ELECTRICAL SYMBOL SCHEDULE

SYMBOL	DEVICE/FIXTURE DESCRIPTION	MOUNTING	COMMENTS
	MECHANICAL/PLUMBING EQUIPMENT CALLOUT		
	CONDUIT RUN CONCEALED IN WALL OR CEILING		
—UG—	CONDUIT RUN CONCEALED IN FLOOR OR GROUND		
	DEMOLITION		
	EXISTING		
	HOME RUN TO PANEL		
	CONDUIT STUB		
	CONDUIT BREAK/CONTINUATION		
	CONDUIT STUB DOWN		
	CONDUIT STUB UP		
VFD	VARIABLE FREQUENCY DRIVE		
	FUSED DISCONNECT SWITCH		(13) (14)
	MAIN DISTRIBUTION POWER PANEL		
	PANEL BOARD, SURFACE	6'-6" TO TOP	(15)
	PANEL BOARD, RECESSED	6'-6" TO TOP	(15)

ABBREVIATIONS

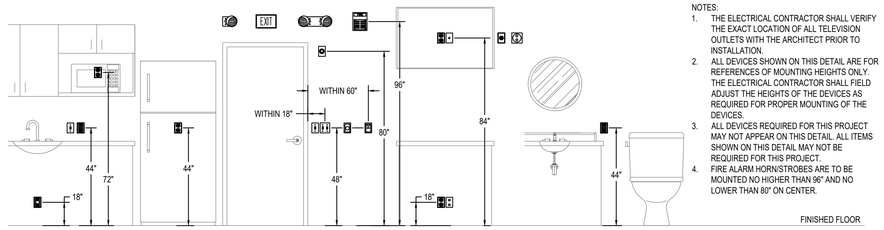
A	AMPS	ENT	ELEC. NON-METAL. TUBING	NL	NIGHT LIGHT, BYPASS
AFC	AVAILABLE FAULT CURRENT	ER	EXISTING TO BE RELOCATED		LOCAL SWITCHING
AFF	ABOVE FINISHED FLOOR	EX	EXISTING TO REMAIN	PC	PLUMBING CONTRACTOR
AFG	ABOVE FINISHED GRADE	FMC	FLEXIBLE METAL CONDUIT	POC	POINT OF CONNECTION
AIC	AMPS INTERR. CAPACITY	GC	GENERAL CONTRACTOR	POS	POINT OF SALE
AWG	AMERICAN WIRE GAUGE	GEC	GRND. ELEC. COND. AT SES	R	RELOCATED
BC	BARE COPPER	GFCI	GRND. FLT. CURR. INTERR.	RM	ROOF MOUNTED
BFC	BELOW FINISHED CEILING	GND	GROUND	RMC	RIGID METALLIC CONDUIT
BFG	BELOW FINISHED GRADE	IMC	INTER. METAL CONDUIT	RNC	RIGID NON-METALLIC COND.
C	CONDUIT	IG	ISOLATED GROUND	SBJ	SYSTEM BONDING JUMPER
CND	CONDUIT	KCMIL	1000 CIRCULAR MILS (MCM)	SCA	SHORT CIRCUIT AMPERES
CO	CONDUIT ONLY	LFMC	LIQUID-TIGHT FLEX.	T	TRANSMITTER
CT	CURRENT TRANSDUCER		METAL. COND.	TC	TEMP. CONTROL CONTR.
CU	COPPER MATERIAL	LFNC	LIQUID-TIGHT FLEX.	UG	UNDERGROUND
DED	DEDICATED		NON-METAL. COND.	UNO	UNLESS NOTED OTHERWISE
DFA	DROP FROM ABOVE	MC	MECHANICAL CONTRACTOR	VA	VOLT/AMPS
EC	ELECTRICAL CONTRACTOR	MCA	MINIMUM CIRCUIT AMPS	VIF	VERIFY IN FIELD
EF	EXHAUST FAN	N1	NEMA 1	WP	WEATHERPROOF/NEMA 3R
EM	EMER./EGRESS BATTERY	N3R	NEMA 3R	XP	EXPLOSION PROOF
EMT	ELEC. METALLIC TUBING	N	NEW	XR	EXISTING TO BE REMOVED

NOTES

(1) SEE LUMINAIRE SCHEDULE FOR FIXTURE TYPES AND DETAILS.
(2) SEE LUMINAIRE SCHEDULE FOR MOUNTING REQUIREMENTS.
(3) WIRE LIGHT FIXTURE FROM ADJACENT J-BOX
(4) CONNECT NEAREST UN-SWITCHED HOT CONDUCTOR TO EMERGENCY BALLAST
(5) DIRECTIONAL ARROWS INDICATE REQUIRED CHEVRONS.
(6) COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL INTERIOR ELEVATIONS
(7) USE WITH POWER PACK.
(8) "X" IN SYMBOL IS INCHES BETWEEN RECEPTACLE ALONG WIREWAY. SEE DRAWINGS.
(9) PROVIDE UL LISTED DEVICE COMPATIBLE WITH THE FIRE ALARM PANEL/SYSTEM.
(10) MATCH THE VOLTAGE OF THE RELAY WITH THAT OF THE CONTROLLING CIRCUIT.
(11) USE A 4" X 4" BOX WITH A MUD RING TO MATCH THE DEVICE AND INSTALLATION.
(12) PROVIDE MUD RING AND/OR BOX COVER APPROPRIATE FOR DEVICE/FIXTURE SERVED.
(13) USE HEAVY DUTY DEVICE FOR 480 VOLT.
(14) SIZE TO THE EQUIPMENT BEING CONTROLLED
(15) FIRE ALARM PANELS: FACP: FIRE ALARM CONTROL PANEL, NAC: NOTIFICATION APPLIANCE CIRCUIT PANEL, ANNUN: GRAPHIC ANNUNCIATOR PANEL, AND SES: SMOKE EVACUATION SYSTEM PANEL.
(16) LIGHT FIXTURES ARE SCALED WITHIN THE DRAWINGS BASED ON ACTUAL DIMENSIONS.

