PROJECT GENERAL NOTES

1 UNLESS OTHERWISE NOTED, ALL CIRCUITRY SHOWN ON THESE DOCUMENTS IS DONE PER THE "ROUNDHOUSE" METHOD. FOR EVERY GROUP OF THREE (3) CONSECUTIVE CIRCUITS IN PHASE ORDER, THERE IS A DEDICATED NEUTRAL. FOR EXAMPLE, A HOMERUN COMPRISED OF CIRCUITS 1, 3 AND 5 CONTAINS FOUR (4) CONDUCTORS; THREE (3) HOTS AND ONE (1) NEUTRAL. A HOMERUN COMPRISED OF NON- CONSECUTIVE NUMBERS OUT OF PHASE ORDER. I.E. 1, 9 AND 11 OR 3, 5, 7 CONTAINS FIVE (5) CONDUCTORS; THREE (3) HOTS AND TWO NEUTRALS. GROUND CONDUCTORS TYPICALLY ARE NOT SHOWN AS PART OF THE WIRE COUNT.

2 INSTALL AND CONNECT A CODE SIZED INSULATED OR BARE COPPER GROUNDING CONDUCTOR IN ALL BRANCH CIRCUITS AND FEEDERS.

3 MOUNTING HEIGHTS SHOWN ARE FROM FINISHED FLOOR TO THE CENTERLINE OF THE DEVICE. ALL MOUNTING HEIGHTS SHALL BE AS SHOWN ON THE SYMBOLS LIST UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS.

4 REFER TO POWER PLANS FOR THE LOCATION OF ALL PANELBOARDS.

5 FURNISH AND INSTALL ALL PANELBOARDS WITH CIRCUIT BREAKERS AS SHOWN ON PANEL SCHEDULES.

6 DO NOT INSTALL POWER OUTLETS BACK TO BACK IN STUD WALLS.

7 REFER TO ELECTRICAL ONE LINE DIAGRAM AND FEEDER SCHEDULE FOR THE SIZE OF CONDUITS AND CONDUCTORS BETWEEN MAJOR POWER COMPONENTS OF THE ELECTRICAL SYSTEM.

8 REFER TO ARCHITECTURAL PLANS FOR DIMENSIONAL LOCATION OF OUTLETS AND FIXTURES AND LOCATION IN ELEVATION VIEW.

9 CONTRACTOR IS RESPONSIBLE TO SUBMIT REVISED LAYOUT OF EQUIPMENT IN ANY ELECTRICAL ROOM OR OTHER ROOM CONTAINING ELECTRICAL GEAR FOR WRITTEN APPROVAL BY ENGINEER IF PROPOSED INSTALLATION LAYOUT DIFFERS FROM CONSTRUCTION DOCUMENTS. SUBMISSION MUST BE APPROVED PRIOR TO RELEASE OF ORDER FOR EQUIPMENT AND PRIOR TO INSTALLATION.

10 THE CONTRACTOR SHALL VISIT THE JOBSITE AND VERIFY ALL EXISTING CONDITIONS BEFORE BIDDING AND SHALL INCLUDE IN THE BID THE NECESSARY COSTS TO CONSTRUCT THIS PROJECT IN ACCORDANCE WITH THE ELECTRICAL DRAWINGS, SPECIFICATIONS AND ALL APPLICABLE CODES.

11 ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE LISTED BY UNDER-WRITERS LABORATORIES AND BEAR THEIR LABEL.

12 COORDINATE AS REQUIRED THAT ALL CONDUIT IS INSTALLED CONCEALED IN THE WALLS, AND ALL ROUGH-IN IS INSTALLED FLUSH. USE OF EXPOSED CONDUIT AND SURFACE MOUNTED BOXES IS NOT ACCEPTABLE.

13 CONTRACTOR SHALL REMOVE ALL LEFT OVER CONDUIT, WIRE, SCRAPS, ETC. AND LEAVE PREMISES CLEAN AND FREE OF TRASH OR DEBRIS RESULTING FROM HIS WORK.

14 CONTRACTOR SHALL REPORT TO THE OWNER'S ENGINEER ANY OBSERVATIONS OF CONDITIONS WHICH ARE DISCOVERED IN THE BUILDING WHICH WOULD PREVENT THE CORRECT INSTALLATION OF THE ELECTRICAL SYSTEM.

15 PROVIDE INDIVIDUAL GFCI RECEPTACLES AT EACH LOCATION SHOWN, DO NOT USE FEED-THRU GFCI TYPE RECEPTACLES. LOCATE RECEPTACLE AT END OF A BRANCH CIRCUIT WIRE.

16 VERIFY THE EXACT LOCATION OF ALL MECHANICAL AND PLUMBING EQUIPMENT, SPRINKLER VALVE MONITORS AND FLOW SWITCHES, DUCT SMOKE DETECTORS, CONTROL DEVICES, ETC. PRIOR TO DETERMINING CONDUIT TERMINATION POINTS.

17 CONDUIT ROUTING (WHERE SHOWN) IS ESSENTIALLY DIAGRAMMATIC. CONTRACTOR SHALL LAYOUT RUNS TO SUIT FILED CONDITIONS AND THE COORDINATION REQUIREMENTS OF OTHER TRADES.

18 ALL CONDUIT AND RACEWAY PENETRATIONS THROUGH FIRE RATED WALLS AND FLOORS SHALL BE SEALED TO MAINTAIN THE FIRE SEPARATION RATING. REFER TO ARCHITECTURAL PLANS TO IDENTIFY ALL RATED CONSTRUCTION.

19 CONDUITS EMBEDDED IN SLABS SHALL BE NO LARGER THAN 1.25" TRADE SIZE OF 1/3 OR SLAB DEPTH, WHICHEVER IS SMALLER. SPACE CONDUITS 5" APART (CENTER-TO-CENTER).

20 REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOCATIONS OF WALL MOUNTED LIGHT FIXTURES, AND MOUNTING HEIGHTS OF ALL SUSPENDED FIXTURES. REPORT ANY DISCREPANCIES BETWEEN THE ELEVATIONS AND INFORMATION PROVIDED ON THE ELECTRICAL PLANS PRIOR TO ROUGH-IN.

21 REFER TO DETAIL 8/2E-800 FOR CONDUITS CROSSING SEISMIC JOINT. REFER TO STRUCTURAL PLANS AND CONFIRM LOCATION OF ALL SEISMIC JOINTS.

22 INSTALL A POLYETHYLENE PULLING ROPE IN ALL EMPTY CONDUITS.

23 FIXTURES INDICATED AS EMERGENCY, WITH BATTERY BACK-UP, SHALL BE WIRED FOR NORMAL OPERATION (SWITCHED) U.O.N. DO NOT WIRE AS NIGHT LIGHT (24 HOUR OPERATION) U.O.N. EXIT LIGHTS ARE EXCEPTION.

24 REFER TO ARCHITECTURAL REFLECTED CEILING PLANS TO VERIFY LOCATION OF CEILING MOUNTED LIGHT FIXTURES. REPORT ANY DISCREPANCIES PRIOR TO ROUGH-IN.

25 LAMP ORIENTATION IN ROOMS CONTAINING 2' X 2' AND 2' X 4' FIXTURES SHALL BE THE SAME.

26 CONDUIT SHALL BE ROUTED CONCEALED, EXCEPT FOR IN ELECTRICAL ROOMS AND OTHER SIMILAR UTILITY ROOMS, UNLESS OTHERWISE NOTED OR PERMISSION IS GRANTED VIA RFI RESPONSE. ALL EXPOSED CONDUIT, BOXES, SUPPORTS, ETC. SHALL BE PAINTED TO MATCH SURROUNDING SURFACES.

27 ALL EXPOSED LIGHT FIXTURE CORDS AND CANOPIES SHALL BE APPROVED BY THE ARCHITECT FOR COLOR. PROVIDE WHITE UNLESS OTHERWISE NOTED.

28 DEVICE AND FACEPLATE COLORS SHALL BE COORDINATED WITH THE ARCHITECT, INCLUDING DESIGNER COLORS IN MAIN ENTRY LOBBIES AND OTHER SPACES AS REQUIRED.

29 METAL-CLAD CABLE SHALL NOT BE ROUTED HORIZONTALLY IN WALLS OR BETWEEN STUD BAYS ON IN THIS PROJECT. DO NOT USE MC-CABLE FOR HOME RUNS. DO NOT INSTALLED MC CABLE EXPOSED.

30 ALL EXPOSED CONDUITS, CABLE TRAY, OPEN CABLING SHALL BE ROUTED AT RIGHT ANGLES TO THE BUILDING STRUCTURE.

31 DEVICE/OUTLET BOXES MOUNTED ON OPPOSITE SIDES OF RATED WALLS IN CORRIDORS, AND IN ANY AIRTIGHT SPACES, SHALL BE SEPARATED BY A MINIMUM OF 24".

32 THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ACCEPTANCE TESTING AND DOCUMENTATION AS REQUIRED BY THE 2019 BUILDING ENERGY EFFICIENCY STANDARDS, TITLE 24, PART 6.

33 THE CONTRACTOR SHALL PROVIDE THE CERTIFICATE OF INSTALLATION (NRCI) AND THE CERTIFICATE OF ACCEPTANCE (NRCA) FORMS REQUIRED FOR THIS PROJECT AND SUBMIT THE SIGNED FORMS.

