ELECTRICAL LEGEND

	LIGHTING	POWER	POWER	SIGNAL	ABBREVIATIONS
€ • • • • • • • • • • • • •	CEILING LUMINAIRE: SURFACE, RECESSED WALL LUMINAIRE: SURFACE, RECESSED WALL WASHER: SURFACE, RECESSED LUMINAIRE: SURFACE, RECESSED LUMINAIRE: WALL MOUNTED LUMINAIRE: STRIP EXIT LIGHT: CEILING, WALLS (ARROWS AS SHOWN) DESIGNATES LIGHT ON EMERGENCY EMERGENCY BATTERY LIGHT WALL SWITCH: SINGLE POLE, 2 POLE WALL SWITCH: 3 WAY, 4 WAY WALL SWITCH: TIMER WALL SWITCH: TIMER WALL SWITCH: OCCUPANCY SENSOR SEE DETAILS FOR TYPE SENSOR: OCCUPANCY SENSOR, CEILING, WALL SEE DETAILS FOR TYPES	RECEPTACLE: DUPLEX CEILING RECESSED RECEPTACLE: DUPLEX SPECIAL PURPOSE OUTLET AS NOTED FLUSH IN FLOOR OUTLET: DUPLEX, TELECOMMUNICATIONS SURFACE OUTLET STRIP: DIMENSIONS AS SHOWN JUNCTION BOX FJ	CONDUIT HOMERUN TO PANELBOARD "HA" WITH CIRCUIT 3.5. CONDUIT HOMERUN TO LIGHTING CONTROL PANEL "LCP1" WITH RELAYS 24.26. SCHEDULE FOR HOMERUN TO PANELBOARDS DENOTES NEUTRAL DENOTES NEUTRAL DENOTES ISOLATE GREEN GROUND WIRE DENOTES GROUND CONNECTION PER LIGHTING PLANS: 1/2" CONDUIT WITH 2 #12 WIRES 1/2" CONDUIT WITH 4 #12 WIRES 1/2" CONDUIT WITH 4 #12 WIRES 1/2" CONDUIT WITH 5#12 WIRES WITH 3/4" CONDUIT WITH 6#12 WIRES WITH 3/4" CONDUIT WITH 5#12 WIRES DER POWER & EQUIPMENT PLANS: 3/4" CONDUIT WITH 5#12 WIRES, 1 #12 GREEN INSULATED GROUND WIRE DUPLEX RECEPTACLE OUTLET, 20 AMPS, 125 VOLTS, FLUSH WALL MOUNTED, + OR AS NOTED ON DRAWINGS. D DENOTES DEDICATED CIRCUIT T DENOTES TEMPER RESISTANT U DENOTES RECEPTACLE WITH (2) USB PORTS SW DENOTES SHOW WINDOW RECEPTACLE MS DENOTES SHOW FROM THE TO SHAPS, 125 VOLTS, FLUSH WALL MOUNTED, + 18" AFF OR AS NOTED ON DRAWINGS.	E MANUAL FIRE ALARM STATION SEE ① ② ② DETECTOR: IONIZATION, RATE OF RISE ③ ② DUCT DETECTOR, TYPE AS NOTED ☐ FIRE ALARM: HORN, HORN WITH VISUAL ☐ ☐ SI FIRE ALARM: VISUAL STROBE ONLY ☑ WALL OUTLET: TELECOMMUNICATIONS ☑ WALL OUTLET: TELEPHONE ONLY ☑ WALL OUTLET: TELEPHONE ONLY ☑ WALL OUTLET: TELEPHONE ONLY ② WALL OUTLET: TELEVISION ☐ ☑ WALL OUTLET: CCTV CAMERA ☐ ☐ WALL CLOCK (PROVIDE DUPLEX RECEPTACLE) ① PENDANT CLOCK (PROVIDE DUPLEX RECEPTACLE) ① THERMOSTAT	A AMPERE (AMP) ACT ABOVE COUNTER TOP ADA AMERICAN WITH DISABILITIES ACT AFF ABOVE FINISHED FLOOR ARCH ARCH ARCH ACHITECT CC CONDUIT CC CC CONDUIT CC CONDU
NL (E) (R) (X) (5)	DESIGNATES NIGHT LIGHT CIRCUIT EXISTING TO REMAIN EXISTING TO BE RELOCATED EXISTING TO BE REMOVED ELECTRICAL SHEET NOTE LABEL DESIGNATOR	S EC ENTOUCH CONTROLLER S H ENTOUCH HUMIDITY SENSOR PS PURGE SWITCH (SWITCH INSTALLED BY MECHANICAL) S CO2 CO2 SENSOR (SENSOR INSTALLED BY MECHANICAL)	DOUBLE DUPLEX RECEPTACLE OUTLET, 20 AMPS, 125 VOLTS, FLUSH WALL MOUNTED ON DRAWINGS. DENOTES DOUBLE DUPLEX OR DUPLEX RECEPTACLE, 20 AMPS, 125 VOLTS, FLUSH WALL MOUNTED, +18" AFF OR AS NOTED ON DRAWINGS. PROVIDE NLIGHT POW PACK, WITH CONTROL FROM ROOM OCCUPANCY SENSOR. DOUBLE DUPLEX WHAVE ONE (1) RECEPTACLE UNSWITCHED & ONE (1) RECEPTACLE CONTROLLED MOTION SENSOR.	USH NER WITH	NOTE: NOT ALL SYMBOLS SHOWN ON LEGEND APPEAR ON DRAWINGS.

