TO THE APPROVAL OF THE VA/CO.

   ANY CHANGES TO THE CONTRACT REQUIREMENTS MUST BE APPROVED PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL KEEP UP-TO-DATE AS-BUILT DRAWINGS, ON-SITE, AVAILABLE FOR INSPECTION AT ANY TIME OF THE EXACT NATURE OF WORK, INCLUDING ALLOWABLE DEVIATIONS FROM THE CONTRACT DRAWINGS, FOR THE PURPOSE OF RECORD DOCUMENTS.

6. ELECTRICAL DRAWINGS

   THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL DOORS, WALLS, FURNITURE, EQUIPMENT, ETC.. THE LOCATION OF RACEWAY SYSTEM COMPONENTS IS SCHEMATIC. THE EXACT LOCATION OF RACEWAY SYSTEM COMPONENTS SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD. THE CONTRACTOR SHALL CONFIRM THE DIMENSIONS OF THE ACTUAL EQUIPMENT TO BE SUPPLIED FOR THIS PROJECT, VERIFY CLEARANCES AND ROUGH-INS, AND OBTAIN ALL APPROVALS PRIOR TO STARTING WORK.

7. SITE EXAMINATION

   BEFORE SUBMITTING A BID, THE CONTRACTOR WILL VISIT THE SITE, EXAMINE THE PREMISES, AND MAKE A THOROUGH SURVEY OF THE EXISTING CONDITIONS. THIS VISIT SHALL ONLY BE ALLOWED AS PER THE VA SCHEDULED WALK THROUGH. THE SUBMISSION OF A BID WILL BE CONSTRUED AS EVIDENCE THAT SUCH A VISIT HAS BEEN MADE. NO CONSIDERATION OR ALLOWANCE WILL BE GRANTED FOR FAILURE TO VISIT THE SITE OR FOR LATER CLAIMS FOR LABOR, EQUIPMENT, MATERIALS REQUIRED, OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH VISIT BEEN MADE.

   CONTRACTOR SHALL CAREFULLY EXAMINE THE DRAWINGS AND SPECIFICATIONS, VISIT THE SITE OF THE WORK, AND FULLY INFORM THEM SELF 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/COR AT ONCE, IN WRITING, OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND NEW WORK, OR BETWEEN ELECTRICAL WORK AND THE WORK OF OTHER TRADES. OBTAIN CLARIFICATION(S) PRIOR TO SUBMITTING ANY BID. LACK OF SUCH NOTIFICATION SHALL BE CONSTRUED TO INDICATE NO DISCREPANCIES OR CONFLICTS EXIST. ADDITIONAL COMPENSATION WILL NOT BE GRANTED AFTER AWARD OF CONTRACT FOR ANY WORK REQUIRED TO COMPLY WITH THESE REQUIREMENTS.

8. COORDINATION WITH OTHER TRADES:

   THE ELECTRICAL CONTRACTOR SHALL OBTAIN A COMPLETE SET OF GENERAL, ARCHITECTURAL AND ENGINEERING DOCUMENTS AND COORDINATE WITH MECHANICAL, PLUMBING, ARCHITECTURAL, AND OTHER TRADES FOR EXACT DIMENSIONS, CLEARANCES, ROUGH-IN LOCATIONS, AND OTHER ADDITIONAL SCOPES OF WORK THAT MAY NOT BE SHOWN ON THE ELECTRICAL PLANS. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL 120 VOLT (AND HIGHER) AC POWER TO OTHER TRADES EQUIPMENT AND HARDWARE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, CONTROLS, FIRE AND SECURITY SYSTEMS, MOTORIZED DOORS, DAMPERS, LIFTS, AND OTHER SYSTEMS. UNLESS SPECIFICALLY NOTED OTHERWISE ON THE ELECTRICAL PLANS, THE ELECTRICAL CONTRACTOR SHALL FURNISH ALL SAFETY DISCONNECT SWITCHES TO MECHANICAL EQUIPMENT UNLESS OTHERWISE NOTED..

   THE CONTRACTOR SHALL CHECK ALL ARCHITECTURAL, STRUCTURAL, AND MECHANICAL TRADES WORK FOR POSSIBLE INTERFERENCE CAUSED BY CONDITIONS IN THE FIELD, BEFORE THE BID IS MADE. NO ALLOWANCE SHALL SUBSEQUENTLY BE MADE TO THE CONTRACTOR BY REASON OF HIS FAILURE TO HAVE MADE SUCH EXAMINATIONS OR OF ANY ERROR OF THEIR PART.

9. THE ELECTRICAL CONTRACTOR IS: RESPONSIBLE FOR SCHEDULING DELIVERY, RECEIVING, UNLOADING, UNCRATING, STORING SETTING IN PLACE, AND PROTECTING FROM DAMAGE, VANDALISM, THEFT OR WEATHER DURING CONSTRUCTION FOR ALL NEW EQUIPMENT FURNISHED BY THE ELECTRICAL CONTRACTOR.

   CONTRACTOR SHALL PAY ALL PERMIT FEES, PLAN REVIEW FEES, LICENSE FEES, INSPECTIONS AND TAXES APPLICABLE TO THIS DIVISION IF NECESSARY. (FEDERAL GOVERNMENT IS NOT SUBJECT TO LOCAL PERMITS OR FEE FOR THE PROJECT).

10. FIRE STOPPING:

    ALL PENETRATIONS IN WALL, FLOOR OR CEILINGS SHALL BE SUITABLY CLOSED UP AND SEALED WITH AN INTUMESCENT FIRE STOPPING COMPOUND LISTED IN THE MOST RECENT FACTORY MUTUAL RESEARCH CORPORATION (FMRC) APPROVAL GUIDE. WHEN NEW CABLES/CONDUITS PENETRATE EXISTING FIRE RATED WALL, PENETRATIONS SHALL BE SEALED TO MATCH EXISTING RATING TO ENSURE IT RETAIN EXISTING CONDITIONS. THE BOD FOR FIRE STOPPING PRODUCTS SHALL BE AS MANUFACTURED BY THE 3M CO.

11. PAINTING:

    ALL NEWLY INSTALLED EXPOSED PIPING SHALL BE PAINTED TO MATCH THE ADJACENT WALL OR CEILING SURFACE UNLESS THE REQUIRED COLOR CODING IS SPECIFIED.

12. VA FURNISHED EQUIPMENT:

    EQUIPMENT THAT WILL BE FURNISHED BY THE VA WILL BE INDICATED ON A SCHEDULE OR BE INCLUDED IN SPECIFIC NOTES OR SPECIFICATIONS. THE CONTRACTOR SHALL COORDINATE WITH THE VA/COR FOR DELIVERY SCHEDULES. THE CONTRACTOR IS TO ASSUME THAT ON SITE STORAGE MAY NOT BE AVAILABLE WHEN COORDINATING DELIVERY OF EQUIPMENT. THE CONTRACTOR, IN COORDINATION WITH THE VA/COR, WILL INSPECT THE DELIVERY FOR ACCURACY AND SHIPMENT DAMAGE AND ACCEPTING THE EQUIPMENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO STORE, PROTECT, AND ULTIMATELY INSTALL THE EQUIPMENT.

13. ELECTRICAL SERVICE DISRUPTIONS:

    WORK ON ENERGIZED EQUIPMENT SHALL BE COORDINATED WITH THE VA COR. ENERGIZED WORK PERMITS ARE AVAILABLE, BUT ONLY GRANTED AS A LAST RESORT. ALL EFFORT SHALL BE MADE TO NOT WORK ON ENERGIZED EQUIPMENT. THIS RESTRICTION INCLUDES REMOVING THE COVER FROM ANY PANEL BOARD, SWITCHBOARD, M.C.C. ETC.. ALL WORK WHICH EXPOSES ACTIVE BUS REQUIRES A WRITTEN NOTIFICATION TO THE VA/COR WHICH WILL OUTLINE THE METHOD OF PROCEDURE FOR THE WORK. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 6 WEEKS NOTICE TO THE VA/COR BEFORE WORKING ON ANY ENERGIZED ELECTRICAL SYSTEM. ALL POWER DISRUPTION SHALL OCCUR AT TIMES AND OF DURATIONS ACCEPTABLE TO THE VA/COR.

14. EQUIPMENT:

    ALL MATERIALS AND EQUIPMENT USED IN THIS INSTALLATION SHALL BE NEW, AND HAVE THE APPROPRIATE UL LISTING AND LABEL.

    THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, TOOLS, EQUIPMENT SERVICES, AND ACCESSORIES FOR COMPLETE INSTALLATION OF ALL ELECTRICAL WORK AS NOTED. ITEMS OMITTED FROM EITHER THE SPECIFICATIONS OR THE DRAWINGS, BUT SHOWN OR DESCRIBED IN ONE OR THE OTHER, AND ITEMS NECESSARY TO MAKE THE ELECTRICAL SYSTEM COMPLETE AND WORKABLE SHALL FORM A PART OF THE WORK.

15. MISCELLANEOUS SUPPORTING MEMBERS:

    ALL ANGLES CHANNELS, AND OTHER MISCELLANEOUS STEEL, BOLTS, RODS, ETC.. REQUIRED TO SUPPORT LIGHT FIXTURE, CONDUIT, RACEWAY, LADDER TRAY, OR OTHER ELECTRICAL EQUIPMENT OR DEVICES SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

    ANY MENTION OF A SPECIFIC VOLTAGE ON THE ELECTRICAL DRAWINGS SHALL NOT RELIEVE THE ELECTRICAL CONTRACTOR OF THE RESPONSIBILITY TO VERIFY THE VOLTAGE PRIOR TO PURCHASING OR ROUGH-IN WORK.

16. DISTRIBUTION PANELS AND PANELS BOARDS:

    ALL DISTRIBUTION PANELS AND PANEL BOARDS SHALL BE PROVIDED WITH TYPEWRITTEN DIRECTORIES. SEE PANEL SCHEDULES ON THE DRAWINGS AND SPECIFICATION FOR COMPLETE IDENTIFICATION AND LABELING REQUIREMENTS. ALL DISTRIBUTION PANELS AND PANEL BOARDS SHALL BE LABELED ON THE PANEL CABINET WITH THE PANEL NAME AND THE POWER SOURCE FEEDING THE PANEL AS PER THE ELECTRICAL ONE LINE. ALL PANELS AND PANEL BOARDS SHALL BE PROVIDED WITH HINGED DOOR WITH LOCK AND KEY.

17. SAFETY:

    CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO ENSURE THE SAFETY OF THE VA'S EMPLOYEES, BUILDING EMPLOYEES AND GUESTS, AS WELL AS THEIR OWN FORCES, BY ADEQUATELY PROVIDING APPROPRIATE PPE AND PROTECTING ANY EXPOSED LIVE CONDUCTORS, OR DEVICES THROUGHOUT THE COURSE OF THIS WORK.

18. EQUIPMENT CONNECTIONS:

    PROVIDE FINAL CONNECTIONS FOR ALL EQUIPMENT FURNISHED UNDER OTHER DIVISIONS AND FOR ALL VA FURNISHED EQUIPMENT. PROVIDE A FLEXIBLE LIQUID TIGHT CONNECTION TO ALL VIBRATION PRODUCING EQUIPMENT.

19. TEMPORARY LIGHTING, POWER, FIRE, AND SAFETY:

    PROVIDE TEMPORARY LIGHTING AND POWER AS REQUIRED IN AREAS UNDERGOING WORK DURING CONSTRUCTION. FURNISH AND INSTALL ONE OSHA APPROVED PIGTAIL SOCKET WITH 150-WATT LAMP FOR EVERY 500 SQUARE FEET OF FLOOR SPACE AND A MINIMUM 1 PER ROOM. THE TEMPORARY LIGHTING SHALL BE LEFT IN PLACE UNTIL PERMANENT LIGHTING IS COMPLETELY OPERATIONAL.

    FURNISH AND INSTALL POWER OUTLETS TO A TOTAL OF ONE FOR EVERY 2000 SQUARE FEET OR PART THEREOF OF FLOOR AREA. THESE SHALL BE 20 AMP, SINGLE PHASE RECEPTACLES FOR EITHER 110 OR 220 VOLTS AS DIRECTED BY THE GENERAL/PRIME CONTRACTOR. COORDINATE FOR ADDITIONAL TEMPORARY POWER REQUIREMENTS WITH OTHER TRADES AND PROVIDE AN ADEQUATE INSTALLATION.

    COMPLY WITH NFPA 241 FOR SAFEGUARDING DURING CONSTRUCTION AND ALTERATION OPERATIONS. IN ADDITION, ANY OPENINGS IN FIRE RATED SEPARATIONS BETWEEN OCCUPIED AND UNOCCUPIED (OR OPERATIONAL AND NON-OPERATIONAL) AREAS SHALL BE SEALED AT THE END OF EACH WORK DAY WITH AN APPROPRIATE FIRE RATED ENCLOSURE OR SEALANT. DO NOT COMPROMISE EXISTING SECURITY OR FIRE ALARM SYSTEMS SERVING THE OCCUPIED OR OPERATIONAL AREAS.

    DURING CONSTRUCTION THE CONTRACTOR SHALL AT ALL TIMES MAINTAIN ELECTRICAL UTILITIES OF THE BUILDING WITHOUT INTERRUPTION. SHOULD IT BE NECESSARY TO INTERRUPT ANY ELECTRICAL SERVICE OR UTILITY, THE CONTRACTOR SHALL SECURE PERMISSION IN WRITING FROM THE VA/COR FOR SUCH INTERRUPTION AT LEAST 6 WEEKS IN ADVANCE. ANY INTERRUPTION SHALL BE MADE WITH THE MINIMUM AMOUNT OF INCONVENIENCE TO THE VA AND ANY SHUT-DOWN TIME SHALL HAVE TO BE ON A PREMIUM TIME/AFTER HOURS BASIS AND SUCH TIME TO BE INCLUDED IN THE CONTRACTOR'S BID.

    CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY LIGHTING AND POWER FOR ALL TRADES DURING CONSTRUCTION AND REMOVE IT AT COMPLETION OF WORK.

    CONTRACTOR SHALL ESTABLISH SAFE WORKING PROCEDURES FOR THE PROTECTION OF THE WORKMEN IN ALL PHASES OF WORK, COMPLYING WITH THE APPLICABLE PROVISIONS OF ALL 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.

20. POWER COORDINATION:

    THE CONTRACTOR SHALL PERFORM ALL COORDINATION AND SCHEDULING OF LOCAL POWER OUTAGES REQUIRED WITH THE VA/COR. ALL NEEDED POWER OUTAGES TO BE SCHEDULED WITH THE VA/COR SIX WEEKS IN ADVANCE.

21. CABLING:

    BRANCH CIRCUITS TO RECEPTACLES, LIGHTING AND MISC. SMALL LOADS (20 AMP CIRCUITS), UNLESS SPECIFICALLY NOTED OTHERWISE, SHALL BE 2 - #12, 1 - #12 GRD., 3/4" C. A SEPARATE NEUTRAL SHALL BE RUN FOR EACH CIRCUIT. SEE WIRE SIZING TABLE ON THIS SHEET.

    ALL WIRE SIZE #12 AWG AND LARGER SHALL BE STRANDED AND SOLID FOR #14 AND SMALLER.

    EACH BRANCH CIRCUIT HOMERUN SHALL HAVE NO MORE THAN THREE CIRCUITS. EACH BRANCH CIRCUIT HOMERUN SHALL HAVE A SEPARATE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR. ALL CONDUCTORS SHALL BE COPPER TYPE THWN / XHHW.

    CABLE JACKET COLOR FOR VARIOUS SYSTEM SHALL BE AS FOLLOW:
    VOICE (VOiP) - BLUE
    3 DATA - BLUE
    CLINICAL WIRELESS (OIT) - BLUE
    VIDEO SURVEILLANCE - BLUE
    NURSE CALL - GREEN
    FIRE ALARM - RED
    ANALOGUE LINE - WHITE
    UPS - ORANGE

22. CABLING SIZES:

    BRANCH CIRCUIT CABLE SIZING SHALL BE ADJUSTED BASED ON THE VALUES INDICATED IN THE WIRE SIZING TABLE PER THIS SHEET.

23. SPECIAL LUG REQUIREMENTS:

    ANY CABLE WHICH TERMINATES DIRECTLY ON TO A BUS BAR SHALL BE 2 BOLT LONG BARREL TYPE WITH INSPECTION HOLES PRODUCED WITH NON FLASHING TYPE DYES WITH THE BOD AS MANUFACTURED BY THOMAS AND BETTS, OR EQUIVALENT MINIMUM 10 TONS OF COMPRESSION, HEX CRIMP. THE USE OF HEAT SHRINK TUBING IS EXPLICITLY FORBIDDEN.

24. RACEWAYS:

    ALL WIRE SHALL BE INSTALLED IN THIN WALL (E.M.T.) CONDUIT UNLESS OTHERWISE NOTED. MINIMUM SIZE SHALL BE 3/4". ALL THINWALL FITTINGS SHALL BE OF THE STEEL COMPRESSION GLAND TYPE.

    ALL UNDERFLOOR, UNDERGROUND OR EXPOSED-TO-WEATHER CONDUIT SHALL BE HEAVYWALL GALVANIZED RIGID STEEL. (G.R.S.), MINIMUM 3/4". ALL BURIED CONDUITS AND 2" AND ABOVE EXPOSED-TO-WEATHER CONDUIT SHALL BE PVC COATED HEAVYWALL GALVANIZED RIGID STEEL (G.R.S).

    ALL CONDUIT FASTENERS, STRAPS, SUPPORTS ETC. MUST BE "BOLT-ON" GALVANIZED STEEL ON EXPOSED CONSTRUCTION AND IN WET AREAS. SNAP-ON BLACK METAL "CADDY" CLIPS IN METAL PARTITION WALLS AND ABOVE SUSPENDED CEILINGS WILL BE PERMITTED. ALL FASTENERS, STRAPS, CLIPS, ETC. SHALL BE UL LISTED FOR THEIR USE.

    SUPPORT CONDUIT WITH P1000 UNISTRUT AND 3/8" THREADED ROD 8'-0" O.C. MAX.

    PROVIDE MYERS HUBS FOR ALL CONDUIT TO ENCLOSURE CONNECTIONS.

    CABLE TRAYS ARE NOT ALLOWED. ALL CONDUIT RACEWAYS SHALL BE CONCEALED IN OR WITHIN: WALLS, CEILING CAVITY, ROOF CONSTRUCTION (WHERE APPROVED), SLAB, GRADE, ETC. UNLESS OTHERWISE NOTED. ANY RACEWAY THAT IS TO BE ROUTED EXPOSED SHALL BE APPROVED BY THE VA/COR AND SUCCESSFULLY REVIEWED BY THE ARCHITECT/ENGR. PRIOR TO INSTALLATION. ALL CONDUIT SHALL BE ROUTED PARALLEL OR PERPENDICULAR TO WALLS AND STRUCTURAL MEMBERS WITH 90° BENDS WHERE REQUIRED AND SHALL BE RACKED. PULL AND JUNCTION BOXES SHALL BE HELD TO A MINIMUM. CONTRACTOR SHALL INSTALL ALL WORK IN NEAT & INDUSTRY RECOGNIZED MANNER OF BEST PRACTICES.

    GROUND ALL CONDUITS, MOTORS, AND EXPOSED NON-CURRENT CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ALL PROVISIONS WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE. VA SPECIFICATION SECTION 26 05 26 "GROUNDING AND BONDING ELECTRICAL SYSTEM".

    CONTRACTOR SHALL PROVIDE PULL BOXES, JUNCTION BOXES, SPLICE BOXES AND FITTINGS WHERE NECESSARY OR REQUIRED BY THE NEC.

    CONDUIT ROUTING SHOWN DIAGRAMMATIC AND BASED ON CONDITIONS AT THE TIME THE FIELD SURVEY. CONTRACTOR SHALL FIELD VERIFY EXACT ROUTING AS FIELD CONDITION DICTATES AT THE TIME OF CONSTRUCTION. PROVIDE PULL BOXES SIZED AS PER NFPA-70 LATEST EDITION. THERE SHALL NOT BE MORE THAN EQUIVALENT OF THREE QUARTER BENDS (270° TOTAL) BETWEEN PULL POINTS.

    ALL ELECTRICAL CONDUITS TO A MINIMUM OF 3/4".
    MULTI-GANG BACKBOXES FOR DIFFERENT VOLTAGES AND TYPES OF EMERGENCY AND NORMAL BRANCH WIRING DEVICES SHALL HAVE DIVIDERS BETWEEN DEVICES.

    PROVIDE JUNCTION BOX AND CONDUIT COLOR FOR VARIOUS SYSTEMS AS PER FARGO CABLE COLORS. DOCUMENT INCLUDED WITH SPECIFICATIONS.

    WHERE CORE DRILLING AND CUTTING OF FLOORS OR WALLS IS REQUIRED, X-RAY THE AREAS PRIOR TO DRILLING. AVOID INTERFERENCE WITH EXISTING CONCEALED ELECTRICAL, PLUMBING INSTALLATIONS, AND REINFORCING STEEL. REFINISH DAMAGED AND CUT SURFACES TO MATCH ADJACENT FINISHES.

    CONTRACTOR SHALL FIREPROOF ALL CONDUIT OPENINGS BETWEEN FLOORS AND ANY INTERSPACE FIRE SEPARATION BLOCK WALLS WITH A VA/COR APPROVED U.L. LISTED FIRE RETARDANT MATERIAL, AS SUCCESSFULLY REVIEWED BY THE ARCHITECT/ENGINEER..

25. LIGHTING:

    ALL FINAL LOCATIONS AND ARRANGEMENTS OF LIGHTING FIXTURES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN. COORDINATE LIGHT LOCATION WITH CABLE TRAY AND CEILING MOUNTED MECHANICAL EQUIPMENTS AND ENSURE THAT SERVICE CLEARANCE AND ACCESS IS NOT RESTRICTED.

26. RECEPTACLES

    CONTRACTOR SHALL VERIFY ALL OUTLET MOUNTING ARRANGEMENTS, HEIGHTS AND LOCATIONS WITH THE ARCHITECTURAL DRAWINGS PRIOR TO ROUGH-IN. ANY MENTION OF A SPECIFIC MOUNTING ARRANGEMENT, HEIGHT OR LOCATION SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO VERIFY THE SPECIFIC REQUIREMENT WITH THE EQUIPMENT FURNISHED OR THE OTHER TRADES WORKING IN THE SAME AREA. NO ADDITIONS TO THE CONTRACT SUM WILL BE PERMITTED FOR OUTLETS IN WRONG LOCATIONS, IN CONFLICT WITH OTHER WORK ETC. THE VA RESERVES THE RIGHT TO RELOCATE ANY DEVICE UPTO 10'-0" PRIOR TO ROUGH-IN WITHOUT ANY ADDITIONAL CHARGES BY THE CONTRACTOR.

    OUTLET BOXES MOUNTED BACK-TO-BACK IN THE SAME WALL ARE PROHIBITED. A MINIMUM 24" CENTER-TO-CENTER LATERAL SPACING SHALL BE MAINTAINED BETWEEN BOXES.

    ALL THE EMERGENCY POWER OUTLETS SHALL BE HOSPITAL GRADE RED IN COLOR. NORMAL POWER IS IVORY, UPS POWER IS ORANGE. FACEPLATES ARE STAINLESS STEEL. OUTLETS POWERED FROM EMERGENCY GENERATOR SHALL ALSO LIST : LS, CR OR EQ.

27. AS BUILT/RECORD DOCUMENTS:

    ELECTRICAL CONTRACTOR SHALL FURNISH CONTRACT AS-BUILT RECORD DOCUMENTS TO THE VA/COR AND ARCHITECT/ENGINEER BEFORE FINAL PAYMENT WILL BE ISSUED. THE CONTRACT RECORD DOCUMENTS SHALL DIAGRAMMATICALLY INDICATE THE ACTUAL INSTALLED CONDITIONS THAT DEVIATE FROM ORIGINAL DESIGN DRAWINGS.

28. GUARANTEE:

    ALL EQUIPMENT FURNISHED AND WORK PERFORMED UNDER THE CONTRACT DOCUMENTS SHALL BE GUARANTEED AGAINST DEFECTS IN MATERIALS OR WORKMANSHIP FOR A PERIOD AS PER VA SPECIFICATION, UNLESS OTHERWISE NOTED. ANY FAILURE OF EQUIPMENT OR WORK DUE TO DEFECTS IN MATERIALS OR WORKMANSHIP SHALL BE CORRECTED BY THE CONTRACTOR AT NO COST TO THE VA.

29. FINAL INSPECTION:

    ALL THE ITEMS AND WORK SHALL BE TESTED FOR SAFE AND PROPER OPERATIONS.

    UPON COMPLETION OF THE WORK, THE ELECTRICAL CONTRACTOR SHALL REVIEW AND CHECK THE ENTIRE PORTION OF WORK, CLEAN EQUIPMENT AND DEVICES, REMOVE SURPLUS MATERIALS AND RUBBISH FROM THE OWNER'S PROPERTY, LEAVING THE WORK IN NEAT AND CLEAN ORDER AND IN COMPLETE WORKING CONDITION. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ANY CARTON, DEBRIS, ETC. FOR EQUIPMENT INSTALLED BY THIS CONTRACTOR INCLUDING EQUIPMENT FURNISHED BY THE OWNER. THE ABOVE SHALL ALSO APPLY TO ALL EQUIPMENT FURNISHED BY OTHERS AND UNPACKED OR REMOVED FROM CARTON, BY THE CONTRACTOR.

ELECT DEMOLITION NOTES

1. EXAMINATION

   CONTRACTOR SHALL SURVEY THE EXISTING SITE AND EXAMINE AREAS UNDER WHICH THE WORK IS TO BE PERFORMED PRIOR TO BIDDING AND DETERMINE THE EXTENT OF NECESSARY RELOCATIONS, REMOVALS AND REPAIRS TO THE EXISTING ELECTRICAL WORK REQUIRE AVOIDING CONFLICTS WITH NEW CONSTRUCTION IN ORDER TO MEET MINIMUM CODE REQUIREMENTS. NOTIFY THE VA/COR IN WRITING OF ANY CONDITIONS DETRIMENTAL TO THE PROPER AND TIMELY COMPLETION OF THE WORK. CONTRACTOR SHALL NOT PROCEED WITH WORK UNTIL SATISFACTORY CONDITIONS HAVE BEEN CORRECTED. A FIELD SURVEY VERIFICATION IS RECOMMENDED IN ORDER TO SUBMIT AN ELECTRICAL BID, FAILURE TO DO SO SHALL NOT RELIEVE THIS CONTRACTOR FROM PERFORMING THE WORK OF THIS CONTRACT.

   DEMOLITION DRAWINGS ARE BASED ON FIELD OBSERVATION AND EXISTING RECORD DRAWINGS. THE CONTRACTOR SHALL INCLUDE IN HIS BID ALL COSTS ASSOCIATED WITH RELOCATION AND REMOVAL OF ELECTRICAL WORK AS DESCRIBED IN THE DRAWINGS AND SPECIFICATIONS WITH ALLOWANCES FOR EXPECTED OR UNFORESEEN ISSUES WHEN CONCEALED WORK HAS BEEN EXPOSED. NO ADDITIONAL CLAIMS FOR WORK ASSOCIATED WITH DEMOLITION WILL BE ACCEPTED, UNLESS, IN CERTAIN CASES, CONSIDERED JUSTIFIABLE BY THE COR.

   REVIEW MECHANICAL AND ARCHITECTURAL DEMOLITION DRAWINGS FOR ANY OTHER ELECTRICAL DEMOLITION REQUIREMENTS.

2. PREPARATION

   ALL EXISTING EQUIPMENT IS TO REMAIN OPERATIONAL DURING THE CONSTRUCTION PERIOD. ANY TEMPORARY WIRING OR REROUTING OF CIRCUITRY TO ACHIEVE THIS IS BY THE ELECTRICAL CONTRACTOR. SHUTDOWN OF EXISTING SERVICES SHALL ONLY BE PERMITTED UPON WRITTEN APPROVAL FROM THE OWNER AND THEN ONLY FOR THE DATE AND DURATION AGREED UPON. INCLUDE ALL PREMIUM TIME CHARGES IN THE BASE BID.

   ANY UTILITY SHUT DOWN THAT AFFECT PATIENT CARE SHALL BE COORDINATED A MINIMUM OF 45 DAYS IN ADVANCE AND SHALL BE PERFORMED OFF HOUR PERIODS OR WEEKENDS AT THE CONVENIENCE OF VA AS APPROVED THE BY VA CO.

   IT IS MANDATORY THAT ALL THE EXISTING FIRE ALARM COMPONENTS TO REMAIN FUNCTIONAL DURING CONSTRUCTION.

   BEFORE WORKING ON ANY EQUIPMENT THAT IS CONNECTED TO SOURCE OF ENERGY, CONTRACTOR SHALL PROVIDE OSHA MANDATED LOCK-OUT/TAG-OUT AT SOURCE LOCATION TO SHUT OFF ENERGY SOURCE.

3. DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK.

   WHERE SOURCE OF SUPPLY IS A PANEL BOARD, RE-LABEL PROTECTIVE DEVICE AS "SPARE" AND SET TO THE OFF POSITION AFTER DEMOLITION IS COMPLETE. PROVIDE REVISED CIRCUIT DIRECTORIES IN ALL PANEL BOARDS AFFECTED BY NEW OR DEMOLITION WORK THAT INDICATES ALL LOADS, NEW AND MODIFIED.

   CIRCUIT NUMBER LABEL SHOWN ON EXISTING OUTLETS AND SWITCHES IS AS PER FIELD SURVEY. CONTRACTOR SHALL BE RESPONSIBLE TO TRACE CIRCUITS AND FIND OUT BREAKER LOCATIONS AND DEMO THE CABLES AND UPDATE THE PANEL DIRECTORY FOR VA RECORD.

   WHERE CORE DRILLING AND CUTTING OF FLOORS/SLABS OR WALLS IS REQUIRED CONTRACTOR IS TO EXERCISE EXTREME CAUTION AND X-RAY THE AREAS PRIOR TO DRILLING/CUTTING SLAB TO AVOID DAMAGE TO ANY EXISTING CONCEALED ELECTRICAL, PLUMBING INSTALLATIONS, AND REINFORCING STEEL ETC. THAT MAY BE CONCEALED IN OR BENEATH THE SLAB/WALL. CONTRACTOR SHALL FIREPROOF ALL THE OPENING WITH U.L. LISTED FIRE RETARDANT MATERIAL, TO MATCH EXISTING CONDITIONS.

   MAKE EVERY EFFORT POSSIBLE TO REMOVE ANYTHING ABANDONED. LEAVE IN PLACE AS AN ABSOLUTE LAST RESORT. REMOVE EXPOSED ABANDONED CONDUIT ABOVE ACCESSIBLE CEILING AND FINISHED WALL. CUT CONDUIT FLUSH WITH WALLS AND FLOORS, AND PATCH THE SURFACE TO MATCH EXISTING. CONDUIT MAY BE ABANDONED IN WALLS AND FLOORS TO REMAIN BUT EXISTING WIRING WITHIN THESE CONDUITS TO BE REMOVED COMPLETELY.

   REPAIR ADJACENT CONSTRUCTION AND FINISHES DAMAGED DURING DEMOLITION AND EXTENSION OF WORK.

4. DISPOSAL

   OWNER SHALL HAVE RIGHT TO RETAIN ANY EQUIPMENT OR MATERIALS THAT HAVE BEEN DEMOLISHED PRIOR TO DISPOSAL OR REMOVAL FROM SITE. ANY EQUIPMENT OR MATERIALS NOT WANTED BY THE OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND REMOVED FROM SITE.

   CONTRACTOR SHALL COMPLY WITH ENVIRONMENTAL LAWS AND REGULATIONS FOR DISPOSAL OF DEMOLISHED MATERIALS AND EQUIPMENT.

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www. bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-036261
W. J. Groszko
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title	ELECTRICAL - GENERAL NOTES
Approved: Project Director	083
Phase	ISSUE FOR BID
	BUILDING FULLY SPRINKLERED
Project Title	EHRM INFRASTRUCTURE UPGRADES - TIER 2
Location	FARGO VA HEALTH CARE SYSTEM
Issue Date	01/16/2024
Checked	WG
Drawn	BX
Project Number	437-21-210
Building Number	
Drawing Number	E001

K:\CCG_PROJECTS\2022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- DesDocs\402- Drawings\WORKING\CAD\Electrical\E001_Gen Notes.dwg

12/18/2023 6:47:42 PM

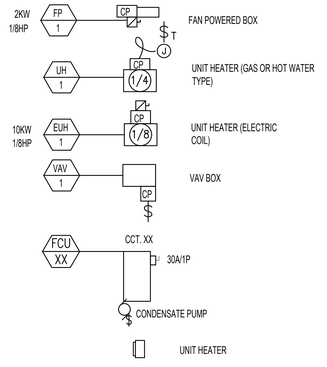
ELECTRICAL SYMBOLS - DIAGRAM

- INCOMING LINE
- GROUND
- DELTA CONNECTION
- WYE CONNECTION
- SURGE AND LIGHTNING ARRESTER
- POTHEAD
- STRESS CONE
- TRANSFORMER
- CONTACTOR
- EARTH GROUND
- PB — PULL BOX
- NORMALLY CLOSED RELAY CONTACT
- NORMALLY OPEN RELAY CONTACT
- FUSE WITH RATING
- MOLDED CASE CIRCUIT BREAKER
- LOW-VOLTAGE DRAWOUT AIR CIRCUIT BREAKER
- O.C.B. — MEDIUM-VOLTAGE OIL CIRCUIT BREAKER
- MEDIUM-VOLTAGE DRAWOUT AIR CIRCUIT BREAKER
- SWITCH AND FUSE UNIT
- FUSIBLE SWITCH
- FUSED DRAWOUT POTENTIAL TRANSFORMER
- CONTROL OR POTENTIAL TRANSFORMER
- CURRENT TRANSFORMER
- X — CABLE AND CONDUIT TAG SEE SCHEDULE
- X / Y — EQUIPMENT TAG SEE EQUIPMENT SCHEDULE
- ST — SHUNT TRIP
- A — AMMETER
- AS — AMMETER SELECTOR SWITCH
- V — VOLTMETER
- VS — VOLTMETER SELECTOR SWITCH
- M — UTILITY METER
- CM — OWNER METER
- KWH — KILOWATT HOUR METER
- TVSS — TRANSIENT VOLTAGE SURGE SUPPRESSOR
- GF — GROUND FAULT

ELECTRICAL SYMBOL - POWER PLAN

- MOTOR, SINGLE-PHASE
- MOTOR, THREE-PHASE
- T — TRANSFORMER, PLAN
- WYE CONNECTION
- EARTH GROUND
- J — POWER JUNCTION BOX
- A/V — DOUBLE GANG DEEP AUDIO/VISUAL JUNCTION BOX
- C | C — LADDER CABLE TRAY
- HOMERUN TO PANELBOARDS. 4#10 + 1#12 GROUND IN 3/4" CONDUIT
- PB — PULL BOX
- W | W — WIREWAY
- 208Y / 120 V NORMAL PANELBOARD
- 208Y / 120 V CRITICAL PANELBOARD
- 208Y / 120 V LIFE SAFETY PANELBOARD
- 208Y / 120 V LIFE EQUIPMENT PANELBOARD
- 480Y / 277 V NORMAL PANELBOARD
- 480Y / 277 V CRITICAL PANELBOARD
- 480Y / 277 V LIFE SAFETY PANELBOARD
- 480Y / 277 V DISTRIBUTION PANELBOARD
- DISTRIBUTION SWITCHBOARD NORMAL
- DISTRIBUTION SWITCHBOARD CRITICAL
- DISTRIBUTION SWITCHBOARD LIFE SAFETY
- DISTRIBUTION SWITCHBOARD EQUIPMENT
- RECEPTACLE, DUPLEX
- RECEPTACLE, DUPLEX ON EMERGENCY POWER
- GFCI — RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER
- GFCI — RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER MOUNTED AT 44"
- RECEPTACLE, QUADRAPLEX
- RECEPTACLE, QUADRAPLEX ON EMERGENCY POWER
- FLOOR RECEPTACLE, DUPLEX
- FLOOR RECEPTACLE, DUPLEX ON EMERGENCY POWER
- FLOOR RECEPTACLE, QUADRAPLEX
- FLOOR RECEPTACLE, QUADRAPLEX ON EMERGENCY POWER
- CEILING MOUNTED RECEPTACLE, L21-20R TWIST LOCK
- CEILING MOUNTED RECEPTACLE ON EMERGENCY POWER L21-20R TWIST LOCK
- CEILING MOUNTED RECEPTACLE ON UPS POWER L21-20R TWIST LOCK
- L6-30R TWIST LOCK RECEPTACLE ON NORMAL POWER, 250V, TWO-POLE, 3W GROUNDED
- L6-30R TWIST LOCK RECEPTACLE ON POWER, 250V, TWO-POLE, 3W GROUNDED
- ELECTRICAL STRIP MOLD (OUTLETS ON 2'-0" CENTERS OR AS DESIGNATED ON DRAWINGS), MTD 3'-6" AFF OR AS INDICATED.
- PP — AUTOMATIC DOOR OPERATOR PUSH PLATE
- CONDUIT STUBBED DOWN
- CONDUIT STUBBED UP
- FLEXIBLE CONDUIT
- POINT OF CONNECTION BETWEEN NEW AND EXISTING WORK
- LIMIT OF DEMOLITION
- J — JUNCTION BOX WITH DISCONNECT SWITCH AND FLEXIBLE CONDUIT CONNECTION
- J — EQUIPMENT CONNECTION
- EMERGENCY POWER OFF PUSHBUTTON
- BELL
- B — BUZZER
- DOCK DOOR POSITION INDICATOR LIGHT
- T — THERMOSTAT, WALL MOUNTED PULL CORD
- H — HUMIDISTAT, WALL MOUNTED
- VAV POWER SUPPLY

ELECTRICAL SYMBOL - HVAC POWER PLAN



MOTORS AND CONTROLS

- XX — SINGLE PHASE MOTOR (HP AS INDICATED)
- XX — THREE PHASE (HP AS INDICATED)
- 30A/20A — DISCONNECT SWITCH, FUSED (SWITCH/FUSE RATING)
- 30A — DISCONNECT SWITCH, UNFUSED (SWITCH RATING)
- STARTER, COMBINATION WITH DISCONNECT SWITCH
- STARTER OR MOTOR CONTROLLER

ELECTRICAL SYMBOLS - LIGHTING PLAN

- S_2 — SWITCH
  BLANK = SINGLE POLE; 3 = THREE-WAY
  4 = FOUR-WAY; K = KEY OPERATED
  DM= DIMMER; P = WITH PILOT LIGHT
  LV= LOW VOLTAGE; TM = TIMER OPERATED
  WP=WEATHER PROOF; X = EXPLOSION PROOF
  T= THERMAL OVERLOAD PROTECTION; OS= OCCUPANCY SENSOR
- OS — SWITCH, OCCUPANCY SENSOR REFER TO FIXTURE SCHEDULE FOR TYPE
- DOUBLE FACED CEILING OR WALL MOUNTED EXIT SIGN. ARROW INDICATES DIRECTION
- SINGLE FACED CEILING OR WALL MOUNTED EXIT SIGN. ARROW INDICATES DIRECTION
- LIGHTING WALL PACK - EXTERIOR BUILDING
- LIGHTING LANDSCAPE WALL
- LIGHT FIXTURE, DIRECTIONAL
- STRIP LIGHT FIXTURE
- STRIP LIGHT FIXTURE EMERGENCY
- STRIP LIGHT WITH BATTERY
- 2' x 2' LIGHT FIXTURE, RECESSED LED
- 2' x 4' LIGHT FIXTURE, RECESSED LED
- 2' x 4' LIGHT FIXTURE, RECESSED LED EMERGENCY
- RECESSED MOUNTED LIGHT FIXTURE EMERGENCY
- WALL MOUNTED LIGHT FIXTURE EMERGENCY

ELECTRICAL SYMBOLS - COMM. / DATA PLAN

- 3-GANG COMPARTMENT BOX IN FLOOR FOR TELEPHONE, DATA & RECEPTACLE.
- THREE PORT TELEPHONE DATA OUTLET - MOUNTED 18" AFF UNLESS OTHERWISE NOTED.
- FOUR PORT TELEPHONE/DATA OUTLET - MOUNTED 18" AFF UNLESS OTHERWISE NOTED. CABLE AND JACK COLOR AS FOLLOW VOICE - WHITE, GREEN - VOIP, BLUE - DATA, RED - DATA
- FLOOR MOUNTED FOUR PORT TELEPHONE/DATA OUTLET
- TELEPHONE OUTLET - WALL MOUNTED
- GETWELL NETWORK DATA OUTLET
- CEILING MOUNTED DATA OUTLET
- WAP — WIRELESS ACCESS POINT
- S PA — SPEAKER FOR PUBLIC ANNOUNCEMENT
- TV TV — HDMI OUTLET - CEILING/WALL
- TV TV — COAXIAL OUTLET - CEILING/WALL
- TV — TELEVISION ANTENNA SYSTEM OUTLET - CEILING/WALL
- TV — TV OUTLET - +84" A.F.F. OTHERWISE NOTED
- VFD — VARIABLE FREQUENCY DRIVE

FIRE ALARM SYMBOLS

- F SD — STANDARD, CEILING MOUNTED SMOKE DETECTOR
- F SSD — SOUNDER BASE, CEILING MOUNTED SMOKE DETECTOR
- F HD — RATE-OF-RISE STD, CEILING MOUNTED HEAT DETECTOR
- 135 F HD — FIXED TEMP (135°), CEILING MOUNTED HEAT DETECTOR
- DUCT SMOKE DETECTOR WIREMOTE TEST STATION WP INDICATES WEATHERPROOF HOUSING FOR BOTH
- P — MANUAL PULL STATION WP-WEATHERPROOF HOUSING
- F HS — CEILING MOUNTED HORN/STROBE (A/V)
- F ST — CEILING MOUNTED STROBE
- F SP — CEILING MOUNTED FIRE ALARM SPEAKER
- F SPS — CEILING MOUNTED FIRE ALARM SPEAKER/STROBE
- F HS — WALL MOUNTED HORN/STROBE
- F ST — WALL MOUNTED STROBE
- F SP — WALL MOUNTED FIRE ALARM SPEAKER
- F SPS — WALL MOUNTED FIRE ALARM SPEAKER/STROBE
- CHIME
- FA — FIRE ALARM LINE = FA
- DH — ELECTROMAGNETIC TYPE DOOR HOLDER OUTLET
- TS — TEMPERATURE SWITCH
- FS — FLOW SWITCH
- PS — PRESSURE SWITCH
- LS — LEVEL SWITCH
- VTS — VALVE TAMPER SWITCH
- VSS — VALVE SUPERVISORY SWITCH
- FACP — FIRE ALARM CONTROL PANEL
- MM — MONITOR MODULE
- CM — CONTROL MODULE
- FIRE FIGHTERS TELEPHONE JACK
- RTS/I — REMOTE TEST SWITCH W/INDICATOR
- Z — F.A. ZONE ADDRESSABLE MODULE
- I — F.A. INDIVIDUAL ADDRESSABLE MODULE
- F.A. DOOR HOLDER
- F.A. DOOR CLOSER
- FR — FIRE ALARM SHUT DOWN RELAY
- S — SPEAKER HORN WITH STROBE
- J — JUNCTION BOX

ELECTRONIC SAFETY AND SECURITY SYMBOLS

- H CR — WALL MOUNTED CARD READER
- DC — DOOR CONTACT (SN-CSD80-W)
- ES — ELECTRIC STRIKE (DS160I)
- ML — MAG LOCK
- REX — REQUEST TO EXIT PUSH BUTTON
- H CR/K — WALL MOUNTED CARD READER WITH KEYPAD
- ACP — ACCESS CONTROL PANEL
- ACP — ACCESS CONTROL PANEL (LNL–AL400ULX)
- ACPS — ACCESS CONTROL POWER SULLPY (AL600ULACMCB)
- KP — KEYPAD LOCK
- AIP — AIPHONE
- DC — DOOR CONTACT/DOOR POSITION SWITCH
- RX — REQUEST TO EXIT MOTION
- ES — DOOR LOCKING MECHANISM/ELECT STRIKE
- ML — DOOR LOCKING MECHANISM/MAG LOCK
- H P A — SECURITY / DURESS-ALARM BUTTON MOUNTED 3" ABOVE COUNTER TOP / COUNTER TOP BACK SPLAH.
- C — CEILING MOUNTED SECURITY CAMERA
- C — WALL MOUNTED SECURITY CAMERA
- ROOF POLE MOUNTED SECURITY CAMERA
- CCP — CAMERA CONTROL PANEL
- RTLS — REAL TIME LOCATING SYSTEM
- QTS — CENTRAX EQUIPMENT TRACKING SYSTEM
- MID — MOTION INTRUSION DETECTOR
- GB — GLASS BREAK SENSOR
- EPO — EMERGENCY POWER OFF

ELECTRICAL ABBREVIATIONS

1PH	SINGLE-PHASE	EC	EMPTY CONDUIT	NEUT OR N	NEUTRAL
1P	SINGLE POLE	EG	EQUIPMENT GROUND	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
2/C	TWO-CONDUCTOR	EL	ELEVATION	NIC	NOT IN CONTRACT
3/C	THREE-CONDUCTOR	ELEC	ELECTRIC OR ELECTRICAL	NL	NIGHT LIGHT
3PH	THREE-PHASE	ELEV	ELEVATOR	NO	NORMALLY OPEN
4/C	FOUR-CONDUCTOR	EMCP	EMERGENCY MONITORING CONTROL PANEL	NS	NO SCALE
4W	FOUR-WIRE	EMER	EMERGENCY	NTS	NOT TO SCALE
		EMI	ELECTROMAGNETIC INTERFERENCE		
A/C UNIT	AIR CONDITIONING UNIT	EMT	ELECTRICAL METALLIC TUBING	OC	ON CENTER
A/E	ARCHITECT/ENGINEER	ENCL	ENCLOSURE	OD	OUTSIDE DIAMETER
AAP	ALARM ANNUNCIATOR PANEL	EPO	EMERGENCY POWER OFF	OL	OVERLOAD
AC	ALTERNATING CURRENT OR ARMORED CABLE	EPRF	EXPLOSION PROOF		
ACC	ACCESSIBLE	ESMT	EASEMENT	P	POLE
ADDL	ADDITIONAL	EWC	ELECTRIC WATER COOLER	PA	PUBLIC ADDRESS
ADJ	ADJACENT, ADJOINING	EWH	ELECTRIC WATER HEATER	PB	PANELBOARD, PULL BOX, OR PUSHBUTTON
ADO	AUTOMATIC DOOR OPENER	EXIST, EX	EXISTING	PBPU	PREFABRICATED BEDSIDE PATIENT UNIT
AF	AMPERE FRAME OR AMP FUSE			PCB	POLYCHLORINATED BIPHENYL
AFC	ABOVE FINISHED COUNTER, AUTOMATIC FREQUENCY CONTROL, OR AVAILABLE FAULT CURRENT	FA	FIRE ALARM	PEC	PHOTOELECTRIC CELL
		FAAP	FIRE ALARM ANNUNCIATOR PANEL	PED	PEDESTAL
AFF	ABOVE FINISHED FLOOR	FABL	FIRE ALARM BELL	PEND	PENDANT
AFG	ABOVE FINISHED GRADE	FABX	FIRE ALARM BOX	PF	POWER FACTOR
AH	AMPERE HOUR	FACP	FIRE ALARM CONTROL PANEL	PH	PHASE
AHJ	AUTHORITY HAVING JURISDICTION	FC	FOOTCANDLE	PNL	PANEL
AIC	AMPERE INTERRUPTING CAPACITY	FI	FILM ILLUMINATOR	POD	POWER OPERATED DAMPER
ALT	ALTERNATE	FIXT	FIXTURE	PT	POTENTIAL TRANSFORMER
AMB OR A	AMBIENT	FLA	FULL LOAD AMPS	PTRV	POWER TYPE ROOF VENTILATION
AMP	AMPERE	FLEX	FLEXIBLE METALLIC CONDUIT	PVC	POLYVINYL CHLORIDE (PLASTIC)
ARCH	ARCHITECT	FLT	FLOODLIGHT	PWR	POWER
ASC	AMPS SHORT CIRCUIT	FLUOR	FLUORESCENT		
AT	AMPERE TRIP	FLUOR FIX	FLUORESCENT FIXTURE	RCP	REFLECTED CEILING PLAN
ATS	AUTOMATIC TRANSFER SWITCH	FOUTT	TELEPHONE FLOOR OUTLET	REC	RECESSED
AUTO	AUTOMATIC	FP	FIRE PROTECTION	RECPT	RECEPTACLE
AV	AUDIO VISUAL	FT	FEET OR FOOT	RGS	RIGID GALVANIZED STEEL
		FU SW	FUSED SWITCH	RM	ROOM
BAT	BATTERY	FVNR	FULL VOLTAGE NON-REVERSING	RMS	ROOT MEAN SQUARE
BC	BARE COPPER	FVR	FULL VOLTAGE REVERSING	REQD	REQUIRED
BD	BOARD				
BFF	BELOW FINISH FLOOR	G OR GND	GROUND OR GENERATOR	SCC	SHORT CIRCUIT CAPACITY
BIL	BASIC INSULATION LEVEL	GEN	GENERATOR	SES	SERVICE ENTRANCE SECTION
BLDG	BUILDING	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	SD	SMOKE DETECTOR
BPIP	BOILER PLANT INSTRUMENTATION PANEL	GTB	GROUND TERMINAL BOX	SF	SQUARE FOOT (FEET)
BRKR	BREAKER			SHT	SHEET
BYP	BY PASS	HID	HIGH INTENSITY DISCHARGE	SI	INTERNATIONAL SYSTEM OF UNITS
		HOA	HAND-OFF-AUTOMATIC	SPEC	SPECIFICATION
C	CONDUIT	HP	HORSEPOWER	SPST	SINGLE POLE, SINGLE THROW
CAB	CABINET	HT	HEIGHT	SURF	SURFACE
CALC	CALCULATE	HZ	HERTZ	SW	SWITCH
CAP	CAPACITY			SWBD	SWITCHBOARD
CAT	CATALOG	IESNA	ILLUMINATION ENGINEERING SOCIETY OF NORTH AMERICA	SWGR	SWITCHGEAR
CATV	COMMUNITY ANTENNA TELEVISION	IMC	INTERMEDIATE METAL CONDUIT		
CCR	CONTROL CONTACTOR	INCAND	INCANDESCENT	TC	TIME CLOCK
CCTV	CLOSED CIRCUIT TELEVISION	IR	INFRARED	TEL	TELEPHONE
CB	CODE BLUE	IWH	INSTANTANEOUS WATER HEATER	TP	TWISTED PAIR
cd	CANDELA			TPS	TWISTED PAIR SHIELDED
CD	CONSTRUCTION DOCUMENTS	J-BOX, JB	JUNCTION BOX	TTB	TELEPHONE TERMINAL BOARD
CF	CONTRACTOR FURNISHED			TV	TELEVISION
CF/CI	CONTRACTOR FURNISHED/CONTRACTOR INSTALLED	kV	KILOVOLT	TYP	TYPICAL
CF/OI	CONTRACTOR FURNISHED/OWNER INSTALLED	kVA	KILOVOLT AMPERE		
CFE	CONTRACTOR FURNISHED EQUIPMENT	kVAH	KILOVOLT AMPERE PER HOUR	UFD	UNDERFLOOR DUCT
CHW	CHILLED WATER	kVAR	KILOVOLT AMPERE REACTIVE	UGND	UNDERGROUND
CHWP	CHILLED WATER PUMP	kW	KILOWATT	UL	UNDERWRITERS LABORATORY
CKT	CIRCUIT	kWH	KILOWATT HOUR	UON	UNLESS OTHERWISE NOTED
CKT BRKR	CIRCUIT BREAKER	kWHM	KILOWATT HOUR METER	UPS	UNINTERRUPTIBLE POWER SUPPLY
CLF	CURRENT LIMITING FUSE			UTIL	UTILITY
CLG	CEILING	LED	LIGHT EMITTING DIODE		
CMU	CONCRETE MASONRY UNIT	LF	LINEAR FEET (FOOT)	V	VOLT
COAX	COAX CABLE	LM	LUMEN	VA	VOLT AMPERE
COMM	COMMUNICATION	LP	LIGHT POLE	VAR	VOLT AMPERE REACTIVE
COMPT	COMPARTMENT	LPS	LOW PRESSURE SODIUM	VFD	VARIABLE FREQUENCY DRIVE
CONC	CONCRETE	LRA	LOCKED ROTOR AMPS	VOLT	VOLTAGE
CONT	CONTINUE	LTCP	LOCAL TEMPERATURE CONTROL PANEL		
CONTR	CONTRACTOR	LT	LIGHT	W	WATT
COORD	COORDINATE	LTG	LIGHTING	WH	WATER HEATER
CPT	CONTROL POWER TRANSFORMER	LTG PNL	LIGHTING PANEL	WP	WEATHERPROOF
CRI	COLOR RENDERING INDEX	LTNG	LIGHTNING		
CT	CURRENT TRANSFORMER	LV	LOW VOLTAGE	XFER	TRANSFER
CTV	CABLE TELEVISION			XFMR	TRANSFORMER
CU	COPPER	MATV	MASTER ANTENNA TELEVISION SYSTEM		
CU FT	CUBIC FEET	MAX	MAXIMUM		
CUR	CURRENT	MC	METAL-CLAD		
		MCA	MINIMUM CIRCUIT AMPS		
DB	DECIBEL OR DIRECT BURIAL	MCB	MAIN CIRCUIT BREAKER		
DC	DIRECT CURRENT	MCC	MOTOR CONTROL CENTER		
DCP	DIMMER CONTROL PANEL	MDP	MAIN DISTRIBUTION PANEL		
DEG C	DEGREES CELSIUS	MECH	MECHANICAL		
DEG F	DEGREES FAHRENHEIT	MG	MOTOR GENERATOR		
DEMO	DEMOLITION	MH	MANHOLE		
DIAG	DIAGRAM	MIN	MINIMUM		
DISC	DISCONNECT	MOCP	MAXIMUM OVERCURRENT PROTECTION		
DISTR	DISTRIBUTION	MLO	MAIN LUGS ONLY		
DISTR PNL	DISTRIBUTION PANEL	MT	MOUNT		
DMR SW	DIMMER SWITCH	MTD	MOUNTED		
DN	DOWN	MTG	MOUNTING		
DPDT	DOUBLE POLE, DOUBLE THROW	MTS	MANUAL TRANSFER SWITCH		
DPST	DOUBLE POLE, SINGLE THROW	MV	MEDIUM VOLTAGE		
DRSW	DOOR SWITCH	MVA	MEGAVOLT-AMPERE		
DS	DISCONNECT SWITCH	MW	MEGAWATT MICROWAVE		
DWG	DRAWING				
		NA	NOT APPLICABLE		
		NAC	NOTIFICATION APPLIANCES CIRCUIT PANEL		
		NEC	NATIONAL ELECTRICAL CODE		
		NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION		

GENERAL NOTES

1. THIS IS A STANDARD LEGEND SHEET. SOME SYMBOLS OR ABBREVIATIONS MAY APPEAR ON THIS SHEET AND NOT ON THE PLANS.

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

Bancroft
BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www. bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-039281
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

ISSUE FOR BID - 01/16/2024

Drawing Title: ELECTRICAL - SYMBOLS AND ABBREVIATION	Phase: ISSUE FOR BID	Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2	Project Number: 437-21-210
			Building Number:
Approved: Project Director: 084	BUILDING FULLY SPRINKLERED	Location: FARGO VA HEALTH CARE SYSTEM	Drawing Number: E002
		Issue Date: 01/16/2024 / Checked: WG / Drawn: BX	

K:\CCG_PROJECTS\2022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- DwgDocs\402- Drawings\WORKING\CAD\Electrical\E002_Symbols and Abbreviation.dwg

1/15/2024 3:15:27 PM

VA FORM 08 - 6231

ELECTRICAL GENERAL NOTES

A. DRAWING DEPICTS AREAS OF WORK.

B. CONTRACTOR TO DETERMINE WHICH CONDUIT CAN BE REUSED TO RUN UPS POWER FROM NEW UPS PANEL IN SWGR 46 ROOM. CONTRACTOR TO REMOVE ALL OTHER WIRING, CONDUIT AND SUPPORTS FROM BASEMENT TR ROOMS BACK TO SOURCE PANELS IN ROOM BC-50A.