GENERAL NOTES

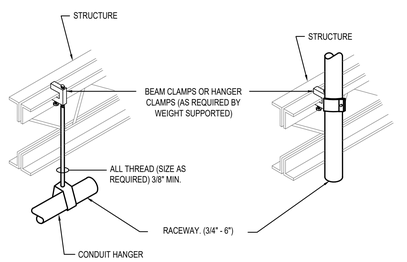
1. THE ELECTRICAL SYSTEMS DEFINED BY THESE PLANS AND SPECIFICATIONS ARE TO BE CONSTRUCTED AS COMPLETE AND OPERABLE SYSTEMS AND SHALL BE BID WITH THIS INTENT. THE CONTRACTOR SHALL VISIT THE SITE, READ ALL THE RELEVANT DOCUMENTS AND BECOME FAMILIAR WITH THE TYPE OF CONSTRUCTION AND WORK TO BE ACCOMPLISHED. SHOULD ANY ERROR, OMISSION OR CONFLICT EXIST IN EITHER THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING BEFORE SUBMITTING HIS BID PRICE SO A CHANGE CAN BE ISSUED IN A PRE-BID ADDENDUM. OTHERWISE, THE CONTRACTOR AND/OR EQUIPMENT SUPPLIER SHALL SUPPLY THE PROPER MATERIALS AND LABOR TO INSTALL COMPLETE AND OPERABLE SYSTEMS AT THEIR OWN EXPENSE. WHEN EACH ELECTRICAL SYSTEM IS COMPLETE, THE CONTRACTOR SHALL TEST AND CONFIRM IT'S PROPER OPERATION. ANY INCOMPLETE SYSTEM SHALL BE MADE COMPLETE AND OPERABLE.
2. THE ARCHITECTURAL AND MECHANICAL PLANS ARE CONSIDERED A PART OF THE ELECTRICAL DOCUMENTS SO FAR AS ANY ELECTRICAL ITEMS THEY MAY CONTAIN. THE ELECTRICAL CONTRACTOR SHALL REFER TO AND COORDINATE WITH THEM. NO EXTRA COST SHALL BE ALLOWED FOR FAILURE TO COORDINATE THE CONTRACT DOCUMENTS WITH OTHER TRADES AND/OR IF EQUIPMENT DIMENSIONS ARE GREATER THAN SPECIFIED AND/OR DIMENSIONED ON THE PLANS.
3. NO ADDITIONS TO THE CONTRACTOR BID WILL BE ALLOWED FOR CHANGES MADE NECESSARY BY INTERFERENCE WITH OTHER WORK.
4. THE ELECTRICAL CONTRACTOR SHALL PROVIDE EQUIPMENT, MATERIALS AND LABOR FOR THE CONNECTIONS OF ALL EQUIPMENT SHOWN ON THE PLANS - ARCHITECTURAL, MECHANICAL, ETC.
5. THIS PROJECT IS TO BE INSTALLED IN STRICT ACCORDANCE WITH LOCAL AND STATE CODES AND THE NEC. IF AT ANY TIME DURING CONSTRUCTION, OR AFTER, SOMETHING IS FOUND TO BE INSTALLED IN VIOLATION OF THE CODES LISTED ABOVE, IT SHALL BE CORRECTED AT THE CONTRACTORS EXPENSE.
6. ALL EQUIPMENT PROVIDED BY THE ELECTRICAL CONTRACTOR SHALL BE LISTED AND LABELED BY A NATIONALLY RECOGNIZED TESTING AGENCY, ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION, AND BE PROPERLY INSTALLED FOR THE CONDITIONS AND SPACE THAT EQUIPMENT IS BEING INSTALLED WITHIN.
7. THE ELECTRICAL CONTRACTOR SHALL COORDINATE AND CONFIRM THE EXACT LOCATION OF THE POWER PANELS FROM WHICH NEW CIRCUITS ARE BEING FED FROM. VERIFY EXISTING BRANCH CIRCUIT BREAKERS AND PROVIDE NEW BREAKERS AS NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM.
8. THE ELECTRICAL CONTRACTOR SHALL COORDINATE AND CONFIRM THE EXACT LOCATION OF THE TELE/DATA ROOM FROM WHICH NEW TELE/DATA OUTLETS WILL BE FED FROM. VERIFY EXISTING PATCH PANEL SPACES AND PROVIDE NEW PATCH PANELS AS NECESSARY TO LAND ALL NEW TELE/DATA CABLING.
9. THE ELECTRICAL CONTRACTOR SHALL INSTALL A SEPARATE EQUIPMENT GROUNDING CONDUCTOR IN EACH CONDUIT RUN. CONDUIT SHALL NOT BE USED AS AN EQUIPMENT GROUNDING CONDUCTOR. THE ELECTRICAL CONTRACTOR SHALL GROUND THE ELECTRICAL SYSTEM IN ACCORDANCE WITH LOCAL AND NATIONAL CODES.
10. THE ELECTRICAL CONTRACTOR SHALL CONFIRM MINIMUM CODE (NEC) WORKING CLEARANCE BEFORE INSTALLING ANY ELECTRICAL PANELS, CABINETS, DISCONNECT, TRANSFORMERS, ETC. AND SHALL MOVE THE PANELS/EQUIPMENT AT HIS EXPENSE IF REJECTED BY AN INSPECTOR. IF CLEARANCE IS NOT POSSIBLE, THE DESIGNER SHALL BE NOTIFIED IMMEDIATELY IN WRITING.
11. CONDUIT LAYOUTS SHOWN ON THE PLANS ARE DIAGRAMMATIC, NOT INDICATING THE ROUTING REQUIRED. THE EC SHALL ROUTE THE CONDUITS AS REQUIRED BY THE CONDITIONS OF THE INSTALLATION AND SHALL COORDINATE WITH DUCTWORK, PIPING, EQUIPMENT, BUILDING STRUCTURE AND OTHER POTENTIAL OBSTRUCTIONS.
12. THE CONTRACTOR SHALL ALLOW THE MOVEMENT, BEFORE ROUGH-IN, OF ANY ELECTRICAL PANEL, DEVICE, LUMINAIRE, ETC. A DISTANCE OF 10 FEET WITHOUT REQUIRING ADDITIONAL COST TO THE PROJECT.
13. THE ELECTRICAL CONTRACTOR SHALL SECURE ALL CONDUIT TO THE STRUCTURE AS IT IS SET IN PLACE USING INDUSTRY STANDARD METHODS AND PRACTICES.
14. MINIMUM SIZE CONDUIT SHALL BE 3/4". ABOVE GROUND CONDUIT SHALL BE EMT WITH STEEL SET SCREW FITTINGS. UNDERGROUND CONDUIT SHALL BE PVC (SCH40) WITH GRC ELBOWS AND RISERS WRAPPED IN CORROSION RESISTANT MATERIALS WHERE IN DIRECT CONTACT WITH THE SOIL.
15. FLEXIBLE METAL CONDUIT SHALL BE LIMITED TO CONNECTIONS TO LIGHT FIXTURES AND FINAL CONNECTIONS TO MOTORS OR OTHER EQUIPMENT SUBJECT TO VIBRATION. LENGTHS OF FLEXIBLE OR SEALTITE CONDUIT SHALL NOT EXCEED 72" INCHES. USE LFMC IN DAMP OR WET LOCATIONS.
16. TO ASSURE ALL DEVICES ARE RIGIDLY SET, THE ELECTRICAL CONTRACTOR SHALL SECURE ALL DEVICE BOXES WITH BRACKETS, HANGERS, ETC. DESIGNED FOR THE APPLICATION. ANY DEVICE BOXES NOT SECURED WILL BE MADE SECURE AT THE CONTRACTORS EXPENSE.
17. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL EMPTY CONDUITS WITH 200LB RATED NYLON PULL CORD.
18. BEFORE ANY ELECTRICAL CONDUIT, BOXES, ETC. ARE COVERED (FLOOR, CEILINGS, WALLS, ETC.), THEY SHALL BE APPROVED BY THE INSPECTING OFFICER (INSPECTOR). THE UNCOVERING AND REPLACEMENT OF ELECTRICAL WORK FOR THE INSPECTION PURPOSES WILL BE AT THE COST OF THE ELECTRICAL CONTRACTOR.
19. WHERE WIRE SIZE IS NOT SHOWN ON THE DRAWINGS FOR 20A, 120 OR 277VAC BRANCH CIRCUITS, THE CIRCUIT SHALL CONSIST OF 2#12(CU,THHN/THWN-2)+1#12(CU,THHN/THWN-2)GND IN 3/4" EMT CONDUIT. THIS WIRE SIZE SHALL BE INCREASED TO #10(CU,THHN) FOR 120VAC BRANCH CIRCUITS WITH OVERALL LENGTHS EXCEEDING 100' TO ACCOMMODATE FOR VOLTAGE DROP. REFER TO EQUIPMENT SCHEDULES, FEEDER SCHEDULES AND NOTES ON DRAWINGS FOR ALL OTHER BRANCH CIRCUIT AND FEEDER WIRE/CONDUIT SIZING.
20. CONDUCTORS SHALL BE COPPER STRANDED, 600VAC RATED, TYPE THHN/THWN-2 UNLESS OTHERWISE NOTED.
21. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH EQUIPMENT SUPPLIERS ON THE EXACT LOCATIONS OF ALL EQUIPMENT AND ELECTRICAL CONNECTIONS, WIRES, AND OVERCURRENT PROTECTION PRIOR TO ROUGH-IN. THE ELECTRICAL CONTRACTOR SHALL MAKE THE FINAL CONNECTION TO ALL EQUIPMENT UNLESS OTHERWISE DIRECTED BY THE EQUIPMENT SUPPLIER.
22. THE ELECTRICAL CONTRACTOR SHALL CLEAN THE ENTIRE ELECTRICAL SYSTEM AFTER COMPLETION OF THE INSTALLATION. REMOVE ALL FINGER PRINTS, FOREIGN MATTER, PAINT, DIRT, GREASE, UN-NEEDED LABELS OR STICKERS FROM FIXTURES AND EQUIPMENT. REMOVE ALL RUBBISH AND DEBRIS ACCUMULATED DURING INSTALLATION FROM THE PREMISES.
23. OBTAIN FROM SUPPLIERS ALL WIRING DIAGRAMS FOR EQUIPMENT PRIOR TO ANY ROUGH-IN. TO ASSURE THAT PROPER CHARACTERISTICS ARE PROVIDED, ANY INCORRECT WIRING OR DEVICES INSTALLED BY THE ELECTRICAL CONTRACTOR WITHOUT THE WIRING DIAGRAM SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE. PROVIDE COPIES OF WIRING DIAGRAMS WITHIN EACH PIECE OF EQUIPMENT AND ADDITIONAL COPIES WITH THE OPERATION AND MAINTENANCE MANUALS.
24. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR TO PROVIDE CONDUIT AND DEVICE MOUNTING BOXES FOR THERMOSTATS AND OTHER MECHANICAL CONTROLS.
25. IT IS THE INTENT OF THE CONSTRUCTION DOCUMENTS FOR ALL DEVICES TO BE FLUSH MOUNTED AND CONDUIT/CABLING INSTALLED CONCEALED WITHIN WALLS/CEILINGS. IN AREAS WHERE CONDUIT MUST BE INSTALLED EXPOSED IT SHALL BE COORDINATED WITH THE ARCHITECT AND/OR ENGINEER. ALL EFFORTS SHALL BE MADE TO CONCEAL WIRING METHODS.
26. PROVIDE AN UPDATED, TYPED PANEL CIRCUIT DIRECTORY FOR ALL PANELS WHERE CIRCUITS HAVE BEEN MODIFIED, ADDED, OR REMOVED BY THE SCOPE OF THIS PROJECT. CIRCUIT DESCRIPTIONS ON THE DIRECTORY SHALL BE UNIQUE AND INDICATE THE ROOM AND EQUIPMENT/DEVICE IT IS FEEDING. DATE DIRECTORY WITH PROJECT COMPLETION DATE. MODIFIED CIRCUITS TO BE IN BOLD.
27. FUSED DISCONNECTS TO BE HEAVY DUTY.