34 REFER TO SPECIFICATION 260090, SELECTIVE ELECTRICAL DEMOLITION, FOR ADDITIONAL DEMOLITION REQUIREMENTS.

35 REFER TO ARCHITECTURAL DEMOLITION PLANS TO COORDINATE SCOPE OF DEMOLITION. REFER TO MECHANICAL AND PLUMBING DEMOLITION PLANS AND REMOVE DISCONNECTS, CONDUIT, WIRE, BOXES, ETC. AT EQUIPMENT TO BE REMOVED.

36 DISCONNECT AND REMOVE ALL EXISTING DEVICES AND FIXTURES WITHIN THE AREA OF DEMOLITION U.O.N. AT THE OWNER'S DISCRETION, TURN OVER ANY EXISTING RE-USABLE OR RECYCLABLE MATERIAL. PROPERLY DISPOSE OF ANY UNWANTED MATERIALS.

37 WHERE DEVICES OR FIXTURES ARE REMOVED, THE CONTRACTOR SHALL ALSO REMOVE ALL CONDUCTORS OR CABLE SERVING THE DEVICE.

38 WHERE DEMOLITION INTERUPTS SERVICE TO EXISTING DEVICE OR EQUIPMENT IN AREA THAT IS OTHERWISE UNDISTURBED, CIRCUITS OR WIRING SHALL BE RE-WORKED AS REQUIRED.

39 DEVICES, EQUIPMENT, ETC. SHOWN ON THE DEMOLITION PLANS DO NOT NECESSARILY REPRESENT THE ENTIRE SCOPE OF ELECTRICAL DEMOLITION.

SYMBOLS LIST

SOME OF THESE SYMBOLS SHOWN MAY NOT BE USED ON THIS PROJECT

POWER DISTRIBUTION

- SWITCHGEAR, SWITCHBOARD, DISTRIBUTION BOARD, SUBSTATION OR MOTOR CONTROL CENTER, FLOOR MOUNTED. DOUBLE LINE INDICATES FRONT FACE OF GEAR.
- PANELBOARD, 277/480V, SURFACE MOUNTED ON WALL.
- PANELBOARD, 277/480V, FLUSH MOUNTED IN WALL.
- PANELBOARD, 120/208V, SURFACE MOUNTED ON WALL.
- PANELBOARD, 120/208V, FLUSH MOUNTED IN WALL.
- DRY-TYPE STEP-DOWN TRANSFORMER, FLOOR MOUNTED 480-120/208V 3Ø, UON. DOUBLE LINE INDICATES FRONT FACE OF TRANSFORMER.
- ELECTRIC MOTOR, NIEC. MAKE POWER CONNECTIONS ONLY AS NOTED ON PLANS.
- (F) INDOOR EXHAUST FAN MOTOR, SINGLE PHASE. MAKE POWER CONNECTIONS TO INCLUDE JUNCTION BOX MOUNTED MANUAL MOTOR STARTER AND DISCONNECT ADJACENT TO FAN WITH 2 #12 CONDUCTORS PLUS GROUND IN 1/2" FLEXIBLE CONDUIT BETWEEN STARTER AND MOTOR.
- (V) INDOOR FAN POWERED VAV BOX MOTOR, SINGLE PHASE, MOUNTED FROM STRUCTURE ABOVE, NIEC. MAKE POWER CONNECTIONS TO INCLUDE JUNCTION BOX MOUNTED MANUAL MOTOR STARTER AND DISCONNECT ADJACENT TO VAV BOX WITH 2 #12 CONDUCTORS PLUS GROUND IN 1/2" FLEXIBLE CONDUIT BETWEEN STARTER AND MOTOR.
- (D)2 MOTOR OPERATED FIRE/SMOKE DAMPER 'FSD', NIEC. SYMBOL DENOTES INTERFACE FOR POWER CONNECTIONS. ALSO, INCLUDES LOCAL POWER DISCONNECT MEANS. ADJACENT NUMBER INDICATES QUANTITY OF ACTUATORS REQUIRING CONNECTION PER FSD, IF MORE THAN 1.
- COMBINATION EXHAUST FAN AND DOWNLIGHT FIXTURE, CEILING MOUNTED. FAN AND LIGHT SHALL BE CONTROLLED SEPARATELY.
- P PULLBOX OR HANDHOLE, SIZE AND TYPE AS NOTED ON PLANS.
- A AF SAFETY DISCONNECT SWITCH, 3 POLE, UON. ADJACENT NUMBER INDICATES FUSE SIZE WHEN APPLICABLE. LABELING CONVENTION AS FOLLOWS:

A:	30A, NON-FUSED	AF:	30A, FUSED
B:	60A, NON-FUSED	BF:	60A, FUSED
C:	100A, NON-FUSED	CF:	100A, FUSED
D:	200A, NON-FUSED	DF:	200A, FUSED
E:	400A, NON-FUSED	EF:	400A, FUSED
F:	600A, NON-FUSED	FF:	600A, FUSED
G:	800A, NON-FUSED	GF:	800A, FUSED

- 1 MAGNETIC MOTOR STARTER. ADJACENT NUMBER INDICATES NEMA SIZE OF STARTER.
- 1 COMBINATION MAGNETIC MOTOR STARTER WITH OVERCURRENT PROTECTION DISCONNECT. ADJACENT NUMBER INDICATES NEMA SIZE OF STARTER.
- PACKAGE MOTOR CONTROLLER OR STARTER FURNISHED AND INSTALLED UNDER ANOTHER DIVISION WITH EQUIPMENT CONTROLLED. PROVIDE SINGLE-POINT POWER SERVICE CONNECTION UNDER THIS DIVISION AS NOTED ON PLANS.
- VFD VARIABLE FREQUENCY DRIVE FURNISHED UNDER ANOTHER DIVISION. INSTALL VFD AND PROVIDE POWER SERVICE CONNECTION UNDER THIS DIVISION AS NOTED ON PLANS.
- VFD VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECT FURNISHED UNDER ANOTHER DIVISION. INSTALL VDF AND PROVIDE POWER SERVICE CONNECTION UNDER THIS DIVISION AS NOTED ON PLANS.
- ECM ELECTRONICALLY COMMUTATED MOTOR CONTROLLER FURNISHED UNDER ANOTHER DIVISION. PROVIDE POWER SERVICE CONNECTION UNDER THIS DIVISION AS NOTED ON PLANS.
- ECM ELECTRONICALLY COMMUTATED MOTOR CONTROLLER WITH INTEGRAL CIRCUIT BREAKER FURNISHED UNDER ANOTHER DIVISION. PROVIDE POWER SERVICE CONNECTION UNDER THIS DIVISION AS NOTED ON PLANS.
- DRIVEN GROUND ROD.
- DRIVEN GROUND ROD IN GROUND WELL WITH COVER.
- ELECTRICAL VEHICLE CHARGING STATION, WALL MOUNTED.
- ELECTRICAL VEHICLE CHARGING STATION, PEDESTAL MOUNTED.
- CABLE TO BUS TERMINATION LUGS.
- BOLTED PRESSURE OR HIGH PRESSURE CONTACT OR FUSED SWITCHES.
- GROUP MOUNTED MOLDED CASE CIRCUIT BREAKER.
- INDIVIDUALLY FIXED MOUNTED INSULATED-CASE OR POWER CIRCUIT BREAKER.
- INDIVIDUALLY DRAW-OUT MOUNTED INSULATED-CASE OR POWER CIRCUIT BREAKER.
- MEDIUM-VOLTAGE, INDIVIDUALLY DRAW-OUT MOUNTED VACUUM CIRCUIT BREAKER.
- MEDIUM-VOLTAGE LOAD INTERRUPTER SWITCH, FUSED TYPE.
- MEDIUM-VOLTAGE LOAD INTERRUPTER SWITCH, NON-FUSED TYPE.
- G GROUND FAULT RELAY INTEGRAL WITH CIRCUIT BREAKER.
- EO ELECTRICALLY OPERATED INTEGRAL.
- ST SHUNT-TRIP INTEGRAL WITH OVERCURRENT PROTECTION DEVICES.
- K1 KIRK-KEY INTERLOCK INTEGRAL WITH OVERCURRENT PROTECTION DEVICES. ADJACENT NUMBER CORRESPONDS WITH DEVICE INTERLOCK.
- M PRIVATE METER, MOUNTED INTEGRAL WITH OVERCURRENT PROTECTION OR SEPARATE WITHIN SWITCHGEAR.
- UM UTILITY METER, MOUNTED IN UTILITY METER SECTION OF SWITCHGEAR.
- M PRIVATE METER, MOUNTED IN SEPARATE ENCLOSURE FROM SWITCHGEAR.
- GFTB GROUND FAULT RELAY WITH SHUNT TRIP.
- GFA GROUND FAULT ALARM, NO SHUNT TRIP.
- TRANSFORMER.
- CONNECTION TO GROUND.