C. EXISTING EMERGENCY POWER WIRING, CONDUIT AND SUPPORTS FEEDING THE BASEMENT TR'S WILL BE DISCONNECTED AND REMOVED BACK TO SOURCE.

D. EXISTING UPS POWER CONDUITS THAT FEED UPPER FLOORS FROM ROOM BC-50A WILL BE DISCONNECTED FROM BC-50A AND SPLICED TO NEW UPS FEEDERS FROM LOCATION OF NEW MCR. LOCATION OF SPLICES TO BE DETERMINED.

E. A NEW EMERGENCY POWER DISTRIBUTION PANEL, FED FRO NEW MCR, WILL BE LOCATED IN BASEMENT SWGR ROOM 46, TO FEED THE EXISTING TR ROOMS.

F. REMOVAL OF CONDUIT #7 THAT IS ROUTED TO BLDG 40 WILL STOP NEAR ROOM BA-30 . A SPLICE BOX WILL BE INSTALLED IN THIS LOCATION FOR A NEW CONNECTION FROM THE NEW UPS PANEL IN SWGR ROOM 46.

RATED PARTITION LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

1 HR FIRE BARRIER	1 HR FIRE BARRIER (EXISTING)
2 HR FIRE BARRIER	2 HR FIRE BARRIER (EXISTING)
SMOKE BARRIER	SMOKE BARRIER (EXISTING)

BC-50A UPS

BB-94 ELEC

BB-92 IRM

CONDUITS TO BE DEMOLISHED

BC-02 IRM

CONDUITS TO BE DEMOLISHED

BB-34A UPS

SPLICE BOX

CONDUIT TO BE DEMOLISHED

BA-30 OI&T

BD-02 OI&T/TEL ROOM

CONDUIT # 7
LEAVE CONDUIT TO BE REUSED

LEAVE CONDUIT TO BE REUSED

BD-83 ELEC

BD-84 IRM

TO BUILDING #40

N

KEY PLAN

NORTH

1 ELECTRICAL - BUILDING 1-9-46 - BASEMENT FLOOR PLAN
1/16"=1'-0"

0 4" 8" 16" 32"

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035261
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - OVERALL BASEMENT DEMOLITION PLAN

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024 | Checked: WG | Drawn: BX

Project Number: 437-21-210

Building Number: 1-9-46

Drawing Number: EPD-B1-101

K:\CCO_PROJECTS\002222-113_437-21-210_Fargo_ND_EHRM Tier 2 (VISN 23 TO)\400- DesDocs\402- Drawings\WORKING\CAD\Electrical\EPD-B01-101.dwg
12/15/2023 3:46:59 PM

VA FORM 08 - 6231

ELECTRICAL GENERAL NOTES

A. DRAWING DEPICTS AREAS OF WORK.

B. A NEW UPS PANEL "UPS-A DISTRIBUTION" WILL BE INSTALLED IN UPS ROOM BE-97. ALL UPS POWER IN BASEMENT, PREVIOUSLY FED FROM BC-50 UPS, WILL NOW BE FED FROM THE NEW UPS-A DISTRIBUTION PANEL.

C. SEE DRAWING E604 FOR NEW UPS CONDUIT SCHEDULE.

D. CONTRACTOR TO RE-USE AS MUCH OF THE UPS CONDUITS AS REASONABLE.

E. A NEW EMERGENCY POWER PANEL, PANEL EM, WILL BE INSTALLED IN UPS ROOM BE-97 TO PROVIDE EM POWER TO ALL RACKS IN ALL TR'S.

F. UPS WIRING AND EM WIRING CANNOT BE MIXED. EACH REQUIRES AN INDIVIDUAL CONDUIT.

G. NOTE THAT MAX 360 BENDS BETWEEN PULL BOXES.

H. CONTACT IT PRIOR TO WORKING IN ANY TR ROOM.

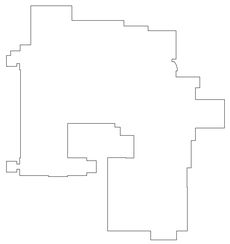
ⓧ ELECTRICAL KEY NOTES

1. INSTALL NEW UPS FEED TO DEMARK CREDIT UNION.
2. INSTALL NEW UPS FEED TO DEMARK CARRIER#1.

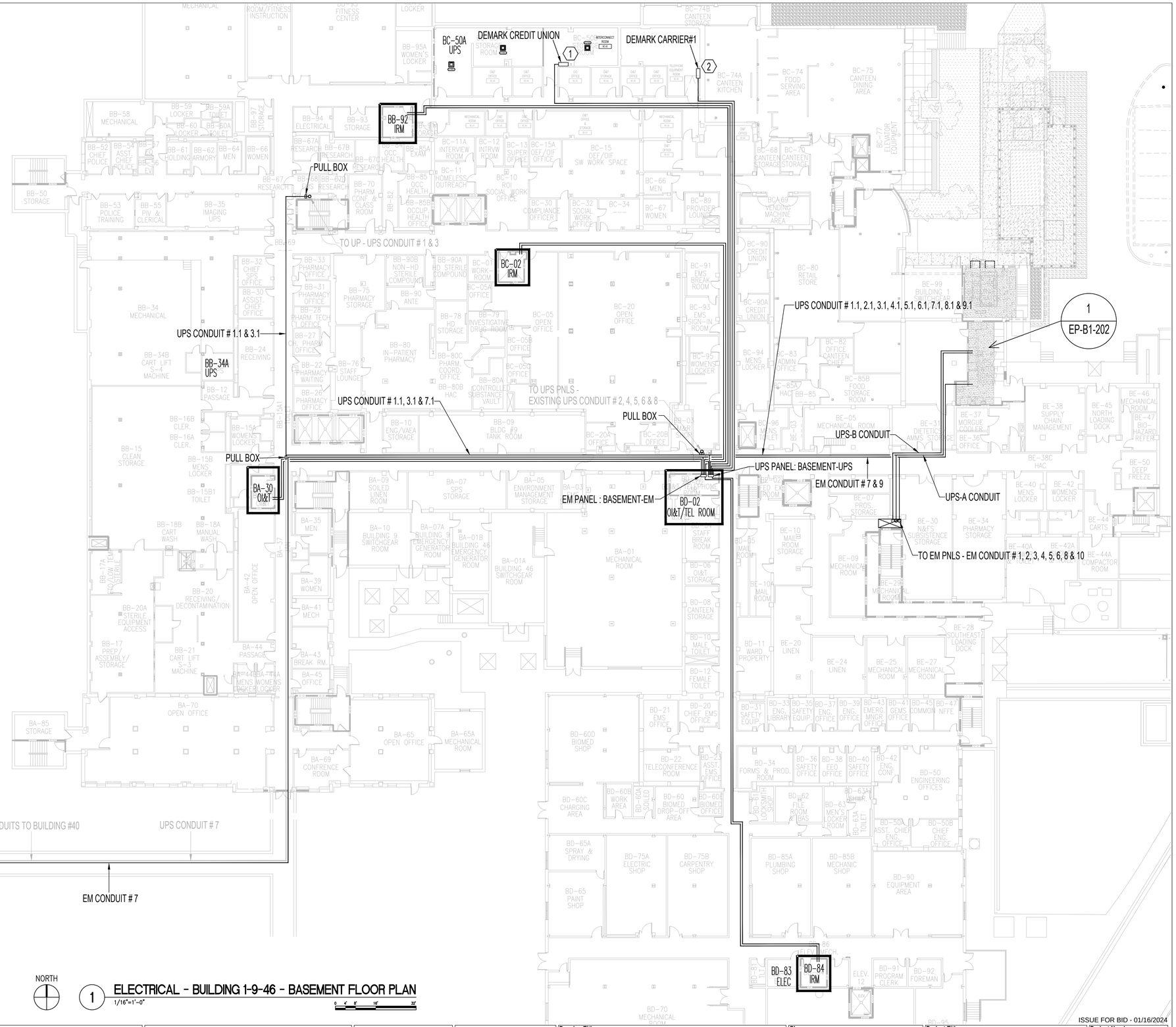
RATED PARTITION LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

1 HR FIRE BARRIER	1 HR FIRE BARRIER (EXISTING)
2 HR FIRE BARRIER	2 HR FIRE BARRIER (EXISTING)
SMOKE BARRIER	SMOKE BARRIER (EXISTING)



N KEY PLAN



NORTH

1 ELECTRICAL - BUILDING 1-9-46 - BASEMENT FLOOR PLAN
1/16"=1'-0"

0 4' 8' 16' 32'

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

Bancroft
BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035261
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - OVERALL BASEMENT PLAN

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024

Checked: WG

Drawn: BX

Project Number: 437-21-210

Building Number: 1-9-46

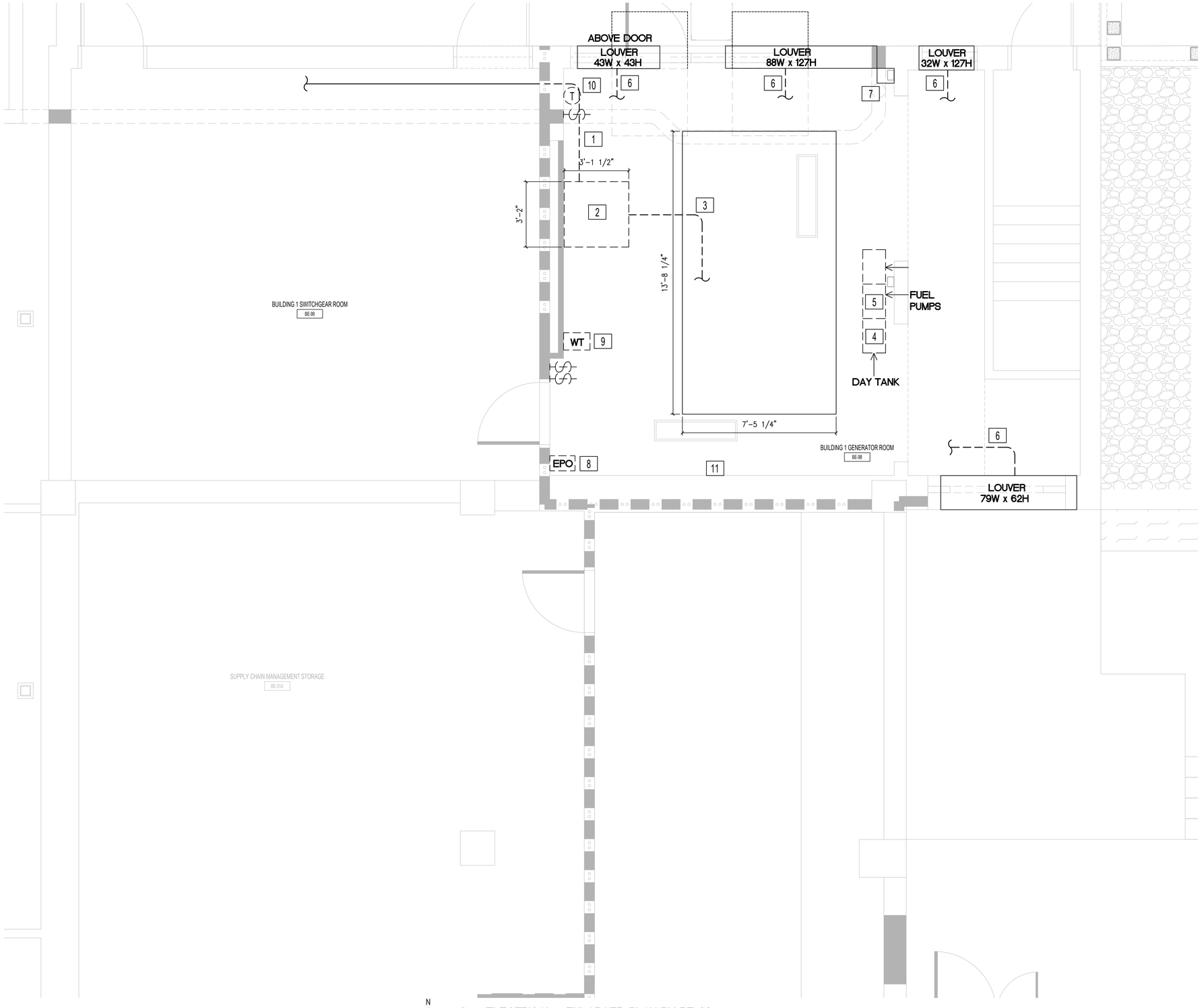
Drawing Number: EP-B1-101

ISSUE FOR BID - 01/16/2024

12/15/2023 3:46:20 PM

K:\CCO_PROJECTS\002222-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- Des\Docs\402- Drawings\WORKING\CAD\Electrical\EP-B01-101.dwg

VA FORM 08 - 6231



N

1 ELECTRICAL - ENLARGED PLAN RM BE-98

1/2"=1'-0"

0 1' 2' 4'

ELECTRICAL GENERAL NOTES

A. DRAWING DEPICTS AREAS OF WORK.

B. FOLLOW VA PHASING PLAN FOR WORK.

C. FOLLOW VA LOCK-OUT-TAG-OUT PROCEDURES FOR PERFORMING ELECTRICAL DEMOLITION.

D. REVIEW NEW INSTALLATION DRAWINGS WHEN PERFORMING DEMOLITION WORK TO DETERMINE EXTENT OF DEMOLITION.

E. WHEN REMOVING VARIOUS PANELS ALSO REMOVE THE ASSOCIATED CONDUITS BACK TO THE SOURCE.

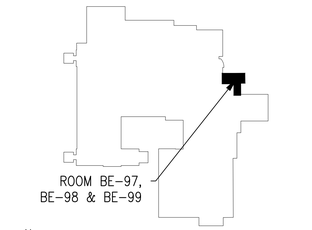
[X] ELECTRICAL KEY NOTES

1. REMOVE SUFFICIENT CONDUIT TO RECONNECT ATS-LS, ATS-CR AND ATS-EQ TO NEW SWITCHBOARD AFTER GENERATOR MAIN BREAKER PANEL IS REPLACED WITH NEW EM GEN 1 SWITCHBOARD.
2. REMOVE GEN MAIN BREAKER PANEL.
3. DISCONNECT GENERATOR OUTPUT CABLING AND REMOVE.
4. DISCONNECT DAY TANK POWER AND CONTROLS.
5. DISCONNECT FUEL PUMPS POWER AND CONTROLS.
6. DISCONNECT POWER AND CONTROLS TO LOUVERS.
7. DISCONNECT SENSORS FROM OUTDOOR TANK. PROTECT EQUIPMENT FOR REUSE WITH A NEW FUEL OIL TANK.
8. REMOVE GENERATOR EPO TO BE RE-INSTALLED AFTER DOOR IS RELOCATED.
9. REMOVE WALL PHONE AND LIGHT SWITCHES AND CONDUIT TO BE RE-INSTALLED AFTER THE DOOR IS RELOCATED.
10. REMOVE THERMOSTAT AND LIGHT SWITCH TO BE RE-INSTALLED ON WALL AFTER WALL MODIFICATIONS.
11. REMOVE LOUVER CONTROL PANEL AND ASSOCIATED POWER PANEL. LEAVE THE SMALL POWER PANEL THAT IS FED FROM EMERGENCY AND NORMAL POWER IN PLACE TO FEED THE NEW LOUVER CONTROL PANEL.

RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)



N KEY PLAN

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www. bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035261
STATE OF ILLINOIS

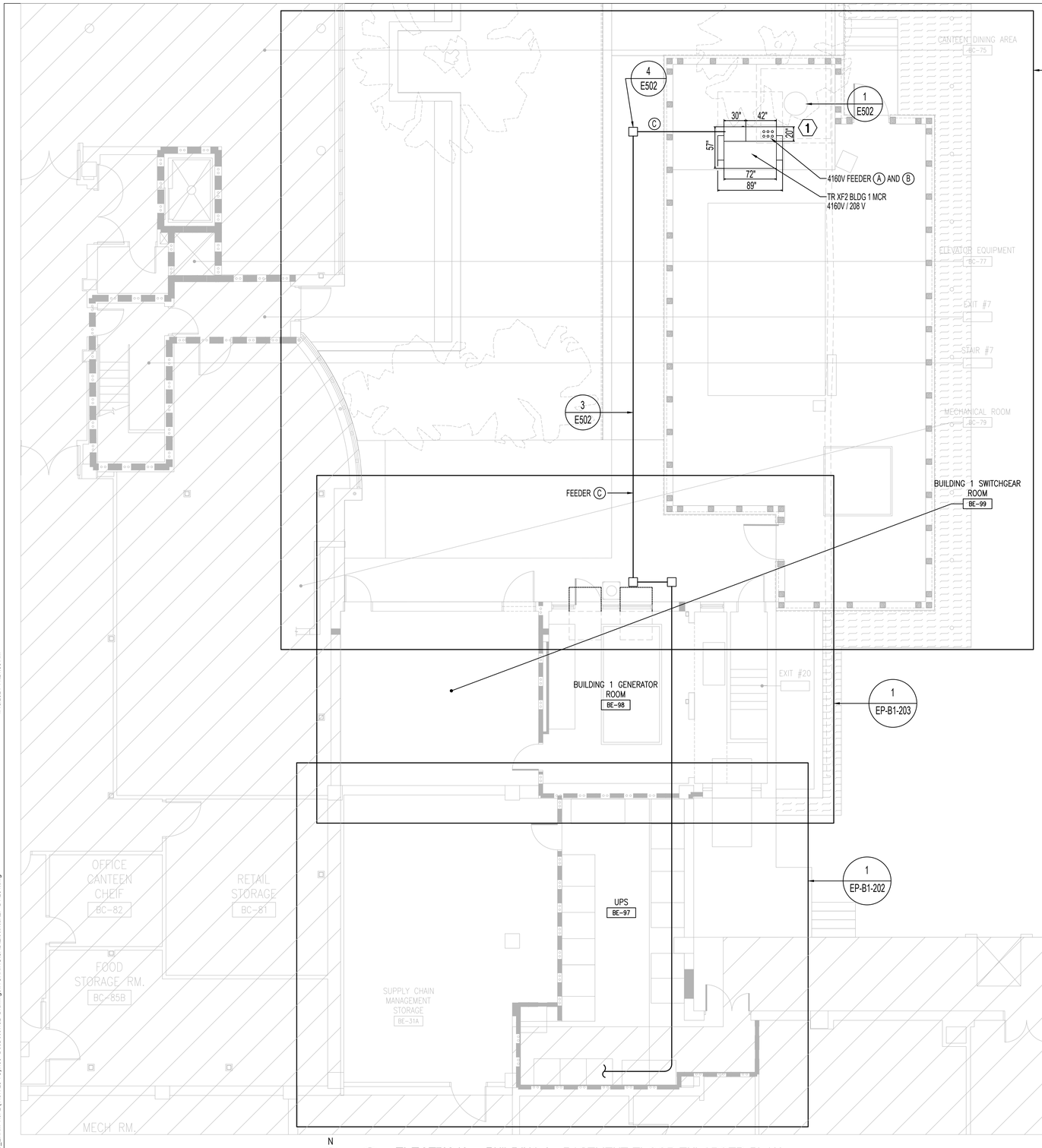
Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title	ELECTRICAL - BLDG-1-9-46 - ENLARGED DEMO PLAN - BASEMENT
Approved: Project Director	
Phase	ISSUE FOR BID
	BUILDING FULLY SPRINKLERED
Project Title	EHRM INFRASTRUCTURE UPGRADES - TIER 2
Location	FARGO VA HEALTH CARE SYSTEM
Issue Date / Checked / Drawn	01/16/2024 / WG / BX
Project Number	437-21-210
Building Number	01, 09, 46
Drawing Number	EPD-B1-201

K:\CCG_PROJECTS\2022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- DwtDocs\400- Drawings\WORKING\CAD\Electrical\EPD-B1-201.dwg
1/16/2024 12:02:39 PM

VA FORM 08 - 6231



N

1 ELECTRICAL - BUILDING 1 - BASEMENT FLOOR ENLARGED PLAN

3/16"=1'-0"

0 2" 4" 8" 12"

RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)

ELECTRICAL GENERAL NOTES

A. DRAWING DEPICTS AREAS OF WORK.

B. REFER TO "WIRING SCHEDULE MCR" ON DRAWING EP-B1-201 FOR WIRING BETWEEN ROOMS BE-97, 98, 99 AND OUTDOOR TRANSFORMER. THESE ARE THE LARGER LOADS. LESSER WIRING IS SHOWN ON DRAWINGS AS AN ARROW WITH "ROOM, PANEL, CKT" DESIGNATIONS.

C. SEE SINGLE LINE DRAWING E707 TO BETTER UNDERSTAND THE WIRING CONFIGURATION.

D. SEE MCR WIRING SCHEDULE 4.16KV - 208V FEEDERS WIRING DETAILS FOR MEDIUM VOLTAGE INFORMATION.

E. FOLLOW VA HIGH VOLTAGE PROCEDURES AND VA LOCK-OUT-TAG-OUT PROCEDURES FOR ELECTRICAL WORK ON MEDIUM VOLTAGE.

F. FOLLOW CABLE MANUFACTURER'S BEND RADII AND SIDEWALL PULLING TENSIONS.

G. SWITCHBOARDS EQ MCR AND EM GEN BLDG 1 COMPOSED OF FOUR STRUCTURES EACH. VERIFY THAT CABLES ARE PULLED BETWEEN THE CORRECT STRUCTURES.

H. POSITION MEDIUM VOLTAGE TRANSFORMER AND CONCRETE PAD OVER SW CORNER OF MANHOLE SUCH THAT THE MV CABLES FROM THE VAULT CAN BE ROUTED UP INTO THE MV SECTION OF THE TRANSFORMER. CORE SIX HOLES IN TOP OF VAULT FOR THE A AND B MEDIUM VOLTAGE 4.16KV FEEDERS TO ENTER THE TRANSFORMER.

I. POUR NEW CONCRETE PAD FOR THE TRANSFORMER. EXTEND THE CORED HOLES TO THE TOP OF THE CONCRETE PAD.

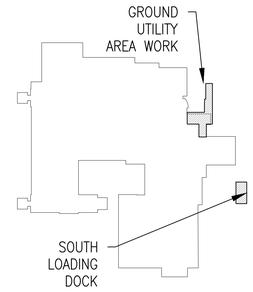
(X) ELECTRICAL KEY NOTES

1. ROUTE 4,160V FEEDERS A AND B FROM MANHOLE INTO BOTTOM OF MEDIUM VOLTAGE SECTION OF 750KVA TRANSFORMER.
   a. REPLACE THE SIX DEADBREAKS IN MANHOLE WITH NEW DEADBREAKS. VERIFY THAT NEW DEADBREAKS ARE COMPATIBLE WITH EXISTING PLUG CONNECTORS.
   b. SEE DETAIL 1 ON DRAWING E-502 FOR MANHOLE TERMINATIONS.
   c. SEE DETAIL 2 ON DRAWING E-502 FOR CONDUIT ROUTING UNDER SLAB.

MCR WIRING SCHEDULE

FROM NO	FROM ROOM	FROM ITEM	FROM STRUCTURE ITEM	TO ROOM	TO ITEM	TO CABLE	LENGTH	NOTES
①	BE-98	GEN SKID	4,000A MAIN	BE-98	SWBD EM GEN BLDG1,	(11) SETS 5#500, (11) 4 IN C	20	INSTALL SHORTEST ROUTE
②	BE-98	SWBD EM GEN BLDG1, STR-4	3,000A FEEDER	BE-97	SWBD EQ MCR, STR-2	(8) SETS 5#500, (8) 4 IN C	40	INSTALL SHORTEST ROUTE
③	BE-98	SWBD EM GEN BLDG1, STR-1	250A FEEDER	BE-99	ATS LIFE SAFETY	4#250, 1#4G	30	REUSE/RECONFIGURE EXISTING CONDUIT, RUN NEW CABLES
④	BE-98	SWBD EM GEN BLDG1, STR-1	400A FEEDER	BE-99	ATS CRITICAL	(2) SETS 4#3/0, 1#3G	30	REUSE/RECONFIGURE EXISTING CONDUIT, RUN NEW CABLES
⑤	BE-98	SWBD EM GEN BLDG1, STR-1	800A FEEDER	BE-99	ATS EQUIPMENT	(3) SETS 4#300, 1#1/0G	30	REUSE/RECONFIGURE EXISTING CONDUIT, RUN NEW CABLES
⑥	BE-97	SWBD EQ MCR, STR-4	1,000A FEEDER	BE-98	PANEL PP-2-EM	(3) SETS 4#400, 1#2/0G, (3) 3 IN C	50	
⑦	BE-97	SWBD EQ MCR, STR-3	700A FEEDER	BE-97	UPS B MBP	(2) SETS 4#500, 1#1/0G, (2) 4 IN C	30	
⑧	BE-97	SWBD EQ MCR, STR-3	700A FEEDER	BE-97	UPS B MODULE	(2) SETS 4#500, 1#1/0G, (2) 4 IN C	30	
⑨	BE-97	SWBD EQ MCR, STR-4	700A FEEDER	BE-97	UPS A MODULE A1	(2) SETS 4#500, 1#1/0G, (2) 4 IN C	ABOUT 24 FT - MEASURE EXACTLY	COORDINATE WITH EATON UPS TECHNICIAN. LENGTH OF CABLE THAT FEEDS UPS MODULE A1 MUST BE EXACT LENGTH THAT FEEDS UPS MODULE A2
⑩	BE-97	SWBD EQ MCR, STR-4	700A FEEDER	BE-97	UPS A MODULE A2	(2) SETS 4#500, 1#1/0G, (2) 4 IN C		
⑪	BE-97	SWBD EQ MCR, STR-4	700A FEEDER	BE-97	UPS A MBP	(2) SETS 4#500, 1#1/0G, (2) 4 IN C	30	
⑫	BE-97	BATT-2, UPS-A2	DC FEEDER	BE-97	UPS-A2 MODULE	2#350 FOR POSITIVE, 2#350 FOR NEGATIVE, 1#1 GROUND, 4 IN C.	20	DC TWO CABLES - MAKE AS SHORT AS POSSIBLE
⑬	BE-97	BATT-2, UPS-A2	CONTROL CONDUIT	BE-97	UPS-A2 MODULE	2#18 AWG, 3/4 IN C	20	CONTROL WIRING
⑭	BE-97	SWBD EQ MCR, STR-3	1,000A FEEDER	BE-97	PANEL PP-EM	(3) SETS 4#400, 1#2/0G, (3) 3 IN C	30	
⑰	BE-98	PANEL PP-2-EM	500A FEEDER	4E-19	PANEL PP 3 EM MCR	4#250, 1#2G, 2 1/2 IN C	185	CONTRACTOR TO FIELD ROUTE TO VERTICAL CHASE NORTH OF STAIR 2.
⑱	BE-97	UPS B DISTRIBUTION CABINET	300A FEEDER	MCR 4E-24	PANEL BUSWAY B	4#350, 1#3G, 4 IN C	195	CONTRACTOR TO FIELD ROUTE TO VERTICAL CHASE NORTH OF STAIR 2.
⑲	BE-97	UPS A MLO DISTRIBUTION	300A FEEDER	MCR 4E-24	PANEL BUSWAY A	4#350, 1#3G, 4 IN C	195	CONTRACTOR TO FIELD ROUTE TO VERTICAL CHASE NORTH OF STAIR 2.
⑳	BE-97	SWBD EQ MCR, STR-3	800A FEEDER	BE-97	SWBD EQ MCR, STR-4	(3) 4#300, 1#1/0, 3 IN C	30	
N/A	MCR 4E-24	PANEL BUSWAY B	150A BRANCH	MCR 4E-24	ROW 1 - BUSWAY B	4#1/0, 1#6G, 2 IN C	60	
N/A	MCR 4E-24	PANEL BUSWAY B	150A BRANCH	MCR 4E-24	ROW 2 - BUEWAY B	4#1/0, 1#6G, 2 IN C	60	
N/A	MCR 4E-24	PANEL BUSWAY A	150A BRANCH	MCR 4E-24	ROW 1 - BUSWAY A	4#1/0, 1#6G, 2 IN C	60	
N/A	MCR 4E-24	PANEL BUSWAY A	150A BRANCH	MCR 4E-24	ROW 2 - BUEWAY A	4#1/0, 1#6G, 2 IN C	60	

NOTE: CABLE 9 AND 10 MUST CUT TO EXACT SAME LENGTH. CONTRACTOR TO COIL LONGER CABLE IN JUNCTION BOX. DETERMINE SIZE AND LOCATION OF JUNCTION BOX BASED ON FIELD
NOTE: CABLE LENGTHS ON DRAWING ARE REPRESENTATIVE. CONTRACTOR TO DETERMINE ACTUAL CABLE LENGTHS BASED ON FIELD CONDITIONS.



N

KEYPLAN BUILDING 1-9-46

NTS

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

Bancroft Architects + Engineers
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www. bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035261
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - BLDG-1 - BASEMENT 4.16KV AND FEEDERS 208V

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024 | Checked: WG | Drawn: BX

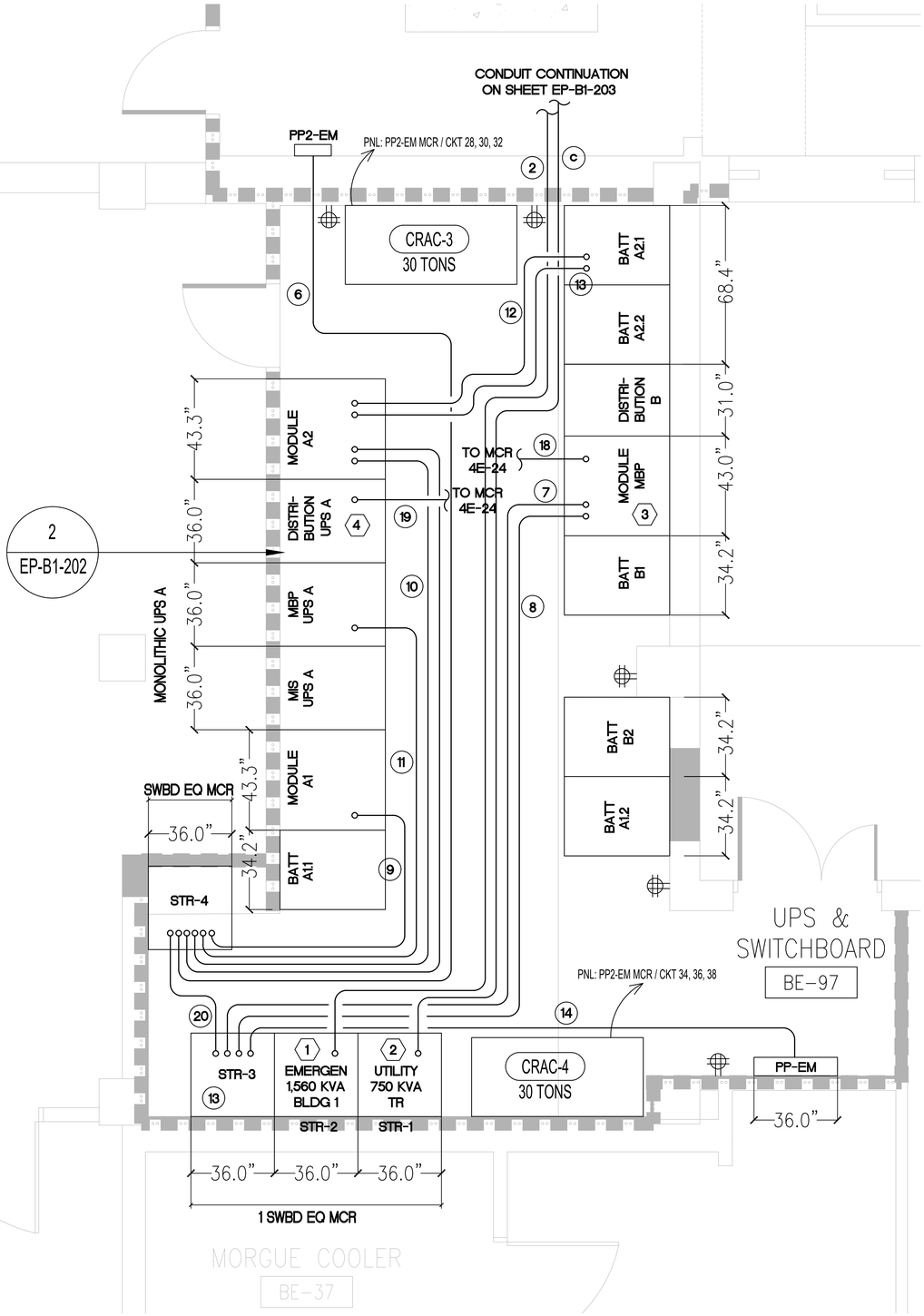
Project Number: 437-21-210

Building Number: 1

Drawing Number: EP-B1-201

K:\CCG_PROJECTS\2022\22-113_437-21-210_Fargo_ND_EHRM Tier 2 (VISN 23 TOI)\400- DesDocs\402- Drawings\WORKING\CAD\Electrical\EP-B1-201.dwg
1/16/2024 11:21:55 AM

VA FORM 08 - 6231



N

1 ELECTRICAL - BUILDING 1 - UPS ROOM ENLARGED PLAN

1/2"=1'-0"

IMPORTANT NOTES CONCERNING MONOLITHIC UPS A:

A. CONTRACTOR TO COORDINATE WITH COR FOR RELOCATING THE MONOLITHIC UPS A FROM ROOM BC-50 TO ROOM BE-97. THE FARGO PHASE 1 PROJECT "437-21-205 EHRM INFRASTRUCTURE UPGRADES" CONTRACTED WITH EATON TO MANAGE DISASSEMBLY OF UPS IN ROOM BC-50 AND RE-ASSEMBLY IN ROOM BE-97.

B. THE ABOVE CONTRACT ALSO PURCHASED ADDITIONAL MODULES FOR MONOLITHIC UPS A THAT NEED TO BE ACTIVATED TO SUPPORT THE NEW ADDITIONAL MCR LOAD.

C. FOLLOW THE MONOLITHIC UPS A INSTALLATION MANUAL FOR ALL CABLING AND TERMINATIONS. SPECIFICALLY, **THE FOLLOWING CABLES MUST BE THE SAME LENGTH: THE CABLE THAT FEEDS UPS MODULE A1 & STATIC TRANSFER SWITCH (STS) A1 AND THE CABLE THAT FEEDS UPS MODULE A2 & STATIC TRANSFER SWITCH (STS) A2.** BOTH OF THESE CABLES MUST COME FROM SWITCHBOARD STRUCTURE (STR-3). DO NOT CONNECT THESE TWO CABLES TO TWO DIFFERENT STRUCTURES.

D. ROUTE BATTERY DC CABLES THE SHORTEST MOST DIRECT PATH FROM BATTERY CABINET TO THE UPS MODULES. THESE ARE DC CABLES ?? AND ??.

ELECTRICAL GENERAL NOTES

A. DRAWING DEPICTS AREAS OF WORK.

B. CONDUIT ROUTINGS ARE SHOWN FOR CLARITY. CONTRACTOR TO PROPERLY ROUTE CONDUITS BETWEEN TERMINATION POINTS, EXCEPT UPS CONDUITS NOTED IN MONOLITHIC UPS.

C. REFER TO ARCHITECTURAL DRAWING AS-B1-306 FOR ROUTING UNDERGROUND DUCT INTO AND BELOW ROOMS BE-98 AND BE-97.

D. REFER TO "MCR WIRING SCHEDULE" ON DRAWING EP-B1-201 FOR WIRING BETWEEN ROOMS BE-97, 98, 99, AND MCR ON 4th FLOOR. THESE ARE THE LARGER LOADS. LESSER WIRING IS SHOWN ON DRAWINGS AS AN ARROW WITH "ROOM, PANEL, CKT" DESIGNATIONS.

E. UTILIZE SINGLE LINE DRAWING E-707 TO BETTER UNDERSTAND THE WIRING CONFIGURATION.

F. OUTDOOR FEEDER DUCT WIRING IS IDENTIFIED "ALPHABETICALLY". INDOOR FEEDER WIRING IS IDENTIFIES "NUMERICALLY".

G. INSTALL SWITCHBOARD EQ MCR AGAINST EAST WALL OF UPS ROOM BE-97.

H. REFER TO DRAWING E-604 FOR ROUTING CABLES FROM MONOLITHIC UPS A DISTRIBUTION PANEL (OUTGOING MLO) TO SPLICE WITH EXISTING UPS CABLES.

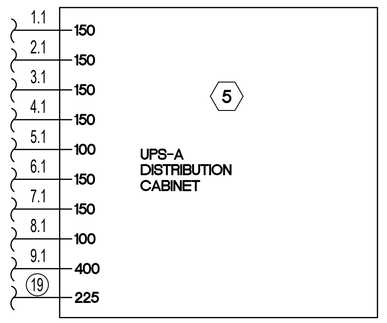
⟨X⟩ ELECTRICAL KEY NOTES

1. ROUTE 3,000A POWER FROM 3,000A BREAKER IN SWITCHBOARD EM GEN BLDG 1 TO 3,000A BREAKER IN SWITCHBOARD EQ MCR 1, IN ROOM BE-97 FROM ABOVE.
2. ROUTE 2,000A 208V POWER FROM OUTDOOR TRANSFORMER TO ENTER STR-1, SWBD EQ MCR FROM BELOW.
3. ROUTE WIRE NO 18 UP THROUGH CHASE NORTH OF STAIR 2 TO PANEL BUSWAY B IN MCR ROOM 4E-24.
4. ROUTE WIRE NO 19 UP THROUGH CHASE NORTH OF STAIR 2 TO PANEL BUSWAY A IN MCR ROOM 4E-24.
5. MATCH FEEDERS 1.1, 2.1, 3.1, ETC WITH PROPER BREAKERS AS SHOWN ON SCHEDULE "UPS A DISTRIBUTION WIRING SCHEDULE TO SPLICE NEW UPS WIRING INTO EXISTING UPS WIRING", DRAWING E-604.

RATED WALL LEGEND

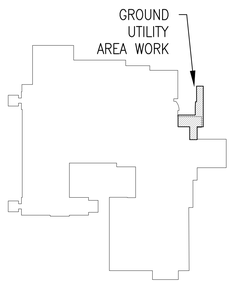
CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)



2 UPS-A BREAKER DISTRIBUTION DETAIL

NTS



N

KEYPLAN BUILDING 1-9-46

NTS

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035261
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - BLDG-1 - UPS ROOM ENLARGED PLAN

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024 | Checked: WG | Drawn: BX

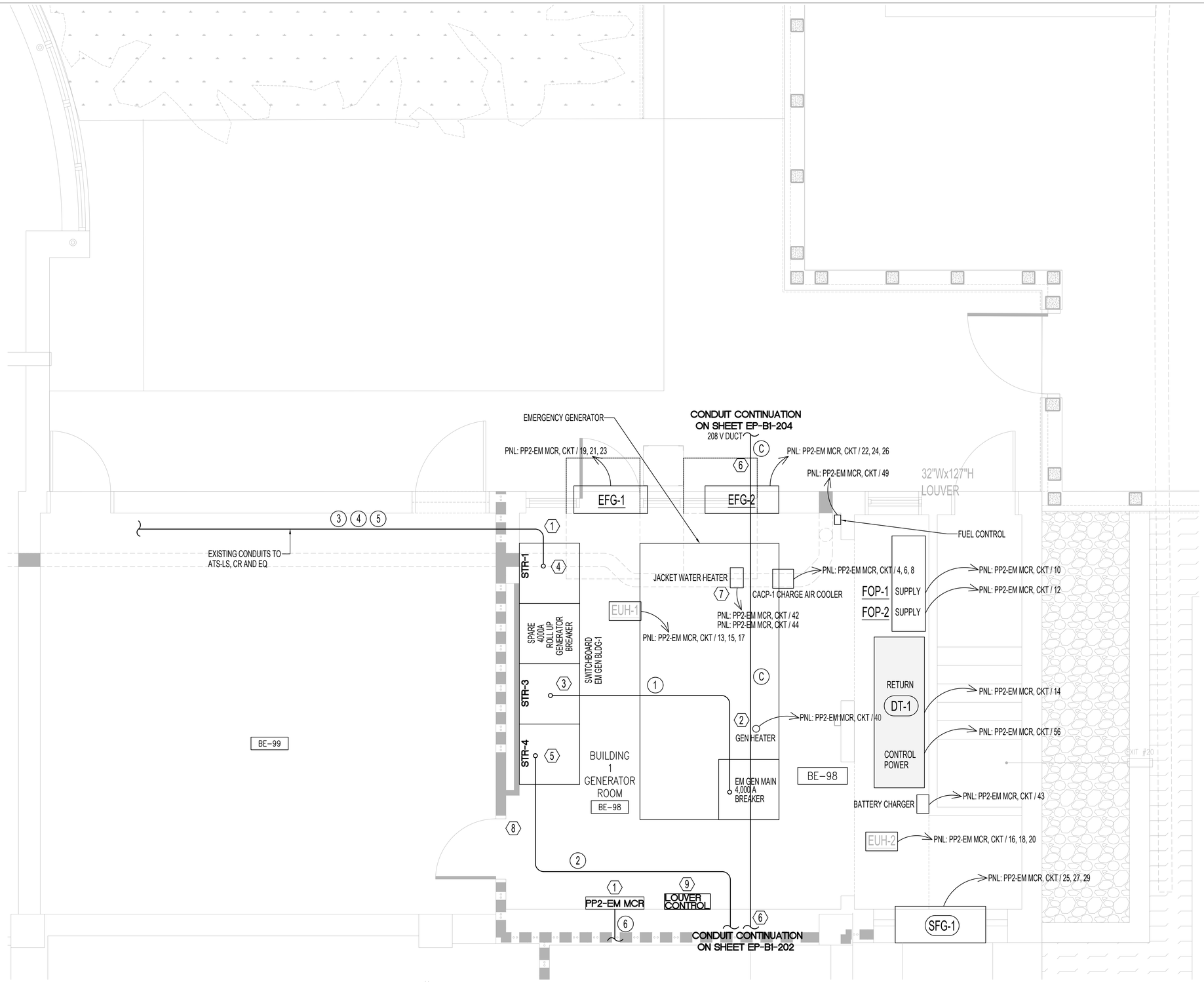
Project Number: 437-21-210

Building Number: 1

Drawing Number: EP-B1-202

VA FORM 08 - 6231

K:\CDG_PROJECTS\2022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- DwtDocs\400- Drawings\WORKING\CAD\Electrical\EP-B1-202.dwg 1/16/2024 11:22:19 AM



ELECTRICAL GENERAL NOTES

A. REFER TO "MCR WIRING SCHEDULE" ON DRAWING EP-B1-201 FOR WIRING BETWEEN ROOMS BE-97, 98, 99, OUTDOOR TRANSFORMER AND 4th FLOOR MCR. THESE ARE THE LARGER FEEDER CABLES AND LOADS. LESSER WIRING/BRANCH CIRCUITS ARE SHOWN ON DRAWINGS AS AN ARROW WITH "ROOM, PANEL, CKT" DESIGNATIONS.

B. CONTRACTOR TO REVIEW ARCHITECTURAL DRAWING AS-B1-301 FOR ELEVATION OF ELECTRICAL CONDUITS THAT GO BELOW THE GENERATOR ROOM FLOOR AND BELOW THE UPS ROOM FLOOR.

C. LARGE WIRING IS IDENTIFIED IN CIRCLED NUMBERS.

D. SEE SINGLE LINE DRAWING E707 TO BETTER UNDERSTAND THE WIRING CONFIGURATION.

E. INSTALL SWITCHBOARD EM GEN BLDG-1 AGAINST THE WEST WALL OF ROOM BE-98.

F. CONTRACTOR TO SELECT CIRCUIT NUMBERS ON PANEL PP2-EM BASED ON FIELD CONDITIONS, AND TO BALANCE LOADS. UPDATE INDEX IN PANEL AND PANEL SCHEDULE ACCORDINGLY.

G. CONTRACTOR TO USE 90 DEG. C WIRING TO UNIT HEATERS.

H. CONTRACTOR TO COORDINATE WITH CONTROLS CONTRACTOR TO ROUTE ¾ IN CONDUITS FOR CONTROLS, FOR EXAMPLE FUEL SYSTEM, GENERATOR CONTROL PANEL, LOUVER AND FAN CONTROLS.