NOTES:
1. THE ELECTRICAL CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL TELEVISION OUTLETS WITH THE ARCHITECT PRIOR TO INSTALLATION.
2. ALL DEVICES SHOWN ON THIS DETAIL ARE FOR REFERENCES OF MOUNTING HEIGHTS ONLY. THE ELECTRICAL CONTRACTOR SHALL FIELD ADJUST THE HEIGHTS OF THE DEVICES AS REQUIRED FOR PROPER MOUNTING OF THE DEVICES.
3. ALL DEVICES REQUIRED FOR THIS PROJECT MAY NOT APPEAR ON THIS DETAIL. ALL ITEMS SHOWN ON THIS DETAIL MAY NOT BE REQUIRED FOR THIS PROJECT.
4. FIRE ALARM HORN/STROBES ARE TO BE MOUNTED NO HIGHER THAN 96" AND NO LOWER THAN 80" ON CENTER.

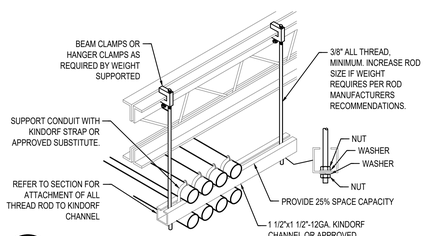
FINISHED FLOOR

MT02 MOUNTING HEIGHTS DETAIL
NO SCALE

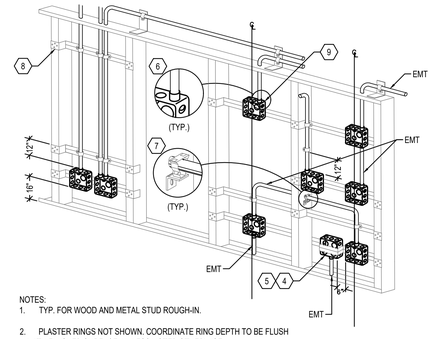


NOTES:
1. WIRE SHALL NOT BE USED AS A COMPONENT OF ANY RACEWAY HANGER SYSTEM.
2. DO NOT SUPPORT ANY RACEWAY LARGER THAN 1" FROM BOTTOM CORD OF STEEL TRUSSES.

CN03 RACEWAY SUPPORT METHODS DIAGRAM
NO SCALE

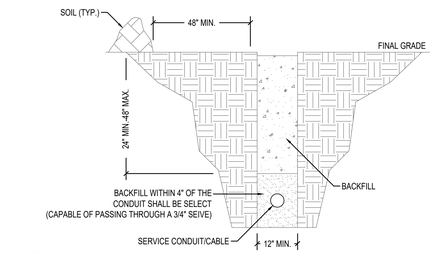


CT03 TRAPEZE SUPPORT DETAIL
NO SCALE



NOTES:
1. TYP. FOR WOOD AND METAL STUD ROUGH-IN.
2. PLASTER RINGS NOT SHOWN. COORDINATE RING DEPTH TO BE FLUSH WITH FINISHED SURFACE, UNLESS NOTED OTHERWISE.
3. LOCATE ALL OUTLET BOXES IN ACCORDANCE WITH ARCH. AND MECH. DRAWINGS, AND WITH ALL APPLICABLE SHOP DRAWINGS.
4. OUTLET BOXES ON OPPOSITE SIDES OF WALLS OR PARTITIONS IN THE SAME STUD SPACE MUST BE SEPARATED BY A MIN. OF 6" HORIZONTAL DISTANCE.
5. ELECTRICAL BOXES INSTALLED IN FIRE RESISTANT WALLS OR PARTITIONS SHALL COMPLY WITH IBC 714.3.2.
6. INSULATED THROAT EMT CONNECTOR.
7. CADDY FASTENER, THROUGH STUD CABLE/CONDUIT SUPPORT 'FB12P'.
8. ADJUSTABLE BAR HANGER.
9. TYPICAL DEVICE JUNCTION BOX.

MT01 TYPICAL ROUGH-IN DETAIL
NO SCALE



TR03 SERVICE TRENCH (POWER ONLY)
NO SCALE

NAME: (EX)M1	VOLTAGE: 208 / 120	MOUNTING: FLUSH	MAINS: BREAKER	DIMS. 20" W, 5.75" D, 68" H	SPECIAL EQUIPMENT: X GROUND BUS; SUB-FEED BREAKER; SUB-FEED LUGS; NEMA 3R; SURGE PROTECTOR
TYPE: NQ	PH 3 WIRES 4				
ELEC ROOM LOCATION	AIC 10K AMPS	FEED: BOTTOM	225 AMPS	42 SPACES	

CKT DF	CKT #	CIRCUIT DESCRIPTION	CODE	BRKR P	AMP	WIRE SIZE	VA LOAD	PHASE VA A	PHASE VA B	PHASE VA C	VA LOAD	WIRE SIZE	BRKR AMP	BRKR P	CODE	CIRCUIT DESCRIPTION	CKT #	DF
	1	RCP-3 235	EX	1	20			0					20	1	EX	ATC 235	2	
	3	WH-1 235	EX	1	20				0				20	1	EX	RECEPT 235	4	
	5	WH-2 235	EX	1	20					0			20	1	EX	RECEPT 235	6	
	7	RCP-1 235	EX	1	20			0					20	1	EX	RECEPT 251	8	
	9	RCP-2 235	EX	1	20				0				20	1	EX	DOOR SEC 251	10	
	11	UNIT HEATER 235	EX	1	20					0			20	1	EX	AIR HANDLER LIGHTS 25	12	
	13	GLYCOL FEED 235	EX	1	20			180			180	12	20	1		**EXTERIOR RCPT**	14	R
	15	WATER SOFTNER 235	EX	1	20				0				20	1	EX	SPARE	16	
M	17	**C-1 CNTRLS & HEATER**		1	20		500			500			20	1	EX	SPARE	18	
	19	SPARE	EX	1	20			0					20	1	EX	SPARE	20	
	21	FC-10 251	EX	3	20				3864		3864	8	40	3		**PUMP P-3**	22	M
	23		-	-	-						3864	-	-	-	-		24	M
	25		-	-	-			3864			3864	-	-	-	-		26	M
	27	SPACE							0							SPACE	28	
	29	SPACE								0						SPACE	30	
	31	SPACE						0								SPACE	32	
	33	SPACE							0							SPACE	34	
	35	SPACE								0						SPACE	36	
	37	SPACE						0								SPACE	38	
	39	SPACE							0							SPACE	40	
	41	SPACE								0						SPACE	42	