FIRE ALARM

- C SMOKE DETECTOR INITIATING DEVICE, CEILING MOUNTED IN FLUSH OR SURFACE JUNCTION BOX. "C" DENOTES MULTI-CRITERIA CARBON MONOXIDE AND SMOKE DETECTOR.
- SMOKE DETECTOR INITIATING DEVICE, WALL MOUNTED IN FLUSH JUNCTION BOX, MAXIMUM 6" BELOW CEILING.
- SMOKE DETECTOR INITIATING DEVICE, MOUNTED TO STRUCTURE ABOVE SUSPENDED CEILING IN SURFACE JUNCTION BOX OR SUSPENDED IN JUNCTION BOX IN FRONT OF RETURN AIR FIRE/SMOKE DAMPERS.
- SMOKE DETECTOR INITIATING DEVICE, DUCT-MOUNTED TYPE WITH SAMPLING TUBE, LOCATED AT SUPPLY AIR FANS 2000cfm AND LARGER.
- SMOKE DETECTOR INITIATING DEVICE, IN-DUCT MOUNTED TYPE AT DUCTED SUPPLY AIR FIRE/SMOKE DAMPERS.
- HEAT DETECTOR INITIATING DEVICE, CEILING MOUNTED IN FLUSH OR SURFACE JUNCTION BOX.
- HEAT DETECTOR INITIATING DEVICE, WALL MOUNTED IN FLUSH JUNCTION BOX, MAXIMUM 6" BELOW CEILING.
- HEAT DETECTOR INITIATING DEVICE, MOUNTED TO STRUCTURE ABOVE SUSPENDED CEILING IN SURFACE JUNCTION BOX.
- MANUAL PULL STATION INITIATING DEVICE, WALL MOUNTED AT +48" UON.
- SPRINKLER SYSTEM WATER FLOW SWITCH, NIEC. SYMBOL DENOTES INTERFACE FOR MONITORING CONNECTION FROM FIRE ALARM SYSTEM.
- SPRINKLER SYSTEM TAMPER SWITCH, NIEC. SYMBOL DENOTES INTERFACE FOR MONITORING CONNECTION FROM FIRE ALARM SYSTEM.
- SPRINKLER SYSTEM POST INDICATING VALVE 'PIV', NIEC. SYMBOL DENOTES INTERFACE FOR MONITORING CONNECTION FROM FIRE ALARM SYSTEM. INCLUDE A REMOTE MOUNTED ADDRESSABLE MONITORING MODULE AT PIV.
- SM REMOTE MOUNTED SINGLE INPUT, ADDRESSABLE, MONITORING MODULE FOR INITIATING CIRCUIT CONNECTION.
- DM REMOTE MOUNTED DUAL INPUT, ADDRESSABLE, MONITORING MODULE FOR INITIATING CIRCUIT CONNECTION.
- CR REMOTE MOUNTED PROGRAMMABLE CONTROL RELAY MODULE FOR ADDRESSABLE CONTROL.
- DPS DIFFERENTIAL PRESSURE SWITCH, NIEC. SYMBOLS DENOTES INTERFACE FOR MONITORING CONNECTION FROM FIRE ALARM SYSTEM TO ANNUNCIATE FAN OPERATION. INCLUDE A REMOTE MOUNTED ADDRESSABLE MONITORING MODULE AT EACH LOCATION.
- EOL END-OF-LINE RESISTOR.
- CT CURRENT TRANSFORMER FOR MONITORING AVAILABLE POWER.
- FRAP FIREMANS REMOTE ANNUNCIATOR PANEL FRAP, FLUSH WALL MOUNTED, +42" UON.
- MAGNETIC TYPE DOOR HOLD OPEN/RELEASE DEVICE, WALL MOUNTED, NIEC. SYMBOL DENOTES INTERFACE FOR POWER AND CONTROL CONNECTIONS FROM FIRE ALARM SYSTEM.
- DOOR HOLD OPEN/RELEASE DEVICE INTEGRATED IN DOOR HARDWARE CLOSURE EQUIPMENT, NIEC. SYMBOL DENOTES INTERFACE FOR POWER AND CONTROL CONNECTIONS FROM FIRE ALARM SYSTEM.
- AUDIBLE NOTIFICATION APPLIANCE, WALL MOUNTED, 6" BELOW CEILING OR +80" AFF, WHICHEVER IS LOWER.
- VISIBLE NOTIFICATION APPLIANCE, WALL MOUNTED, 6" BELOW CEILING OR +80" AFF, WHICHEVER IS LOWER. NUMBER ASSOCIATED WITH 'cd' REPRESENTS CANDELA RATING OF STROBE.
- AUDIBLE/VISIBLE NOTIFICATION APPLIANCE, WALL MOUNTED, 6" BELOW CEILING OR +80" AFF, WHICHEVER IS LOWER. NUMBER ASSOCIATED WITH 'cd' REPRESENTS CANDELA RATING OF STROBE.
- AUDIBLE NOTIFICATION APPLIANCE, CEILING MOUNTED IN FLUSH BACK BOX.
- VISIBLE NOTIFICATION APPLIANCE, CEILING MOUNTED IN FLUSH BACK BOX. NUMBER ASSOCIATED WITH 'cd' REPRESENTS CANDELA RATING OF STROBE.
- AUDIBLE/VISIBLE NOTIFICATION APPLIANCE, CEILING MOUNTED IN FLUSH BACK BOX. NUMBER ASSOCIATED WITH 'cd' REPRESENTS CANDELA RATING OF STROBE.

WIRING DEVICES

- JUNCTION BOX, WALL MOUNTED, +18" UON.
- JUNCTION BOX, MOUNTED IN FLUSH FLOOR BOX.
- J JUNCTION BOX, MOUNTED FLUSH IN CEILING.
- JUNCTION BOX, SURFACE OR PENDANT MOUNTED TO STRUCTURE IN ACCESSIBLE CEILING SPACE.
- JUNCTION BOX, MOUNTED ON CONDUIT STANCHION FLOOR PENETRATION, +12" UON.
- SINGLE-PLEX CONVENIENCE RECEPTACLE DEVICE, WALL MOUNTED, +18" UON.
- DUPLEX CONVENIENCE RECEPTACLE DEVICE, WALL MOUNTED, +18" UON. ADJACENT LETTERING DENOTED BELOW APPLY TO ALL RECEPTACLE DEVICES WHEN SHOWN ON DRAWINGS.
  - A: ARC FAULT CURRENT INTERRUPTER (AFCI)
  - G: GROUND FAULT CURRENT INTERRUPTER (GFCI)
  - IG: ISOLATED GROUND
  - U: INTEGRAL USB PORTS
  - WP: WEATHER-RESISTANT, GROUND FAULT CURRENT INTERRUPTER (GFCI) WITH WEATHERPROOF "IN USE" COVER
- DOUBLE DUPLEX CONVENIENCE RECEPTACLE DEVICE, WALL MOUNTED, +18" UON.
- DUPLEX CONVENIENCE RECEPTACLE DEVICE, WALL MOUNTED OVER COUNTER, 6" ABOVE BACK SPLASH UON, BUT NO HIGHER THAN ADA REQUIREMENTS.
- DUPLEX CONVENIENCE RECEPTACLE DEVICE, SPLIT-WIRED, WALL MOUNTED, +18" UON.
- DUPLEX CONVENIENCE RECEPTACLE DEVICE, ON EMERGENCY POWER, WALL MOUNTED, +18" UON.
- DUPLEX CONVENIENCE RECEPTACLE DEVICE, CONTROLLED PER T24, WALL MOUNTED, +18" UON.
- DUPLEX CONVENIENCE RECEPTACLE DEVICE, HORIZONTALLY WALL MOUNTED, +18" UON.
- SPECIALTY OUTLET DEVICE, NEMA CONFIGURATION TYPE AS NOTED ON PLANS, WALL MOUNTED, +18" UON.
- DUPLEX CONVENIENCE RECEPTACLE DEVICE, MOUNTED IN FLUSH FLOOR BOX.
- DOUBLE DUPLEX CONVENIENCE RECEPTACLE DEVICE, MOUNTED IN FLUSH FLOOR BOX.
- DUPLEX CONVENIENCE RECEPTACLE DEVICE, MOUNTED IN FIRE-RATED POKE-THRU FLOOR FITTING.
- DOUBLE DUPLEX CONVENIENCE RECEPTACLE DEVICE, MOUNTED IN FIRE-RATED POKE-THRU FLOOR FITTING.
- DUPLEX CONVENIENCE RECEPTACLE DEVICE, MOUNTED FLUSH IN CEILING.
- DOUBLE DUPLEX CONVENIENCE RECEPTACLE DEVICE, MOUNTED FLUSH IN CEILING.
- COMBINATION POWER/TELECOMMUNICATION DEVICE, MOUNTED IN FLUSH FLOOR BOX. TYPE AS NOTED ON PLANS OR IN SPECIFICATIONS.
- DUPLEX CONVENIENCE RECEPTACLE DEVICE, MOUNTED ON CONDUIT STANCHION FLOOR PENETRATION, +12" UON.
- DUPLEX CONVENIENCE RECEPTACLE DEVICE, CORD OR REEL HUNG FROM STRUCTURE ABOVE. TYPE AS NOTED ON PLANS.
- ELECTRIFIED FURNITURE PARTITION POWER FEED, WALL MOUNTED, +18" UON. CONSISTS OF 4 11/16" SQ. X 2 1/8" DEEP JUNCTION BOX, SINGLE GANG RING, AND STAINLESS STEEL COVER PLATE WITH KO TO ACCEPT FURNITURE WHIP.
- ELECTRIFIED FURNITURE PARTITION COMBINATION POWER/TELECOMMUNICATION FEEDS, MOUNTED IN FLUSH FLOOR BOX WITH KO'S IN COVER TO ACCEPT FURNITURE WHIPS
- ELECTRIFIED FURNITURE PARTITION POWER FEED, MOUNTED IN FIRE-RATED POKE-THRU FLOOR FITTING WITH KO IN COVER TO ACCEPT FURNITURE WHIP.
- POWER/TELECOMMUNICATION POLE, MOUNTED TO EXTEND FROM FLOOR TO CEILING. TYPE AS NOTED ON PLANS.
- ST SINGLE-POLE, MANUAL DISCONNECT SWITCH WITH THERMAL OVERLOAD ELEMENT, MOUNTED ADJACENT TO MOTOR.
- SMS SINGLE-POLE, FRACTIONAL HORESPOWER, MOTOR STARTER/DISCONNECT SWITCH, MOUNTED ADJACENT TO MOTOR.
- SF SWITCH FURNISHED UNDER ANOTHER DIVISION, BUT INSTALLED AND WIRED UNDER THIS DIVISION, WALL MOUNTED, +42" UON.
- LINE-VOLTAGE THERMOSTAT, NIEC, WALL MOUNTED +48" UON. INSTALLED AND WIRED BY ELECTRICAL.
- CONTROL STATION, WALL MOUNTED, +42" UON.

