UPGRADE UPS AND AC IN COMPUTER ROOM

CINCINNATI VA MEDICAL CENTER

3200 VINE STREET CINCINNATI OHIO 45220
PROJECT NO. 539-18-202

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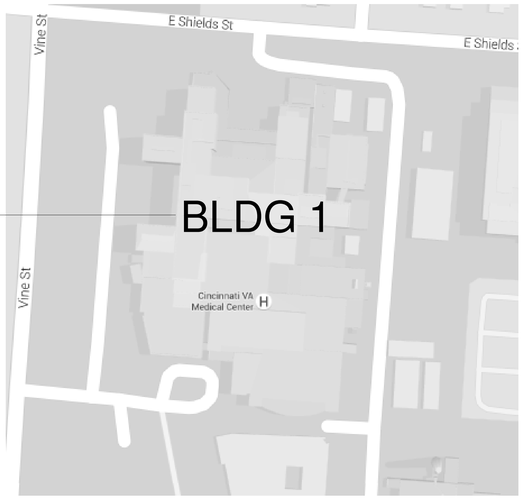
AREA MAP



PROJECT LOCATION

*** R.I.D. = RESIDENT INTERIOR DESIGNER. ***
** U.N.O. = UNLESS NOTED OTHERWISE.**
* C.O.R. = CONTRACTING OFFICER'S REPRESENTATIVE. THIS IS USED IN LIEU OF THE TERM OWNER.*

1. ALL WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE AND LOCAL CODES, RULES, ORDINANCES AND REGULATIONS INCLUDING THE AMERICAN DISABILITIES ACT (ADA), ARCHITECTURAL BARRIERS ACT(ABA), THE VA BARRIER FREE DESIGN GUIDELINES AND THE AMERICAN NATIONALSTANDARDS INSTITUTE (ANSI) GUIDELINES.
2. THE C.O.R. SHALL WORK WITH THE CONTRACTOR TO PROVIDE ACCESS TO TEMPORARY SERVICES REQUIRED TO PROVIDE THE WORK INDICATED. SEE SPECIFICATION SECTION 01 00 00 FOR ADDITIONAL REQUIREMENTS ON TEMPORARY ACCESS TO VA UTILITIES.
3. THE GENERAL CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF THE SPECIFICATIONS, INCLUDING ALL GENERAL CONDITIONS, SUPPLEMENTARY GENERAL CONDITIONS, AND MATERIAL AND CONSTRUCTION PROVISIONS, WHICH APPLY TO MATERIALS OR CONSTRUCTION METHODS REQUIRED BY THIS PROJECT.
4. PRIOR TO BIDDING, THE GENERAL CONTRACTOR SHALL VISIT THE SITE, EXAMINE, AND ACCEPT ALL EXISTING CONDITIONS. DATES FOR SITE VISITS WILL BE POSTED IN THE CONTRACT DOCUMENTS AS POSTED ON THE FEDERAL BUSINESS OPPURTUNITIES WEBPAGE FOR THIS PROJECT. UNSCHEDULED VISITS WILL NOT BE ALLOWED.
5. DO NOT PAINT ANY CAULKING OR SEALANTS WHICH ARE SUBJECT TO MOVEMENT - CONTROL JOINTS SHALL BE CAULKED AFTER PAINT AND SPECIAL COATING APPLICATIONS. PROVIDE CAULKING OR SEALANTS IN COLORS WHICH MATCH ADJACENT FINISHED SURFACE COLORS.
6. VERIFY ALL CONDITIONS AND DIMENSIONS IN THE FIELD BEFORE FABRICATING ANY MATERIALS.
7. IT IS THE INTENT OF THE DOCUMENTS TO INDICATE COMPLETE AND OPERATIONAL SYSTEMS (I.E. STRUCTURAL, HVAC, PLUMBING, ELECTRICAL, ETC.) THE CONTRACTOR SHALL PROVIDE THE SYSTEMS AS OPERATIONAL SYSTEMS WHICH COMPLY WITH APPLICABLE CODES AND REGULATIONS. THIS NOTE SHALL BE LIMITED TO THE SYSTEMS AS INDICATED BY THE DOCUMENTS AND SHALL NOT INCLUDE CHANGES TO THE SYSTEMS WHICH ALTER INDICATED CAPACITIES, OPERATIONAL CHARACTERISTICS, ETC.
8. THE GENERAL CONTRACTOR SHALL VERIFY THE SIZES OF ALL EQUIPMENT OR FIXTURES TO BE INSTALLED IN THE BUILDING THROUGH THE SUBMITTAL PROCESS, AND SHALL MAKE SPECIAL PROVISIONS FOR INSTALLATION OF ANY EQUIPMENT WHICH IS TOO LARGE TO FIT THROUGH A FINISHED OPENING.
9. ALL CONTRACTORS SHALL BE RESPONSIBLE TO PATCH AND REPAIR ALL SURFACES WHERE EXISTING CONSTRUCTION IS REMOVED OR DISTURBED BY WORK UNDER THEIR CONTRACT.
10. ALL SUSPENDED ITEMS SUCH AS CEILINGS, DUCTS, PIPES, CONDUITS, ETC., SHALL BE SUSPENDED (ATTACHED) DIRECTLY TO STRUCTURE AND SHALL NOT BE ATTACHED OR ANCHORED TO EXISTING PLASTER, ACOUSTIC TILE, ETC.
11. NEW PENETRATIONS SUCH AS DUCTS, CONDUITS, PIPING, ELECTRICAL OUTLETS, LIGHT SWITCHES, RECESSED DEVICES OR ITEMS, HOLES, VOIDS, CRACKS, ETC. IN MODIFIED AND NEW CORRIDOR WALLS, SMOKE PARTITIONS, AND FLOOR SLABS SHALL BE SEALED TO PREVENT PASSAGE OF ANY SMOKE, FLAME, GASES, ETC. AS INDICATED IN THE CONTRACT DOCUMENTS.
12. WHERE NEW CONSTRUCTION REQUIRES CORE DRILLING THROUGH EXISTING STRUCTURAL CONCRETE FLOOR SLABS, AND WALLS THE CONTRACTOR SHALL COORDINATE HIS DRILLING WORK TO AVOID DRILLING INTO A STRUCTURAL ELEMENT, INCLUDING JOISTS, BEAMS, COLUMNS, ETC. ALSO SEE ELECTRICAL. DRAWINGS AND SPECIFICATIONS.
13. WHERE NEW CONSTRUCTION IS INDICATED TO BE INSTALLED IN EXISTING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS FOR PROPER FIT AND FOR ACCESS INTO THE BUILDING PRIOR TO SHOP DRAWING SUBMITTAL, ORDERING AND DELIVERING TO THE SITE.
14. FOR INFECTION CONTROL REASONS, WORK CONDUCTED IN THE CORRIDOR THAT DOES NOT GENERATE DUST MAY ONLY REMOVE UP TO 16 SQUARE FEET OF CEILING TILE AT ONCE. AS LONG AS THIS STANDARD IS FOLLOWED NEGATIVE AIR AND BARRIERS ARE NOT REQUIRED BY THE INFECTION CONTROL NURSES. IF DUST IS GENERATED AND GREATER THAN 16 SF OF CEILING TILES ARE DISTURBED AT ONCE THEN THE WORK AREA SHALL BE SEALED OFF WITH 6 MIL FIRE RETARDANT POLYETHYLENE AND NEGATIVE AIR PROVIDED. MAINTAIN 5' MINIMUM ACCESS IN CORRIDORS AT ALL TIMES. CLEAN THOROUGHLY PRIOR TO COMPLETION OF A GIVEN WORK AREA BY HEPA VACUUM AND WET MOP. REFER TO SPECIFICATION 01 35 26 FOR ADDITIONAL INFORMATION.

FULLY SPRINKLERED

Revisions		Date
1	ADDENDUM 1	11-03-2017
0	ISSUED FOR CONSTRUCTION	06-09-2017

CONSULTANTS:

STATE OF OHIO — MATTHEW J. METZ — E-77415 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

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Drawing Title: COVER SHEET

Approved: Project Director

Project Title: Upgrade UPS and AC in Computer Room

Location: Cincinnati, Ohio

Date: 06/09/17 | Checked: RG | Drawn: JK

Project No. VA Project No. 539-18-202

Building Number: 1

Drawing Number: GI001

Dwg. 1 of 13

Office of Construction and Facilities Management

Department of Veterans Affairs

GENERAL NOTES

A. EACH BRANCH CIRCUIT HOMERUN SHALL HAVE NO MORE THAN THREE CIRCUITS. EACH BRANCH CIRCUIT HOMERUN SHALL HAVE A SEPARATE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR.

B. MULTI-GANG BACKBOXES FOR DIFFERENT VOLTAGES AND TYPES OF EMERGENCY AND NORMAL BRANCH WIRING DEVICES SHALL HAVE DIVIDERS BETWEEN DEVICES.

C. COORDINATE ALL SHUT-DOWNS OF EXISTING ELECTRICALSYSTEMS WITH OWNER A MINIMUM OF FOURTEEN (14) WORKING DAYS IN ADVANCE. ALL SHUT-DOWNS SHALL OCCUR DURING WEEKENDS OR UNOCCUPIED TIMES, INCLUDE ALL PREMIUM TIME CHARGES IN BID.

D. ALL NOISE GENERATING OPERATIONS, INCLUDING CUTTING OF CEILINGS, WALLS AND FLOORS, CORING, DRILLING,ETC. SHALL BE SCHEDULED ON WEEKENDS OR BETWEEN 8:00PM AND 7:00AM ON WEEKDAYS. INCLUDE ALL PREMIUM TIME CHARGES IN BID.

E. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILINGS REQUIRED FOR ELECTRICAL WORK. ELECTRICAL CONTRACTOR SHALL REPLACE ANY DAMAGED CEILING MATERIAL.

F. ALL NEW WALL MOUNTED ELECTRICAL DEVICES ARE TO BE INSTALLED FLUSH IN WALL UNLESS OTHERWISE NOTED. ALL ELECTRICAL CONDUIT SHALL BE CONCEALED BEHIND FINISHED WALLS AND ABOVE FINISHED CEILING UNLESS OTHERWISE NOTED. THE COST TO CUT AND PATCH WALLS SHALL BE THE RESPONSIBILITY OF THE TRADE REQUIRING THE CUTTING.

G. ALL WORK SHALL BE PERFORMED IN STRICT CONFORMANCE WITH THE PHASING REQUIREMENTS OF THE PROJECT. ALL COSTS ASSOCIATED WITH THESE REQUIREMENTS SHALL BE INCLUDED IN THE BID SUBMITTAL. REFER TO ARCHITECTURAL PLANS FOR PHASING AND AREAS DESIGNATED AS "OFF HOURS" CONSTRUCTION AREAS.

H. DEFINITION: "PROVIDE" - FURNISH, INSTALL AND CONNECT COMPLETE.

GENERAL NOTES - DEMOLITION

A. FOR EXISTING EQUIPMENT, SUCH AS LIGHTING FIXTURES, WIRING DEVICES, CONDUITS, ETC., SHOWN ON PLANS TO BE REMOVED, COMPLETELY CUT/CAP CONDUITS AT THE AREA OF WORK PERIMETER AND REMOVE CONDUIT WITHIN THE WORK AREA, DISCONNECT WIRING AT THE OVERCURRENT PROTECTIVE DEVICE AND REMOVE WIRING COMPLETELY FROM THE ABANDONED CONDUITS.

B. DISCONNECT ALL ABANDONED WIRING OF ALL TYPES AT THE OVERCURRENT PROTECTIVE DEVICE. COMPLETELY REMOVE ALL ABANDONED WIRING.

C. MAINTAIN AND RESTORE, IF INTERRUPTED, ALL CONDUITS AND CONDUCTORS PASSING THROUGH RENOVATED AREAS AND SERVICING UNDISTURBED AREAS.

