

ELECTRICAL SYMBOL SCHEDULE			
SYMBOL	DEVICE/FIXTURE DESCRIPTION	MOUNTING	COMMENTS
	MECHANICAL/PLUMBING EQUIPMENT CALLOUT		
	CONDUIT RUN CONCEALED IN WALL OR CEILING		
	CONDUIT RUN CONCEALED IN FLOOR OR GROUND		
	DEMOLITION		
	EXISTING		
	HOME RUN TO PANEL		
	CONDUIT STUB		
	CONDUIT BREAK/CONTINUATION		
	CONDUIT STUB DOWN		
	CONDUIT STUB UP		
	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
AFC	AVAILABLE FAULT CURRENT	ER	EXISTING TO BE RELOCATED
AFB	ABOVE FINISHED FLOOR	EX	EXISTING TO REMAIN
AFS	ABOVE FINISHED GRADE	FMIC	FLEXIBLE METAL CONDUIT
AIC	AMPS INTER. CAPACITY	GC	GENERAL CONTRACTOR
AWG	AMERICAN WIRE GAUGE	GEC	GRIND. ELEC. COND. AT SES
BC	BARE COPPER	GFCI	GRIND. FLT. CURR. INTERRU.
BFC	BELOW FINISHED CEILING	GND	GROUND
BFG	BELOW FINISHED GRADE	IMC	INTER. METAL CONDUIT
C	CONDUIT	IG	ISOLATED GROUND
CND	CONDUIT	KCMIL	1000 CIRCULAR MILS (MCM)
CO	CONDUIT ONLY	LFCM	LIQUID-TIGHT FLEX.
CT	CURRENT TRANSFORMER	METAL COND.	METAL COND.
CU	COPPER MATERIAL	LFCM	LIQUID-TIGHT FLEX.
DED	DEDICATED	UNO	UNLESS NOTED OTHERWISE
DFA	DROP FROM ABOVE	MC	MECHANICAL CONTRACTOR
EC	ELECTRICAL CONTRACTOR	MCA	MINIMUM CIRCUIT AMPS
EF	EXHAUST FAN	N1	NEMA 1
EM	EMER. EGRESS BATTERY	N3R	NEMA 3R
EMT	ELEC. METALLIC TUBING	N	NEW
		NL	NIGHT LIGHT, BYPASS
		ER	EXISTING TO BE RELOCATED
		EX	EXISTING TO REMAIN
		FMIC	FLEXIBLE METAL CONDUIT
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E

D

C

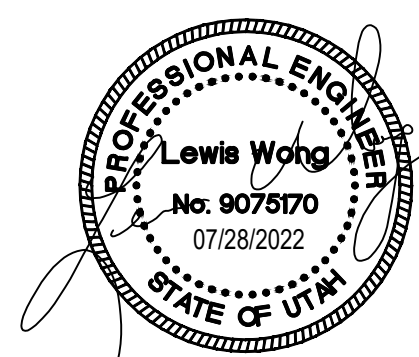
B

A

ELECTRICAL SPECIFICATIONS	
<p>PART 1 - GENERAL</p> <p>A. DESCRIPTION</p> <ol style="list-style-type: none"> FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND TRANSPORTATION AS REQUIRED TO PROPERLY INSTALL A COMPLETE AND OPERABLE ELECTRICAL SYSTEM. <p>B. RULES AND REGULATIONS</p> <ol style="list-style-type: none"> ALL WORK AND MATERIALS SHALL BE INSTALLED AS SHOWN AND HEREIN SPECIFIED. 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): <ol style="list-style-type: none"> NFPA (NATIONAL FIRE PROTECTION ASSOCIATION), PUBLICATION NUMBER 70, "NATIONAL ELECTRICAL CODE"; PUB. NO. 72E, "AUTOMATIC FIRE DETECTORS". UL (UNDERWRITERS LABORATORIES, INC.). NEMA (NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION). UBC (UNIFORM BUILDING CODE) AND STANDARD BUILDING CODE. IBC (INTERNATIONAL BUILDING CODE) IFC (INTERNATIONAL FIRE CODE) IECC (INTERNATIONAL ENERGY CONSERVATION CODE) IEC (INTERNATIONAL ELECTRICAL CODE) STATE AND LOCAL BUILDING AUTHORITY AND CODES NO REQUIREMENT TO THESE DRAWINGS AND SPECIFICATIONS SHALL BE CONSTRUCTED TO VOID ANY OF THE PROVISIONS OF THE ABOVE SPECIFICATIONS AND STANDARDS. <p>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.</p> <ol style="list-style-type: none"> EC SHALL INCLUDE ALL UTILITY COMPANY CHARGES IN THE BASE BID. <p>D. WORKMANSHIP AND MATERIALS</p> <ol style="list-style-type: none"> 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. 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 ITS KIND SHALL BE THE STANDARD PRODUCT OF A SINGLE MANUFACTURER. 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. ALL MANUFACTURED MATERIALS SHALL BE CLEARLY MARKED OR STAMPED WITH THE MANUFACTURER'S NAME AND RATING. REFERENCE TO STANDARDS ARE INTENDED TO BE THE LATEST REVISION OF THE STANDARD SPECIFIED, OR THAT ACCEPTED BY THE AUTHORITY HAVING JURISDICTION. <p>E. MANUFACTURER'S RECOMMENDATIONS</p> <ol style="list-style-type: none"> 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. <p>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.</p> <p>G. DEFINITIONS</p> <ol style="list-style-type: none"> "PROVIDE" - MEANS FURNISH, INSTALL, AND CONNECT, UNLESS OTHERWISE INDICATED. "FURNISH" - MEANS PURCHASE NEW AND DELIVER IN OPERATING ORDER TO PROJECT SITE. "INSTALL" - MEANS TO PHYSICALLY INSTALL THE ITEMS IN-PLACE. "CONNECT" - MEANS MAKE FINAL ELECTRICAL CONNECTIONS FOR A COMPLETE OPERATING PIECE OF EQUIPMENT. THIS INCLUDES PROVIDING CONDUIT, WIRE, TERMINATIONS, ETC. AS APPLICABLE. "OR EQUIVALENT" - MEANS TO PROVIDE EQUIVALENT EQUIPMENT. SUCH EQUIPMENT MUST BE APPROVED BY THE ENGINEER PRIOR TO BIDDING. <p>H. SUBMITTALS</p> <ol style="list-style-type: none"> 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: CATALOG CUTS <ol style="list-style-type: none"> CIRCUIT BREAKERS (EACH SIZE AND TYPE) SAFETY SWITCHES MOTOR STARTERS THERMAL SWITCHES LIGHT FIXTURES <p>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.</p> <p>PART 2 - MATERIALS</p> <p>A. GENERAL</p> <ol style="list-style-type: none"> 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. <p>B. RACEWAY</p> <ol style="list-style-type: none"> ELECTRICAL METALLIC TUBING (EMT) SHALL BE USED IN INTERIOR DRY LOCATIONS. GALVANIZED FLEXIBLE STEEL (FMC) OR LIQUID TIGHT STEEL (LFMC) CONDUIT SHALL BE USED FOR 	<p>CONNECTIONS TO MECHANICAL EQUIPMENT, LUMINAIRES AND TRANSFORMERS AND AS INDICATED. LIQUID TIGHT CONDUIT SHALL BE USED IN EXTERIOR OR DAMP LOCATIONS.</p> <ol style="list-style-type: none"> 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. 3/4" CONDUIT SHALL BE THE MINIMUM SIZE CONDUIT. OUTDOOR AND WET OR DAMP LOCATIONS: PROVIDE RIGID STEEL CONDUIT. <p>C. FITTINGS</p> <ol style="list-style-type: none"> ALL FITTINGS SHALL BE STEEL/MALLEABLE IRON WITH INSULATING BUSHINGS. <p>D. OUTLET AND JUNCTION BOXES</p> <ol style="list-style-type: none"> 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. BOXES SHALL BE EQUIPPED WITH PLASTER RINGS, EXTENSION RINGS, AND FIXTURE STUDS AS REQUIRED. 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. PROVIDE FLUSH MOUNTING OUTLET BOX IN FINISHED AREAS. 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. ALL BOXES IN FINISHED SPACES SHALL BE PROVIDED WITH MUD RINGS AS REQUIRED FOR THE DEVICE AND WALL MATERIAL. OUTDOOR AND WET OR DAMP LOCATIONS: PROVIDE CAST METAL OR PVC OUTLET, JUNCTION, AND PULL BOXES. <p>E. CONDUCTORS</p> <ol style="list-style-type: none"> 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 #6 AWG AND LARGER SHALL BE STRANDED. 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. <p>F. WIRING CONNECTIONS</p> <ol style="list-style-type: none"> MAKE ALL ELECTRICAL CONNECTIONS. MAKE CONNECTION TO DEVICES USING "PIG-TAILS". DO NOT USE A DEVICE AS A CONNECTION OR A SPLICE UNIT. DO NOT PLACE STRANDED CONDUCTORS DIRECTLY UNDER SCREWS. INSTALL CRIMP-ON, INSULATED, FORK TERMINALS FOR CONDUCTOR TERMINATIONS, OR INSTALL SOLID CONDUCTORS. <p>G. NAMEPLATES</p> <ol style="list-style-type: none"> 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. <p>J. FRACTIONAL HORSEPOWER MANUAL STARTER</p> <ol style="list-style-type: none"> PROVIDE FRACTIONAL HORSEPOWER MANUAL STARTER WITH THE FOLLOWING FEATURES. <ol style="list-style-type: none"> MELTING ALLOY TYPE THERMAL OVERLOAD RELAY RED NEON PILOT LIGHT THERMAL ELEMENT SIZED FOR MOTOR LOAD PROVIDE A NAMEPLATE ON EACH COMPONENT OF MOTOR CONTROL EQUIPMENT AS SPECIFIED IN "NAMEPLATES". <p>K. SAFETY SWITCHES</p> <ol style="list-style-type: none"> 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. 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 800 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. 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). 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. 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. PROVIDE A NAMEPLATE ON EACH DISCONNECT SWITCH AS SPECIFIED IN "NAMEPLATES". <p>L. FUSES</p> <ol style="list-style-type: none"> 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. 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. 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. <p>PART 3 - EXECUTION</p> <p>A. GENERAL</p> <ol style="list-style-type: none"> ALL MATERIALS SHALL BE INSTALLED IN A PROFESSIONAL MANNER INDICATIVE OF THE TRADE. ALL PENETRATIONS OF THE OUTSIDE WALLS OR ROOF SHALL BE SEALED WITH APPROPRIATE SEALANT OR CAULK FOR THE PARTICULAR SURFACE INVOLVED. PROVIDE CLEAR, TYPED, P-TOUCH LABEL FOR ALL RECEPTACLES COVERPLATES IDENTIFYING THE CIRCUIT NUMBER THAT THE RECEPTACLE IS CIRCUITED TO. PROVIDE UPDATED TYPED PANEL SCHEDULE INDEX FOR ALL PANELS WHERE CIRCUITS HAVE BEEN MODIFIED OR CHANGED.