DIVERSITY FACTORS (DF):		CONNECTED VA	4044	3864	4364	12.3 KVA
C=CONTINUOUS	M=MOTOR	CONNECTED AMPS	34	32	36	34.064 A
N=NON-CONTINUOUS	L=LARGEST MOTOR	DIVERSIFIED VA				12 KVA
R=RECEPTACLES	O=OTHER	DIVERSIFIED AMPS				34.064 A
K=KITCHEN EQUIPMENT						

CODES:
1 = SEE DRAWINGS FOR CONDUIT & CONDUCTOR SIZE
2 = SHUNT-TRIP BREAKER 5 = GFCI BREAKER
3 = GFEP BREAKER
4 = PROVIDE LOCK OFF DEVICE

THIS PANEL, ALL OF ITS LUGS, BREAKERS, ETC. SHALL BE RATED FOR 75°C

NOTES:
REUSE EXISTING SPARE BREAKRES WHERE POSSIBLE.
MATCH EXISTING PANEL AIC RATING WITH ALL NEW BREAKERS.

EQUIPMENT SCHEDULE

TYPE	DESCRIPTION	ELECTRICAL VOLT	PHASE	LOAD	FLA	WIRE SETS	WIRE QTY	WIRE SIZE	WIRE GND	COND SIZE	OVER CURRENT PROTECTION OCPD/ MOCP	TYPE	DISCONNECT SIZE	DISCONNECT POLE	FUSE SIZE	STR NEMA SIZE	REMARKS
C - 1	CHILLER	480	3	260.00 MCA	208.0	1	3	350	4	2 1/2	300	C1	-	-	-	-	13 B
P - 1	PUMP	208	3	10.00 HP	32.2	1	3	8	10	3/4	40	C1	-	-	-	-	11 B

ABBREVIATIONS:
KW = KILOWATTS; VA = VOLT AMPERES; DISC = DISCONNECT; OCPD = OVERCURRENT PROTECTIVE DEVICE
V/PH = VOLTAGE/PHASE; KVA = KILOVOLT AMPERES; GND = GROUND; COND = CONDUIT
HP = HORSEPOWER; FLA = FULL LOAD AMPERES; STR = STARTER; MOCP = MAXIMUM OCPD (LISTED BY THE MANUFACTUR
W = WATTS; MCA = MINIMUM CIRCUIT AMPACITY; PL = POLE

REMARKS:
1. NEMA 1 FUSED DISCONNECT SWITCH
2. NEMA 1 NON-FUSED DISCONNECT SWITCH
3. BREAKER IN ENCLOSURE
4. MANUAL STARTER WITH THERMAL OVERLOAD
5. MANUAL MOTOR CONTROLLER W/OUT THERMAL OVERLOAD
6. MAGNETIC STARTER
7. MAGNETIC STR/NON-FUSED DISCONNECT COMBINATION
8. MAGNETIC STR/FUSED DISCONNECT COMBINATION
9. NEMA 3R FUSED DISCONNECT SWITCH
10. NEMA 3R NON-FUSED DISCONNECT SWITCH
11. VARIABLE FREQUENCY DRIVE
12. RECEPTACLE/SPECIAL PURPOSE OUTLET/ETC.
13. DIRECT CONNECTION
14. DUCT DETECTOR IN RETURN AIR DUCT
15. CONTROLLED WITH LIGHTS
16. LM-EB DISCONNECT W/CNTRL WIRING TO VFD

REMARKS:
A. FURNISHED, INSTALLED AND CONNECTED UNDER DIVISION 26.
B. FURNISHED AND INSTALLED UNDER ANOTHER DIVISION REQUIRING CONNECTION UNDER DIV
C. FURNISHED UNDER ANOTHER DIVISION BUT INSTALLED AND CONNECTED UNDER DIV 26.
D. FURNISHED, INSTALLED AND CONNECTED UNDER ANOTHER DIVISION.
E. FURNISHED AND INSTALLED UNDER DIV 26 REQUIRING CONNECTION UNDER ANOTHER DIVIS

OCPD TYPES:
C1 = THERMAL MAGNETIC CIRCUIT BREAKER
C2 = MAGNETIC ONLY CIRCUIT BREAKER

NOTES:
- THE DIVISION 26 CONTRACTOR MAY INCREASE THE CONDUIT SIZE BY ONE INCREMENTAL SIZE TO FACILITATE INSTALLATION OR TO HELP WITH MATERIAL AVAILABILITY/COST.

GENERAL NOTE: THE EC SHALL COORDINATE ALL REQUIREMENTS (IE: MOCP SIZE, UNIT THERMAL PROTECTION, ETC) WITH APPROVED MECHANICAL SHOP DRAWINGS/SUBMITTALS AND BRING UP ANY DISCREPANCIES WITH THE ELECTRICAL ENGINEER OF RECORD IN WRITING PRIOR TO ROUGH-IN.

Sheet List Table

Sheet Number	Sheet Title
EG0.1	ELECTRICAL NOTES & SYMBOLS
EG4.1	ELECTRICAL SPECIFICATIONS
EP1.1	ELECTRICAL POWER PLAN

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PROFESSIONAL ENGINEER
Lewis Wong
No. 9075170
07/28/2022
STATE OF UTAH

GARLAND ELEMENTARY SCHOOL COOLING UPGRADE

150 WEST 500 SOUTH, GARLAND, UTAH 84312

REVISIONS

VBFA PROJECT #:	21493
CHECKED BY:	KC
DRAWN BY:	AC
CURRENT/ISSUE DATE:	07.28.2022

SHEET CONTENTS

ELECTRICAL NOTES & SYMBOLS

EG0.1

ELECTRICAL SPECIFICATIONS

PART 1 - GENERAL

A. DESCRIPTION
1. FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND TRANSPORTATION AS REQUIRED TO PROPERLY INSTALL A COMPLETE AND OPERABLE ELECTRICAL SYSTEM.

B. RULES AND REGULATIONS
1. ALL WORK AND MATERIALS SHALL BE INSTALLED AS SHOWN AND HEREIN SPECIFIED.
2. THE LATEST EDITIONS OF THE FOLLOWING SPECIFICATIONS, STANDARDS, AND AMENDMENTS, AS ADOPTED BY THE AUTHORITY HAVING JURISDICTION, SHALL FORM A PART OF THIS SPECIFICATION THE SAME AS IF HEREIN WRITTEN OUT IN FULL (ALL MATERIALS AND INSTALLATIONS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS THEREOF):
   a. NFPA (NATIONAL FIRE PROTECTION ASSOCIATION), PUBLICATION NUMBER 70, "NATIONAL, ELECTRICAL CODE"; PUB. NO. 72E, "AUTOMATIC FIRE DETECTORS".
   b. UL (UNDERWRITERS LABORATORIES, INC.),
   c. NEMA (NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION).
   d. UBC (UNIFORM BUILDING CODE) AND STANDARD BUILDING CODE.
   e. IBC (INTERNATIONAL BUILDING CODE)
   f. IFC (INTERNATIONAL FIRE CODE)
   g. IECC (INTERNATIONAL ENERGY CONSERVATION CODE)
   h. IEC (INTERNATIONAL ELECTRICAL CODE) STATE AND
   i. LOCAL BUILDING AUTHORITY AND CODES
3. NO REQUIREMENT TO THESE DRAWINGS AND SPECIFICATIONS SHALL BE CONSTRUCTED TO VOID ANY OF THE PROVISIONS OF THE ABOVE SPECIFICATIONS AND STANDARDS.

