

ELECTRICAL GENERAL NOTES:

- ALL WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES, AND REGULATIONS ADOPTED BY MUNICIPAL, COUNTY, STATE, AND FEDERAL AUTHORITIES, INCLUDING THE 2014 EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) 70, AND WITH THE REQUIREMENTS/AMENDMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ).
- CONTRACT DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO CONVEY SCOPE, DESIGN INTENT, AND GENERAL ARRANGEMENT ONLY. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL WORK OF ALL TRADES INCLUDING THE RESOLUTION OF FIELD CONFLICTS THAT MAY ARISE.
- EACH FEEDER AND BRANCH CIRCUIT SHALL INCLUDE AN INSULATED EQUIPMENT GROUNDING CONDUCTOR. BOND ALL ELECTRICAL EQUIPMENT, OUTLET BOXES, GROUNDING TYPE RECEPTACLES, ETC., IN ACCORDANCE WITH NEC ARTICLE 250.
- TROUGHS, JUNCTION AND PULL BOXES ARE NOT NECESSARILY INDICATED, BUT SHALL BE PROVIDED WHERE MANDATED BY THE NEC, AND AS REQUIRED FOR EASE OF INSTALLATION. BOXES SHALL BE SIZED (MINIMUM) IN ACCORDANCE WITH NEC ARTICLE 314. TROUGHS SHALL BE SIZED PER NEC ARTICLE 366.
- FEEDER AND BRANCH CIRCUIT WIRING ARE DEPICTED BY ASSIGNMENT OF CIRCUIT NUMBERS, INTERCONNECTING WIRING AND HOMERUNS, OR HOMERUNS ONLY (FOR SIMILAR LOADS). ALL FEEDERS AND BRANCH CIRCUITS ARE NEW TO BE PROVIDED UNDER THIS CONTRACT UNLESS OTHERWISE NOTED. INTERIOR WIRING SHALL BE INSTALLED IN RIGID METALLIC CONDUIT AND/OR EMT, 3/4" MINIMUM FLEXIBLE METAL CONDUIT, LIQUID-TIGHT FLEXIBLE METAL CONDUIT, MC CABLE SHALL BE UTILIZED IN LIMITED LENGTHS AS NECESSARY, OR AS REQUIRED/ALLOWED BY CODE.
- ALL NEW 600V OVER-CURRENT PROTECTIVE DEVICES SHALL HAVE INTERRUPTING CAPABILITIES OR RATINGS (AIC OR AIR) IN RMS AMPERES SYMMETRICAL. ALL DEVICES SHALL BE FULLY RATED FOR AVAILABLE FAULT CURRENT.
- ALL BUILDING WIRE SHALL BE COPPER CONDUCTORS, TYPE THHN/THWN-2 (DUAL LISTED) 90 DEGREE CELSIUS RATED INSULATION, #12 AWG MINIMUM. UTILIZE #10 AWG WIRE FOR ANY 15A OR 20A, 120V CIRCUIT THAT EXCEEDS 100 FEET FROM SOURCE TO LAST DEVICE OR OUTLET.
- CONTRACTOR SHALL PROVIDE AND INSTALL AN APPROVED, UL LISTED, FIRE STOP SEALANT, TOTALLY ENCLOSED ALL PENETRATIONS THROUGH RATED CEILINGS, WALLS, ROOFS, FLOORS, ETC. ALL FLOOR PENETRATIONS SHALL BE CORE-DRILLED, SLEEVED AND SEALED WITH AN APPROVED FIRE RATED SEALANT. CONTRACTOR SHALL SUBMIT LETTER TO OWNER THAT THE REQUIRED FIRE SEALANT WAS INSTALLED PER MANUFACTURER'S REQUIREMENTS. ALL EXISTING CERTIFIED AND NOTARIZED PENETRATIONS BETWEEN FLOORS AND WALLS MUST BE CLOSED TO MAINTAIN FIRE RATING.
- THE CONTRACTOR SHALL PERFORM THE WORK AS INDICATED ON THE DRAWINGS. ANY DEVIATIONS FROM THE DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL IN WRITING. IF CHANGES ARE MADE WITHOUT THE ENGINEER'S WRITTEN CONSENT, THE CONTRACTOR SHALL BE LIABLE FOR ANY ISSUES THAT MAY ARISE DUE TO THE CHANGES.
- UNLESS OTHERWISE NOTED, ALL WIRE SIZES SHALL BE BASED ON THE FOLLOWING:
 - #12 THROUGH #1 OR 100A OR LESS - NEC TABLE 310.16 60° COLUMN
 - #10 AND GREATER OR 101A OR GREATER - NEC TABLE 310.16 75° COLUMN
 - OTHER ALLOWANCES OF NEC 110.14(C)
- UNLESS OTHERWISE NOTED, ALL CONDUIT SIZES SHALL BE BASED ON EMT, RMC, OR RNC (PVC SCHEDULE 40).
- ALL ELECTRICAL MATERIALS, DEVICES, APPLIANCES, AND EQUIPMENT SHALL BE NEW, LABELED AND LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY OR AGENCY (E.G. UL), UNLESS OTHERWISE NOTED.
- ELECTRICAL CONTRACTOR SHALL FOLLOW ALL MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION OF ALL EQUIPMENT IF NOT INDICATED ON DRAWINGS. IF THERE IS A DISCREPANCY, MANUFACTURER'S INSTRUCTIONS TAKE PRECEDENCE.
- THE ELECTRICAL CONTRACTOR SHALL FURNISH ALL EQUIPMENT, LABOR, SERVICES, AND MATERIALS REQUIRED FOR COMPLETE INSTALLATION OF THE WORK INDICATED. UNLESS OTHERWISE NOTED, ALL MATERIALS SHALL BE NEW.
- DO NOT SCALE DRAWINGS. CONTRACTOR SHALL VERIFY AND CONFIRM ALL DIMENSIONS IN THE FIELD AND NOTIFY THE ENGINEER OF ANY AND ALL DISCREPANCIES ON THE DRAWINGS. COPIES OF THIS DRAWING WITHOUT A PROFESSIONAL ENGINEER'S SEAL AND ORIGINAL SIGNATURE SHALL NOT BE CONSIDERED VALID AND ARE FOR CONVENIENCE TO THE USER AT THEIR OWN RISK.
- FURNISH ALL NECESSARY MATERIALS, TOOLS AND LABOR AND INSTALL A COMPLETE AND FULLY OPERABLE WIRING SYSTEM AS INDICATED OR REASONABLY IMPLIED. UNLESS NOTED OTHERWISE, ALL MATERIALS SHALL BE NEW, FREE OF DEFECTS AND BE UL LISTED.
- ALL SMALL MOTORS UNDER 1 HORSEPOWER SHALL HAVE INTEGRAL OVERLOAD PROTECTION PER NEC 430.32 AND 430.53(A) IF PLANNING TO BE INSTALLED ON ONE BRANCH CIRCUIT DUE TO SMALL LOADS.
- MEANS AND METHODS EMPLOYED SHALL MEET ALL DESIGN STANDARDS REQUIRED BY ALL CONTRACT DOCUMENTS AND THE CODES ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION.
- THE CONTRACTOR SHALL COORDINATE ALL HVAC EQUIPMENT LOCATIONS IN FIELD.
- UNLESS OTHERWISE NOTED, ALL CIRCUIT BREAKERS ARE BASED ON INVERSE TIME TYPE AND ALL FUSES ARE BASED ON DUAL ELEMENT TIME-DELAY TYPE.

GENERAL DEMOLITION NOTES:

- PERFORM ALL DEMOLITION AND CONSTRUCTION IN ACCORDANCE WITH LOCAL CODES AND REQUIREMENTS.
- ALL ITEMS SHOWN DASHED AND BOLD SHALL BE DISCONNECTED AND REMOVED BY THE ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED.
- PRIOR TO DEMOLITION OF ELECTRICAL EQUIPMENT, ELECTRICAL CONTRACTOR SHALL DISCONNECT ALL CABLING AND ASSOCIATED EQUIPMENT. CONTRACTOR SHALL TRACE OUT AND VERIFY ALL CIRCUITING PRIOR TO DEMOLITION. ALL EXISTING WIRING TO BE DEMOLISHED SHALL BE REMOVED TO ITS POINT OF ORIGIN.

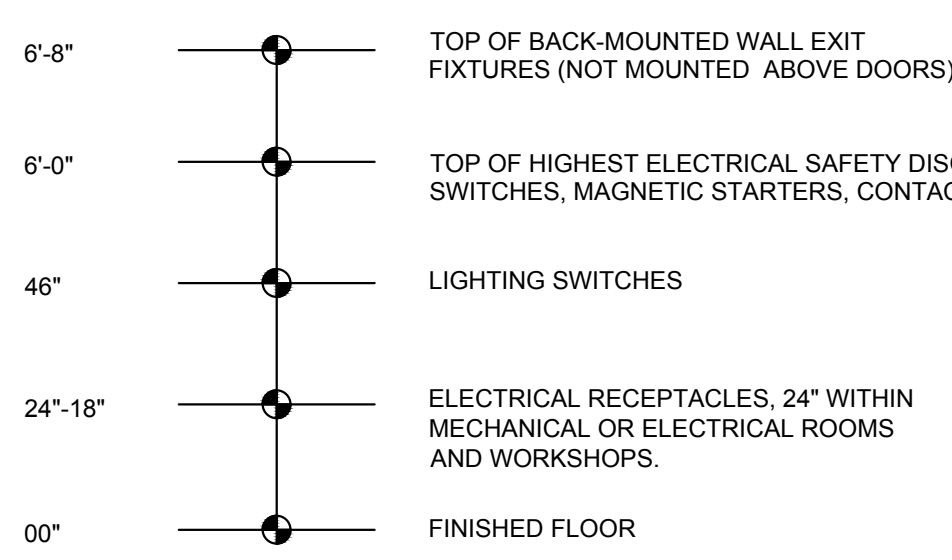
ELECTRICAL SYMBOLS:

- DUPLEX RECEPTACLE, NEMA 5-20R, 20A, 125V
- DUPLEX RECEPTACLE, NEMA 5-20R, 20A, 125V WITH (GFCI) GROUND FAULT CURRENT INTERRUPTER PROTECTION
- DUPLEX RECEPTACLE, NEMA 5-20R, 20A, 125V WITH (GFCI) GROUND FAULT CURRENT INTERRUPTER PROTECTION (+) INDICATES MOUNTING HEIGHT IN INCHES
- DUPLEX RECEPTACLE, NEMA 5-20R, 20A, 125V WITH (GFCI) GROUND FAULT CURRENT INTERRUPTER PROTECTION IN A WEATHER-PROOF ENCLOSURE
- SIMPLEX RECEPTACLE, NEMA 5-20R, 20A, 125V
- QUADRUPLX RECEPTACLE, NEMA 5-20R, 20A, 125V
- SPECIAL RECEPTACLE, CONFIGURATION NOTED ON PLANS
- 20A, 120/277 VAC, SINGLE POLE TOGGLE SWITCH
- WEATHER PROOF SWITCH
- OCCUPANCY SENSOR SWITCH
- 20A, 120/277 VAC, THREE-WAY SWITCH
- MANUAL MOTOR RATED SWITCH
- NON-FUSIBLE DISCONNECT SWITCH, 30A/3P, 600V UNLESS OTHERWISE NOTED
- COMBINATION MAGNETIC STARTER, SIZE AS REQUIRED BY NEC
- FUSIBLE DISCONNECT SWITCH, SIZE AS NOTED
- BRANCH CIRCUIT HOMERUN INDICATES PANEL AND CIRCUIT BREAKER NUMBER
- LOOP LINE INDICATES CIRCUIT CONDUCTORS AND CONDUIT CONNECTING IDENTIFIED DEVICES.
- JUNCTION BOX
- CEILING MOUNTED OCCUPANCY SENSOR
- PANELBOARD
- CIRCUIT BREAKER, RATINGS AS INDICATED
- LINE VOLTAGE THERMOSTAT FURNISHED BY HVAC CONTRACTOR
- ELECTRICAL HANDHOLE 24" L x 24" W x 30" D, H20 RATED PRECAST CONCRETE WITH METAL LID
- DUCT SMOKE DETECTOR

PRESENTATION:

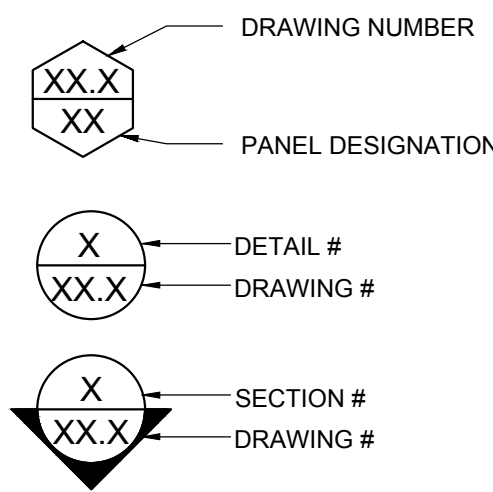
- ELECTRICAL EQUIPMENT DESIGNATED BY SOLID HEAVY LINE WEIGHT INDICATES NEW WORK TO BE FURNISHED AND INSTALLED.
- ELECTRICAL EQUIPMENT DESIGNATED BY SOLID LIGHT LINE WEIGHT INDICATES EXISTING EQUIPMENT TO REMAIN, UNLESS OTHERWISE INDICATED.
- ELECTRICAL EQUIPMENT DESIGNATED BY DASHED HEAVY LINE WEIGHT REPRESENTS EXISTING EQUIPMENT TO BE REMOVED AND DISPOSED, UNLESS INDICATED TO BE REMOUNTED, RELOCATED, OR TURNED OVER TO OWNER.

STANDARD MOUNTING HEIGHTS:



- NOTES:**
- MOUNTING HEIGHTS TO CENTER OF OUTLETS UNLESS OTHERWISE NOTED.
 - THE ABOVE MOUNTING HEIGHTS SHALL BE ADHERED TO UNLESS NOTED OTHERWISE ON THE DRAWINGS OR SPECIFICATION.

DETAIL CALLOUT SYMBOLS:



ELECTRICAL ABBREVIATIONS:

- A, AMP AMPERES
- AC ALTERNATING CURRENT
- AFCI ARC FAULT CIRCUIT INTERRUPTER
- AFB ABOVE FINISHED FLOOR
- AFG ABOVE FINISHED GRADE
- AHU AIR HANDLING UNIT
- AIC AMP INTERRUPTING CAPACITY
- AT AMP TRIP
- AF AMP FRAME
- ATC AUTOMATIC TEMPERATURE CONTROL
- AWG AMERICAN WIRE GAUGE
- BKR BREAKER
- C, GND CONDUIT
- C.B. CIRCUIT BREAKER
- CKT CIRCUIT
- CU COPPER
- DC DIRECT CURRENT
- DDC DIGITAL DATA CONTROL
- DWG DRAWING
- (E) EXISTING WORK/EQUIPMENT TO REMAIN
- (ER) EXISTING WORK/EQUIPMENT TO BE REMOVED AND RELOCATED
- EC ELECTRICAL CONTRACTOR
- EF EXHAUST FAN
- ELEC ELECTRICAL EQUIPMENT
- EM EMERGENCY
- EMH ELECTRICAL MANHOLE
- EMT ELECTRICAL METALLIC TUBING
- EUH ELECTRIC UNIT HEATER
- FT FOOT (FEET)
- G, GND GROUND
- GFCI, GFI GROUND FAULT CIRCUIT INTERRUPTER
- HZ HERTZ
- JB JUNCTION BOX
- KAIC KILO AMPERES INTERRUPTING CURRENT
- KVA KILO VOLTS AMPERES
- KW KILOWATTS
- LFMC LIQUID TIGHT FLEXIBLE METAL CONDUIT
- MC MECHANICAL CONTRACTOR
- MCB MAIN CIRCUIT BREAKER
- MCA MAXIMUM CIRCUIT AMPACITY
- MIN MINIMUM
- MISC MISCELLANEOUS
- MLO MAIN LUG ONLY
- MOPC MAXIMUM OVER CURRENT PROTECTION
- MOPD MAXIMUM OVER CURRENT PROTECTIVE DEVICE
- (N) NEW
- NEC NATIONAL ELECTRIC CODE
- NIC NOT IN CONTRACT
- NTS NOT TO SCALE
- P POLE
- PH, Ø PHASE
- PNL PANEL
- PWR POWER
- (R) EXISTING EQUIPMENT TO BE DISCONNECTED & REMOVED
- (RE) RELOCATED EXISTING WORK
- RCPT RECEPTACLE
- RGS RIGID GALVANIZED STEEL
- RMC RIGID METAL CONDUIT
- RNC RIGID NON-METALLIC CONDUIT
- SCCR SHORT CIRCUIT CURRENT RATING
- SMR SURFACE METAL RACEWAY
- SW SWITCH
- SPECS SPECIFICATIONS
- TBD TO BE DETERMINED
- TVSS TRANSIENT VOLTAGE SURGE SUPPRESSION
- TS TWISTED SHIELDED
- TYP. TYPICAL
- UE UNDERGROUND ELECTRIC
- UH UNIT HEATER
- UON UNLESS OTHERWISE NOTED
- UPS UNINTERRUPTIBLE POWER SUPPLY
- V VOLTS
- VAV VARIABLE AIR VOLUME
- VFD VARIABLE FREQUENCY DRIVE
- WFP WEATHER PROOF
- XFMR TRANSFORMER

MEP / FP Engineer



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CHADDS FORD, PA. 19317
610.459.7900

Architect

Civil Engineer

Structural Engineer

Seal

Revisions:

NO.	DESCRIPTION	DATE

**3RD AND SPRUCE
RECREATION CENTER**
320 S 3RD ST,
READING PA 19602
CITY OF READING DEPARTMENT
OF PUBLIC WORKS

**ELECTRICAL NOTES
SYMBOLS AND
ABBREVIATIONS**

Project Number	131021.001
Date	05/13/2022
Drawn By	TM
Checked By	RR

E000

Scale As Noted

ISSUED FOR BID

THIS DRAWING IS FORMATTED TO BE PRINTED AT 30" X 42"



Revisions:

NO.	DESCRIPTION	DATE

3RD AND SPRUCE RECREATION CENTER
320 S 3RD ST,
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CITY OF READING DEPARTMENT
OF PUBLIC WORKS