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• Van Boerum & Frank Assoc., 2021

ALICE C. HARRIS INTERMEDIATE SCHOOL COOLING UPGRADE
 515 NORTH HUSKY WAY (800 WEST), TREMONTON, UTAH 84337

REVISIONS

VBFA PROJECT #: 21493
CHECKED BY: KC
DRAWN BY: AC
CURRENT ISSUE DATE: 07/28/2022

SHEET CONTENTS

ELECTRICAL SPECIFICATIONS

NAME: LSW2		VOLTAGE: 208 / 120		MOUNTING: FLUSH		MAINS: 225 AMPS		DIMS: EX " W EX " D EX " H		SPECIAL EQUIPMENT: X GROUND BUS X SUB-FEED BREAKER X SUB-FEED LUGS X NEMA 3R SURGE PROTECTOR			
TYPE: NQOD		PH 3 WIRES 4		FEED: BOTTOM		42 SPACES							
ELEC. ROOM LOCATION		AIC 10K AMPS		VA		PHASE VA		VA WIRE BRKR LOAD SIZE/AMP/P		CODE			
CKT #	CIRCUIT DESCRIPTION	CODE	BRKR WIRE P	VA AMP SIZE LOAD	A	B	C	VA WIRE BRKR LOAD SIZE/AMP/P	CODE	CIRCUIT DESCRIPTION	CKT #		
1	EF-6, CUH-1	EX	1	20				25	3	EX FC-1	2		
3	EF-7	EX	1	20			0				4		
5	EF-8, 22	EX	1	20			0				6		
7	UH-12, 3	EX	1	20			0			EX FC-2	8		
9	EF-8	EX	1	20			0				10		
11	WS-1 CONTROL	EX	1	20			0				12		
13	SPARE	EX	1	20			0			EX RP-1	14		
15	SPARE	EX	1	20			1176	1176	20	1	CFS-2	16	
17	A1C PANEL	EX	1	20			180	180	20	1	EXTERIOR RECP	18	
19	SPARE	EX	1	20			500	500	20	1	EQUIP HEATER & CTRLS	20	
21	SPARE	EX	1	20			0			20	1	EX SPARE	22
23	SPRINKLER CLOCK	EX	1	20			0			20	1	EX SPARE	24
25	SPARE	EX	1	20			0			20	1	EX SPARE	26
27	SPARE	EX	1	20			0			20	1	EX SPARE	28
29	SPARE	EX	1	20			0			20	1	EX SPARE	30
31	SPACE											SPACE	32
33	SPACE											SPACE	34
35	SPACE											SPACE	36
37	SPACE											SPACE	38
39	SPACE											SPACE	40
41	SPACE											SPACE	42