RACEWAYS

- CONDUIT RUN EXPOSED ON WALL OR CEILING.
- CONDUIT RUN CONCEALED IN SLAB, UNDER SLAB OR UNDERGROUND.
- CONDUIT RUN CONCEALED IN WALL OR ABOVE CEILING.
- CONDUIT HOMERUN, CONTINUOUS RUN TO PANEL OR EQUIPMENT CABINET. HOMERUN CAN OCCUR ON ANY OF THE ABOVE ROUTING CONDITIONS.
- CONDUIT TURNED UP, CAN OCCUR ON ANY OF THE ABOVE ROUTING CONDITIONS.
- CONDUIT TURNED DOWN, CAN OCCUR ON ANY OF THE ABOVE ROUTING CONDITIONS.
- CONDUIT CAPPED OR STUBBED WITH INSULATED BUSHINGS, CAN OCCUR ON ANY OF THE ABOVE ROUTING CONDITIONS.
- CONDUIT SLEEVE, WITH INSULATING BUSHINGS.
- FLEXIBLE METALLIC CONDUIT, EQUIPMENT CONNECTION.
- CROSSMARKS ON BRANCH CIRCUIT CONDUIT RUNS INDICATE THE QUANTITY OF CONDUCTORS AS FOLLOWS (GROUND CONDUCTORS ARE NOT NOTED, BUT SHOULD BE INCLUDED IN EVERY CONDUIT WITH POWER CONDUCTORS):
  1. NO CROSSMARKS INDICATES TWO #12 AWG CONDUCTORS, UON.
  2. THREE TO SIX CROSSMARKS INDICATES THE QUANTITY OF #12 AWG CONDUCTORS, UON.
  3. SEVEN OR MORE CROSSMARKS INDICATES THE QUANTITY OF #10 AWG CONDUCTORS, UON.
- SURFACE RACEWAY; TYPE, DEVICE SPACING AND MOUNTING AS NOTED ON PLANS.
- CABLE TRAY, REFER TO PLANS AND/OR SPECS FOR SIZE AND MOUNTING.

CONVENTIONS

- (1) NUMBERED NOTE, APPLIES TO ALL DRAWINGS.
- 1 NUMBERED SHEET NOTE, APPLIES TO DRAWING CONTAINING NOTES ONLY.
- 1 OVERCURRENT PROTECTIVE DEVICE SPACE IDENTIFICATION TAG. REFERS TO LOCATION OF PROTECTIVE OR CONTROL DEVICE WITHIN SWITCHBOARDS, DISTRIBUTION BOARDS, MOTOR CONTROL CENTERS, ETC.
- NAME EQUIPMENT IDENTIFICATION TAG: ITEM FURNISHED AND INSTALLED UNDER ANOTHER SECTION AND WIRED UNDER THIS SECTION.
- 2004 FEEDER SIZE. REFER TO FEEDER SCHEDULE.
- 1 / E-801 DETAIL REFERENCE:
  - DETAIL DESIGNATION
  - SHEET NUMBER

ABBREVIATIONS

A	AMPERES	LCP	LIGHTING CONTROL PANEL
AFI	ARC FAULT CIRCUIT INTERRUPTER	MBGB	MAIN BUILDING GROUND BUS
AF	AMPERE OVERCURRENT FRAME SIZE (WHEN APPLIED TO CIRCUIT BREAKERS) OR AMPERE FUSE SIZE (WHEN APPLIED TO FUSES)	MCB	MAIN CIRCUIT BREAKER
		MCC	MOTOR CONTROL CENTER
		MLO	MAIN LUGS ONLY
AFF	ABOVE FINISHED FLOOR	MT	EMPTY CONDUIT
AIC	ASYMMETRIC INTERRUPTING CURRENT	MTS	MANUAL TRANSFER SWITCH
AL	ALUMINUM	(N)	NEW
AT	AMPERE OVERCURRENT TRIP (WHEN APPLIED TO CIRCUIT BREAKERS)	NC	NORMALLY CLOSED
AV	AUDIO / VIDEO	NF	NON-FUSED
ATS	AUTOMATIC TRANSFER SWITCH	NIEC	NOT IN ELECTRICAL CONTRACT
BAS	BUILDING AUTOMATION SYSTEM	NL	NIGHT LIGHT, UNSWITCHED
BPS	BOLTED PRESSURE CONTACT SWITCH	NO	NORMALLY OPEN
C	CONDUIT	NTS	NOT TO SCALE
CCTV	CLOSED CIRCUIT TELEVISION	OC	ON CENTER
CEC	CALIFORNIA ELECTRICAL CODE	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
CL	CURRENT LIMITING CIRCUIT BREAKER OR FUSE	PA	PUBLIC ADDRESS
CP	CIRCULATION PUMP	PDZ	PRIMARY DAYLIGHT ZONE
CT	CURRENT TRANSFORMER	PNL	PANEL
CU	COPPER	PQM	POWER QUALITY METER
DF	DRINKING FOUNTAIN	PT	POTENTIAL TRANSFORMER
(E)	EXISTING TO REMAIN	PVC	POLYVINYL CHLORIDE
EC	ELECTRICAL CONTRACTOR	(R)	EXISTING TO BE REMOVED
EF	EXHAUST FAN	(RR)	REMOVE AND RELOCATE
EP	EXPLOSION PROOF	SAD	SEE ARCHITECTURAL DRAWINGS
EPO	EMERGENCY POWER OFF	TC	TIME CLOCK
EMT	ELECTRICAL METALLIC TUBING	TP	TWISTED-PAIR
EWH	ELECTRIC WATER HEATER	SDZ	SECONDARY DAYLIGHT ZONE
F	FUSED	SPD	SURGE PROTECTION DEVICE
(F)	FUTURE	TX	TRANSFORMER
FACP	FIRE ALARM CONTROL PANEL	TYP	TYPICAL
FFCP	FIREMAN'S FAN CONTROL PANEL	UON	UNLESS OTHERWISE NOTED
FLA	FULL LOAD AMPERES	UPS	UNINTERRUPTIBLE POWER SUPPLY
FMC	FLEXIBLE METAL CONDUIT	V	VOLTS
FSD	FIRE/SMOKE DAMPER	VA	VOLTS-AMPS
FRAP	FIREMAN'S REMOTE ANNUNCIATOR PANEL	VFD	VARIABLE FREQUENCY DRIVE
		VM	VENDING MACHINE
G	GROUND	WAP	WIRELESS ACCESS POINT
GB	GROUND BUS	WP	WEATHERPROOF
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	2SP	TWO SPEED
GND	GROUND	1Ø	1-PHASE
GRAP	GENERATOR REMOTE ANNUNCIATOR PANEL	3Ø	3-PHASE
GRC	GALVANIZED RIGID CONDUIT	1P	1-POLE
HNC	HOME NETWORK CABINET	2P	2-POLE
HPC	HIGH PRESSURE CONTACT SWITCH	3P	3-POLE
IG	ISOLATED GROUND	3W	3-WIRE
IMC	INTERMEDIATE METAL CONDUIT	4W	4-WIRE

APPLIANCES

DO	DOUBLE OVEN	MW	MICROWAVE
DW	DISHWASHER	RF	REFRIGERATOR
ED	ELECTRIC DRYER	RH	RANGE HOOD
EO	ELECTRIC OVEN/RANGE	UR	UNDERCOUNTER REFRIGERATOR
GD	GARBAGE DISPOSER	WC	WINE COOLER
GR	GAS RANGE	WM	WASHING MACHINE

ELECTRICAL SHEET INDEX

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REGISTERED PROFESSIONAL ENGINEER
SCOTT WHEELER
No. E015491
Exp. 06/30/23
ELECTRICAL
STATE OF CALIFORNIA

Sacramento City College Makerspace

LOS RIOS COMMUNITY COLLEGE DISTRICT
3835 Freeport Blvd, Sacramento, CA 95822

REVISIONS

#	DESCRIPTION	DATE

DESIGNER: Designer

SCALE:

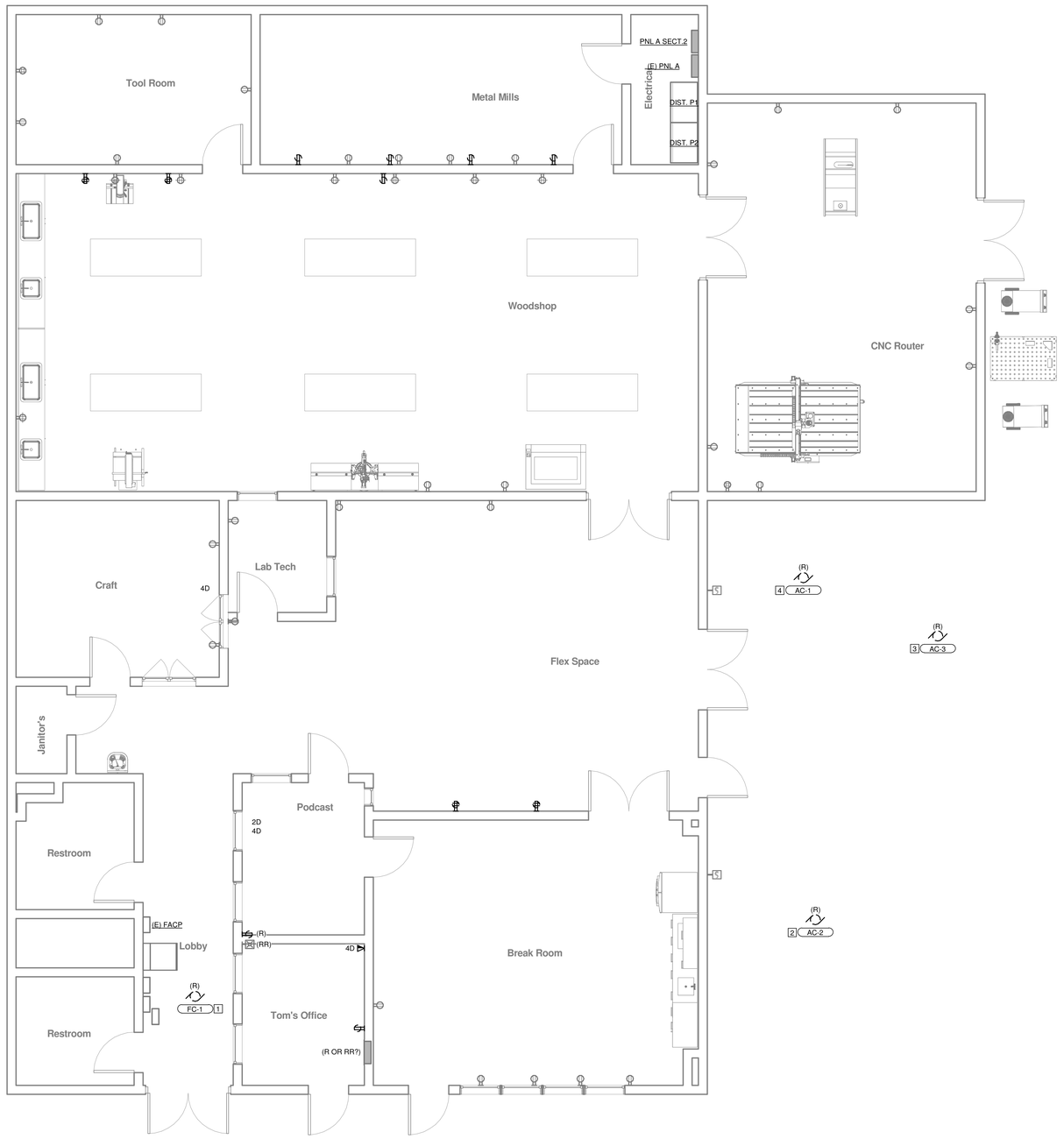
DATE: 2022-03-01

TITLE:
SYMBOLS, ABBREVIATIONS, AND SHEET INDEX

DRAWING NO.
E0.01

NUMBERED SHEET NOTES

1. RECORD DRAWINGS DO NOT INDICATE EXISTING CONDUIT AND WIRE. FIELD VERIFICATION MAY BE REQUIRED TO CONFIRM EXISTING CONDITIONS AND FEEDER SIZE. REFER TO E2.1 FOR NEW WORK AND FEEDER REQUIREMENTS.
2. EXISTING CONDUIT AND WIRE TO REMAIN FOR CONNECTION TO NEW HEAT PUMP UNIT.
3. DEMO EXISTING WIRE BACK TO IT'S ORGINATING SOURCE
4. DEMO EXISTING CONDUIT AND WIRE BACK TO IT'S ORGINATING SOURCE



1 DEMOLITION PLAN

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

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REVISIONS

#	DESCRIPTION	DATE

DESIGNER: Designer

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

DATE: 2022-03-01

TITLE:
DEMOLITION PLAN

DRAWING NO.
ED.1.1

EQUIPMENT SCHEDULE

ELEC. NO.	DESCRIPTION	VOLTAGE	PHASE	LOAD		OUTLET HEIGHT	PANEL	CIRCUIT NUMBER	FEEDER SIZE	BREAKER	DISCONNECT SIZE	NOTES
				WATTS	AMPS DRAW							
E-1	MIMAKI TX300P-1800 MKII	120 V	1	1400 W	11.67 A	+42"	A	59	202	20A	-	
E-2	ROLAND SG-540	120 V	1	1000 W	8.33 A	+42"	A	61	202	20A	-	
E-3	FORMECH 450DT VACUUFORMER	208 V	1	2400 W	11.54 A	+42"	A	63,65	202	20A	30A	
E-4	TORMACH PCNC 770M	120 V	1	180 W	1.5 A	+42"	A	6	202	20A	-	
E-5	TORMACH 8L	120 V	1	1100 W	9.17 A	+42"	A	2	202	20A	-	
E-6	TORMACH PCNC 440	120 V	1	1800 W	15 A	+18"	A	67	202	20A	-	
E-7	TORMACH PCNC 440	120 V	1	1800 W	15 A	+18"	A	69	202	20A	-	
E-8	TORMACH PCNC 440	120 V	1	1800 W	15 A	+18"	A	71	202	20A	-	
E-9	TORMACH PCNC 440	120 V	1	1800 W	15 A	+18"	A	50	202	20A	-	
E-10	TORMACH PCNC 440	120 V	1	1800 W	15 A	+18"	A	52	202	20A	-	
E-11	LAGUNA X-FLUX 10 DUST COLLECTOR	208 V	3	10075 W	28 A	+16"	DIST. P1	TBD	303	50A	60A	1,2
E-12	BAND SAW	120 V	1	1320 W	11 A	+16"	A	16	202			
E-13	BELT SANDER	120 V	1	1260 W	10.5 A	+16"	A	80	202	20A	-	
E-14	DRILL PRESS	120 V	1	1032 W	8.6 A	+16"	A	14	202			
E-15	MITER SAW	120 V	1	1800 W	15 A	+16"	A	58	202	20A	-	
E-16.1	SAWSTOP PCS175 TABLE SAW	120 V	1	1680 W	14 A	+16"	A	82	202	20A	-	
E-16.2	SAWSTOP ROUTER 690LR	120 V	1	1320 W	11 A	+16"	A	84	202	20A	-	
E-17	LIGHTOBJECT FIBER LASER	208 V	1	8000 W	38.46 A	+18"	A	54,56	402	40A	60A	
E-18	UNIVERSAL VLS 6.60 LASER	208 V	1	1040 W	5 A	+18"	A	64,66	202	20A	-	
E-19	RANGER III LASER	120 V	1	1000 W	8.33 A	+18"	A	68	402	40A	-	
E-20	MULTIMATIC 225 WELDER	208 V	1	7217.6 W	34.7 A	+16"	A	60,62	402	40A	-	
E-21	BOGE AIR COMPRESSOR	208 V	3	11900 W	33.07 A	+16"	DIST. P1	TBD	403	40A	60A	1
E-22	BOGE INTEGRATED AIR DRYER	120 V	1	600 W	5 A	+16"	A	70	202	20A	-	

GENERAL NOTE: WHERE NEMA PLUG TYPE IS NOT INDICATED ON SCHEDULE, REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS FOR DETERMING PLUG TYPE TO PROVIDE.

NOTES:

1) PROVIDE NEW BREAKER IN NEXT AVAILABLE UNUSED 3P FRAME SPACE.
2) INTERLOCK WITH GRADE MOUNTED HEAT PUMPS. REFER TO MECHANICAL FOR ADDITIONAL INFORMATION.

Branch Panel: (E) PNL A

Location: Electrical Closet 15 — **Served From** — **Phases** 3 — **A.I.C. Rating:** — **Bus Rating** 225 A
Mounting: SURFACE — **Volts:** 120/208 — **Wires** 4 — **Main Type:** — **Main Rating:** 225 A