CODE COMPLIENCE

NFPA 2017

CHAPTER 6 - SPECIAL EQUIPMENT
ARTICLE 645 - INFORMATION TECHNOLOGY EQUIPMENT

645.5 SUPPLY CIRCUITS AND INTERCONNECTING CABLES
645.5(A) BRANCH CIRCUIT CONDUCTORS SHALL HAVE AN AMPACITY OF NOT LESS THAN 125% OF THE TOTAL CONNECTED LOAD.
645.5(B)(1) POWER SUPPLY CORDS SHALL NOT EXCEED 15 FEET IN LENGTH.
645.5(B)(2) POWER CORDS SHALL BE LISTED AND OF A TYPE PERMITTED FOR USE ON LISTED IT EQUIPMENT OR CONSTRUCTED FROM LISTED CORD WITH LISTED ATTACHMENT PLUGS AND CORD CONNECTORS OF A TYPE PERMITTED FOR IT EQUIPMENT.
645.5(C) INTERCONNECTING CABLES SHALL BE LISTED CABLES OR ASSEMBLIES.
645.5(D) WHERE EXPOSED TO PHYSICAL DAMAGE, SUPPLY CIRCUITS AND INTERCONNECTING CABLES SHALL BE PROTECTED FROM HARM.
645.5(E) FLOOR OPENINGS SHALL MINIMIZE THE ENTRANCE OF DEBRIS BENEATH THE FLOOR.
645.5(E)(1)(A) BRANCH CIRCUIT SUPPLY CONDUCTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF 300.11.
645.5(E)(1)(B) IN ADDITION TO THE WIRING METHODS OF 300.22(C), THE FOLLOWING WIRING METHODS ARE ALSO PERMITTED: (1) RIGID METAL CONDUIT, (2) RIGID NONMETALLIC CONDUIT, (3) INTERMEDIATE METAL CONDUIT, (4) ELECTRICAL METALLIC TUBING, (5) ELECTRICAL NONMETALLIC TUBING, (6) METAL WIREWAY, (7) NONMETALLIC WIREWAY, (8) SURFACE METAL RACEWAY WITH METAL COVER, (9) SURFACE NONMETALLIC RACEWAY, (10) FLEXIBLE METAL CONDUIT, (11) LIQUIDTIGHT FLEXIBLE METAL CONDUIT, (12) LIQUIDTIGHT NONMETALLIC CONDUIT, (13) TYPE MI CABLE, (14) TYPE MC CABLE, (15) TYPE AC CABLE, (16) ASSOCIATED METALLIC AND NONMETALLIC BOXES OR ENCLOSURES, (17) TYPE TC POWER AND CONTROL TRAY CABLE.
645.10 DISCONNECTING MEANS
645.10(B) REMOTE DISCONNECTING CONTROLS SHALL NOT BE REQUIRED FOR CRITICAL OPERATIONS DATA SYSTEMS WHEN ALL OF THE FOLLOWING ARE MET:
(1) AN APPROVED PROCEDURE HAS BEEN ESTABLISHED AND MAINTAINED FOR REMOVING POWER AND AIR MOVEMENT WITHIN THE ROOM OR ZONE. (2) QUALIFIED PERSONNEL ARE CONTINUOUSLY AVAILABLE TO ADVISE EMERGENCY RESPONDERS AND TO INSTRUCT THEM OF DISCONNECTING METHODS. (3) A SMOKE-SENSING FIRE DETECTION SYSTEM IS IN PLACE. (4) AN APPROVED FIRE SUPPRESSION SYSTEM SUITABLE FOR THE APPLICATION IS IN PLACE. (5) CABLES INSTALLED UNDER A RAISED FLOOR, OTHER THAN BRANCH CIRCUIT WIRING, AND POWER CORDS ARE INSTALLED IN COMPLIANCE WITH 645.5(E)(2) OR (E)(3), OR IN COMPLIANCE WITH TABLE 645.10(B)(5).
645.11 UPS SYSTEMS INSTALLED WITHIN THE INFORMATION TECHNOLOGY EQUIPMENT ROOM, AND THEIR SUPPLY AND OUTPUT CIRCUITS, SHALL COMPLY WITH 645.10. THE DISCONNECTING MEANS SHALL ALSO DISCONNECT THE BATTERY FROM ITS LOAD.
645.15 ALL EXPOSED NON-CURRENT CARRYING METAL PARTS OF AN IT SYSTEM SHALL BE BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR IN ACCORDANCE WITH PARTS I, V, VI, VII, AND VIII OF ARTICLE 250 OR SHALL BE DOUBLE INSULATED.
645.16 EACH UNIT OF AN IT SYSTEM SUPPLIED BY A BRANCH CIRCUIT SHALL BE PROVIDED WITH A MANUFACTURER'S NAMEPLATE, WHICH SHALL ALSO INCLUDE THE INPUT POWER REQUIREMENTS FOR VOLTAGE, FREQUENCY, AND MAXIMUM RATED LOAD IN AMPERES.
645.18 SURGE PROTECTION SHALL BE PROVIDED FOR CRITICAL OPERATIONS DATA SYSTEMS.
645.27 OVERCURRENT DEVICES FOR CRITICAL OPERATION DATA SYSTEMS SHALL BE SELECTIVELY COORDINATED WITH ALL SUPPLY-SIDE OVERCURRENT PROTECTIVE DEVICES.

CHAPTER 7 - SPECIAL CONDITIONS
ARTICLE 700 EMERGENCY SYSTEMS

700.8 A LISTED SURGE PROTECTION DEVICE SHALL BE INSTALLED IN ALL EMERGENCY SYSTEM SWITCHBOARDS AND PANELBOARDS.
700.32 EMERGENCY SYSTEM OVERCURRENT DEVICES SHALL BE SELECTIVELY COORDINATED WITH ALL SUPPLY-SIDE OVERCURRENT PROTECTIVE DEVICES.

ELECTRICAL ABBREVIATIONS

1PH	SINGLE-PHASE
1P	SINGLE POLE
2/C	TWO-CONDUCTOR
3/C	THREE-CONDUCTOR
3PH	THREE-PHASE
4/C	FOUR-CONDUCTOR
4W	FOUR-WIRE
AFC	ABOVE FINISHED COUNTER, AUTOMATIC FREQUENCY CONTROL, OR AVAILABLE FAULT CURRENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AH	AMPERE HOUR
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AMPERE INTERRUPTING CAPACITY
AMP	AMPERE
ASC	AMPS SHORT CIRCUIT
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
BAT	BATTERY
BC	BARE COPPER
BFF	BELOW FINISH FLOOR
BRKR	BREAKER
BYP	BY PASS
C	CONDUIT
CAB	CABINET
CAP	CAPACITY
CKT	CIRCUIT
CKT BRKR	CIRCUIT BREAKER
CLF	CURRENT LIMITING FUSE
CPT	CONTROL POWER TRANSFORMER
CT	CURRENT TRANSFORMER
CU	COPPER
CU FT	CUBIC FEET
CUR	CURRENT
DC	DIRECT CURRENT
DISC	DISCONNECT
DISTR	DISTRIBUTION
DISTR PNL	DISTRIBUTION PANEL
DMR SW	DIMMER SWITCH
DN	DOWN
DPDT	DOUBLE POLE, DOUBLE THROW
DPST	DOUBLE POLE, SINGLE THROW
DRSW	DOOR SWITCH
DS	DISCONNECT SWITCH
EG	EQUIPMENT GROUND
ELEV	ELEVATOR
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EXIST	EXISTING
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE METALLIC CONDUIT
FU SW	FUSED SWITCH
G	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GTB	GROUND TERMINAL BOX
IMC	INTERMEDIATE METAL CONDUIT
J-BOX	JUNCTION BOX
kV	KILOVOLT
kVA	KILOVOLT AMPERE
kVAH	KILOVOLT AMPERE PER HOUR
kVAR	KILOVOLT AMPERE REACTIVE
kW	KILOWATT
kWH	KILOWATT HOUR
kWHM	KILOWATT HOUR METER
LV	LOW VOLTAGE
MC	METAL-CLAD
MCA	MINIMUM CIRCUIT AMPS
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MOCP	MAXIMUM OVERCURRENT PROTECTION
MLO	MAIN LUGS ONLY
MT	MOUNT
MTD	MOUNTED
MTG	MOUNTING
MTS	MANUAL TRANSFER SWITCH
NA	NOT APPLICABLE
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NEUT OR N	NEUTRAL
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
OL	OVERLOAD
PB	PANELBOARD
PH	PHASE
PNL	PANEL
PT	POTENTIAL TRANSFORMER
PWR	POWER
REC	RECESSED
RECPT	RECEPTACLE
SCC	SHORT CIRCUIT CAPACITY
TP	TWISTED PAIR
TPS	TWISTED PAIR SHIELDED
TYP	TYPICAL
UFD	UNDERFLOOR DUCT
UGND	UNDERGROUND
UL	UNDERWRITERS LABORATORY
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLT
VA	VOLT AMPERE
VAR	VOLT AMPERE REACTIVE
VOLT	VOLTAGE
W	WATT
WP	WEATHERPROOF
XFMR	TRANSFORMER

ELECTRICAL SYMBOLS - POWER PLAN

- MOTOR, SINGLE-PHASE
- MOTOR, THREE-PHASE
- TRANSFORMER, PLAN
- WYE CONNECTION
- DUCT, CELL FLOOR HEADER
- DUCT, TROLLEY
- DUCT, UNDERFLOOR JUNCTION BOX
- EARTH GROUND
- JUNCTION BOX
- LADDER CABLE TRAY
- BRANCH CIRCUIT HOMERUN. LINES INDICATE NUMBER OF CIRCUITS, NEUTRAL, AND SWITCH LEG CONDUCTORS. ONE SEPARATE GREEN GROUNDING CONDUCTOR SHALL BE PROVIDED FOR EACH HOMERUN; NOT SHOWN
- PULL BOX
- WIREWAY
- RIGID CONDUIT LINE = RC
- DIRECT BURIAL CABLE = DB
- POWER DUCT = P
- BUSWAY
- FLOOR OUTLET, DATA COMMUNICATION
- OUTLET, DATA COMMUNICATION
- PUSH BUTTON
- DISTRIBUTION PANEL
- LIGHTING PANEL
- PANELBOARD CABINET, FLUSH MOUNTED
- PANELBOARD CABINET, SURFACE MOUNTED
- RECEPTACLE, CLOCK HANGER
- RECEPTACLE, DUPLEX
- RECEPTACLE, DUPLEX ON EMERGENCY POWER
- RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER
- RECEPTACLE, QUADRAPLEX
- RECEPTACLE, SINGLE
- RECEPTACLE, SINGLE WITH SWITCH
- RECEPTACLE, SPECIAL PURPOSE
  A = 120V, 20A, 1 PHASE, 2-POLE, 3W, NEMA 5-20R.
  B = 208V, 20A, 1 PHASE, 2-POLE, 3W, NEMA 6-20R.
  C = 120V, 30A, 1 PHASE, 2-POLE, 3W, NEMA 5-30R.
  D = 208V, 30A, 1 PHASE, 2-POLE, 3W, NEMA 6-30R.
  E = 208V, 60A, 1 PHASE, 3-POLE, 4W, NEMA 14-60R.
  F = 208V, 30A, 3 PHASE, 3-POLE 4W, NEMA 15-30R.
  G = 208V, 50A, 3 PHASE, 3 POLE, 4W, NEMA 15-30R.
  H = 208V, 60A, 3 PHASE, 3 POLE, 4W, NEMA 15-60R.
- RECEPTACLE, SWITCHED DUPLEX
- DROP CORD, SINGLE CONVENIENCE OUTLET, 3-WIRE, GROUNDING TYPE, 20A, W/#12 CONDUCTORS IN FLEXIBLE CORD (CENTER LINE OF OUTLET: 6'-6" [1981mm] AFF. MINIMUM).
- ELECTRICAL STRIP MOLD (OUTLETS ON 2'-0" [610mm] CENTERS OR AS DESIGNATED ON DRAWINGS), MTD 3'-6" [1067mm] AFF OR AS INDICATED.
- 3-GANG COMPARTMENT BOX IN FLOOR FOR TELEPHONE, DATA & RECEPTACLE.
- RELAY: LETTER INDICATES RELAY TYPE
  50 = INSTANTANEOUS OVERCURRENT OR RATE-OF-RISE
  51 = AC-TIME OVERCURRENT
  67 = AC-DIRECTIONAL OVERCURRENT
  86 = LOCK OUT

ELECTRICAL SYMBOLS - POWER PLAN

- DISCONNECT SWITCH, FUSED
- DISCONNECT SWITCH, UNFUSED
- STARTER, COMBINATION WITH DISCONNECT SWITCH
- STARTER OR MOTOR CONTROLLER
- VARIABLE FREQUENCY DRIVE
- CONDUIT TERMINATED 6" [152mm] AFF IN STANDARD BOX FOR EXTENSION TO EQUIPMENT AS DIRECTED.
- CONDUIT TERMINATED W/COUPLING (FLUSH W/FINISHED FLOOR) FOR EXTENSION TO EQUIPMENT AS DIRECTED.
- SWITCH
  F = FUSED SWITCH
  L = LOCK
  M = MANUAL MOTOR STARTING
  MP= MOTOR SNAP WITH PILOT LIGHT (THERMAL TYPE)
  PB= PUSH BUTTON STATION
  WP= WEATHER PROOF
  K = KEY OPERATED
  LM= LOW VOLTAGE MASTER
  MC= MOMENTARY CONTACT
  P = WITH PILOT LIGHT
  RC= REMOTE CONTROL
  X = EXPLOSION PROOF

ELECTRICAL SYMBOLS - DIAGRAM

- DELTA CONNECTION
- MOTOR, SINGLE-PHASE
- MOTOR, THREE-PHASE
- TRANSFORMER
- WYE CONNECTION
- EARTH GROUND
- JUNCTION BOX
- PULL BOX
- NORMALLY CLOSED RELAY CONTACT
- NORMALLY OPEN RELAY CONTACT
- FUSE WITH RATING
- MOLDED CASE CIRCUIT BREAKER
- LOW-VOLTAGE DRAWOUT AIR CIRCUIT BREAKER
- SWITCH AND FUSE UNIT
- FUSED DRAWOUT POTENTIAL TRANSFORMER
- RELAY
  50 = INSTANTANEOUS OVERCURRENT OR RATE-OF-RISE
  51 = AC-TIME OVERCURRENT
  67 = AC-DIRECTIONAL OVERCURRENT
  86 LOCKING OUT
- DISCONNECT SWITCH, FUSED
- DISCONNECT SWITCH, UNFUSED
- FUSIBLE LINK
- STARTER, COMBINATION WITH DISCONNECT SWITCH
- STARTER OR MOTOR CONTROLLER
- BATTERY
- METER
- AMMETER
- VOLTMETER
- WATTMETER
- WATT-HOUR METER

FULLY SPRINKLERED

Revisions		Date
0	ISSUED FOR CONSTRUCTION	06-09-2017

CONSULTANTS:

STATE OF OHIO — MATTHEW J. METZ — E-77415 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

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Drawing Title: ELECTRICAL LEGENDS