DIVERSITY FACTORS (DF): CONNECTED VA 500 1176 180 1.9 KVA CODES: 1 = SEE DRAWINGS FOR CONDUIT & CONDUCTOR SIZE
 C-CONTINUOUS M-MOTOR CONNECTED AMPS 4 10 2 5,1517 A 1 = SEE DRAWINGS FOR CONDUIT & CONDUCTOR SIZE
 N-NON-CONTINUOUS L-LARGEST MOTOR DIVERSIFIED VA 2 KVA 2 = SHUNT-TRIP BREAKER 5 = GFCI BREAKER
 R-RECEPTACLES O-OTHER DIVERSIFIED AMPS 5,1517 A 3 = GFCI BREAKER
 K-KITCHEN EQUIPMENT 4 = PROVIDE LOCK OFF DEVICE

NOTES:
 EC TO USE EXISTING SPARE BREAKERS WHERE POSSIBLE
 ALL NEW BREAKERS ARE TO MATCH EXISTING PANELBOARD AIC RATINGS

NAME: HNE		VOLTAGE: 480 / 277		MOUNTING: SURFACE		MAINS: 225 AMPS		DIMS: EX " W EX " D EX " H		SPECIAL EQUIPMENT: X GROUND BUS X SUB-FEED BREAKER X SUB-FEED LUGS X NEMA 3R SURGE PROTECTOR			
TYPE: EXISTING		PH 3 WIRES 4		FEED: BOTTOM		54 SPACES							
A HALL JAN CLOS LOCATION		AIC EX AMPS		VA		PHASE VA		VA WIRE BRKR LOAD SIZE/AMP/P		CODE			
CKT #	CIRCUIT DESCRIPTION	CODE	BRKR WIRE P	VA AMP SIZE LOAD	A	B	C	VA WIRE BRKR LOAD SIZE/AMP/P	CODE	CIRCUIT DESCRIPTION	CKT #		
1	LTS SCIENCE A17.16 RM	EX	1	20			0	20	1	EX HALL LTS S E	2		
3	LTS A27.24 RM 5 & 6	EX	1	20			0	20	1	EX HALL LTS N E	4		
5	LTS A31.28 RM 7 & 8	EX	1	20			0	20	1	EX HALL LTS N W	6		
7	LTS RESTROOMS RM13	EX	1	20			0	20	1	EX LTS COMMS CNTR	8		
9	LTS A26.25 RM 11 & 12	EX	1	20			0	20	1	EX HALL LTS S W	10		
11	LTS A30.29 RM 9 & 10	EX	1	20			0	20	1	EX LIGHTING	12		
13	LTS COMP LAB A4 RM	EX	1	20			0	20	1	EX LIGHTING	14		
15	LTS SCIENCE A3.2 RM	EX	1	20			0	20	1	EX SPARE	16		
17	LTS LIBRARY	EX	1	20			0	20	1	EX SPARE	18		
19	LTS LIBRARY	EX	1	20			0	20	1	EX SPARE	20		
21	LIGHTING	EX	1	20			0	20	1	EX SPARE	22		
23	LIGHTING	EX	1	20			0	20	1	EX SPARE	24		
25	LIGHTING	EX	1	20			0	60	3	EX SPARE	26		
27	LIGHTING (EM)	EX	1	20			0				28		
29	LTS (OUTDOOR) PARKIN	EX	1	20			0				30		
31	LTS COURTYARD POLES	EX	1	20			582	582	12	20	3	P-5	32
33	SECURITY LIGHTS EAST	EX	1	20			582	582					34
35	SECURITY LIGHTS N.W.	EX	1	20			582	582					36
37	AH-1 AIR HANDLER	EX	3	60			0					SPACE	38
39							0					SPACE	40
41							0					SPACE	42
43	SPACE						0					SPACE	44
45	SPACE						0					SPACE	46
47	SPACE						0					SPACE	48
49	SPACE						0					SPACE	50
51	SPACE						0					SPACE	52
53	SPACE						0					SPACE	54

DIVERSITY FACTORS (DF): CONNECTED VA 582 582 582 1.7 KVA CODES: 1 = SEE DRAWINGS FOR CONDUIT & CONDUCTOR SIZE
 C-CONTINUOUS M-MOTOR CONNECTED AMPS 2 2 2 2,099 A 1 = SEE DRAWINGS FOR CONDUIT & CONDUCTOR SIZE
 N-NON-CONTINUOUS L-LARGEST MOTOR DIVERSIFIED VA 0 KVA 2 = SHUNT-TRIP BREAKER 5 = GFCI BREAKER
 R-RECEPTACLES O-OTHER DIVERSIFIED AMPS 0 A 3 = GFCI BREAKER
 K-KITCHEN EQUIPMENT 4 = PROVIDE LOCK OFF DEVICE

NOTES:
 EC TO USE EXISTING SPARE BREAKERS WHERE POSSIBLE
 ALL NEW BREAKERS ARE TO MATCH EXISTING PANELBOARD AIC RATINGS

NAME: SM1		VOLTAGE: 480 / 277		MOUNTING: SURFACE		MAINS: 225 AMPS		DIMS: EX " W EX " D EX " H		SPECIAL EQUIPMENT: X GROUND BUS X SUB-FEED BREAKER X SUB-FEED LUGS X NEMA 3R SURGE PROTECTOR				
TYPE: EXISTING		PH 3 WIRES 4		FEED: BOTTOM		30 SPACES								
MEZZANINE D14 LOCATION		AIC EX AMPS		VA		PHASE VA		VA WIRE BRKR LOAD SIZE/AMP/P		CODE				
CKT #	CIRCUIT DESCRIPTION	CODE	BRKR WIRE P	VA AMP SIZE LOAD	A	B	C	VA WIRE BRKR LOAD SIZE/AMP/P	CODE	CIRCUIT DESCRIPTION	CKT #			
1	SPACE						0	20	3	EX MAU-1A	2			
3	SPACE						0				4			
5	SPACE						0				6			
7	AH-4	EX	3	20			0	20	3	EX EF-17	8			
9							0				10			
11							0				12			
13	AH-5	EX	3	40			0	20	3	EX EF-18	14			
15							0				16			
17							0				18			
19	AH-3 A	EX	3	60			0	20	3	EX AH-3B	20			
21							0				22			
23							0				24			
M 25	P-8		3	20	12	582	886	305	12	20	3	P-7	26	
M 27							582	305						28
M 29							582	305						30

DIVERSITY FACTORS (DF): CONNECTED VA 886 886 886 2.7 KVA CODES: 1 = SEE DRAWINGS FOR CONDUIT & CONDUCTOR SIZE
 C-CONTINUOUS M-MOTOR CONNECTED AMPS 3 3 3 3,1965 A 1 = SEE DRAWINGS FOR CONDUIT & CONDUCTOR SIZE
 N-NON-CONTINUOUS L-LARGEST MOTOR DIVERSIFIED VA 3 KVA 2 = SHUNT-TRIP BREAKER 5 = GFCI BREAKER
 R-RECEPTACLES O-OTHER DIVERSIFIED AMPS 3,1965 A 3 = GFCI BREAKER
 K-KITCHEN EQUIPMENT 4 = PROVIDE LOCK OFF DEVICE