PROJECT GENERAL NOTES

- 1. IT SHALL BE THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO VISIT THE SITE PRIOR TO BID AND FIELD VERIFY EXISTING CONDITIONS WHICH WILL AFFECT THE WORK SHOWN ON THE DRAWINGS AND IN THE SPECIFICATIONS.
- 2. PROVIDE PATCHING IN AREAS OF WORK NOT SHOWN ON ARCHITECTURAL FINISH SCHEDULES AND DRAWINGS, COORDINATE WITH ARCHITECTURAL DRAWINGS AND ELEVATIONS. PATCHING SHALL MATCH EXISTING, PROVIDE ALL LABOR AND MATERIAL AS REQUIRED.
- 3. VERIFY PHASING OF PROJECT WITH ARCHITECTURAL DRAWINGS AND SPECIFICATIONS. CONTRACTOR SHALL PROVIDE ADDITIONAL MATERIAL AND LABOR AS REQUIRED TO ENERGIZE AREAS OF PROJECT TO REMAIN IN OPERATION DURING CONSTRUCTION AND PROVIDE ALL TEMPORARY POWER AS REQUIRED.
- 4. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC, REFERENCE ARCHITECTURAL FLOOR PLANS, ELEVATIONS AND DETAILS FOR DEVICE LOCATIONS AND MOUNTING HEIGHTS, INCLUDING BUT NOT LIMITED TO LUMINAIRES, AND FIRE ALARM DEVICES. IT SHALL BE THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO COORDINATE WITH DRAWINGS, IF CONFLICTS ARISE CONTACT THE ARCHITECT AND/OR ENGINEER.
- REFERENCE ARCHITECTURAL SPECIFICATIONS AND DOOR SCHEDULES FOR ADDITIONAL ELECTRICAL CONNECTIONS REQUIRED. PROVIDE ALL MATERIAL AND LABOR AS REQUIRED FOR A COMPLETE AND OPERATIONAL INSTALLATION WHETHER SPECIFICALLY SHOWN ON THE ELECTRICAL DRAWINGS.
- 6. MOUNT ELECTRICAL DEVICES PER CURRENT ADA REQUIREMENTS, COORDINATE WITH CODE OFFICIALS HAVING JURISDICTION. HEIGHTS SHALL INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

- CONTROLS AND SWITCHES SHALL BE INSTALLED WITHIN THE MINIMUM AND MAXIMUM REACH RANGES SPECIFIED IN 2013 UBC SEC 11B-308.1.1. -ELECTRICAL RECEPTACLES SHALL BE INSTALLED WITHIN THE MINIMUM AND MAXIMUM REACH RANGES SPECIFIED IN 2013 UBC SEC 11B-308.1.2. - THERMOSTATS, SWITCHES AND RECEPTACLES INSTALLED IN AREAS EQUIPPED FOR THE DISABLED SHALL BE LOCATED AT NOT MORE THAN 48" MEASURED FROM THE TOP OF BOX TO FINISH FLOOR. THE BOTTOM OF THE BOX FOR THERMOSTATS, SWITCHES AND RECEPTACLES SHALL BE NO LOWER THAN 15" TO FINISH FLOOR, PER 2013 U.B.C. 11B-308.