ELECTRICAL DEMOLITION - LOWER LEVEL AND UPPER LEVEL

Project Number 131021.001
Date 05/13/2022
Drawn By TM
Checked By RR

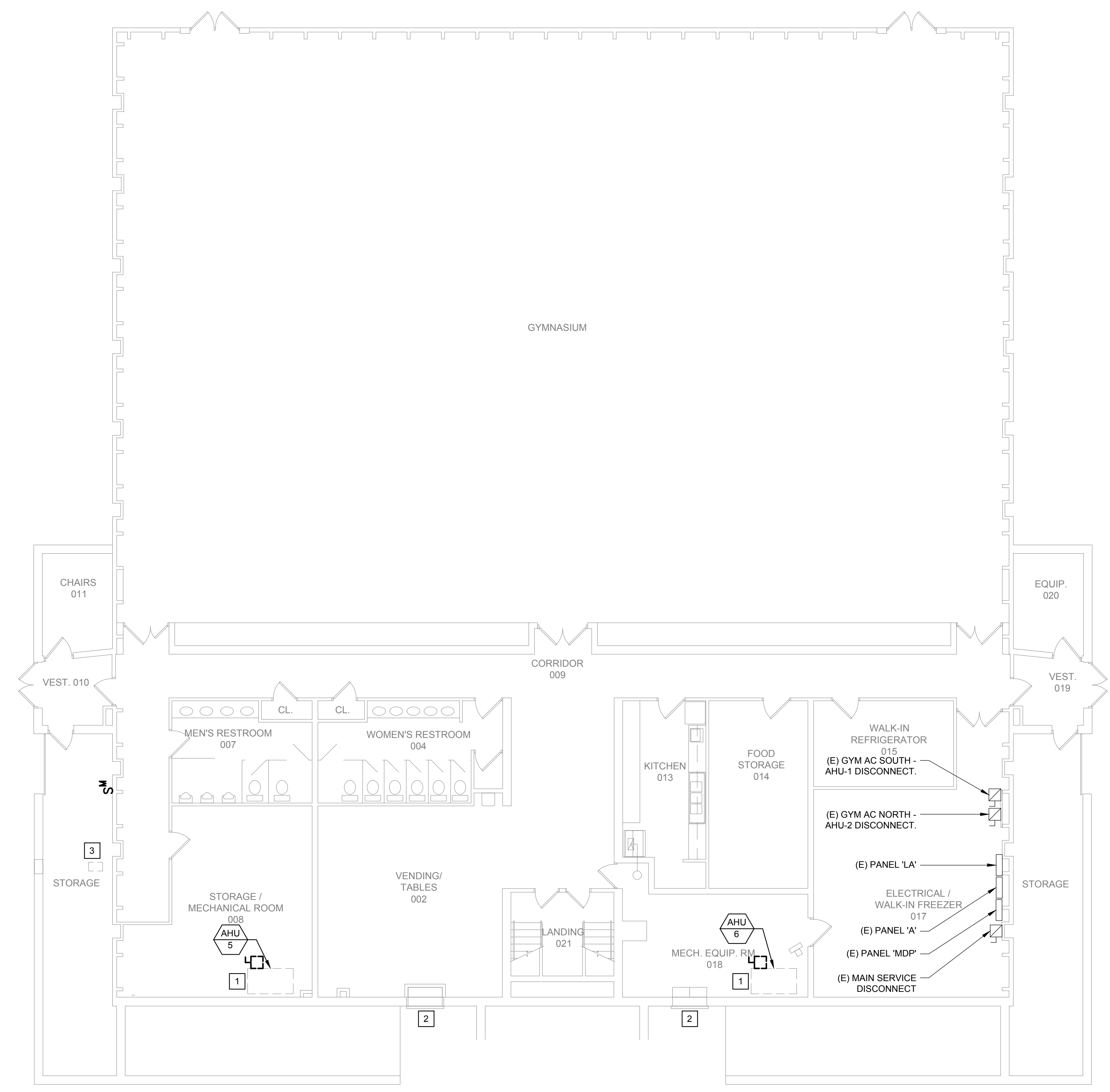
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GENERAL NOTES:

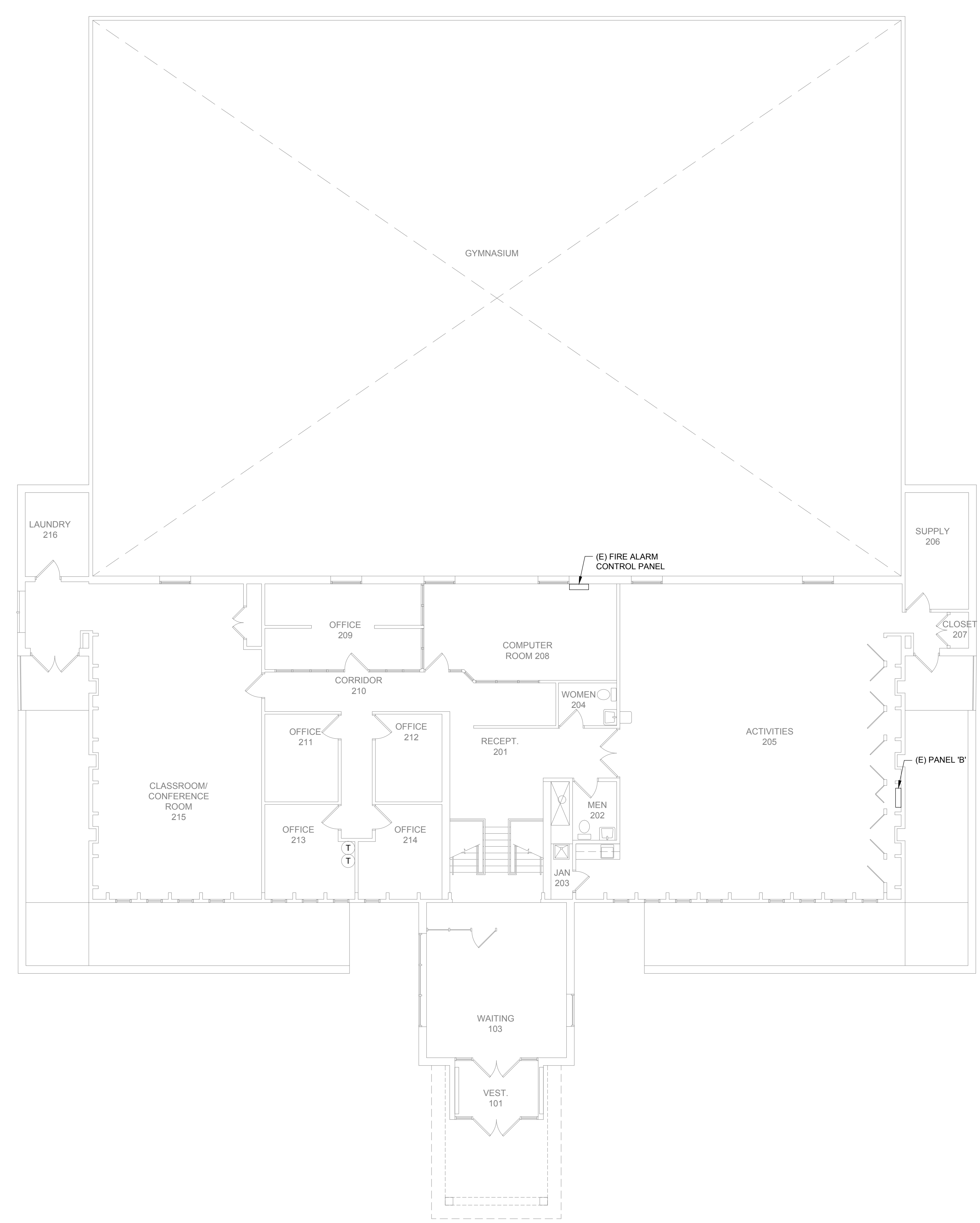
- REFER TO DRAWING E000 FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS.
- COORDINATE WORK WITH OTHER DISCIPLINES AS REQUIRED.
- CONTRACTOR SHALL UPDATE ALL PANELBOARD CIRCUIT DIRECTORIES UPON COMPLETION OF DEMOLITION.
- PRIOR TO COMMENCEMENT OF WORK, ELECTRICAL CONTRACTOR SHALL TRACE ALL CIRCUITS ASSOCIATED WITH AHU REPLACEMENT WORK AND FIELD VERIFY WIRING AND CONDUIT SIZES. ELECTRICAL CONTRACTOR SHALL REPORT RESULTS TO ENGINEER FOR REVIEW.

KEYED NOTES:

- DISCONNECT POWER FROM EXISTING AHU. REMOVE DISCONNECT SWITCH, WIRING, AND CONDUIT BACK TO SOURCE PANEL "MDP" AND REMOVE SUPPLY BREAKER. PRESERVE SPACE FOR FEED TO NEW AHU CIRCUIT.
- DISCONNECT POWER TO EXISTING MOTORIZED DAMPER AND PRESERVE WIRING FOR CONNECTION TO NEW MOTORIZED DAMPER.
- DISCONNECT POWER TO EXISTING EXHAUST FAN AND PRESERVE WIRING FOR CONNECTION TO NEW EXHAUST FAN.



1 ELECTRICAL DEMOLITION-LOWER LEVEL
Scale: 1/8" = 1'-0"



2 ELECTRICAL DEMOLITION-UPPER LEVEL
Scale: 1/8" = 1'-0"

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3RD AND SPRUCE RECREATION CENTER
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**ELECTRICAL
DEMOLITION - ROOF
LEVEL**

Project Number	131021.001
Date	05/13/2022
Drawn By	TM
Checked By	RR

E101

Scale 1/8"=1'-0"