Approved: Project Director

Project Title: Upgrade UPS and AC in Computer Room

Location: Cincinnati, Ohio

Date: 06/09/17 | Checked: RG | Drawn: JK

Project No. VA Project No. 539-18-202

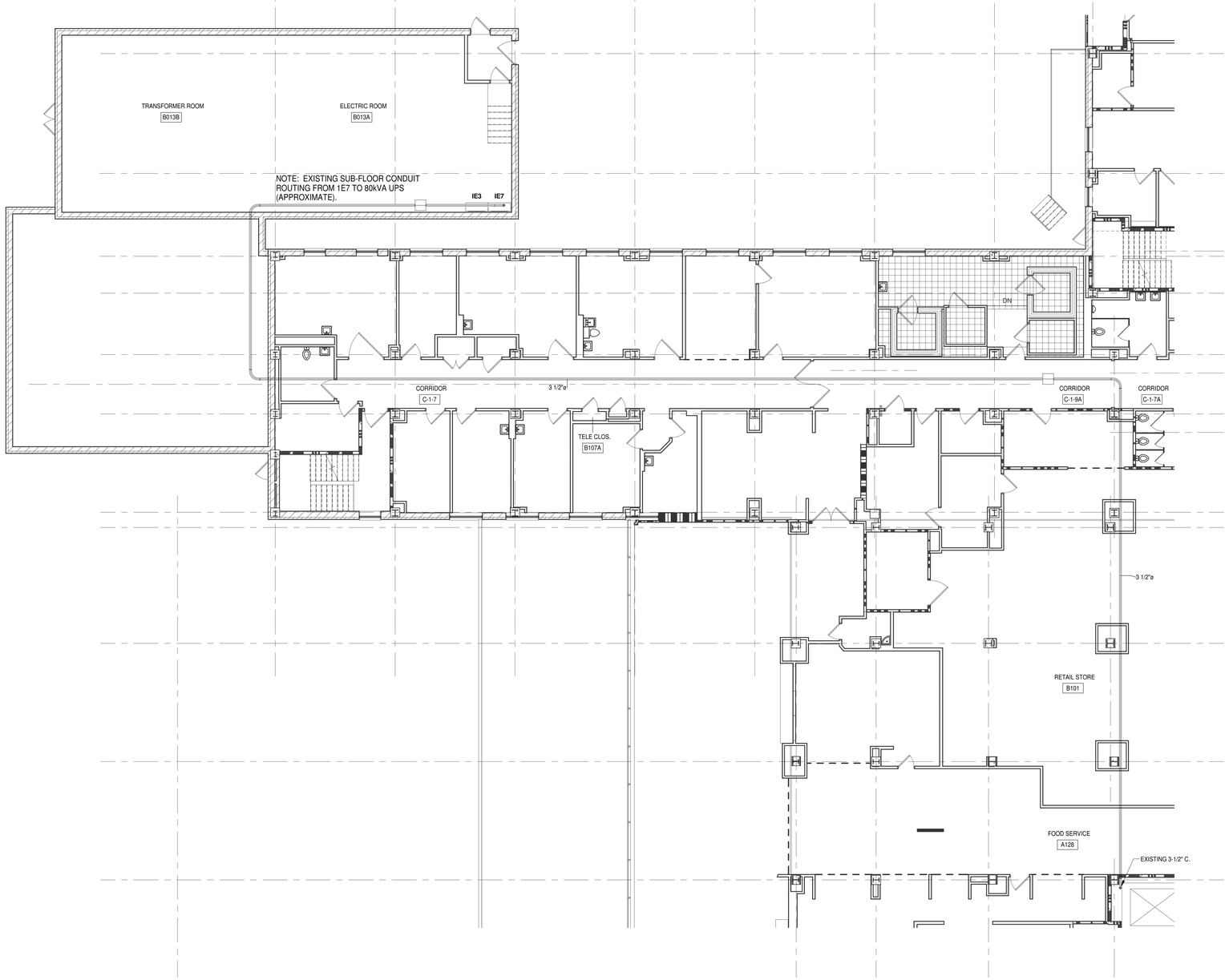
Building Number: 1

Drawing Number: E001

Dwg. 2 of 13

Office of Construction and Facilities Management

Department of Veterans Affairs



1 PARTIAL FIRST FLOOR ELECTRIC PLAN - EXISTING UPS POWER (REFERENCE ONLY)
SCALE: 1/8" = 1'-0"

GENERAL POWER NOTES:

A. ALL ELECTRIC WIRING & CONDUITS SHALL BE INSTALLED PER LOCAL CODES AND AS DIRECTED BY THE LOCAL ELECTRIC CODE OFFICIAL. VERIFY ALL REQUIREMENTS PRIOR TO ROUGH-IN.
B. SUPPLY ARC FAULT WARNING LABELS AS REQUIRED BY N.E.C. 110.16
C. ALL MULTI-WIRE CIRCUITS SHALL HAVE COMMON TRIP OVER-CURRENT PROTECTION DEVICES.
D. ROUTING OF CONDUIT IS ESTIMATED. FIELD VERIFICATION OF CONDUIT ROUTING & PULLBOX LOCATIONS IS REQUIRED.
E. PROVIDE FIRESTOPPING AT ALL RATED WALL PENETRATIONS - SEE PLANS FOR RATED WALLS. PROVIDE ACOUSTICAL WALL SEALANT AT ALL OTHER WALL PENETRATIONS.
F. CONTRACTOR TO PROTECT EXISTING INSTALLATIONS FROM DAMAGE. ANY DAMAGE TO EXISTING FACILITY WILL BE REPAIRED AT CONTRACTOR'S EXPENSE.

FULLY SPRINKLERED

Revisions		Date
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CONSULTANTS:

STATE OF OHIO — MATTHEW J. METZ — E-77415 — REGISTERED PROFESSIONAL ENGINEER

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Drawing Title: PARTIAL FIRST FLOOR PLAN
Approved: Project Director

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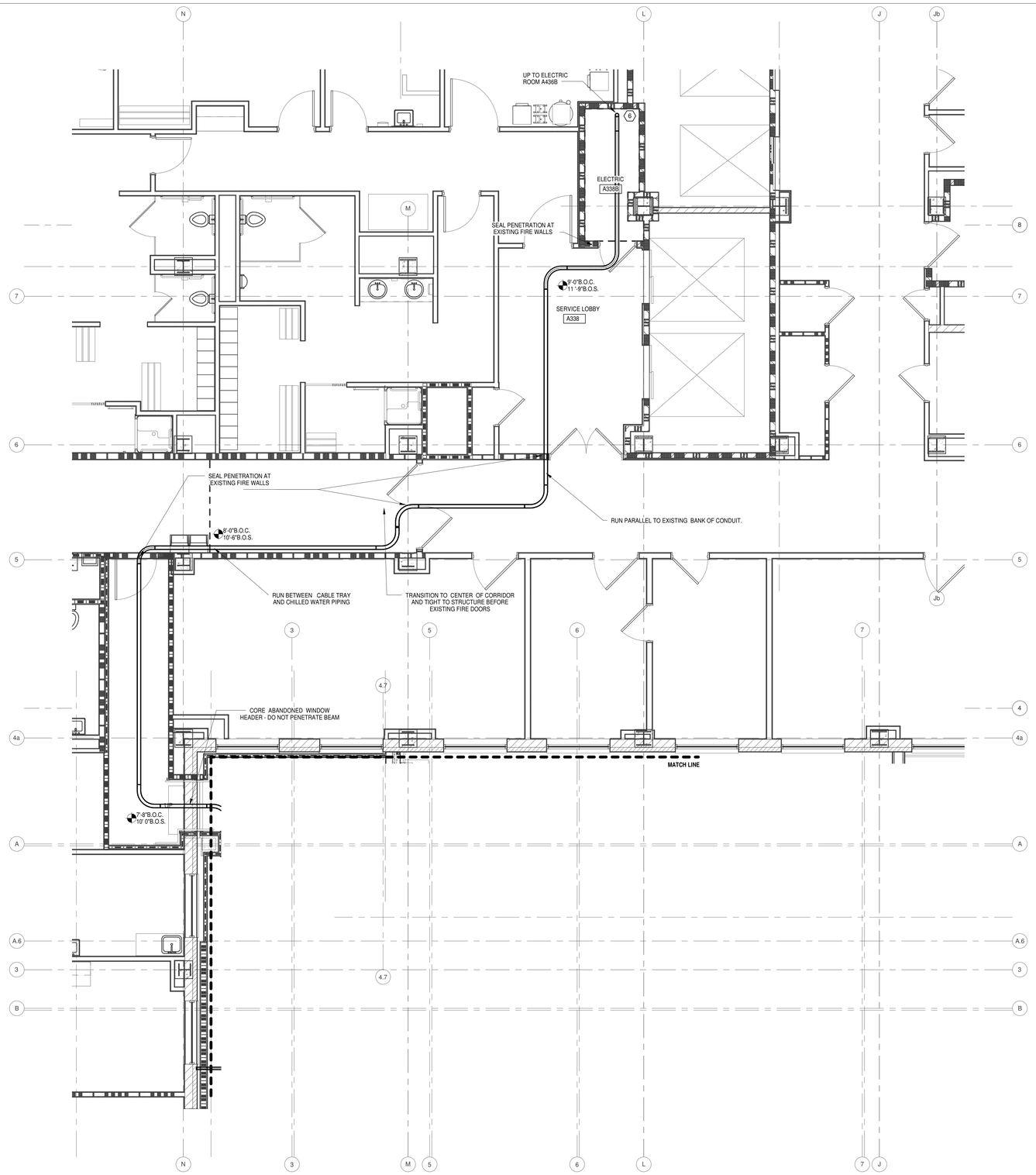
Location: Cincinnati, Ohio
Date: 06/09/17 | Checked: RG | Drawn: JK

Project No. VA Project No. 539-18-202
Building Number: 1
Drawing Number: EP101
Dwg. 3 of 13

Office of Construction and Facilities Management
Department of Veterans Affairs



1 ELECTRICAL POWER THIRD FLOOR PLAN - PANEL EDPEQ3
SCALE: 1/4" = 1'-0"

GENERAL POWER NOTES:

A. ALL ELECTRIC WIRING & CONDUITS SHALL BE INSTALLED PER LOCAL CODES AND AS DIRECTED BY THE LOCAL ELECTRIC CODE OFFICIAL. VERIFY ALL REQUIREMENTS PRIOR TO ROUGH-IN.
B. SUPPLY ARC FAULT WARNING LABELS AS REQUIRED BY N.E.C. 110.16.
C. ALL MULTI-WIRE CIRCUITS SHALL HAVE COMMON TRIP OVER-CURRENT PROTECTION DEVICES.
D. ROUTING OF CONDUIT IS ESTIMATED. FIELD VERIFICATION OF CONDUIT ROUTING & PULLBOX LOCATIONS IS REQUIRED.
E. PROVIDE FIRESTOPPING AT ALL RATED WALL PENETRATIONS - SEE PLANS FOR RATED WALLS.
PROVIDE ACOUSTICAL WALL SEALANT AT ALL OTHER WALL PENETRATIONS.
F. CONTRACTOR TO PROTECT EXISTING INSTALLATIONS FROM DAMAGE. ANY DAMAGE TO EXISTING FACILITY WILL BE REPAIRED AT CONTRACTOR'S EXPENSE.

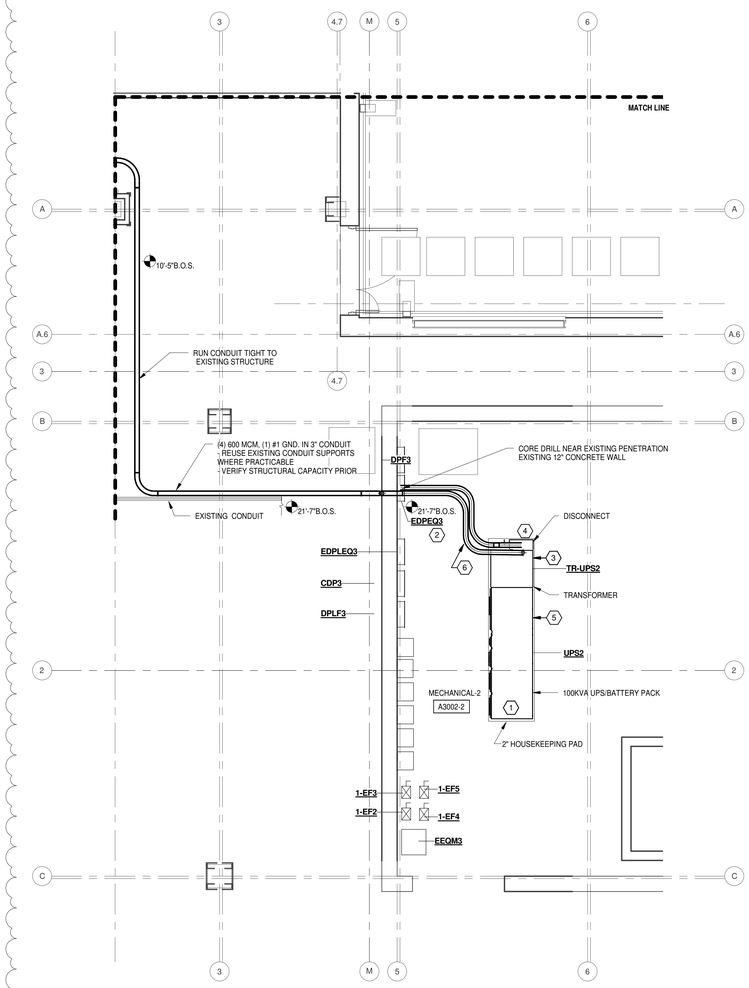
⓪ PHASING NOTES:

PHASE 1

1. PROVIDE 100KVA UPS AND ASSOCIATED TRANSFORMER. INSTALL UPON 2" POURED CONCRETE PAD WITHIN MECHANICAL ROOM A3002-2. FURNISH ALL ASSOCIATED COMPONENTS AND PROVIDE INSTALLATION, PROGRAMMING, STARTUP, ASSOCIATED CONTROL WIRING AND ALL ASSOCIATED TERMINATIONS.
2. PROVIDE 200A CIRCUIT BREAKER IN PANEL EDPEQ3 - VERIFY CAPACITY. ROUTE FEEDER IN CONDUIT FROM NEW CIRCUIT BREAKER TO UPS.
3. PROVIDE 125kVA, 480V-208Y/120V TRANSFORMER IN MECHANICAL ROOM A3002-2.
4. PROVIDE 600V 200A 3P NON-FUSED DISCONNECT (14,000AIC RATED). ROUTE CONDUIT AND WIRE TO SERVE TR-UPS2 PRIMARY.
5. PROVIDE CONDUIT AND WIRE FROM TRANSFORMER TO UPS INPUT BREAKER.
6. PROVIDE CONDUIT AND WIRE FROM UPS SHUNT TRIP OUTPUT BREAKER TO DISTRIBUTION PANELS IN ROOM A4037C ON THE 4TH FLOOR. REFER TO SHEET EP103.