Load Served	Amp	P	#	A		B		C		#	P	Amp	Load Served
EXISTING LOAD	20 A	1	1	0.00	1.10					2	1	20 A	(1) ROLAND SG-540
EXISTING LOAD	20 A	1	3			0.00	0.00			4	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	5					0.00	0.18	6	1	20 A	(1) TORMACH PCNC 770M
EXISTING LOAD	20 A	1	7	0.00	0.00					8	1	20 A	EXISTING LOAD
EXISTING LOAD	20 A	1	9			0.00	3.61			10	2	40 A	(2) MULTIMATIC 225 WELDER
EXISTING LOAD	20 A	1	11					0.00	3.61	12	--	--	--
EXISTING LOAD	20 A	1	13	0.00	1.03					14	1	20 A	(1) DRILL PRESS
EXISTING LOAD	20 A	1	15			0.00	1.32			16	1	20 A	(1) BAND SAW
EXISTING LOAD	20 A	1	17					0.00	0.36	18	1	20 A	(1) CORD REEL WORK RM 11
EXISTING LOAD	20 A	1	19	0.00	0.36					20	1	20 A	(1) CORD REEL WORK RM 11
EXISTING LOAD	20 A	1	21			0.00	0.36			22	1	20 A	(1) CORD REEL WORK RM 11
EXISTING LOAD	20 A	1	23					0.00	0.36	24	1	20 A	(1) CORD REEL WORK RM 11
EXISTING LOAD	20 A	1	25	0.00	0.36					26	1	20 A	(1) CORD REEL WORK RM 11
EXISTING LOAD	20 A	1	27			0.00	0.36			28	1	20 A	(1) CORD REEL WORK RM 11
EXISTING LOAD	20 A	1	29					0.00	0.36	30	1	20 A	(1) CORD REEL WORK RM 11
EXISTING LOAD	20 A	1	31	0.00	0.36					32	1	20 A	(1) CORD REEL WOOD SHOP 12
EXISTING LOAD	20 A	1	33			0.00	0.36			34	1	20 A	(1) REC PRINT ROOM 7
EXISTING LOAD	20 A	1	35					0.00	0.36	36	1	20 A	(1) REC PRINT ROOM 7
EXISTING LOAD	20 A	1	37	0.00	0.36					38	1	20 A	(1) REC PRINT ROOM 7
EXISTING LOAD	20 A	1	39			0.00	0.36			40	1	20 A	(1) REC PRINT ROOM 7
EXISTING LOAD	20 A	1	41					0.00	0.36	42	1	20 A	(1) REC PRINT ROOM 7
EXISTING LOAD	20 A	1	43	0.00	0.36					44	1	20 A	(1) REC PRINT ROOM 7
EXISTING LOAD	20 A	1	45			0.00	0.36			46	1	20 A	(1) REC PRINT ROOM 7
EXISTING LOAD	20 A	1	47					0.00	0.36	48	1	20 A	(1) REC PRINT ROOM 7
EXISTING LOAD	20 A	1	49	0.00	1.80					50	1	20 A	(1) TORMACH PCNC 440
EXISTING LOAD	20 A	1	51			0.00	1.80			52	1	20 A	(1) TORMACH PCNC 440
EXISTING LOAD	20 A	1	53					0.00	4.00	54	2	40 A	(2) LIGHT OBJECT LASER
EXISTING LOAD	20 A	1	55	0.00	4.00					56	--	--	--
EXISTING LOAD	20 A	1	57			0.00	1.80			58	1	20 A	(1) MITER SAW
(1) E-1 MIMAKI TX300P-1800 MKII	20 A	1	59					1.40	3.61	60	2	40 A	(2) WELDER
(1) E-2 ROLAND SG-540	20 A	1	61	1.00	3.61					62	--	--	--
(2) FORMECH 450DT VACUUFORMER	20 A	2	63			1.20	0.52			64	2	20 A	(2) UNIVERSAL LASER VLS6.60
--	--	--	65					1.20	0.52	66	--	--	--
(1) TORMACH PCNC 440	20 A	1	67	1.80	1.00					68	1	20 A	(1) RANGER III LASER
(1) TORMACH PCNC 440	20 A	1	69			1.80	0.60			70	1	20 A	(1) AIR DRYER
(1) TORMACH PCNC 440	20 A	1	71					1.80	0.36	72	1	20 A	(1) REC FIBER ROOM 9
EXISTING LOAD	30 A	2	73	0.00	0.36					74	1	20 A	(1) REC FIBER ROOM 9
--	--	--	75			0.00	0.54			76	1	20 A	(2) REC MILL ROOM 13
(2) REC CLASSROOM 6	20 A	1	77					0.18	0.54	78	1	20 A	(2) REC MILL ROOM 13
(2) REC CLASSROOM 6	20 A	1	79	0.18	1.26					80	1	20 A	(2) BELT SANDER
(2) CLASSROOM 6	20 A	1	81			0.90	1.68			82	1	20 A	(2) TABLE SAW
(2) REC WORK ROOM 11	20 A	1	83					0.36	1.32	84	1	20 A	(2) TABLE SAW ROUTER
			Total Load:	18.94 kVA		17.57		21.24					
			Total Amps:	160 A		146.41 A		178.74 A					

Load Classification	Conn. Load	Demand Factor	Code Demand	Panel Totals
Receptacles	32.75 kVA	65.27%	21.38 kVA	**Connected Load:** 57.75 kVA
Receptacle	25 kVA	70.00%	17.5 kVA	**Connected Amps:** 160.29 A
				Code Demand Est... 38.87 kVA
				Code Demand Est... 107.9 A

Notes:
{1} USE EXISTING BREAKER FOR LOAD.
{2} PROVIDE NEW BREAKER FOR NEW LOAD.

FEEDER SCHEDULE

FEEDER SCHEDULE GENERAL NOTES

1. COPPER FEEDER SIZES SHOWN IN THIS SCHEDULE ARE BASED ON CONDUCTORS WITH THHN/THWN-2 INSULATION IN EMT CONDUIT.
2. ALUMINUM FEEDER SIZES SHOWN IN THIS SCHEDULE ARE BASED ON CONDUCTORS WITH XHHW-2 INSULATION IN EMT CONDUIT.
3. FEEDER SIZES SHOWN IN THIS SCHEDULE ARE BASED ON AN AMBIENT TEMPERATURE OF 30 DEGREES C (86 DEGREES F).
4. FEEDERS CONSISTING OF MULTIPLE SETS OF CONDUCTORS AND CONDUITS ARE TO BE PROVIDED WITH THE INDICATED SIZE GROUND CONDUCTOR IN EACH CONDUIT.
5. PER CEC ARTICLE 110.14, ALL FEEDERS SIZED AT #2 AWG OR LESS ARE CALCULATED PER 60 DEGREE TABLE. FEEDERS GREATER THAN #2 AWG ARE RATED 75 DEGREE.

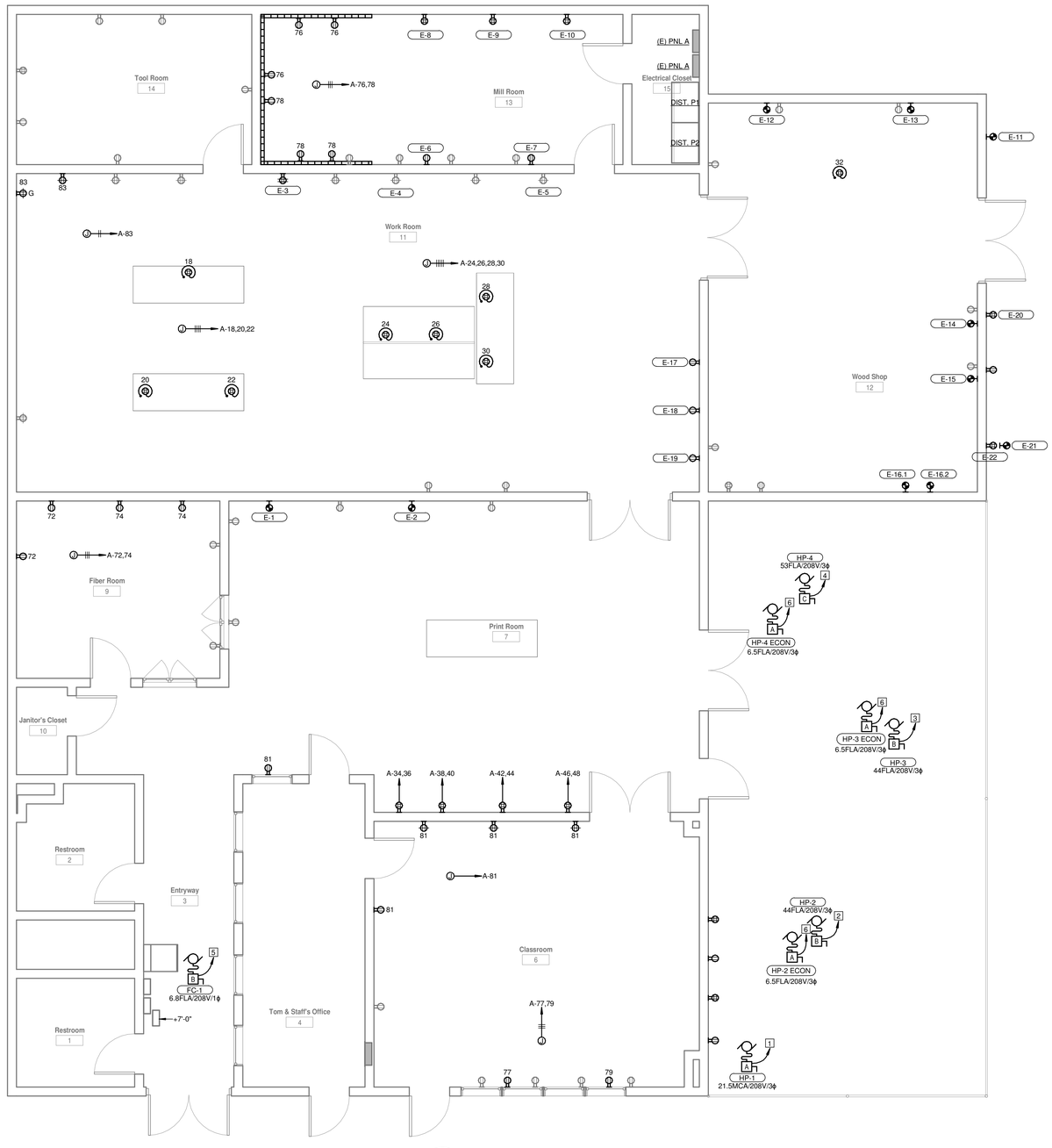
FEEDER SCHEDULE REMARKS

C. FEEDER GROUND AND BONDING JUMPER SHALL HAVE AN AREA NOT LESS THAN 12.5% OF THE AREA OF THE LARGEST PHASE CONDUCTOR.

FEEDER TAG	FEEDER DESCRIPTION	CONDUIT	CONDUCTORS		SEPARATELY DERIVED SYSTEM		REMARKS
			PHASE/NEUTRAL	GROUND	GROUNDING ELECTRODE	BONDING JUMPER	
202	20 AMP, 2 WIRE	1-0.75"	2 #12 CU	1 #12 CU	-	-	-
303	30 AMP, 3 WIRE	1-0.75"	3 #10 CU	1 #10 CU	-	-	-
402	40 AMP, 2 WIRE	1-0.75"	2 #8 CU	1 #10 CU	-	-	-
403	40 AMP, 3 WIRE	1-0.75"	3 #8 CU	1 #10 CU	-	-	-