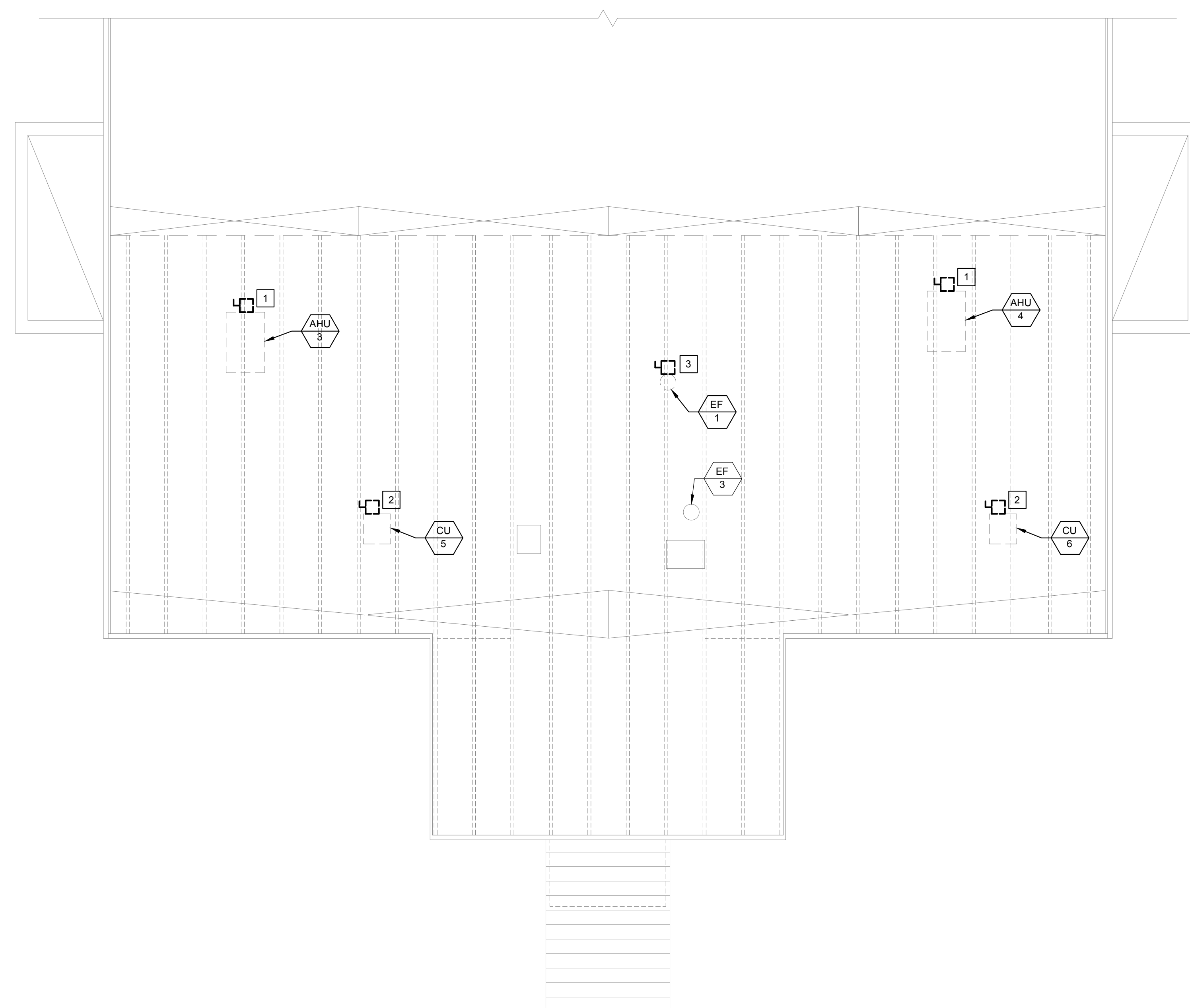
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GENERAL NOTES:

- REFER TO DRAWING E000 FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS.
- COORDINATE WORK WITH OTHER DISCIPLINES AS REQUIRED.
- CONTRACTOR SHALL UPDATE ALL PANELBOARD CIRCUIT DIRECTORIES UPON COMPLETION OF DEMOLITION.
- PRIOR TO COMMENCEMENT OF WORK, ELECTRICAL CONTRACTOR SHALL TRACE ALL CIRCUITS ASSOCIATED WITH AHU REPLACEMENT WORK AND FIELD VERIFY WIRING AND CONDUIT SIZES. ELECTRICAL CONTRACTOR SHALL REPORT RESULTS TO ENGINEER FOR REVIEW.

KEYED NOTES:

- DISCONNECT POWER FROM EXISTING AHU. REMOVE DISCONNECT SWITCH, WIRING, AND CONDUIT BACK TO SOURCE PANEL "MDP" AND REMOVE SUPPLY BREAKER. PRESERVE SPACE FOR FEED TO NEW AHU CIRCUIT.
- DISCONNECT POWER TO EXISTING MOTORIZED DAMPER AND PRESERVE WIRING FOR CONNECTION TO NEW MOTORIZED DAMPER.
- DISCONNECT POWER TO EXISTING EXHAUST FAN AND PRESERVE WIRING FOR CONNECTION TO NEW EXHAUST FAN.



1 ELECTRICAL DEMOLITION - ROOF LEVEL
E101 Scale: 1/8" = 1'-0"



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ELECTRICAL NEW WORK - LOWER LEVEL AND UPPER LEVEL

Project Number	131021.001
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Drawn By	TM
Checked By	RR

E200

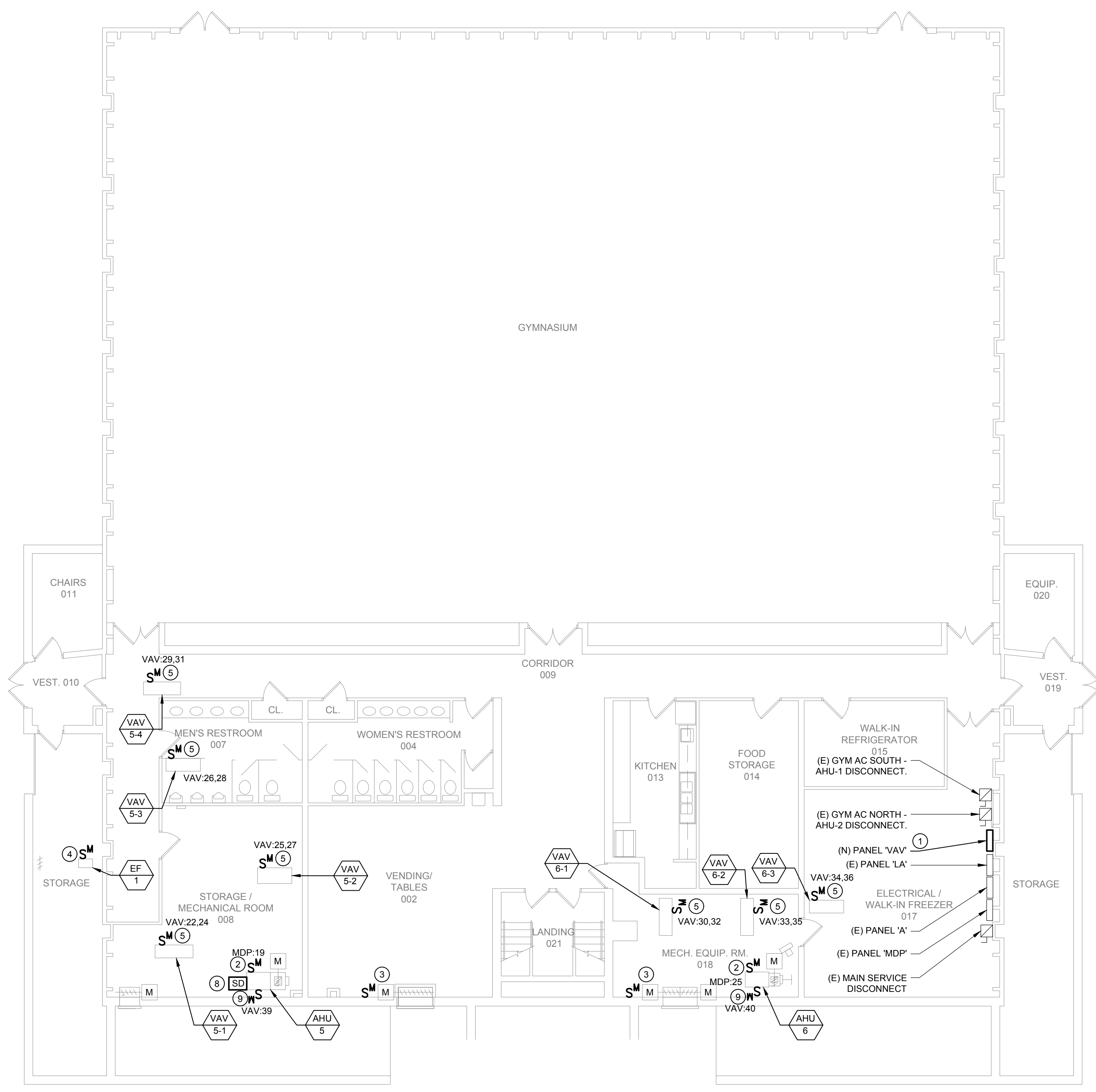
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GENERAL NOTES:

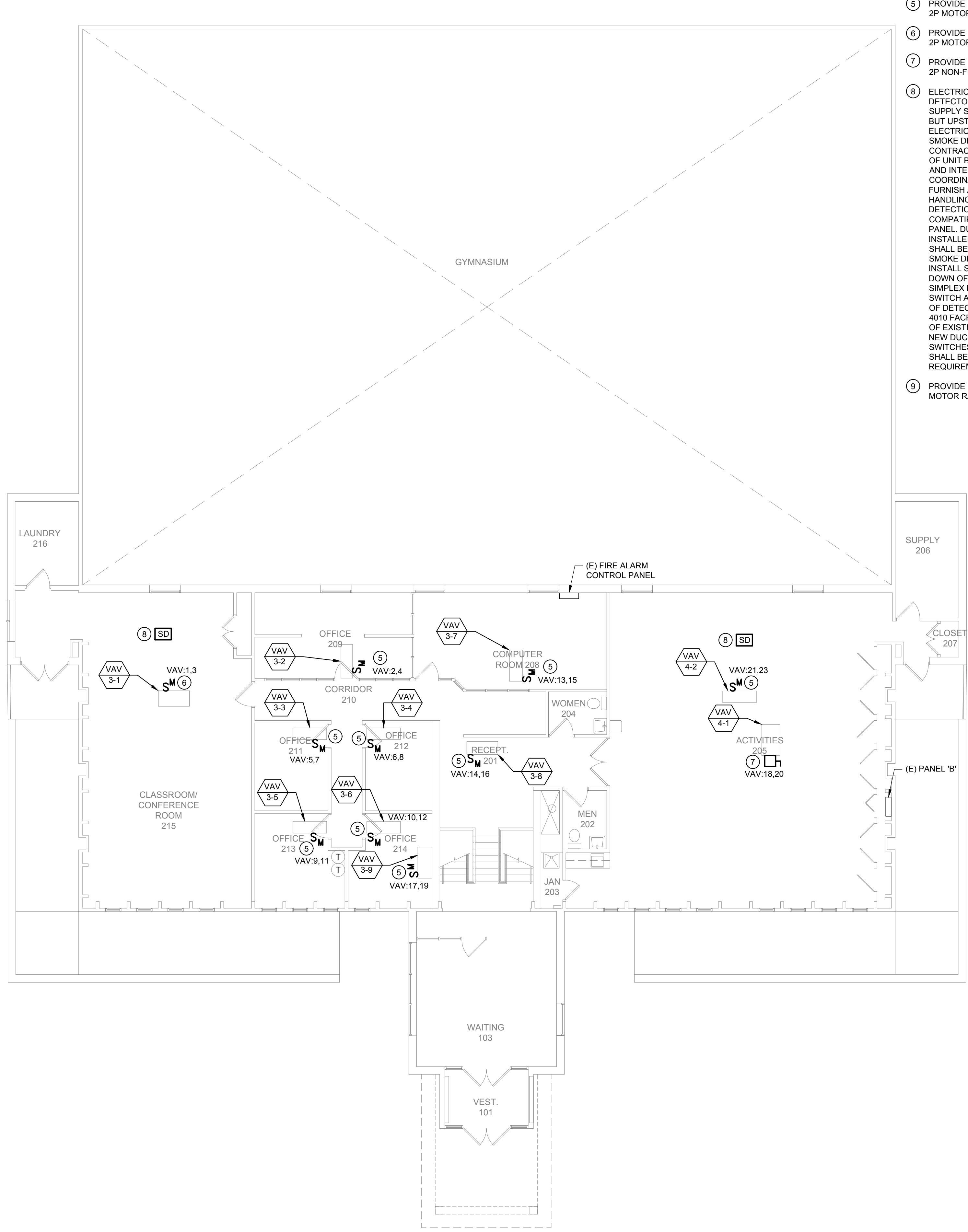
- REFER TO DRAWING E000 FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS.
- ALL WIRING AND CONDUIT FOR NEW OR EXTENDING EXISTING CIRCUITS SHALL BE #12 & #12G THHN/THWN-2 IN 3/4" CONDUIT MINIMUM. MATCH EXISTING WIRE AND CONDUIT SIZES WHERE THEY ARE GREATER.
- FOR POWER SUPPLY TO NEW EQUIPMENT FROM EXISTING CIRCUITS, IN NO CASE SHALL A 120V, 20A/1P CIRCUIT BE LOADED TO OVER 1520W. MAKE CHANGES AS REQUIRED TO ENSURE COMPLIANT LOADING ON BREAKERS.
- CONTRACTOR SHALL UPDATE ALL PANELBOARD CIRCUIT DIRECTORIES UPON COMPLETION OF WORK.

KEYED NOTES:

- FURNISH AND INSTALL NEW PANEL 'VAV'. PROVIDE POWER VIA TAP OFF EXISTING TROUGH WIRING UNDERNEATH PANELS 'MDP', 'A', AND 'LA'. REFER TO SINGLE LINE DIAGRAM ON E300 FOR ADDITIONAL INFORMATION.
- PROVIDE POWER TO NEW AHU VIA NEW 15A, 120V, 1P MOTOR RATED TOGGLE SWITCH.
- SPlice AND EXTEND PRESERVED CIRCUIT FOR NEW MOTORIZED DAMPER. PROVIDE POWER VIA NEW 15A, 120V, 1P MOTOR RATED TOGGLE SWITCH. MATCH EXISTING WIRING, #12 & #12G IN 3/4" MINIMUM.
- SPlice AND EXTEND PRESERVED CIRCUIT FOR NEW EXHAUST FAN. PROVIDE POWER VIA NEW 15A, 120V, 1P MOTOR RATED TOGGLE SWITCH. MATCH EXISTING WIRING, #12 & #12G IN 3/4" MINIMUM.
- PROVIDE POWER TO NEW VAV HEATING COIL VIA NEW 20A, 208V, 2P MOTOR RATED TOGGLE SWITCH.
- PROVIDE POWER TO NEW VAV HEATING COIL VIA NEW 30A, 208V, 2P MOTOR RATED TOGGLE SWITCH.
- PROVIDE POWER TO NEW VAV HEATING COIL VIA NEW 60A, 208V, 2P NON-FUSED DISCONNECT SWITCH.
- ELECTRICAL CONTRACTOR SHALL FURNISH DUCT SMOKE DETECTOR TO BE INSTALLED BY MECHANICAL CONTRACTOR ON SUPPLY SIDE OF AIR HANDLING UNIT DOWNSTREAM OF FILTER BUT UPSTREAM OF ANY SPLITS PER NFPA 72 (2013) AND 90A (2015). ELECTRICAL CONTRACTOR SHALL FURNISH RETURN SIDE DUCT SMOKE DETECTOR TO BE INSTALLED BY MECHANICAL CONTRACTOR ON RETURN SIDE OF AIR HANDLING UNIT UPSTREAM OF UNIT BUT DOWNSTREAM OF ANY SPLITS PER NFPA 72 (2013) AND INTERNATIONAL MECHANICAL CODE (IMC) (2015). COORDINATE FINAL LOCATION WITH MECHANICAL CONTRACTOR. FURNISH AND INSTALL SEPARATE RELAY MODULE FOR AIR HANDLING UNIT SHUTDOWN PER NFPA 72 (2013). DUCT SMOKE DETECTION AND RELAY MODULE INSTALLATION SHALL BE COMPATIBLE WITH EXISTING SIMPLEX 4010 FIRE ALARM CONTROL PANEL. DUCT SMOKE DETECTORS AND RELAY MODULE SHALL BE INSTALLED IN CONDITIONED SPACE. DUCT SMOKE DETECTORS SHALL BE SIMPLEX MODEL 4098-9755 PHOTOELECTRIC DUCT SMOKE DETECTORS WITHOUT INTEGRAL RELAY. FURNISH AND INSTALL SIMPLEX MODEL 4099-9010 RELAY MODULE FOR SHUT DOWN OF AIR HANDLING UNIT. FURNISH AND INSTALL TWO SIMPLEX MODEL NUMBER 2098-8806 TEST STATIONS WITH KEY SWITCH AND RED LED STATUS INDICATOR FOR REMOTE TESTING OF DETECTORS. LOCATE TEST STATIONS AT EXISTING SIMPLEX 4010 FACP ON BACK BOXES AND COVER. UPDATE PROGRAMMING OF EXISTING FIRE ALARM CONTROL PANEL TO ACCOMMODATE NEW DUCT SMOKE DETECTORS, RELAY MODULE AND TEST SWITCHES. NEWLY INSTALLED APPLIANCES AND FUNCTIONALITY SHALL BE FULLY TESTED AND ACCEPTED BY AHU PER NFPA 72 REQUIREMENTS.
- PROVIDE POWER TO NEW AHU UV LIGHT VIA NEW 15A, 120V, 1P MOTOR RATED TOGGLE SWITCH.



1 ELECTRICAL NEW WORK-LOWER LEVEL
E200 Scale: 1/8" = 1'-0"



2 ELECTRICAL NEW WORK-UPPER LEVEL
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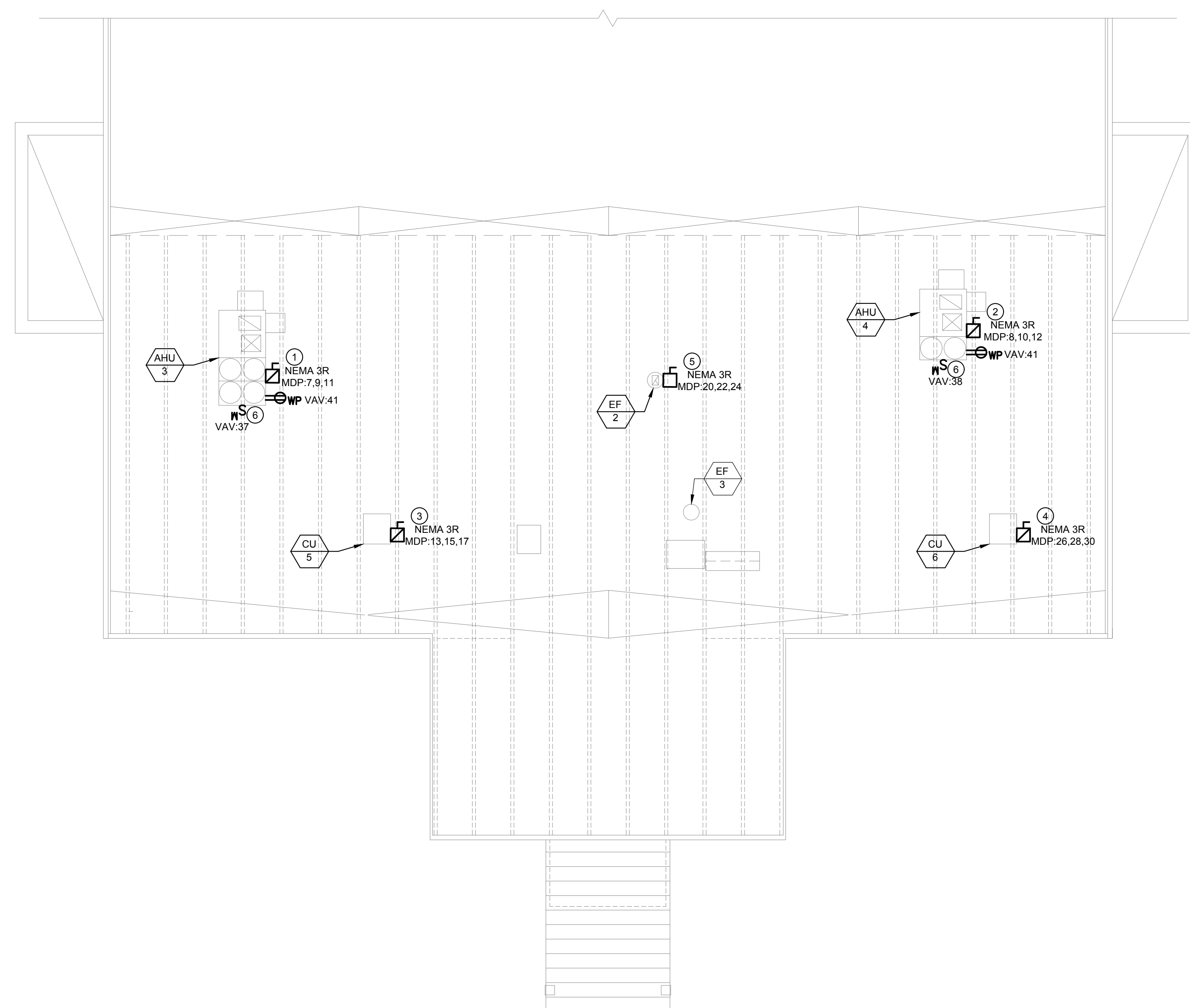