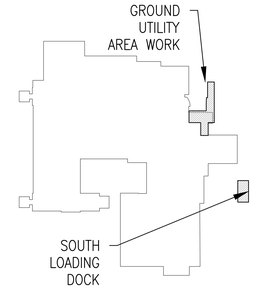
⟨X⟩ ELECTRICAL KEY NOTES

1. ROUTE WIRE NO 17 FROM PANEL PP2-EM TO CHASE NORTH OF STAIR 2, THEN UP TO 4th FLOOR MCR, ELECTRIC CLOSET 4E-19. SEE DRAWING EP-B1-242.
2. TERMINATE GENERATOR HEATER. THIS MAY BE A SEPARATE UNIT TO BE INSTALLED IN THE FIELD.
3. ROUTE 4,000A POWER FROM GENERATOR MAIN BREAKER INTO (MLO) MAIN LUG ONLY STRUCTURE STR-3 OF SWITCHBOARD EM GEN BLDG 1.
4. MODIFY / EXTEND NEW CONDUITS FROM SWITCHBOARD AND CONNECT TO / RE-USE EXISTING CONDUITS THAT GO INTO ROOM BE-99, BUILDING 1 SWITCHGEAR ROOM. TERMINATE TO ATS - LIFE SAFETY TO 250A BREAKER, ATS - CRITICAL TO 400A BREAKER AND ATS - EQUIPMENT TO 800A BREAKER; CABLES ③④⑤.
5. ROUTE 3,000A POWER FROM 3,000A BREAKER IN SWITCHBOARD STR-4, EM GEN BLDG 1 TO 3,000A "EM GEN 1" BREAKER IN STR-2, SWITCHBOARD EQ MCR 1, IN ROOM BE-97.
6. CONTINUE CONDUIT FROM DRAWING EP-B1-201, FROM UNDER SLAB AND OUTDOOR TRANSFORMER. ROUTE CONDUIT 3,000A "DATA CENTER TRANSFORMER" BREAKER INTO SWITCHBOARD EQ MCR 1, STR-1 FROM BELOW, IN ROOM BE-97.
7. TERMINATE JACKET WATER HEATER. THIS MAY BE A SEPARATE UNIT TO BE INSTALLED IN THE FIELD.
8. REINSTALL EPO, WALL PHONE AND LIGHT SWITCHES
9. RUN NEW WIRING FROM NEW LOUVERS TO THE EXISTING LOUVER CONTROL PANEL.

RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)



KEYPLAN BUILDING 1-9-46
NTS

N

1 ELECTRICAL - BUILDING 1 - GENERATOR ROOM BE-98 ENLARGED FLOOR PLAN
1/2"=1'-0"

0 1' 2' 4'

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035261
STATE OF ILLINOIS

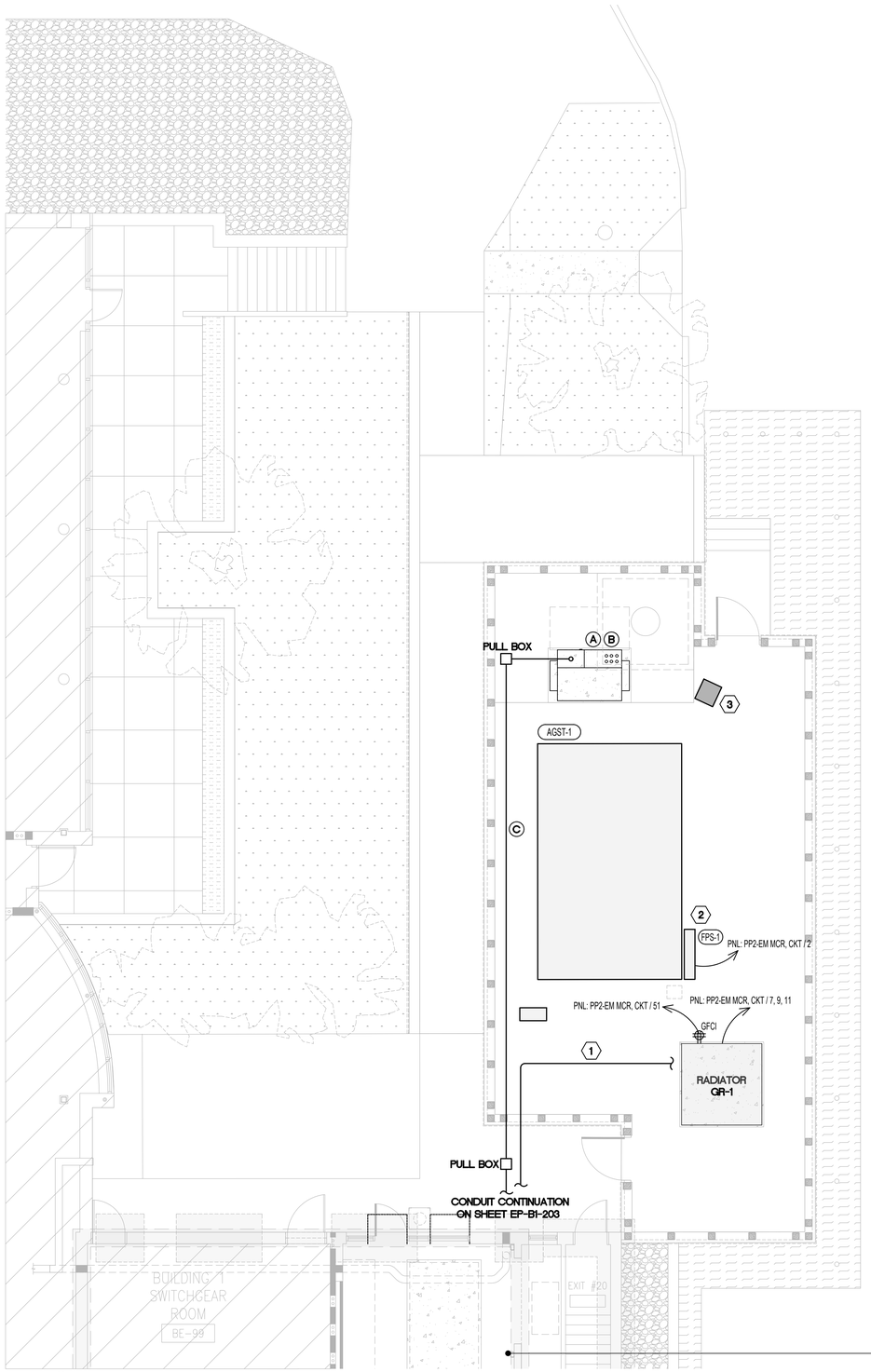
Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - BLDG-1 - GENERATOR ROOM ENLARGED PLAN	Phase: ISSUE FOR BID	Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2	Project Number: 437-21-210
			Building Number: 1
Approved: Project Director	BUILDING FULLY SPRINKLERED	Location: FARGO VA HEALTH CARE SYSTEM	Drawing Number: EP-B1-203
		Issue Date: 01/16/2024 / Checked: WG / Drawn: BX	

VA FORM 08 - 6231

K:\CCG_PROJECTS\2022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TOJ)\400- Dwgs\WORKING\CAD\Electrical\EP-B1-203.dwg
1/16/2024 11:23:03 AM



N

1 ELECTRICAL - BLDG-1 - OUTDOOR

3/16"=1'-0"

ELECTRICAL GENERAL NOTES

A. FOLLOW VA HIGH VOLTAGE PROCEDURES AND VA LOCK-OUT-TAG-OUT PROCEDURES FOR ELECTRICAL WORK ON MEDIUM VOLTAGE.

B. INSTALL NEW TRANSFORMER AND PAD, SO THAT THE MEDIUM VOLTAGE (MV) PORTION OF THE TRANSFORMER OVERLAPS THE SOUTHWEST CORNER OF THE MV VAULT BELOW:

   a. SEE DETAIL 1 ON DRAWING E502 FOR MANHOLE TERMINATIONS.

   b. SEE DETAIL 2 ON DRAWING E502 FOR CONDUIT ROUTING UNDER SLAB.

   c. CORE SIX 3 IN. HOLES FROM MV TRANSFORMER COMPARTMENT DOWN INTO THE MV VAULT.

   a. REPLACE THE MV DEAD BREAKS IN THE VAULT SO THAT FINAL INSTALLATION HAS ONE REMAINING SPARE. VERIFY THAT NEW DEADBREAKS ARE COMPATIBLE WITH EXISTING PLUG CONNECTORS.

   d. ROUTE MV FEEDERS A AND B FROM VAULT INTO TRANSFORMER.

C. SEE MCR WIRING SCHEDULE 4.16KV - 208V FEEDERS WIRING DETAILS FOR MEDIUM VOLTAGE INFORMATION.

D. ROUTE 208V DUCT BANK FROM TRANSFORMER INTO BOTTOM OF STR-1, SWBD EQ MCR, IN ROOM BE-97. FOLLOW WIRING SCHEDULE 4.16KV - 208V FEEDERS. UTILIZE 4 IN PVC FOR THIS DUCT AS THERE IS NO ROOM FOR SPARES, SO THE DUCT IS LARGER TO ALLOW REMOVAL OF A FAILED CABLE.

E. INSTALL REBAR ON TOP AND BOTTOM OF 208V CONCRETE DUCT. NORMALLY REBAR IS NOT REQUIRED, BUT DUE TO THE CONFIGURATION AND PROXIMITY WITH OTHER UNDERGROUND WORK, FOR THIS INSTALLATION REBAR IS REQUIRED.

F. REFER TO ARCHITECTURAL AS-B1-301 FOR ROUTING THE 208V FEEDER CONDUITS FROM OUTDOOR TRANSFORMER TO BELOW GENERATOR ROOM AND UPS ROOM FLOORS.

G. BRANCH WIRING TO INDIVIDUAL OUTDOOR EQUIPMENT SHOULD BE ROUTED BELOW GRADE TO EACH COMPONENT TO PREVENT ANY TRIPPING HAZARDS.

NOTE: BASED ON FIELD CONDITIONS, CONTRACTOR HAS OPTION USE "FACTORY ELLS" INSTEAD OF PULL BOX TO REDUCE SIDEWALL FRICTION WHEN PULLING CABLES.

H. SEE SINGLE LINE DRAWING E707 TO BETTER UNDERSTAND THE WIRING CONFIGURATION.

I. FOLLOW CABLE MANUFACTURER'S BEND RADII AND SIDEWALL PULLING TENSIONS.

J. SWITCHBOARDS EQ MCR AND EM GEN BLDG 1 COMPOSED OF FOUR STRUCTURES EACH. VERIFY THAT CABLES ARE PULLED TO THE CORRECT STRUCTURES.

(X) ELECTRICAL KEY NOTES

1. RUN POWER CONDUIT TO RADIATOR USING SAME ROUTING AS RADIATOR PIPING. ENCASE POWER CONDUIT WITH 2 IN. OF RED CONCRETE.
2. FUEL POLISHER CONDUIT.
3. FUEL TANK MONITORING CONDUITS.

RATED WALL LEGEND

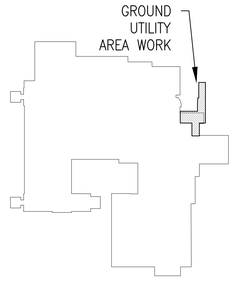
CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)

MCR WIRING SCHEDULE 4.160KV - 208V FEEDERS - SOUTHWIRE BASIS OF DESIGN OR VA EQUAL

FROM				TO			
NO		ITEM		ITEM	CIRCUIT	CABLE	NOTES
(A)	ELECTRIC MANHOLE	4.16KV FEEDER A	DEAD BREAK	TR B1 MCR	A	COPPER (3) # 4/0 AWG MV EPR	REPLACE EXISTING DEAD BREAKS WITH NEW DEAD BREAKS
(B)	ELECTRIC MANHOLE	4.16KV FEEDER A	DEAD BREAK	TR B1 MCR	B	COPPER (3) # 4/0 AWG MV EPR	REPLACE EXISTING DEAD BREAKS WITH NEW DEAD BREAKS
(C)	TR B1 MCR	208V FEEDER		ROOM BE-97, STR-1, SWBD EQ MCR	STRUCTURE 4, 3,000A BREAKER	(6) SETS, 4#400, 1#250G, (6) 3 IN DUCTS	FOLLOW GENERAL AND KEY NOTES ON DRAWING

NOTE: CABLE LENGTHS ON DRAWING ARE "REPRESENTATIVE" CONTRACTOR TO DETERMINE LENGTHS FOR INSTALLATION BASED ON FIELD CONDITIONS.
NOTE: UTILIZE CABLE MANUFACTURER'S BEND RADII AND SIDEWALL PRESSURES FOR INSTALLATIONS
NOTE: WHEN RUNNING CABLES IN A DUCT, GROUP PHASES A, B, C & G IN EACH INDIVIDUAL DUCT.



N

KEYPLAN BUILDING 1-9-46

NTS

0 2' 4' 8' 12'

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

Bancroft Architects + Engineers
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-059281
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - BLDG-1 - OUTDOOR INSTALLATION

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024 | Checked: WG | Drawn: BX

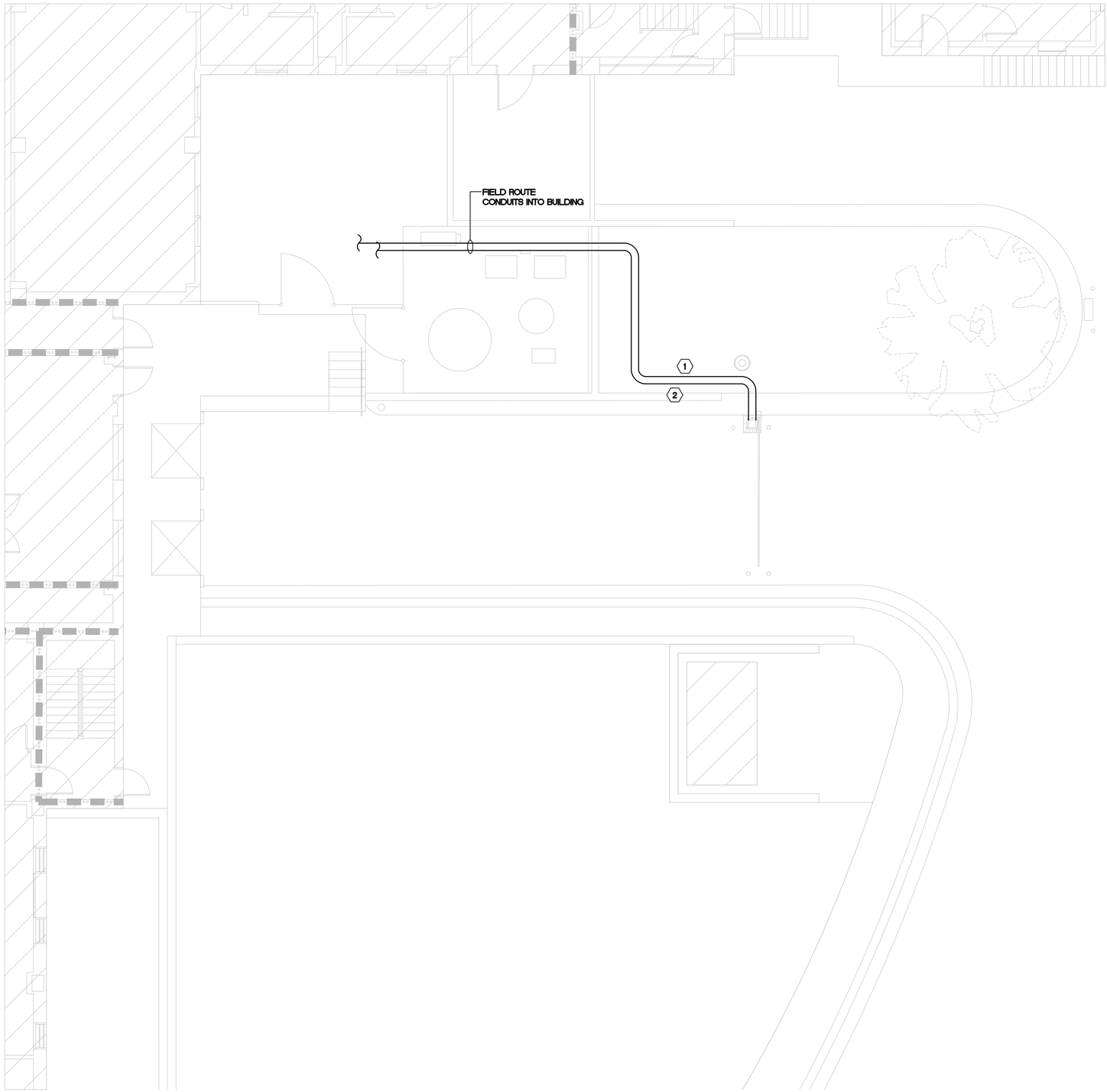
Project Number: 437-21-210

Building Number: 1

Drawing Number: EP-B1-204

K:\CCG_PROJECTS\022\22-113_437-21-210_Fargo_ND_EHRM Tier 2 (VISN 23 TO)\400- DwgDocs\402- Drawings\WORKING\CAD\Electrical\EP-B1-204.dwg
1/16/2024 11:23:26 AM

VA FORM 08 - 6231



ELECTRICAL GENERAL NOTES

A. SEE ARCHITECTURAL DRAWING AS-B1-205 FOR SECURITY GATE DETAILS.

B. INSTALL THE COMMUNICATIONS AND ELECTRICAL CONDUITS AT THE SAME TIME AS THE UNDERGROUND WORK IS BEING PERFORMED FOR OUTDOOR PIPING AND POWER.

C. CONTRACTOR TO SELECT BEST ROUTING BASED ON FIELD CONDITIONS.

D. ENCASE BOTH CONDUITS IN 2 IN OF RED CONCRETE.

(X) ELECTRICAL KEY NOTES

1. ROUTE POWER CONDUIT TO PANEL PP2-EM MCR.
2. ROUTE COMMUNICATIONS CONDUIT ALL THE WAY INTO HOSPITAL CORRIDOR AND CONTINUE IN CEILING WIRE TRAY ALL THE WAY INTO TR ROOM BD-02.

RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

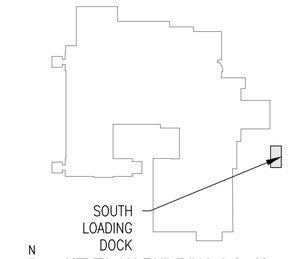
- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)

N

1 ELECTRICAL - BUILDING 1 - SOUTH LOADING DOCK SECURITY GATE PLAN

3/16"=1'-0"

0 2' 4' 8' 12'



N

KEYPLAN BUILDING 1-9-46

NTS

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www. bancroft-ae.com
Bancroft Project No: 22-113

STAMP

REGISTERED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035201
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - B1 - SOUTH LOADING DOCK SECURITY GATE PLAN

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location: FARGO VA HEALTH CARE SYSTEM

Project Number: 437-21-210

Building Number: 1

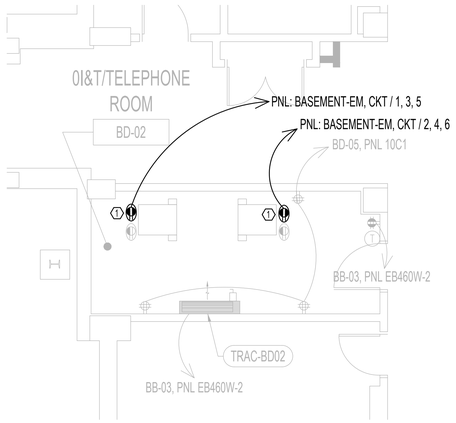
Drawing Number: EP-B1-205

Issue Date	Checked	Drawn
01/16/2024	WG	BX

K:\CCG_PROJECTS\2022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- DesDocs\402- Drawings\WORKING\CAD\Electrical\EP-B1-205.dwg

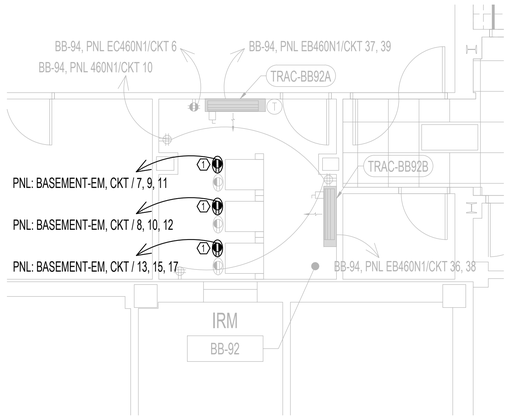
12/15/2023 3:46:47 PM

VA FORM 08 - 6231



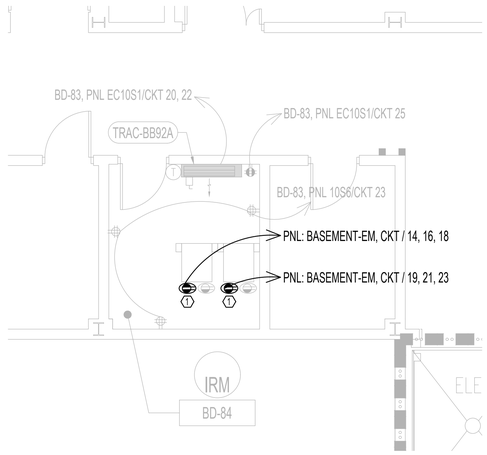
1 ENLARGED POWER PLAN RM BD-02

1/4"=1'-0"



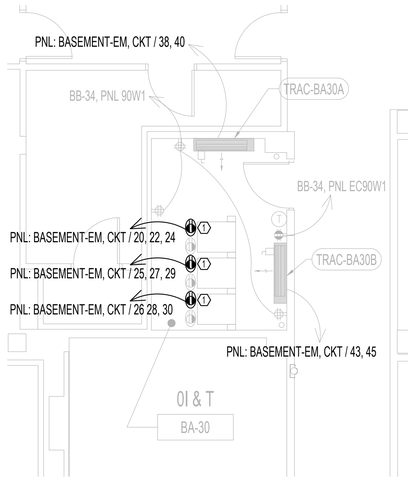
2 ENLARGED POWER PLAN RM BB-92

1/4"=1'-0"



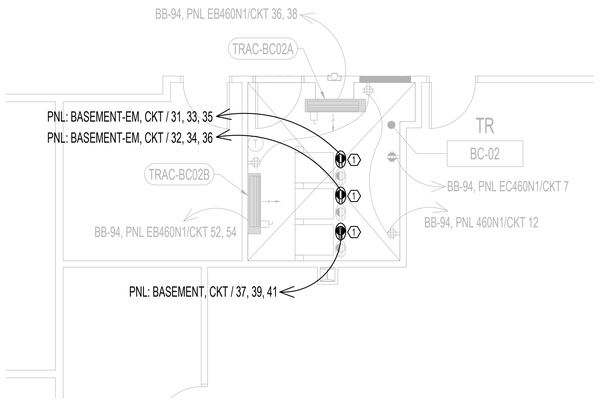
3 ENLARGED POWER PLAN RM BD-84

1/4"=1'-0"



4 ENLARGED POWER PLAN RM BA-30

1/4"=1'-0"



5 ENLARGED POWER PLAN RM BC-02

1/4"=1'-0"

ELECTRICAL GENERAL NOTES

A. CONTACT VA IT PRIOR TO WORKING IN DATA CENTER OR IT CLOSET.

B. ALL RACKS ARE IN OPERATION ON UPS POWER. REMAINING WORK IS TO INSTALL EMERGENCY POWER ABOVE EACH RACK.

C. USE PRECAUTIONS TO AVOID SNAGGING, WIRING OR DAMAGING EQUIPMENT.

D. PROTECT IT EQUIPMENT FROM DUST DURING WORK THAT CREATES DUST.

E. SEE PANEL SCHEDULES ON DRAWING SERIES E600 FOR EMERGENCY POWER (EM) PANEL SCHEDULES AND EM CIRCUIT NUMBERS. CABLE LENGTHS ARE FOR INFORMATION ONLY. CONTRACTOR TO DETERMINE CORRECT LENGTHS BASED ON FIELD CONDITIONS.

F. SEE DRAWING SERIES E700 FOR SINGLE LINE DRAWINGS.

G. EM POWER TO RACKS / CABINETS IN NEW TR's MUST BE PROVIDED TO THE TOP OF THE RACKS / CABINETS. NO POWER WIRING ON FLOORS!

H. RECEPTACLES ABOVE RACKS MUST BE NEMA L21-20R, LOCKING RECEPTACLES.

I. PANEL CIRCUIT NUMBERS ARE SUGGESTIONS, CONTRACTOR TO SELECT BREAKERS AND CIRCUIT NUMBERS BASED ON FIELD CONDITIONS AT TIME OF INSTALLATION.

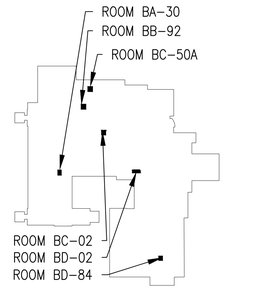
⟨X⟩ ELECTRICAL KEY NOTES

1. EMERGENCY POWER TO RACK.

RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)



N

KEY PLAN

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035201
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELETRICAL - BLDG-1-9-46 - ENLARGED PLANS - BASEMENT

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

ISSUE FOR BID - 01/16/2024

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Project Number: 437-21-210

Building Number: 01, 09, 46

Location: FARGO VA HEALTH CARE SYSTEM

Drawing Number: EP-B1-401

Issue Date: 01/16/2024 | Checked: WG | Drawn: BX

K:\CCG_PROJECTS\2022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- DataDocs\402- Drawings\WORKING\CAD\Electrical\EP-01-401.dwg
12/11/2023 11:46:13 AM

VA FORM 08 - 6231

ELECTRICAL GENERAL NOTES

A. DRAWING DEPICTS AREAS OF WORK.

B. EXISTING UPS POWER CONDUITS WILL BE DISCONNECTED AND REMOVED FROM ROOM BC-50A TO 1st FLOOR CONDUIT CHASES.

C. NEW 2nd FLOOR UPS FEEDERS FROM MCR WILL INTERCEPT AND SPLICE INTO UPS FEEDERS FOR 1st FLOOR.

D. TWO NEW EMERGENCY POWER DISTRIBUTION PANELS, FED FROM NEW MCR, WILL BE LOCATED IN 1ST FLOOR TO FEED EXISTING TR ROOMS.

(X) ELECTRICAL KEY NOTES

1. INSTALL NEW PANEL EBEM-011CB.
2. INSTALL NEW PANEL EBEM-461NA.

RATED PARTITION LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)

NORTH

1 ELECTRICAL - BUILDING 1-9-46 - FIRST FLOOR PLAN

1/16"=1'-0"

0 4' 8' 16' 32'

N KEY PLAN

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www. bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035261
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - OVERALL FIRST FLOOR PLAN

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024

Checked: WG

Drawn: BX

Project Number: 437-21-210

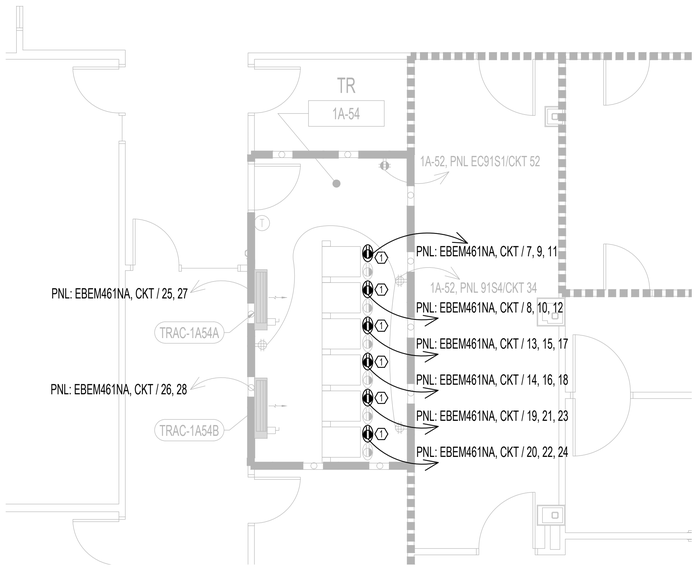
Building Number: 1-9-46

Drawing Number: EP-B1-111

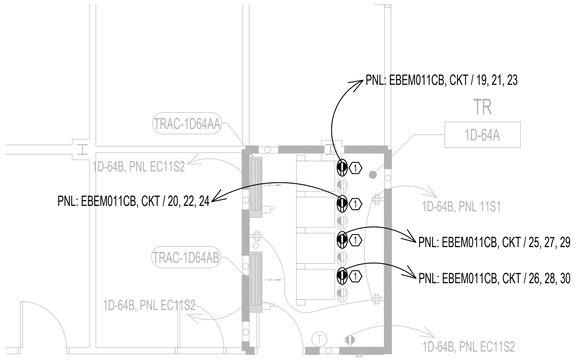
VA FORM 08 - 6231

K:\CCD_PROJECTS\2022\22-113_437-21-210_Fargo_ND_EHRM Tier 2 (VISN 23 TO)\400- DesDocs\402- Drawings\WORKING\CAD\Electrical\EP-B01-111.dwg

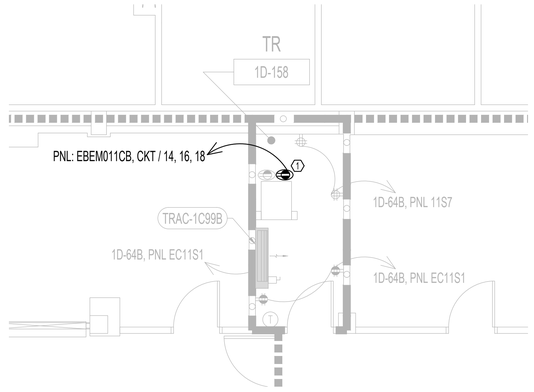
12/11/2023 11:46:04 AM



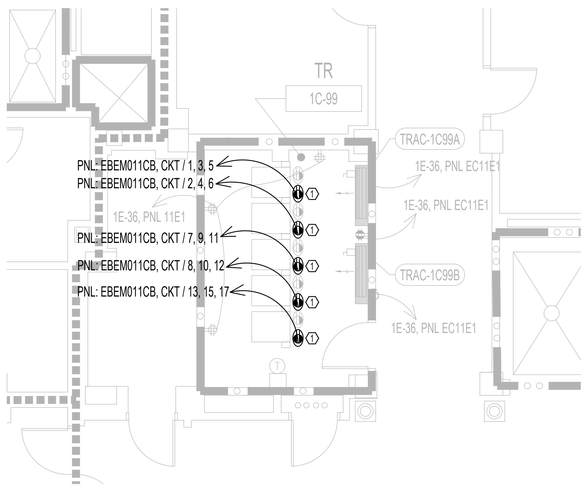
1 ENLARGED POWER PLAN RM 1A-54
1/4"=1'-0"



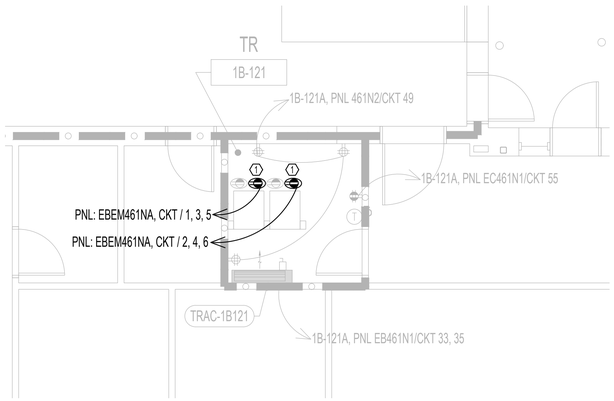
2 ENLARGED POWER PLAN RM 1D-64A
1/4"=1'-0"



5 ENLARGED POWER PLAN RM 1D-158
1/4"=1'-0"



3 ENLARGED POWER PLAN RM 1C-99
1/4"=1'-0"



4 ENLARGED POWER PLAN RM 1B-121
1/4"=1'-0"

ELECTRICAL GENERAL NOTES

A. CONTACT VA IT PRIOR TO WORKING IN DATA CENTER OR IT CLOSET.

B. ALL RACKS ARE IN OPERATION ON UPS POWER. REMAINING WORK IS TO INSTALL EMERGENCY POWER ABOVE EACH RACK.

C. USE PRECAUTIONS TO AVOID SNAGGING, WIRING OR DAMAGING EQUIPMENT.

D. PROTECT IT EQUIPMENT FROM DUST DURING WORK THAT CREATES DUST.

E. SEE PANEL SCHEDULES ON DRAWING SERIES E600 FOR EMERGENCY POWER (EM) PANEL SCHEDULES AND EM CIRCUIT NUMBERS. CABLE LENGTHS ARE FOR INFORMATION ONLY. CONTRACTOR TO DETERMINE CORRECT LENGTHS BASED ON FIELD CONDITIONS.

F. SEE DRAWING SERIES E700 FOR SINGLE LINE DRAWINGS.

G. EM POWER TO RACKS / CABINETS IN NEW TR's MUST BE PROVIDED TO THE TOP OF THE RACKS / CABINETS. NO POWER WIRING ON FLOORS!

H. RECEPTACLES ABOVE RACKS MUST BE NEMA L21-20R, LOCKING RECEPTACLES.

I. PANEL CIRCUIT NUMBERS ARE SUGGESTIONS, CONTRACTOR TO SELECT BREAKERS AND CIRCUIT NUMBERS BASED ON FIELD CONDITIONS AT TIME OF INSTALLATION.

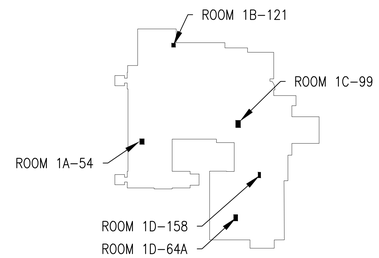
⟨X⟩ ELECTRICAL KEY NOTES

1. EMERGENCY POWER TO RACK.

RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)



N
KEY PLAN

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

REGISTERED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035201
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELETRICAL - BLDG-1-9-46 - ENLARGED PLANS - FIRST FLOOR

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024 | Checked: WG | Drawn: BX

Project Number: 437-21-210

Building Number: 01, 09, 46

Drawing Number: EP-B1-411

K:\CCG_PROJECTS\2022\22-113_437-21-210_Fargo_ND_EHRM Tier 2 (VISN 23 TO)\400- DwtDocs\402- Drawings\WORKING\CAD\Electrical\EP-01-411.dwg
12/11/2023 11:45:52 AM
VA FORM 08 - 6231

ELECTRICAL GENERAL NOTES

A. DRAWING DEPICTS AREAS OF WORK.

B. EXISTING UPS POWER CONDUITS WILL BE DISCONNECTED AND REMOVED FROM ROOM BC-50A TO 2nd FLOOR CONDUIT CHASES.

C. NEW 2nd FLOOR UPS FEEDERS FROM MCR WILL INTERCEPT AND SPLICE INTO UPS FEEDERS FOR 2nd FLOOR.

D. TWO NEW EMERGENCY POWER DISTRIBUTION PANELS, FED FROM NEW MCR, WILL BE LOCATED IN 2nd FLOOR TO FEED EXISTING TR ROOMS.

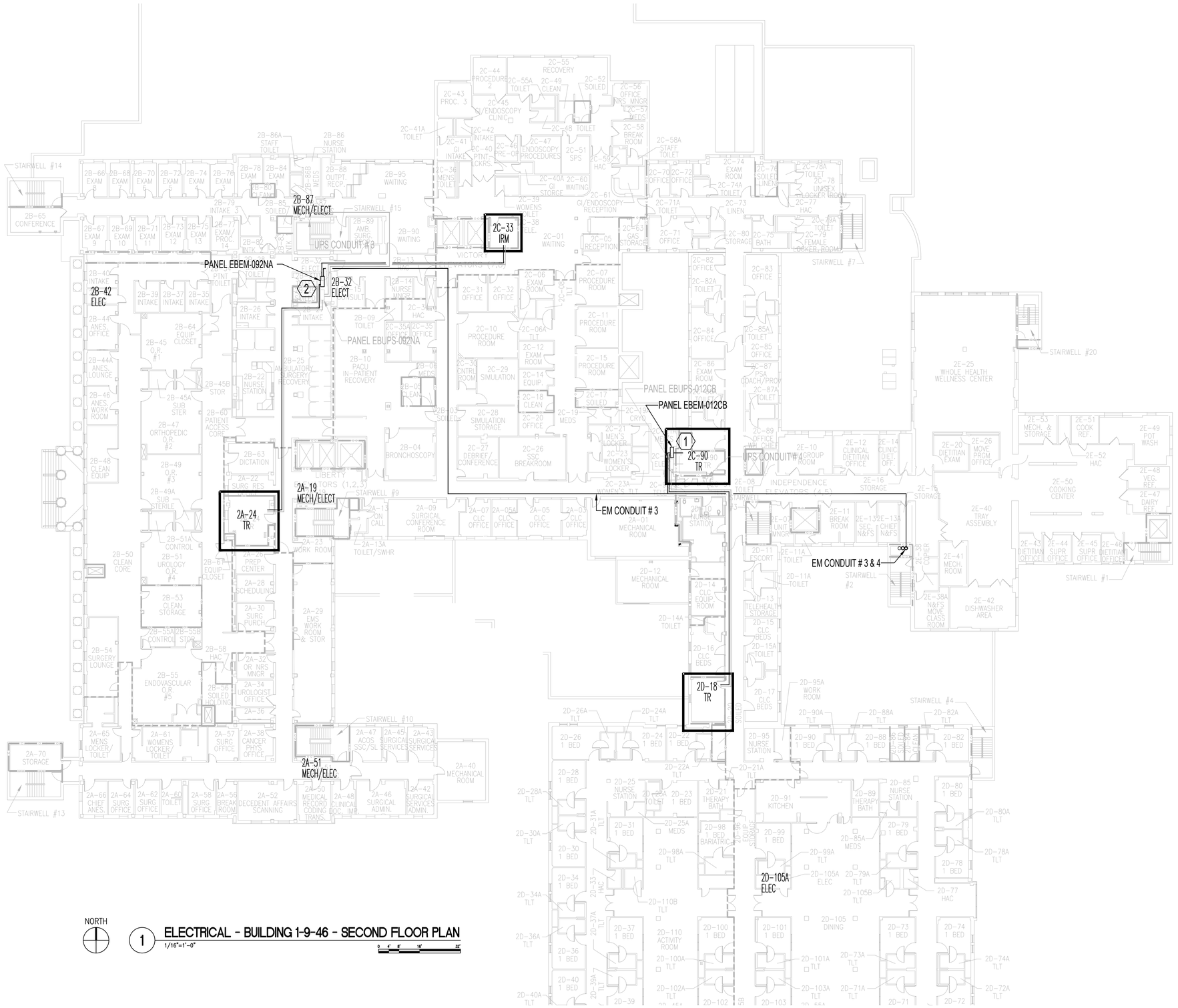
ELECTRICAL KEY NOTES

1. INSTALL NEW PANEL EBEM-012CB.
2. INSTALL NEW PANEL EBEM-092NA.

RATED PARTITION LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)

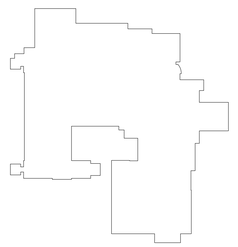


NORTH

1 ELECTRICAL - BUILDING 1-9-46 - SECOND FLOOR PLAN

1/16"=1'-0"

0' 4' 8' 16' 32'



N

KEY PLAN

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS

3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www. bancroft-ae.com
Bancroft Project No: 22-113

STAMP

REGISTERED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-052001
STATE OF ILLINOIS

Office of Construction and Facilities Management

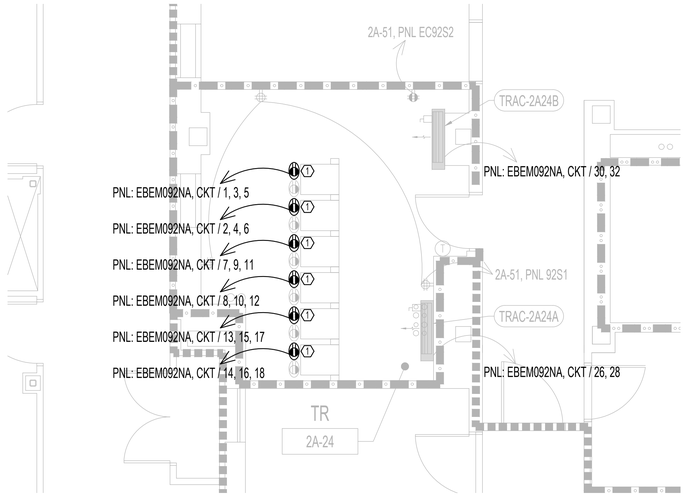
VA U.S. Department of Veterans Affairs

Drawing Title	ELECTRICAL - OVERALL SECOND FLOOR PLAN
Approved: Project Director	
Phase	ISSUE FOR BID
	BUILDING FULLY SPRINKLERED
Project Title	EHRM INFRASTRUCTURE UPGRADES - TIER 2
Location	FARGO VA HEALTH CARE SYSTEM
Issue Date	01/16/2024
Checked	WG
Drawn	BX
Project Number	437-21-210
Building Number	1-9-46
Drawing Number	EP-B1-121

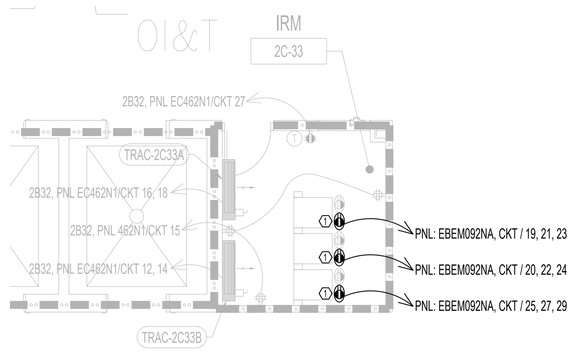
12/11/2023 11:45:44 AM

K:\CCG_PROJECTS\2021\2122-113_437-21-210_Fargo_ND_EHRM Tier 2 (VISN 23 TO)\400- Dwg\Archive\402- Drawings\WORKING\CAD\Electrical\EP-B01-121.dwg

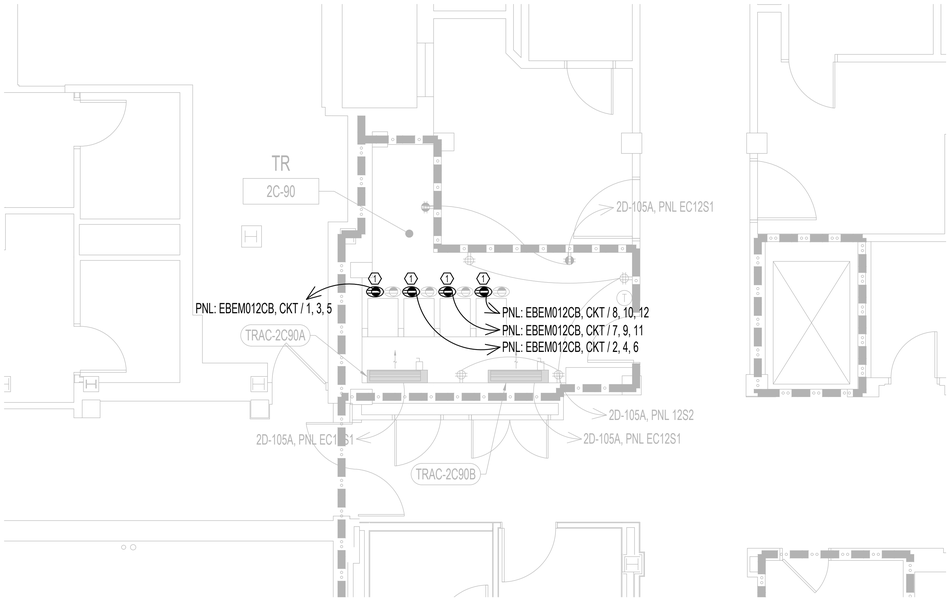
VA FORM 08 - 6231



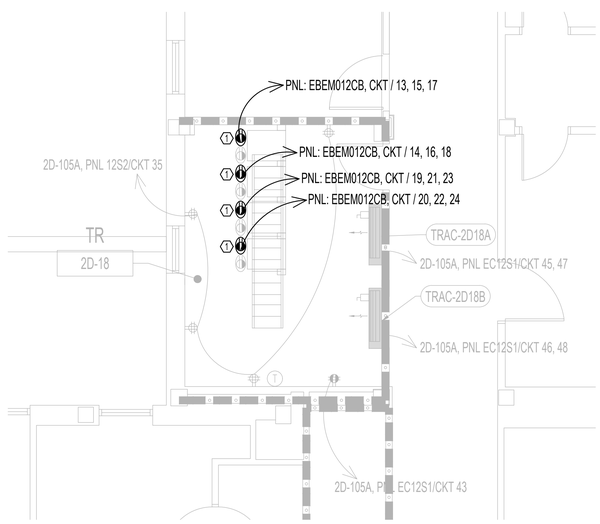
1 ENLARGED POWER PLAN RM 2A-24
1/4"=1'-0"



2 ENLARGED POWER PLAN RM 2C-33
1/4"=1'-0"



3 ENLARGED POWER PLAN RM 2C-90
1/4"=1'-0"



4 ENLARGED POWER PLAN RM 2D-18
1/4"=1'-0"

ELECTRICAL GENERAL NOTES

A. CONTACT VA IT PRIOR TO WORKING IN DATA CENTER OR IT CLOSET.

B. ALL RACKS ARE IN OPERATION ON UPS POWER. REMAINING WORK IS TO INSTALL EMERGENCY POWER ABOVE EACH RACK.

C. USE PRECAUTIONS TO AVOID SNAGGING, WIRING OR DAMAGING EQUIPMENT.

D. PROTECT IT EQUIPMENT FROM DUST DURING WORK THAT CREATES DUST.

E. SEE PANEL SCHEDULES ON DRAWING SERIES E600 FOR EMERGENCY POWER (EM) PANEL SCHEDULES AND EM CIRCUIT NUMBERS. CABLE LENGTHS ARE FOR INFORMATION ONLY. CONTRACTOR TO DETERMINE CORRECT LENGTHS BASED ON FIELD CONDITIONS.

F. SEE DRAWING SERIES E700 FOR SINGLE LINE DRAWINGS.

G. EM POWER TO RACKS / CABINETS IN NEW TR's MUST BE PROVIDED TO THE TOP OF THE RACKS / CABINETS. NO POWER WIRING ON FLOORS!

H. RECEPTACLES ABOVE RACKS MUST BE NEMA L21-20R, LOCKING RECEPTACLES.

I. PANEL CIRCUIT NUMBERS ARE SUGGESTIONS, CONTRACTOR TO SELECT BREAKERS AND CIRCUIT NUMBERS BASED ON FIELD CONDITIONS AT TIME OF INSTALLATION.