NOTES:
 EC TO USE EXISTING SPARE BREAKERS WHERE POSSIBLE
 ALL NEW BREAKERS ARE TO MATCH EXISTING PANELBOARD AIC RATINGS

EQUIPMENT SCHEDULE																	
TYPE	DESCRIPTION	ELECTRICAL						OVER CURRENT PROTECTION				REMARKS					
		VOLT	PHASE	LOAD	FLA	SETS	QTY	SIZE	GND	COND	OC PD		DISCONNECT	FUSE	STR		
CH-1	CHILLER	480	3	866.00 MCA	692.8	3	3	400	20	2 1/2	1000	C1	-	-	-	-	13 B
GF-1	GLYCOL FEED SYSTEM	120	1	0.10 FLA	0.7	1	2	12	3/4	20	20	C1	-	-	-	-	12 A
P-3	PUMP	480	3	40.00 HP	52.0	1	3	4	8	1	70	C1	-	-	-	-	11 A
P-4	PUMP	480	3	40.00 HP	52.0	1	3	4	8	1	70	C1	-	-	-	-	11 A
P-5	PUMP	480	3	1.00 HP	2.1	1	3	12	12	3/4	20	C1	30	3	3	-	1 A
P-6	PUMP	480	3	1.50 HP	3.0	1	3	12	12	3/4	20	C1	30	3	6	-	1 A
P-7	PUMP	480	3	0.50 HP	1.1	1	3	12	12	3/4	20	C1	30	3	3	-	1 A
P-8	PUMP	480	3	1.00 HP	2.1	1	3	12	12	3/4	20	C1	30	3	3	-	1 A

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 MANUFACTURER)
 W = WATTS MCA = MINIMUM CIRCUIT AMPACITY PL = POLE

REMARKS:
 1. NEMA 1 FUSED DISCONNECT SWITCH A. FURNISHED, INSTALLED AND CONNECTED UNDER DIVISION 26.
 2. NEMA 1 NON-FUSED DISCONNECT SWITCH B. FURNISHED AND INSTALLED UNDER ANOTHER DIVISION REQUIRING CONNECTION UNDER DIV 26.
 3. BREAKER IN ENCLOSURE C. FURNISHED UNDER ANOTHER DIVISION BUT INSTALLED AND CONNECTED UNDER DIV 26.
 4. MANUAL STARTER WITH THERMAL OVERLOAD D. FURNISHED, INSTALLED AND CONNECTED UNDER ANOTHER DIVISION.
 5. MANUAL MOTOR CONTROLLER W/OUT THERMAL OVERLOAD E. FURNISHED AND INSTALLED UNDER DIV 26 REQUIRING CONNECTION UNDER ANOTHER DIVISION.
 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

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

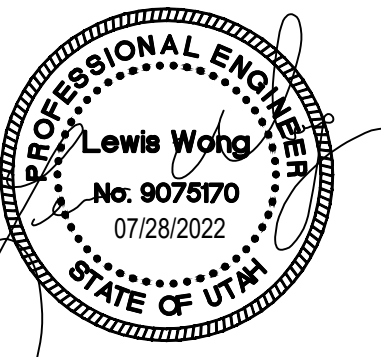
GENERAL NOTE: THE EC SHALL COORDINATE ALL REQUIREMENTS (IE. MOCP SIZE, UNIT THERMAL PROTECTION, ETC) WITH APPROVED MECHANICAL SHOP DRAWINGS/SUBMITTALS AND BRING UP ANY DISCREPANCIES WITH THE ELECTRICAL ENGINEER OF RECORD IN WRITING PRIOR TO ROUGH-IN.

NAME: HNW		VOLTAGE: 480 / 277		MOUNTING: SURFACE		MAINS: 225 AMPS		DIMS: EX " W EX " D EX " H		SPECIAL EQUIPMENT: X GROUND BUS X SUB-FEED BREAKER X SUB-FEED LUGS X NEMA 3R SURGE PROTECTOR					
TYPE: EXISTING		PH 3 WIRES 4		FEED: BOTTOM		42 SPACES									
B HALL JAN CLOS LOCATION		AIC EX AMPS		VA		PHASE VA		VA WIRE BRKR LOAD SIZE/AMP/P		CODE					
CKT #	CIRCUIT DESCRIPTION	CODE	BRKR WIRE P	VA AMP SIZE LOAD	A	B	C	VA WIRE BRKR LOAD SIZE/AMP/P	CODE	CIRCUIT DESCRIPTION	CKT #				
1	LTS ART B26 RM #26	EX	1	20			0	20	1	EX EM LIGHTS	2				
3	LTS B11.14 RM #24.25	EX	1	20			0	20	1	EX EM LIGHTS	4				
5	LTS B6.9 RM #22.23	EX	1	20			0	20	1	EX EM LIGHTS	6				
7	LTS RESTRIEVE #16	EX	1	20			0	20	1	EX SPARE	8				
9	LTS B12.13 RM #18.19	EX	1	20			0	20	1	EX SPARE	10				
11	LTS B7.88 RM#20.21	EX	1	20			0	20	1	EX SPARE	12				
13	LIGHTING RM #27	EX	1	20			0	20	1	EX SPARE	14				
15	LTS SPEC ED/B41 RM #	EX	1	20			0	20	1	EX SPARE	16				
17	LIGHTING	EX	1	20			0	20	1	EX SPARE	18				
19	SPARE	EX	3	30			831	831	12	20	3	P-6	20		
21							831	831					22		
23							831	831					24		
25							0					100	3	EX AH-2	26
27	SPACE						0								28
29	SPACE						0								30
31	SPACE						0								



VBFA
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• Van Boerum & Frank Assoc., 2021