- ELECTRICAL EQUIPMENT SHALL BE LISTED BY THE AUTHORITY HAVING JURISDICTION RECOGNIZED ELECTRICAL TESTING LABORATORY OR APPROVED BY THE DEPARTMENT. INSTALLATION WILL MEET CURRENT CEC INCLUDING ELECTRICAL CODE AMENDMENTS.
- 8. ELECTRICAL DEDICATED SPACES: NO PIPING, DUCTS, EQUIPMENT FOREIGN TO ELECTRICAL EQUIPMENT SHALL BE PERMITTED WITHIN THE DEDICATED SPACE ABOVE THE ELECTRICAL EQUIPMENT.

- 9. DUPLEX, DOUBLE DUPLEX AND GFCI RECEPTACLES PER SECTION 26 27 26 WILL BE 20 AMP ONLY.
- 10. EQUIPMENT WIRING TERMINAL WILL BE LISTED FOR 75 DEGREE C WIRING
- 11. CONDUIT WILL BE EMT, MC CABLE MAY BE USED AS INSTALLED PER SECTION 26 05 33.12 - METAL CLAD CABLE.
- 12. CONDUCTORS WILL BE COPPER TYPE THHN/THWN.
- 13. LIGHTING AND MECHANICAL FIXTURES MUST BE SUPPORTED BY ADDITIONAL INDEPENDENT NO. 12 GAGE WIRES ATTACHED TO EACH CORNER OF FIXTURE.
- 14. SEE MECHANICAL PLANS FOR ADDITIONAL ELECTRICAL CONNECTIONS.
- 15. CONTRACTOR SHALL FURNISH AND INSTALL A GROUND WIRE IN ALL PVC CONDUIT. GROUND WIRES MAY NOT BE SHOWN, BUT SHALL BE INCLUDED IN THE ELECTRICAL CONTRACTOR'S BASE BID AND SIZED PER CURRENT CODE.
- 16. CONTRACTOR TO TAG/IDENTIFY ALL CONDUCTORS FOR EQUIPMENT INSTALLATION.
- 17. FITTINGS: GALVANIZED STEEL TYPE ONLY, DIE CAST NOT PERMITTED.
- 18. SLEEVES: PROVIDE SLEEVES FOR ALL RACEWAYS AND/OR WIRING THROUGH ALL FIRE-RATED WALLS, CEILINGS AND CONCRETE STEEL FLOORS. SEAL SLEEVES, AFTER INSTALLING RACEWAYS, WITH APPROVED FIRE-RATING MATERIAL OF EQUAL RATING AS ORIGINAL FIRE-RATING.
- 19. ALL CONDUIT ONLY (C.O.) SHALL HAVE A PULL WIRE OR ROPE.
- 20. ALL CIRCUITS SHOWN ON THE ELECTRICAL PLANS MUST BE PROVIDED WITH A SEPARATE NEUTRAL FOR MULTI-BRANCH CIRCUIT REQUIREMENTS PER CURRENT
- 21. SEE ANDERSON POOL WORKS CONSTRUCTION PLANS FOR ADDITIONAL ELECTRICAL CONNECTIONS. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO PROVIDE ELECTRICAL CONNECTIONS AND BONDING AS REQUIRED INCLUDE ALL LABOR AND MATERIAL INCLUDING BUT NOT BE LIMITED TO JUNCTIONS BOXES, CONDUIT, WIRE, SUPPORT, TRENCHING AND BACKFILL