C. PERMITS AND INSPECTIONS UNLESS OTHERWISE SPECIFIED, THE CONTRACTOR SHALL APPLY, PAY FOR AND SCHEDULE ALL APPLICABLE PERMITS, FEES AND INSPECTIONS REQUIRED BY ANY AND ALL PUBLIC AUTHORITIES HAVING JURISDICTION AND REQUIRING INSPECTION.
1. EC SHALL INCLUDE ALL UTILITY COMPANY CHARGES IN THE BASE BID.

D. WORKMANSHIP AND MATERIALS
1. WORKMANSHIP SHALL BE OF THE BEST QUALITY AND NONE BUT COMPETENT PERSONNEL SKILLED IN THEIR TRADE SHALL BE EMPLOYED. THE CONTRACTOR SHALL FURNISH THE SERVICES OF AN EXPERIENCED SUPERINTENDENT, WHO WILL BE IN CHARGE OF THE EXECUTION OF WORK, UNTIL COMPLETED AND ACCEPTED.
2. UNLESS OTHERWISE HEREIN AFTER SPECIFIED, ALL MATERIALS AND EQUIPMENT UNDER THIS DIVISION OF THE SPECIFICATIONS SHALL BE NEW, OF BEST GRADE AND AS LISTED IN PRINTED CATALOGS OF THE MANUFACTURER. EACH ARTICLE OF IT'S KIND SHALL BE THE STANDARD PRODUCT OF A SINGLE MANUFACTURER.
3. THE OWNER'S REPRESENTATIVE SHALL HAVE THE RIGHT TO ACCEPT OR REJECT MATERIAL EQUIPMENT AND/OR WORKMANSHIP AND DETERMINE WHEN THEY HAVE COMPLIED WITH THE REQUIREMENTS HEREIN SPECIFIED.
4. ALL MANUFACTURED MATERIALS SHALL BE CLEARLY MARKED OR STAMPED WITH THE MANUFACTURER'S NAME AND RATING.
5. REFERENCE TO STANDARDS ARE INTENDED TO BE THE LATEST REVISION OF THE STANDARD SPECIFIED, OR THAT ACCEPTED BY THE AUTHORITY HAVING JURISDICTION.

E. MANUFACTURER'S RECOMMENDATIONS
1. EQUIPMENT INSTALLED UNDER THIS DIVISION OF THE SPECIFICATIONS SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS, UNLESS OTHERWISE SHOWN ON THE DRAWINGS OR HEREIN SPECIFIED.

F. GUARANTEE ALL MATERIALS AND EQUIPMENT PROVIDED AND INSTALLED UNDER THIS SECTION SHALL BE GUARANTEED FOR A MINIMUM OF ONE YEAR. SHOULD ANY TROUBLE OR MALFUNCTIONS DEVELOP DURING THIS PERIOD DUE TO DEFECTIVE MATERIALS OR FAULTY WORKMANSHIP, THE CONTRACTOR WILL BE HELD LIABLE AND SHALL FURNISH LABOR, MATERIALS AND EQUIPMENT NECESSARY TO CORRECT THE TROUBLE OR MALFUNCTION WITHOUT ADDITIONAL COST TO THE OWNER. ALL DEFECTIVE MATERIAL OR INFERIOR WORKMANSHIP NOTICED DURING THE TIME OF INSTALLATION SHALL BE CORRECTED IMMEDIATELY TO THE ENTIRE SATISFACTION OF THE ARCHITECT, ENGINEER AND OWNER, AT NO ADDITIONAL COST.

G. DEFINITIONS
1. "PROVIDE" - MEANS FURNISH, INSTALL, AND CONNECT, UNLESS OTHERWISE INDICATED.
2. "FURNISH" - MEANS PURCHASE NEW AND DELIVER IN OPERATING ORDER TO PROJECT SITE.
3. "INSTALL" - MEANS TO PHYSICALLY INSTALL THE ITEMS IN-PLACE.
4. "CONNECT" - MEANS MAKE FINAL ELECTRICAL CONNECTIONS FOR A COMPLETE OPERATING PIECE OF EQUIPMENT. THIS INCLUDES PROVIDING CONDUIT, WIRE, TERMINATIONS, ETC. AS APPLICABLE.
5. "OR EQUIVALENT" - MEANS TO PROVIDE EQUIVALENT EQUIPMENT. SUCH EQUIPMENT MUST BE APPROVED BY THE ENGINEER PRIOR TO BIDDING.

H. SUBMITTALS
1. PROVIDE SHOP DRAWINGS AND MANUFACTURER'S LITERATURE OF MATERIALS AND EQUIPMENT AS REQUIRED IN THE GENERAL CONDITIONS, AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND AS LISTED BELOW:
2. CATALOG CUTS
   a. CIRCUIT BREAKERS (EACH SIZE AND TYPE)
   b. SAFETY SWITCHES
   c. MOTOR STARTERS
   d. THERMAL SWITCHES
   e. LIGHT FIXTURES

THE ABOVE IS A STANDARD SUBMITTAL REQUIREMENT LIST. ELECTRICAL CONTRACTOR SHALL SUBMIT ALL APPLICABLE ITEMS FOR REVIEW. MATERIAL NOT SUBMITTED AND APPROVED BY THE ARCHITECT, ENGINEER OR OWNER'S REPRESENTATIVE SHALL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTORS COST IF DIRECTED BY THE ARCHITECT, ENGINEER OR THE OWNER'S REPRESENTATIVE.

PART 2 - MATERIALS

A. GENERAL
1. MATERIALS AND EQUIPMENT SHALL BE STANDARD CATALOGED PRODUCTS OF MANUFACTURERS REGULARLY ENGAGED IN THE MANUFACTURE OF THE PRODUCT. UL LISTED, AND SHALL BE THE LATEST STANDARD DESIGN THAT CONFORMS TO SPECIFIED MATERIALS AND EQUIPMENT.

B. RACEWAY
1. ELECTRICAL METALLIC TUBING (EMT) SHALL BE USED IN INTERIOR DRY LOCATIONS.
2. GALVANIZED FLEXIBLE STEEL (FMC) OR LIQUID TIGHT STEEL (LFMC) CONDUIT SHALL BE USED FOR CONNECTIONS TO MECHANICAL EQUIPMENT, LUMINAIRES AND TRANSFORMERS AND AS INDICATED. LIQUID TIGHT CONDUIT SHALL BE USED IN EXTERIOR OR DAMP LOCATIONS.
3. SCHEDULE 40 PVC (WITH PVC COATED OR VINYL TAPE DOUBLE WRAPPED RIGID STEEL ELBOWS AND RISES) SHALL BE USED FOR RUNS THAT ARE IN CONTACT WITH THE EARTH.
4. 3/4" CONDUIT SHALL BE THE MINIMUM SIZE CONDUIT.
5. OUTDOOR AND WET OR DAMP LOCATIONS: PROVIDE RIGID STEEL CONDUIT.