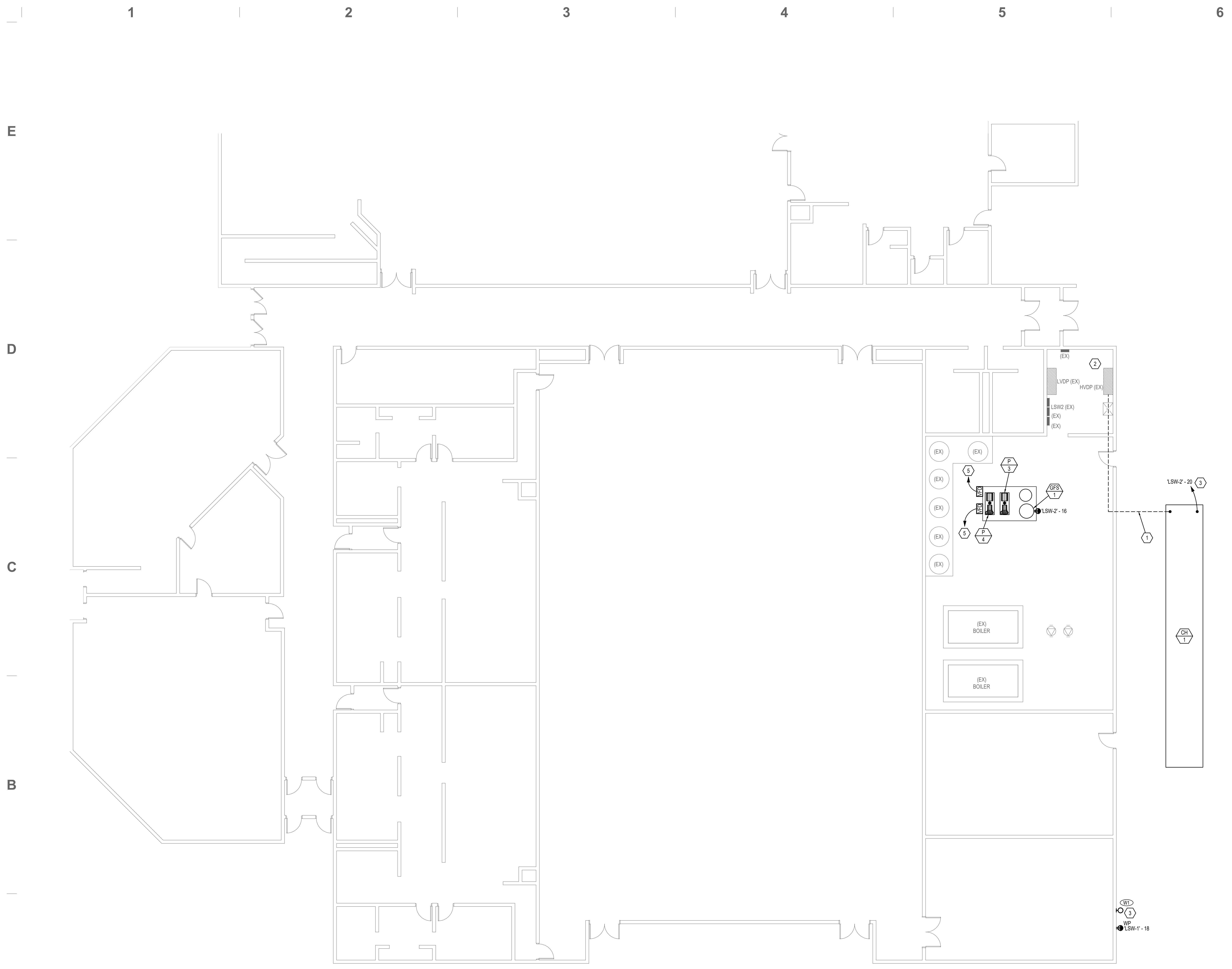
ALICE C. HARRIS INTERMEDIATE SCHOOL COOLING UPGRADE
5115 NORTH HUSKY WAY (800 WEST), TREMONTON, UTAH 84337

KEYED NOTES

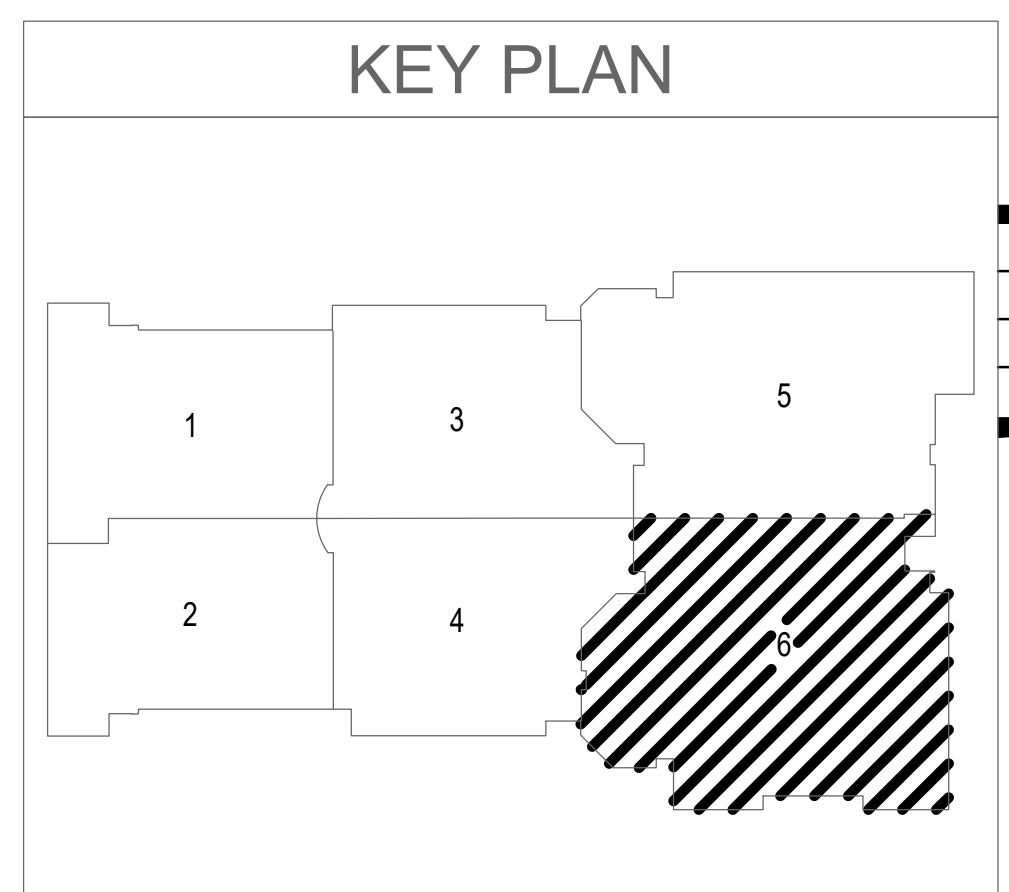
- APPROXIMATE CONDUIT ROUTING, REFER TO EQUIPMENT SCHEDULE FOR SIZING, TO BE CONNECTED TO A NEW 100A/3P CIRCUIT BREAKER WITHIN EXISTING MAIN DISTRIBUTION PANEL HVDP. REFER TO EQUIPMENT SCHEDULE FOR MORE DETAIL.
- PROVIDE (1) 1000A/3P & (2) 70A/3P CIRCUIT BREAKERS WITH AIC RATINGS THAT MATCH EXISTING BREAKERS/GEAR.
- INSTALL NEW FIXTURE AS SCHEDULED. MOUNT NEW FIXTURE AT SAME HEIGHT AS EXISTING BUILDING MOUNTED FIXTURES. CONNECT NEW FIXTURE TO CIRCUIT/CONTROLS FOR EXISTING BUILDING MOUNTED FIXTURES. PROVIDE (1) 3/4" C WITH (3) #12 AS REQUIRED. REFER TO LIGHT FIXTURE SCHEDULE FOR MORE DETAIL.
- APPROXIMATE CONDUIT ROUTING FOR NEW CHILLER "C-1". REFER TO EQUIPMENT SCHEDULE FOR CONDUIT AND CONDUCTOR SIZING.
- ROUTE CONDUIT AND CONDUCTORS, REFER TO EQUIPMENT SCHEDULE FOR SIZING, TO BE CONNECTED TO A NEW 70A/3P CIRCUIT BREAKER WITHIN EXISTING MAIN DISTRIBUTION PANEL HVDP. REFER TO EQUIPMENT SCHEDULE FOR MORE DETAIL. PROVIDE UNISTRUT SYSTEM NEEDED TO MOUNT VFD.