Α	AMPERE (AMP)	MCB	MAIN CIRCUIT BREAKER
ACT	ABOVE COUNTER TOP	MDP	MAIN DISTRIBUTION PANEL
ADA	AMERICAN WITH DISABILITIES ACT	MECH	MECHANICAL
AFF	ABOVE FINISHED FLOOR	MH	METAL HALIDE
ARCH	ARCHITECT	MLO	MAIN LUGS ONLY
С	CONDUIT	MV	MERCURY VAPOR
C/B	CIRCUIT BREAKER	NIC	NOT IN CONTRACT
CKT	CIRCUIT	PA	PUBLIC ADDRESS
CLG	CEILING	PE	PHOTOELECTRIC CELL
CU	COPPER	PNL	PANEL BOARD
CT	CURRENT TRANSFORMER	PVC	POLYVINYL CHLORIDE CONDUIT
EC	ELECTRICAL CONTRACTOR	PWR	POWER
EMERG	EMERGENCY	SDP	SUB-DISTRIBUTION PANEL
EMT	ELECTRIC METALLIC TUBING	STR	STARTER
EXT	EXTERIOR	SV	SOLENOID VALVE
FA	FIRE ALARM	SW	SWITCH
FLA	FULL LOAD AMPS	TBF	TO BOTTOM OF FIXTURE
FLUOR	FLUORESCENT	TD	TIME DELAY
FCIC FOIC	FURNISHED BY CONTRACTOR / INSTALLED BY CONTRACTOR FURNISHED BY OWNER / INSTALLED BY CONTRACTOR	TP	TAMPERPROOF
		TTB	TELEPHONE TERMINAL BOARD
FOIO	FURNISHED BY OWNER / INSTALLED BY OWNER	TTC	TELEPHONE TERMINAL CABINET
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	TV	TELEVISION
GFP	GROUND FAULT PROTECTION	TYP	TYPICAL
GRC	GALVANIZED RIGID CONDUIT GROUND	UG	UNDERGROUND
GRD		V	VOLTAGE
HLO HP	HANDLE LOCK OFFS HORSEPOWER	W	WATTS
nr HPS	HIGH PRESSURE SODIUM	WP	WEATHER PROOF
HZ	HERTZ	XFMR	TRANSFORMER
INC	INCANDESCENT		
JB	JUNCTION BOX		
_	KILOVOLT AMP		
KVA	LOW VOLTAGE		

ELECTRICA	L SEISMIC (CRITERIA
OCCUPANCY CLASSIFICATION	SEISMIC DESIGN CATAGORY	COMPONENT IMPORTANCE FACTOR (Ip)
IV	D	1.5

DEMOLITION SCOPE OF WORK

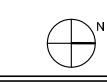
SCOPE: THE SCOPE OF WORK INCLUDES THE REMOVEAL OF THE EXISTING POOL EQUIPMENT BUILDING AND SITE . THE WORK WILL INCLUDE BUT NOT BE LIMITED TO DEMOLITION (SEE BELOW) OF THE LIGHTING, POWER, AND DISTRIBUTION EQUIPMENT SYSTEMS. THE DEMO OF ALL MECHANICAL EQUIPMENT AND EQUIPMENT PROVIDED BY OTHERS, ELECTRICAL CONTRACTOR WILL DISCONNECT ALL MECHANICAL EQUIPMENT.

DEMOLITION: ELECTRICAL DRAWINGS ARE DIAGRAMMATIC, DEMOLITION INFORMATION HAS BEEN SHOWN ON THE CONSTRUCTION DRAWINGS, IN THE SPECIFICATIONS OR INDICATED BELOW. ELECTRICAL DEVICES AND EQUIPMENT ARE FROM EXISTING RECORD DRAWINGS AND / OR SITE OBSERVATIONS. THEIR ACCURACY IS NOT GUARANTEED. IT WILL BE THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO VISIT THE SITE PRIOR TO BID AND VERIFY ALL EXISTING CONDITIONS PRIOR TO BID AND INCLUDE ALL LABOR AND MATERIAL REQUIRED FOR THE WORK INDICATED IN THE CONSTRUCTION SET

THE PURPOSE OF THE DEMOLITION INFORMATION IS TO OUTLINE A GENERAL DIRECTION OF WHAT NEEDS TO BE REMOVED TO ACCOMPLISH THE RENOVATION WORK. THE WORK IS DIAGRAMMATIC IN NATURE AND IS NOT INTENDED TO BE ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE TO VERIFY EXISTING CONDITIONS AT THE SITE AND INCLUDE ALL WORK EVIDENT BY SITE INSPECTION WHETHER OR NOT SHOWN ON THE DRAWINGS, TO ACHIEVE THE DESIRED RESULTS INDICATED ON THE DOCUMENTS FOR THE FINISHED SPACES.