C. FITTINGS
1. ALL FITTINGS SHALL BE STEEL/MALLEABLE IRON WITH INSULATING BUSHINGS.

D. OUTLET AND JUNCTION BOXES
1. BOXES IN INTERIOR DRY LOCATIONS SHALL BE GALVANIZED ONE-PIECE PRESSED STEEL, KNOCKOUT TYPE, NOT LESS THAN 4 INCHES SQUARE AND 2 1/8" DEEP; APPLETON, RACO, OR EQUAL.
2. BOXES SHALL BE EQUIPPED WITH PLASTER RINGS, EXTENSION RINGS, AND FIXTURE STUDS AS REQUIRED.
3. BOXES FOR FLOOR OUTLETS SHALL BE OF THE CAST-METAL THREADED-CONDUIT-ENTRANCE, WATERPROOF TYPE WITH MEANS FOR ADJUSTING COVER PLATE TO FINISHED FLOOR LEVEL. BOXES SHALL BE SUCH AS HUBBELL B2503 OR EQUAL. THE COVER SHALL BE HUBBELL S3925, S3082 OR EQUAL TO MATCH THE FLOOR TYPE OR AS SHOWN ON THE PLANS.
4. PROVIDE FLUSH MOUNTING OUTLET BOX IN FINISHED AREAS.
5. BOXES FOR STRUCTURED CABLING (DATA & PHONE) IN INTERIOR DRY LOCATIONS SHALL BE GALVANIZED ONE-PIECE PRESSED STEEL, KNOCKOUT TYPE 4 11/16" x 2 1/8", APPLETON, RAYCO OR EQUAL.
6. ALL BOXES IN FINISHED SPACES SHALL BE PROVIDED WITH MUD RINGS AS REQUIRED FOR THE DEVICE AND WALL MATERIAL.
7. OUTDOOR AND WET OR DAMP LOCATIONS: PROVIDE CAST METAL OR PVC OUTLET, JUNCTION, AND PULL BOXES.

E. CONDUCTORS
1. ALL CONDUCTORS SHALL BE SOFT DRAWN, ANNEALED COPPER IN RACEWAY SIZED AS SHOWN ON THE PLANS. ALL CONDUCTORS TO BE MINIMUM #12 AWG UNLESS NOTED OTHERWISE #8 AWG AND LARGER SHALL BE STRANDED.
2. CONDUCTORS SHALL BE COPPER, THHN OR THWN-2 COLOR CODED IN ACCORDANCE WITH PART 3, SECTION C. 1. OF THESE SPECIFICATIONS OR AS INDICATED ON THE DRAWINGS.

F. WIRING CONNECTIONS
1. MAKE ALL ELECTRICAL CONNECTIONS.
2. MAKE CONNECTION TO DEVICES USING "PIG-TAILS". DO NOT USE A DEVICE AS A CONNECTION OR A SPLICE UNIT.
3. DO NOT PLACE STRANDED CONDUCTORS DIRECTLY UNDER SCREWS. INSTALL CRIMP-ON, INSULATED, FORK TERMINALS FOR CONDUCTOR TERMINATIONS, OR INSTALL SOLID CONDUCTORS.

G. NAMEPLATES
1. PROVIDE EACH PANEL BOARD, DISCONNECT SWITCH, AND BREAKER IN SWITCHBOARD WITH A MICARTA PLASTIC NAMEPLATE MADE OF WHITE-FACED BLACKCORE PLASTIC LAMINATE. NAMEPLATE SHALL BE MINIMUM 3" WIDE BY 3/4" HIGH FOR PANEL BOARD IDENTIFICATION INCLUDE DESIGNATION, PHASE, VOLTAGE, AND CIRCUIT NUMBER. FASTEN WITH EPOXY GLUE. DOUBLE STICK TAPE IS NOT ACCEPTABLE.

J. FRACTIONAL HORSEPOWER MANUAL STARTER
1. PROVIDE FRACTIONAL HORSEPOWER MANUAL STARTER WITH THE FOLLOWING FEATURES.
   a. MELTING ALLOY TYPE THERMAL OVERLOAD RELAY
   b. RED NEON PILOT LIGHT
   c. THERMAL ELEMENT SIZED FOR MOTOR LOAD
2. PROVIDE A NAMEPLATE ON EACH COMPONENT OF MOTOR CONTROL EQUIPMENT AS SPECIFIED IN "NAMEPLATES".

K. SAFETY SWITCHES
1. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL SAFETY SWITCHES AS INDICATED ON THE DRAWINGS OR AS REQUIRED. ALL SAFETY SWITCHES SHALL BE UL LISTED. THE SWITCHES SHALL BE FUSED SAFETY SWITCHES OR NON-FUSED SAFETY SWITCHES AS SHOWN ON THE DRAWINGS OR REQUIRED BY CODE AND SHALL BE MANUFACTURED BY SQUARE D, GENERAL ELECTRIC, SIEMENS OR CUTLER HAMMER.
2. SWITCHES SHALL HAVE A QUICK-MAKE AND QUICK-BREAK OPERATING HANDLE AND MECHANISM WHICH SHALL BE AN INTEGRAL PART OF THE BOX. PADLOCKING PROVISIONS SHALL BE PROVIDED FOR PADLOCKING IN THE OFF POSITION WITH AT LEAST THREE PADLOCKS. SWITCHES SHALL BE HORSEPOWER RATED FOR 250 VOLTS AC OR DC OR 600 VOLTS AC AS REQUIRED. LUGS SHALL BE UL LISTED FOR COPPER AND ALUMINUM CABLE AND SHALL HAVE A TEMPERATURE RATING OF AT LEAST 75 DEGREES C.
3. SWITCHES SHALL BE FURNISHED IN NEMA 1 HEAVY DUTY ENCLOSURES WITH KNOCKOUTS UNLESS OTHERWISE NOTED OR REQUIRED. SWITCHES LOCATED ON THE EXTERIOR OF THE BUILDING OR IN "WET" LOCATIONS SHALL HAVE NEMA 3R ENCLOSURES (WP).
4. THE SAFETY SWITCHES SHALL BE SECURELY MOUNTED IN ACCORDANCE WITH THE NEC. THE CONTRACTOR SHALL PROVIDE ALL MOUNTING MATERIALS AND INSTALL FUSES IN THE FUSED SAFETY SWITCHES. THE FUSES SHALL BE DUAL ELEMENT ON MOTOR CIRCUITS.
5. PROVIDE FUSES AS SPECIFIED BELOW. FUSES SHALL BE INSTALLED SO THAT THE RATING IS CLEARLY VISIBLE WITHOUT REMOVING FUSE. PROVIDE A SPARE FUSE FOR EACH FUSE INSTALLED.
6. PROVIDE A NAMEPLATE ON EACH DISCONNECT SWITCH AS SPECIFIED IN "NAMEPLATES".

L. FUSES
1. FUSES SHALL BE CLASS "RK-1" REJECTION TYPE. FUSES SERVING MOTOR LOADS SHALL BE DUAL ELEMENT WITH A MINIMUM TIME DELAY OF 10 SECONDS AT 500% RATING. FUSES SHALL BE CURRENT LIMITING TIME DELAY TYPE WITH INTERRUPTING CAPACITY OF 200,000 AMP RMS SYMMETRICAL.
2. FUSES SERVING SWITCH OR CIRCUIT BREAKER DISTRIBUTION PANELS, LIGHTING PANEL BOARDS AND OTHER NON - MOTOR LOADS NEED NOT BE TIME DELAY TYPE, BUT SHALL BE CURRENT LIMITING WITH THE INTERRUPTING CAPACITY OF 200,000AMP RMS SYMMETRICAL MINIMUM. FUSES SHALL BE BUSSMAN, GOULD OR LITTELFUSE.
3. PROVIDE FUSES SIZED TO THE MAXIMUM SIZE RECOMMENDED BY THE MANUFACTURER OF THE EQUIPMENT OR AS SHOWN ON THE DRAWINGS IF THE MANUFACTURER DOES NOT HAVE A RECOMMENDED SIZE.

PART 3 - EXECUTION

A. GENERAL
1. ALL MATERIALS SHALL BE INSTALLED IN A PROFESSIONAL MANNER INDICATIVE OF THE TRADE.
2. ALL PENETRATIONS OF THE OUTSIDE WALLS OR ROOF SHALL BE SEALED WITH APPROPRIATE SEALANT OR CAULK FOR THE PARTICULAR SURFACE INVOLVED.
3. PROVIDE CLEAR, TYPED, P-TOUCH LABEL FOR ALL RECEPTACLES COVERPLATES IDENTIFYING THE CIRCUIT NUMBER THAT THE RECEPTACLE IS CIRCUITED TO.
4. PROVIDE UPDATED TYPED PANEL SCHEDULE INDEX FOR ALL PANELS WHERE CIRCUITS HAVE BEEN MODIFIED OR CHANGED.