GENERAL NOTES

- EC SHALL COORDINATE WITH ALL OTHER TRADES DURING DEMOLITION AND CONSTRUCTION TO FACILITATE TIMELY WORK.
- ALL AREAS ARE TO BE KEPT CLEAN AND CLEAR OF DEBRIS AT ALL TIMES.
- CONTRACTOR SHALL PATCH AND REPAIR ALL WALLS, CEILING ETC. TO MATCH EXISTING CONDITIONS. PENETRATIONS SHALL BE SEALED WITH FIRE RATED CAULK.
- 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.
- 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.
- DEVICES/EQUIPMENT SHOWN IN GRAY ARE EXISTING TO REMAIN. PRESERVE AND PROTECT. MAINTAIN EXISTING CIRCUIT INTEGRITY.
- 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.
- PROVIDE UPDATED TYPED CIRCUIT DIRECTORY WITH UNIQUE CIRCUIT DESCRIPTIONS PER NEC 408.4 FOR PANELS AFFECTED BY THIS PROJECT.
- ALL CORE DRILLING IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.



1 AREA 6 - ELECTRICAL POWER PLAN
EP1.6 SCALE: 1/8"=1'-0"

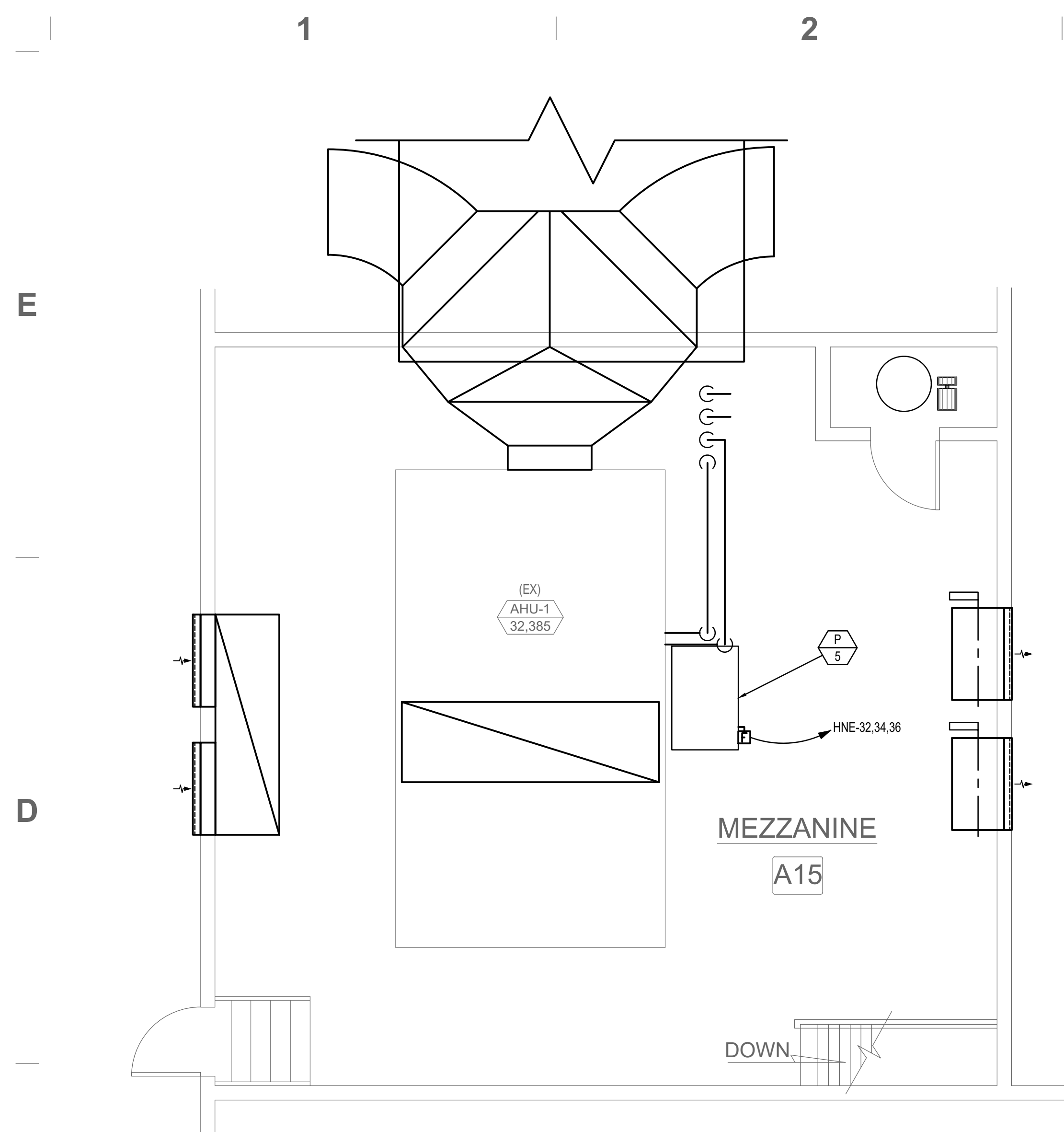


REVISIONS	

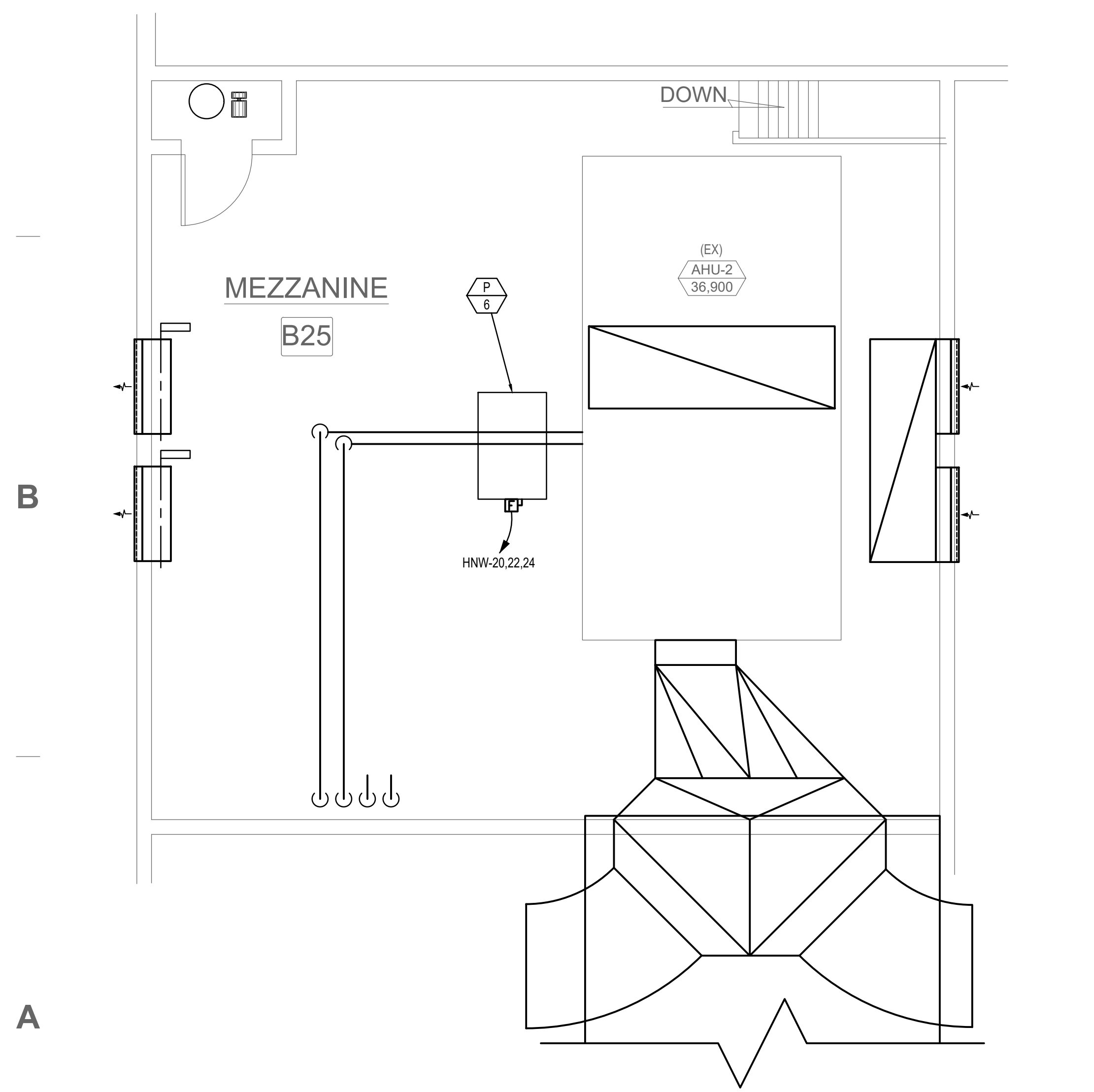
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CURRENT ISSUE DATE:	07.28.2022