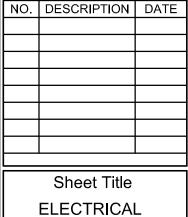


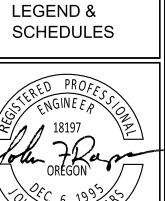
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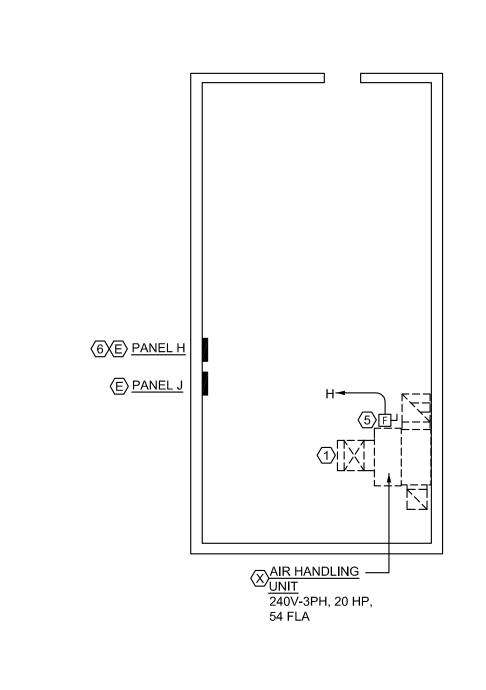




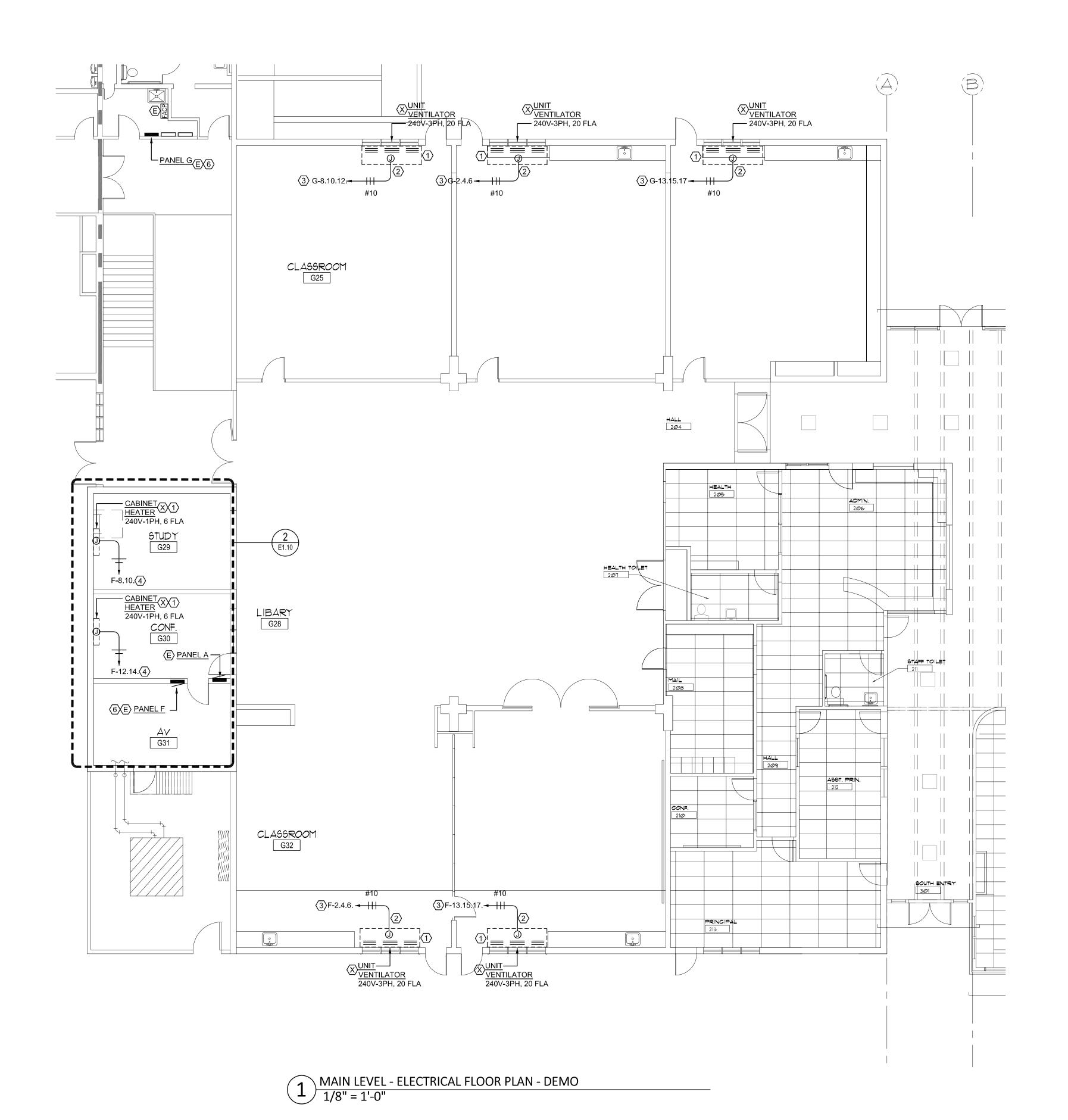
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E1.10