NUMBERED SHEET NOTES

1. PROVIDE (N) 3#10 & #12GND IN (N) .75"C. PROVIDE (N) 30A/3P BREAKER IN DISTRIBUTION BOARD P1. REPLACE WITH NEXT AVAILABE UNUSED 3P SPARE BREAKER.
2. REUSE EXISTING CONDUIT, WIRE AND BREAKER FOR NEW HEAT PUMP UNIT. EXTEND CONDUIT AND WIRE AS NECESSARY. INTERLOCK HVAC EQUIPMENT WITH DUST COLLECTOR. REFER TO MECHANICAL FOR ADDITIONAL INFO.
3. DEMO EXISTING WIRE BACK TO IT'S ORGINATING SOURCE. PROVIDE (N) 3#6 & 1#8GND IN EXISTING CONDUIT. REPLACE EXISTING BREAKER WITH (N) 60A/3P BREAKER. EXTEND CONDUIT AS NECESSARY. INTERLOCK HVAC EQUIPMENT WITH DUST COLLECTOR. REFER TO MECHANICAL FOR ADDITIONAL INFO.
4. DEMO EXISTING CONDUIT AND WIRE BACK TO IT'S ORGINATING SOURCE. PROVIDE (N) 3#6 & 1#8GND IN (N) 1.25"C. REPLACE EXISTING BREAKER WITH (N) 100A/3P BREAKER. INTERLOCK HVAC EQUIPMENT WITH DUST COLLECTOR. REFER TO MECHANICAL FOR ADDITIONAL INFO.
5. RECORD DRAWINGS DO NOT INDICATE EXISTING CONDUIT AND WIRE. FIELD VERIFICATION OF FEEDER SIZE MAY BE REQUIRED. FEEDER SIZE SHALL BE 3#10 & #10GND IN .75"C, WITH 30A/3P BREAKER IN ORIGINATING PANELBOARD. EXTEND CONDUIT AND WIRE AS NECESSARY.
6. NEW ECONOMIZER UNITS TO BE PROVIDED WITH NEW FEEDER AND DEDICATED CIRCUIT: PROVIDE 3#12 AND #12GND IN .75"C. PROVIDE NEW 20A/3P BREAKER IN NEXT AVAILABLE UNUSED SPARE BREAKER FRAME SPACE. INTERLOCK HVAC EQUIPMENT WITH DUST COLLECTOR. REFER TO MECHANICAL FOR ADDITIONAL INFO.



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

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REGISTERED PROFESSIONAL ENGINEER — SCOTT WHEELER — No. E015491 — Exp. 06/30/23 — ELECTRICAL — STATE OF CALIFORNIA

Sacramento City College Makerspace

LOS RIOS COMMUNITY COLLEGE DISTRICT
3835 Freeport Blvd, Sacramento, CA 95822

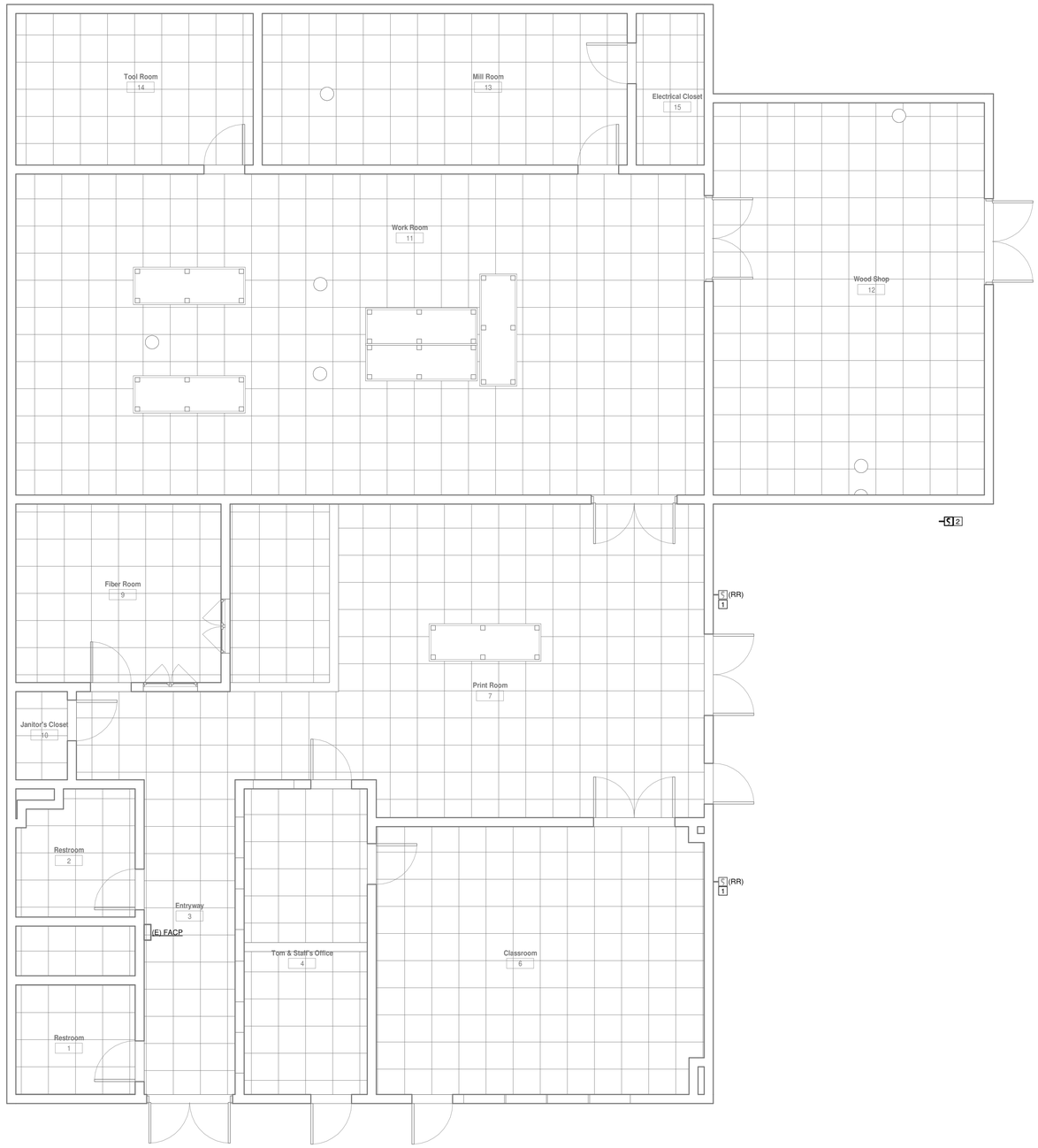
REVISIONS

#	DESCRIPTION	DATE

DESIGNER: Designer
SCALE: 1/4" = 1'-0"
DATE: 2022-03-01
TITLE: POWER PLAN, PROJECT NOTES & EQUIPMENT SCHEDULE
DRAWING NO. E2.1

NUMBERED SHEET NOTES

1. RESUSE EXISTING SMOKE DETECTOR FOR NEW HEAT PUMP UNIT. TIE INTO EXISTING FA SYSTEM FOR AUTOMATIC SHUT OFF.
2. AT NEW HEAT PUMP UNIT, PROVIDE NEW DUCT SMOKE DETECTOR (SD505-ADHR). UTILIZE ONBOARD RELAY FOR UNIT SHUT DOWN. PROVIDE REMOTE TEST SWITCH (SD505-DTS). LOCATE AT SAME HEIGHT AS EXISTING REMOTE TEST SWITCHES. TIE INTO CLOSEST SLC FOR PROPER SUPERVISION.



1 FIRE ALARM PLAN

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

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REVISIONS

#	DESCRIPTION	DATE

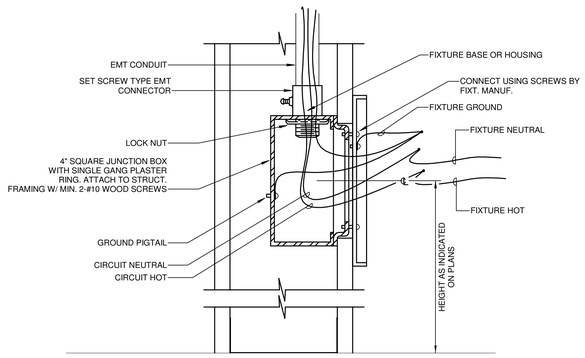
DESIGNER: Designer

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

DATE: 2022-03-01

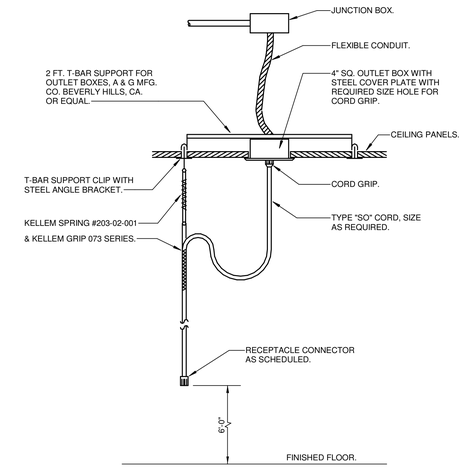
TITLE:
FIRE ALARM PLAN

DRAWING NO.
E3.1



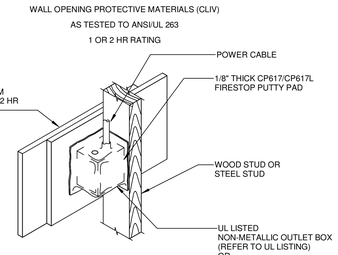
1 WALL MOUNTED FIXTURE

SCALE:NTS



2 DROP CORD ASSEMBLY FOR T-BAR CEILINGS

SCALE:NTS



CP 617 Putty Pads,for use with max 4 by 4 in. flush device UL Listed Metallic Outlet Boxes installed with steel cover plates in 1 and 2 hr. fire rated gypsum wallboard wall assemblies framed with min 3-1/2 in. deep wood or steel studs and constructed as specified in the individual U300 or U400 Series Wall and Partition Designs in the Fire Resistance Directory. Min 1/8 in. thick moldable putty pads are to be installed to completely cover the exterior surfaces of the outlet box (except for the side of the outlet box against the stud) and completely seal against the stud within the stud cavity. When moldable putty pad outlet box protective material is used on boxes on both sides of wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. provided that the boxes are not installed back to back.