AREA 6 - ELECTRICAL PLAN

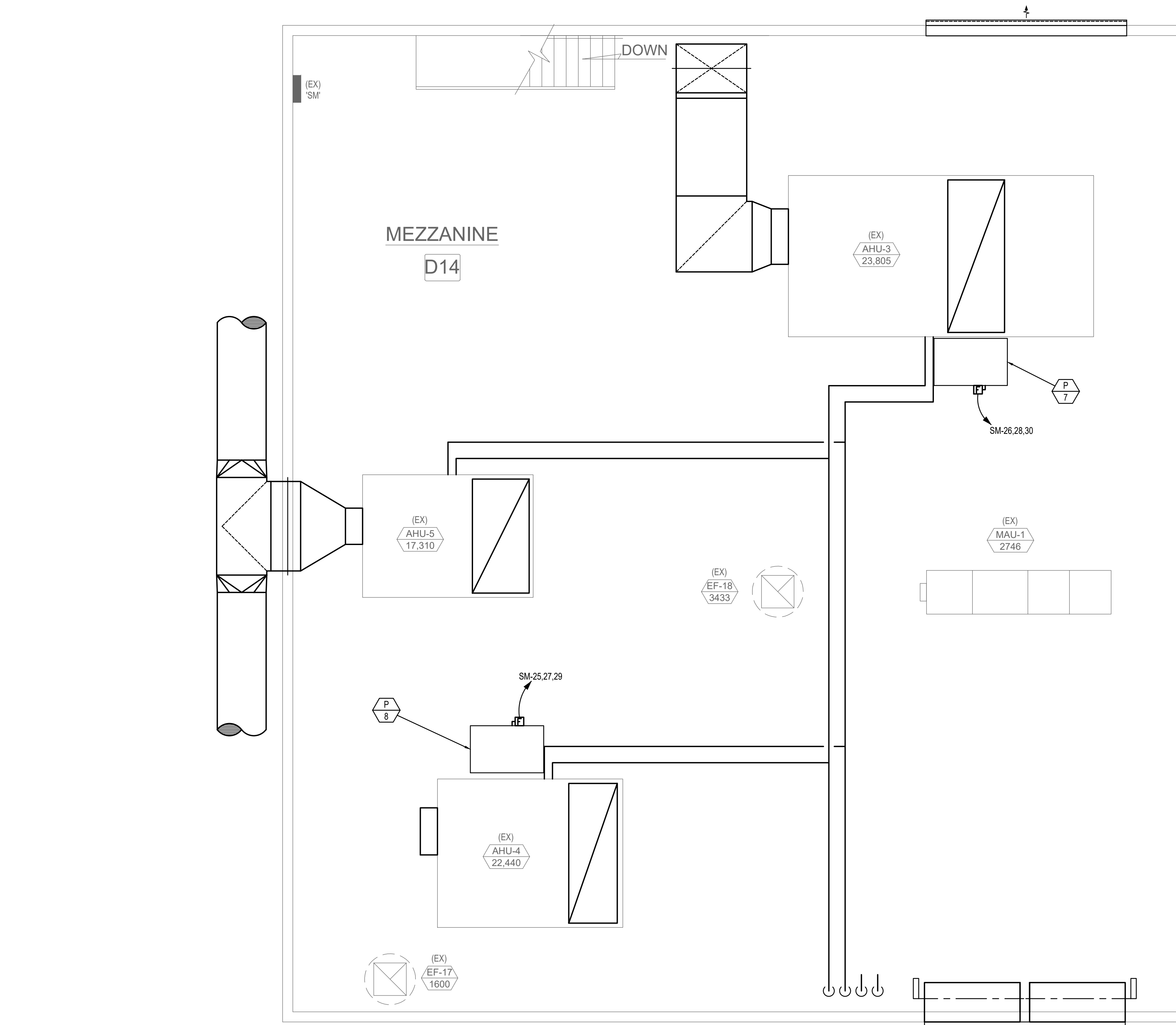
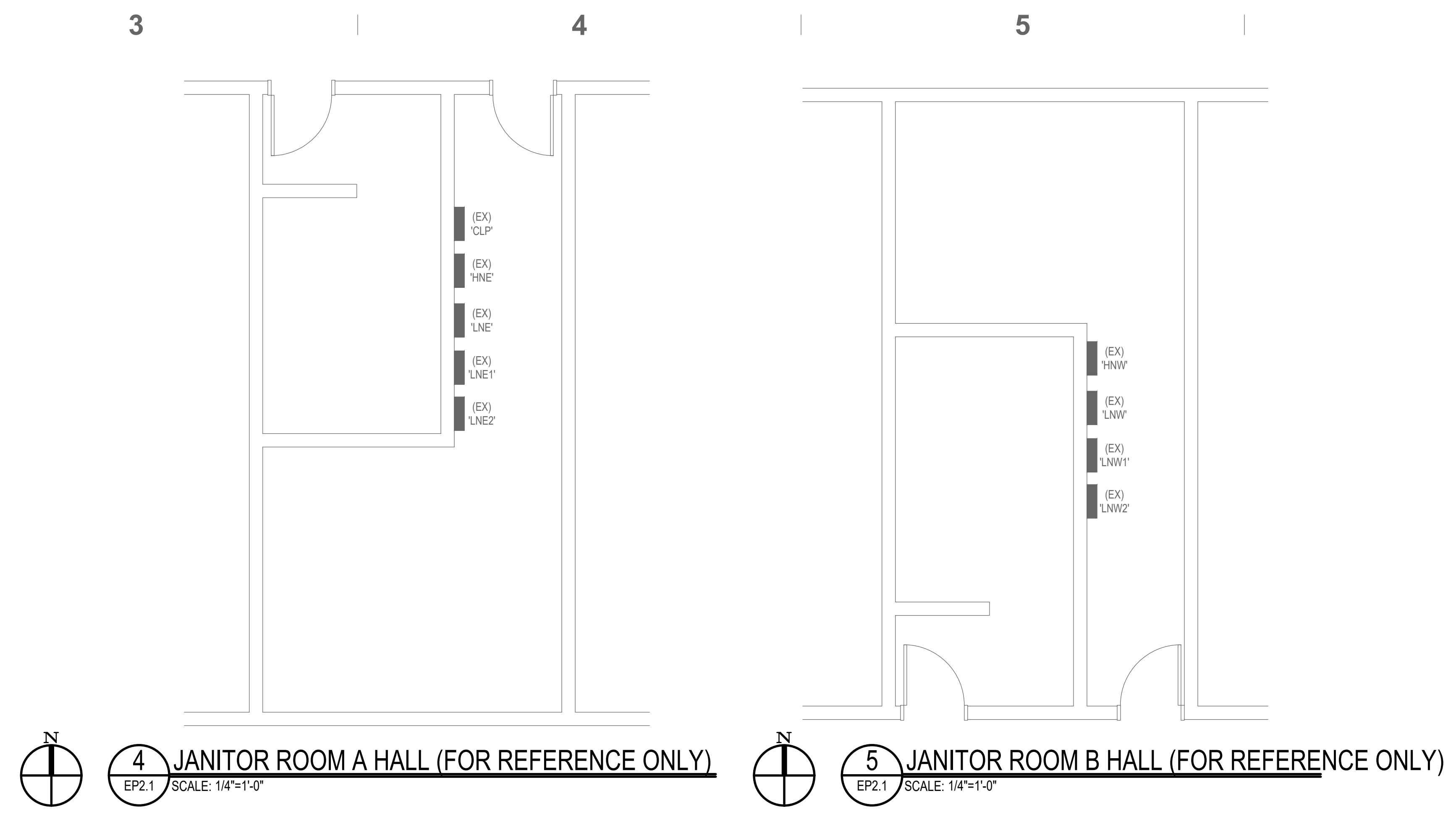
EP1.6