ABBREVIATIONS

B.O.C. = BOTTOM OF CEILING
B.O.S. = BOTTOM OF STRUCTURE



CABLE SCHEDULE				
FROM	TO	CABLE SIZE	CABLE TYPE	CABLE LENGTH
EDPEQ3 PANEL	UPS2	REFER TO SINGLE LINE	THWN-2	35'
UPS2	TR-UPS2	REFER TO SINGLE LINE	THWN-2	25'
TR-UPS2 DISCONNECT	UPS2 PANEL 1	REFER TO SINGLE LINE	THWN-2	210'
UPS2 PANEL 1	UPS2 PANEL 2	REFER TO SINGLE LINE	THWN-2	5'

FULLY SPRINKLERED

Revisions		Date
1	ADDENDUM 1	11-03-2017
0	ISSUED FOR CONSTRUCTION	06-09-2017

CONSULTANTS:

STATE OF OHIO — MATTHEW J. METZ — E-77415 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

FFE Inc. ENGINEERING & TECHNICAL SERVICES

FFE, Inc.
420 Springfield Pike
Cincinnati OH, 45215
513-522-0956

Drawing Title: PHASE 1 PARTIAL THIRD FLOOR PLAN

Approved: Project Director

Project Title: Upgrade UPS and AC in Computer Room

Location: Cincinnati, Ohio

Date: 06/09/17 | Checked: RG | Drawn: JK

Project No. VA Project No. 539-18-202

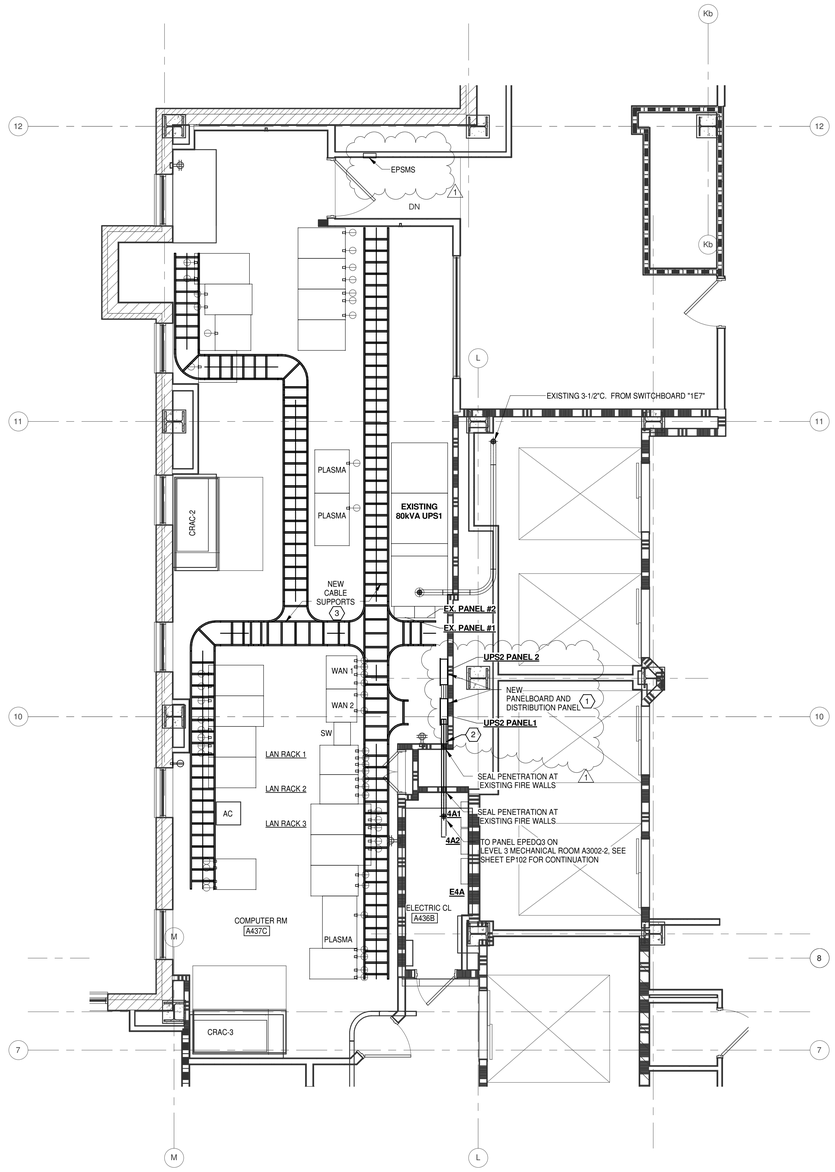
Building Number: 1

Drawing Number: EP102

Dwg. 4 of 13

Office of Construction and Facilities Management

Department of Veterans Affairs



1 PHASE 1 FOURTH FLOOR COMPUTER ROOM POWER PLAN

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

GENERAL POWER NOTES:

A. ALL ELECTRIC WIRING & CONDUITS SHALL BE INSTALLED PER LOCAL CODES AND AS DIRECTED BY THE LOCAL ELECTRIC CODE OFFICIAL. VERIFY ALL REQUIREMENTS PRIOR TO ROUGH-IN.
B. SUPPLY ARC FAULT WARNING LABELS AS REQUIRED BY N.E.C. 110.16
C. ALL MULTI-WIRE CIRCUITS SHALL HAVE COMMON TRIP OVER-CURRENT PROTECTION DEVICES.
D. ROUTING OF CONDUIT IS ESTIMATED. FIELD VERIFICATION OF CONDUIT ROUTING & PULLBOX LOCATIONS IS REQUIRED.
E. PROVIDE FIRESTOPPING AT ALL RATED WALL PENETRATIONS - SEE PLANS FOR RATED WALLS. PROVIDE ACOUSTICAL WALL SEALANT AT ALL OTHER WALL PENETRATIONS.
F. CONTRACTOR TO PROTECT EXISTING INSTALLATIONS FROM DAMAGE. ANY DAMAGE TO EXISTING FACILITY WILL BE REPAIRED AT CONTRACTOR'S EXPENSE.

0 PHASING NOTES:

PHASE 1

1. PROVIDE AND INSTALL NEW DISTRIBUTION PANEL AND PANELBOARD AS INDICATED ON EP603.
2. PROVIDE AND INSTALL CONDUIT AND WIRE FROM UPS OUTPUT BREAKER TO NEW DISTRIBUTION PANELS AS INDICATED ON EP102.
3. PROVIDE AND INSTALL APPROXIMATELY 24" LONG SECTIONS OF UNISTRUT TO SUPPORT AND ORGANIZE THE POWER CABLES. UNISTRUT IS TO BE SUPPORTED FROM THE RAISED FLOOR SUPPORTS. INSTALL ON APPROXIMATELY 4'-0" CENTERS.

FULLY SPRINKLERED

Revisions		Date
1	ADDENDUM 1	11-03-2017
0	ISSUED FOR CONSTRUCTION	06-09-2017

CONSULTANTS:

STATE OF OHIO — MATTHEW J. METZ — E-77415 — REGISTERED PROFESSIONAL ENGINEER

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ENGINEERING & TECHNICAL SERVICES

Drawing Title: POWER PLAN - PHASE 1 PARTIAL FOURTH FLOOR IT ROOM A437C

Approved: Project Director

Project Title: Upgrade UPS and AC in Computer Room

Location: Cincinnati, Ohio

Date: 06/09/17 | Checked: RG | Drawn: JK

Project No. VA Project No. 539-18-202

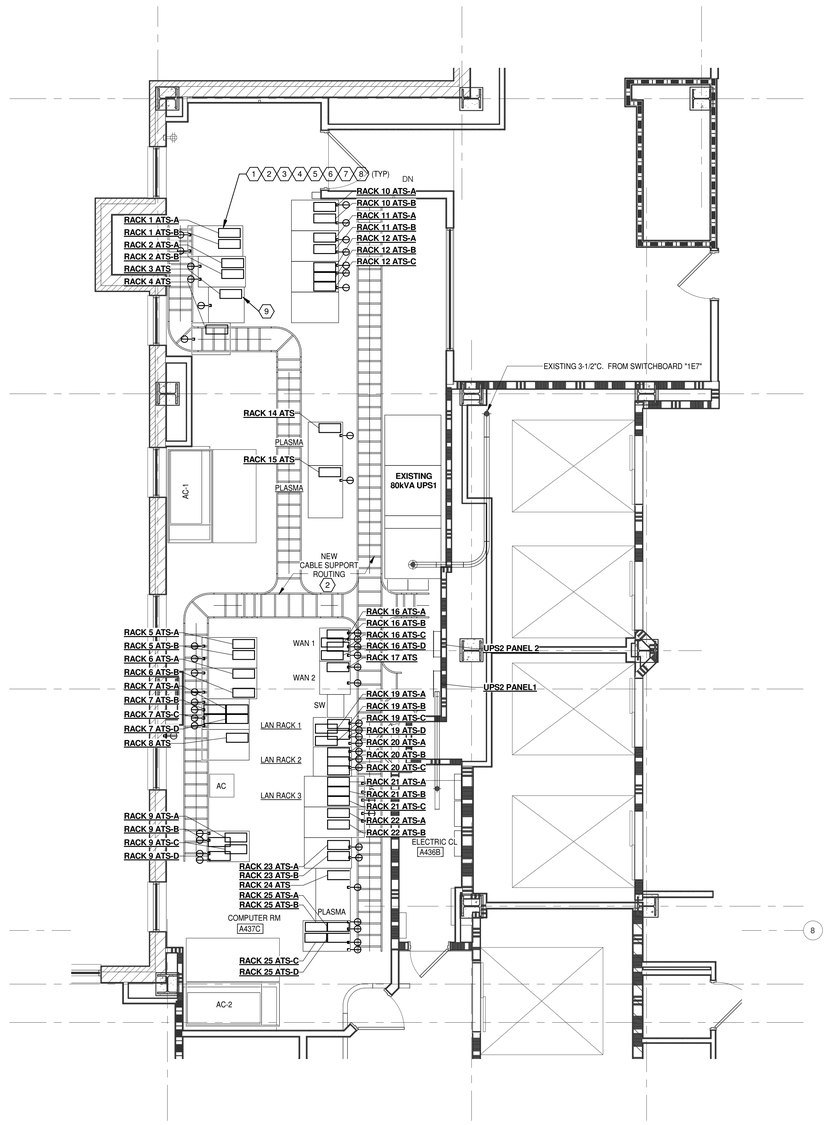
Building Number: 1

Drawing Number: EP103

Dwg. 5 of 13

Office of Construction and Facilities Management

Department of Veterans Affairs



1 PHASE 2 FOURTH FLOOR COMPUTER ROOM POWER PLAN

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

GENERAL POWER NOTES:

A. ALL ELECTRIC WIRING & CONDUITS SHALL BE INSTALLED PER LOCAL CODES AND AS DIRECTED BY THE LOCAL ELECTRIC CODE OFFICIAL. VERIFY ALL REQUIREMENTS PRIOR TO ROUGH-IN.
B. SUPPLY ARC FAULT WARNING LABELS AS REQUIRED BY N.E.C. 110.16
C. ALL MULTI-WIRE CIRCUITS SHALL HAVE COMMON TRIP OVER-CURRENT PROTECTION DEVICES.
D. ROUTING OF CONDUIT IS ESTIMATED. FIELD VERIFICATION OF CONDUIT ROUTING & PULLBOX LOCATIONS IS REQUIRED.
E. PROVIDE FIRESTOPPING AT ALL RATED WALL PENETRATIONS - SEE PLANS FOR RATED WALLS. PROVIDE ACOUSTICAL WALL SEALANT AT ALL OTHER WALL PENETRATIONS.
F. CONTRACTOR TO PROTECT EXISTING INSTALLATIONS FROM DAMAGE. ANY DAMAGE TO EXISTING FACILITY WILL BE REPAIRED AT CONTRACTOR'S EXPENSE.