GENERAL NOTES:

1. REFER TO DRAWING E000 FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS.
2. ALL WIRING AND CONDUIT FOR NEW OR EXTENDING EXISTING CIRCUITS SHALL BE 2#12 & 1#12G THHN/THWN-2 IN 3/4" CONDUIT MINIMUM. MATCH EXISTING WIRE AND CONDUIT SIZES WHERE THEY ARE GREATER.
3. FOR POWER SUPPLY TO NEW EQUIPMENT FROM EXISTING CIRCUITS, IN NO CASE SHALL A 120V, 20A/1P CIRCUIT BE LOADED TO OVER 1.92KW. MAKE CHANGES AS REQUIRED TO ENSURE COMPLIANT LOADING ON BREAKERS.
4. CONTRACTOR SHALL UPDATE ALL PANELBOARD CIRCUIT DIRECTORIES UPON COMPLETION OF WORK.

KEYED NOTES:

- 1 PROVIDE POWER TO NEW AHU-3 VIA NEW NEMA 3R 100AF/80AT, 208V, 3P FUSED DISCONNECT SWITCH.
- 2 PROVIDE POWER TO NEW AHU-4 VIA NEW NEMA3R 100AF/70AT, 208V, 3P FUSED DISCONNECT SWITCH.
- 3 PROVIDE POWER TO NEW CU-5 VIA NEW NEMA 3R 30AF/35AT, 208V, 3P FUSED DISCONNECT SWITCH.
- 4 PROVIDE POWER TO NEW CU-6 VIA NEW NEMA 3R 30AF/20AT, 208V, 3P FUSED DISCONNECT SWITCH.
- 5 SPLICE AND EXTEND PRESERVED CIRCUIT FOR NEW EXHAUST FAN. PROVIDE POWER VIA NEW NEMA 3R 30A, 208V, 3P NON-FUSED DISCONNECT SWITCH. MATCH EXISTING WIRING, 2#12 & 1#12G IN 3/4" MINIMUM.
- 6 PROVIDE POWER TO NEW AHU UV LIGHT VIA NEW 15A, 120V, 1P MOTOR RATED TOGGLE SWITCH.



Seal

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ELECTRICAL NEW WORK - ROOF LEVEL

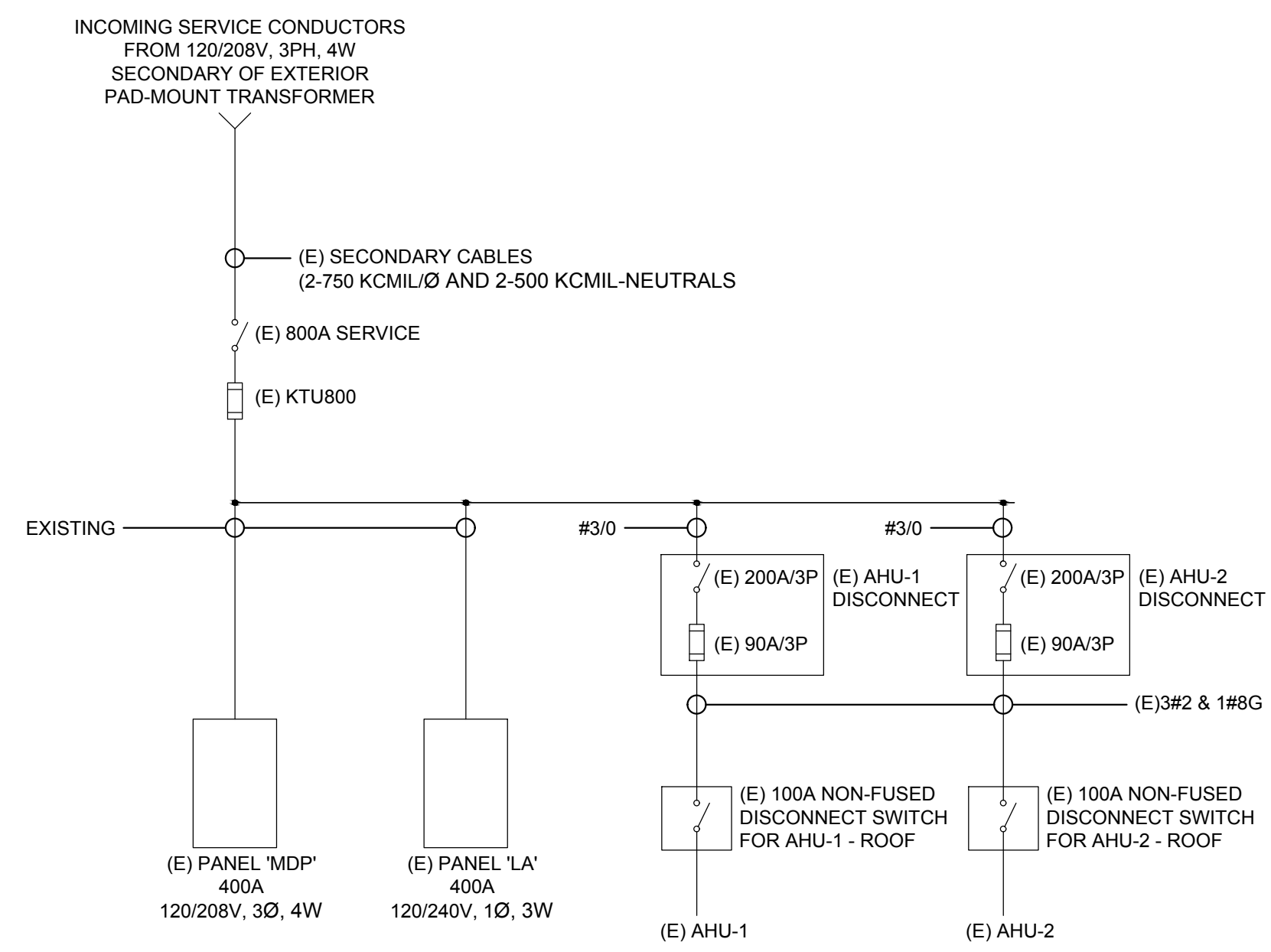
Project Number	131021.001
Date	05/13/2022
Drawn By	TM
Checked By	RR