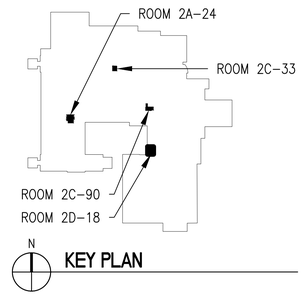
⟨X⟩ ELECTRICAL KEY NOTES

1. EMERGENCY POWER TO RACK.

RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)



KEY PLAN

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www. bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035201
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - BLDG-1-9-46 - ENLARGED PLANS - SECOND FLOOR

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

ISSUE FOR BID - 01/16/2024

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024 | Checked: WG | Drawn: BX

Project Number: 437-21-210

Building Number: 01, 09, 46

Drawing Number: EP-B1-421

ELECTRICAL GENERAL NOTES

A. DRAWING DEPICTS AREAS OF WORK.

B. NEW THIRD FLOOR UPS FEED FROM MCR WILL INTERCEPT AND SPLICE INTO UPS FEEDER FOR THE 3rd FLOOR.

C. NEW EMERGENCY POWER DISTRIBUTION PANELS, FED FROM NEW MCR, WILL BE LOCATED IN 3rd FLOOR TO FEED EXISTING TR ROOMS.

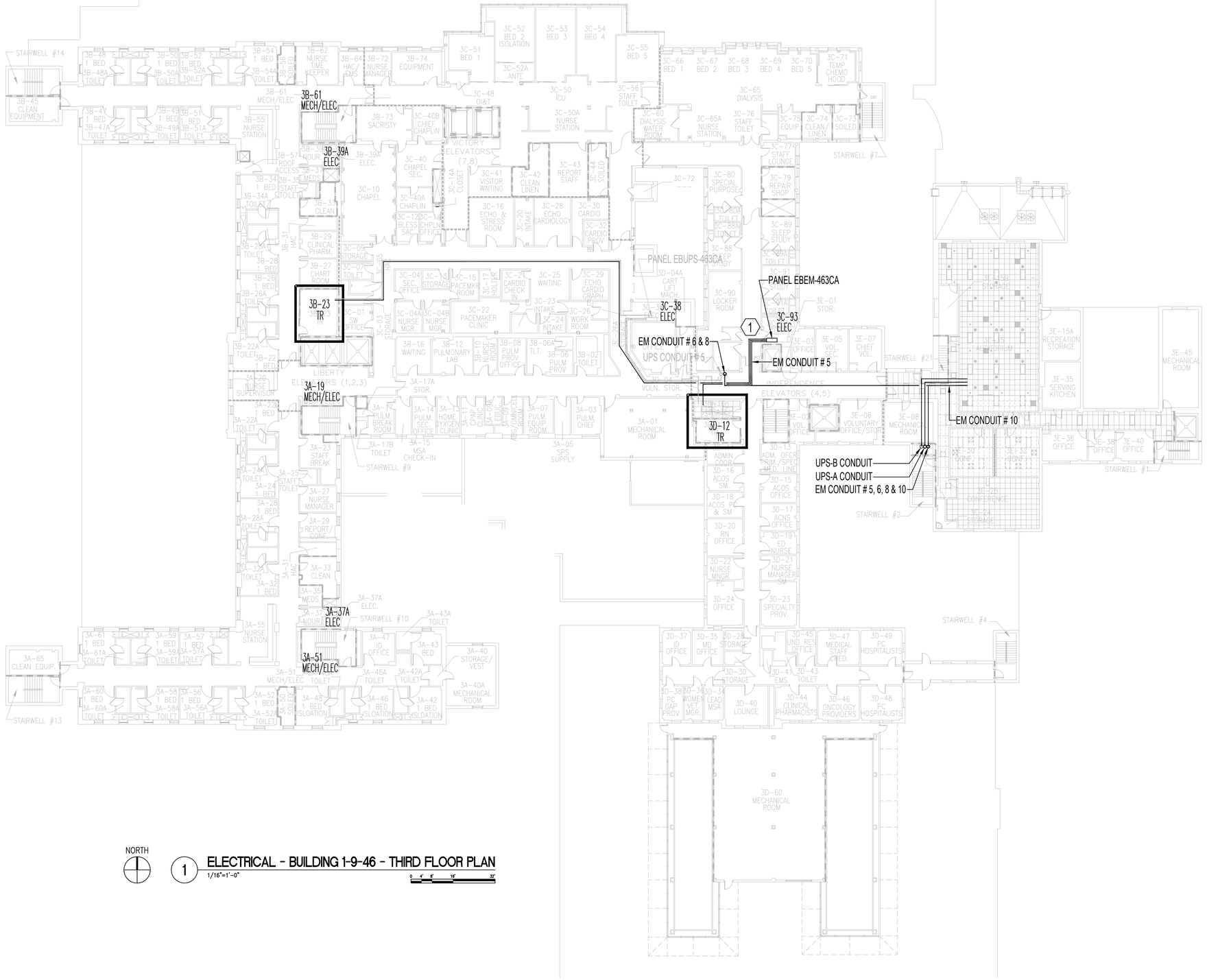
ELECTRICAL KEY NOTES

1. INSTALL NEW PANEL EBEM-463CA.

RATED PARTITION LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)

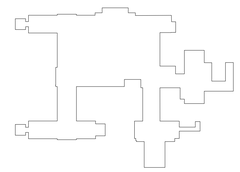


NORTH

1 ELECTRICAL - BUILDING 1-9-46 - THIRD FLOOR PLAN

1/16"=1'-0"

0 4' 8' 16' 32'



N KEY PLAN

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035261
STATE OF ILLINOIS

Office of Construction and Facilities Management

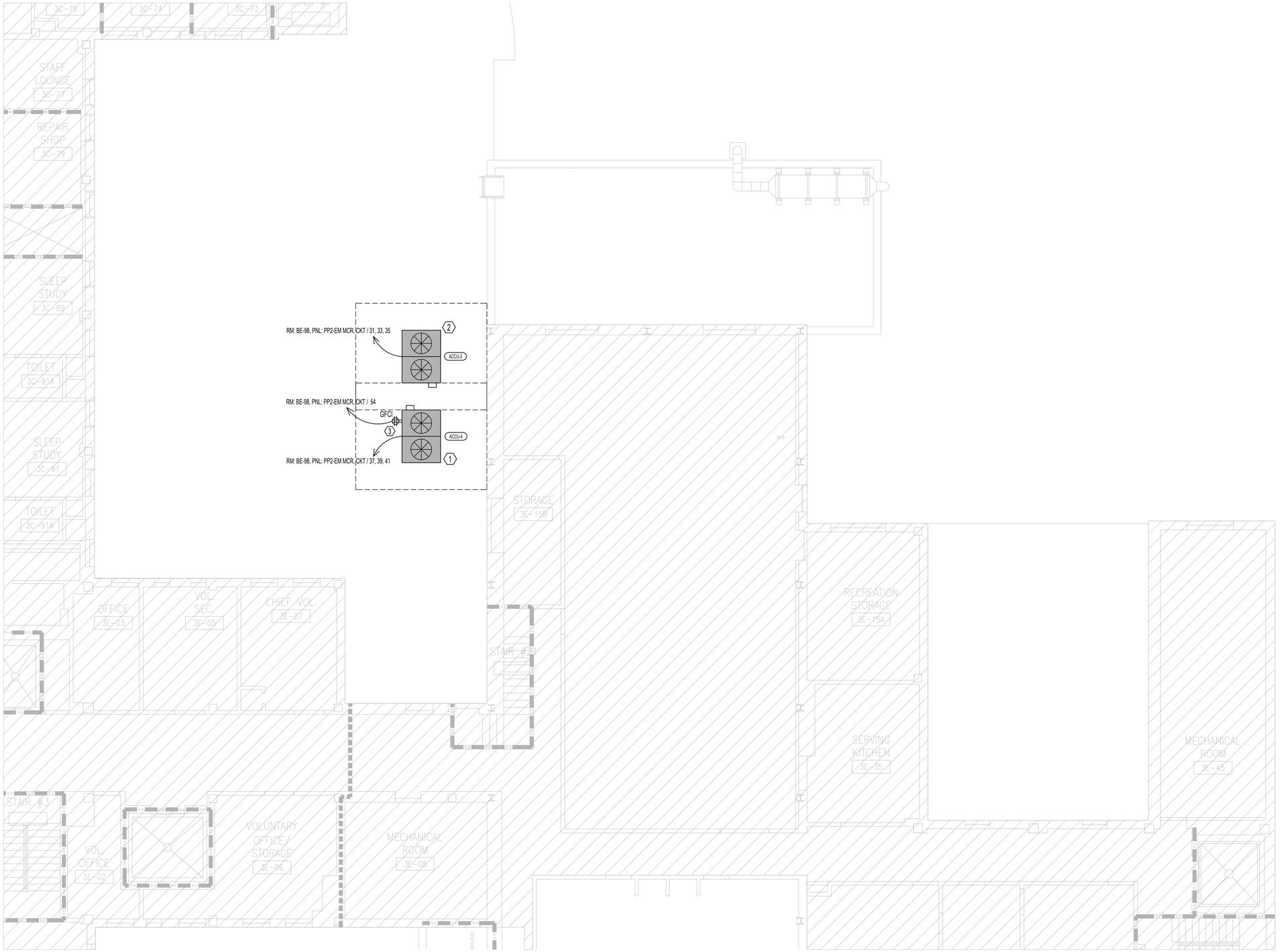
VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - OVERALL THIRD FLOOR PLAN	Phase: ISSUE FOR BID	Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2	Project Number: 437-21-210
			Building Number: 01-09-46
Approved: Project Director	BUILDING FULLY SPRINKLERED	Location: FARGO VA HEALTH CARE SYSTEM	Drawing Number: EP-B1-131
		Issue Date: 01/16/2024 / Checked: WG / Drawn: BX	

12/11/2023 5:03:10 PM

K:\CDG_PROJECTS\2022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TOI)\400- Dwgs\WORKING\CAD\Electrical\EP-B01-131.dwg

VA FORM 08 - 6231



ELECTRICAL GENERAL NOTES

A. DRAWING DEPICTS AREAS OF WORK.

B. SEE SINGLE LINE DRAWING E-707 TO BETTER UNDERSTAND THE WIRING CONFIGURATION.

C. CONTRACTOR TO USE THE SAME SUPPORTS FOR BOTH MECHANICAL AND ELECTRICAL TUBING AND CONDUITS, INCLUDING CONTROL CONDUITS. ELECTRICAL CONTRACTOR TO COORDINATE WITH MECHANICAL CONTRACTOR.

⟨X⟩ ELECTRICAL KEY NOTES

1. TERMINATE POWER AND CONTROLS TO UPS ROOM CONDENSER 1.
2. TERMINATE POWER AND CONTROLS TO UPS ROOM CONDENSER 2.
3. INSTALL OUTDOOR NEMA 3 QUAD GFCI RECEPTACLE ON STRUCTURE OF ONE CONDENSER FO MAINTENANCE PURPOSES.

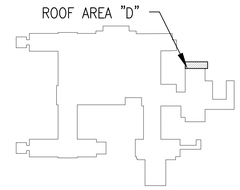
RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

1 HR FIRE BARRIER — 1 HR FIRE BARRIER (EXISTING)

2 HR FIRE BARRIER — 2 HR FIRE BARRIER (EXISTING)

SMOKE BARRIER — SMOKE BARRIER (EXISTING)



N

KEYPLAN BUILDING 1-9-46

NTS

N

1 ELECTRICAL - BUILDING 1 - EMERGENCY GENERATOR ENLARGED POWER PLAN - THIRD FLOOR

3/16"=1'-0"

0 2' 4' 8' 16'

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS

3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www. bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035261
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - BLDG-1 - THIRD FLOOR & ROOF POWER PLAN

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024 | Checked: WG | Drawn: BX

Project Number: 437-21-210

Building Number: 01

Drawing Number: EP-B1-231

ELECTRICAL GENERAL NOTES

A. CONTACT VA IT PRIOR TO WORKING IN DATA CENTER OR IT CLOSET.

B. ALL RACKS ARE IN OPERATION ON UPS POWER. REMAINING WORK IS TO INSTALL EMERGENCY POWER ABOVE EACH RACK.

C. USE PRECAUTIONS TO AVOID SNAGGING, WIRING OR DAMAGING EQUIPMENT.

D. PROTECT IT EQUIPMENT FROM DUST DURING WORK THAT CREATES DUST.

E. SEE PANEL SCHEDULES ON DRAWING SERIES E600 FOR EMERGENCY POWER (EM) PANEL SCHEDULES AND EM CIRCUIT NUMBERS. CABLE LENGTHS ARE FOR INFORMATION ONLY. CONTRACTOR TO DETERMINE CORRECT LENGTHS BASED ON FIELD CONDITIONS.

F. SEE DRAWING SERIES E700 FOR SINGLE LINE DRAWINGS.

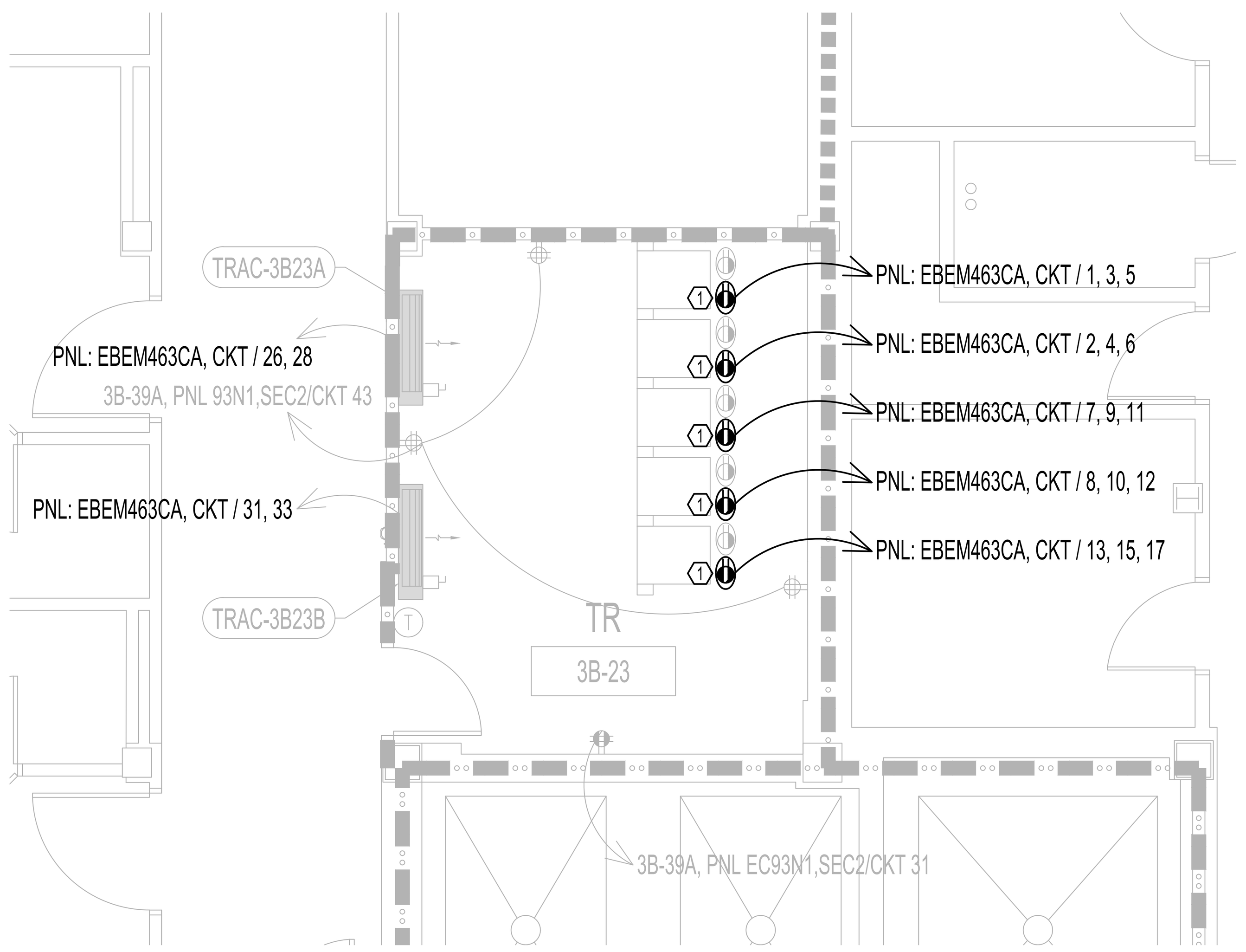
G. EM POWER TO RACKS / CABINETS IN NEW TR's MUST BE PROVIDED TO THE TOP OF THE RACKS / CABINETS. NO POWER WIRING ON FLOORS!

H. RECEPTACLES ABOVE RACKS MUST BE NEMA L21-20R, LOCKING RECEPTACLES.

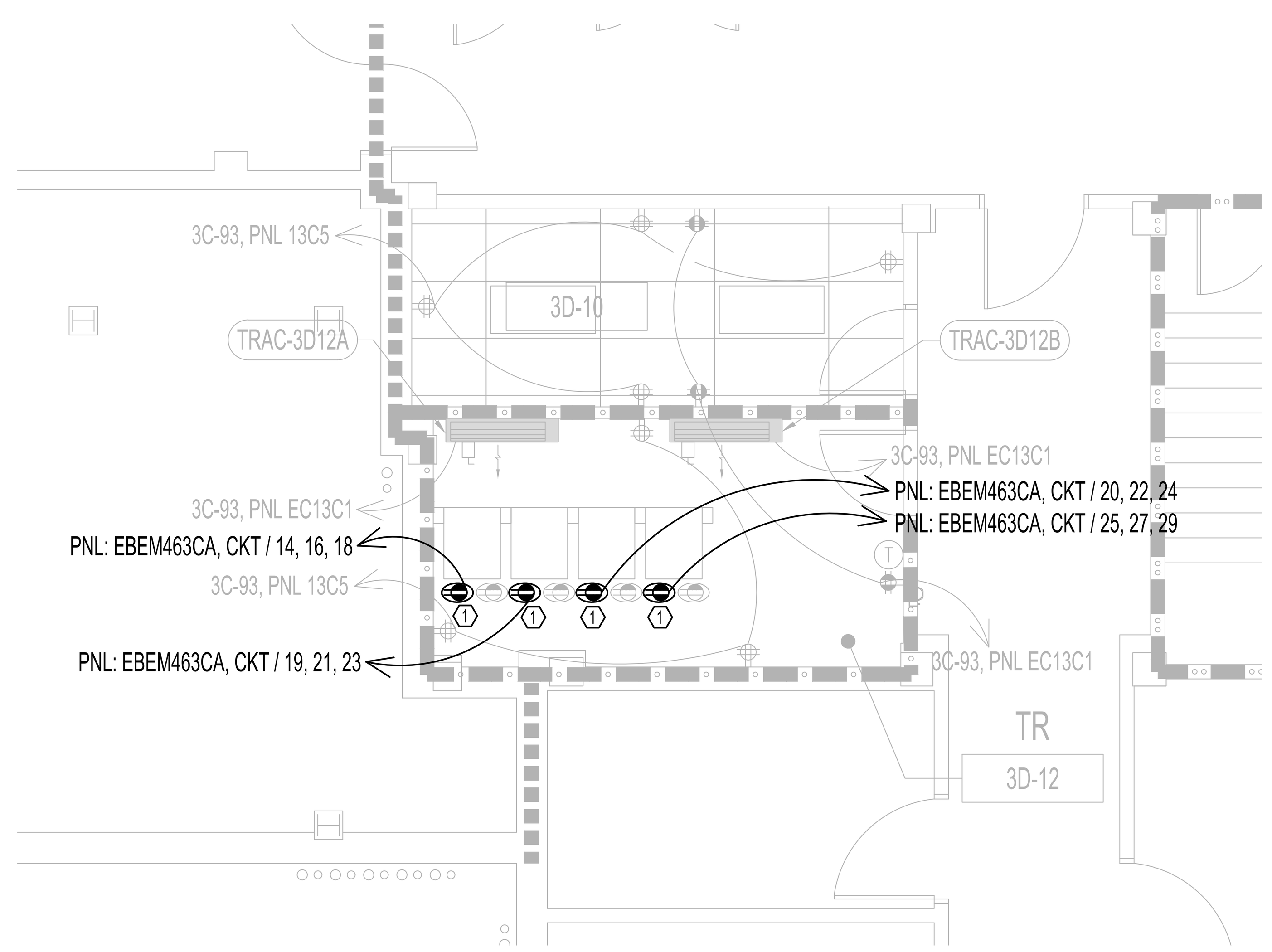
I. PANEL CIRCUIT NUMBERS ARE SUGGESTIONS, CONTRACTOR TO SELECT BREAKERS AND CIRCUIT NUMBERS BASED ON FIELD CONDITIONS AT TIME OF INSTALLATION.

⟨X⟩ ELECTRICAL KEY NOTES

1. EMERGENCY POWER TO RACK.



1 ENLARGED POWER PLAN RM 3B-23
1/4"=1'-0"

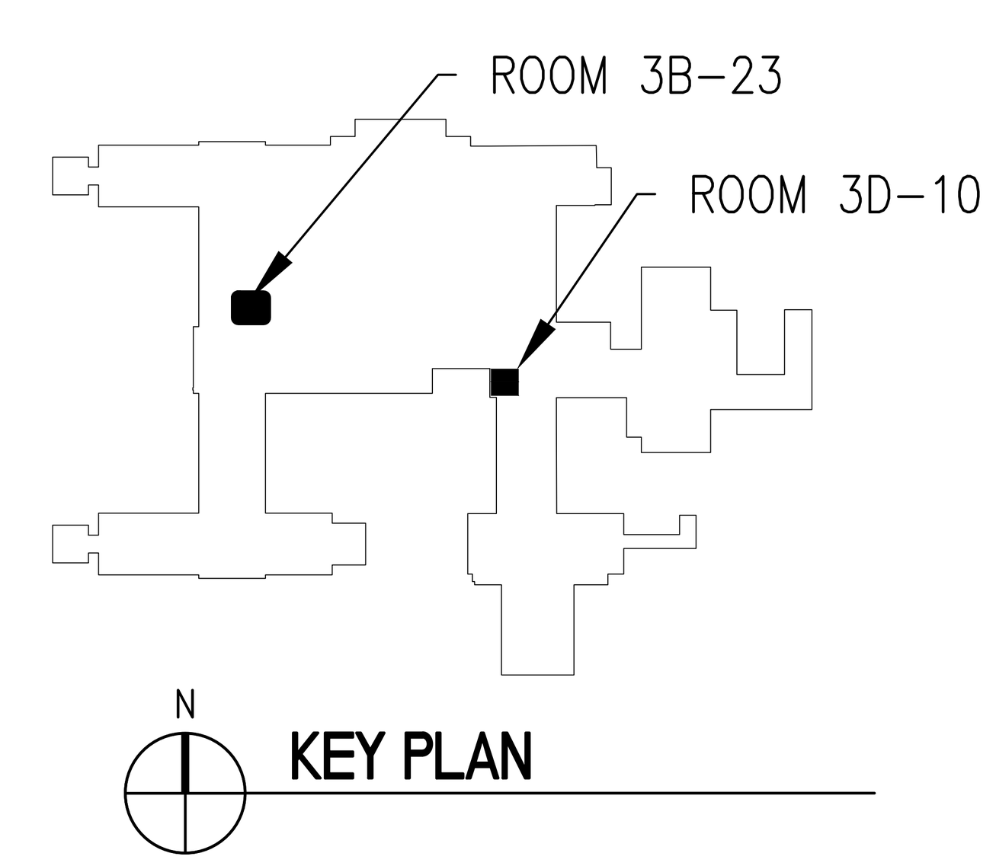


2 ENLARGED POWER PLAN RM 3D-12
1/4"=1'-0"

RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)



KEY PLAN

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www. bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-036261
STATE OF ILLINOIS
1/16/24

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - BLDG-1-9-46 - ENLARGED PLANS - THIRD FLOOR

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024 | Checked: WG | Drawn: BX

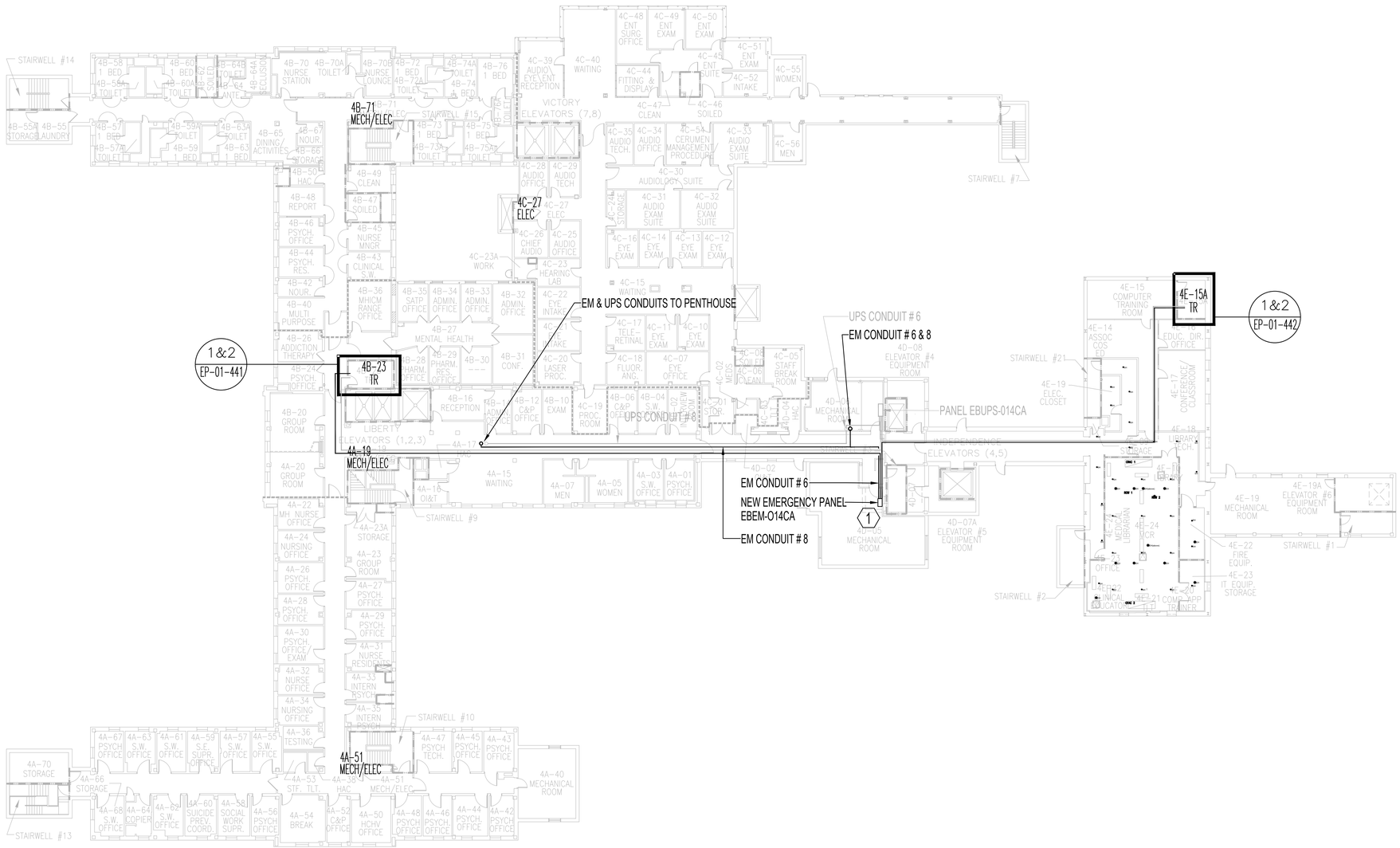
Project Number: 437-21-210

Building Number: 01, 09, 46

Drawing Number: EP-B1-431

VA FORM 08 - 6231

K:\CCG_PROJECTS\2022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- DesDocs\402- Drawings\WORKING\CAD\Electrical\EP-01-431.dwg
12/11/2023 11:45:15 AM



K:\CCG_PROJECTS\2022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- DesDocs\402- Drawings\WORKING\CAD\Electrical\EP-B01-141.dwg
12/11/2023 11:45:08 AM

ELECTRICAL GENERAL NOTES

A. DRAWING DEPICTS AREAS OF WORK.

B. NEW 4TH FLOOR UPS FEEDERS FROM MCR WILL INTERCEPT AND SPLICE INTO UPS FEEDERS FOR 4th FLOOR AND PENTHOUSE.

C. THE NEW EMERGENCY POWER DISTRIBUTION PANEL, EBEM014CA FED FROM THE NEW MCR, WILL BE LOCATED ON 4th FLOOR TO FEED EXISTING TR ROOMS.

Ⓧ ELECTRICAL KEY NOTES

1. INSTALL NEW PANEL EBEM-014CA.

NORTH

1 ELECTRICAL - BUILDING 1-9-46 - FOURTH FLOOR PLAN

1/16"=1'-0"

0 4' 8' 16' 32'

RATED PARTITION LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

1 HR FIRE BARRIER	1 HR FIRE BARRIER (EXISTING)
2 HR FIRE BARRIER	2 HR FIRE BARRIER (EXISTING)
SMOKE BARRIER	SMOKE BARRIER (EXISTING)

N

KEY PLAN

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www. bancroft-ae.com
Bancroft Project No: 22-113

STAMP

WALTER J. GROSZKO
062-036261
W. J. Groszko
1/16/24

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title
ELECTRICAL - OVERALL FOURTH FLOOR PLAN

Approved: Project Director

Phase
ISSUE FOR BID

BUILDING FULLY SPRINKLERED

Project Title
EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location
FARGO VA HEALTH CARE SYSTEM

Issue Date
01/16/2024

Checked
WG

Drawn
BX

Project Number
437-21-210

Building Number
1-9-46

Drawing Number
EP-B1-141

ELECTRICAL GENERAL NOTES

A. CONTACT VA IT PRIOR TO WORKING IN DATA CENTER OR IT CLOSET.

B. ALL RACKS ARE IN OPERATION ON UPS POWER. REMAINING WORK IS TO INSTALL EMERGENCY POWER ABOVE EACH RACK.

C. USE PRECAUTIONS TO AVOID SNAGGING, WIRING OR DAMAGING EQUIPMENT.

D. PROTECT IT EQUIPMENT FROM DUST DURING WORK THAT CREATES DUST.

E. SEE PANEL SCHEDULES ON DRAWING SERIES E600 FOR EMERGENCY POWER (EM) PANEL SCHEDULES AND EM CIRCUIT NUMBERS. CABLE LENGTHS ARE FOR INFORMATION ONLY. CONTRACTOR TO DETERMINE CORRECT LENGTHS BASED ON FIELD CONDITIONS.

F. SEE DRAWING SERIES E700 FOR SINGLE LINE DRAWINGS.

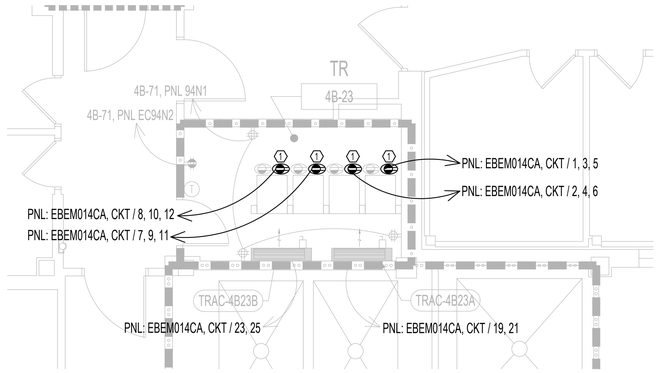
G. EM POWER TO RACKS / CABINETS IN NEW TR's MUST BE PROVIDED TO THE TOP OF THE RACKS / CABINETS. NO POWER WIRING ON FLOORS!

H. RECEPTACLES ABOVE RACKS MUST BE NEMA L21-20R, LOCKING RECEPTACLES.

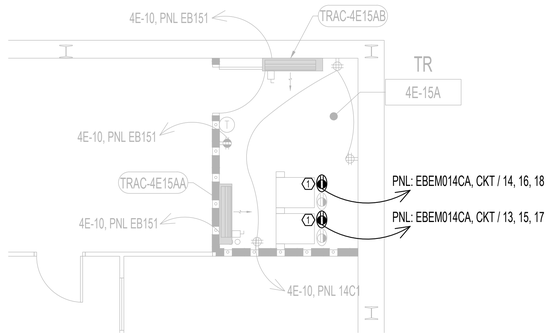
I. PANEL CIRCUIT NUMBERS ARE SUGGESTIONS, CONTRACTOR TO SELECT BREAKERS AND CIRCUIT NUMBERS BASED ON FIELD CONDITIONS AT TIME OF INSTALLATION.

⟨X⟩ ELECTRICAL KEY NOTES

1. EMERGENCY POWER TO RACK.



1 ENLARGED POWER PLAN RM 4B-23
1/4"=1'-0"

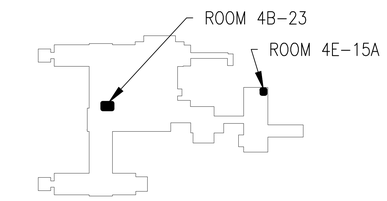


2 ENLARGED POWER PLAN RM 4E-15A
1/4"=1'-0"

RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)



N
KEY PLAN

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-055261
STATE OF ILLINOIS
1/16/24

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - BLDG-1-9-46 - ENLARGED PLANS - FOURTH FLOOR

Phase: ISSUE FOR BID

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Project Number: 437-21-210

Building Number: 01, 09, 46

Approved: Project Director

BUILDING FULLY SPRINKLERED

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024

Checked: WG

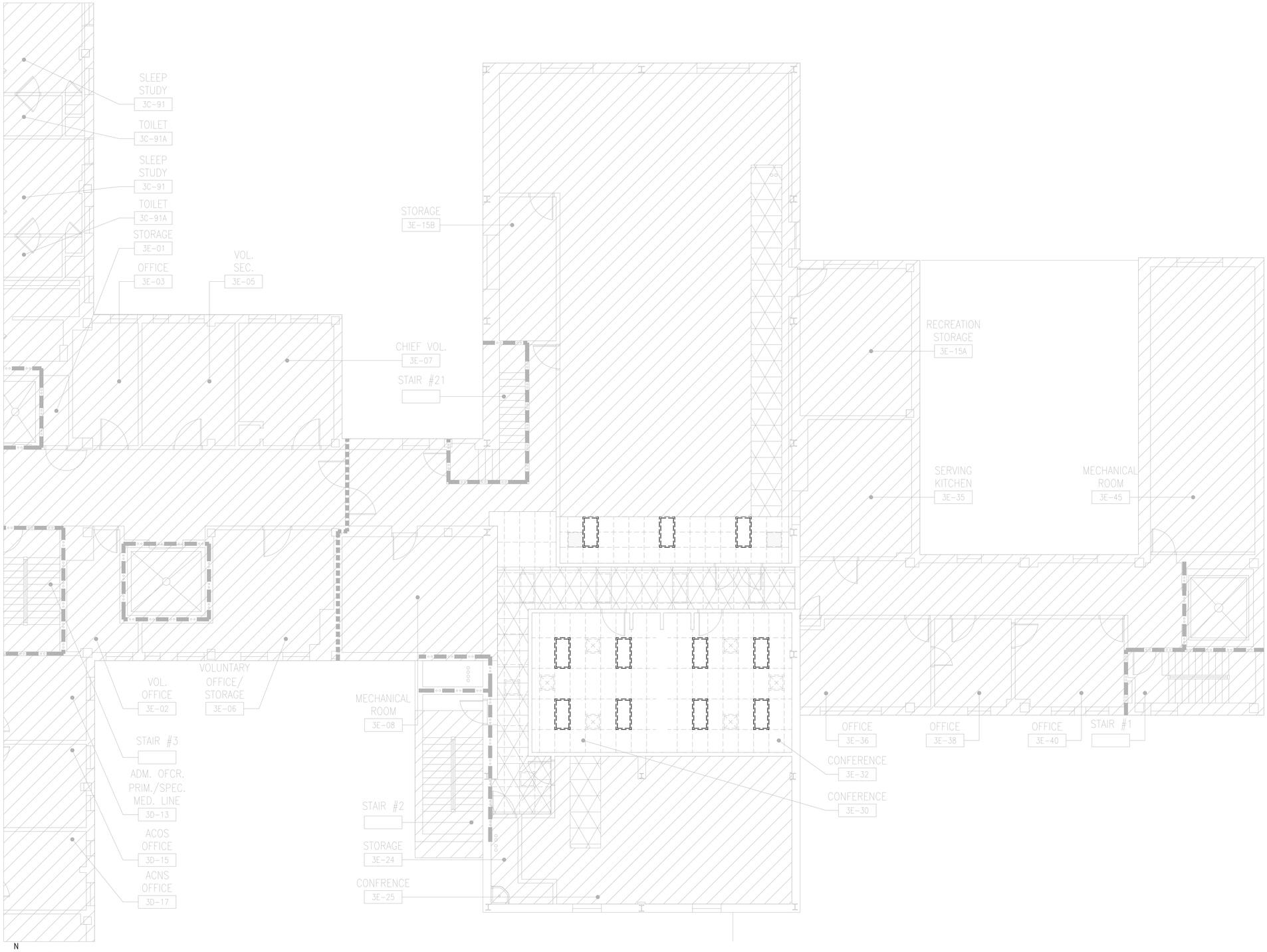
Drawn: BX

Drawing Number: EP-B1-441

VA FORM 08 - 6231

12/11/2023 11:48:01 AM

K:\CCG_PROJECTS\2022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- DwtDocs\400- Drawings\WORKING\CAD\Electrical\EP-01-441.dwg



N

1 ARCHITECTURAL - BUILDING 1 - THIRD FLOOR REFLECTED CEILING DEMOLITION PLAN

3/16"=1'-0"

0 2" 4" 8" 12"

ELECTRICAL GENERAL NOTES

A. CONTRACTOR TO FOLLOW VA LOCK-OUT-TAGOUT PROCEDURE.

B. COORDINATE WITH COR TWO WEEKS PRIOR TO SCHEDULE ANY SHUTDOWNS.

C. REMOVE AND STORE LIGHTING FIXTURES. THEY WILL BE REINSTALLED IN SAME LOCATIONS AFTER CEILING IS RESTORED.

D. COORDINATE WITH MECHANICAL CONTRACTOR AS TO WHICH CONDUIT WILL NEED TO BE REMOVED FOR PLUMBING WORK. DISPOSE OF OLD CONDUIT AND WIRING. NEW CONDUIT AND WIRING WILL BE USED FOR RE-INSTALLATION.

[X] ELECTRICAL KEY NOTES

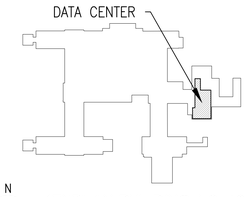
RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

1 HR FIRE BARRIER — 1 HR FIRE BARRIER (EXISTING)

2 HR FIRE BARRIER — 2 HR FIRE BARRIER (EXISTING)

SMOKE BARRIER — SMOKE BARRIER (EXISTING)



N

KEYPLAN BUILDING 1-9-46

NTS

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS

3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-039201
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - BLDG-1 - THIRD FLOOR LIGHTING DMO PLAN

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024 | Checked: WG | Drawn: BX

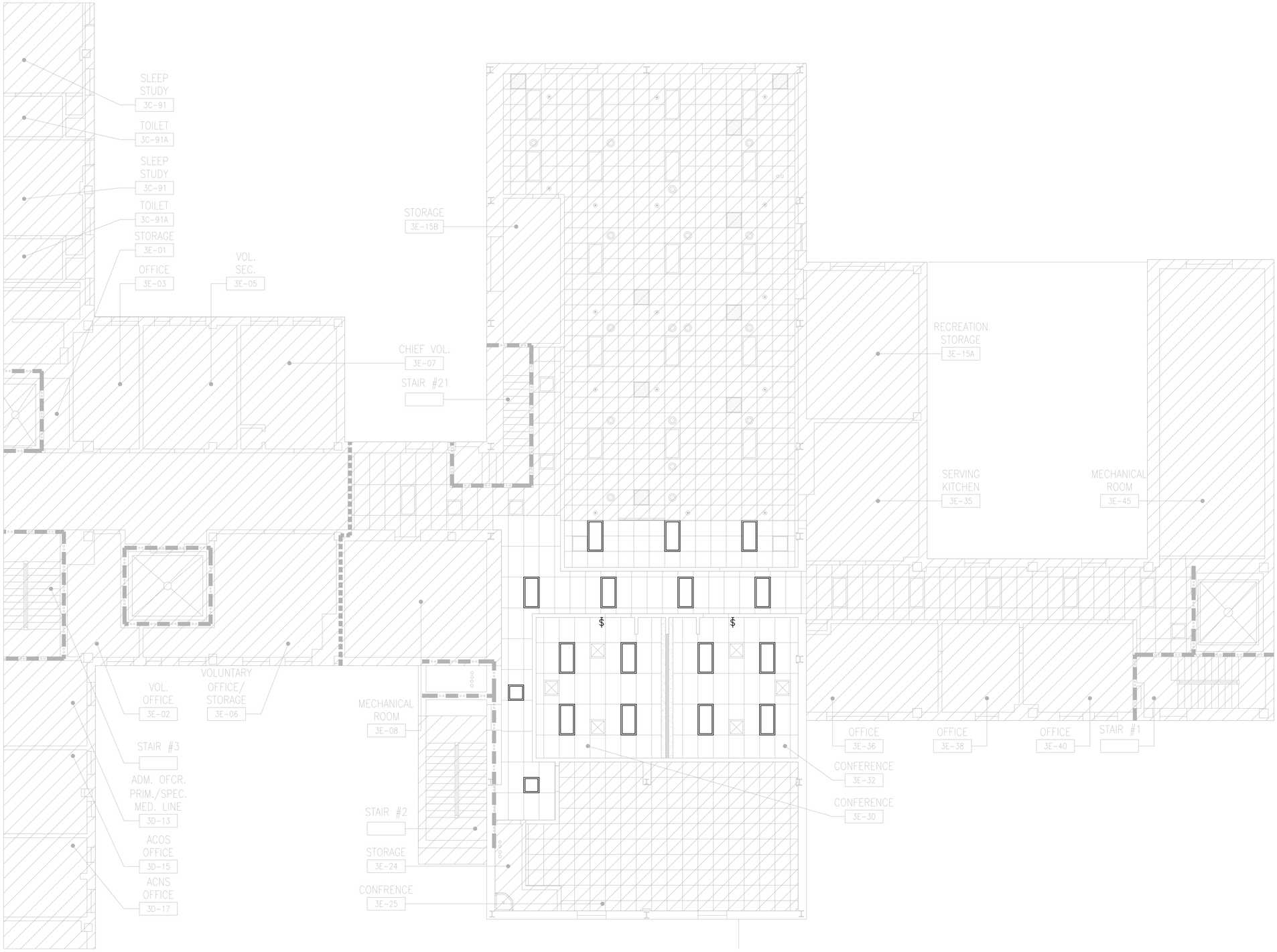
Project Number: 437-21-210

Building Number: 1

Drawing Number: ELD-B1-231

K:\CCG_PROJECTS\2022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- DataDocs\402- Drawings\WORKING\CAD\Electrical\ELD-B1-231.dwg 12/11/2023 11:44:53 AM

VA FORM 08 - 6231



N

1 ELECTRICAL - BUILDING 1 - THIRD FLOOR LIGHTING PLAN

3/16"=1'-0"

0 2' 4' 8' 12'

ELECTRICAL GENERAL NOTES

A. CONTRACTOR TO FOLLOW VA LOCK-OUT-TAGOUT PROCEDURE.

B. COORDINATE WITH COR TWO WEEKS PRIOR TO SCHEDULE ANY SHUTDOWNS.

C. REINSTALL LIGHT FIXTURES IN ORIGINAL LOCATIONS.

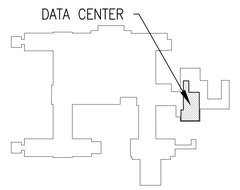
D. INSTALL NEW CONDUIT AND WIRING FOR THE CONDUIT REMOVED FOR THE PLUMBING WORK. UTILIZE SPLICE BOXES AS NEEDED.

ⓧ ELECTRICAL KEY NOTES

RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)



N

KEY PLAN BUILDING 1-9-46

NTS

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS

3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www. bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035201
STATE OF ILLINOIS

Office of Construction and Facilities Management

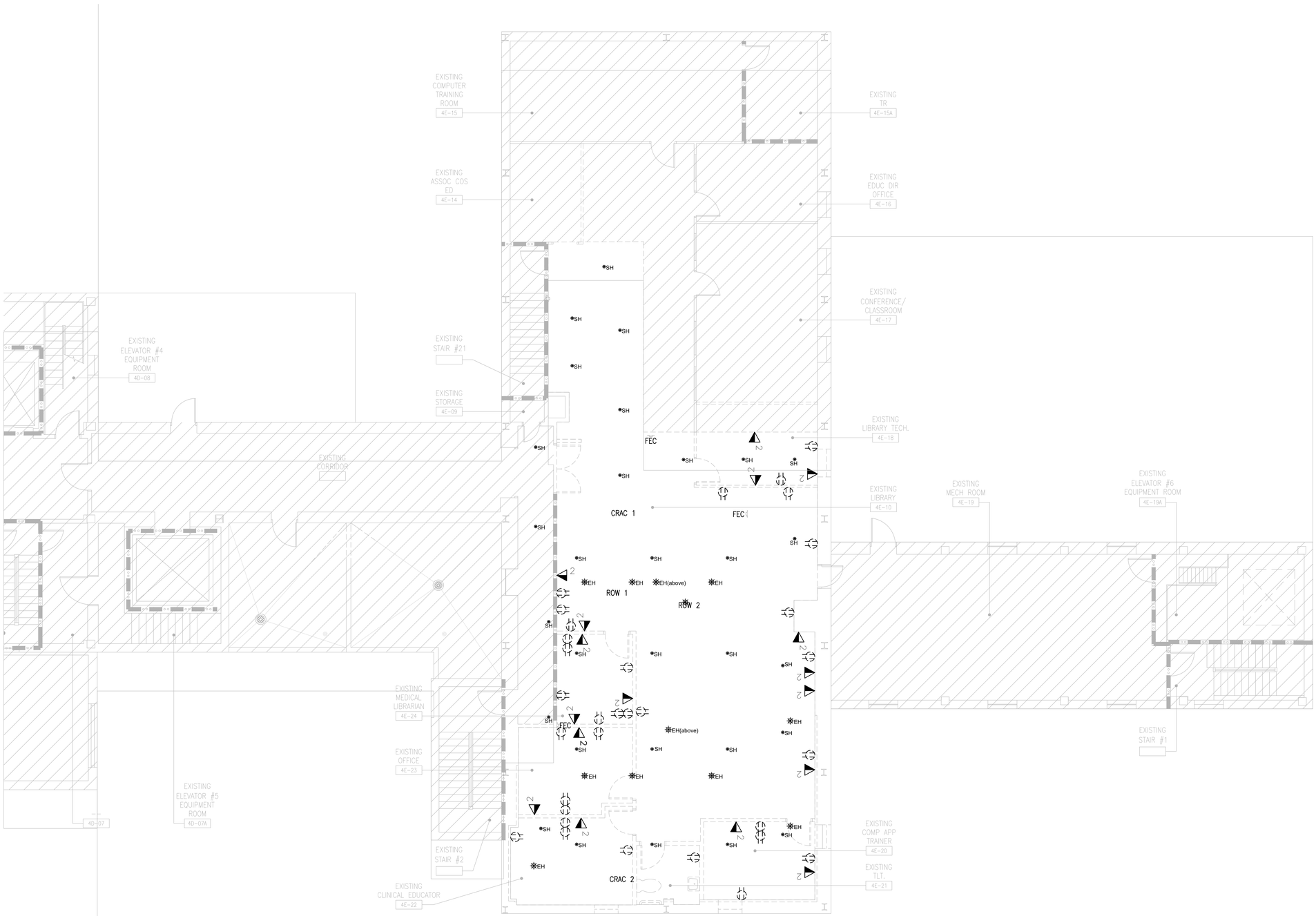
VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - BLDG-1 - THIRD FLOOR LIGHTING PLAN	Phase: ISSUE FOR BID	Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2	Project Number: 437-21-210
			Building Number: 1
Approved: Project Director	BUILDING FULLY SPRINKLERED	Location: FARGO VA HEALTH CARE SYSTEM	Drawing Number: EL-B1-232
		Issue Date: 01/16/2024 / Checked: WG / Drawn: BX	

K:\CCG_PROJECTS\022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- DataDocs\402- Drawings\WORKING\CAD\Electrical\EL-B1-232.dwg

12/11/2023 11:44:46 AM

VA FORM 08 - 6231



N

1 ELECTRICAL - BUILDING 1 - FOURTH FLOOR POWER DEMOLITION PLAN - DATA CENTER

3/16"=1'-0"

ELECTRICAL GENERAL NOTES

A. CONTRACTOR TO FOLLOW VA LOCK-OUT-TAGOUT PROCEDURE.

B. COORDINATE WITH COR TWO WEEKS PRIOR TO SCHEDULE ANY SHUTDOWNS.

C. REMOVE RECEPTACLES.

D. REMOVE DATA PORTS.

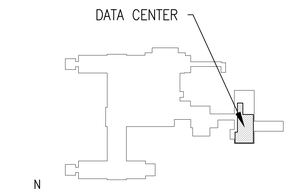
E. CONTRACTOR TO REMOVE ALL WIRING, CONDUIT, SUPPORTS AND RELATED APPURTENANCES BACK TO SOURCE. PATCH AND SEAL ALL OPENINGS THAT WILL NOT BE USED. UPDATE PANEL SCHEDULES FOR ALL REMOVED CIRCUITS.

[X] ELECTRICAL KEY NOTES

RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)



KEYPLAN BUILDING 1-9-46

NTS

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www. bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035201
1/16/24
STATE OF ILLINOIS

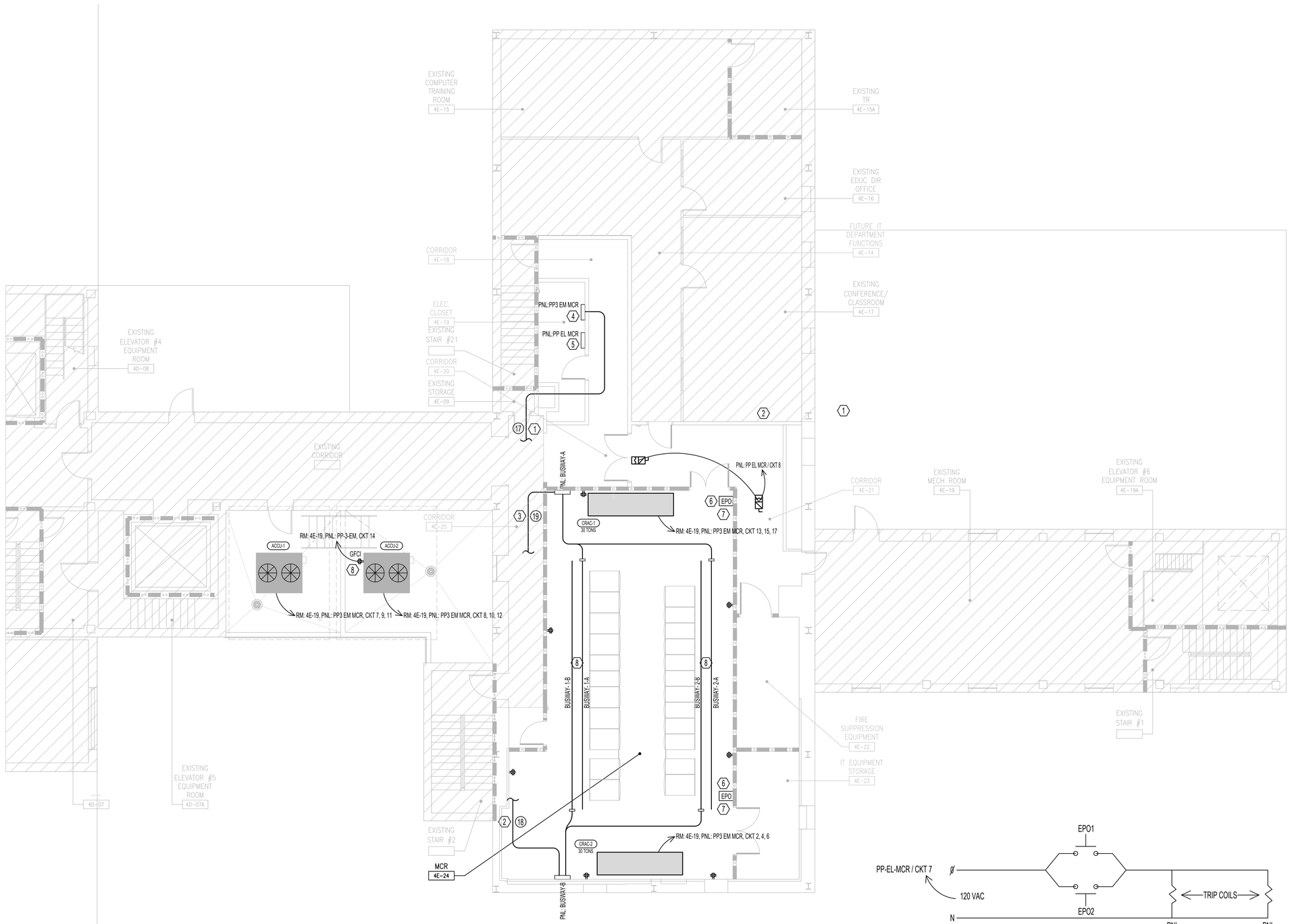
Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - BLDG-1 - FOURTH FLOOR POWER DEMO - DATA CENTER	Phase: ISSUE FOR BID	Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2	Project Number: 437-21-210
			Building Number: 1
Approved: Project Director	BUILDING FULLY SPRINKLERED	Location: FARGO VA HEALTH CARE SYSTEM	Drawing Number: EPD-B1-241
		Issue Date: 01/16/2024 / Checked: WG / Drawn: BX	

K:\CCG_PROJECTS\022022-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- DetDocs\402- Drawings\WORKING\CAD\Electrical\EPD-B1-241.dwg
12/11/2023 11:44:38 AM

VA FORM 08 - 6231

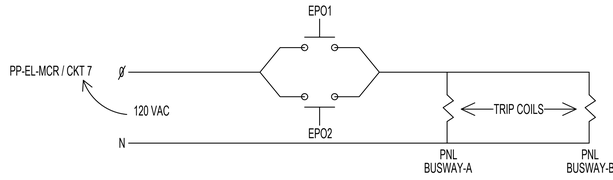


NORTH

1 ELECTRICAL - BUILDING 1 - FOURTH FLOOR POWER PLAN - DATA CENTER

3/16"=1'-0"

0 2' 4' 8' 12'



2 EPO SHUNT TRIP CKT, DATA CENTER

NTS

ELECTRICAL GENERAL NOTES

A. DRAWING DEPICTS AREAS OF WORK.

B. REFER TO "MCR WIRING SCHEDULE" ON DRAWING EP-B1-201 FOR WIRING. LESSER WIRING IS SHOWN ON DRAWINGS AS AN ARROW WITH "ROOM, PANEL, CKT" DESIGNATIONS.