PHASING NOTES:

PHASE 2

1. PROVIDE AND INSTALL NEW RACK AUTO TRANSFER SWITCHES AND POWER DISTRIBUTION UNITS IN EACH RACK. (SEE HEX NOTE 1 ON PLANS)
2. PROVIDE AND INSTALL NEW CABLE FROM PANELS UPS2-1 AND UPS2-2 TO EACH RACK ATS IN ACCORDANCE WITH THE ASSOCIATED PANEL SCHEDULE. INSTALL NEW POWER CIRCUITS IN A NEAT AND ORGANIZED MANNER. SECURE TO NEW CABLE SUPPORTS USING CABLE ACCESSORIES THAT ARE EITHER METAL OR THAT ARE LISTED AS HAVING LOW SMOKE OR HEAT RELEASE PROPERTIES. CONNECT NEW CIRCUITS TO ATS SECONDARY INPUT. (SEE HEX NOTE 2 ON PLANS)
3. VERIFY SECONDARY POWER IS AVAILABLE AT EACH ATS. (SEE HEX NOTE 3 ON PLANS)
4. CONNECT CONTROL CIRCUIT FROM EACH ATS AND EACH PDU TO LOCAL NETWORK. (SEE HEX NOTE 4 ON PLANS)
5. INSTALL ATS AND PDU MONITORING SOFTWARE IN HMI DESIGNATED BY VA IT DEPARTMENT. (SEE HEX NOTE 5 ON PLANS)
6. VERIFY CONTROL AND POWER FUNCTIONS FOR EACH ATS AND EACH PDU. (SEE HEX NOTE 6 ON PLANS)
7. COORDINATE WITH VA IT DEPARTMENT FOR SEQUENCING OF SWITCHING RACK EQUIPMENT OVER TO NEW RACK PDUs. (SEE HEX NOTE 7 ON PLANS)
8. AS EACH DEVICE IS ADDED TO A PDU, CHECK THE PDU POWER METER TO ENSURE THE CIRCUIT IS NOT OVERLOADED. IF THE LOAD EXCEEDS 80% OF THE CAPACITY OF THE CIRCUIT, ADD AN ADDITIONAL CIRCUIT INCLUDING ATS AND PDU. FOR BIDDING PURPOSES, ASSUME NO MORE THAN TWO ADDITIONAL 120V, 30 AMP CIRCUITS. (SEE HEX NOTE 8 ON PLANS)
9. RACK 9 POWER FEED FROM UPS1 ONLY. EXISTING TO REMAIN. (SEE HEX NOTE 9 ON PLANS)

UPS2 PANELS 1 AND 2 CABLE SCHEDULE

ATS NAME	VOLTAGE	PANEL	CIRCUIT	RECEPTACLE	CABLE SIZE	CABLE TYPE	CABLE LENGTH
RACK 1 ATS-A	208V	UPS2 PANEL 1	21, 23	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	47' - 10"
RACK 1 ATS-B	208V	UPS2 PANEL 1	37,39	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	47' - 2"
RACK 2 ATS-A	208V	UPS2 PANEL 1	30, 32	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	45' - 10"
RACK 2 ATS-B	208V	UPS2 PANEL 2	18, 20	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	44' - 11"
RACK 4 ATS-A	120V	UPS2 PANEL 1	19	NEMA L5-20	(2) #12 AWG / #10 GND	MC	36' - 4"
RACK 5 ATS-A	208V	UPS2 PANEL 1	34, 36	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	26' - 1"
RACK 5 ATS-B	208V	UPS2 PANEL 2	39, 41	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	26' - 4"
RACK 6 ATS-A	120V	UPS2 PANEL 1	20	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	27' - 8"
RACK 6 ATS-B	208V	UPS2 PANEL 2	36, 38	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	28' - 11"
RACK 7 ATS-A	120V	UPS2 PANEL 2	22	NEMA L5-20	(2) #12 AWG / #10 GND	MC	30' - 0"
RACK 7 ATS-B	208V	UPS2 PANEL 1	24, 26	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	30' - 0"
RACK 7 ATS-C	120V	UPS2 PANEL 1	6	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	30' - 7"
RACK 7 ATS-D	120V	UPS2 PANEL 2	5	NEMA L5-20	(2) #12 AWG / #10 GND	MC	30' - 7"
RACK 8 ATS	120V	UPS2 PANEL 2	3	NEMA L5-20	(2) #12 AWG / #10 GND	MC	31' - 9"
RACK 9 ATS-A	120V	UPS2 PANEL 2	21	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	40' - 0"
RACK 9 ATS-B	120V	UPS2 PANEL 1	27	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	40' - 0"
RACK 9 ATS-C	120V	UPS2 PANEL 1	11	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	40' - 0"
RACK 9 ATS-D	120V	UPS2 PANEL 2	24	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	40' - 0"
RACK 10 ATS-A	208V	UPS2 PANEL 1	8, 10	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	37' - 4"
RACK 10 ATS-B	208V	UPS2 PANEL 2	4, 6	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	36' - 7"
RACK 11 ATS-A	208V	UPS2 PANEL 1	8, 10	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	35' - 3"
RACK 11 ATS-B	208V	UPS2 PANEL 2	4, 6	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	34' - 5"
RACK 12 ATS-A	120V	UPS2 PANEL 1	2	NEMA L5-20	(2) #12 AWG / #10 GND	MC	33' - 3"
RACK 12 ATS-B	120V	UPS2 PANEL 2	26	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	33' - 3"
RACK 12 ATS-C	120V	UPS2 PANEL 1	4	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	33' - 3"
RACK 14 ATS	120V	UPS2 PANEL 2	2	NEMA L5-20	(2) #12 AWG / #10 GND	MC	22' - 11"
RACK 15 ATS	120V	UPS2 PANEL 2	14	NEMA L5-20	(2) #12 AWG / #10 GND	MC	20' - 0"
RACK 16 ATS-A	208V	UPS2 PANEL 1	40, 42	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	9' - 5"
RACK 16 ATS-B	120V	UPS2 PANEL 1	7	NEMA L5- 20	(2) #12 AWG / #10 GND	MC	9' - 5"
RACK 16 ATS-C	208V	UPS2 PANEL 2	17, 19	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	9' - 5"
RACK 16 ATS-D	120V	UPS2 PANEL 2	16	NEMA L5-20	(2) #12 AWG / #10 GND	MC	9' - 5"
RACK 17 ATS	120V	UPS2 PANEL 2	23	NEMA L5-20	(2) #12 AWG / #10 GND	MC	7' - 3"
RACK 19 ATS-A	208V	UPS2 PANEL 2	7, 9	NEMA L6-20	(2) #12 AWG / #10 GND	MC	9' - 10"
RACK 19 ATS-B	208V	UPS2 PANEL 1	13, 15	NEMA L6-20	(2) #12 AWG / #10 GND	MC	9' - 10"
RACK 19 ATS-C	208V	UPS2 PANEL 2	31, 33	NEMA L6-20	(2) #12 AWG / #10 GND	MC	9' - 10"
RACK 19 ATS-D	120V	UPS2 PANEL 1	9	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	9' - 10"
RACK 20 ATS-A	208V	UPS2 PANEL 1	16, 18	NEMA L6-20	(2) #12 AWG / #10 GND	MC	12' - 0"
RACK 20 ATS-B	208V	UPS2 PANEL 2	28, 30	NEMA L6-20	(2) #12 AWG / #10 GND	MC	12' - 0"
RACK 20 ATS-C	208V	UPS2 PANEL 2	35, 37	NEMA L6-20	(2) #12 AWG / #10 GND	MC	12' - 0"
RACK 21 ATS-A	120V	UPS2 PANEL 1	25	NEMA L5-20	(2) #12 AWG / #10 GND	MC	13' - 11"
RACK 21 ATS-B	208V	UPS2 PANEL 1	31, 33	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	13' - 11"
RACK 21 ATS-C	208V	UPS2 PANEL 2	32, 34	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	13' - 11"
RACK 22 ATS-A	120V	UPS2 PANEL 1	28	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	15' - 10"
RACK 22 ATS-B	120V	UPS2 PANEL 2	22	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	15' - 10"
RACK 23 ATS-A	120V	UPS2 PANEL 1	28	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	17' - 10"
RACK 23 ATS-B	120V	UPS2 PANEL 2	22	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	17' - 10"
RACK 24 ATS	120V	UPS2 PANEL 2	8	NEMA L5-20	(2) #12 AWG / #10 GND	MC	21' - 2"
RACK 25 ATS-A	120V	UPS2 PANEL 1	17	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	23' - 5"
RACK 25 ATS-B	120V	UPS2 PANEL 2	29	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	23' - 5"
RACK 25 ATS-C	120V	UPS2 PANEL 2	25	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	23' - 5"
RACK 25 ATS-D	120V	UPS2 PANEL 2	15	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	23' - 5"

FULLY SPRINKLERED

Revisions		Date
0	ISSUED FOR CONSTRUCTION	06-09-2017

CONSULTANTS:

STATE OF OHIO — MATTHEW J. METZ — E-77415 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

FFE, Inc.
420 Springfield Pike
Cincinnati OH, 45215
513-522-0956

FFE Inc. ENGINEERING & TECHNICAL SERVICES

Drawing Title: POWER PLAN - PHASE 2 PARTIAL FOURTH FLOOR IT ROOM A437C

Approved: Project Director

Project Title: Upgrade UPS and AC in Computer Room

Location: Cincinnati, Ohio

Date: 06/09/17 | Checked: RG | Drawn: JK

Project No. VA Project No. 539-18-202

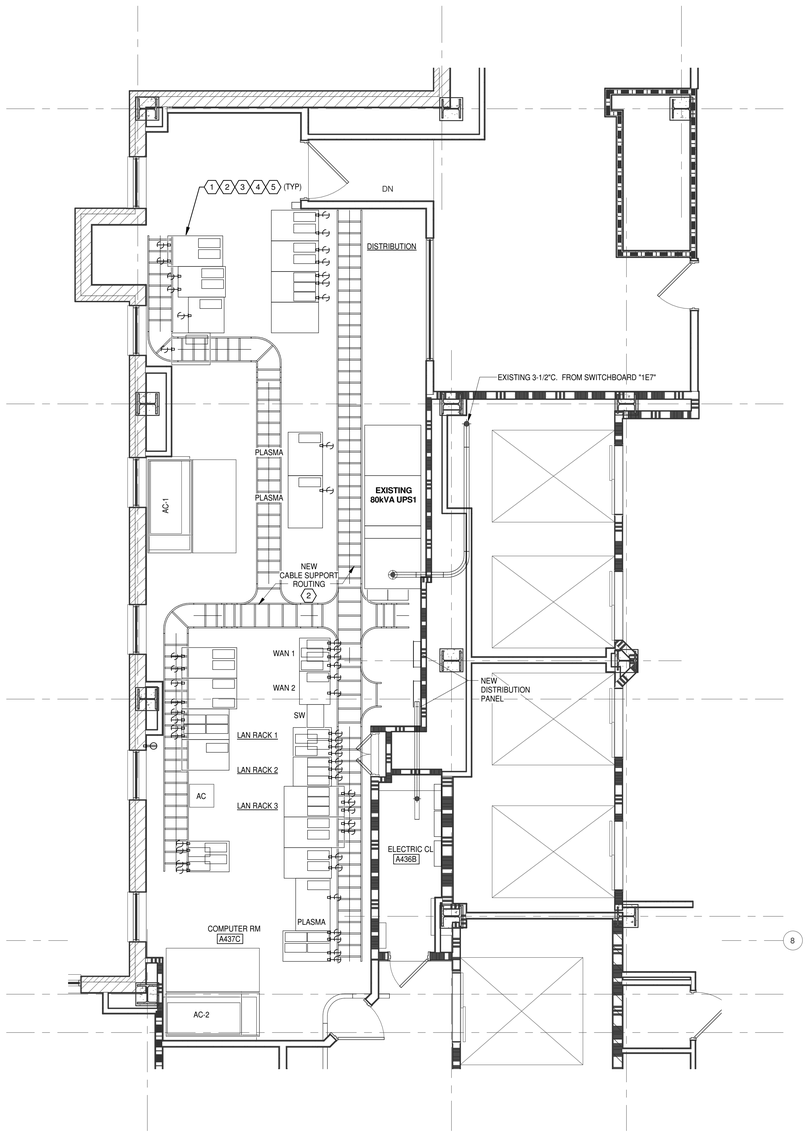
Building Number: 1

Drawing Number: EP104

Dwg. 6 of 13

Office of Construction and Facilities Management

Department of Veterans Affairs



2 PHASE 3 FOURTH FLOOR COMPUTER ROOM POWER PLAN

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

GENERAL POWER NOTES:

A. ALL ELECTRIC WIRING & CONDUITS SHALL BE INSTALLED PER LOCAL CODES AND AS DIRECTED BY THE LOCAL ELECTRIC CODE OFFICIAL. VERIFY ALL REQUIREMENTS PRIOR TO ROUGH-IN.
B. SUPPLY ARC FAULT WARNING LABELS AS REQUIRED BY N.E.C. 110.16
C. ALL MULTI-WIRE CIRCUITS SHALL HAVE COMMON TRIP OVER-CURRENT PROTECTION DEVICES.
D. ROUTING OF CONDUIT IS ESTIMATED. FIELD VERIFICATION OF CONDUIT ROUTING & PULLBOX LOCATIONS IS REQUIRED.
E. PROVIDE FIRESTOPPING AT ALL RATED WALL PENETRATIONS - SEE PLANS FOR RATED WALLS. PROVIDE ACOUSTICAL WALL SEALANT AT ALL OTHER WALL PENETRATIONS.
F. CONTRACTOR TO PROTECT EXISTING INSTALLATIONS FROM DAMAGE. ANY DAMAGE TO EXISTING FACILITY WILL BE REPAIRED AT CONTRACTOR'S EXPENSE.

PHASING NOTES:

PHASE 3

1. AFTER RACK EQUIPMENT IS SWITCHED OVER TO UPS2 RECONFIGURE UPS1 CIRCUITS TO MATCH NEW SCHEDULE ON SHEET EP602.
2. ROUTE UPS1 WIRING IN A NEAT AND ORGANIZED MANNER. SECURE TO NEW CABLE SUPPORTS USING CABLE ACCESSORIES THAT ARE EITHER METAL OR THAT ARE LISTED AS HAVING LOW SMOKE OR HEAT RELEASE PROPERTIES. (EXHIBIT A MAXIMUM PEAK OPTICAL DENSITY OF 0.5 OR LESS, AN AVERAGE OPTICAL DENSITY OF 0.15 OR LESS, AND A PEAK HEAT RELEASE RATE OF 100kW OR LESS WHEN TESTED IN ACCORDANCE WITH ANSI/UL 2043-2008)
3. REMOVE UNUSED RECEPTACLES AND CABLES. INSTALL NEW RECEPTACLES AND CONNECT TO NEW RACK ATS UNITS.
4. VERIFY ATS SWITCHES TO PRIMARY POWER WHEN UPS1 CIRCUIT IS ENERGIZED.
5. CLOSE ALL FLOOR PENETRATIONS WITH 1" THICK, FIRE RETARDANT, FLEXIBLE FOAM SHEETING, FOAM TO MEET UL94, HF1 RATING.