CP 617 Firestop Putty Pads,for use with max 4-11/16 by 4-11/16 in. flush device UL Listed Metallic Outlet Boxes installed with steel cover plates for use in 1 hr fire rated configuration of Wall and Partition Design No. V446 in the Fire Resistance Directory. Min 1/8 in. thick moldable putty pads are to be installed to completely cover the exterior surfaces of the outlet box (except for the side of the outlet box against the stud) and to completely seal against the box within the stud cavity. When moldable putty pad outlet box protective material is used on boxes on both sides of wall as directed, the horizontal separation between outlet boxes on opposite sides of the wall may be less than 24 in. and the boxes may be installed back to back.

CP 617 Firestop Putty Pads,for use with max 4 by 3-3/4 by 3 in. deep UL Listed Nonmetallic Outlet Boxes manufactured by Carlon Electrical Products, made from polyvinyl chloride, and bearing a 2 hr rating under the "Outlet Boxes and Fittings Classification for Fire Resistance" category in the Fire Resistance Directory. Putty pads and boxes for use in 1 and 2 hr fire rated gypsum wallboard assemblies, framed with min 3-1/2 in. deep wood studs and constructed as specified in the individual U300 Series Wall and Partition Designs in the Fire Resistance Directory. Outlet box secured to wood stud by means of two nailing tabs supplied with the outlet box. Min 1/8 in. thick moldable putty pads are to be installed to completely cover the exterior surfaces of the outlet box (except for the sides of the outlet box against the stud) including the nailing tab and completely seal against the stud within the stud cavity. Outlet boxes installed with steel or plastic cover plates. When moldable putty pad outlet box protective material is used on boxes on both sides of wall as directed, the horizontal separation between boxes on opposite sides of the wall may be less than 24 in. provided that the boxes are not installed back to back.

CP 617 Putty Pads,for use with max 4 by 4 by 2-7/8 in. deep UL Listed Nonmetallic Outlet Boxes manufactured by Carlon Electrical Products, made from polyvinyl chloride, and bearing a 2 hr rating under the "Outlet Boxes and Fittings Classification for Fire Resistance" category in the Fire Resistance Directory. Putty pads and boxes for use in the 1 hr fire rated V446 gypsum board/steel stud Wall and Partition Design in the Fire Resistance Directory. Outlet box secured to steel stud by means of fastening tab supplied with the outlet box. Min 1/8 in. thick moldable putty pads are to be installed to completely cover the exterior surfaces of the outlet box (except for the side of the outlet box against the stud) including the tab and completely seal against the stud within the stud cavity. Outlet boxes installed with steel or plastic cover plates. When moldable putty pad outlet box protective material is used on boxes on both sides of wall as directed, the horizontal separation between boxes on opposite sides of the wall may be less than 24 in. and the boxes may be installed back to back.

CP 617 Firestop Putty Pads,for use with max 2-1/4 by 3-3/4 by 2-3/4 in. deep UL Listed Nonmetallic Outlet Boxes manufactured by Pass and Seymore, Inc., and bearing a 2 hr rating under the "Outlet Boxes and Fittings Classification for Fire Resistance" category in the Fire Resistance Directory. Putty pads and boxes for use in 1 and 2 hr fire rated gypsum wallboard assemblies, framed with min 3-1/2 in. deep wood studs and constructed as specified in the individual U300 Series Wall and Partition Designs in the Fire Resistance Directory. Outlet box secured to wood stud by means of two nailing tabs supplied with the outlet box. Min 1/8 in. thick moldable putty pads are to be installed to completely cover the exterior surfaces of the outlet box (except for the sides of the outlet box against the stud) including the nailing tab and completely seal against the stud within the stud cavity. Outlet boxes installed with steel or plastic cover plates. When moldable putty pad outlet box protective material is used on boxes on both sides of wall as directed, the horizontal separation between boxes on opposite sides of the wall may be less than 24 in. provided that the boxes are not installed back to back.

CP 617 Firestop Putty Pads,for use with max 4 by 3-3/4 by 3 in. deep UL Listed Nonmetallic Outlet Boxes manufactured by Allied Molded Products, Inc., made from fiber reinforced thermoplastic and bearing a 2 hr rating under the "Outlet Boxes and Fittings Classification for Fire Resistance" category in the Fire Resistance Directory. Putty pads and boxes for use in 1 hr fire rated gypsum wallboard assemblies, framed with min 3-1/2 in. deep wood studs and constructed as specified in the individual U300 Series Wall and Partition Designs in the Fire Resistance Directory. Outlet box secured to wood stud by means of two nailing tabs supplied with the outlet box. Min 1/8 in. thick moldable putty pads are to be installed to completely cover the exterior surfaces of the outlet box (except for the sides of the outlet box against the stud) including the nailing tabs and completely seal against the stud within the stud cavity. Outlet boxes installed with plastic cover plates. When moldable putty pad outlet box protective material is used on boxes on both sides of wall as directed, the horizontal separation between boxes on opposite sides of the wall may be less than 24 in. provided that the boxes are not installed back to back.

HILTI FIRESTOP SYSTEMS

Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories Inc. November 03, 2004

CLASSIFIED C UL US

GENERAL SHEET NOTES

A. REFER TO ARCHITECTURAL PLANS FOR IDENTIFICATION OF ALL RATED WALL ASSEMBLIES. ALL CONDUIT AND BOX PENETRATIONS OF RATED WALLS SHALL BE INSTALLED PER THE APPLICABLE UL LISTED ASSEMBLY.

3 RATED PENETRATION DETAIL

SCALE:NTS

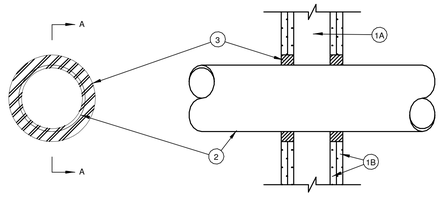
SYSTEM NO. W-L-1054

F RATINGS - 1 AND 2 HR (SEE ITEMS 1 AND 3)

T RATING - 0 HR

L RATING AT AMBIENT - LESS THAN 1 CFM/SQ FT

L RATING AT 400 F - 4 CFM/SQ FT



SECTION A-A

1. Wall Assembly -- The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs -- Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. wider and 4 to 6 in. higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. clearance is present between the penetrating item and the framing on all four sides.
   B. Gypsum Board* -- 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 32-1/4 in. for steel stud walls. Max diam of opening is 14-1/2 in. for wood stud walls.
   The F Rating of the firestop system is equal to the fire rating of the wall assembly.
2. Through-Penetrants -- One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space shall be min 0 in. to max 2-1/4 in. Pipe may be installed with continuous point contact. Pipe, conduit or tubing may be installed at an angle not greater than 45 degrees from perpendicular. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
   A. Steel Pipe -- Nom 30 in diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Iron Pipe -- Nom 30 in. diam (or smaller) cast or ductile iron pipe.
   C. Conduit -- Nom 4 in diam (or smaller) steel electrical metallic tubing or 6 in. diam steel conduit.
   D. Copper Tubing -- Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.
   E. Copper Pipe -- Nom 6 in. diam (or smaller) regular (or heavier) copper pipe.
3. Fill, Void or Cavity Material* -- Sealant -- Min 5/8 in. thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point or continuous contact locations between pipe and wall, a min 1/2 in. diam bead of fill material shall be applied at the pipe wall interface on both surfaces of wall .
   HILTI CONSTRUCTION CHEMICALS, DIV OF
   HILTI INC -- FS-One Sealant
*Bearing the UL Classification Mark

HILTI FIRESTOP SYSTEMS

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CLASSIFIED C UL US

4 RATED PENETRATION DETAIL

SCALE:NTS

The Engineering Enterprise
CONSULTING ENGINEERS
ALAMEDA | AUBURN
SAN DIEGO | SANTA BARBARA
https://www.engent.com

REGISTERED PROFESSIONAL ENGINEER
SCOTT WHEELER
No. E015491
Exp. 06/30/23
ELECTRICAL
STATE OF CALIFORNIA

Sacramento City College Makerspace

LOS RIOS COMMUNITY COLLEGE DISTRICT
3835 Freeport Blvd, Sacramento, CA 95822

REVISIONS

#	DESCRIPTION	DATE

DESIGNER: Designer

SCALE: NTS

DATE: 2022-03-01

TITLE:
DETAILS

DRAWING NO.
E4.0