B. RACEWAYS
1. RACEWAYS SHALL RUN CONCEALED UNLESS OTHERWISE INDICATED. EXPOSED RACEWAY RUNS SHALL BE PARALLEL WITH SUPPORTING WALLS, BEAMS, AND CEILINGS AND WITH EACH OTHER CLOSER THAN 6 INCHES TO ANY WATER PIPE OR HEATER BE INSTALLED AND SHALL NOT FLUME.
2. RACEWAY ENDS SHALL BE REAMED AFTER THREADING AND AFTER CUTTING AND BE MADE TO BUTT IN THE CENTER OF THE COUPLING. THE USE OF RUNNING THREADS IS PROHIBITED.
3. RACEWAYS SHALL BE INSTALLED AS A COMPLETE SYSTEM, CONTINUOUS FROM OUTLET TO OUTLET, CABINET, BOX OR FITTINGS, AND SHALL BE MECHANICALLY CONNECTED SO THAT ADEQUATE ELECTRICAL CONTINUITY FROM ONE TO ANOTHER IS OBTAINED. CONDUITS SHALL BE SUPPORTED WITH ONE OR TWO HOLE STAMPED STEEL OR MALLEABLE IRON STRAPS (SUCH AS MANUFACTURED BY RACO) DESIGNED FOR SUPPORTING CONDUIT. THE SIZE OF STRAP SHALL MATCH THE SIZE OF THE CONDUIT. NAILS, PERFORATED STRAP, OR PLUMBERS TAPE SHALL NOT BE USED FOR SUPPORT OF RACEWAY.
4. PROVIDE 1/8" POLY PULL CORD IN RACEWAYS WITHOUT CONDUCTORS.
5. FOUR 90 DEGREE BENDS MAXIMUM BETWEEN TERMINATIONS OR BOXES.

C. CONDUCTORS
1. ALL CONDUCTORS SHALL BE INSTALLED IN CONDUIT AND COLOR CODED AS FOLLOWS:

PHASE	208/120	480/277
PHASE A	BLACK	BROWN
PHASE B	RED	ORANGE
PHASE C	BLUE	YELLOW
NEUTRAL	WHITE	GRAY
GROUND	GREEN	GREEN

2. MAKE JOINTS, SPLICES, TAPS AND CONNECTIONS IN CONDUCTORS WITH SOLDERLESS CONNECTORS.

D. JUNCTION AND PULL BOXES
1. PULL BOXES SHALL BE PROVIDED WHERE INDICATED AND WHERE NECESSARY TO FACILITATE THE PULLING OF CONDUCTORS. TELEPHONE RACEWAYS SHALL HAVE A MAXIMUM OF TWO 90 DEGREE BENDS BETWEEN TERMINATIONS OR BOXES.

E. GROUNDING
1. INSTALL A CODE SIZED GROUNDING CONDUCTOR IN ALL RACEWAYS. DO NOT USE THE RACEWAY FOR GROUNDING. MAKE GOOD CONTACT AT ALL PANEL BOARDS, OUTLET BOXES, AND JUNCTION OR PULL BOXES TO THE RACEWAY SYSTEM. USE APPROVED BONDING MATERIALS.

G. BONDING
1. BOND ALL PIPING (GAS WATER, ETC) AS REQUIRED BY THE NEC. CONFIRM SYSTEMS TO BE USED WITH MC.

H. SEISMIC REQUIREMENTS
1. IF REQUIRED, RECESSED TYPE LIGHTING FIXTURES, IN ADDITION TO THE STANDARD SEISMIC CLIPS AND SUPPORT ON T-BAR GRID SYSTEM, SHALL HAVE 2#12 STEEL SAFETY WIRES PER FIXTURE. ONE END OF EACH SAFETY WIRE SHALL BE SECURELY FASTENED TO THE BUILDING STRUCTURE. THE OTHER END (6 INCHES LONGER THAN THE T-BAR GRID SUPPORT WIRES) SHALL BE FASTENED TO DIAGONAL CORNERS OF EACH LIGHTING FIXTURE.

I. CUTTING AND PATCHING
1. PERFORM DRILLING, CUTTING, AND PATCHING OF THE GENERAL CONSTRUCTION WORK WHETHER EXISTING OR NEW, AS REQUIRED FOR THE INSTALLATION OF ELECTRICAL WORK. PATCH WITH THE SAME MATERIALS, WORKMANSHIP, AND FINISH AS THE ORIGINAL WORK AND ACCURATELY MATCH ALL SURROUNDING WORK. SUCH WORK WILL BE DONE BY A CRAFTSMAN ACCREDITED IN THE APPLICABLE TRADE UNDER THE CONTRACTOR'S SUPERVISION AND BE ACCEPTABLE TO THE OWNER'S REPRESENTATIVE. COORDINATE WITH OTHER TRADES AND GENERAL CONTRACTOR PRIOR TO CUTTING, DRILLING, OR CORING.

K. TESTING
1. DEMONSTRATE THAT ALL COMPONENTS OF THE WORK OF THIS DIVISION HAVE BEEN PROVIDED AND THAT THEY OPERATE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
2. TEST WIRING AND CONNECTORS FOR CONTINUITY, SHORT CIRCUITS AND IMPROPER GROUNDS. TEST EACH LIGHTING AND APPLIANCE PANEL WITH MAINS DISCONNECTED FROM FEEDERS, BRANCHES CONNECTED, WALL SWITCHES CLOSED AND FIXTURES PERMANENTLY CONNECTED AND COMPLETE WITH LAMPS. TEST EACH INDIVIDUAL POWER CIRCUIT WITH THE POWER EQUIPMENT CONNECTED FOR PROPER OPERATION.
3. PROVIDE DETAILED DOCUMENTATION OF EACH TEST PERFORMED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE, WITH THE NAMES AND THE SIGNATURES OF QUALIFIED INDIVIDUALS WHO CONDUCTED AND WITNESSED EACH TEST.

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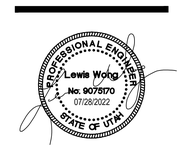

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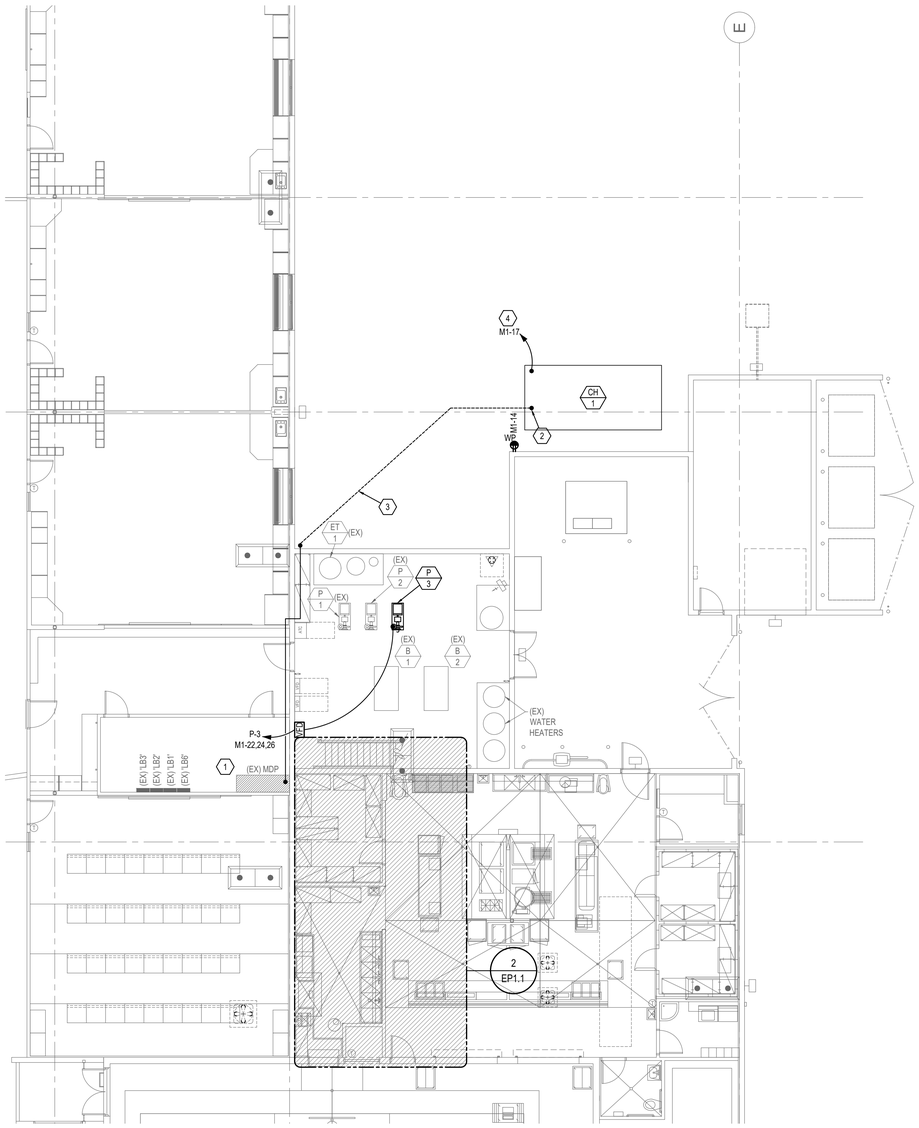
REVISIONS