FULLY SPRINKLERED

Revisions		Date
0	ISSUED FOR CONSTRUCTION	06-09-2017

CONSULTANTS:

STATE OF OHIO
MATTHEW J. METZ
E-77415
REGISTERED
PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:
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ENGINEERING & TECHNICAL SERVICES

Drawing Title: POWER PLAN - PHASE 3 PARTIAL FOURTH FLOOR IT ROOM A437C

Approved: Project Director

Project Title: Upgrade UPS and AC in Computer Room

Location: Cincinnati, Ohio

Date: 06/09/17 | Checked: RG | Drawn: JK

Project No. VA Project No. 539-18-202

Building Number: 1

Drawing Number: EP105

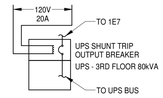
Dwg. 7 of 13

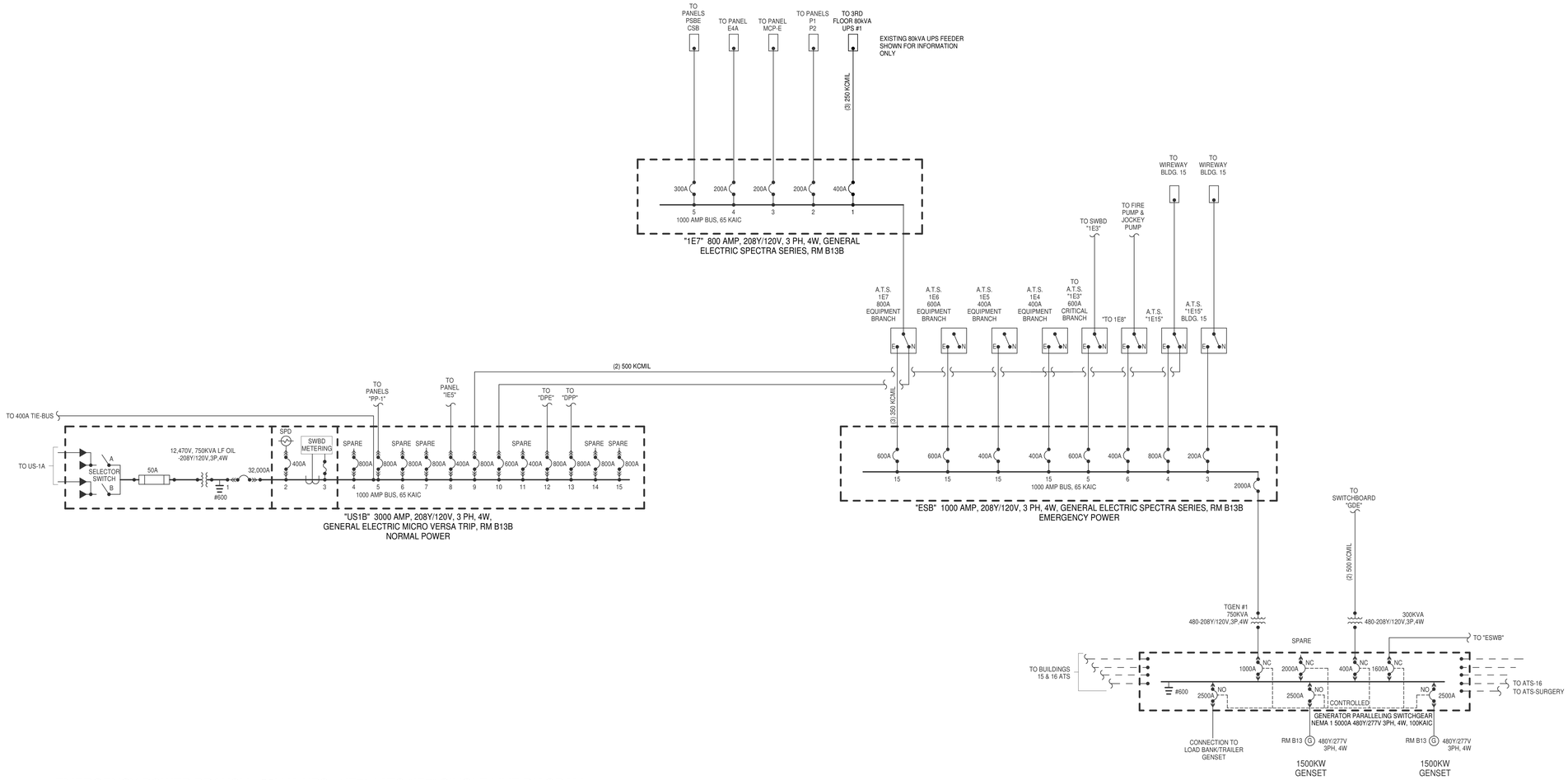
Office of Construction and Facilities Management

Department of Veterans Affairs

DRAWING NOTES:

1. PROVIDE (2)#12, 3/4"C TO TIE UPS OUTPUT SHUNT TRIP BREAKER INTO EXISTING SHUNT TRIP CIRCUIT, FED FROM THE EMERGENCY POWER SHUTDOWN MANAGEMENT SYSTEM (EPSMS). REFER TO PLAN FOR EPSMS LOCATION.





1 EMERGENCY POWER BRANCH - 80kVA UPS - "IE7" / ATS-"IE7" SINGLE LINE DIAGRAM
NOT TO SCALE

FULLY SPRINKLERED

Revisions		Date
0	ISSUED FOR CONSTRUCTION	06-09-2017

CONSULTANTS:

STATE OF OHIO — MATTHEW J. METZ — E-77415 — REGISTERED PROFESSIONAL ENGINEER

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FFE, Inc.
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FFE Inc. ENGINEERING & TECHNICAL SERVICES

Drawing Title: NORMAL & EMERGENCY POWER BRANCHES - 80kVA UPS - "1E7" / ATS-"1E7" SINGLE LINE DIAGRAM

Approved: Project Director

Project Title: Upgrade UPS and AC in Computer Room

Location: Cincinnati, Ohio

Date: 06/09/17 | Checked: CL | Drawn: JK

Project No. VA Project No. 539-18-202

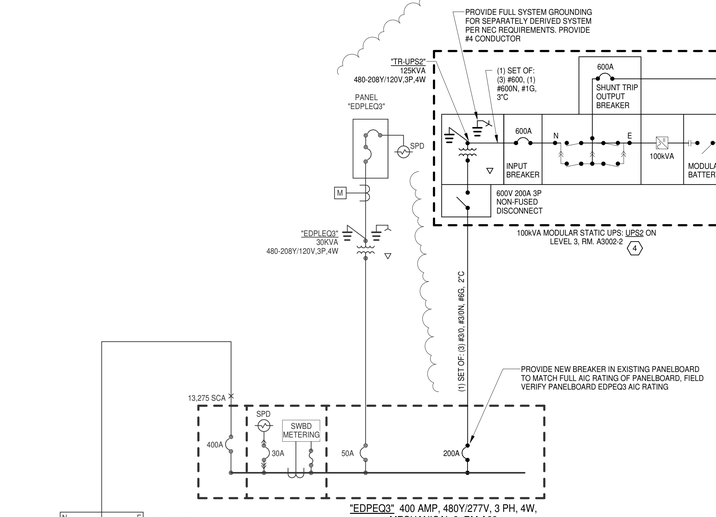
Building Number: 1

Drawing Number: EP301

Dwg. 8 of 13

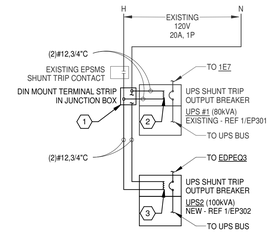
Office of Construction and Facilities Management

Department of Veterans Affairs



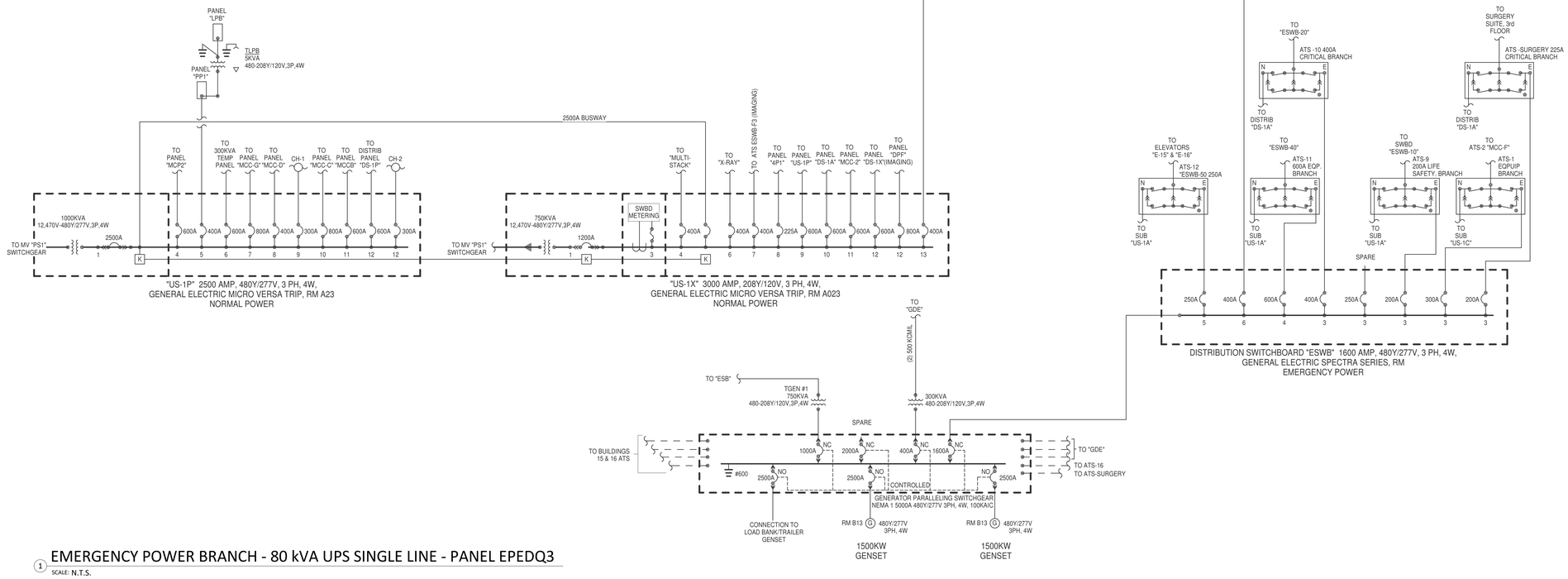
DRAWING NOTES:

1. PROVIDE NEMA 1 JUNCTION BOX WITH DIN RAIL MOUNTED TERMINAL STRIP WITH 12 TERMINAL CONTACTS RATED FOR #12 WIRING AT STRUCTURE ABOVE UPS #1. PROVIDE ALL CONDUIT AND WIRING ASSOCIATED WITH EXTENSION OF EMERGENCY POWER SHUTDOWN MANAGEMENT SYSTEM (EPSMS) TO SHUTDOWN UPS2. CONNECT WIRING IN PARALLEL PER WIRING DIAGRAM. EXTEND EXISTING CONDUIT.
2. RECONNECT SHUNT TRIP WIRING TO OUTPUT BREAKER WITHIN UPS #1.
3. CONNECT SHUNT TRIP WIRING TO OUTPUT BREAKER WITHIN UPS2.
4. EQUIPMENT SHALL BE FULLY RATED FOR A MINIMUM INTERRUPT RATING OF 14,000AIC.



WIRING DIAGRAM - EPSMS SHUNT TRIP

2 SCALE: N.T.S.



EMERGENCY POWER BRANCH - 80 kVA UPS SINGLE LINE - PANEL EPEDQ3

1 SCALE: N.T.S.

FULLY SPRINKLERED

Revisions		Date
1	ADDENDUM 1	11-03-2017
0	ISSUED FOR CONSTRUCTION	06-09-2017

CONSULTANTS:

STATE OF OHIO — MATTHEW J. METZ — E-77415 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

FFE, Inc.
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Cincinnati OH, 45215
513-522-0956

Drawing Title: POWER BRANCH - 100kVA UPS2, PANEL EDPEQ3 SINGLE LINE DIAGRAM

Approved: Project Director

Project Title: Upgrade UPS and AC in Computer Room

Location: Cincinnati, Ohio

Date: 06/09/17 | Checked: RG | Drawn: JK

Project No. VA Project No. 539-18-202

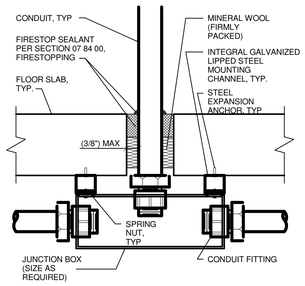
Building Number: 1

Drawing Number: EP302

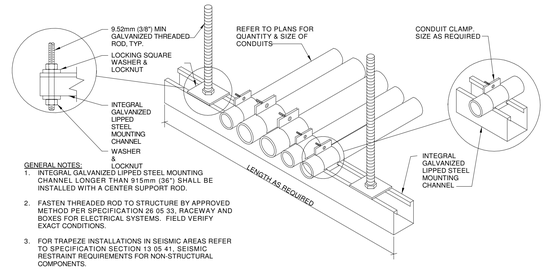
Dwg. 9 of 13

Office of Construction and Facilities Management

Department of Veterans Affairs



1 FLOOR SLAB PENETRATION DETAIL
NTS



GENERAL NOTES:
1. INTEGRAL GALVANIZED LIPPED STEEL MOUNTING CHANNEL LONGER THAN 915mm (36") SHALL BE INSTALLED WITH A CENTER SUPPORT ROD.
2. FASTEN THREADED ROD TO STRUCTURE BY APPROVED METHOD PER SPECIFICATION 26 05 33, RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS. FIELD VERIFY EXACT CONDITIONS.
3. FOR TRAPEZE INSTALLATIONS IN SEISMIC AREAS REFER TO SPECIFICATION SECTION 13 05 41, SEISMIC RESTRAINT REQUIREMENTS FOR NON-STRUCTURAL COMPONENTS.