C. LARGE WIRING IS IDENTIFIED IN CIRCLED NUMBERS.

D. SEE SINGLE LINE DRAWING E707 TO BETTER UNDERSTAND THE WIRING CONFIGURATION.

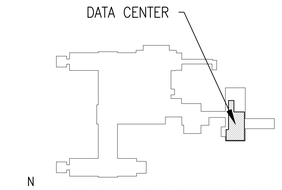
ELECTRICAL KEY NOTES

1. ROUTE WIRING NO 17 FROM PANEL PP-3-EM DOWN TO ROOM EB-98 PANEL PP-2-EM. USE CHASE NORTH OF STAIRWAY #2.
2. ROUTE WIRING FROM UPS MODULE UPS-B/MBP TO PANEL BUSWAY-B.
3. ROUTE WIRING FROM UPS MODULE UPS-A DISTRIBUTION TO PANEL BUSWAY-A.
4. INSTALL PNL-PP-3-EM IN ROOM 4E-19, 500A BUSS, 500A MAIN.
5. INSTALL PNL EL-MCR 100A BUSS, 100A MAIN, FEED FROM PANEL PP-3-EM.
6. INSTALL EPO SWITCH BY EACH DOOR. (SEE SHUNT TRIP CKT ON THIS DRAWING).
7. INSTALL 6 IN. X 4 IN. ENGRAVED RED SIGN / BLACK WRITING, BELOW EACH EPO SWITCH, TO READ "EPO DE-ENERGIZES DATA CENTER ONLY, UPS UNITS REMAIN OPERATIONAL".
8. CONTRACTOR TO TRAIN CABINET PDU PLUGS TO VICINITY OF THE UPS BUSWAYS. COORDINATE WITH IT DEPARTMENT PRIOR TO PLUGGING IN AND ENERGIZING.

RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)



KEYPLAN BUILDING 1-9-46

NTS

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035261
STATE OF ILLINOIS

Office of Construction and Facilities Management

U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - BLDG-1 - FOURTH FLOOR POWER PLAN - DATA CENTER

Phase: ISSUE FOR BID

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Project Number: 437-21-210

Building Number: 1

Approved: Project Director

BUILDING FULLY SPRINKLERED

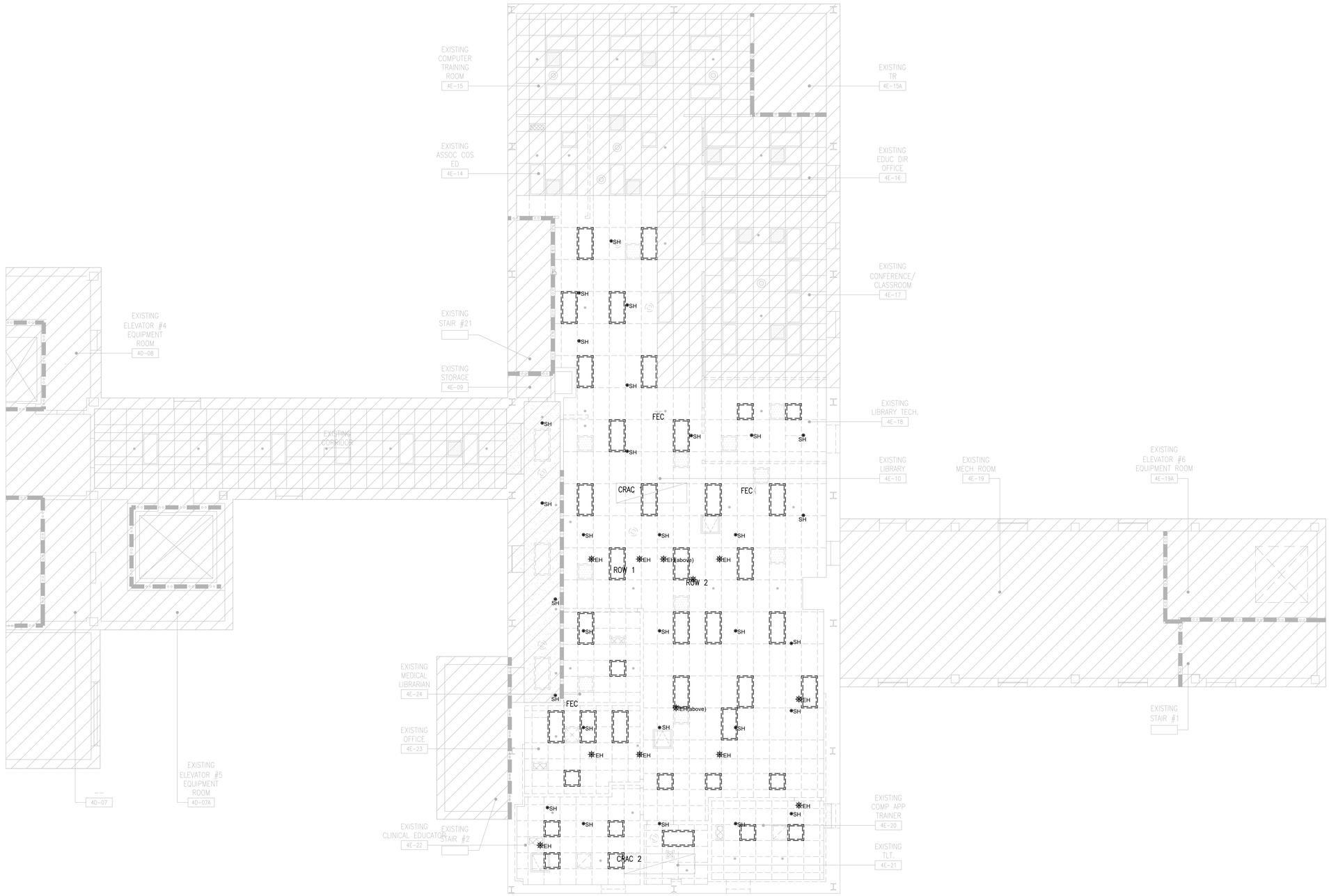
Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024

Checked: WG

Drawn: BX

Drawing Number: EP-B1-242



N

1 ELECTRICAL - BUILDING 1 - FOURTH FLOOR LIGHTING DEMOLITION PLAN - DATA CENTER

3/16"=1'-0"

0 2' 4' 8' 12'

ELECTRICAL GENERAL NOTES

A. CONTRACTOR TO FOLLOW VA LOCK-OUT-TAGOUT PROCEDURE.

B. COORDINATE WITH COR TWO WEEKS PRIOR TO SCHEDULE ANY SHUTDOWNS.

C. REMOVE AND DISPOSE LIGHTING FIXTURES AND APPURTENANCES. PROPERLY DISPOSE ALL BALLASTS.

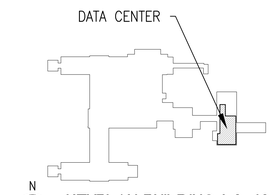
D. REMOVE CONDUIT, WIRING, CONTROLS, SWITCHES, SUPPORTS ETC BACK TO SOURCE.

[X] ELECTRICAL KEY NOTES

RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)



KEYPLAN BUILDING 1-9-46

NTS

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

Bancroft Architects + Engineers
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-055261
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - BLDG-1 - FOURTH FLOOR LIGHTING DEMO - DATA CENTER

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024

Checked: WG

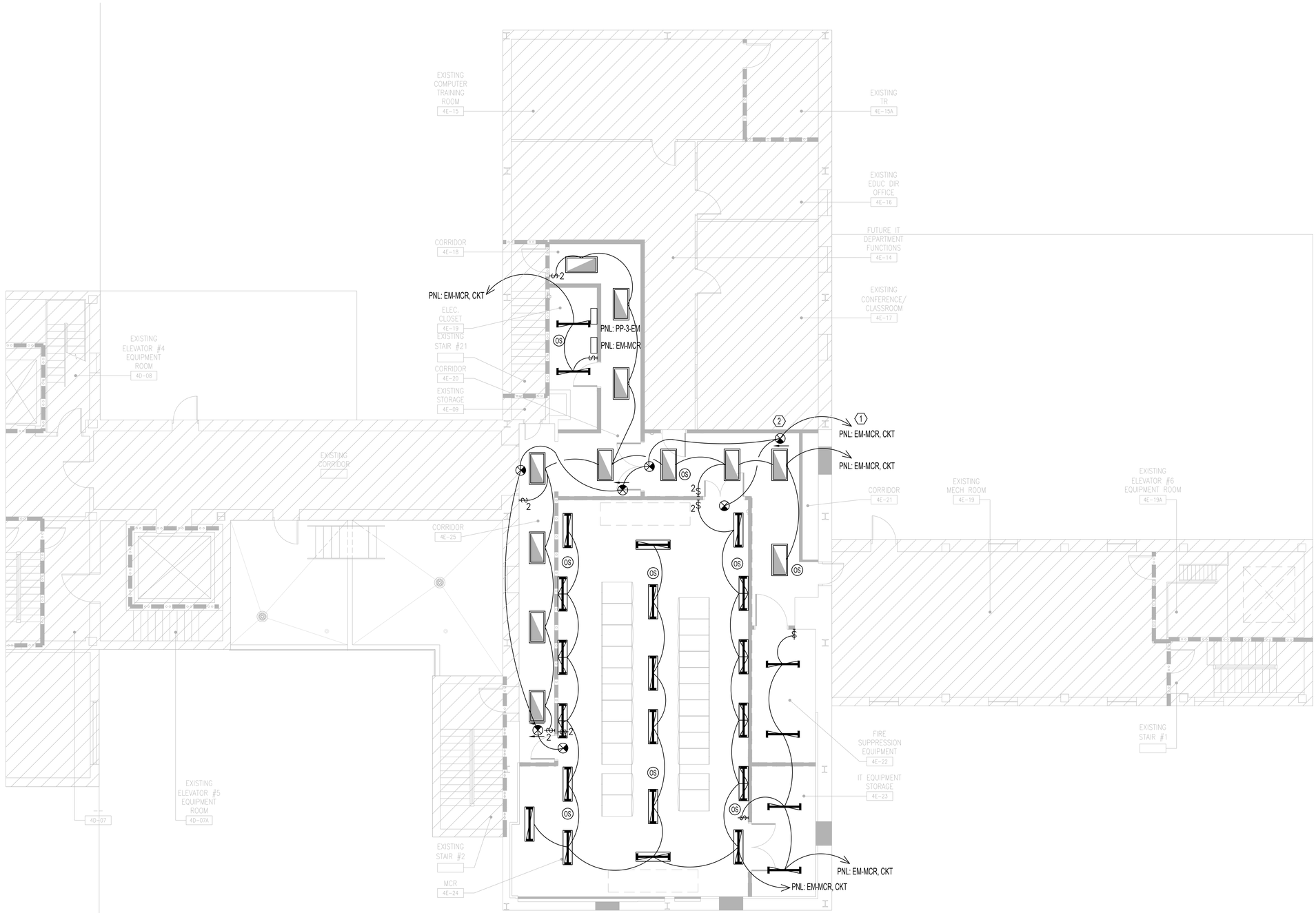
Drawn: BX

Project Number: 437-21-210

Building Number: 1

Drawing Number: ELD-B1-243

VA FORM 08 - 6231



NORTH

1 ELECTRICAL - BUILDING 1 - FOURTH FLOOR LIGHTING PLAN - DATA CENTER

3/16"=1'-0"

0 2' 4' 8' 12'

ELECTRICAL GENERAL NOTES

A. CONTRACTOR TO FOLLOW VA LOCK-OUT-TAGOUT PROCEDURE.

B. COORDINATE WITH COR TWO WEEKS PRIOR TO SCHEDULE ANY SHUTDOWNS.

C. FIELD INSTALL OCCUPANCY SENSORS IN ALL AISLES AS THE COMPUTER CABINETS BLOCK AREAS FROM EACH OTHER.

D. CONNECT OCCUPANCY SENSORS SUCH THAT ONE FOURTH OF THE DATA CENTER IS CONTROLLED BY ONE GROUP OF SENSORS.

E. UTILIZE PLENUM RATED CABLING IN THE CEILING, AS CEILING IS A RETURN AIR PLENUM.

F. LOCATE TUBE LIGHTS MIDWAY BETWEEN CABINETS. SEE DRAWING E501 FOR ELEVATION DETAILS OF EQUIPMENT ABOVE CABINETS.

G. CONTRACTOR TO FIELD LOCATE FIXTURES TO AVOID OBSTRUCTIONS AND PROVIDE LIGHTING ON THE FACES OF CABINETS.

H. CONTRACTOR TO SELECT CIRCUIT NUMBERS IN PANELS TO BALANCE POWER, AND FILL OUT PANEL INDEX CARD.

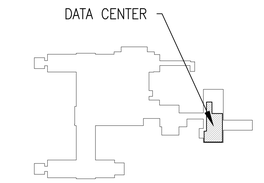
(X) ELECTRICAL KEY NOTES

1. CONTRACTOR TO NOTE "DO NOT SHUT OFF" ON CIRCUIT THAT FEEDS THE EXIT LIGHTS.
2. CONTRACTOR TO PURCHASE EXIT SIGNS WITH CORRECT ARROW DIRECTIONS TO MATCH EXIT PATH SHOWN ON GENERAL LIFE SAFETY DRAWINGS.

RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)



N

KEYPLAN BUILDING 1-9-46

NTS

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS

3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

REGISTERED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-039201
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - BLDG-1 - FOURTH FLOOR LIGHTING PLAN - DATA CENTER

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024 | Checked: WG | Drawn: BX

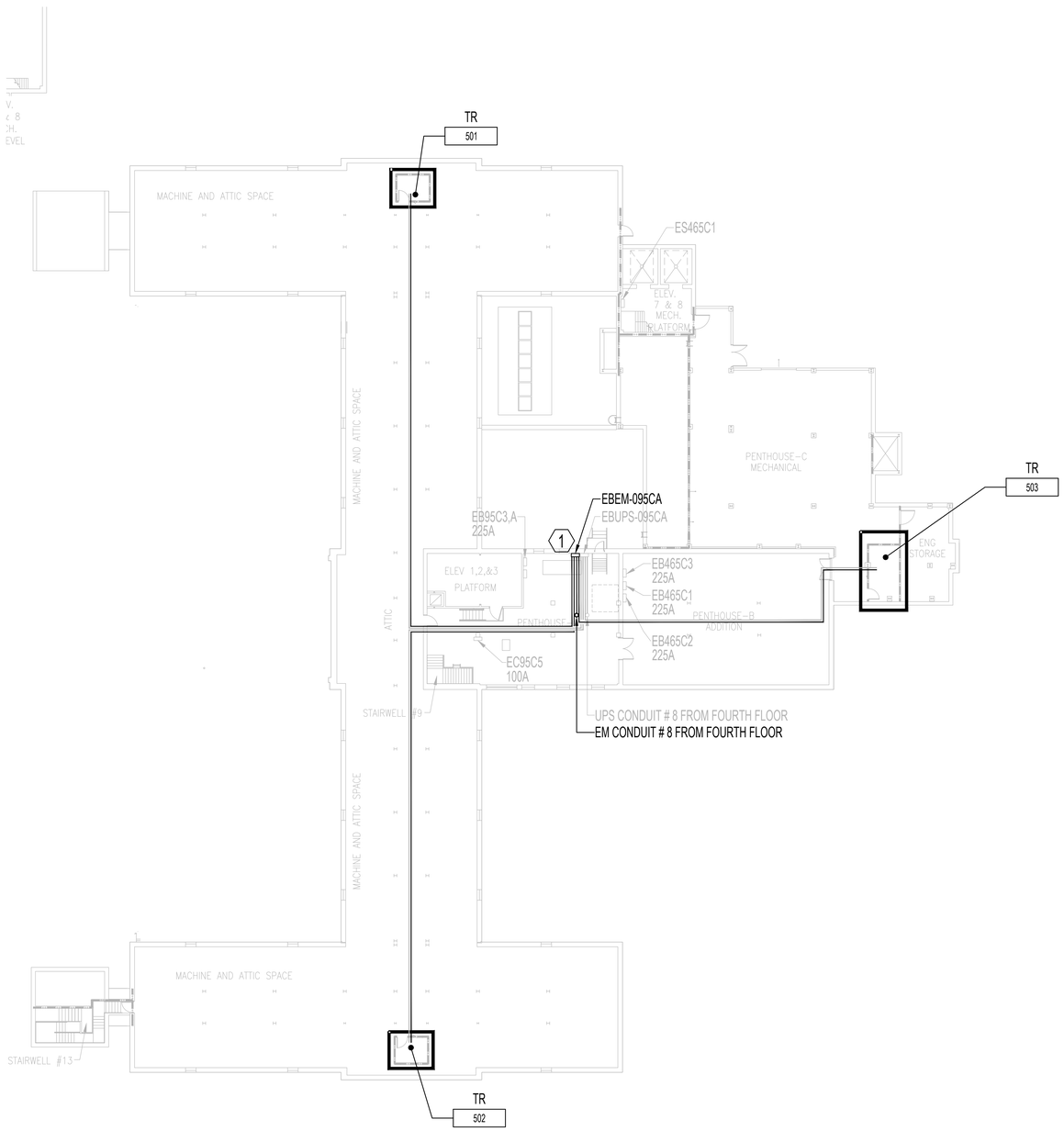
Project Number: 437-21-210

Building Number: 1

Drawing Number: EL-B1-244

K:\CCG_PROJECTS\2022\22-113_437-21-210_Fargo_ND_EHRM Tier 2 (VISN 23 TO)\400- DataDocs\402- Drawings\WORKING\CAD\Electrical\EL-B1-244.dwg
1/16/2024 11:33:28 AM

VA FORM 08 - 6231



NORTH

1 ELECTRICAL - BUILDING 1-9-46 - FIFTH FLOOR PLAN

1/16"=1'-0"

0 4' 8' 16' 32'

ELECTRICAL GENERAL NOTES

A. DRAWING DEPICTS AREAS OF WORK.

B. NEW PENTHOUSE FLOOR UPS FEEDER FROM MCR WILL BE INTERCEPTED ON 4th FLOOR AND SPLICED INTO NEW UPS FEEDER FROM MCR.

C. THE NEW EMERGENCY POWER DISTRIBUTION PANEL, EBEM095CA FED FROM THE NEW MCR, WILL BE LOCATED IN PENTHOUSE TO FEED THE EXISTING TR ROOMS.

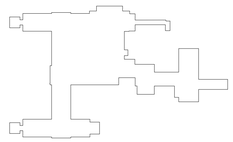
⟨X⟩ ELECTRICAL KEY NOTES

1. INSTALL NEW PANEL EBEM-095CA.

RATED PARTITION LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)



N

KEY PLAN

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-055261
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

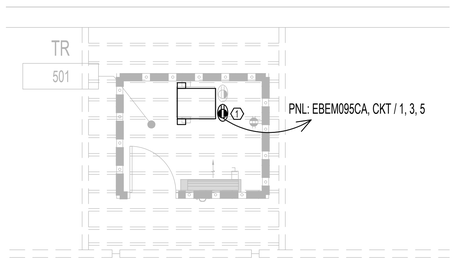
ISSUE FOR BID - 01/16/2024

Drawing Title: ELECTRICAL - OVERALL FIFTH FLOOR PLAN	Phase: ISSUE FOR BID	Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2	Project Number: 437-21-210
			Building Number: 1-9-46
Approved: Project Director	BUILDING FULLY SPRINKLERED	Location: FARGO VA HEALTH CARE SYSTEM	Drawing Number: EP-B1-151
		Issue Date: 01/16/2024 / Checked: WG / Drawn: BX	

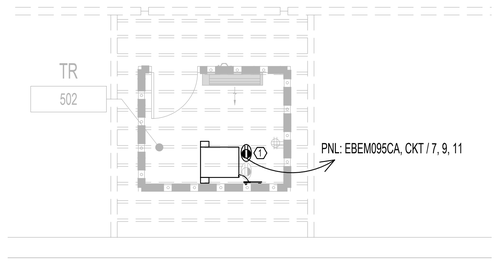
VA FORM 08 - 6231

K:\CDG_PROJECTS\2022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- DistDocs\400- Drawings\WORKING\CAD\Electrical\EP-B01-151.dwg

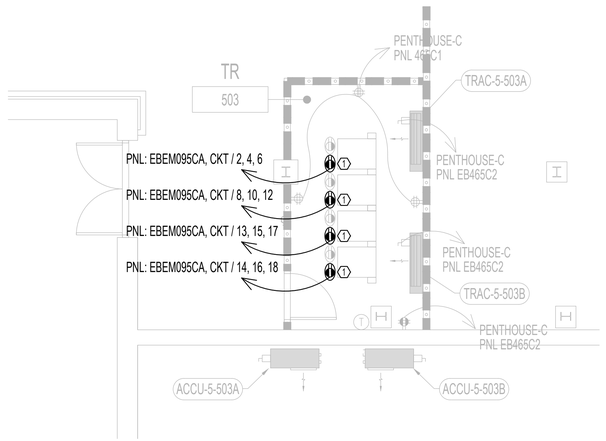
12/11/2023 11:43:09 AM



1 ENLARGED POWER PLAN RM 501
1/4"=1'-0"



2 ENLARGED POWER PLAN RM 502
1/4"=1'-0"



3 ENLARGED POWER PLAN RM 503
1/4"=1'-0"

ELECTRICAL GENERAL NOTES

A. CONTACT VA IT PRIOR TO WORKING IN DATA CENTER OR IT CLOSET.

B. ALL RACKS ARE IN OPERATION ON UPS POWER. REMAINING WORK IS TO INSTALL EMERGENCY POWER ABOVE EACH RACK.

C. USE PRECAUTIONS TO AVOID SNAGGING, WIRING OR DAMAGING EQUIPMENT.

D. PROTECT IT EQUIPMENT FROM DUST DURING WORK THAT CREATES DUST.

E. SEE PANEL SCHEDULES ON DRAWING SERIES E600 FOR EMERGENCY POWER (EM) PANEL SCHEDULES AND EM CIRCUIT NUMBERS. CABLE LENGTHS ARE FOR INFORMATION ONLY. CONTRACTOR TO DETERMINE CORRECT LENGTHS BASED ON FIELD CONDITIONS.

F. SEE DRAWING SERIES E700 FOR SINGLE LINE DRAWINGS.

G. EM POWER TO RACKS / CABINETS IN NEW TR's MUST BE PROVIDED TO THE TOP OF THE RACKS / CABINETS. NO POWER WIRING ON FLOORS!

H. RECEPTACLES ABOVE RACKS MUST BE NEMA L21-20R, LOCKING RECEPTACLES.

I. PANEL CIRCUIT NUMBERS ARE SUGGESTIONS, CONTRACTOR TO SELECT BREAKERS AND CIRCUIT NUMBERS BASED ON FIELD CONDITIONS AT TIME OF INSTALLATION.

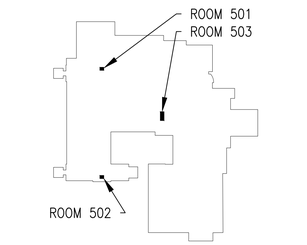
(X) ELECTRICAL KEY NOTES

1. EMERGENCY POWER TO RACK.

RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)



KEY PLAN

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www. bancroft-ae.com
Bancroft Project No: 22-113

STAMP

REGISTERED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035201
1/16/24
STATE OF ILLINOIS

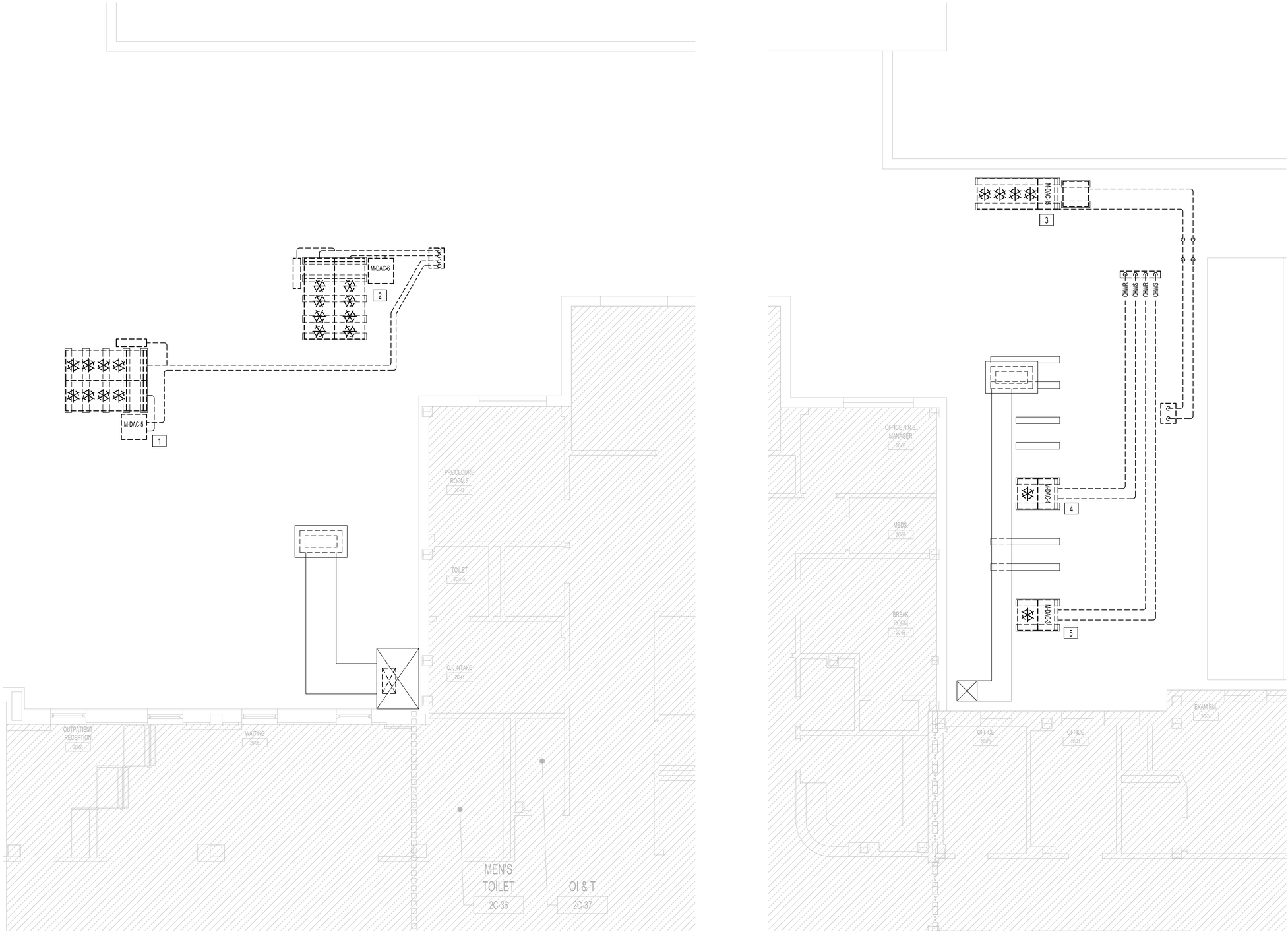
Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title	ELECTRICAL - BLDG-1-9-46 - ENLARGED PLANS - PENTHOUSE
Approved: Project Director	
Phase	ISSUE FOR BID
	BUILDING FULLY SPRINKLERED
Project Title	EHRM INFRASTRUCTURE UPGRADES - TIER 2
Location	FARGO VA HEALTH CARE SYSTEM
Issue Date	01/16/2024
Checked	WG
Drawn	BX
Project Number	437-21-210
Building Number	01, 09, 46
Drawing Number	EP-B1-451

K:\CCG_PROJECTS\2022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- DesDocs\402- Drawings\WORKINGS\CAD\Electrical\EP-01-451.dwg
1/15/2024 5:08:47 PM

VA FORM 08 - 6231



ELECTRICAL GENERAL NOTES

A. CONTRACTOR TO FOLLOW VA LOCK-OUT-TAGOUT PROCEDURE.

B. COORDINATE WITH COR TWO WEEKS PRIOR TO SCHEDULE ANY SHUTDOWNS.

C. COORDINATE WITH MECHANICAL CONTRACTOR.

D. CONTRACTOR TO REMOVE ALL WIRING, CONDUIT, SUPPORTS AND RELATED APPURTENANCES BACK TO SOURCE. PATCH AND SEAL ALL OPENINGS THAT WILL NOT BE USED. UPDATE PANEL SCHEDULES FOR ALL REMOVED CIRCUITS.

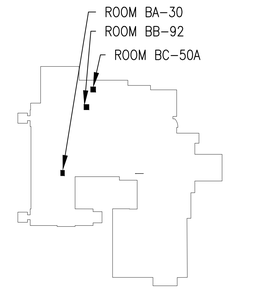
X ELECTRICAL KEY NOTES

1. REMOVE POWER AND CONTROL WIRING AND CONDUITS FOR MDAC-5 BACK TO SOURCE. PATCH ALL OPENINGS PER SPECIFICATIONS.
2. REMOVE POWER AND CONTROL WIRING AND CONDUITS FOR MDAC-6 BACK TO SOURCE. PATCH ALL OPENINGS PER SPECIFICATIONS.
3. REMOVE POWER AND CONTROL WIRING AND CONDUITS FOR MDAC-15 BACK TO SOURCE. PATCH ALL OPENINGS PER SPECIFICATIONS.
4. REMOVE POWER AND CONTROL WIRING AND CONDUITS FOR MDAC-4 BACK TO SOURCE. PATCH ALL OPENINGS PER SPECIFICATIONS.
5. REMOVE POWER AND CONTROL WIRING AND CONDUITS FOR MDAC-3 BACK TO SOURCE. PATCH ALL OPENINGS PER SPECIFICATIONS.

RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)



N

KEY PLAN

N

1 ELECTRICAL - DEMOLITION PLAN - BUILDING 46 - SECOND FLOOR - ROOF

1/4"=1'-0"

0 1" 2" 4" 8"

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035261
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - BUILDING 46 SECOND FLOOR ROOF DEMOLITION

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024 | Checked: WG | Drawn: BX

Project Number: 437-21-210

Building Number: 46

Drawing Number: EPD-B46-402

K:\CCD_PROJECTS\202222-113_437-21-210_Fargo_ND_EHRM Tier 2 (VISN 23 TOI)\400- DataDocs\402- Drawings\WORKING\CAD\Electrical\EPD-B46-402.dwg

1/15/2024 2:51:54 PM

VA FORM 08 - 6231

ELECTRICAL GENERAL NOTES

A. CONTRACTOR TO FOLLOW VA LOCK-OUT-TAGOUT PROCEDURE.

B. COORDINATE WITH COR TWO WEEKS PRIOR TO SCHEDULE ANY SHUTDOWNS.

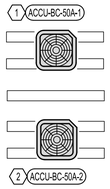
C. COORDINATE WITH MECHANICAL CONTRACTOR.

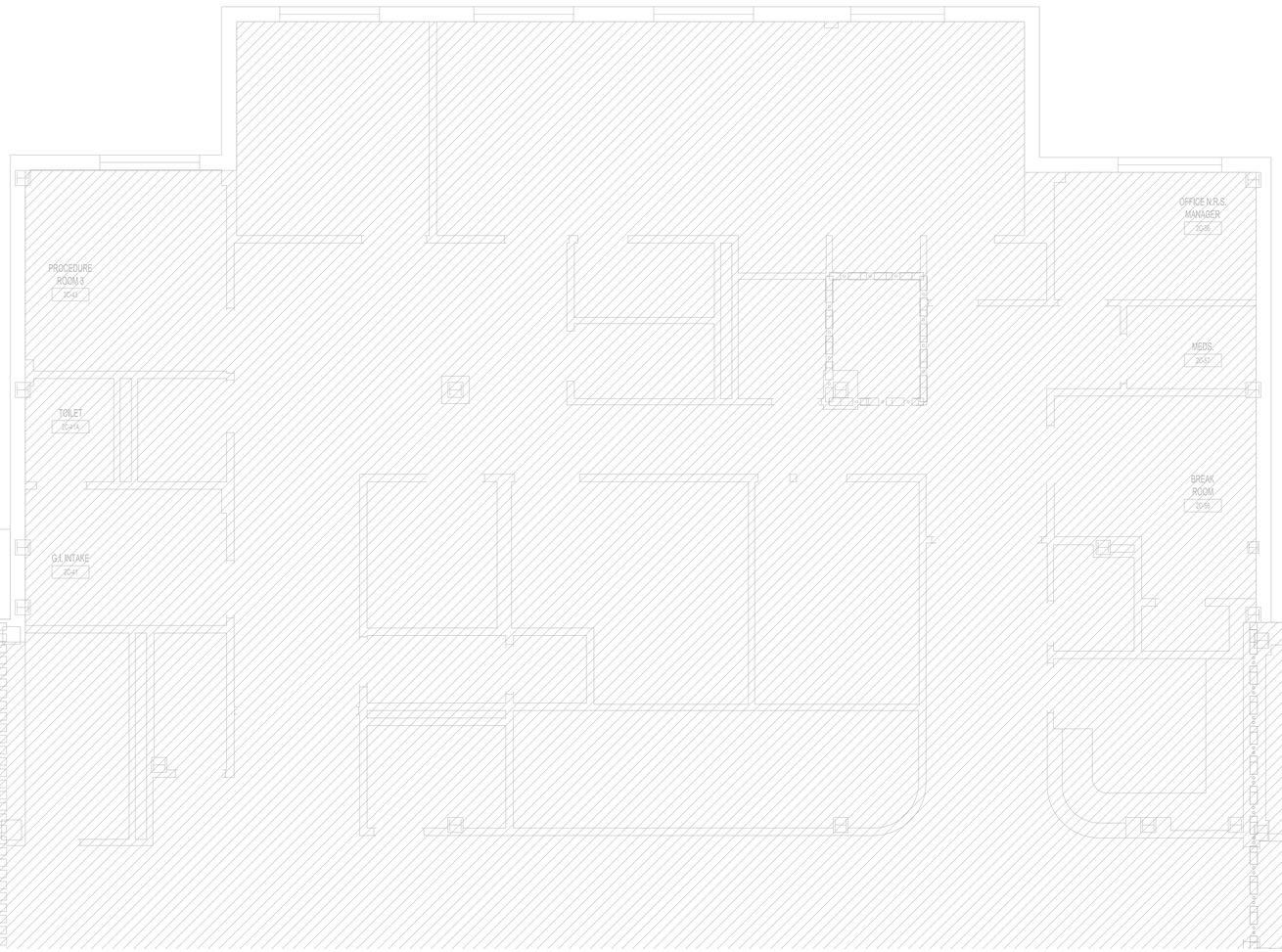
D. CONTRACTOR TO UTILIZE SPLIT UNIT WIRING DETAIL ON SERIES 500 DETAIL DRAWINGS AS A GUIDE FOR ROUTING POWER AND CONTROL CONDUITS AND WIRING FROM POWER PANEL, TO EVAPORATOR AND THEN TO CONDENSER UNIT. INSTALL 20A DISCONNECT AT EVAPORATOR AND NEMA 3 20A DISCONNECT AT CONDENSER.

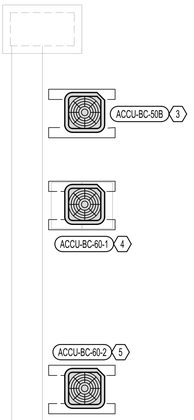
E. CONTRACTOR TO INSTALL 20A BREAKERS ON PANEL, AND SELECT CIRCUITS ON POWER PANEL TO BALANCE PANEL.

⟨X⟩ ELECTRICAL KEY NOTES

1. FOR ACCU-BC-50A-1 ROUTE CONDUITS AND 25A CABLES FROM PANEL EBUPS-90N1. CONTRACTOR TO SELECT CIRCUITS TO BALANCE PANEL.
2. FOR ACCU-BC-50A-2 ROUTE CONDUITS AND 25A CABLES FROM PANEL EBUPS-90N1. CONTRACTOR TO SELECT CIRCUITS TO BALANCE PANEL.
3. FOR ACCU-BC-50B ROUTE CONDUITS AND 25A CABLES FROM PANEL EBUPS-90N1. CONTRACTOR TO SELECT CIRCUITS TO BALANCE PANEL.
4. FOR ACCU-BC-60-1 ROUTE CONDUITS AND 25A CABLES FROM PANEL EBUPS-90N1. CONTRACTOR TO SELECT CIRCUITS TO BALANCE PANEL.
5. FOR ACCU-BC-60-2 ROUTE CONDUITS AND 25A CABLES FROM PANEL EBUPS-90N1. CONTRACTOR TO SELECT CIRCUITS TO BALANCE PANEL.



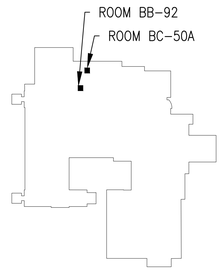




RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

1 HR FIRE BARRIER	1 HR FIRE BARRIER (EXISTING)
2 HR FIRE BARRIER	2 HR FIRE BARRIER (EXISTING)
SMOKE BARRIER	SMOKE BARRIER (EXISTING)



N

KEY PLAN

1 ELECTRICAL PLAN - BUILDING 46 - SECOND FLOOR - ROOF

1/4"=1'-0"

0 1' 2' 4' 8'

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035261
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

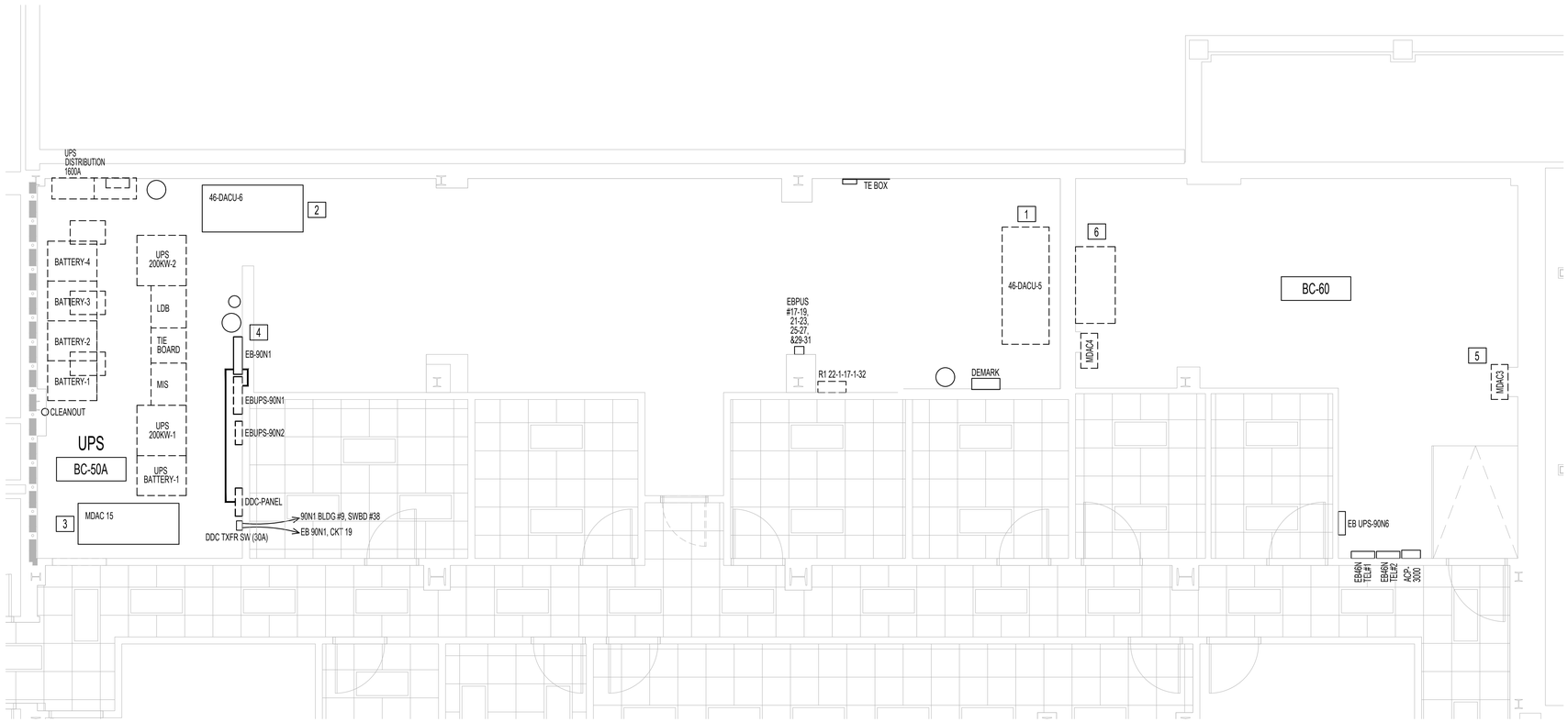
VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - BUILDING 46 SECOND FLOOR ROOF	Phase: ISSUE FOR BID	Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2	Project Number: 437-21-210
Approved: Project Director	BUILDING FULLY SPRINKLERED	Location: FARGO VA HEALTH CARE SYSTEM	Building Number: 46
		Issue Date: 01/16/2024 / Checked: WG / Drawn: BX	Drawing Number: EP-B46-402

VA FORM 08 - 6231

1/16/2024 9:40:16 AM

K:\CCO_PROJECTS\002222-113_437-21-210_Fargo_ND_EHRM Tier 2 (VISN 23 TO)\400- DesDocs\402- Drawings\WORKING\CAD\Electrical\EP-B46-402.dwg



N

1 ELECTRICAL - ENLARGED DEMOLITION PLAN RM BC-50A AND BC60

1/4"=1'-0"

0 1' 2' 4' 8'

ELECTRICAL GENERAL NOTES

A. DISCONNECT POWER AND CONDUITS TO CRAC UNITS IN BC-50: MDAC15, 46-DACU-6 AND 46-DACU-5.

B. AFTER NEW MCR IS COMPLETED, AND ALL IT EQUIPMENT HAS BEEN MOVED/MIGRATED TO NEW MCR, AND UPS-B IN MCR IS OPERATIONAL, AND EMERGENCY POWER IS SUPPORTING ALL TR ROOMS, UPS A WILL BE DISMANTLED AND RELOCATED INTO NEW MCR.

C. CONTRACTOR TO OBTAIN PERMISSION FROM VA COR TO SHUT DOWN MONOLITHIC UPS A.

D. CONTRACTOR TO DEVELOP A "METHOD OF PROCEDURE" / LOCKOUT-TAGOUT PROCEDURE TO COMPLETELY SHUTDOWN AND DE-ENERGIZE ALL POWER TO OLD UPS AND BYPASS SYSTEM.

E. CONTRACTOR TO FOLLOW PROCEDURE FOR SHUTTING DOWN MONOLITHIC UPS A, AND THEN OPENING ALL REQUIRED BREAKERS TO COMPLETELY DE-ENERGIZE ALL POWER TO UPS AND BYPASS BREAKERS.

F. HIRE UPS VENDOR TO DECOMMISSION UPS-A AND CONFIGURE THE UPS INTO SECTIONS FOR MOVING TO NEW MCR.

   a. MONOLITHIC UPS AND BATTERIES WILL BE RELOCATED INTO UPS ROOM BE-97.

   b. THE THREE TIE CABINETS WILL BE RELOCATED TO UPS ROOM BE-97.

   c. THEN FOLLOW DIRECTIONS ON NEW DRAWING EP-B1-203 FOR ROOM BE-97.

G. VERIFY THAT ALL EQUIPMENT HAS BEEN DISCONNECTED FROM OLD LOCATION OF MONOLITHIC UPS A.

H. VERIFY THAT BOTH MONOLITHIC UPS A AND NORMAL UPS B ARE OPERATIONAL.

I. VERIFY THAT NEW BLGD. 1, 1,560KVA EMERGENCY GENERATOR IS FULLY OPERATIONAL.

J. VERIFY THAT NEW CIRCUITS HAVE BEEN PROVIDED TO THE TWO DEMARKS (SEE DRAWING EP-B1-101).

K. REUSE FORMER PANEL EPUPS-90N1, 400A AND RENAME PANEL AS PANEL 90N1. EXTEND CONDUIT THAT PREVIOUSLY FED MTS EB90N3 TO FEED RENAMED PANEL 90N1.

L. THE FOLLOWING PANELS (AND CONDUITS AND WIRING) THAT USED TO SERVE THE OLD DATA CENTER CAN NOW BE REMOVED:

   a. MTS EB90N1 - FED FROM BLDG 9 SWGR EB, AND FROM BLDG 9 NORMAL SWGR.

   b. PANEL EB90N1.

   c. MTS EB90N3 FED FROM BLDG 9 EB SWGR AND FROM BLDG 9 NORMAL SWGR.

   d. PANEL EB90N3.

   e. PARALLEL TIE CABINET.

   f. PANEL EBUPS90N1.

   g. ALL OTHER PANELS THAT HAVE UPS IN THEIR NAME.

M. TURNOVER PANELS AND SWITCHES TO COR.

N. PROPERLY DISCARD ALL OLD CONDUITS, WIRING, CABLING, OLD NETWORK CABLING FROM ABOVE AND BELOW THE RAISED FLOOR TO LEAVE AREA AS A CLEAN STORAGE FACILITY.

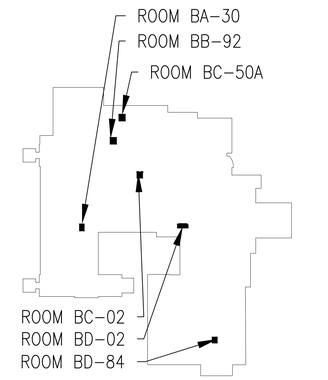
[X] ELECTRICAL KEY NOTES

1. REMOVE ALL CONDUIT AND WIRING FROM CRAC 46-DACU-5.
2. REMOVE ALL CONDUIT AND WIRING FROM CRAC 46-DACU-6.
3. REMOVE ALL CONDUIT AND WIRING FROM CRAC MDAC-15.
4. LEAVE PANEL EB-90N1 IN PLACE. THIS PANEL WILL REMAIL TO FEED EQUIPMENT THAT REMAINS IN AREA.
5. REMOVE ALL CONDUIT AND WIRING FROM CRAC MDCA3.
6. REMOVE ALL CONDUIT AND WIRING FROM CRAC.

RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)



N

KEY PLAN

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035261
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - UPS SYSTEM A ROOM BC-50A AND BC-60 DEMOLITION

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024 | Checked: WG | Drawn: BX

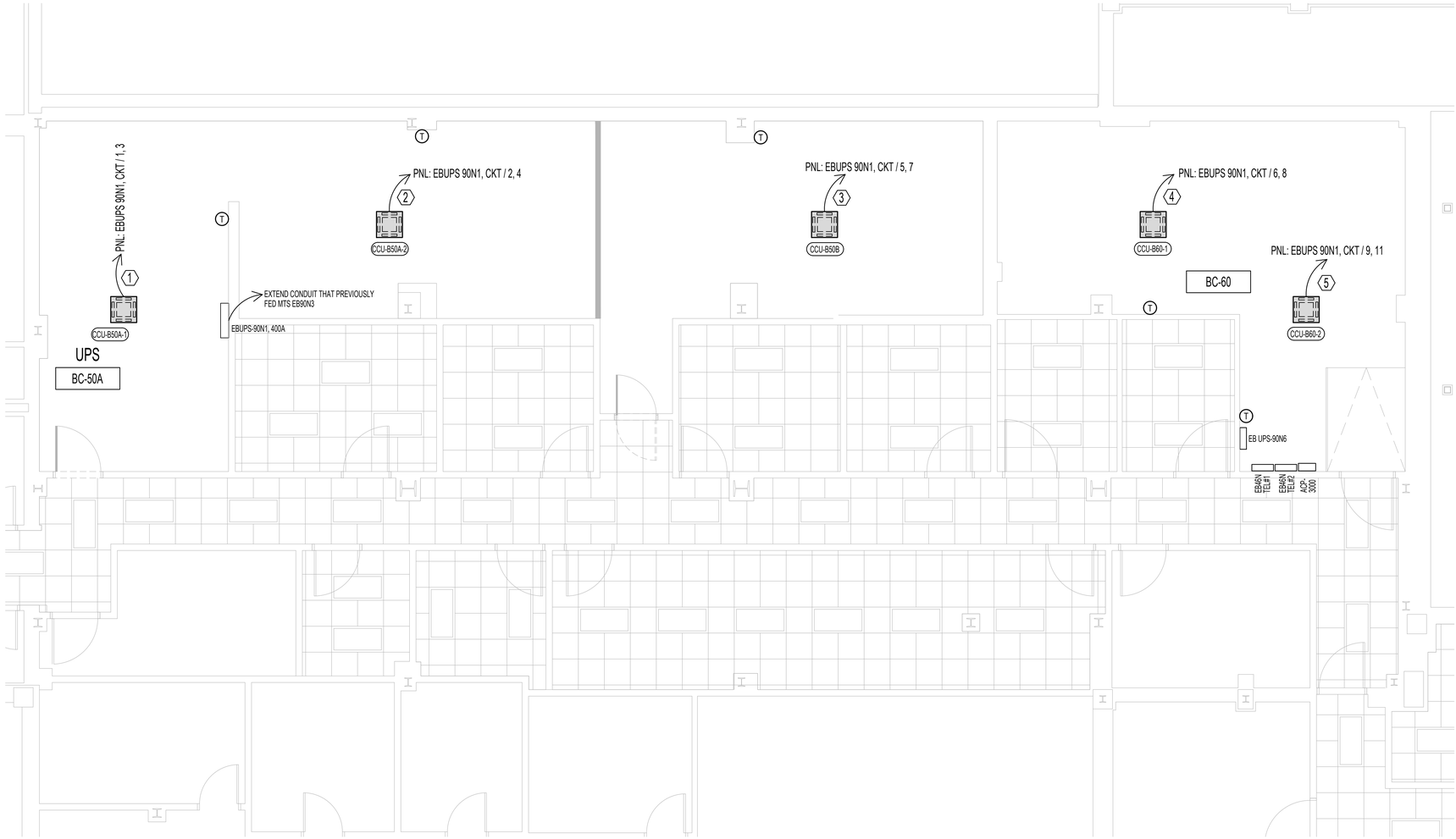
Project Number: 437-21-210

Building Number: 46

Drawing Number: EPD-B46-403

K:\CCG_PROJECTS\2022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- DwtDocs\400- Drawings\WORKING\CAD\Electrical\EPD-01-403.dwg
1/15/2024 5:08:37 PM

VA FORM 08 - 6231



N

1 ELECTRICAL - ENLARGED PLAN RM BC-50A AND BC60

1/4"=1'-0"

0 1' 2' 4' 8'

ELECTRICAL GENERAL NOTES

A. REUSE FORMER PANEL EPUPS-90N1, 400A AND RENAME PANEL AS PANEL 90N1. EXTEND CONDUIT THAT PREVIOUSLY FED MTS EB90N3 TO FEED RENAMES PANEL 90N1.