VBFA PROJECT #:	21493
CHECKED BY:	KC
DRAWN BY:	AC
CURRENT/ISSUE DATE:	07.28.2022

SHEET CONTENTS

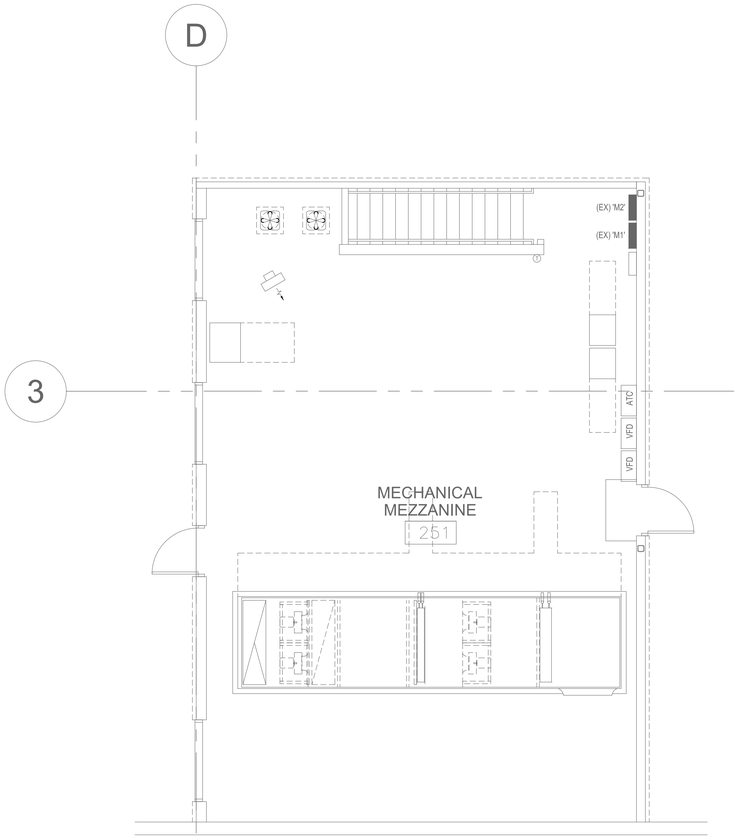
ELECTRICAL SPECIFICATIONS

EG4.1



N

1 ELECTRICAL POWER PLAN
EP1.1 SCALE: 1/8"=1'-0"



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2 ENLARGED ELECTRICAL MEZZANINE PLAN (FOR REFERENCE ONLY)
EP1.1 SCALE: 1/8"=1'-0"

KEYED NOTES

1. PROVIDE NEW 300A/3P CIRCUIT BREAKER WITHIN EXISTING MAIN DISTRIBUTION PANEL. NEW BREAKER SHALL MATCH EXISTING MDP AIC RATING. VERIFY IN FIELD.
2. ROUTE (3)350KCMIL & (1)#4G IN 2-1/2" CONDUIT TO BE CONNECTED TO NEW 300A CIRCUIT BREAKER WITHIN EXISTING MAIN DISTRIBUTION PANEL. REFER TO EQUIPMENT SCHEDULE FOR MORE DETAIL.
3. APPROXIMATE CONDUIT ROUTING FOR NEW CHILLER 'C-1'. PROVIDE 'LB' AT EXTERIOR WALL. REFER TO EQUIPMENT SCHEDULE FOR CONDUIT AND CONDUCTOR SIZING.
4. PROVIDE ADDITIONAL 120V/1PH/20A CIRCUIT FOR EQUIPMENT HEATERS AND CONTROLS. REFER TO EQUIPMENT MANUFACTURERS INSTALLATION DETAILS FOR ADDITIONAL REQUIREMENTS.

GENERAL NOTES

A. EC SHALL COORDINATE WITH ALL OTHER TRADES DURING DEMOLITION AND CONSTRUCTION TO FACILITATE TIMELY WORK.

B. ALL AREAS ARE TO BE KEPT CLEAN AND CLEAR OF DEBRIS AT ALL TIMES.

C. CONTRACTOR SHALL PATCH AND REPAIR ALL WALLS, CEILINGS ETC. TO MATCH EXISTING CONDITIONS. PENETRATIONS SHALL BE SEALED WITH FIRE RATED CAULK.

D. ROUTE ALL CONDUIT IN A NEAT AND ORDERLY FASHION. ALL CONDUIT SHALL BE CONCEALED ABOVE CEILINGS OR IN WALLS IN FINISHED SPACES UNLESS OTHERWISE INDICATED ON THE PLANS.

E. EXISTING DEVICES SHOWN ON SHEETS ARE GATHERED FROM AS-BUILT DRAWINGS AND FIELD INVESTIGATION. NOT ALL DEVICES ARE SHOWN. DEVICE PLACEMENT IS SCHEMATIC AND NOT EXACT. CONTRACTOR TO FIELD VERIFY FOR EXACT LOCATIONS AND COORDINATE WORK WITH ALL OTHER DEVICES, EQUIPMENT, CONDUIT, ETC. WHETHER OR NOT SHOWN TO COMPLETE PROJECT.

F. DEVICES/EQUIPMENT SHOWN IN GRAY ARE EXISTING TO REMAIN. PRESERVE AND PROTECT. MAINTAIN EXISTING CIRCUIT INTEGRITY.

G. PROVIDE CLEAR, TYPED, P-TOUCH LABELS ON ALL NEW DEVICES/EQUIPMENT INDICATING THE PANEL AND CIRCUIT NUMBER IT IS TIED TO. LABEL SHALL BE 1/8" LONGER THAN TEXT ON BOTH ENDS.

H. PROVIDE UPDATED TYPED CIRCUIT DIRECTORY WITH UNIQUE CIRCUIT DESCRIPTIONS PER NEC 408.4 FOR PANELS AFFECTED BY THIS PROJECT.

I. ALL CORE DRILLING IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.

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07/28/2022
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COOLING UPGRADE

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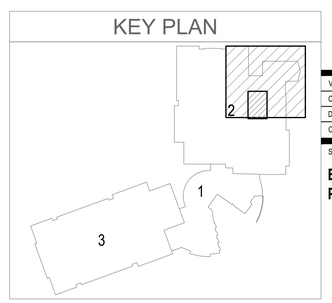
REVISIONS

KEY PLAN



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ELECTRICAL POWER PLAN

EP1.1