2 CONDUIT TRAPEZE MOUNTING DETAIL
NTS

EXISTING UPS1 PANELS 1 AND 2 CABLE SCHEDULE

RACK NUMBER	VOLTAGE	PANEL	CIRCUIT	RECEPTACLE	CABLE SIZE	CABLE TYPE	CABLE LENGTH
RACK 1	208V	EX. PANEL #1	25, 27	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	47' - 10"
RACK 1	208V	EX. PANEL #1	26, 28	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	47' - 2"
RACK 2	208V	EX. PANEL #1	30, 32	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	45' - 10"
RACK 2	208V	EX. PANEL #2	33, 35	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	44' - 11"
RACK 3	208V	EX. PANEL #1	38, 40	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	43' - 6"
RACK 4	120V	EX. PANEL #1	20	NEMA L5-20	(2) #12 AWG / #10 GND	MC	36' - 4"
RACK 5	208V	EX. PANEL #1	37, 39	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	26' - 1"
RACK 5	208V	EX. PANEL #2	11, 13	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	26' - 4"
RACK 6	120V	EX. PANEL #1	13	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	27' - 8"
RACK 6	208V	EX. PANEL #2	25, 27	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	28' - 11"
RACK 7	120V	?	?	NEMA L5-20	(2) #12 AWG / #10 GND	MC	30' - 0"
RACK 7	208V	EX. PANEL #1	33, 35	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	30' - 0"
RACK 7	120V	EX. PANEL #1	19	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	30' - 7"
RACK 7	120V	EX. PANEL #2	19	NEMA L5-20	(2) #12 AWG / #10 GND	MC	30' - 7"
RACK 8	120V	E4A	2	NEMA L5-20	(2) #12 AWG / #10 GND	MC	31' - 9"
RACK 9	120V	EX. PANEL #1	14	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	40' - 0"
RACK 9	120V	EX. PANEL #2	14	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	40' - 0"
RACK 9	120V	EX. PANEL #1	10	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	40' - 0"
RACK 9	120V	EX. PANEL #2	10	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	40' - 0"
RACK 10	208V	EX. PANEL #1	34, 36	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	37' - 4"
RACK 10	208V	EX. PANEL #2	34, 36	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	36' - 7"
RACK 11	208V	EX. PANEL #1	34, 36	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	35' - 3"
RACK 11	208V	EX. PANEL #2	34, 36	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	34' - 5"
RACK 12	120V	EX. PANEL #1	24	NEMA L5-20	(2) #12 AWG / #10 GND	MC	33' - 3"
RACK 12	120V	EX. PANEL #2	37	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	33' - 3"
RACK 12	120V	EX. PANEL #1	7	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	33' - 3"
RACK 14	120V	EX. PANEL #2	16	NEMA L5-20	(2) #12 AWG / #10 GND	MC	22' - 11"
RACK 15	120V	EX. PANEL #2	18	NEMA L5-20	(2) #12 AWG / #10 GND	MC	20' - 0"
RACK 16	208V	EX. PANEL #1	6, 8	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	9' - 5"
RACK 16	120V	EX. PANEL #1	17	NEMA L5- 20	(2) #12 AWG / #10 GND	MC	9' - 5"
RACK 16	208V	EX. PANEL #2	6, 8	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	9' - 5"
RACK 16	120V	EX. PANEL #2	17	NEMA L5-20	(2) #12 AWG / #10 GND	MC	9' - 5"
RACK 17	120V	EX. PANEL #2	24	NEMA L5-20	(2) #12 AWG / #10 GND	MC	7' - 3"
RACK 17	120V	E4A	2	NEMA L5-20	(2) #12 AWG / #10 GND	MC	7' - 3"
RACK 19	208V	EX. PANEL #1	1, 3	NEMA L6-20	(2) #12 AWG / #10 GND	MC	9' - 10"
RACK 19	208V	EX. PANEL #2	1, 3	NEMA L6-20	(2) #12 AWG / #10 GND	MC	9' - 10"
RACK 19	208V	EX. PANEL #2	39, 41	NEMA L6-20	(2) #12 AWG / #10 GND	MC	9' - 10"
RACK 19	120V	EX. PANEL #1	16	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	9' - 10"
RACK 20	208V	EX. PANEL #1	2, 4	NEMA L6-20	(2) #12 AWG / #10 GND	MC	12' - 0"
RACK 20	208V	EX. PANEL #2	2, 4	NEMA L6-20	(2) #12 AWG / #10 GND	MC	12' - 0"
RACK 20	208V	EX. PANEL #2	40, 42	NEMA L6-20	(2) #12 AWG / #10 GND	MC	12' - 0"
RACK 21	120V	EX. PANEL #1	15	NEMA L5-20	(2) #12 AWG / #10 GND	MC	13' - 11"
RACK 21	208V	EX. PANEL #1	29, 31	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	13' - 11"
RACK 21	208V	EX. PANEL #2	29, 31	NEMA L6-30	(2) #10 AWG / # 8 GND	MC	13' - 11"
RACK 22	120V	EX. PANEL #1	12	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	15' - 10"
RACK 22	120V	EX. PANEL #2	12	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	15' - 10"
RACK 23	120V	EX. PANEL #1	12	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	17' - 10"
RACK 23	120V	EX. PANEL #2	12	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	17' - 10"
RACK 24	120V	EX. PANEL #2	22	NEMA L5-20	(2) #12 AWG / #10 GND	MC	21' - 2"
RACK 25	120V	EX. PANEL #1	9	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	23' - 5"
RACK 25	120V	EX. PANEL #2	7	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	23' - 5"
RACK 25	120V	EX. PANEL #2	9	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	23' - 5"
RACK 25	120V	EX. PANEL #2	20	NEMA L5-30	(2) #10 AWG / # 8 GND	MC	23' - 5"

FULLY SPRINKLERED

Revisions		Date
0	ISSUED FOR CONSTRUCTION	06-09-2017

CONSULTANTS:

MATTHEW J. METZ E-77415 REGISTERED PROFESSIONAL ENGINEER STATE OF OHIO

ARCHITECT/ENGINEERS:

FFE Inc. ENGINEERING & TECHNICAL SERVICES

FFE, Inc.
420 Springfield Pike
Cincinnati OH, 45215
513-522-0956

Drawing Title: ELECTRICAL DETAILS

Approved: Project Director

Project Title: Upgrade UPS and AC in Computer Room

Location: Cincinnati, Ohio

Date: 06/09/17 | Checked: RG | Drawn: JK

Project No. VA Project No. 539-18-202

Building Number: 1

Drawing Number: EP501

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Office of Construction and Facilities Management

Department of Veterans Affairs

A three inches = one foot
B one and one-half inches = one foot
C one inch = one foot
D three-quarters inch = one foot
E one-half inch = one foot
F three-eighths inch = one foot
one-quarter inch = one foot
one-eighth inch = one foot

Branch Panel: EX. PANEL #1

Location:
Supply From: EXISTING 80kVA UPS1
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 25
Mains Type:
Mains Rating: 225 A
MCB Rating:

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	Rack #19	20 A	2	676 VA	676 VA		2	20 A	Rack #20	2
3					676 VA	676 VA				4
5	Space	--	--			0 VA	1014...	2	30 A	Rack #16	6
7	Rack #12, OPEN	30 A	1	676 VA	1014...					8
9	Rack #25	30 A	1		676 VA	676 VA	1	30 A	Rack #9, OPEN	10
11	Spare	30 A	1			0 VA	676 VA	1	30 A	Rack #22 & Rack #23	12
13	Rack #6 (1 USED) & Rack #6 (1 OPEN)	30 A	1	676 VA	676 VA			1	30 A	Rack #9 (2 USED)	14
15	Rack #21	20 A	1		676 VA	676 VA		1	30 A	Rack #19, OPEN	16
17	Rack #16	20 A	1			450 VA	0 VA	1	20 A	Spare	18
19	Rack 7, OPEN	20 A	1	450 VA	450 VA			1	20 A	Rack #4	20
21	Spare	20 A	1		0 VA	450 VA		1	20 A	Test Bench	22
23	Console	20 A	1			450 VA	450 VA	1	20 A	Rack # 12	24
25	Rack #1	30 A	2	1014...	1014...			2	30 A	Rack #1	26
27					1014...	1014...					28
29	Rack #21	30 A	2			1014...	1014...	2	30 A	Rack #2	30
31				1014...	1014...						32
33	Rack #7	30 A	2			1014...	1014...	2	30 A	Rack #10 & Rack #11	34
35							1014...	1014...			36
37	Rack #5	30 A	2	1014...	3381...			2	100 A	Rack #3	38
39					1014...	3381...					40
41	Spare	20 A	1			0 VA	0 VA	1	20 A	Spare	42
				Total Load:	13745 VA	12957 VA	7096 VA				
				Total Amps:	122 A	115 A	59 A				

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Computer Receptacle	33798 VA	100.00%	33798 VA		
				Total Conn. Load:	33798 VA
				Total Est. Demand:	33798 VA
				Total Conn.:	94 A
				Total Est. Demand:	94 A

Notes:

Branch Panel: EX. PANEL #2

Location:
Supply From: EXISTING 80kVA UPS1
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 25
Mains Type:
Mains Rating: 225 A
MCB Rating:

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	Rack #19	20 A	2	676 VA	676 VA		2	20 A	Rack #20	2
3					676 VA	676 VA				4
5	Space	--	--			0 VA	1014...	2	30 A	Rack #16	6
7	Rack #25 (1 USED) & Rack #25 (1 OPEN)	30 A	1	676 VA	1014...						8
9	Rack #25	30 A	1		676 VA	676 VA		1	30 A	Rack #9, OPEN	10
11	Rack #5	30 A	2				1014...	676 VA	1	30 A	Rack #22 & Rack #23	12
13				1014...	676 VA				1	20 A	Rack #9 (1 USED) Rack #9 (1 OPEN)	14
15	Spare	30 A	1		0 VA	450 VA			1	20 A	Rack #14	16
17	Rack #16	20 A	1				450 VA	450 VA	1	20 A	Rack #15	18
19	Rack 7, OPEN	20 A	1	450 VA	450 VA				1	20 A	Rack #25, OPEN	20
21	Spare	20 A	1		0 VA	450 VA			1	20 A	Rack #24	22
23	Test Bench	20 A	1				450 VA	450 VA	1	20 A	Rack #17	24
25	Rack #6	30 A	2	1014...	1014...							26
27					1014...	1014...			2	30 A	Sprint EL TEK Rect. 11&12	28
29	Rack #21	30 A	2				1014...	1014...				30
31				1014...	1014...				2	30 A	Sprint EL TEK Rect. 15&16	32
33	Rack #2	30 A	2			1014...	1014...					34
35							1014...	1014...	2	30 A	Rack #10 & Rack #11	36
37	Rack #12 (1 USED) & Rack #12 (1 OPEN)	30 A	1	676 VA	0 VA				--	--	Space	38
39	Rack #19	20 A	2			676 VA	676 VA					40
41								676 VA	676 VA	2	20 A	Rack #20	42
				Total Load:	10364 VA		9012 VA		9912 VA			
				Total Amps:	88 A		75 A		84 A			

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Computer Receptacle	29288 VA	100.00%	29288 VA		
				Total Conn. Load:	29288 VA
				Total Est. Demand:	29288 VA
				Total Conn. Current:	81 A
				Total Est. Demand Current:	81 A

Notes:

FULLY SPRINKLERED

Revisions		Date
0	ISSUED FOR CONSTRUCTION	06-09-2017

CONSULTANTS:

STATE OF OHIO
MATTHEW J. METZ
E-77415
REGISTERED
PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

FFE, Inc.
420 Springfield Pike
Cincinnati OH, 45215
513-522-0956

ENGINEERING & TECHNICAL SERVICES

Drawing Title
EXISTING UPS1 POWER PANEL SCHEDULES

Approved: Project Director

Project Title
Upgrade UPS and AC in Computer Room

Location
Cincinnati, Ohio

Date 06/09/17 | Checked RG | Drawn JK

Project No.
VA Project No. 539-18-202

Building Number
1

Drawing Number
EP601

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Office of Construction and Facilities Management

Department of Veterans Affairs

Branch Panel: EDPEQ3

Location: Mechanical A3002
Supply From:
Mounting: Surface
Enclosure: Type 1

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: (1)
Mains Type: MCB
Mains Rating: 400 A
MCB Rating:

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1				3926 VA	3926 VA								2
3	1-SF43b	30 A	3			3926 VA	3926 VA			3	30 A	1-SF43a	4
5								3926 VA	3926 VA				6
7				930 VA	3926 VA								8
9	1-RF40	20 A	3			930 VA	3926 VA			3	30 A	1-SF43c	10
11								930 VA	3926 VA				12
13				3926 VA	397 VA								14
15	1-SF43d	30 A	3			3926 VA	397 VA			3	20 A	1-EF3	16
17								3926 VA	397 VA				18
19				397 VA	397 VA								20
21	1-EF2	20 A	3			397 VA	397 VA			3	20 A	1-EF5	22
23								397 VA	397 VA				24
25				397 VA	33333 VA								26
27	1-EF4	20 A	3			397 VA	33333 VA			3	135 A	UPS2	28
29								397 VA	33333 VA				30
31				0 VA	0 VA								32
33	Spare	20 A	3			0 VA	0 VA			3	20 A	Spare	34
35								0 VA	0 VA				36
37				0 VA	0 VA								38
39	Spare	20 A	3			0 VA	0 VA			3	20 A	Spare	40
41								0 VA	0 VA				42
43				0 VA	0 VA								44
45	Spare	20 A	3			0 VA	0 VA			3	20 A	Spare	46
47								0 VA	0 VA				48
49				0 VA	0 VA								50
51	Spare	20 A	3			0 VA	0 VA			3	30 A	SPD	52
53								0 VA	0 VA				54
55				1620 VA	0 VA					--	--	Space	56
57	EDPLEQ3	50 A	3			1000 VA	0 VA			--	--	Space	58
59								0 VA	0 VA	--	--	Space	60
61	Space	--	--	0 VA	0 VA					--	--	Space	62
63	Space	--	--			0 VA	0 VA			--	--	Space	64
65	Space	--	--					0 VA	0 VA	--	--	Space	66
67	Space	--	--	0 VA	0 VA					--	--	Space	68
69	Space	--	--			0 VA	0 VA			--	--	Space	70
71	Space	--	--					0 VA	0 VA	--	--	Space	72
			Total Load:	53177 VA		52557 VA		51557 VA					
			Total Amps:	193 A		190 A		186 A					

NEW WORK. PROVIDE NEW CIRCUIT BREAKER IN AVAILABLE SPACE.