E201

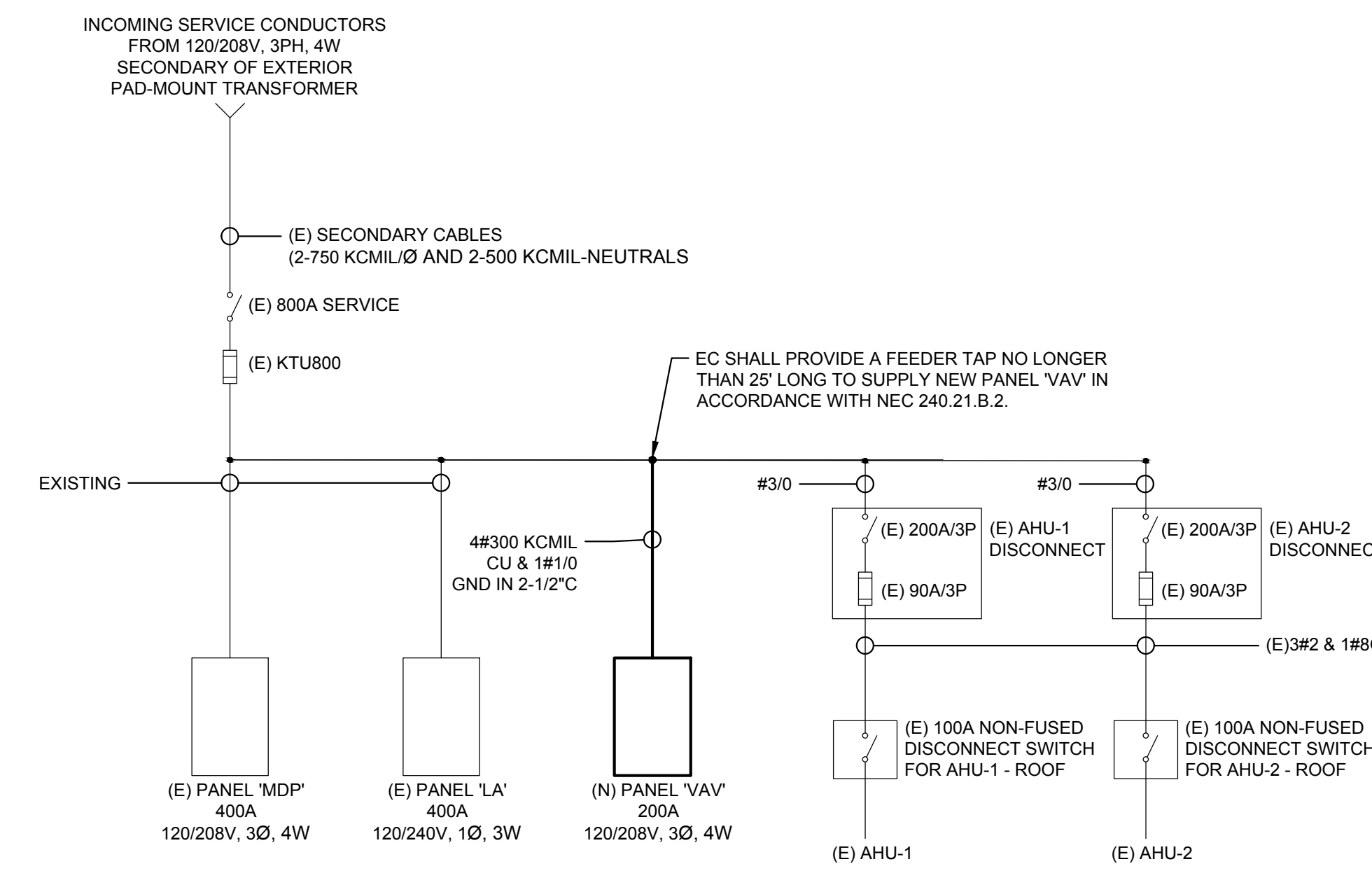
Scale 1/8"=1'-0"

1 ELECTRICAL NEW WORK - ROOF LEVEL
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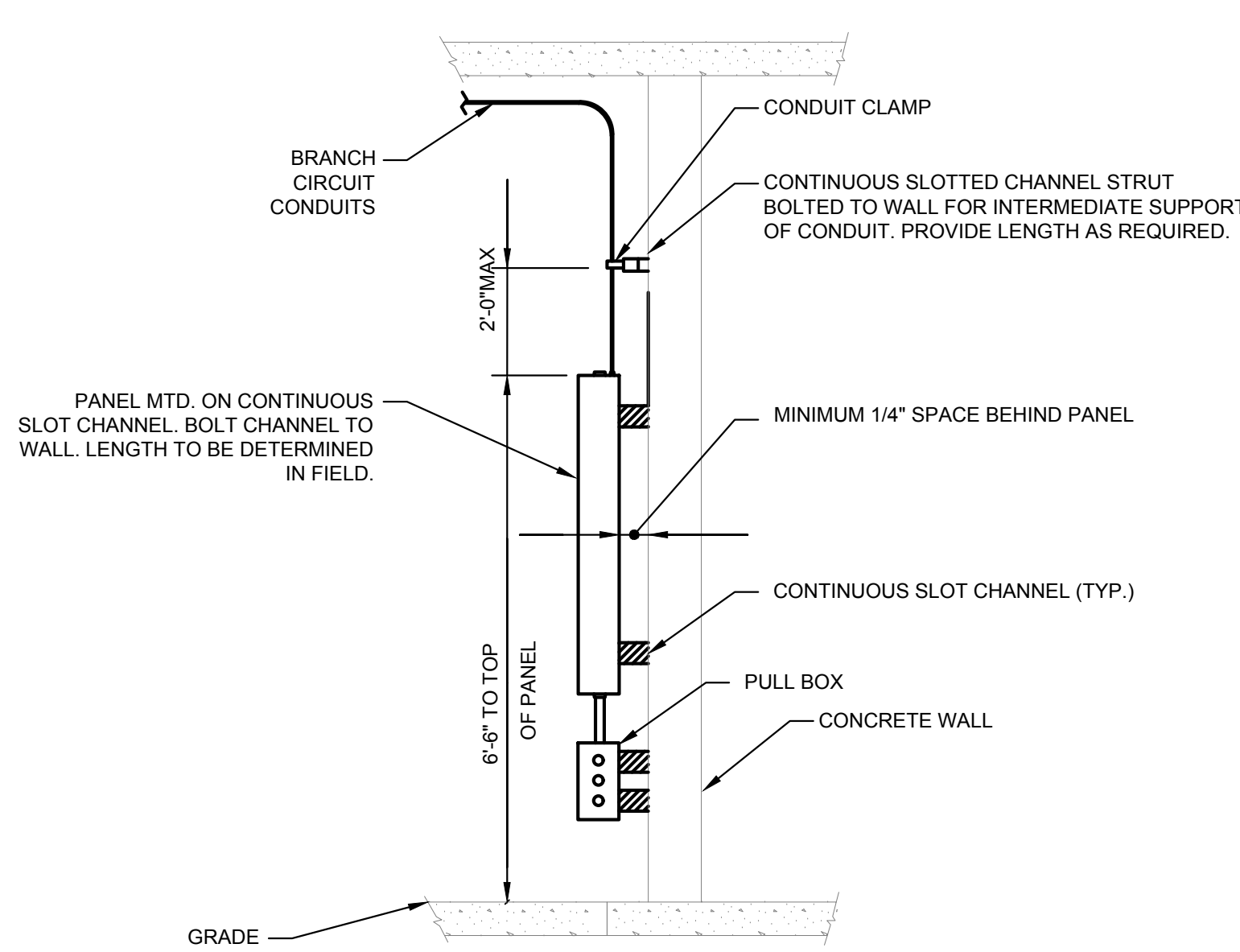
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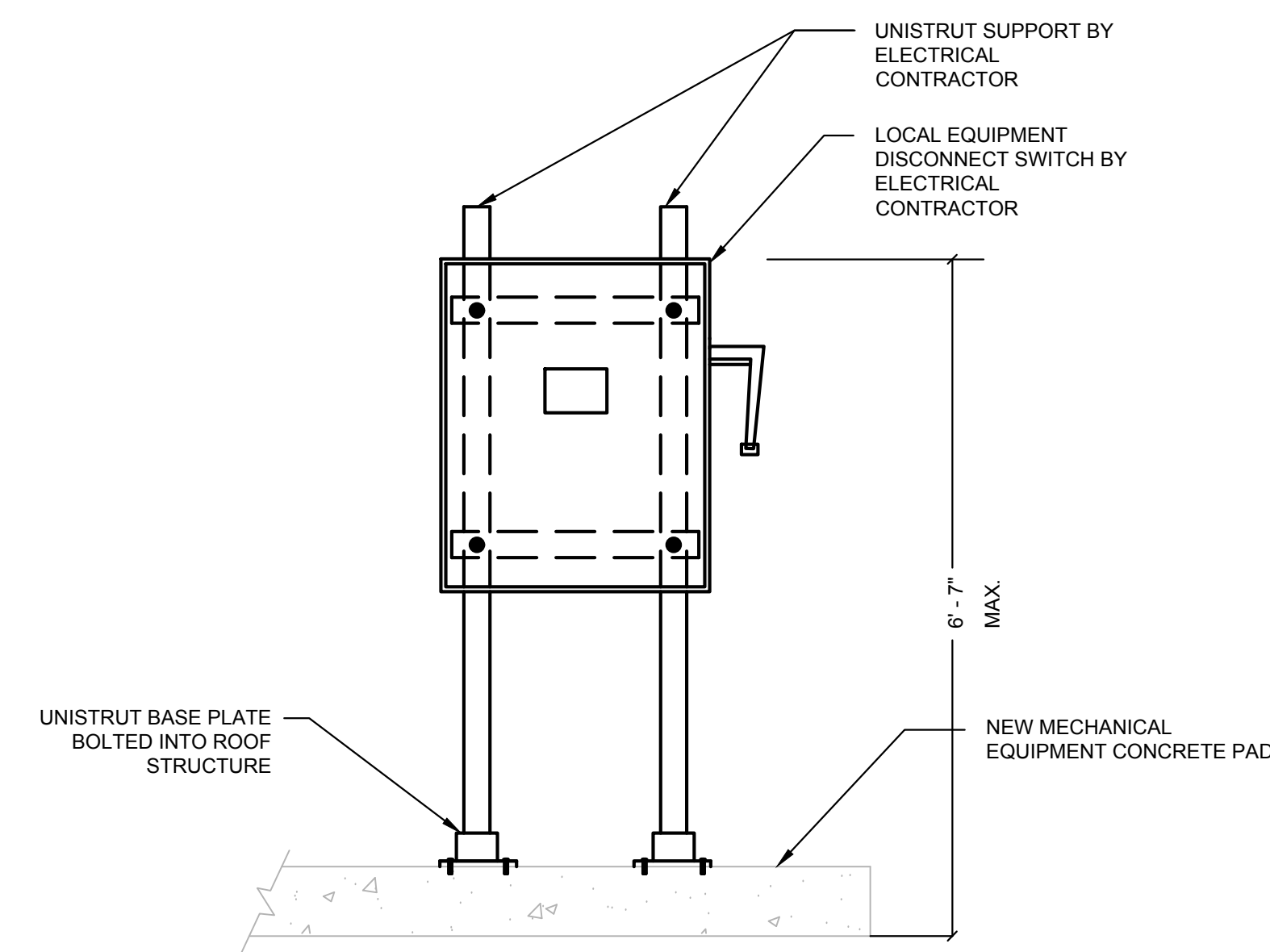
1 SINGLE LINE DIAGRAM - EXISTING CONDITIONS
Scale: NTS



2 SINGLE LINE DIAGRAM - PROPOSED CONDITIONS
Scale: NTS



3 TYPICAL SURFACE MOUNT PANELBOARD INSTALLATION
Scale: NTS



4 CHANNEL STRUT-MOUNTED DISCONNECT SWITCH
Scale: NTS

NOTE:

1. MOUNT DISCONNECT SWITCH ADJACENT TO MECHANICAL EQUIPMENT CONTROL PANELS AND MOTORS AS CLOSE AS POSSIBLE. COORDINATE W/ MECHANICAL CONTRACTOR.