B. SEE DETAILS ON THIS DRAWING FOR WIRING SPLIT COOLING UNITS.

C. CONTRACTOR TO SELECT CIRCUITS ON PANEL AND BALANCE PANEL, AND UPDATE INDEX CARD.

D. SEE DETAIL 8 ON DRAWING E501 FOR WIRING SPLIT UNITS.

E. CONTRACTOR TO SELECT ELECTRICAL CIRCUITS AND BALANCE PANEL LOAD.

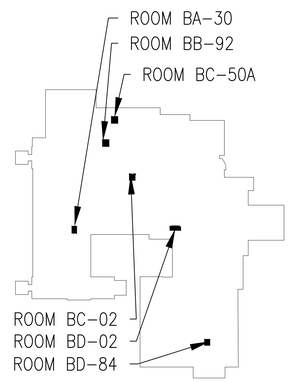
(X) ELECTRICAL KEY NOTES

1. PROVIDE POWER FOR SPLIT COOLING UNIT CCU-B50A-1 FROM PANEL EBUPS-90N1, CKT 1, 3
2. PROVIDE POWER FOR SPLIT COOLING UNIT CCU-B50A-2 FROM PANEL EBUPS-90N1, CKT 2, 4
3. PROVIDE POWER FOR SPLIT COOLING UNIT CCU-B50B FROM PANEL EBUPS-90N1, CKT 5, 7
4. PROVIDE POWER FOR SPLIT COOLING UNIT CCU-B60-1 FROM PANEL EBUPS-90N1, CKT 6, 8
5. PROVIDE POWER FOR SPLIT COOLING UNIT CCU-B60-2 FROM PANEL EBUPS-90N1, CKT 9, 11

RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)



N

KEY PLAN

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www. bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035201
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - UPS SYSTEM A ROOM BC-50A AND BC-60

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

ISSUE FOR BID - 01/16/2024

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

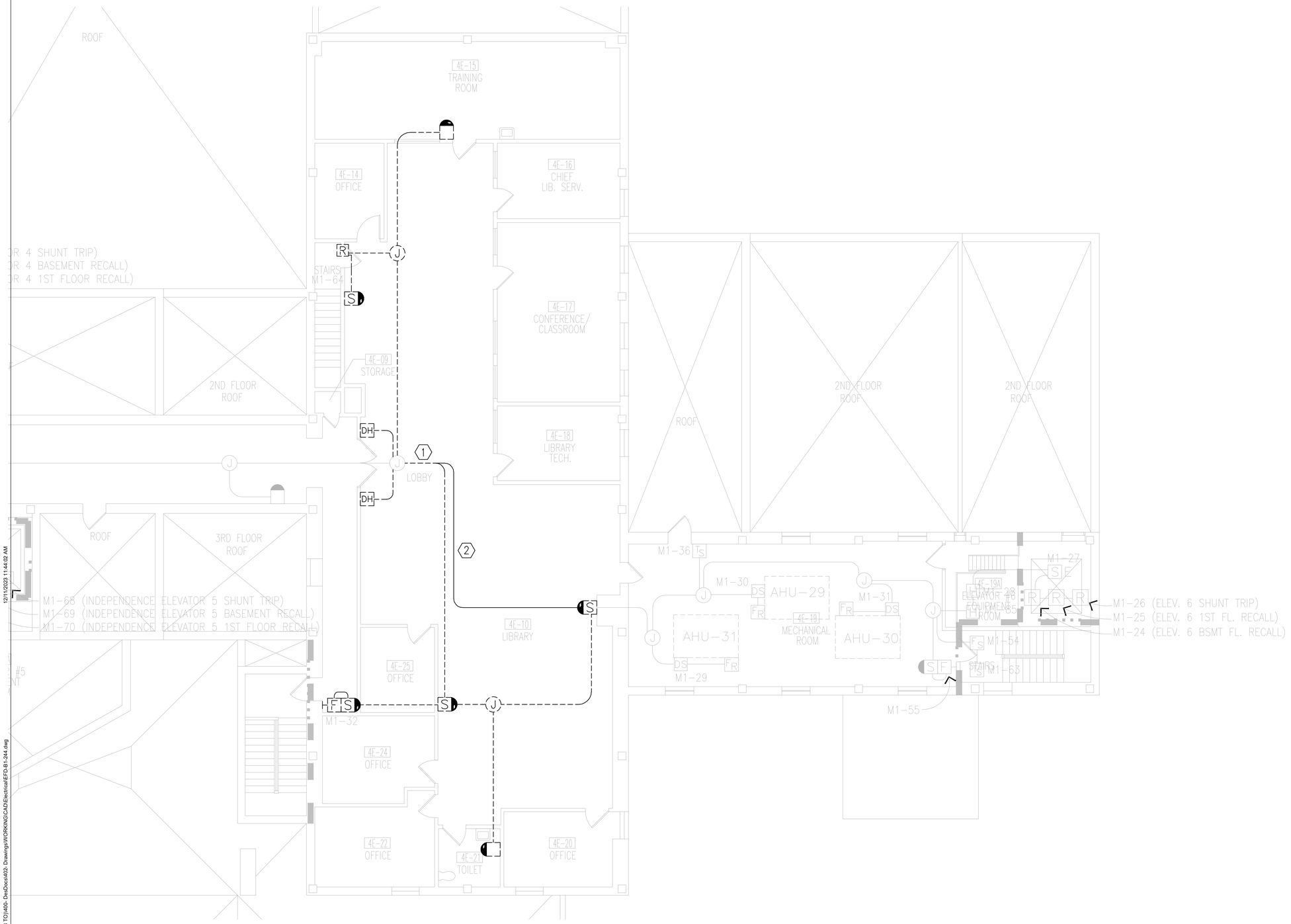
Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024 | Checked: WG | Drawn: BX

Project Number: 437-21-210

Building Number: 46

Drawing Number: EP-B46-403



NORTH

1 FIRE ALARM - BUILDING 1 - FOURTH FLOOR FIRE ALARM PLAN

3/16"=1'-0"

0 2" 4" 8" 12"

FIRE ALARM GENERAL NOTES

A. CERTIFIED FIRE PROTECTION CONTRACTOR TO PERFORM THIS WORK.

NOTE: DURING CONSTRUCTION, THE FIRE ALARM SYSTEM EAST OF THE DATA CENTER NEEDS TO REMAIN OPERATIONAL. A JUMPER NEEDS TO BE INSTALLED TO MAINTAIN OPERABILITY OF FIRE ALARM EAST OF DATA CENTER, PRIOR TO PERFORMING ANY DEMOLITION.

B. CONTRACTOR TO TEST THIS PORTION OF THE SYSTEM TO VERIFY EVERYTHING IS OPERABLE.

C. COORDINATE WITH COR IF FIRE WATCH IS REQUIRED DURING CONSTRUCTION. **ALTERNATELY, CONTRACTOR MAY INSTALL TEMPORARY SMOKE DETECTORS IN CONSTRUCTION AREA IF VA PROVIDES APPROVAL.**

D. CONTRACTOR TO CONTACT VA SECURITY / OPERATIONS WHENEVER THE FIRE ALARM SYSTEM IS TAKEN DOWN.

E. TEST FIRE ALARM SYSTEM AFTER "JUMPER" HAS BEEN INSTALLED TO MAINTAIN OPERABILITY OF FIRE ALARM EAST OF DATA CENTER.

F. REMOVE FIRE ALARM / FIRE DETECTION COMPONENTS IN PROJECT AREA.

X FIRE ALARM KEY NOTES

1. INSTALL JUNCTION BOX ON EXISTING FIRE ALARM CONDUIT TO SERVE TWO PURPOSES:
   a. INSTALL A "JUMPER" ACROSS CONSTRUCTION AREA TO MAINTAIN OPERABILITY OF FIRE ALARM EAST OF DATA CENTER.
   b. UTILIZE THIS SAME JUNCTION BOX TO CONNECT NEW FIRE ALARM COMPONENTS IN THE DATA CENTER PROJECT.
2. INSTALL NEW CONDUIT AND WIRING TO MAINTAIN OPERABILITY OF FIRE ALARM EAST OF DATA CENTER.

RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-059281
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - FIRE ALARM DEMOLITION PLAN

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

ISSUE FOR BID - 01/16/2024

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024 | Checked: WG | Drawn: BX

Project Number: 437-21-210

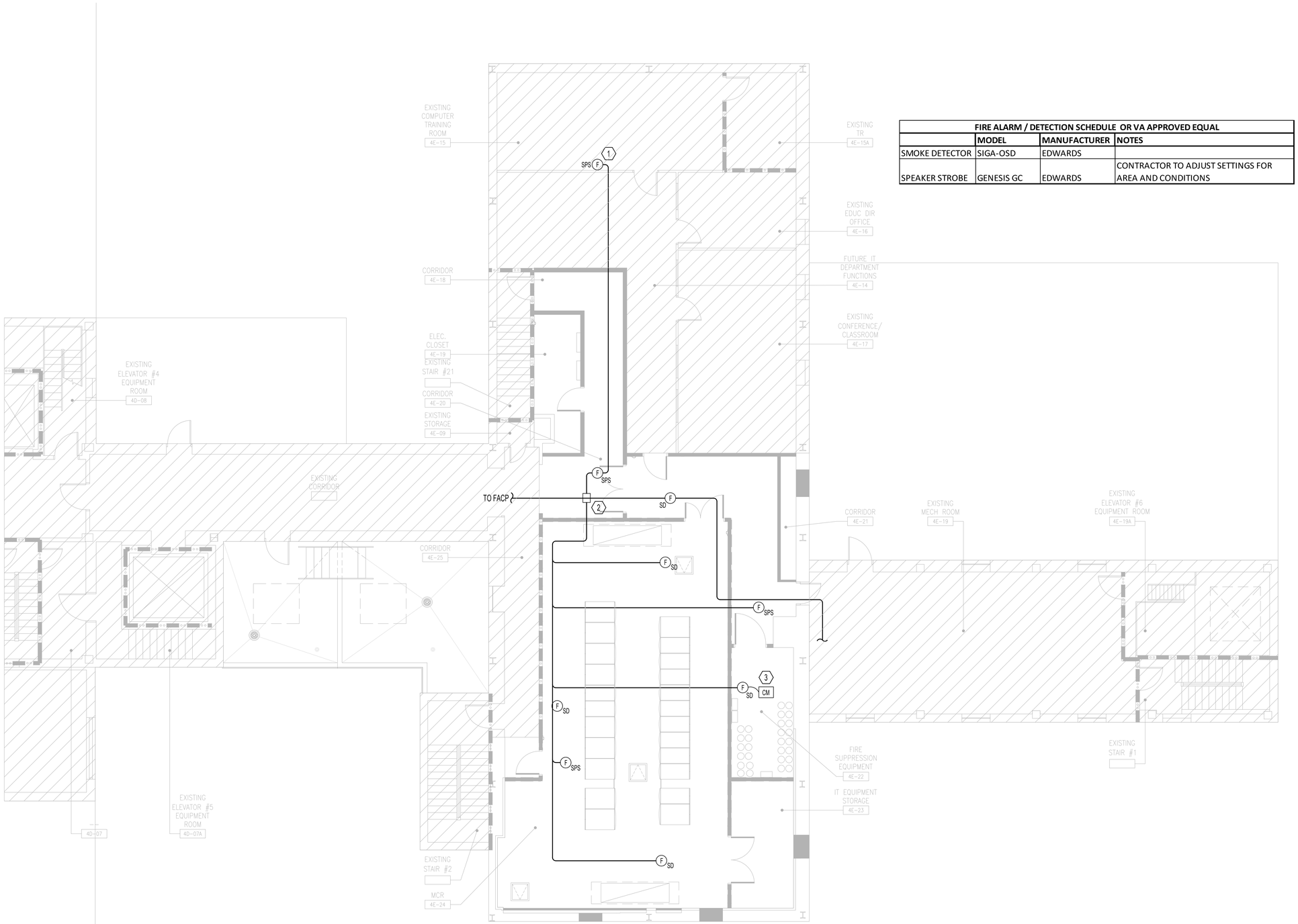
Building Number: 1

Drawing Number: EFD-B1-244

12/11/2023 11:44:02 AM

K:\CCG_PROJECTS\2022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- DataDocs\402- Drawings\WORKING\CAD\Electrical\EFD-B1-244.dwg

VA FORM 08 - 6231



NORTH

1 ELECTRICAL - BUILDING 1 - FOURTH FLOOR FIRE ALARM PLAN - DATA CENTER

3/16"=1'-0"

FIRE ALARM / DETECTION SCHEDULE OR VA APPROVED EQUAL			
	MODEL	MANUFACTURER	NOTES
SMOKE DETECTOR	SIGA-OSD	EDWARDS	
SPEAKER STROBE	GENESIS GC	EDWARDS	CONTRACTOR TO ADJUST SETTINGS FOR AREA AND CONDITIONS

ELECTRICAL GENERAL NOTES

A. CERTIFIED FIRE PROTECTION CONTRACTOR TO PERFORM THIS WORK.

B. DURING CONSTRUCTION, THE FIRE ALARM SYSTEM EAST OF THE DATA CENTER NEEDS TO REMAIN OPERATIONAL.

C. CONTRACTOR TO CONTACT VA SECURITY / OPERATIONS WHENEVER THE FIRE ALARM SYSTEM IS TAKEN DOWN.

D. COORDINATE WITH COR IF FIRE WATCH IS REQUIRED DURING CONSTRUCTION.

E. CONTRACTOR TO TEST SYSTEM AFTER ADDITION OF NEW COMPONENTS.

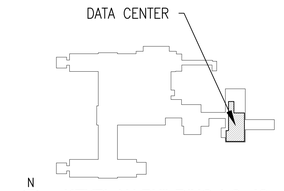
(X) ELECTRICAL KEY NOTES

1. RECONNECT SPEAKER STROBE IN ROOM 4E-15 THAT WAS DISCONNECTED DURING CONSTRUCTION.
2. CONNECT NEW FIRE ALARM COMPONENTS TO JUNCTION BOX, OR WHERE CERTIFIED FIRE PROTECTION CONTRACTO DETERMINES.
3. CONNECT TO INERGEN GAS SYSTEM IN ROOM 4E-22.

RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)



N

KEYPLAN BUILDING 1-9-46

NTS

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www. bancroft-ae.com
Bancroft Project No: 22-113

STAMP

REGISTERED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035201
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - BLDG-1 - FOURTH FLOOR FIRE ALARM PLAN - DATA CENTER

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024 | Checked: WG | Drawn: BX

Project Number: 437-21-210

Building Number: 1

Drawing Number: EF-B1-244

K:\CCG_PROJECTS\2022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- DataDocs\402- Drawings\WORKING\CAD\Electrical\EF-B1-244.dwg

1/15/2024 8:30:48 AM

VA FORM 08 - 6231

ELECTRICAL GENERAL NOTES

A. CONTACT VA IT PRIOR TO WORKING IN DATA CENTER OR IT CLOSET.

B. ALL RACKS ARE IN OPERATION ON UPS POWER. REMAINING WORK IS TO INSTALL EMERGENCY POWER ABOVE EACH RACK.

C. USE PRECAUTIONS TO AVOID SNAGGING, WIRING OR DAMAGING EQUIPMENT.

D. PROTECT IT EQUIPMENT FROM DUST DURING WORK THAT CREATES DUST.

E. SEE PANEL SCHEDULES ON DRAWING SERIES E600 FOR EMERGENCY POWER (EM) PANEL SCHEDULES AND EM CIRCUIT NUMBERS. CABLE LENGTHS ARE FOR INFORMATION ONLY. CONTRACTOR TO DETERMINE CORRECT LENGTHS BASED ON FIELD CONDITIONS.

F. SEE DRAWING SERIES E700 FOR SINGLE LINE DRAWINGS.

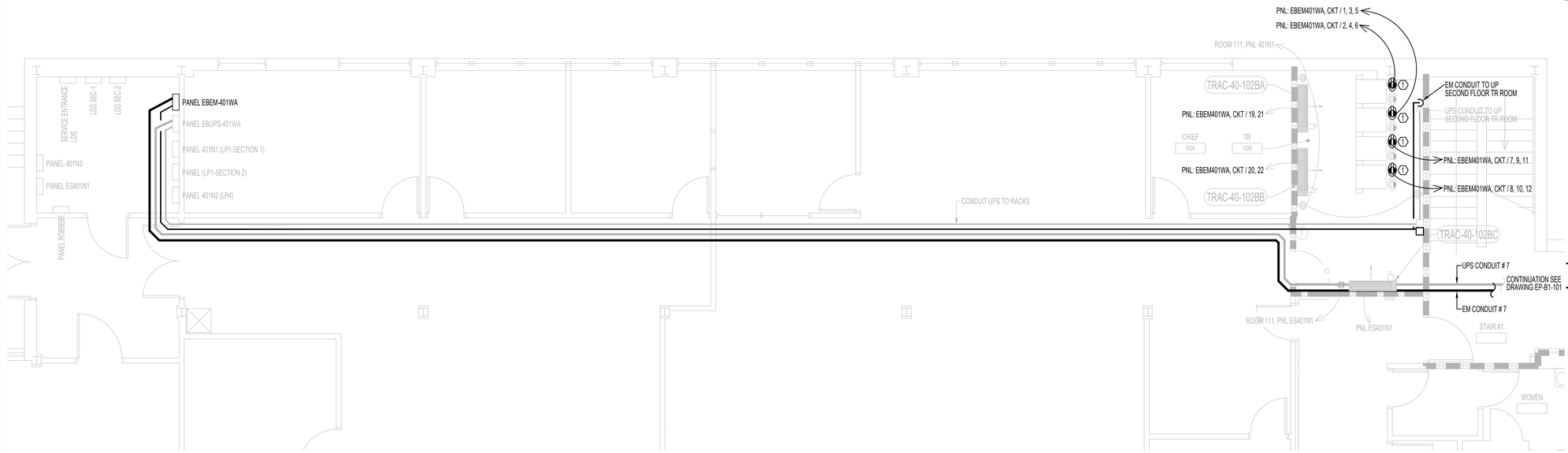
G. EM POWER TO RACKS / CABINETS IN NEW TR's MUST BE PROVIDED TO THE TOP OF THE RACKS / CABINETS. NO POWER WIRING ON FLOORS!

H. RECEPTACLES ABOVE RACKS MUST BE NEMA L21-20R, LOCKING RECEPTACLES.

I. PANEL CIRCUIT NUMBERS ARE SUGGESTIONS, CONTRACTOR TO SELECT BREAKERS AND CIRCUIT NUMBERS BASED ON FIELD CONDITIONS AT TIME OF INSTALLATION.

(X) ELECTRICAL KEY NOTES

1. EMERGENCY POWER TO RACK.



N

1 ELECTRICAL - ENLARGED POWER PLAN BLDG-40 RM 102B

1/4"=1'-0"

0 1' 2' 4' 8'

RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)

N

KEY PLAN

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS

3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035201
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - BLDG-40 - ENLARGED POWER PLAN - FIRST FLOOR

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024 | Checked: WG | Drawn: BX

Project Number: 437-21-210

Building Number: 40

Drawing Number: EP-B40-101

12/18/2023 8:46:13 PM

K:\CCG_PROJECTS\2022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- DataDocs\402- Drawings\WORKING\CAD\Electrical\EP-40-101.dwg

VA FORM 08 - 6231

ELECTRICAL GENERAL NOTES

A. CONTACT VA IT PRIOR TO WORKING IN DATA CENTER OR IT CLOSET.

B. ALL RACKS ARE IN OPERATION ON UPS POWER. REMAINING WORK IS TO INSTALL EMERGENCY POWER ABOVE EACH RACK.

C. USE PRECAUTIONS TO AVOID SNAGGING, WIRING OR DAMAGING EQUIPMENT.

D. PROTECT IT EQUIPMENT FROM DUST DURING WORK THAT CREATES DUST.

E. SEE PANEL SCHEDULES ON DRAWING SERIES E600 FOR EMERGENCY POWER (EM) PANEL SCHEDULES AND EM CIRCUIT NUMBERS. CABLE LENGTHS ARE FOR INFORMATION ONLY. CONTRACTOR TO DETERMINE CORRECT LENGTHS BASED ON FIELD CONDITIONS.

F. SEE DRAWING SERIES E700 FOR SINGLE LINE DRAWINGS.

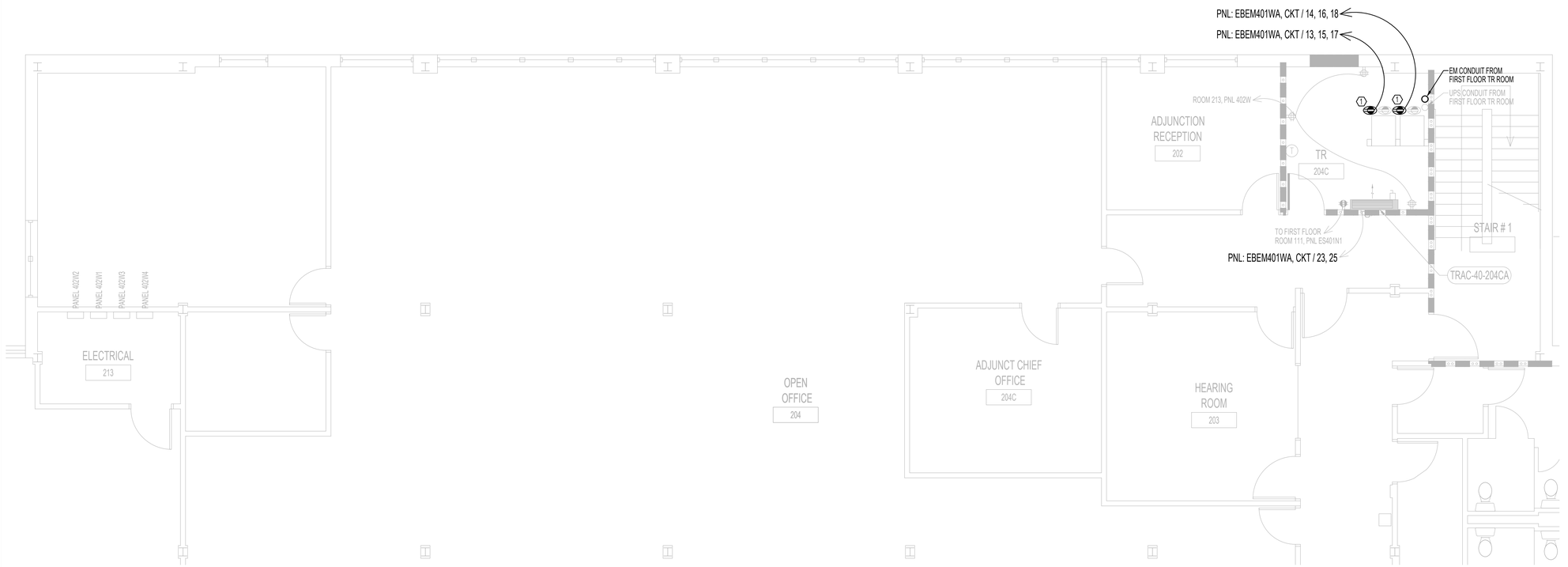
G. EM POWER TO RACKS / CABINETS IN NEW TR's MUST BE PROVIDED TO THE TOP OF THE RACKS / CABINETS. NO POWER WIRING ON FLOORS!

H. RECEPTACLES ABOVE RACKS MUST BE NEMA L21-20R, LOCKING RECEPTACLES.

I. PANEL CIRCUIT NUMBERS ARE SUGGESTIONS, CONTRACTOR TO SELECT BREAKERS AND CIRCUIT NUMBERS BASED ON FIELD CONDITIONS AT TIME OF INSTALLATION.

⟨X⟩ ELECTRICAL KEY NOTES

1. EMERGENCY POWER TO RACK.



N

1 ELECTRICAL - ENLARGED POWER PLAN RM 204C

1/4"=1'-0"

RATED WALL LEGEND

CONTRACTOR IS REQUIRED TO MAINTAIN ALL RATED PARTITIONS.

- 1 HR FIRE BARRIER
- 1 HR FIRE BARRIER (EXISTING)
- 2 HR FIRE BARRIER
- 2 HR FIRE BARRIER (EXISTING)
- SMOKE BARRIER
- SMOKE BARRIER (EXISTING)

N

KEY PLAN

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS

3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www. bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035201
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - BLDG-40 - ENLARGED POWER PLAN - SECOND FLOOR

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024 | Checked: WG | Drawn: BX

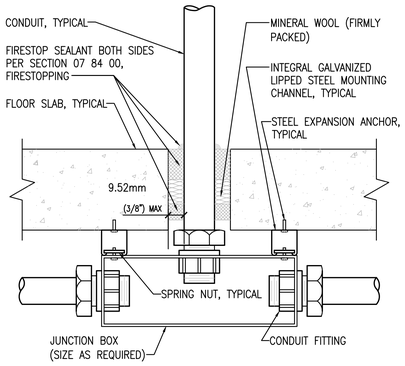
Project Number: 437-21-210

Building Number: 40

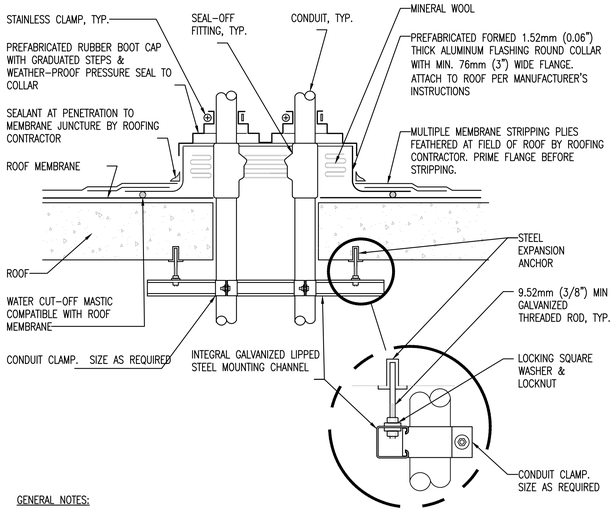
Drawing Number: EP-B40-102

VA FORM 08 - 6231

K:\CCG_PROJECTS\2022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- DataDocs\402- Drawings\WORKING\CAD\Electrical\EP-40-102.dwg
12/11/2023 11:44:26 AM



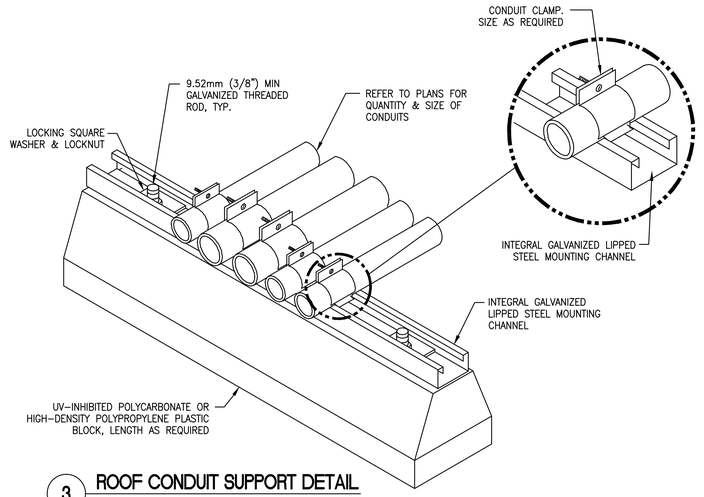
1 FLOOR SLAB PENETRATION DETAIL
NTS



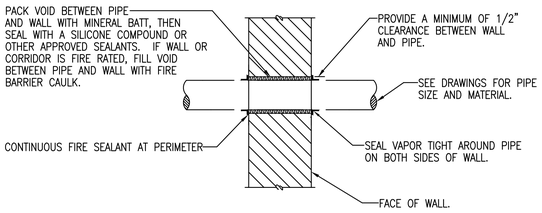
GENERAL NOTES:

1. MAINTAIN A MINIMUM CLEARANCE OF 305mm (12") ON ALL SIDES OF ROOF PENETRATION FROM WALLS, CURBS, AND OTHER PROJECTIONS TO FACILITATE PROPER FLASHING.
2. FLANGES OF ADJACENT FLASHINGS SHALL NOT BE CUT OR OVERLAPPED.
3. VERIFY ROOF & STRUCTURAL SYSTEM WITH ARCHITECT.
4. COORDINATE FLASHING INSTALLATION WITH ROOFING CONTRACTOR TO ENSURE PROPER METHODS & MATERIALS ARE USED TO MAINTAIN ROOF WARRANTY.

2 CONDUIT ROOF PENETRATION DETAIL
NTS



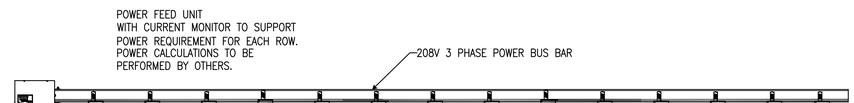
3 ROOF CONDUIT SUPPORT DETAIL
NTS



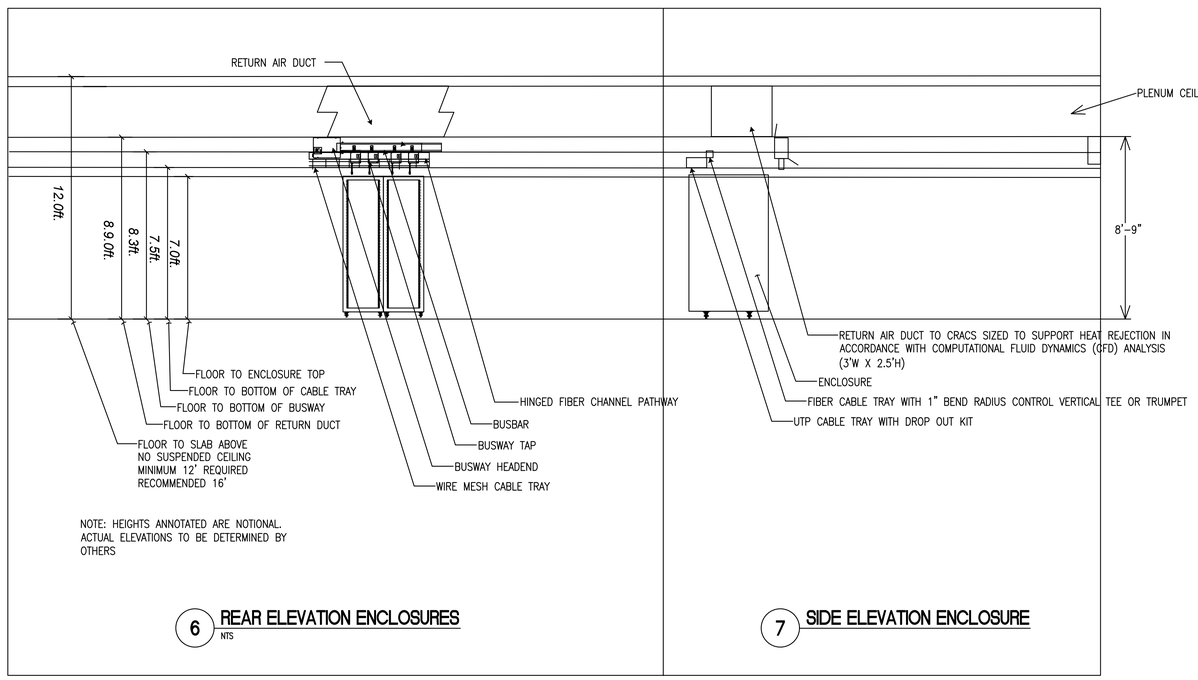
NOTES:

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.

4 PIPE PENETRATION OF WALL DETAIL
NTS



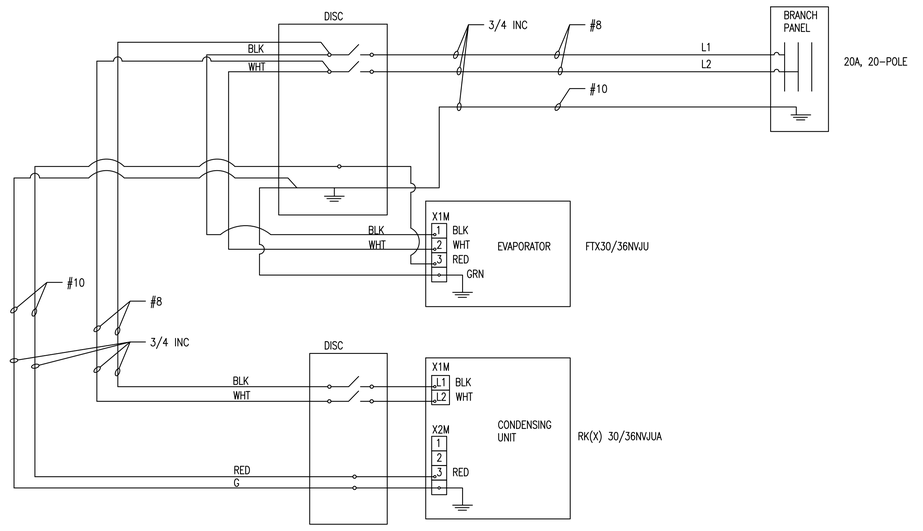
5 TYPICAL POWER BUSWAY COMPONENTS
NTS



NOTE: HEIGHTS ANNOTATED ARE NOTIONAL. ACTUAL ELEVATIONS TO BE DETERMINED BY OTHERS

6 REAR ELEVATION ENCLOSURES
NTS

7 SIDE ELEVATION ENCLOSURE



8 EVAPORATOR / CONDENSING UNIT WIRING DIAGRAM
NTS

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www. bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035281
1/16/24
STATE OF ILLINOIS

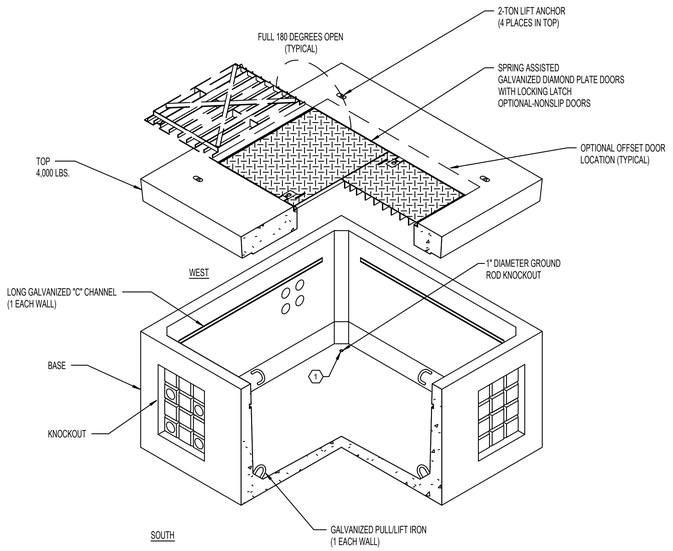
Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

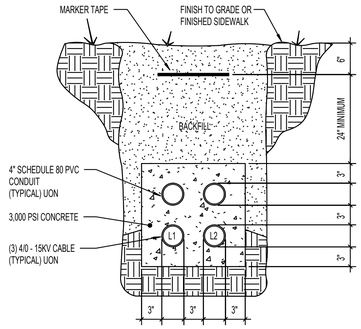
Drawing Title: ELECTRICAL - DETAILS	Phase: ISSUE FOR BID	Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2	Project Number: 437-21-210
Approved: Project Director	BUILDING FULLY SPRINKLERED	Location: FARGO VA HEALTH CARE SYSTEM	Building Number: -
		Issue Date: 01/16/2024 / Checked: WG / Drawn: BX	Drawing Number: E501

K:\CCG_PROJECTS\200\2322-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- DesDocs\402- Drawings\WORKING\CAD\Electrical\E501.dwg
11/16/2024 11:35:40 AM

VA FORM 08 - 6231

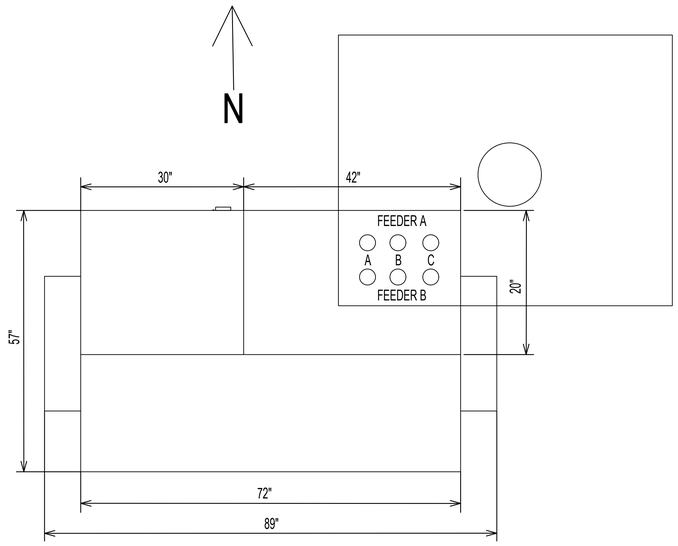


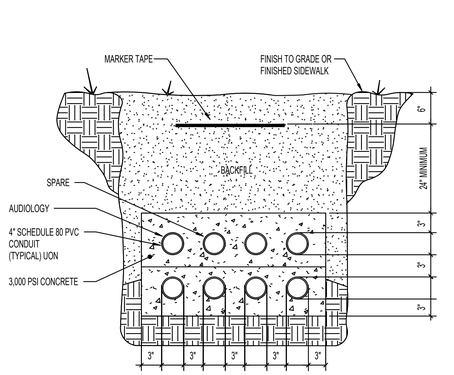
1 VAULT
NTS



GENERAL NOTES:
1. USE THIS DETAIL FOR DUCTBANKS NOT LOCATED UNDER PAVED AREAS OF PARKING LOTS.
2. MINIMUM COVER TO TOP OF ENVELOPE SHALL BE 24" OR AS OTHERWISE SPECIFIED IN SECTION 26 05 41.
3. PROVIDE PULLSTRINGS IN ALL UNDERGROUND CONDUIT FOR FUTURE CABLE PULLS.

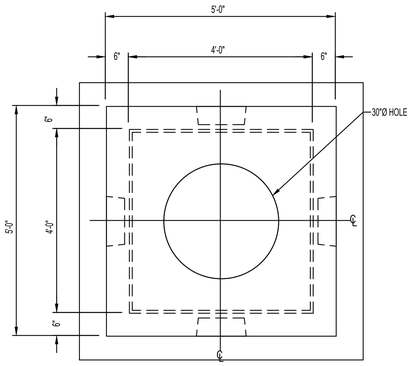
2 CONCRETE ENCASED 4.16 KV DUCTBANK
NTS



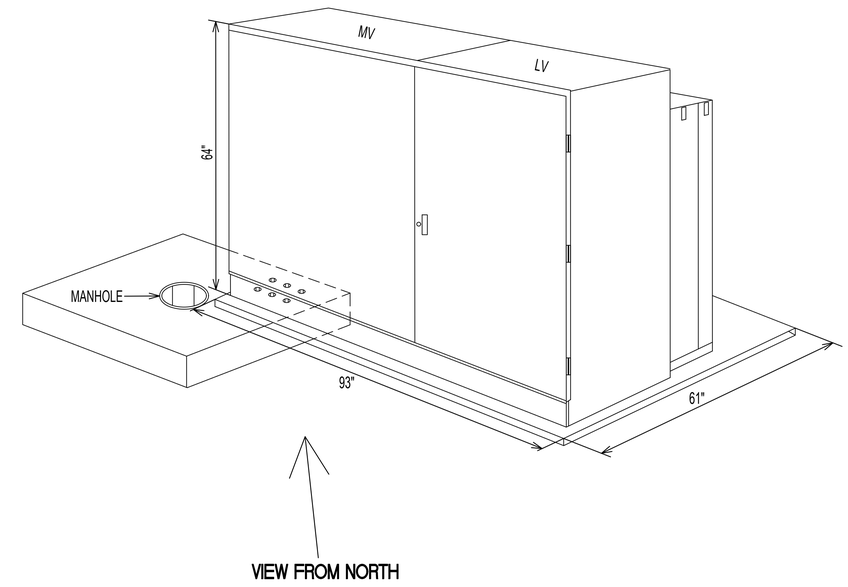


GENERAL NOTES:
1. USE THIS DETAIL FOR DUCTBANKS NOT LOCATED UNDER PAVED AREAS OF PARKING LOTS.
2. MINIMUM COVER TO TOP OF ENVELOPE SHALL BE 24" OR AS OTHERWISE SPECIFIED IN SECTION 26 05 41.
3. PROVIDE PULLSTRINGS IN ALL UNDERGROUND CONDUIT FOR FUTURE CABLE PULLS.

3 CONCRETE ENCASED 208V DUCTBANK
NTS



4 480V PULL BOX
NTS



VIEW FROM NORTH

5 TRANSFORMER AND PAD OVER ELECTRIC VAULT DETAILS
NTS

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

Bancroft ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035261
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - DETAILS

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024 | Checked: WG | Drawn: BX

Project Number: 437-21-210

Building Number: -

Drawing Number: E502

VA FORM 08 - 6231

FARGO MCR ELECTRICAL LOAD SCENARIOS 10% Schematic Design

	NORMAL OPERATION ON UTILITY				ON EMERGENCY, UTILITY FAILED NON UPS LOADS SEE 10 SEC. POWER LOSS				UPS A FAILED OR IN MAINTENANCE NO DISRUPTION TO POWER				UPS B FAILED OR IN MAINTENANCE NO DISRUPTION TO POWER			
	MONOLITHIC UPS A	UPS B	PANEL PP-EM	PANEL PP 2-EM	MONOLITHIC UPS A	UPS B	PANEL PP-EM	PANEL PP 2-EM	MONOLITHIC UPS A	UPS B	PANEL PP-EM	PANEL PP 2-EM	MONOLITHIC UPS A	UPS B	PANEL PP-EM	PANEL PP 2-EM
MCR CABINETS ROWS A & B	40,000	40,000			40,000	40,000				80,000			80,000			
MCR SERV. ENT A	2,500		2,500		2,500		2,500				5,000		2,500		2,500	
BASEMENT TR'S	16,250		16,250		16,250		16,250				32,500		16,250		16,250	
1ST FLOOR TR'S	22,500		22,500		22,500		22,500				45,000		22,500		22,500	
2ND FLOOR TR'S	21,250		21,250		21,250		21,250				42,500		21,250		21,250	
3RD FLOOR TR'S	11,250		11,250		11,250		11,250				22,500		11,250		11,250	
4TH FLOOR TR'S	7,500		7,500		7,500		7,500				15,000		7,500		7,500	
PENTHOUSE TR'S	7,500		7,500		7,500		7,500				15,000		7,500		7,500	
BLDG 40 TR'S	8,750		8,750		8,750		8,750				17,500		8,750		8,750	
BLDG 40 SERV. ENT B	2,500		2,500		2,500		2,500				5,000		2,500		2,500	
EQUIPMENT & LIGHTS				174,320				174,320				174,320				174,320
	140,000	40,000	100,000	174,320	140,000	40,000	100,000	174,320	0	80,000	200,000	174,320	180,000	0	100,000	174,320
TOTAL POWER TO MCR				454,320 VA				454,320 VA				454,320 VA				454,320 VA

NOTE: ALL POWER IS 208/120V

12/15/2023 3:44:31 PM

K:\CDG_PROJECTS\2022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TOJ)\400- DwtDocs\400- Drawings\WORKING\CAD\Electrical\EP500.dwg

VA FORM 08 - 6231

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www. bancroft-ae.com
Bancroft Project No: 22-113

STAMP

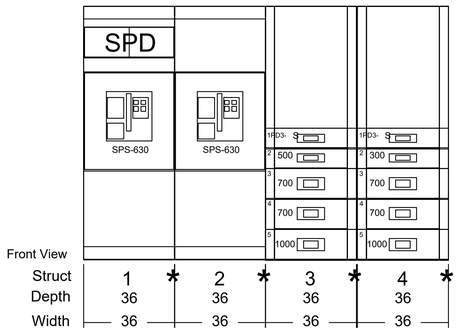
LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035261
STATE OF ILLINOIS
1/16/24

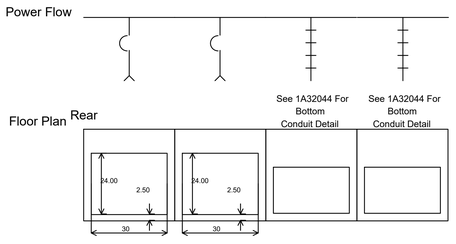
Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

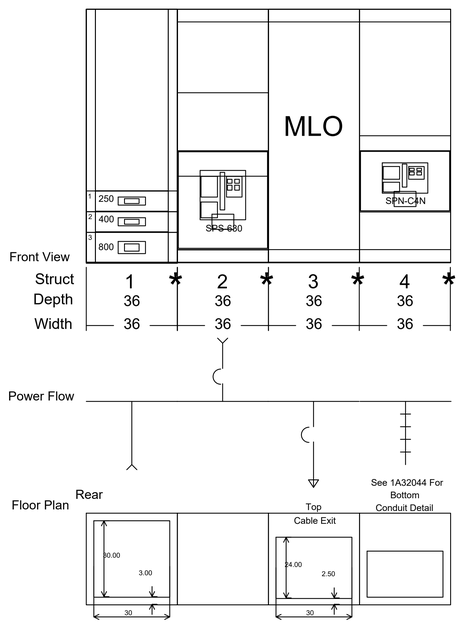
ISSUE FOR BID - 01/16/2024

Drawing Title: ELECTRICAL - UPS EM POWER FAILOVER SCENARIOS	Phase: ISSUE FOR BID	Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2	Project Number: 437-21-210
Approved: Project Director	BUILDING FULLY SPRINKLERED	Location: FARGO VA HEALTH CARE SYSTEM	Building Number: -
		Issue Date: 01/16/2024 / Checked: WG / Drawn: BX	Drawing Number: EP500





1SWBD EQ MCR



1SWBD EM GEN

Switchboard EQ MCR General Information

Pow-R-Line Xpert -Specifications
Quantity: 1
Alignment: Front Access/ Front and Rear Align
Service: 480Y/277V 3-Phase 4-Wire — **Minimum Interrupt Rating: 65 kA**

Bus Specifications
Bus Amps: 3000 — **Bus Bracing Rating: 65kA**
Neutral Amps: 3000
Bus Material: Copper — **Heat Test**
Ground Bus Material: Copper Ground Bus Bolted To Frame, (1) #6-350 kcmil Ground Lug

Incoming Information
Incoming Qty & Size: Terminals, Mechanical, (8) #4-500 kcmil Bottom and Top

Structure Specifications
Non Service Entrance
Enclosure Type: Type 1

Special Notes

Qty	Description	Catalog Number
1	Automatic Transfer Controller; ATC-900 -	Catalog Number CN63

Enclosure properties

Struct #	Description/Modifications
1	Bottom incoming main device (Incoming Main Device/MLO Section)
2	Top incoming main device (Incoming Main Device/MLO Section)
3	50x chassis mounted feeders (Feeder Structure)
4	50x chassis mounted feeders (Feeder Structure)

Switchboard EQ MCR BLDG-1 EATON OR VA APPROVED EQUAL

Str#	Unit	Description/Modifications	Nameplate
1		BOTTOM FEED FROM TRANSFORMER - Main Breaker -Ind Mtd-3000A 3P Power Defense SB Brkr SPS-630 [Fixed-Electric], Trip(Ir) 3000A., PXR25 LSIG w/ARMS and Modbus RTU, 100 % rated ARMS Operation -Local using breaker interface Terminals, Mechanical, (8) #4-500 kcmil, Bottom Shunt Trip: 100-127Vac/Vdc Auxiliary Switch: 4 Form C Control switch w/ indicating lights for electrically operated breaker Mech OC Trip Indicator (1A/1B Contact) Neutral Terminal, (8) #4-500 kcmil PXM3000 Meter, 3000 Amp CTs, Comm. Exp Card, with Display SPD Series 250kA SPD, Standard w/ Surge Counter, w/ Fusible Disconnect	
2		TOP FEED FROM GENERATOR SWBD - Main Breaker -Ind Mtd-3000A 3P Power Defense SB Brkr SPS-630 [Fixed-Electric], Trip(Ir) 3000A., PXR25 LSIG w/ARMS and Modbus RTU, 100 % rated ARMS Operation -Local using breaker interface Terminals, Mechanical, (8) #4-500 kcmil, Bottom Shunt Trip: 100-127Vac/Vdc Auxiliary Switch: 4 Form C Control switch w/ indicating lights for electrically operated breaker Mech OC Trip Indicator (1A/1B Contact) Neutral Terminal, (8) #4-500 kcmil	
3	1	Feeder Breaker -Chassis Mtd-3P Frame 3 Space	
	2	Feeder Breaker -Chassis Mtd-500A, 3P PDG33G Breaker [600A Frame], Trip(Ir) 500A., PXR20 LSI, None , Trip Unit Sensor Rating(In): 600A Terminals, Mechanical, (2) #2-500 kcmil, Top Neutral Terminal, (2) #4-500 kcmil	
	3	Feeder Breaker -Chassis Mtd-700A, 3P PDG43G Breaker [800A Frame], Trip(Ir) 700A., PXR20 LSI, None , Trip Unit Sensor Rating(In): 800A Terminals, Mechanical, (2) 500-750 kcmil, Top Neutral Terminal, (2) 3/0-750 kcmil	
	4	Feeder Breaker -Chassis Mtd-700A, 3P PDG43G Breaker [800A Frame], Trip(Ir) 700A., PXR20 LSI, None , Trip Unit Sensor Rating(In): 800A Terminals, Mechanical, (2) 500-750 kcmil, Top Neutral Terminal, (2) 3/0-750 kcmil	
	5	Feeder Breaker -Chassis Mtd-1000A, 3P PDG53M Breaker, [1200A Frame], Trip(Ir) 1000A., PXR20 LSI w/ ARMS, None , Trip Unit Sensor Rating(In): 1200A Terminals, Mechanical, (4) 4/0-500 kcmil, Top Neutral Terminal, (4) #4-500 kcmil	
4	1	Feeder Breaker -Chassis Mtd-3P Frame 3 Space	
	2	Feeder Breaker -Chassis Mtd-300A, 3P PDG33G Breaker [400A Frame], Trip(Ir) 300A., PXR20 LSI, None , Trip Unit Sensor Rating(In): 400A Terminals, Mechanical, (1) 2/0-500 kcmil, Top Neutral Terminal, (1) #4-500 kcmil	
	3	Feeder Breaker -Chassis Mtd-700A, 3P PDG43G Breaker [800A Frame], Trip(Ir) 700A., PXR20 LSI, None , Trip Unit Sensor Rating(In): 800A Terminals, Mechanical, (2) 500-750 kcmil, Top Neutral Terminal, (2) 3/0-750 kcmil	
	4	Feeder Breaker -Chassis Mtd-700A, 3P PDG43G Breaker [800A Frame], Trip(Ir) 700A., PXR20 LSI, None , Trip Unit Sensor Rating(In): 800A Terminals, Mechanical, (2) 500-750 kcmil, Top Neutral Terminal, (2) 3/0-750 kcmil	
	5	SPACE	

ELECTRICAL GENERAL NOTES

A. WHEN ORDERING SWITCHBOARDS PROVIDE SINGLE LINE DRAWING, WIRING DRAWING AND PLAN DRAWING TO MANUFACTURER. MANUFACTURER NEEDA TO KNOW HOW THE SWITCHBOARD STRUCTURES ARE SPLIT AND HOW THE CABLING WILL ENTER THE SWITCHBOARD STRUCTURES.