1 MEZZANINE A15 ELECTRICAL PLAN
EP2.1 SCALE: 1/4"=1'-0"



2 MEZZANINE B25 ELECTRICAL PLAN
EP2.1 SCALE: 1/4"=1'-0"



3 MEZZANINE D14 ELECTRICAL PLAN
EP2.1 SCALE: 1/4"=1'-0"

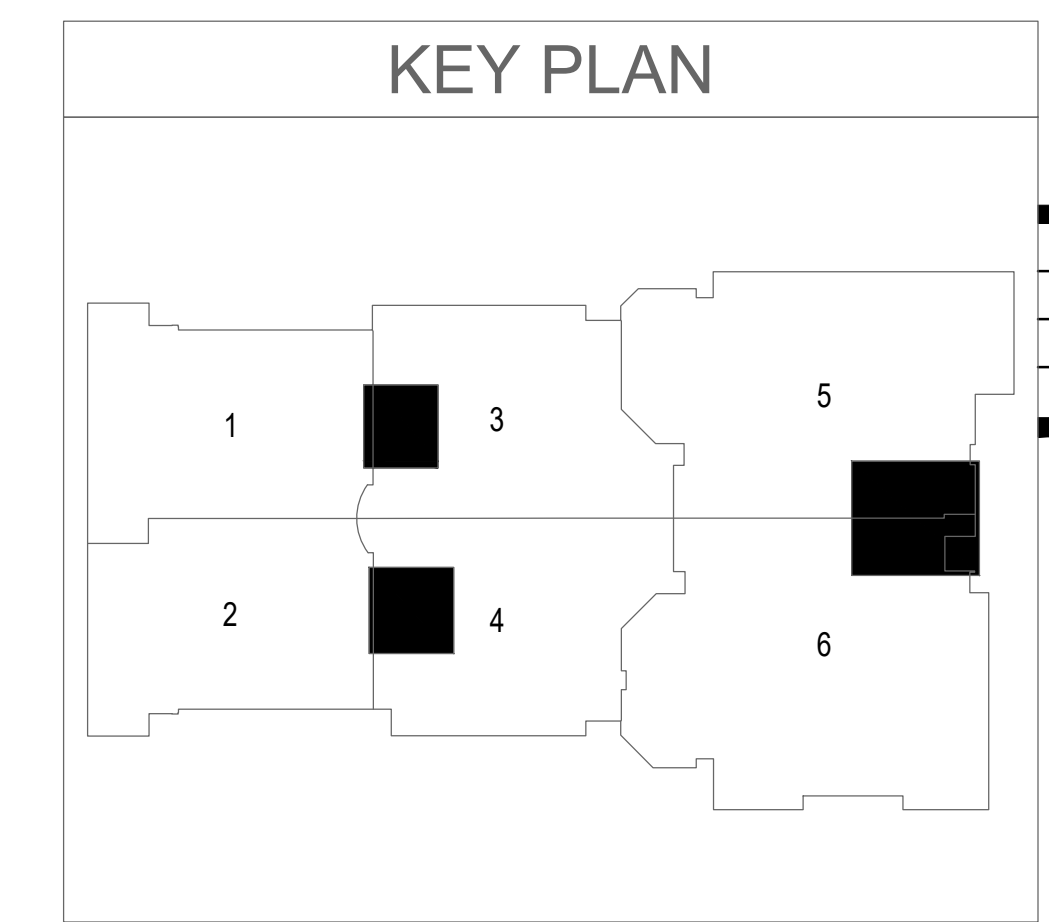
- ### GENERAL NOTES
- A. EC SHALL COORDINATE WITH ALL OTHER TRADES DURING DEMOLITION AND CONSTRUCTION TO FACILITATE TIMELY WORK.
 - B. ALL AREAS ARE TO BE KEPT CLEAN AND CLEAR OF DEBRIS AT ALL TIMES.
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 - E. EXISTING DEVICES SHOWN ON SHEETS ARE GATHERED 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 LOCATION 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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Original drawings remain the property of the Engineer and as such the Engineer retains total ownership and control. The design represented by these drawings are sold to the client for a one time use, unless otherwise agreed upon in writing by the Engineer.
• Van Boerum & Frank Assoc., 2021

ALICE C. HARRIS INTERMEDIATE SCHOOL COOLING UPGRADE
515 NORTH HUSKY WAY (800 WEST), TREMONTON, UTAH 84337



REVISIONS	

VBFA PROJECT #:	21493
CHECKED BY:	JJ
DRAWN BY:	DB
CURRENT ISSUE DATE:	10.13.2021

SHEET CONTENTS
ELECTRICAL MEZZANINE PLANS

EP2