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ELECTRICAL DETAILS

Project Number	131021.001
Date	05/13/2022
Drawn By	TM
Checked By	RR

E300

Scale: As Noted

ISSUED FOR BID

EXISTING PANEL SCHEDULE

PANEL: MDP		INTERRUPTING RATING: 10 KAIC		MOUNTING: SURFACE										
VOLTAGE: 208Y/120V		PHASE: 3		WIRE: 4		BUS AMPS: 400A		MAIN: MLO						
NEMA 1		NEUTRAL: 100%		COPPER GROUND BUS - ISOLATED GROUND		LOCATION: ELECTRICAL ROOM								
CIRCUIT	CIRCUIT DESCRIPTION	BRANCH CIRCUIT CONDUCTORS AND CONDUIT	POLES	BKR SIZE	VA	VA / PHASE			VA	BKR SIZE	POLES	BRANCH CIRCUIT CONDUCTORS AND CONDUIT	CIRCUIT DESCRIPTION	CIRCUIT
						A	B	C						
1					0	0			0					2
3	PANEL A	-	3	100	0	0	0	0	0	100	3	-	PANEL B	4
5					0	0			0					6
7					0	0			0					8
9	(R) AHU-3 (SOUTH)	-	3	90	0	0	0	0	0	60	3	-	(R) AHU-4 (NORTH)	10
11					0	0			0					12
13					0	0			0	-	1	-	SPACE	14
15	(R) CU-5 (SOUTH)	-	3	50	0	0	0	0	0	-	1	-	SPACE	16
17					0	0			0	-	1	-	SPACE	18
19					0	0			0					20
21	(R) AHU-5 (SOUTH)	-	3	20	0	0	0	0	0	20	3	-	EF-2	22
23					0	0			0					24
25					0	0			0					26
27	(R) AHU-6 (SOUTH)	-	3	20	0	0	0	0	0	50	3	-	(R) CU-6 (NORTH)	28
29					0	0			0					30
31					0	0			0					32
33	COOLER OUTSIDE UNIT	-	3	20	0	0	0	0	0	30	2	-	MUH-1	34
35					0	0			0					36
37					0	0			0	20	2	-	SPARE	38
39	FREEZER OUTSIDE UNIT	-	3	20	0	0	0	0	0	-	1	-	SPACE	40
41					0	0			0	-	1	-	SPACE	42
NOTES:					TOTALS									
					0	0	0				0.00 AMPS			
					0 VA									

PROPOSED PANEL SCHEDULE

PANEL: VAV		INTERRUPTING RATING: 22 KAIC		MOUNTING: SURFACE										
VOLTAGE: 208Y/120V		PHASE: 3		WIRE: 4		BUS AMPS: 200A		MAIN: 200A MCB						
NEMA 1		NEUTRAL: 100%		COPPER GROUND BUS - ISOLATED GROUND		LOCATION: ELECTRICAL ROOM								
CIRCUIT	CIRCUIT DESCRIPTION	BRANCH CIRCUIT CONDUCTORS AND CONDUIT	POLES	BKR SIZE	VA	VA / PHASE			VA	BKR SIZE	POLES	BRANCH CIRCUIT CONDUCTORS AND CONDUIT	CIRCUIT DESCRIPTION	CIRCUIT
						A	B	C						
1					2500	3000			500	20	2	2#12,1#12G,3/4 "C	VAV-3-2	2
3	VAV-3-1	2#10,1#10G,3/4 "C	2	30	2500				500	20	2	2#12,1#12G,3/4 "C	VAV-3-2	4
5					250		3000		250					6
7	VAV-3-3	2#12,1#12G,3/4 "C	2	20	250	500			250	20	2	2#12,1#12G,3/4 "C	VAV-3-4	8
9					250				250					10
11	VAV-3-5	2#12,1#12G,3/4 "C	2	20	250		500		250	20	2	2#12,1#12G,3/4 "C	VAV-3-6	12
13					500	1000			500					14
15	VAV-3-7	2#12,1#12G,3/4 "C	2	20	500		1000		500	20	2	2#12,1#12G,3/4 "C	VAV-3-8	16
17					1500			4000	2500					18
19	VAV-3-9	2#12,1#12G,3/4 "C	2	20	1500				2500	30	2	2#10, 1#10G, 3/4 "C	VAV-4-1	20
21					1500	4000			2500					22
23	VAV-4-2	2#12,1#12G,3/4 "C	2	20	250		750		500	20	2	2#12,1#12G,3/4 "C	VAV-5-1	24
25					1500	2000			500					26
27	VAV-5-2	2#12,1#12G,3/4 "C	2	20	1500		2000		500	20	2	2#12,1#12G,3/4 "C	VAV-5-3	28
29					500			1000	500					30
31	VAV-5-4	2#12,1#12G,3/4 "C	2	20	500	1000			500	20	2	2#12,1#12G,3/4 "C	VAV-6-1	32
33					250		750		500					34
35	VAV-6-2	2#12,1#12G,3/4 "C	2	20	250				500	20	2	2#12,1#12G,3/4 "C	VAV-6-3	36
37	AHU-3 UV LIGHTS	2#12,1#12G,3/4 "C	1	15	1000	2000			1000	15	1	2#12,1#12G,3/4 "C	AHU-4 UV LIGHTS	38
39	AHU-5 UV LIGHTS	2#12,1#12G,3/4 "C	1	15	1000			2000	1000	15	1	2#12,1#12G,3/4 "C	AHU-6 UV LIGHTS	40
41	AHU RECEPTACLES	2#12,1#12G,3/4 "C	1	20	360				360	0	-	1	SPACE	42
43	SPACE	-	1	-	0	0			0	-	1	-	SPACE	44
45	SPACE	-	1	-	0	0			0	-	1	-	SPACE	46
47	SPACE	-	1	-	0	0			0	-	1	-	SPACE	48
49	SPACE	-	1	-	0	0			0	-	1	-	SPACE	50
51	SPACE	-	1	-	0	0			0	-	1	-	SPACE	52
53	SPACE	-	1	-	0	0			0	-	1	-	SPACE	54
NOTES:					TOTALS									
					13500	10000	7860				87.04 AMPS			
					31360 VA									

PROPOSED PANEL SCHEDULE

PANEL: MDP		INTERRUPTING RATING: 10 KAIC		MOUNTING: SURFACE										
VOLTAGE: 208Y/120V		PHASE: 3		WIRE: 4		BUS AMPS: 400A		MAIN: MLO						
NEMA 1		NEUTRAL: 100%		COPPER GROUND BUS - ISOLATED GROUND		LOCATION: ELECTRICAL ROOM								
CIRCUIT	CIRCUIT DESCRIPTION	BRANCH CIRCUIT CONDUCTORS AND CONDUIT	POLES	BKR SIZE	VA	VA / PHASE			VA	BKR SIZE	POLES	BRANCH CIRCUIT CONDUCTORS AND CONDUIT	CIRCUIT DESCRIPTION	CIRCUIT
						A	B	C						
1					0	0			0					2
3	PANEL A	-	3	100	0	0	0	0	0	100	3	-	PANEL B	4
5					0	0			0					6
7					0	0			0					8
9	AHU-3 (SOUTH)	3#2 CU & 1#8G IN 1-1/4"C	3	90	0	0	0	0	0	70	3	3#4 CU & 1#8G IN 1-1/4"C	AHU-4 (NORTH)	10
11					0	0			0					12
13					0	0			0	-	1	-	SPACE	14
15	CU-5 (SOUTH)	3#8 CU & 1#10G IN 3/4"C	3	35	0	0	0	0	0	-	1	-	SPACE	16
17					0	0			0	-	1	-	SPACE	18
19	AHU-5 (SOUTH)	2#12 CU & 1#12G IN 3/4"C	1	15	0	0			0					20
21	SPACE	-			0	0			0	20	3	-	EF-2	22
23	SPACE	-			0	0			0					24
25	AHU-6 (SOUTH)	2#12 CU & 1#12G IN 3/4"C	1	15	0	0			0					26
27	SPACE	-			0	0			0	25	3	3#10 CU & 1#10G IN 3/4"C	CU-6 (NORTH)	28
29	SPACE	-			0	0			0					30
31					0	0			0					32
33	COOLER OUTSIDE UNIT	-	3	20	0	0	0	0	0	30	2	-	MUH-1	34
35					0	0			0					36
37					0	0			0	20	2	-	SPARE	38
39	FREEZER OUTSIDE UNIT	-	3	20	0	0	0	0	0	-	1	-	SPACE	40
41					0	0			0	-	1	-	SPACE	42
NOTES:					TOTALS									
					0	0	0				0.00 AMPS			
					0 VA									

Architect

Civil Engineer

Structural Engineer

Seal

Revisions:

NO.	DESCRIPTION	DATE

3RD AND SPRUCE RECREATION CENTER
 320 S 3RD ST,
 READING PA 19602
 CITY OF READING DEPARTMENT OF PUBLIC WORKS

ELECTRICAL SCHEDULES

Project Number	131021.001
Date	05/13/2022
Drawn By	TM
Checked By	RR

E301
 Scale As Noted