B. WHEN ORDERING UPS'S ALSO PROVIDE DRAWING E708 TO MANUFACTURER TO IDENTIFY PROPER BREAKERS IN THE UPS DISTRIBUTION PANELS.

Switchboard EM GEN General Information

Pow-R-Line Xpert -Specifications
Quantity: 1
Alignment: Front Access/ Front and Rear Align
Service: 480Y/277V 3-Phase 4-Wire — **Minimum Interrupt Rating: 65 kA**

Bus Specifications
Bus Amps: 4000 — **Bus Bracing Rating: 65kA**
Neutral Amps: 4000
Bus Material: Copper — **Heat Test**
Ground Bus Material: Copper Ground Bus Bolted To Frame, (1) #6-350 kcmil Ground Lug

Incoming Information
Incoming Qty & Size: Terminals, Mechanical, Top (11) #4-500 kcmil,

Structure Specifications
Non Service Entrance
Enclosure Type: Type 1

Switchboard EM GEN BLDG-1 EATON OR VA APPROVED EQUAL

Str#	Unit	Description/Modifications	Nameplate
1			
	1	Feeder Breaker ATS-LS BLDG-1 - Chassis Mtd-250A, 3P PDG33M Breaker [400A Frame], Trip(Ir) 250A., Thermal Mag Terminals, Mechanical, (1) 2/0-500 kcmil, Top Neutral Terminal, (1) #4-500 kcmil	
	2	Feeder Breaker ATS-CR BLDG-1 -Chassis Mtd-400A, 3P PDG33M Breaker [400A Frame], Trip(Ir) 400A., Thermal Mag Terminals, Mechanical, (1) 2/0-500 kcmil, Top Neutral Terminal, (1) #4-500 kcmil	
	3	Feeder Breaker ATS-EQ BLDG-1 -Chassis Mtd-800A, 3P PDG53M Breaker, [800A Frame], Trip(Ir) 800A., PXR20 LSI, None , Trip Unit Sensor Rating(In): 800A Terminals, Mechanical, (4) 4/0-500 kcmil, Top Neutral Terminal, (4) #4-500 kcmil	
2		Roll up Breaker - Ind Mtd-4000A 3P Power Defense SB Brkr SPN-C4N [Fixed-Manual], Trip(Ir) 4000A., PXR25 LSI w/ARMS and Modbus RTU, 100 % rated ARMS Operation -Local using breaker interface Terminals, Mechanical, (11) #4-500 kcmil, Top Auxiliary Switch: 4 Form C	
3		Incoming Lugs from Generator	
4		Feeder Breaker SWBD EQ MCR BLDG-1 - Ind Mtd-3000A 3P Power Defense SB Brkr SPS-630 [Fixed-Manual], Trip(Ir) 3000A., PXR25 LSI w/ARMS and Modbus RTU, 100 % rated ARMS Operation -Local using breaker interface Terminals, Mechanical, (8) #4-500 kcmil, Top Auxiliary Switch: 4 Form C Neutral Terminal, (8) #4-500 kcmil	

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035261
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - EQ MCR AND EM GEN SWITCHBOARD SCHEDULES

Phase: ISSUE FOR BID

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Project Number: 437-21-210

Building Number: -

Approved: Project Director

BUILDING FULLY SPRINKLERED

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024 | Checked: WG | Drawn: BX

Drawing Number: E601

EATON UPS B SYSTEM SCHEDULE OR VA APPROVED EQUAL

EQUIPMENT TAG	QUANTITY	KW, A	VOLTAGE	EFFICIENCY	UPS BATTERY UPTIME	CAT. NO.	KAISC	BASIS OF DESIGN	NOTES
UPS MODULE B, GC341027X1K1	1	80 KW	208V, 4-W IN 208V, 4-W OUT	99% w ESS	N/A	# 9GK040A025A00R0 93PM UPS 208V, 4 wire in, 208 or 220V 3 or 4 wire out	65kaic	EATON	WITH ENGRAVED OPERATING INSTRUCTIONS
BATTERY CABINET B	1	50 KW HR	452 A DC	N/A	14 MIN.	# 9PZTJBE39020000 93PM IBC-LW Battery Cabinet, Qty 2/2 Cabinets/Strings	N/A	EATON	VRL BATTERY, 14 MIN. INITIAL, AND 10 MIN AT END OF BATTERY LIFE AT 80KW. NOTE THAT REMAINING BATTERIES WILL BE PURCHASED WHEN UPS #2 IS ENERGIZED. NOTE THAT YEAR 2 BATTERIES SHOULD BE ON BATTERY RACK TO FIT IN 2 HR FIRE RATED ROOM.
3 C/B MAINTENANCE BYPASS CABINET B	1	1600A	208V	N/A	N/A	9PZRDB100010000 93PM IAC-B 200kW, 3 Breaker 65kAIC, Key Interlock, Top Air Exhaust	65kaic	EATON	208Y / 120V, 3 PH, 4 W. 2-KEY INTERLOCK BETWEEN MIS/MBP BREAKERS WITH SOLENOID KEY RELEASE UNIT & INDICATOR LAMP, MAKE BEFORE BREAK.
UPS CONTROL BOARD	1	N/A	N/A	N/A	N/A	93PM 208V PREDICTPULSE	N/A	EATON	
UPS MODULE A	1	N/A	N/A	N/A	N/A	N/A N/A	N/A		WITH ENGRAVED OPERATING INSTRUCTIONS

ELECTRICAL EQUIPMENT SCHEDULE OR VA APPROVED EQUAL

EQUIPMENT TAG	QUANTITY	SINGLE LINE DWG	PANEL SCHEDULE	MODEL / TYPE	ELECTRIC CLOSET	VOLTS	AMPS		NEUTRAL	POLES	SHORT CIRCUIT RATING	BASIS OF DESIGN	NOTES
							BUS	MAIN			KAISC		
PNL BUSWAY UPS A (SEE NOTE)	1	E707	E600 SERIES	Pow-R-Line 4B	MCR	208/120V	250	250	200%	18	22	EATON	PURCHASE MAIN BREAKER WITH 120V SHUNT TRIP FROM EPO BUTTON
PNL BUSWAY UPS B (SEE NOTE)	1	E707	E600 SERIES	Pow-R-Line 4B	MCR	208/120V	250	250	200%	18	22	EATON	PURCHASE MAIN BREAKER WITH 120V SHUNT TRIP FROM EPO BUTTON
PP-1-EM	1	E707	E600 SERIES	Pow-R-Line 4B	MCR	208/120V	1,000	1000	200%	60	22	EATON	WITH SURGE PROTECTION
PP-2-EM MCR	1	E707	E600 SERIES	Pow-R-Line 4B	EM GEN ROOM	208/120V	750	750	100%	60	22	EATON	
PP-3-EM MCR	1	E707	E600 SERIES	Pow-R-Line 4B	MCR	208/120V	500	500	100%	42	22	EATON	
PP-EL-MCR	1	E707	E600 SERIES	Pow-R-Line 1a	MCR	208/120V	100	100	100%	42	22	EATON	LIGHTING AND RECEPTACLES
BASEMENT EM	1	E707	E600 SERIES	Pow-R-Line 1a		208/120V	150	150	200%	42	22	EATON	BSMNT TR'S & (2) DEMARKS
EBEM461NA	1	E707	E600 SERIES	Pow-R-Line 1a	1B-121	208/120V	150	150	200%	42	22	EATON	with EZ TRIM DOOR IN DOOR CONSTRUCTION
EBEM011CB	1	E707	E600 SERIES	Pow-R-Line 1a	1D-01	208/120V	150	150	200%	42	22	EATON	with EZ TRIM DOOR IN DOOR CONSTRUCTION
EBEM092NA	1	E707	E600 SERIES	Pow-R-Line 1a	2B-32	208/120V	150	150	200%	42	22	EATON	with EZ TRIM DOOR IN DOOR CONSTRUCTION
EBEM012CB	1	E707	E600 SERIES	Pow-R-Line 1a	2C-91	208/120V	150	150	200%	42	22	EATON	with EZ TRIM DOOR IN DOOR CONSTRUCTION
EBEM463CA	1	E707	E600 SERIES	Pow-R-Line 1a	3C-38	208/120V	150	150	200%	42	22	EATON	with EZ TRIM DOOR IN DOOR CONSTRUCTION
EBEM014CA	1	E707	E600 SERIES	Pow-R-Line 1a	4D-06	208/120V	250	250	200%	60	22	EATON	with EZ TRIM DOOR IN DOOR CONSTRUCTION
EBEM095CA	1	E707	E600 SERIES	Pow-R-Line 1a	PENTHOUSE A	208/120V	150	150	200%	42	22	EATON	with EZ TRIM DOOR IN DOOR CONSTRUCTION
EBEM401WA	1	E707	E600 SERIES	Pow-R-Line 1a	BLDG 40, RM 102B	208/120V	150	150	200%	42	22	EATON	with EZ TRIM DOOR IN DOOR CONSTRUCTION
100A, 3-POLE BRKR	1	E707	N/A	HFD 100AT/100AF	UPS A DIST. PNL	208/120	N/A	100	N/A	3	22	EATON	INSTALL IN UPS A DISTRIBUTION PANEL

EMERGENCY GENERATOR EQUIPMENT SCHEDULE OR VA APPROVED EQUAL

*******FOLLOW VA SPECIFICATION 26-32-13 ENGINE GENERATOR FOR DETAILS ON THIS SCHEDULE******

EQUIPMENT TAG	EQUIPMENT NAME	LOCATION	VOLTAGE	KW	KVA	AMPS	Pf		REMARKS	PROJECT ITEM NO	BASIS OF DESIGN
01-GEN 1	BLDG 1 EM GENERATOR	ROOM EM-97	120/208V	1250	1560	4333	0.8	CAT C32	STANDBY GENERATOR	437-21-210 | 36C26319D0044	CATERPILLAR

MECHANICAL FEATURES / DETAILS	DESIGN	REMARKS	PROJECT ITEM NO	BASIS OF DESIGN
EMMISIONS		EPA Stationary Emergency (Tier 2)		CATERPILLAR
ENGINE POWER (BHP	1,829			
GEN POWER WITH FAN (EKW):	1,250			
COMPRESSION RATIO	14			
RATING LEVEL	STANDBY			
PUMP QUANTITY	1			
FUEL TYPE	DIESEL			
MANIFOLD TYPE	DRY			
GOVERNOR TYPE	ADEM4			
ELECTRONICS TYPE	ADEM4			
IGNITION TYPE	CI			
INJECTOR TYPE	EUI			
REF EXH STACK DIAMETER (IN):	6			
MAX OPERATING ALTITUDE (FT):	5,400			
COMBUSTION:	DIRECT INJECTION			
ENGINE SPEED (RPM):	1,800			
HERTZ:	60			
FAN POWER (HP):	60.3			
ASPIRATION	TA			
AFTERCOOLER TYPE:	ATAAC			
AFTERCOOLER CIRCUIT TYPE:	JW+OC, AC			
INLET MANIFOLD AIR TEMP (F):	120			
JACKET WATER TEMP (F):	210.2			
TURBO CONFIGURATION	PARALLEL			
TURBO QUANTITY	2			
TURBOCHARGER MODEL	GT5733-1.6A/R			
CERTIFICATION YEAR	2017			
PISTON SPD @ RATED ENG SPD (FT/MIN):	1,913.40			

DT-1	DAY TANK	ROOM EM-97	120/208V					STS200	SIMPLEX DRAWING # ACD-00035296, REV E		SIMPLEX
JACKET WATER PUMP	JACKET WATER PUMP	ROOM EM-97	120/208V					CAT	JACKET WATER PUMP FOR C32 ACERT IND/PETROLEUM		CATERPILLAR
JACKET WATER HEATER	JACKET WATER HEATER	ROOM EM-97	120/208V	9		41		CAT	Jacket Water Heater with Pump Diesel Genset: C32	CAT DOC # LEHE1310-02	CATERPILLAR
BTC 20A2	BATTERY CHARGER	ROOM EM-97	110-120V / 24VDC			20		CAT	AC AND DC FUSES, 20A, 60 HZ, 124 DEG F TO 140 DEG F	CAT DOC # LEHE0140-01, 20A	CATERPILLAR
GEN HEATER	GENERATOR SPACE HEATER	ROOM EM-97	120/208V	500W				CAT	FOR 1400 GEN FRAME	CAT DOC # LEHE1268-01	CATERPILLAR

LIGHTING FIXTURE SCHEDULE - BASIS OF DESIGN OR VA APPROVE EQUAL

TYPE	DESCRIPTION	LIGHTING FIXTURE BASIS OF DESIGN MANUFACTURER	CATALOG NUMBER	LAMPS	FIXTURE		MOUNTING	REMARKS
				TYPE	WATTS	VOLTS		
CLX	4' STRIP LIGHT	LITHONIA LIGHTING OR VA APPROVED EQUAL	CLX L48 5000LM SEF FDL MVOLT GZ10 40K 80CRI WH	LED	46	MVOLT	SURFACE CEILING	
WALL	4' LINEAR LED	LITHONIA LIGHTING OR VA APPROVED EQUAL	FML4W 4ft 5000LM ZT MVOLT 5089 LUMENS	LED	53.4	MVOLT	SURFACE WALL	INSTALL FLUSH AGAINST WALL, TOP OF FIXTURE 10' AFF, nLight DIMMING
TROFFER	2 FT x 4 FT	VOLUMETRIC LED TROFFER	2VTL4 30L ADP MVOLT EZ2 LP835N80 NES7	LED	40	MVOLT	RECESSED	TROFFER HAS INTEGRATED OCCUPANCY SENSOR
EXIT	RED EXIT LIGHT	LITHONIA LIGHTING OR VA APPROVED EQUAL	LQM S W 3 R 120/277 M6	LED	0.62	120/277	CEILING	CONTRACTOR TO SELECT DIRECTIONAL ARROWS FOR EACH LOCATION

GENERAL NOTES:

1. FOR EXACT LOCATIONS OF ALL LIGHTING FIXTURES REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS AND ELEVATIONS.
2. LAMP TYPE DESIGNATIONS FOLLOW NEMA DESIGNATION GUIDELINES. VERIFY AND COORDINATE REQUIRED TRIM KITS, MOUNTING.
3. VERIFY AND COORDINATE REQUIRED TRIM KITS, AND MOUNTING.
4. SEE nLight DETAIL FOR POWER AND CONTROL WIRING.
5. LAMPS FOR ALL FIXTURES SHALL HAVE THE SAME COLOR TEMPERATURE PER SPECIFICATIONS.
6. FOLLOW ADDITIONAL GENERAL AND KEY NOTES ON LIGHTING DRAWINGS.

ACCUITY / LITHONIA LIGHT SWITCHES AND SENSORS BASIS OF DESIGN OR VA APPROVED EQUAL

ITEM	DESCRIPTION	FUNCTION	CATALOG NUMBER	NOTES
N/A	SWITCH - S	ON\OFF, WALL POD	nPODMA DX	
N/A	OCCUPANCY SENSOR	CEILING OCCUPANCY SENSOR, HIGH MOUNT	nCM PDT 9 RJB	

EATON COOPER OR VA APPROVED EQUAL

THREE-PHASE PAD-MOUNTED COMPARTMENTAL TYPE TRANSFORMER

Table 1	Product Scope
Type	Three Phase, Degree Celsius Rise, 60 Degree Celsius
Fluid Type	Mineral oil
Size	750 KVA
Primary Voltage	4160 V
Secondary Voltage	208Y/120V
Speciality Design	UL Listed & Labeled and Classified Factory Mutual (FM) Approved
Impedance Voltage	5.75 Ω
Unit Rating (Temperature Rise Winding)	65 Degree Celsius
Dead Front	

STARLINE UPS BUSWAY OR VA APPROVED EQUAL

Item No.	Qty	Product	Description
	56	LV Busway	TOB with (2) L21-20R Receptacles 22kAIC rated breakers Include strain relief

Designation TOB with (2) L21-20R Receptacles

Item No.	Qty	Product	Description
	4	LV Busway	30' 250A 208/120V Busway Run 150% Neutral and housing ground Includes end feed, starter rail, end cap, couplers and all hangers needed to install busway

Designation 30' 250A Busway Run

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www. bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-039201
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

ISSUE FOR BID - 01/16/2024

Drawing Title: ELECTRICAL - EQUIPMENT, LIGHTING AND UPS SYSTEM SCHEDULES	Phase: ISSUE FOR BID	Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2	Project Number: 437-21-210
			Building Number: -
Approved: Project Director	BUILDING FULLY SPRINKLERED	Location: FARGO VA HEALTH CARE SYSTEM	Drawing Number: E602
		Issue Date: 01/16/2024 / Checked: WG / Drawn: BX	

K:\CCG_PROJECTS\2022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- DwgDocs\402- Drawings\WORKING\CAD\Electrical\E602.dwg
1/16/2024 11:37:10 AM

VA FORM 08 - 6231

PANEL NAME	LOCATION	MOUNTING	SUPPLIED FROM	VOLTAGE	BUS	MAIN
BASEMENTEM		FLOOR	EP-1-EM IN MCR	120/208V. 3PH, 4W		

CKT	LOAD DESCRIPTION	VA LOAD				CB		BUS			CB			VA LOAD			LOAD DESCRIPTION	CKT
NO		PH A	PH B	PH C	CODE	P	TR	A	B	C	TR	P	CODE	PH A	PH B	PH C		NO
1		1200			E			X					E	1200				2
3	BD-02 RACK1		1200		E	3			X		30	3	E		1200		BD-02 RACK2	4
5				1200	E					X			E			1200		6
7		1200			E			X					E	1200				8
9	BB-92 RACK1		1200		E	3			X		30	3	E		1200		BB-92 RACK2	10
11				1200	E					X			E			1200		12
13		1200			E			X					E	1200				14
15	BB-92 RACK3		1200		E	3	30		X		30	3	E		1200		BD-84 RACK1	16
17				1200	E					X			E			1200		18
19		1200			E			X					E	1200				20
21	BD-84 RACK2		1200		E	3	30		X		30	3	E		1200		BA-30 RACK1	22
23				1200	E					X			E			1200		24
25		1200			E			X					E	1200				26
27	BA-30 RACK2		1200		E	3	30		X		30	3	E		1200		BA-30 RACK3	28
29				1200	E					X			E			1200		30
31		1200			E			X					E	1200				32
33	BC-02 RACK1		1200		E	3	30		X		30	3	E		1200		BC-02 RACK2	34
35				1200	E					X			E			1200		36
37		1200			E			X			30	2	H	1768			TRAC-BA30A	38
39	BC-02 RACK3		1200		E	3	30		X				H		1768			40
41				1200	E					X	20	1					SPARE	42
43	TRAC-BA30B	1768			H	2	30	X										44
45			1768		H				X		30	3					SPARE	46
47	SPARE					1	20			X								48
49								X										50
51	SPACE								X								SPACE	52
53										X								54
55								X										56
57	SPACE								X								SPACE	58
59										X								60

LOAD DESCRIPTION	CONNECTED (KVA)	D.F.	DEMAND (KVA)	SUBFED LOADS (KVA)		CONNECTED	VA	
LIGHTING	0.1	1.00	0.1	LIGHTING	0.1	PH A	19136	
RECEPT (FIRST 10 KW)	0.2	1.00	0.2	RECEPT	0.2	PH B	19136	
RECEPT (REMAINDER)	0.0	0.50	0.0	MOTORS	0.3	PH C	15600	
MOTORS	0.3	1.00	0.3	EQUIP	0.4			
LARGEST MOTOR	0.0	1.25	0.0	HEATING	0.5	TOTAL	KVA	AMPS
EQUIPMENT	47.2	1.00	47.2			CONNECTED	53.9	149.5
HEATING	7.6	1.00	7.572			DEMAND	55.4	153.7
TOTAL	55.4		55.4			DESIGN		

UND BUS
LATED GROUND BUS

L BUS
L BUS

INTEGRAL TVSS
ISC = 14KAIC

L	LIGHTING	M	MOTORS	E	EQUIPMENT	S	SUBFED
R	RECEPTACLE	LM	LARGEST MOTOR	H	HEATING	T	TRANSFORMER

PANEL NAME	LOCATION	MOUNTING	SUPPLIED FROM	VOLTAGE	BUS	MAIN
EBEM092NA	2B 32	SURFACE	MCR EP-1-EM	120/208V. 3PH, 4W	150A	150A. 3P. M.C.B.

CKT	LOAD DESCRIPTION	VA LOAD				CB		BUS			CB			VA LOAD			LOAD DESCRIPTION	CKT
NO		PH A	PH B	PH C	CODE	P	TR	A	B	C	TR	P	CODE	PH A	PH B	PH C		NO
1		1200			E			X					E	1200				2
3	2A-24 RACK 1		1200		E	3	30		X		30	3	E		1200		2A-24 RACK 2	4
5				1200	E					X			E			1200		6
7		1200			E			X					E	1200				8
9	2A-24 RACK 3		1200		E	3	30		X		30	3	E		1200		2A-24 RACK 4	10
11				1200	E					X			E			1200		12
13		1200			E			X					E	1200				14
15	2A-24 RACK 5		1200		E	3	30		X		30	3	E		1200		2A-24 RACK 6	16
17				1200	E					X			E			1200		18
19		1200			E			X					E	1200				20
21	2C-33 RACK 1		1200		E	3	30		X		30	3	E		1200		2C-33 RACK 2	22
23				1200	E					X			E			1200		24
25		1200			E			X			30	2	H	2007			TRAC-2A24A	26
27	2C-33 RACK 3		1200		E	3	30		X				H		2007			28
29				1200	E					X	30	2	H			2007	TRAC-2A24B	30
31	SPACE							X					H	2007				32
33	SPACE								X								SPACE	34
35	SPACE									X							SPACE	36
37	SPACE							X									SPACE	38
39	SPACE								X								SPACE	40
41	SPACE									X							SPACE	42

LOAD DESCRIPTION	CONNECTED (KVA)	D.F.	DEMAND (KVA)	SUBFED LOADS (KVA)		CONNECTED	VA	
LIGHTING	0.0	1.00	0.0	LIGHTING	0.0	PH A	14814	
RECEPT (FIRST 10 KW)	0.0	1.00	0.0	RECEPT	0.0	PH B	12807	
RECEPT (REMAINDER)	0.0	0.50	0.0	MOTORS	0.0	PH C	12807	
MOTORS	0.0	1.00	0.0	EQUIP	0.0			
LARGEST MOTOR	0.0	1.25	0.0	HEATING	0.0	TOTAL	KVA	AMPS
EQUIPMENT	32.4	1.00	32.4			CONNECTED	40.4	112.2
HEATING	8.0	1.00	8.028			DEMAND	40.4	112.2
TOTAL	40.4		40.4			DESIGN		

GROUND BUS
ISOLATED GROUND BUS

100% NEUTRAL BUS
200% NEUTRAL BUS

INTEGRAL TVSS
ISC = 14KAIC

L	LIGHTING	M	MOTORS	E	EQUIPMENT	S	SUBFED
R	RECEPTACLE	LM	LARGEST MOTOR	H	HEATING	T	TRANSFORMER

PANEL NAME	LOCATION	MOUNTING	SUPPLIED FROM	VOLTAGE	BUS	MAIN
EBEM401WA	ROOM 40 102B	SURFACE	PP-1-EM IN MCR	120/208V. 3PH, 4W	200A	200A. 3P. M.C.B.

CKT	LOAD DESCRIPTION	VA LOAD				CB		BUS			CB			VA LOAD			LOAD DESCRIPTION	CKT
NO		PH A	PH B	PH C	CODE	P	TR	A	B	C	TR	P	CODE	PH A	PH B	PH C		NO
1		1200			E			X					E	1200				2
3	40 102B RACK1		1200		E	3	30		X		30	3	E		1200		40 102B RACK2	4
5				1200	E					X			E			1200		6
7		1200			E			X					E	1200				8
9	40 102B RACK3		1200		E	3	30		X		30	3	E		1200		40 102B RACK4	10
11				1200	E					X			E			1200		12
13		1200			E			X					E	1200				14
15	40 204C RACK1		1200		E	3	30		X		30	3	E		1200		40 204C RACK2	16
17				1200	E					X			E			1200		18
19	TRAC-40-102BA	1768			H	2	30	X			30	2	H	1768			TRAC-40-102BB	20
21			1768		H				X				H		1768			22
23	TRAC-40-204CA			2028	H	2	30			X							SPACE	24
25		2028			H			X									SPACE	26
27	SPACE								X								SPACE	28
29	SPACE									X							SPACE	30
31	SPACE							X									SPACE	32
33	SPACE								X								SPACE	34
35	SPACE									X							SPACE	36
37	SPACE							X									SPACE	38
39	SPACE								X								SPACE	40
41	SPACE									X							SPACE	42

LOAD DESCRIPTION	CONNECTED (KVA)	D.F.	DEMAND (KVA)	SUBFED LOADS (KVA)		CONNECTED	VA	
LIGHTING	0.0	1.00	0.0	LIGHTING	0.0	PH A	12764	
RECEPT (FIRST 10 KW)	0.0	1.00	0.0	RECEPT	0.0	PH B	10736	
RECEPT (REMAINDER)	0.0	0.50	0.0	MOTORS	0.0	PH C	9228	
MOTORS	0.0	1.00	0.0	EQUIP	0.0			
LARGEST MOTOR	0.0	1.25	0.0	HEATING	0.0	TOTAL	KVA	AMPS
EQUIPMENT	21.6	1.00	21.6			CONNECTED	32.7	90.8
HEATING	11.1	1.00	11.128			DEMAND	32.7	90.8
TOTAL	32.7		32.7			DESIGN		

GROUND BUS
ISOLATED GROUND BUS

100% NEUTRAL BUS
200% NEUTRAL BUS

INTEGRAL TVSS
ISC = 14KAIC

L	LIGHTING	M	MOTORS	E	EQUIPMENT	S	SUBFED
R	RECEPTACLE	LM	LARGEST MOTOR	H	HEATING	T	TRANSFORMER

PANEL NAME	LOCATION	MOUNTING	SUPPLIED FROM	VOLTAGE	BUS	MAIN
EBEM461NA		SURFACE	MCR PP-10EM	120/208V. 3PH, 4W	150A	150A. 3P. M.C.B.

CKT	LOAD DESCRIPTION	VA LOAD				CB		BUS			CB			VA LOAD			LOAD DESCRIPTION	CKT
NO		PH A	PH B	PH C	CODE	P	TR	A	B	C	TR	P	CODE	PH A	PH B	PH C		NO
1		1200			E			X					E	1200				2
3	1B-121 RACK 1		1200		E	3	30		X		30	3	E		1200		1B-121 RACK 2	4
5				1200	E					X			E			1200		6
7		1200			E			X					E	1200				8
9	1A-54 RACK 1		1200		E	3	30		X		30	3	E		1200		1A-54 RACK 2	10
11				1200	E					X			E			1200		12
13		1200			E			X					E	1200				14
15	1A-54 RACK 3		1200		E	3	30		X		30	3	E		1200		1A-54 RACK 4	16
17				1200	E					X			E			1200		18
19		1200			E			X					E	1200				20
21	1A-54 RACK 5		1200		E	3	30		X		30	3	E		1200		1A-54 RACK 6	22
23				1200	E					X			E			1200		24
25	TRAC-1A54A	2028			H	2	30	X			30	2	H	2028			TRAC-1A54B	26
27			2028		H				X				H		2028			28
29	BLANK									X							BLANK	30
31	BLANK							X									BLANK	32
33	BLANK								X								BLANK	34
35	BLANK									X							BLANK	36
37	BLANK							X									BLANK	38
39	BLANK								X								BLANK	40
41	BLANK									X							BLANK	42

LOAD DESCRIPTION	CONNECTED (KVA)	D.F.	DEMAND (KVA)	SUBFED LOADS (KVA)		CONNECTED	VA	
LIGHTING	0.0	1.00	0.0	LIGHTING	0.0	PH A	13656	
RECEPT (FIRST 10 KW)	0.0	1.00	0.0	RECEPT	0.0	PH B	13656	
RECEPT (REMAINDER)	0.0	0.50	0.0	MOTORS	0.0	PH C	9600	
MOTORS	0.0	1.00	0.0	EQUIP	0.0			
LARGEST MOTOR	0.0	1.25	0.0	HEATING	0.0	TOTAL	KVA	AMPS
EQUIPMENT	28.8	1.00	28.8			CONNECTED	36.9	102.5
HEATING	8.1	1.00	8.112			DEMAND	36.9	102.5
TOTAL	36.9		36.9			DESIGN		

GROUND BUS
ISOLATED GROUND BUS

100% NEUTRAL BUS
200% NEUTRAL BUS

INTEGRAL TVSS
ISC = 14KAIC

L	LIGHTING	M	MOTORS	E	EQUIPMENT	S	SUBFED
R	RECEPTACLE	LM	LARGEST MOTOR	H	HEATING	T	TRANSFORMER

PANEL NAME	LOCATION	MOUNTING	SUPPLIED FROM	VOLTAGE	BUS	MAIN
EBEM012CB	2C 91	SURFACE	PP-1-EM	120/208V. 3PH, 4W	150A	150A. 3P. M.C.B.

CKT	LOAD DESCRIPTIO	VA LOAD				CB		BUS			CB			VA LOAD			LOAD DESCRIPTION	CKT
NO		PH A	PH B	PH C	CODE	P	TR	A	B	C	TR	P	CODE	PH A	PH B	PH C		NO
1		1200			E			X					E	1200				2
3	2C-90 RACK 1		1200		E	3	30		X		30	3	E		1200		2C-90 RACK 2	4
5				1200	E					X			E			1200		6
7		1200			E			X					E	1200				8
9	2C-90 RACK 3		1200		E	3	30		X		30	3	E		1200		2C-90 RACK 4	10
11				1200	E					X			E			1200		12
13		1200			E			X					E	1200				14
15	2D-18 RACK 1		1200		E	3	30		X		30	3	E		1200		2D-18 RACK 2	16
17				1200	E					X			E			1200		18
19		1200			E			X					E	1200				20
21	2D-18 RACK 3		1200		E	3	30		X		30	3	E		1200		2D-18 RACK 4	22
23				1200	E					X			E			1200		24
25								X										26
27	SPARE					3	30		X		30	3					SPARE	28
29										X								30
31	SPACE							X									SPACE	32
33	SPACE								X								SPACE	34
35	SPACE									X							SPACE	36
37	SPACE							X									SPACE	38
39	SPACE								X								SPACE	40
41	SPACE									X							SPACE	42

LOAD DESCRIPTION	CONNECTED (KVA)	D.F.	DEMAND (KVA)	SUBFED LOADS (KVA)		CONNECTED	VA	
LIGHTING	0.0	1.00	0.0	LIGHTING	0.0	PH A	9600	
RECEPT (FIRST 10 KW)	0.0	1.00	0.0	RECEPT	0.0	PH B	9600	
RECEPT (REMAINDER)	0.0	0.50	0.0	MOTORS	0.0	PH C	9600	
MOTORS	0.0	1.00	0.0	EQUIP	0.0			
LARGEST MOTOR	0.0	1.25	0.0	HEATING	0.0	TOTAL	KVA	AMPS
EQUIPMENT	28.8	1.00	28.8			CONNECTED	28.8	79.9
HEATING	0.0	1.00	0			DEMAND	28.8	79.9
TOTAL	28.8		28.8			DESIGN		

GROUND BUS
ISOLATED GROUND BUS

100% NEUTRAL BUS
200% NEUTRAL BUS

INTEGRAL TVSS
ISC = 14KAIC

L	LIGHTING	M	MOTORS	E	EQUIPMENT	S	SUBFED
R	RECEPTACLE	LM	LARGEST MOTOR	H	HEATING	T	TRANSFORMER

PANEL NAME	LOCATION	MOUNTING	SUPPLIED FROM	VOLTAGE	BUS	MAIN
EBEM014CA		SURFACE	EP-1-EM IN MCR	120/208V. 3PH, 4W	250	250

CKT	LOAD DESCRIPTION	VA LOAD				CB		BUS			CB			VA LOAD			LOAD DESCRIPTION	CKT
NO		PH A	PH B	PH C	CODE	P	TR	A	B	C	TR	P	CODE	PH A	PH B	PH C		NO
1		1200			E			X					E	1200				2
3	4B-23 RACK 1		1200		E	3	30		X		30	3	E		1200		4B-23 RACK 2	4
5				1200	E					X			E			1200		6
7		1200			E			X					E	1200				8
9	4B-23 RACK 3		1200		E	3	30		X		30	3	E		1200		4B-23 RACK 4	10
11				1200	E					X			E			1200		12
13		1200			E			X					E	1200				14
15	4E-15A RACK 1		1200		E	3	30		X		30	3	E		1200		4E-15A RACK 2	16
17				1200	E					X			E			1200		18
19	TRAC-4B23A	1768			H	2	30	X					E	1200				20
21			1768		H				X		30	3	E		1200		4B-23 RACK 4	22
23	TRAC-4B23B			1768	H	2	30			X			E			1200		24
25		1768			H			X										26
27	SPACE					1	20		X		30	3					SPARE	28
29	SPACE					1	20			X								30
31	SPACE					1	20	X			20	1					SPACE	32
33	SPACE					1	20		X		20	1					SPACE	34
35	SPACE					1	20			X	20	1					SPACE	36
37	SPACE					1	20	X			20	1					SPACE	38
39	SPACE					1	20		X		20	1					SPACE	40
41	SPACE					1	20			X	20	1					SPACE	42
43	SPACE					1	20	X			20	1					SPACE	44
45	SPACE					1	20		X		20	1					SPACE	46
47	SPACE					1	20			X	20	1					SPACE	48
49	SPACE					1	20	X			20	1					SPACE	50
51	SPACE					1	20		X		20	1					SPACE	52
53	SPACE					1	20			X	20	1					SPACE	54
55	SPACE					1	20	X			20	1					SPACE	56
57	SPACE					1	20		X		20	1					SPACE	58
59	SPACE					1	20			X	20	1					SPACE	60

LOAD DESCRIPTION	CONNECTED (KVA)	D.F.	DEMAND (KVA)	SUBFED LOADS (KVA)		CONNECTED	VA	
LIGHTING	0.1	1.00	0.1	LIGHTING	0.1	PH A	11936	
RECEPT (FIRST 10 KW)	0.2	1.00	0.2	RECEPT	0.2	PH B	10168	
RECEPT (REMAINDER)	0.0	0.50	0.0	MOTORS	0.3	PH C	10168	
MOTORS	0.3	1.00	0.3	EQUIP	0.4			
LARGEST MOTOR	0.0	1.25	0.0	HEATING	0.5	TOTAL	KVA	AMPS
EQUIPMENT	25.6	1.00	25.6			CONNECTED	32.3	89.6
HEATING	7.6	1.00	7.572			DEMAND	33.8	93.7
TOTAL	33.8		33.8			DESIGN		

JND BUS
ATED GROUND BUS

L BUS
L BUS

INTEGRAL TVSS
ISC = 14KAIC

L	LIGHTING	M	MOTORS	E	EQUIPMENT	S	SUBFED
R	RECEPTACLE	LM	LARGEST MOTOR	H	HEATING	T	TRANSFORMER

PANEL NAME	LOCATION	MOUNTING	SUPPLIED FROM	VOLTAGE	BUS	MAIN
EBEM011CB	1D 01	SURFACE	EP-1-EM IN MCR	120/208V. 3PH, 4W	150A	150A. 3P. M.C.B.

CKT	LOAD DESCRIPTION	VA LOAD				CB		BUS			CB			VA LOAD			LOAD DESCRIPTION	CKT
NO		PH A	PH B	PH C	CODE	P	TR	A	B	C	TR	P	CODE	PH A	PH B	PH C		NO
1		1200			E			X					E	1200				2
3	1C-99 RACK 1		1200		E	3	30		X		30	3	E		1200		1C-99 RACK 2	4
5				1200	E					X			E			1200		6
7		1200			E			X					E	1200				8
9	1C-99 RACK 3		1200		E	3	30		X		30	3	E		1200		1C-99 RACK 4	10
11				1200	E					X			E			1200		12
13		1200			E			X					E	1200				14
15	1C-99 RACK 5		1200		E	3	30		X		30	3	E		1200		1D-158 RACK 1	16
17				1200	E					X			E			1200		18
19		1200			E			X					E	1200				20
21	1D-64A RACK 1		1200		E	3	30		X		30	3	E		1200		1D-64A RACK 2	22
23				1200	E					X			E			1200		24
25		1200			E			X					E	1200				26
27	1D-64A RACK 3		1200		E	3	30		X		30	3	E		1200		1D-64A RACK 4	28
29				1200	E					X			E			1200		30
31	BLANK							X									BLANK	32
33	BLANK								X								BLANK	34
35	BLANK									X							BLANK	36
37	BLANK							X									BLANK	38
39	BLANK								X								BLANK	40
41	BLANK									X							BLANK	42

LOAD DESCRIPTION	CONNECTED (KVA)	D.F.	DEMAND (KVA)	SUBFED LOADS (KVA)		CONNECTED	VA	
LIGHTING	0.0	1.00	0.0	LIGHTING	0.0	PH A	12000	
RECEPT (FIRST 10 KW)	0.0	1.00	0.0	RECEPT	0.0	PH B	12000	
RECEPT (REMAINDER)	0.0	0.50	0.0	MOTORS	0.0	PH C	12000	
MOTORS	0.0	1.00	0.0	EQUIP	0.0			
LARGEST MOTOR	0.0	1.25	0.0	HEATING	0.0	TOTAL	KVA	AMPS
EQUIPMENT	36.0	1.00	36			CONNECTED	36.0	99.9
HEATING	0.0	1.00	0			DEMAND	36.0	99.9
TOTAL	36.0		36.0			DESIGN		

GROUND BUS
ISOLATED GROUND BUS

100% NEUTRAL BUS
200% NEUTRAL BUS

INTEGRAL TVSS
ISC = 14KAIC

L	LIGHTING	M	MOTORS	E	EQUIPMENT	S	SUBFED
R	RECEPTACLE	LM	LARGEST MOTOR	H	HEATING	T	TRANSFORMER

PANEL NAME	LOCATION	MOUNTING	SUPPLIED FROM	VOLTAGE	BUS	MAIN
EBEM463CA	3C 38	SURFACE	PP 1-EM IN MCR	120/208V. 3PH, 4W	150A	150A. 3P. M.C.B.

CKT	LOAD DESCRIPTIC	VA LOAD				CB		BUS			CB			VA LOAD			LOAD DESCRIPTION	CKT
NO		PH A	PH B	PH C	CODE	P	TR	A	B	C	TR	P	CODE	PH A	PH B	PH C		NO
1		1200			E			X					E	1200				2
3	3D 10 RACK 1		1200		E	3	30		X		30	3	E		1200		3D 10 RACK 2	4
5				1200	E					X			E			1200		6
7		1200			E			X					E	1200				8
9	3D 10 RACK 3		1200		E	3	30		X		30	3	E		1200		3D 10 RACK 4	10
11				1200	E					X			E			1200		12
13		1200			E			X					E	1200				14
15	3B 23 RACK 5		1200		E	3	30		X		30	3	E		1200		3B 23 RACK 1	16
17				1200	E					X			E			1200		18
19		1200			E			X					E	1200				20
21	3B 23 RACK 2		1200		E	3	30		X		30	3	E		1200		3B 23 RACK 3	22
23				1200	E					X			E			1200		24
25		1200			E			X										26
27	3B 23 RACK 4		1200		E	3	30		X		30	3					SPARE	28
29				1200	E					X								30
31								X									SPACE	32
33	SPARE					3	30		X								SPACE	34
35										X							SPACE	36
37	SPACE							X									SPACE	38
39	SPACE								X								SPACE	40
41	SPACE									X							SPACE	42

LOAD DESCRIPTION	CONNECTED (KVA)	D.F.	DEMAND (KVA)	SUBFED LOADS (KVA)		CONNECTED	VA	
LIGHTING	0.0	1.00	0.0	LIGHTING	0.0	PH A	10800	
RECEPT (FIRST 10 KW)	0.0	1.00	0.0	RECEPT	0.0	PH B	10800	
RECEPT (REMAINDER)	0.0	0.50	0.0	MOTORS	0.0	PH C	10800	
MOTORS	0.0	1.00	0.0	EQUIP	0.0			
LARGEST MOTOR	0.0	1.25	0.0	HEATING	0.0	TOTAL	KVA	AMPS
EQUIPMENT	32.4	1.00	32.4			CONNECTED	32.4	89.9
HEATING	0.0	1.00	0			DEMAND	32.4	89.9
TOTAL	32.4		32.4			DESIGN		

GROUND BUS
ISOLATED GROUND BUS

100% NEUTRAL BUS
200% NEUTRAL BUS

INTEGRAL TVSS
ISC = 14KAIC

L	LIGHTING	M	MOTORS	E	EQUIPMENT	S	SUBFED
R	RECEPTACLE	LM	LARGEST MOTOR	H	HEATING	T	TRANSFORMER

PANEL NAME	LOCATION	MOUNTING	SUPPLIED FROM	VOLTAGE	BUS	MAIN
EBEM095CA	4D 06	SURFACE	EP-1-EM IN MCR	120/208V. 3PH, 4W	250	250

CKT	LOAD DESCRIPTION	VA LOAD				CB		BUS			CB			VA LOAD			LOAD DESCRIPTION	CKT
NO		PH A	PH B	PH C	CODE	P	TR	A	B	C	TR	P	CODE	PH A	PH B	PH C		NO
1		1200			E			X					E	1200				2
3	PENTHOUSE TR 501 RACK 1		1200		E	3	30		X		30	3	E		1200		PENTHOUSE TR 503 RACK 1	4
5				1200	E					X			E			1200		6
7		1200			E			X					E	1200				8
9	PENTHOUSE TR 502 RACK 1		1200		E	3	30		X		30	3	E		1200		PENTHOUSE TR 503 RACK 2	10
11				1200	E					X			E			1200		12
13		1200			E			X					E	1200				14
15	PENTHOUSE TR 503 RACK 3		1200		E	3	30		X		30	3	E		1200		PENTHOUSE TR 503 RACK 4	16
17				1200	E					X			E			1200		18
19					E			X					E					20
21	SPARE				E	3	30		X		30	3	E				SPARE	22
23					E					X			E					24
25	SPACE					1	20	X			20	1					SPACE	26
27	SPACE					1	20		X		20	1					SPACE	28
29	SPACE					1	20			X	20	1					SPACE	30
31	SPACE					1	20	X			20	1					SPACE	32
33	SPACE					1	20		X		20	1					SPACE	34
35	SPACE					1	20			X	20	1					SPACE	36
37	SPACE					1	20	X			20	1					SPACE	38
39	SPACE					1	20		X		20	1					SPACE	40
41	SPACE					1	20			X	20	1					SPACE	42
43	SPACE					1	20	X			20	1					SPACE	44
45	SPACE					1	20		X		20	1					SPACE	46
47	SPACE					1	20			X	20	1					SPACE	48
49	SPACE					1	20	X			20	1					SPACE	50
51	SPACE					1	20		X		20	1					SPACE	52
53	SPACE					1	20			X	20	1					SPACE	54
55	SPACE					1	20	X			20	1					SPACE	56
57	SPACE					1	20		X		20	1					SPACE	58
59	SPACE					1	20			X	20	1					SPACE	60

LOAD DESCRIPTION	CONNECTED (KVA)	D.F.	DEMAND (KVA)	SUBFED LOADS (KVA)		CONNECTED	VA	
LIGHTING	0.1	1.00	0.1	LIGHTING	0.1	PH A	7200	
RECEPT (FIRST 10 KW)	0.2	1.00	0.2	RECEPT	0.2	PH B	7200	
RECEPT (REMAINDER)	0.0	0.50	0.0	MOTORS	0.3	PH C	7200	
MOTORS	0.3	1.00	0.3	EQUIP	0.4			
LARGEST MOTOR	0.0	1.25	0.0	HEATING	0.5	TOTAL	KVA	AMPS
EQUIPMENT	22.0	1.00	22			CONNECTED	21.6	60.0
HEATING	0.5	1.00	0.5			DEMAND	23.1	64.1
TOTAL	23.1		23.1			DESIGN		

OUND BUS
OLATED GROUND BUS

BUS
BUS

INTEGRAL TVSS
ISC : 14KAIC

L	LIGHTING	M	MOTORS	E	EQUIPMENT	S	SUBFED
R	RECEPTACLE	LM	LARGEST MOTOR	H	HEATING	T	TRANSFORMER

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

WALTER J. GROSZKO
062-036261
1/16/24

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title
ELECTRICAL - EMERGENCY PANEL SCHEDULES

Approved: Project Director

Phase
ISSUE FOR BID

BUILDING FULLY SPRINKLERED

Project Title
EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location
FARGO VA HEALTH CARE SYSTEM

Issue Date	Checked	Drawn
01/16/2024	WG	BX

Project Number
437-21-210

Building Number
-

Drawing Number
E603

VA FORM 08 - 6231

11/22/2023 1:33:43 PM

K:\CCG_PROJECTS\2022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- DesDocs\402- Drawings\WORKING\CAD\Electrical\E603.dwg

UPS A DISTRIBUTION WIRING SCHEDULE TO SPLICE NEW UPS WIRING INTO EXISTING UPS WIRING														
FROM								TO						
NEW FEEDER CABLE	ROOM	ITEM	LOAD	BREAKER SIZE TRIP SETTING	NEW CABLE	LENGTH OF NEW CABLE	NEW V DROP	EXISTING FEEDER CABLE	EXISTING CONDUIT / CABLE	MAX AMPS	EXISTING LENGTH	EXISTING V DROP	EXISTING UPS PANEL	NOTES
1.1	BE-97	UPS A DISTRIBUTION (OUTGOING MLO)	78	150	4#4/0&1#4G, 2 1/2 IN C	420	4.2	1	4#1/0&#6G, 2 IN C	150	140	2.5	EBUPS461NA	
2.1	BE-97	UPS A DISTRIBUTION (OUTGOING MLO)	78	150	4#1/0&#6G, 2 IN C	160	3.4	2	4#4/0&#2G, 2 1/2 IN C	230	35	0.35	EBUPS011CB	SPLICE NEW CABLE TO EXISTING CABLE IN SPLICE BOX NEAR LOCATION WHERE CONDUIT CONTINUES TO UPPER FLOORS.
3.1	BE-97	UPS A DISTRIBUTION (OUTGOING MLO)	78	150	4#4/0&1#4G, 2 1/2 IN C	420	4.3	3	4#3/0&1#6G, 2 IN C	200	140	1.6	EBUPS092NA	
4.1	BE-97	UPS A DISTRIBUTION (OUTGOING MLO)	78	150	4#1/0&#6G, 2 IN C	160	2.9	4	4#4/0&1#4G, 2 1/2 IN C	230	60	0.6	EBUPS012CB	
5.1	BE-97	UPS A DISTRIBUTION (OUTGOING MLO)	40	100	4#1&#6G, 1 1/2 IN C	160	1.8	5	4#3/0&1#6G, 2 IN C	200	130	0.8	EBUPS463CA	
6.1	BE-97	UPS A DISTRIBUTION (OUTGOING MLO)	100	150	4#1/0&#6G, 2 IN C	160	4.5	6	4#3/0&1#6G, 2 IN C	200	95	1.4	EBUPS014CA	
7.1	BE-97	UPS A DISTRIBUTION (OUTGOING MLO)	78	150	4#250&#4G, 2 1/2 IN C	310	2.6	7	4#4/0&#4G, 2 1/2 IN C	230	430	4.3	EBUPS401WA	
8.1	BE-97	UPS A DISTRIBUTION (OUTGOING MLO)	40	100	4#1&#6G, 1 1/2 IN C	160	1.8	8	4#250&#4G, 2 1/2 IN C	255	235	1	EBUPS095CA	
9.1	BE-97	UPS A DISTRIBUTION (OUTGOING MLO)	203	400	4#250&#4G, 2 1/2 IN C	150	5.6	N/A	N/A		N/A	N/A	BASEMENT UPS	NEW UPS PANEL IN TR BD-02
⑲	BE-97	UPS A DISTRIBUTION (OUTGOING MLO)	225	225	SEE EP-B1-201	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	CABLE TO 4TH FLOOR MCR

NOTE: MATCH PROPER BREAKER SIZE IN UPS A DISTRIBUTION PANEL TO FEEDER CABLE.

NOTE: NEW UPS FEEDER CABLES WILL SPLICE TO EXISTING UPS CABLES IN SPLICE BOXES NEAR LOCATIONS IN BASEMENT WHERE EXISTING UPS CABLES ARE ROUTED UP INTO UPPER FLOORS.

NOTE: ONLY NEW CABLES AND CONDUIT NEED TO BE INSTALLED.