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Motor	55930 VA	105.27%	58875 VA		
Power	100000 VA	100.00%	100000 VA	**Total Conn. Load:**	157290 VA
Receptacle	1360 VA	100.00%	1360 VA	**Total Est. Demand:**	160235 VA
				Total Conn.:	189 A
				Total Est. Demand:	193 A

Notes:

(0) DRAWING NOTES:

1. PROVIDE CIRCUIT BREAKER FULLY RATED FOR PANELBOARD AMPERES INTERRUPTING CURRENT. (AIC)

DESIGN DEVELOPMENT - NOT FOR CONSTRUCTION
FULLY SPRINKLERED

Revisions		Date
0	ISSUED FOR CONSTRUCTION	06-09-2017

CONSULTANTS:

STATE OF OHIO — MATTHEW J. METZ — E-77415 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

FFE, Inc.
420 Springfield Pike
Cincinnati OH, 45215
513-522-0956

Drawing Title: NEW WORK - EDPEQ3 POWER PANEL SCHEDULE

Approved: Project Director

Project Title: Upgrade UPS and AC in Computer Room

Location: Cincinnati, Ohio

Date: 06/09/17 | Checked: RG | Drawn: JK

Project No. VA Project No. 539-18-202

Building Number: 1

Drawing Number: EP602

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Office of Construction and Facilities Management

Department of Veterans Affairs

Distribution Panel: UPS2 PANEL1

Location:
Supply From: TR-UPS2
Mounting: Surface
Enclosure: Type 1

Volts: 208Y/120V
Phases: 3
Wires: 4

A.I.C. Rating: 14,000 AIC
Mains Type: MCB
Mains Rating: 600 A
MCB Rating: 600 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Console	20 A	1	415 VA	450 VA					1	20 A	Rack 12 ATS-A	2
3	HP & Power Scribe Rack	30 A	1			669 VA	676 VA			1	30 A	Rack 12 ATS-C	4
5	Test Bench	20 A	1					415 VA	450 VA	1	20 A	Rack 7 ATS-C	6
7	Rack 16 ATS-B	20 A	1	450 VA	507 VA					2	30 A	Rack 10 ATS-A & Rack 11 ATS-A	8
9	Rack 19 ATS-D	30 A	1			676 VA	507 VA						10
11	Rack 9 ATS-C	30 A	1					676 VA	3381...	2	30 A	Rack 3 ATS	12
13	Rack 19 ATS-B	20 A	2	676 VA	3381...								14
15						676 VA	676 VA			2	20 A	Rack 20 ATS-A	16
17	Rack 25 ATS-A	30 A	1					676 VA	676 VA				18
19	Rack 4 ATS	20 A	1	450 VA	676 VA					1	30 A	Rack 6 ATS-A	20
21	Rack 1 ATS-A	30 A	2			1014...	450 VA			1	20 A	Rack 7 ATS-A	22
23								1014...	1014...	2	30 A	Rack 7 ATS-B	24
25	Rack 21 ATS-A	20 A	1	676 VA	1014...								26
27	Rack 9 ATS-B	30 A	1			676 VA	676 VA			1	30 A	Rack 22 ATS-A & Rack 23 ATS-A	28
29	Spare	20 A	1					0 VA	1014...	2	30 A	Rack 2 ATS-A	30
31				1014...	1014...								32
33	Rack 21 ATS-B	30 A	2			1014...	1014...			2	30 A	Rack 5 ATS-A	34
35	Spare	20 A	1					0 VA	1014...				36
37	Rack 1 ATS-B	30 A	2	1014...	0 VA					1	30 A	Spare	38
39						1014...	1014...			2	30 A	Rack 16 ATS-A	40
41	Spare	30 A	1					0 VA	1014...				42
				11737 VA		10752 VA		11344 VA					
			Total Amps:	99 A		90 A		95 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Computer Receptacle	33833 VA	100.00%	33833 VA		
				Total Conn. Load:	33833 VA
				Total Est. Demand:	33833 VA
				Total Conn. Current:	94 A
				Total Est. Demand Current:	94 A

Notes:

Branch Panel: UPS2 PANEL 2

Location:
Supply From: TR-UPS2
Mounting: Surface
Enclosure: Type 1

Volts: 208Y/120V
Phases: 3
Wires: 4

A.I.C. Rating: 14,000 AIC
Mains Type: MCB
Mains Rating: 400 A
MCB Rating: 225 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Test Bench	20 A	1	415 VA	450 VA					1	20 A	Rack 14 ATS	2
3	Rack 8 ATS	20 A	1			2400...	507 VA			2	30 A	Rack 10 ATS-B & Rack 11 ATS-B	4
5	Rack 7 ATS-D	20 A	1					450 VA	507 VA				6
7	Rack 19 ATS-A	20 A	2	676 VA	450 VA					1	20 A	Rack 24 ATS	8
9						676 VA	935 VA			2	20 A	Sprint EL TEK Rect. 11&12	10
11	Sprint EL TEK Rect. 15&16	20 A	2					935 VA	935 VA				12
13				935 VA	450 VA					1	20 A	Rack 15 ATS	14
15	Rack 25 ATS-D	20 A	1			450 VA	450 VA			1	20 A	Rack 16 ATS-D	16
17	Rack 16 ATS-C	30 A	2					1014...	1014...	2	30 A	Rack 2 ATS-B	18
19				1014...	1014...								20
21	Rack 9 ATS-A	30 A	1			676 VA	676 VA			1	30 A	Rack 22 ATS-B & Rack 23 ATS-B	22
23	Rack 17 ATS	20 A	1					450 VA	676 VA	1	30 A	Rack 9 ATS-D	24
25	Rack 25 ATS-C	30 A	1	676 VA	676 VA					1	30 A	Rack 12 ATS-B	26
27	Spare	30 A	1			0 VA	676 VA			2	20 A	Rack 20 ATS-B	28
29	Rack 25 ATS-B	30 A	1					676 VA	676 VA				30
31				676 VA	1014...								32
33	Rack 19 ATS-C	20 A	2			676 VA	1014...			2	30 A	Rack 21 ATS-C	34
35								676 VA	1014...				36
37	Rack 20 ATS-C	20 A	2	676 VA	1014...					2	30 A	Rack 6 ATS-B	38
39	Rack 5 ATS-B	30 A	2			1014...	0 VA			1	20 A	Spare	40
41								1014...	0 VA	1	30 A	Spare	42
			Total Load:	10136 VA		10150 VA		10037 VA					
			Total Amps:	85 A		85 A		84 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Computer Receptacle	30323 VA	100.00%	30323 VA		
				Total Conn. Load:	30323 VA
				Total Est. Demand:	30323 VA
				Total Conn. Current:	84 A
				Total Est. Demand Current:	84 A

Notes:

Branch Panel: Ex. Panel #1

Location:
Supply From: EXISTING 80kVA UPS1
Mounting: Surface
Enclosure: Type 1

Volts: 208Y/120V
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type:
Mains Rating: 225 A
MCB Rating:

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1				676 VA	676 VA								2
3	Rack 19 ATS-A	20 A	2			676 VA	676 VA			2	20 A	Rack 20 ATS-A	4
5	Space	--	--					0 VA	1014...	2	30 A	Rack 16 ATS-A	6
7	Rack 12 ATS-C	30 A	1	676 VA	1014...								8
9	Rack 25 ATS-A	30 A	1			676 VA	676 VA			1	30 A	Rack 9 ATS-B	10
11	Spare	30 A	1					0 VA	338 VA	1	30 A	Rack 22 ATS-A & Rack 23 ATS-A	12
13	Rack 6 ATS-A	30 A	1	676 VA	676 VA					1	30 A	Rack 9 ATS-C	14
15	HP & Power Scribe Rack	20 A	1			669 VA	676 VA			1	30 A	Rack 19 ATS-C	16
17	Rack 16 ATS-B	20 A	1					450 VA	450 VA	1	20 A	Rack 7 ATS-A	18
19	Rack 7 ATS-C	20 A	1	450 VA	450 VA					1	20 A	Rack 4 ATS	20
21	Rack 21 ATS-A	20 A	1			676 VA	415 VA			1	20 A	Test Bench	22
23	Console	20 A	1					415 VA	450 VA	1	20 A	Rack 12 ATS-A	24
25	Rack 1 ATS-A	30 A	2	1014...	1014...					2	30 A	Rack 1 ATS-B	26
27						1014...	1014...						28
29	Rack 21 ATS-B	30 A	2					1014...	1014...	2	30 A	Rack 2 ATS-A	30
31				1014...	1014...								32
33	Rack 7 ATS-B	30 A	2			1014...	507 VA			2	30 A	Rack 10 ATS-A & Rack 11 ATS-B	34
35								1014...	507 VA				36
37	Rack 5 ATS-A	30 A	2	1014...	3381...					2	30 A	Rack 3 ATS	38
39						1014...	3381...						40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	13745 VA		13084 VA		6666 VA					
			Total Amps:	123 A		117 A		56 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Computer Receptacle	33495 VA	100.00%	33495 VA		
				Total Conn. Load:	33495 VA
				Total Est. Demand:	33495 VA
				Total Conn.:	93 A
				Total Est. Demand:	93 A

Notes:

Branch Panel: Ex. Panel #2

Location:
Supply From: EXISTING 80kVA UPS1
Mounting: Surface
Enclosure: Type 1

Volts: 208Y/120V
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type:
Mains Rating: 225 A
MCB Rating:

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1				676 VA	676 VA								2
3	Rack 19 ATS-B	20 A	2			676 VA	676 VA			2	20 A	Rack 20 ATS-B	4
5	Space	--	--					0 VA	1014...	2	20 A	Rack 16 ATS-C	6
7	Rack 25 ATS-B	20 A	1	676 VA	1014...								8
9	Rack 25 ATS-C	20 A	1			676 VA	676 VA			1	20 A	Rack 9 ATS-D	10
11	Rack 5 ATS-B	20 A	2					1014...	338 VA	1	20 A	Rack 22 ATS-B & Rack 23 ATS-B	12
13				1014...	676 VA					1	20 A	Rack 9 ATS-A	14
15	Spare	30 A	1			0 VA	450 VA			1	20 A	Rack 14 ATS	16
17	Rack 16 ATS-D	20 A	1					450 VA	450 VA	1	20 A	Rack 15 ATS	18
19	Rack 7 ATS-D	20 A	1	450 VA	450 VA					1	20 A	Rack 25 ATS-D	20
21	Rack 8 ATS	20 A	1			2400...	450 VA			1	20 A	Rack 24 ATS	22
23	Test Bench	20 A	1					415 VA	450 VA	1	20 A	Rack 17 ATS	24
25	Rack 6 ATS-B	20 A	2	1014...	935 VA					2	20 A	Sprint EL TEK Rect. 11&12	26
27						1014...	935 VA						28
29	Rack 21 ATS-C	20 A	2					1014...	935 VA	2	20 A	Sprint EL TEK Rect. 15&16	30
31				1014...	935 VA								32
33	Rack 2 ATS-B	20 A	2			1014...	507 VA			2	20 A	Rack 10 ATS-B & Rack 11 ATS-B	34
35								1014...	507 VA				36
37	Rack 12 ATS-B	20 A	1	676 VA	0 VA					--	--	Space	38
39	Rack 19 ATS-D	20 A	2			676 VA	676 VA			2	20 A	Rack 20 ATS-C	40
41								676 VA	676 VA				42
			Total Load:	10206 VA		10826 VA		8953 VA					
			Total Amps:	87 A		92 A		75 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Computer Receptacle	29985 VA	100.00%	29985 VA		
				Total Conn. Load:	29985 VA
				Total Est. Demand:	29985 VA
				Total Conn.:	83 A
				Total Est. Demand:	83 A

Notes:

FULLY SPRINKLERED

Revisions		Date
1	ADDENDUM 1	11-03-2017
0	ISSUED FOR CONSTRUCTION	06-09-2017

CONSULTANTS:

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PROFESSIONAL ENGINEER

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Drawing Title
NEW UPS1 AND UPS2 POWER PANEL SCHEDULES

Approved: Project Director

Project Title
Upgrade UPS and AC in Computer Room

Location
Cincinnati, Ohio

Date 06/09/17 | Checked RG | Drawn JK

Project No. VA Project No. 539-18-202

Building Number 1

Drawing Number EP603

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Office of Construction and Facilities Management

Department of Veterans Affairs