NOTE: REPLACE THE 500A BREAKER ON UPS A DISTRIBUTION PANEL WITH 250A BREAKER

1 UPS A DISTRIBUTION WIRING SCHEDULE FOR TR RACKS
NTS

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www. bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-052901
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

ISSUE FOR BID - 01/16/2024

Drawing Title: ELECTRICAL - UPS-A PANELS WIRING SCHEDULE	Phase: ISSUE FOR BID	Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2	Project Number: 437-21-210
			Building Number: -
Approved: Project Director	BUILDING FULLY SPRINKLERED	Location: FARGO VA HEALTH CARE SYSTEM	Drawing Number: E604
		Issue Date: 01/16/2024 / Checked: WG / Drawn: BX	

VA FORM 08 - 6231

TR RACK EM POWER WIRING SCHEDULE

BASEMENT BLDG 1, 9, 46 EM WIRING

CONDUIT NUMBER	FROM ROOM	FROM PNL	TO ROOM	TO RACK	WIRING / CONDUIT	LENGTH
	MCR	PP EM		BASEMENT	203A	
9EM		BASEMENT	BD-02	1	4#2/0&1#6G, 2 IN C	145
		BASEMENT	BD-02	2	4#8&1#10G, 3/4 IN C	
		BASEMENT	BB-92	1	4#10&1#10G, 3/4 IN C	
		BASEMENT	BB-92	2	4#10&1#10G, 3/4 IN C	
		BASEMENT	BB-92	3	4#10&1#10G, 3/4 IN C	
		BASEMENT	BD-84	1	4#6&1#10G, 1 IN C	
		BASEMENT	BD-84	2	4#6&1#10G, 1 IN C	
		BASEMENT	BA-30	1	4#10&1#10G, 3/4 IN C	
		BASEMENT	BA-30	2	4#10&1#10G, 3/4 IN C	
		BASEMENT	BA-30	3	4#10&1#10G, 3/4 IN C	
		BASEMENT	BC-02	1	4#10&1#10G, 3/4 IN C	
		BASEMENT	BC-02	2	4#10&1#10G, 3/4 IN C	
		BASEMENT	BC-02	3	4#10&1#10G, 3/4 IN C	

78A, 78A

1ST FLOOR BLDG 1, 9, 46 EM WIRING

CONDUIT NUMBER	FROM ROOM	FROM PNL	TO ROOM	TO RACK	WIRING / CONDUIT	LENGTH
1EM	MCR	PP EM	1B121	EBEM461NA	4#250&#1#2G, 2 1/2 IN C	585
	1B121	EBEM461NA	1A-54	1	4#10&1#10G, 3/4 IN C	260
	1B121	EBEM461NA	1A-54	2	4#10&1#10G, 3/4 IN C	260
	1B121	EBEM461NA	1A-54	3	4#10&1#10G, 3/4 IN C	260
	1B121	EBEM461NA	1A-54	4	4#10&1#10G, 3/4 IN C	260
	1B121	EBEM461NA	1A-54	5	4#10&1#10G, 3/4 IN C	260
	1B121	EBEM461NA	1A-54	6	4#10&1#10G, 3/4 IN C	260
	1B121	EBEM461NA	1B-121	1	4#10&1#10G, 3/4 IN C	10
	1B121	EBEM461NA	1B-121	2	4#10&1#10G, 3/4 IN C	10
2EM	MCR	PP EM	1D-01	EBEM011CB	4#1/0&#6G, 2 IN C	220
	1D-01	EBEM011CB	1D-158	1	4#10&1#10G, 3/4 IN C	160
	1D-01	EBEM011CB	1C-99	1	4#10&1#10G, 3/4 IN C	10
	1D-01	EBEM011CB	1C-99	2	4#10&1#10G, 3/4 IN C	10
	1D-01	EBEM011CB	1C-99	3	4#10&1#10G, 3/4 IN C	10
	1D-01	EBEM011CB	1C-99	4	4#10&1#10G, 3/4 IN C	10
	1D-01	EBEM011CB	1C-99	5	4#10&1#10G, 3/4 IN C	10
	1D-01	EBEM011CB	1D-64A	1	4#10&1#10G, 3/4 IN C	240
	1D-01	EBEM011CB	1D-64A	2	4#10&1#10G, 3/4 IN C	240
	1D-01	EBEM011CB	1D-64A	3	4#10&1#10G, 3/4 IN C	240
	1D-01	EBEM011CB	1D-64A	4	4#10&1#10G, 3/4 IN C	240

78A, 78A

2ND FLOOR BLDG 1, 9, 46 EM WIRING

CONDUIT NUMBER	FROM ROOM	FROM PNL	TO ROOM	TO RACK	WIRING / CONDUIT	LENGTH
3EM	MCR	PP EM	2B-32	EBEM092NA	4#4/0&1#2G, 2 1/2 IN C	475
	2B-32	EBEM092NA	2A-24	1	4#10&1#10G, 3/4 IN C	110
	2B-32	EBEM092NA	2A-24	2	4#10&1#10G, 3/4 IN C	110
	2B-32	EBEM092NA	2A-24	3	4#10&1#10G, 3/4 IN C	110
	2B-32	EBEM092NA	2A-24	4	4#10&1#10G, 3/4 IN C	110
	2B-32	EBEM092NA	2A-24	5	4#10&1#10G, 3/4 IN C	110
	2B-32	EBEM092NA	2A-24	6	4#10&1#10G, 3/4 IN C	110
	2B-32	EBEM092NA	2C-33	1	4#10&1#10G, 3/4 IN C	100
	2B-32	EBEM092NA	2C-33	2	4#10&1#10G, 3/4 IN C	100
	2B-32	EBEM092NA	2C-33	3	4#10&1#10G, 3/4 IN C	100
4EM	MCR	PP EM	2C-91	EBEM012CB	4#1/0&1#6G, 2 IN C	255
	2C-91	EBEM012CB	2C-90A	1	4#10&1#10G, 3/4 IN C	10
	2C-91	EBEM012CB	2C-90A	2	4#10&1#10G, 3/4 IN C	10
	2C-91	EBEM012CB	2C-90A	3	4#10&1#10G, 3/4 IN C	10
	2C-91	EBEM012CB	2C-90A	4	4#10&1#10G, 3/4 IN C	10
	2C-91	EBEM012CB	2D-18	1	4#10&1#10G, 3/4 IN C	120
	2C-91	EBEM012CB	2D-18	2	4#10&1#10G, 3/4 IN C	120
	2C-91	EBEM012CB	2D-18	3	4#10&1#10G, 3/4 IN C	120
	2C-91	EBEM012CB	2D-18	4	4#10&1#10G, 3/4 IN C	120

40A

3RD FLOOR BLDG 1, 9, 46 EM WIRING

CONDUIT NUMBER	FROM ROOM	FROM PNL	TO ROOM	TO RACK	WIRING / CONDUIT	LENGTH
5EM	MCR	PP EM	3C-38	EBEM463CA	4#2&1#8G, 1 1/4 IN C	265
	3C-38	EBEM463CA	3D-12	1	4#10&1#10G, 3/4 IN C	70
	3C-38	EBEM463CA	3D-12	2	4#10&1#10G, 3/4 IN C	70
	3C-38	EBEM463CA	3D-12	3	4#10&1#10G, 3/4 IN C	70
	3C-38	EBEM463CA	3D-12	4	4#10&1#10G, 3/4 IN C	70
	3C-38	EBEM463CA	3B-23	1	4#10&1#10G, 3/4 IN C	250
	3C-38	EBEM463CA	3B-23	2	4#10&1#10G, 3/4 IN C	250
	3C-38	EBEM463CA	3B-23	3	4#10&1#10G, 3/4 IN C	250
	3C-38	EBEM463CA	3B-23	4	4#10&1#10G, 3/4 IN C	250
	3C-38	EBEM463CA	3B-23	5	4#10&1#10G, 3/4 IN C	250

100A

4TH FLOOR BLDG 1, 9, 46 EM WIRING

CONDUIT NUMBER	FROM ROOM	FROM PNL	TO ROOM	TO RACK	WIRING / CONDUIT	LENGTH
6EM	MCR	PP EM	4D-06	EBEM014CA	(2) 4#2/0&1#8G, 2 IN C	305
	4D-06	EBEM014CA	4B-23	1	4#8&1#10G, 3/4 IN C	230
	4D-06	EBEM014CA	4B-23	2	4#8&1#10G, 3/4 IN C	230
	4D-06	EBEM014CA	4B-23	3	4#8&1#10G, 3/4 IN C	230
	4D-06	EBEM014CA	4B-23	4	4#8&1#10G, 3/4 IN C	230
	4D-06	EBEM014CA	4E-15	1	4#8&1#10G, 3/4 IN C	170
	4D-06	EBEM014CA	4E-15	2	4#8&1#10G, 3/4 IN C	170

100A

1ST FLOOR BLDG 1 TO BLDG 40 EM WIRING

CONDUIT NUMBER	FROM ROOM	FROM PNL	TO BLDG ROOM	TO RACK	WIRING / CONDUIT	LENGTH
7EM	MCR	PP-10EM	40 102B	EBEM401WA	4#350&#3G, 3 IN C	730
	40 102B	EBEM401WA	40 102B	1	4#8&1#10G, 3/4 IN C	10
	40 102B	EBEM401WA	40 102B	2	4#8&1#10G, 3/4 IN C	10
	40 102B	EBEM401WA	40 102B	3	4#8&1#10G, 3/4 IN C	10
	40 102B	EBEM401WA	40 102B	4	4#8&1#10G, 3/4 IN C	10
	40 102B	EBEM401WA	40 204C	1	4#8&1#10G, 3/4 IN C	30
	40 102B	EBEM401WA	40 204C	2	4#8&1#10G, 3/4 IN C	30

40A

5TH FLOOR PENTHOUSE BLDG 1, 9, 46 EM WIRING

CONDUIT NUMBER	FROM ROOM	FROM PNL	TO ROOM	TO RACK	WIRING / CONDUIT	LENGTH
8EM	MCR	PP-1-EM	PENTHOUSE A	EBEM095CA	4#1&#6G, 1 1/2 IN C	405
	4D-06	EBEM095CA	PENT TR 501	1	4#8&1#10G, 3/4 IN C	200
	4D-06	EBEM095CA	PENT TR 502	1	4#8&1#10G, 3/4 IN C	200
	4D-06	EBEM095CA	PENT TR 503	1	4#8&1#10G, 3/4 IN C	130
	4D-06	EBEM095CA	PENT TR 503	2	4#8&1#10G, 3/4 IN C	130
	4D-06	EBEM095CA	PENT TR 503	3	4#8&1#10G, 3/4 IN C	130
	4D-06	EBEM095CA	PENT TR 503	4	4#8&1#10G, 3/4 IN C	130

1 EMERGENCY PANELS WIRING SCHEDULE FOR TR RACKS
NTS

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035261
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

U.S. Department of Veterans Affairs

ISSUE FOR BID - 01/16/2024

Drawing Title: ELECTRICAL - EMERGENCY PANELS WIRING SCHEDULE

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024 | Checked: WG | Drawn: BX

Project Number: 437-21-210

Building Number: -

Drawing Number: E605

11/8/2023 5:02:37 PM

K:\CCO_PROJECTS\002222-113_437-21-210_Fargo_ND_EHRM Tier 2 (VISN 23 TO)\400- DesDocs\402- Drawings\WORKING\CAD\Electrical\E605.dwg

VA FORM 08 - 6231

VA TO IDENTIFY CIRCUITS TO BE REMOVED

11/8/2023 5:02:42 PM

K:\CCG_PROJECTS\2022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- DesDocs\400- Drawings\WORKING\CAD\Electrical\ED606.dwg

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www. bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-052261
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

ISSUE FOR BID - 01/16/2024

Drawing Title: ELECTRICAL - BC-50 DATA CENTER PANEL SCHEDULES DEMO	Phase: ISSUE FOR BID	Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2	Project Number: 437-21-210
			Building Number: 1-9-46
Approved: Project Director	BUILDING FULLY SPRINKLERED	Location: FARGO VA HEALTH CARE SYSTEM	Drawing Number: ED606
		Issue Date: 01/16/2024 / Checked: WG / Drawn: BX	

VA FORM 08 - 6231

PANEL NAME	LOCATION	MOUNTING	SUPPLIED FROM	VOLTAGE	BUS	MAIN
SWBD EM GEN BLDG1	BLDG 1 BE-98	FLOOR ON PAD	EM GEN 1	120/208V. 3PH, 4W	4000A	4000A. 3P. MAIN LUG

CKT NO	LOAD DESCRIPTION	VA LOAD PH A	VA LOAD PH B	VA LOAD PH C	CB CODE	CB P	CB TR	BUS A	BUS B	BUS C	CB TR	CB P	CB CODE	VA LOAD PH A	VA LOAD PH B	VA LOAD PH C	LOAD DESCRIPTION	CKT NO
1		9996			E			X					E	16560				2
3	STR1-BLDG1 ATS-LS		9996		E	3	250		X		400	3	E		16560		STR1-BLDG1 ATS-CR	4
5				9996	E					X			E			16560		6
7		32400			E			X					N/A	0				8
9	STR1-BLDG1 ATS-EQ		32400		E	3	800		X		4000	3	N/A		0		STR2-ROLL UP GENERATOR BREAKER	10
11				32400	E					X			N/A			0		12
13		0			N/A			X					E	319893				14
15	STR3- INCOMING FROM GENERATOR		0		N/A	3	LUGS		X		3000	3	E		317488		STR4-SWBD EQ MCR	16
17				0	N/A					X			E			323912		18
19						1	20	X			20	1						20
21						1	20		X		20	1						22
23						1	20			X	20	1						24
25						1	20	X			20	1						26
27						1	20		X		20	1						28
29						1	20			X	20	1						30

LOAD DESCRIPTION	CONNECTED (KVA)	D.F.	DEMAND (KVA)	SUBFED LOADS	(KVA)	CONNECTED	VA	
LIGHTING	0.0	1.00	0.0	LIGHTING	0.0	PH A	378849	
RECEPT (FIRST 10 KW)	0.0	1.00	0.0	RECEPT	0.0	PH B	376444	
RECEPT (REMAINDER)	0.0	0.50	0.0	MOTORS	0.0	PH C	382868	
MOTORS	0.0	1.00	0.0	EQUIP	0.0			
LARGEST MOTOR	0.0	1.25	0.0	HEATING	0.0	TOTAL	KVA	AMPS
EQUIPMENT	1138.2	1.00	1138.161			CONNECTED	1138.2	3159.3
HEATING	0.0	1.00	0			DEMAND	1138.2	3159.3
TOTAL	1138.2		1138.2			DESIGN		

GROUND BUS
ISOLATED GROUND BUS

100% NEUTRAL BUS
200% NEUTRAL BUS

INTEGRAL TVSS
ISC = 14KAIC

L	LIGHTING	M	MOTORS	E	EQUIPMENT	S	SUBFED
R	RECEPTACLE	LM	LARGEST MOTOR	H	HEATING	T	TRANSFORMER

SWBD NAME	LOCATION	MOUNTING	SUPPLIED FROM	VOLTAGE	BUS	MAIN
SWBD EQ MCR	BLDG 1 UPS RM BE-97	SURFACE	EM GEN & UTILITY	120/208V. 3PH, 4W	3000A	3000A. 3P. MAIN LUGS

CKT NO	LOAD DESCRIPTION	VA LOAD PH A	VA LOAD PH B	VA LOAD PH C	CB CODE	CB P	CB TR	BUS A	BUS B	BUS C	CB TR	CB P	CB CODE	VA LOAD PH A	VA LOAD PH B	VA LOAD PH C	LOAD DESCRIPTION	CKT NO
1		0						X						0				2
3	STR1-TRANSFORMER MCR FEEDER		0			3	3000		X		3000	3			0		STR2-EM GENERATOR FEEDER	4
5				0						X						0		6
7		83133			E			X					E					8
9	STR3-PP 2 EM MCR		80728		E	3	500		X		300	3	E				STR4-UPS B MAINT BYPASS - SET AT 0A UNDER NORMAL CONDITIONS	10
11				87152	E					X			E					12
13		34000			E			X					E	55000				14
15	STR3-UPS B		34000		E	3	700		X		700	3	E		55000		STR4-MONOLYTHIC UPS A MOD1	16
17				34000	E					X			E			55000		18
19		55000			E			X						0				20
21	STR3-MONOLYTHIC UPS A MOD2		55000		E	3	700		X		700	3			0		STR4-UPS A MAINT BYPASS - SET AT 0A UNDER NORMAL CONDITIONS	22
23				55000	E					X						0		24
25		92760			E			X			20	1						26
27	STR3-PP EM		92760		E	3	1000		X		20	1						28
29				92760	E					X	20	1						30
31						1	20	X			20	1						32
33						1	20		X		20	1						34
35						1	20			X	20	1						36
37						1	20	X			20	1						38
39						1	20		X		20	1						40
41						1	20			X	20	1						42

LOAD DESCRIPTION	CONNECTED (KVA)	D.F.	DEMAND (KVA)	SUBFED LOADS	(KVA)	CONNECTED	VA	
LIGHTING	0.0	1.00	0.0	LIGHTING	0.0	PH A	319893	
RECEPT (FIRST 10 KW)	0.0	1.00	0.0	RECEPT	0.0	PH B	317488	
RECEPT (REMAINDER)	0.0	0.50	0.0	MOTORS	0.0	PH C	323912	
MOTORS	0.0	1.00	0.0	EQUIP	0.0			
LARGEST MOTOR	0.0	1.25	0.0	HEATING	0.0	TOTAL	KVA	AMPS
EQUIPMENT	961.3	1.00	961.293			CONNECTED	961.3	2668.4
HEATING	0.0	1.00	0			DEMAND	961.3	2668.4
TOTAL	961.3		961.3			DESIGN		

GROUND BUS
ISOLATED GROUND BUS

100% NEUTRAL BUS
200% NEUTRAL BUS

INTEGRAL TVSS
ISC = 14KAIC

L	LIGHTING	M	MOTORS	E	EQUIPMENT	S	SUBFED
R	RECEPTACLE	LM	LARGEST MOTOR	H	HEATING	T	TRANSFORMER

PANEL NAME	LOCATION	MOUNTING	SUPPLIED FROM	VOLTAGE	BUS	MAIN
PP2 EM MCR	EM GEN ROOM BE-98	SURFACE	SWBD EQ MCR	120/208V. 3PH, 4W	750A	750A 3P CB

CKT NO	LOAD DESCRIPTION	VA LOAD PH A	VA LOAD PH B	VA LOAD PH C	CB CODE	CB P	CB TR	BUS A	BUS B	BUS C	CB TR	CB P	CB CODE	VA LOAD PH A	VA LOAD PH B	VA LOAD PH C	LOAD DESCRIPTION	CKT NO
1		30815			E			X			25	1	M	1656			FPS-1, POLISHER	2
3	PP 3 EM MCR		31300		E	3	500		X				M		440			4
5				30880	E					X	15	3	M			440	CACP-1, CHARGE AIR COOLER	6
7		14400			M			X					M	440				8
9	GR-1, OUTDOOR RADIATOR		14400		M	3	175		X		25	1	M		1656		DT-1 P1 DAY TANK	10
11				14400	M					X	25	1	M			0	DT-1 P2 DAY TANK	12
13		6666			H			X			30	1	M	1920			DT-1 RETURN PUMP	14
15	EUH-1		6666		H	3	60		X						6666			16
17				6666	H					X	60	3	H			6666	EUH-2	18
19		2100			M			X					H	6666				20
21	EF-G1		2100		M	3	35		X				M		2100			22
23				2100	M					X	35	3	M			2100	EF-G2	24
25		3000			M			X					M	2100				26
27	SF-G1		3000		M	3	50		X				M		2940			28
29				3000	M					X	70	3	M			2940	CRAC-3 UPS ROOM (50%)	30
31		2640			M			X					M	2940				32
33	ACCU-3 UPS ROOM (50%)		2640		M	3	60		X				M		2940			34
35				2640	M					X	70	3	M			2940	CRAC-4 UPS ROOM (50%)	36
37		2640			M			X					M	2940				38
39	ACCU-4 UPS ROOM (50%)		2640		M	3	60		X		20	1	H		500		GENERATOR SPACE HEATER	40
41				2640	M					X	20	1	H			9000	GEN JACKET WATER HEATER	42
43	BATTERY CHARGER	1920			E	1	20	X			20	1	M	90			GEN JACKET PUMP	44
45	RM BE-31A LIGHTS		200		L	1	20		X		20	1	L		180		RM BE-97 LIGHTS	46
47	RM-BE-31A RCPT			180	R	1	20			X	20	1	L			200	RM BE-98 LIGHTS	48
49	FUEL CONTROL PNL	200			E	1	20	X			20	1	R	180-			RM BE-97 RCPT	50
51	RCPT RADIATOR, FUEL TANK		180		R	1	20		X		20	1	R		180		RM BE-98 RCPT	52
53	RCPT ACCU1, 2			180	R	1	20			X	20	1	R			180	RCPT, ACCU-3, 4	54
55						1	20	X			20	1						56
57						1	20		X		20	1						58
59						1	20			X	20	1						60

LOAD DESCRIPTION	CONNECTED (KVA)	D.F.	DEMAND (KVA)	SUBFED LOADS	(KVA)	CONNECTED	VA	
LIGHTING	0.7	1.00	0.7	LIGHTING	0.1	PH A	83133	
RECEPT (FIRST 10 KW)	1.1	1.00	1.1	RECEPT	0.2	PH B	80728	
RECEPT (REMAINDER)	0.0	0.50	0.0	MOTORS	0.3	PH C	87152	
MOTORS	105.2	1.00	105.2	EQUIP	0.4			
LARGEST MOTOR	0.0	1.25	0.0	HEATING	0.5	TOTAL	KVA	AMPS
EQUIPMENT	95.5	1.00	95.515			CONNECTED	251.0	696.8
HEATING	50.0	1.00	49.996			DEMAND	252.5	700.9
TOTAL	252.5		252.5			DESIGN		

UND BUS
.ATED GROUND BUS

L BUS
L BUS

INTEGRAL TVSS
ISC = 35KAIC

L	LIGHTING	M	MOTORS	E	EQUIPMENT	S	SUBFED
R	RECEPTACLE	LM	LARGEST MOTOR	H	HEATING	T	TRANSFORMER

PANEL NAME	LOCATION	MOUNTING	SUPPLIED FROM	VOLTAGE	BUS	MAIN
PP3 EM MCR	MCR 4E-19	SURFACE	PP-2 EM MCR	120/208V. 3PH, 4W	500A	500A. 3P. M.C.B.

CKT NO	LOAD DESCRIPTION	VA LOAD PH A	VA LOAD PH B	VA LOAD PH C	CB CODE	CB P	CB TR	BUS A	BUS B	BUS C	CB TR	CB P	CB CODE	VA LOAD PH A	VA LOAD PH B	VA LOAD PH C	LOAD DESCRIPTION	CKT NO
1		155			E			X					M	7980				2
3	PP ELMCR		820		E	3	200		X		175	3	M		7980		CRAC-2(50%)	4
5				400	E					X			M			7980		6
7		7260			M			X					M	7260				8
9	ACCU-1(50%)		7260		M	3	175		X		175	3	M		7260		ACCU-2(50%)	10
11				7260	M					X			M			7260		12
13		7980			M			X			20	1	R	180			RCPT ACCU1, 2	14
15	CRAC-1 (50%)		7980		M	3	175		X		20	1						16
17				7980	M					X	20	1						18
19						1	20	X			20	1						20
21						1	20		X		20	1						22
23						1	20			X	20	1						24
25						1	20	X			20	1						26
27						1	20		X		20	1						28
29						1	20			X	20	1						30
31						1	20	X			20	1						32
33						1	20		X		20	1						34
35						1	20			X	20	1						36
37						1	20	X			20	1						38
39						1	20		X		20	1						40
41						1	20			X	20	1						42

LOAD DESCRIPTION	CONNECTED (KVA)	D.F.	DEMAND (KVA)	SUBFED LOADS	(KVA)	CONNECTED	VA	
LIGHTING	0.0	1.00	0.0	LIGHTING	0.0	PH A	30815	
RECEPT (FIRST 10 KW)	0.2	1.00	0.2	RECEPT	0.0	PH B	31300	
RECEPT (REMAINDER)	0.0	0.50	0.0	MOTORS	0.0	PH C	30880	
MOTORS	91.4	1.00	91.4	EQUIP	0.0			
LARGEST MOTOR	0.0	1.25	0.0	HEATING	0.0	TOTAL	KVA	AMPS
EQUIPMENT	1.4	1.00	1.375			CONNECTED	93.0	258.1
HEATING	0.0	1.00	0			DEMAND	93.0	258.1
TOTAL	93.0		93.0			DESIGN		

GROUND BUS
ISOLATED GROUND BUS

100% NEUTRAL BUS
200% NEUTRAL BUS

INTEGRAL TVSS
ISC = 14KAIC

L	LIGHTING	M	MOTORS	E	EQUIPMENT	S	SUBFED
R	RECEPTACLE	LM	LARGEST MOTOR	H	HEATING	T	TRANSFORMER

PANEL NAME	LOCATION	MOUNTING	SUPPLIED FROM	VOLTAGE	BUS	MAIN
PP EL MCR		SURFACE		120/208V. 3PH, 4W	100A	100A. 3P. M.C.B.

CKT NO	LOAD DESCRIPTION	VA LOAD PH A	VA LOAD PH B	VA LOAD PH C	CB CODE	CB P	CB TR	BUS A	BUS B	BUS C	CB TR	CB P	CB CODE	VA LOAD PH A	VA LOAD PH B	VA LOAD PH C	LOAD DESCRIPTION	CKT NO
1	INERGEN PNL RM 4E-22	15			E	1	20	X			20	1	L	20			RM 4E-22 LIGHTS, RCPT	2
3	RM 4E-23 LIGHTS		20		L	1	20		X		20	1	L		800		DATA CENTER LIGHTS	4
5	CORR 4E-20, 21 LIGHTS			320	L	1	20			X	20	1	L			80	ELECTRIC CLOSET 4E-19 LIGHTS	6
7	EPO DATA CENTER	40			E	1	15	X			20	1	E	60			VAV POWER SUPPLY	8
9						1	20		X		20	1						10
11						1	20			X	20	1						12
13						1	20	X			20	1						14
15						1	20		X		20	1						16
17						1	20			X	20	1						18
19						1	20	X			20	1						20
21						1	20		X		20	1						22
23						1	20			X	20	1						24
25						1	20	X			20	1						26
27						1	20		X		20	1						28
29						1	20			X	20	1						30
31						1	20	X			20	1						32
33						1	20		X		20	1						34
35						1	20			X	20	1						36
37						1	20	X			20	1						38
39						1	20		X		20	1						40
41						1	20			X	20	1						42

LOAD DESCRIPTION	CONNECTED (KVA)	D.F.	DEMAND (KVA)	SUBFED LOADS	(KVA)	CONNECTED	VA	
LIGHTING	1.2	1.00	1.2	LIGHTING	0.0	PH A	155	
RECEPT (FIRST 10 KW)	0.0	1.00	0.0	RECEPT	0.0	PH B	820	
RECEPT (REMAINDER)	0.0	0.50	0.0	MOTORS	0.0	PH C	400	
MOTORS	0.0	1.00	0.0	EQUIP	0.0			
LARGEST MOTOR	0.0	1.25	0.0	HEATING	0.0	TOTAL	KVA	AMPS
EQUIPMENT	0.1	1.00	0.135			CONNECTED	1.4	3.8
HEATING	0.0	1.00	0			DEMAND	1.4	3.8
TOTAL	1.4		1.4			DESIGN		

GROUND BUS
ISOLATED GROUND BUS

100% NEUTRAL BUS
200% NEUTRAL BUS

INTEGRAL TVSS
ISC = 14KAIC

L	LIGHTING	M	MOTORS	E	EQUIPMENT	S	SUBFED
R	RECEPTACLE	LM	LARGEST MOTOR	H	HEATING	T	TRANSFORMER

PANEL NAME	LOCATION	MOUNTING	SUPPLIED FROM	VOLTAGE	BUS	MAIN
PP EM	MCR BE-31B	SURFACE	PP3 EM MCR	120/208V. 3PH, 4W	1000A	1000A, 3P, 4W

CKT NO	LOAD DESCRIPTION	VA LOAD PH A	VA LOAD PH B	VA LOAD PH C	CB CODE	CB P	CB TR	BUS A	BUS B	BUS C	CB TR	CB P	CB CODE	VA LOAD PH A	VA LOAD PH B	VA LOAD PH C	LOAD DESCRIPTION	CKT NO
1		4800			E			X					E	12000				2
3	PNL EBEM095CA		4800		E	3	100		X		150	3	E		12000		PNL EBEM014CA	4
5				4800	E					X			E			12000		6
7		4800			E			X					E	9360				8
9	PNL EBEM463CA		4800		E	3	100		X		150	3	E		9360		PNL EBEM012CB	10
11				4800	E					X			E			9360		12
13		9360			E			X					E	9360				14
15	PNL EBEM092NA		9360		E	3	150		X		150	3	E		9360		PNL EBEM011CB	16
17				9360	E					X			E			9360		18
19		9360			E			X					E	9360				20
21	PNL EB461NA		9360		E	3	150		X		150	3	E		9360		PNL EBEM401WA	22
23				9360	E					X			E			9360		24
25		24360			E			X			20	1						26
27	PNL. BASEMENTEM		24360		E	3	400		X		20	1						28
29				24360	E					X	20	1						30
31						1	20	X			20	1						32
33						1	20		X		20	1						34
35						1	20			X	20	1						36
37						1	20	X			20	1						38
39						1	20		X		20	1						40
41						1	20			X	20	1						42
43						1	20	X			20	1						44
45						1	20		X		20	1						46
47						1	20			X	20	1						48
49						1	20	X			20	1						50
51						1	20		X		20	1						52
53						1	20			X	20	1						54
55						1	20	X					E					56
57						1	20		X		20	1	E				SPD	58
59						1	20			X			E					60

LOAD DESCRIPTION	CONNECTED (KVA)	D.F.	DEMAND (KVA)	SUBFED LOADS	(KVA)	CONNECTED	VA	
LIGHTING	0.1	1.00	0.1	LIGHTING	0.1	PH A	92760	
RECEPT (FIRST 10 KW)	0.2	1.00	0.2	RECEPT	0.2	PH B	92760	
RECEPT (REMAINDER)	0.0	0.50	0.0	MOTORS	0.3	PH C	92760	
MOTORS	0.3	1.00	0.3	EQUIP	0.4			
LARGEST MOTOR	0.0	1.25	0.0	HEATING	0.5	TOTAL	KVA	AMPS
EQUIPMENT	278.7	1.00	278.68			CONNECTED	278.3	772.5
HEATING	0.5	1.00	0.5			DEMAND	279.8	776.6
TOTAL	279.8		279.8			DESIGN		

JND BUS
.ATED GROUND BUS

\L BUS
\L BUS

INTEGRAL TVSS
ISC = 14KAIC

L	LIGHTING	M	MOTORS	E	EQUIPMENT	S	SUBFED
R	RECEPTACLE	LM	LARGEST MOTOR	H	HEATING	T	TRANSFORMER

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www. bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035261
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - DATA CENTER PANEL SCHEDULES

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024 | Checked: WG | Drawn: BX

ISSUE FOR BID - 01/16/2024

Project Number: 437-21-210

Building Number: 1-9-46

Drawing Number: E606

1/16/2024 11:38:24 AM

K:\CCD_PROJECTS\2022\22-113_437-21-210_Fargo, ND_EHRM Tier 2 (VISN 23 TO)\400- DesDocs\402- Drawings\WORKING\CAD\Electrical\E606.dwg

VA FORM 08 - 6231

PANEL NAME	LOCATION	MOUNTING	SUPPLIED FROM	VOLTAGE	BUS	MAIN
UPS A DISTRIBUTION	UPS RM BE-97	FLOOR	SWGR EQ MCR	120/208V. 3PH, 4W	N/A	N/A

CKT NO	LOAD DESCRIPTION	VA LOAD PH A	VA LOAD PH B	VA LOAD PH C	CODE	CB P	CB TR	BUS A	BUS B	BUS C	CB TR	CB P	CODE	VA LOAD PH A	VA LOAD PH B	VA LOAD PH C	LOAD DESCRIPTION	CKT NO
1		2400			E			X					E	26640				2
3	PNL ENTR. A, B		2400		E	3	100		X		250	3	E		26640		PNL BUSWAY A	4
5				2400	E					X			E			26640		6
7		24360			E			X					E	9360				8
9	PNL BSMNTUPS		24360		E	3	400		X		150	3	E		9360		PNL EBUPS011CB	10
11				24360	E					X			E			9360		12
13		9360			E			X					E	9360				14
15	PNL EBUPS401WA		9360		E	3	150		X		150	3	E		9360		PNL EBUPS012CB	16
17				9360	E					X			E			9360		18
19		9360			E			X					E	12000				20
21	PNL EBUPS461NA		9360		E	3	150		X		150	3	E		1200		PNL EBUPS014CA	22
23				9360	E					X			E			1200		24
25		9360			E			X					E	4800				26
27	PNL EBUPS092NA		9360		E	3	150		X		100	3	E		4800		PNL EBUPS463CA	28
29				9360	E					X			E			4800		30
31		4800			E			X			20	1						32
33	PNL EBUPS095CA		4800		E	3	100		X		20	1						34
35				4800	E					X	20	1						36
37						1	20	X			20	1						38
39						1	20		X		20	1						40
41						1	20			X	20	1						42

LOAD DESCRIPTION	CONNECTED (KVA)	D.F.	DEMAND (KVA)	SUBFED LOADS	(KVA)	CONNECTED	VA	AMPS
LIGHTING	0.0	1.00	0.0	LIGHTING	0.0	PH A	121800	
RECEPT (FIRST 10 KW)	0.0	1.00	0.0	RECEPT	0.0	PH B	111000	
RECEPT (REMAINDER)	0.0	0.50	0.0	MOTORS	0.0	PH C	111000	
MOTORS	0.0	1.00	0.0	EQUIP	0.0			
LARGEST MOTOR	0.0	1.25	0.0	HEATING	0.0	TOTAL	KVA	AMPS
EQUIPMENT	343.8	1.00	343.8			CONNECTED	343.8	954.3
HEATING	0.0	1.00	0			DEMAND	343.8	954.3
TOTAL	343.8		343.8			DESIGN		

GROUND BUS — 100% NEUTRAL BUS — INTEGRAL TVSS

ISOLATED GROUND BUS — 200% NEUTRAL BUS — ISC = 14KAIC

L	LIGHTING	M	MOTORS	E	EQUIPMENT	S	SUBFED
R	RECEPTACLE	LM	LARGEST MOTOR	H	HEATING	T	TRANSFORMER

PANEL NAME	LOCATION	MOUNTING	SUPPLIED FROM	VOLTAGE	BUS	MAIN
EBUPS 90N1 - REUSE	BC-50A	SURFACE		120/208V. 3PH, 4W	400A	400A. 3P. M.C.B.

CKT NO	LOAD DESCRIPTION	VA LOAD PH A	VA LOAD PH B	VA LOAD PH C	CODE	CB P	CB TR	BUS A	BUS B	BUS C	CB TR	CB P	CODE	VA LOAD PH A	VA LOAD PH B	VA LOAD PH C	LOAD DESCRIPTION	CKT NO
1	ACCU-BC-50A-1 / CCU-B50A-1	960			H	2	20	X			20	2	H	960			ACCU-BC-50A-2 / CCU-B50A-2	2
3			960		H				X				H		960			4
5	ACCU-BC-50B / CCU-B50B			960	H	2	20			X	20	2	H			960	ACCU-BC-60-1 / CCU-B60-1	6
7		960			H			X					H	960				8
9	ACCU-BC-60-2 / CCU-B60-2		960		H	2	20		X		20	1						10
11				960	H					X	20	1						12
13						1	20	X			20	1						14
15						1	20		X		20	1						16
17						1	20			X	20	1						18
19						1	20	X			20	1						20
21						1	20		X		20	1						22
23						1	20			X	20	1						24
25						1	20	X			20	1						26
27						1	20		X		20	1						28
29						1	20			X	20	1						30
31						1	20	X			20	1						32
33						1	20		X		20	1						34
35						1	20			X	20	1						36
37						1	20	X			20	1						38
39						1	20		X		20	1						40
41						1	20			X	20	1						42

LOAD DESCRIPTION	CONNECTED (KVA)	D.F.	DEMAND (KVA)	SUBFED LOADS	(KVA)	CONNECTED	VA	AMPS
LIGHTING	0.0	1.00	0.0	LIGHTING	0.0	PH A	3840	
RECEPT (FIRST 10 KW)	0.0	1.00	0.0	RECEPT	0.0	PH B	2880	
RECEPT (REMAINDER)	0.0	0.50	0.0	MOTORS	0.0	PH C	2880	
MOTORS	0.0	1.00	0.0	EQUIP	0.0			
LARGEST MOTOR	0.0	1.25	0.0	HEATING	0.0	TOTAL	KVA	AMPS
EQUIPMENT	0.0	1.00	0			CONNECTED	9.6	26.6
HEATING	9.6	1.00	9.6			DEMAND	9.6	26.6
TOTAL	9.6		9.6			DESIGN		

GROUND BUS — 100% NEUTRAL BUS — INTEGRAL TVSS

ISOLATED GROUND BUS — 200% NEUTRAL BUS — ISC = 14KAIC

L	LIGHTING	M	MOTORS	E	EQUIPMENT	S	SUBFED
R	RECEPTACLE	LM	LARGEST MOTOR	H	HEATING	T	TRANSFORMER

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP
LICENSED PROFESSIONAL ENGINEER WALTER J. GROSZKO 062-039261 1/16/24 STATE OF ILLINOIS

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

Drawing Title: ELECTRICAL - DATA CENTER PANEL SCHEDULES
Approved: Project Director

Phase: ISSUE FOR BID
BUILDING FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2
Location: FARGO VA HEALTH CARE SYSTEM
Issue Date: 01/16/2024 | Checked: WG | Drawn: BX

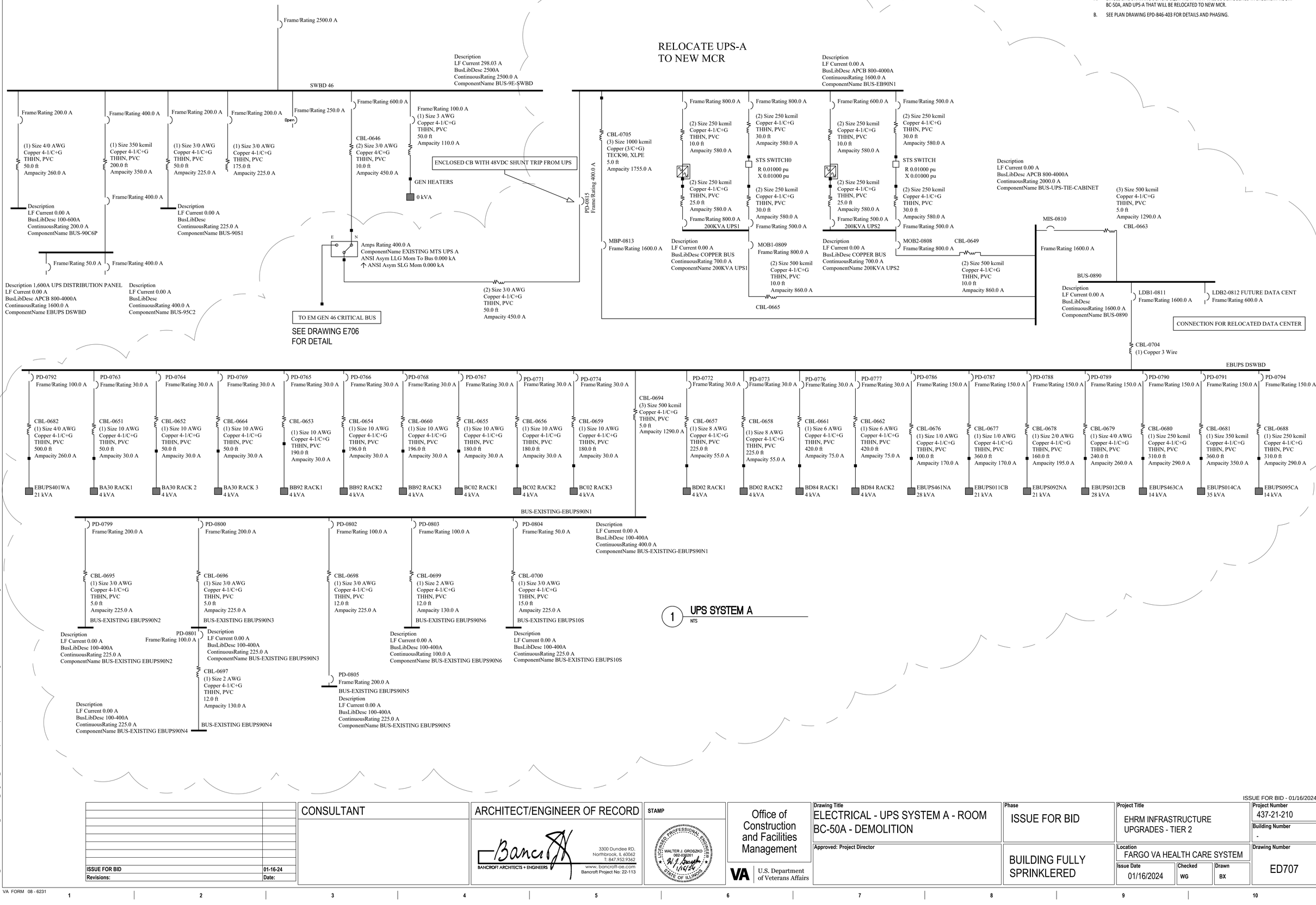
Project Number: 437-21-210
Building Number: 1-9-46
Drawing Number: E607

VA FORM 08 - 6231

ELECTRICAL GENERAL NOTES

A. SINGLE LINE DRAWING DEPICTS EQUIPMENT THAT WILL BE DEMOLISHED IN BASEMENT ROOM BC-50A, AND UPS-A THAT WILL BE RELOCATED TO NEW MCR.

B. SEE PLAN DRAWING EPD-B46-403 FOR DETAILS AND PHASING.



1 UPS SYSTEM A

NTS

ISSUE FOR BID	**01-16-24**
Revisions:	**Date:**

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035201
1/16/24
STATE OF ILLINOIS

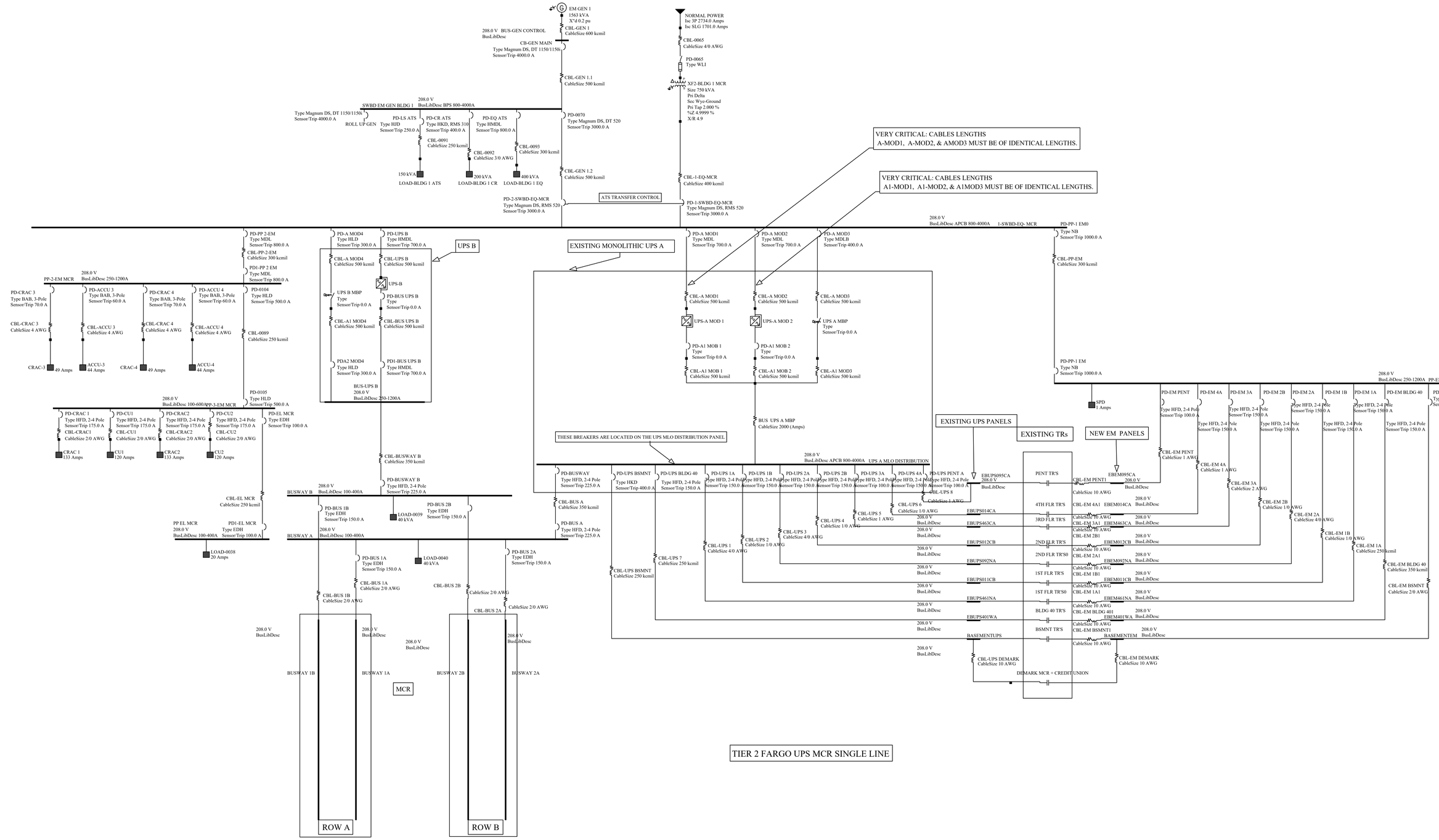
Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

ISSUE FOR BID - 01/16/2024

Drawing Title ELECTRICAL - UPS SYSTEM A - ROOM BC-50A - DEMOLITION	**Phase** ISSUE FOR BID	**Project Title** EHRM INFRASTRUCTURE UPGRADES - TIER 2	**Project Number** 437-21-210
			Building Number -
Approved: Project Director	BUILDING FULLY SPRINKLERED	**Location** FARGO VA HEALTH CARE SYSTEM	**Drawing Number** ED707
		Issue Date 01/16/2024 / **Checked** WG / **Drawn** BX	

K:\CCG_PROJECTS\2022\22-113_437-21-210_Fargo_ND_EHRM Tier 2 (VISN 23 TO)\400- DataDocs\402- Drawings\WORKING\CAD\Electrical\ED707.dwg
12/15/2023 9:44:08 PM
VA FORM 08 - 6231



TIER 2 FARGO UPS MCR SINGLE LINE

ISSUE FOR BID - 01/16/2024

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www.bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035261
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title
ELECTRICAL - MCR MONOLITHIC UPS-A & UPS-B BLOCK DIAGRAM

Approved: Project Director

Phase
ISSUE FOR BID

BUILDING FULLY SPRINKLERED

Project Title
EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location
FARGO VA HEALTH CARE SYSTEM

Issue Date 01/16/2024 | **Checked** WG | **Drawn** BX

Project Number 437-21-210

Building Number -

Drawing Number E707

VA FORM 08 - 6231

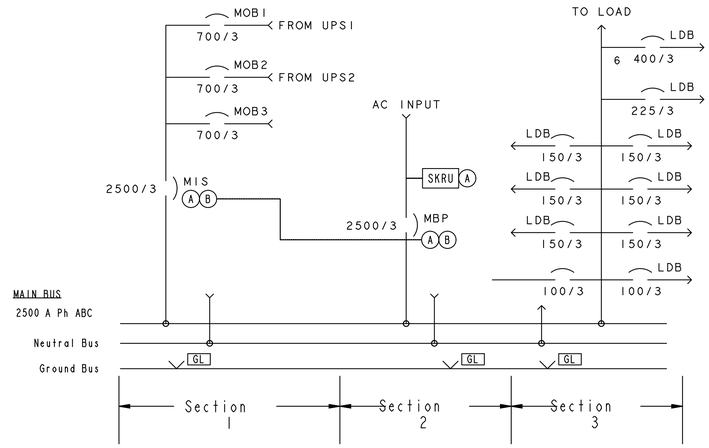
K:\CCG_PROJECTS\002222-113_437-21-210_Fargo_ND_EHRM Tier 2 (VISN 23 TO)\40b- DesDocs\402- Drawings\WORKING\CAD\Electrical\E707.dwg
12/15/2023 3:46:09 PM

ELECTRICAL GENERAL NOTES

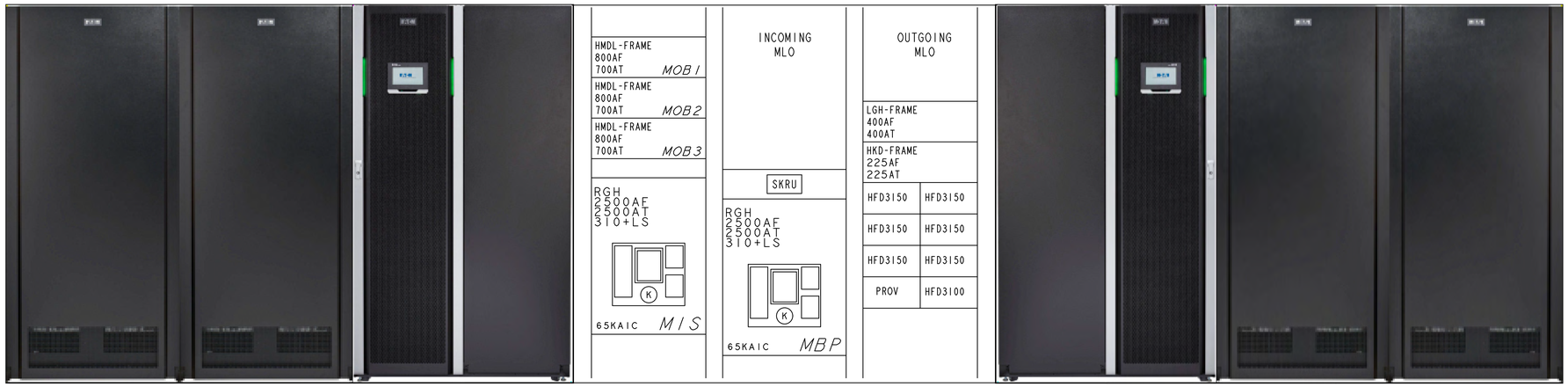
A. SEE DRAWING EP-01-404 FOR EQUIPMENT CONFIGURATIONS.

1 2

UPS-B



ELECTRICAL ONE LINE DIAGRAM
UPS-A - MONOLITICH



1 2 UPS-A - MONOLITHIC 2 1

ISSUE FOR BID	01-16-24
Revisions:	Date:

CONSULTANT

ARCHITECT/ENGINEER OF RECORD

Bancroft Architects + Engineers
3300 Dundee RD.
Northbrook, IL 60062
T: 847.952.9362
www. bancroft-ae.com
Bancroft Project No: 22-113

STAMP

LICENSED PROFESSIONAL ENGINEER
WALTER J. GROSZKO
062-035201
1/16/24
STATE OF ILLINOIS

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL - EM GEN 46 SWBD 46EE-SWBD, UPS-A AND UPS-B

Approved: Project Director

Phase: ISSUE FOR BID

BUILDING FULLY SPRINKLERED

ISSUE FOR BID - 01/16/2024

Project Title: EHRM INFRASTRUCTURE UPGRADES - TIER 2

Location: FARGO VA HEALTH CARE SYSTEM

Issue Date: 01/16/2024 | Checked: WG | Drawn: BX

Project Number: 437-21-210

Building Number: -

Drawing Number: E708

K:\CCG_PROJECTS\2022\22-113_437-21-210_Fargo_ND_EHRM Tier 2 (VISN 23 TOJ)\400- DwtDocs\402- Drawings\WORKING\CAD\Electrical\E708.dwg
1/10/2024 12:02:46 PM

VA FORM 08 - 6231