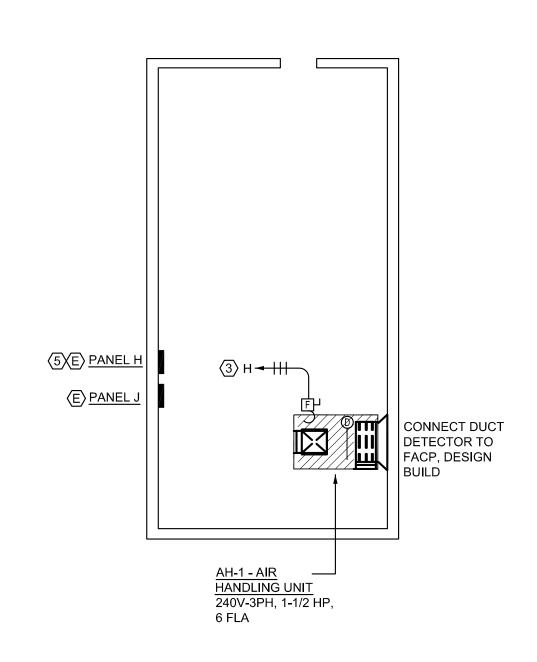
- SHEET NOTES:

 1. DISCONNECT EXISTING ELECTRICAL CONNECTION FROM EACH EXISTING MECHANICAL UNIT NOTED TO BE REMOVED
- 2. REMOVE ONE (1) CONDUCTOR FROM CONDUIT.
 3. REMOVE EXISTING 30A-3P CIRCUIT BREAKER FROM PANEL DESIGNATED. RETURN
- CIRCUIT BREAKERS TO OWNER

 REMOVE EXISTING 20A-2P CIRCUIT BREAKER FROM PANEL DESIGNATED. RETURN
- 5. REMOVE EXISTING FEEDER TO PANEL INCLUDING BUT NOT BE LIMITED TO CONDUCTORS, CONDUIT, DISCONNECT AND SUPPORTS. MARK EXISTING BREAKER AS
- REMOVE EXISTING 20A-2P CIRCUIT BREAKER FROM PANEL DESIGNATED. RETURN
 CIRCUIT BREAKERS TO OWNER

 PEMOVE EXISTING EFFICE TO PANEL INCLUDING BUT NOT BE LIMITED TO

6. UPDATE PANELS SCHEDULES WITH NEW INFORMATION, SCHEDULES WILL BE TYPED



2 ELECTRICAL MEZZANINE FLOOR PLAN 1/8" = 1'-0"

SERVICE: EXISTING VOLTAGE: 120/240 VOLT, 3 PHASE, 4 WIRE

ANEL F :	120/240 VOLT, 3 PHASE, 3 WIRE

DELETE	D LOADS:					
U	NIT VENT:	20.0	FLA	3 PH	8300	WATTS
U	NIT VENT:	20.0	FLA	3 PH	8300	WATTS
CABINET	THEATER:	6.0	FLA	1 PH	2490	WATTS
CABINET	HEATER:	6.0	FLA	1 PH	2490	WATTS
			D	ELETED CONNECTED:	21580	Watts
				AVERAGE AMPS :	52	Amps
NE	W LOADS:					
	UV-1	6.3	FLA	1 PH	1512	WATTS
	UV-2	6.3	FLA	1 PH	1512	WATTS
	FC-1	12.0	FLA	1 PH	2880	WATTS
	FC-2	12.0	FLA	1 PH	2880	WATTS
	HP-1:	12.1	MCA	1 PH	2904	WATTS
				CONNECTED:	11688	Watts
				AVERAGE AMPS :	28	Amps

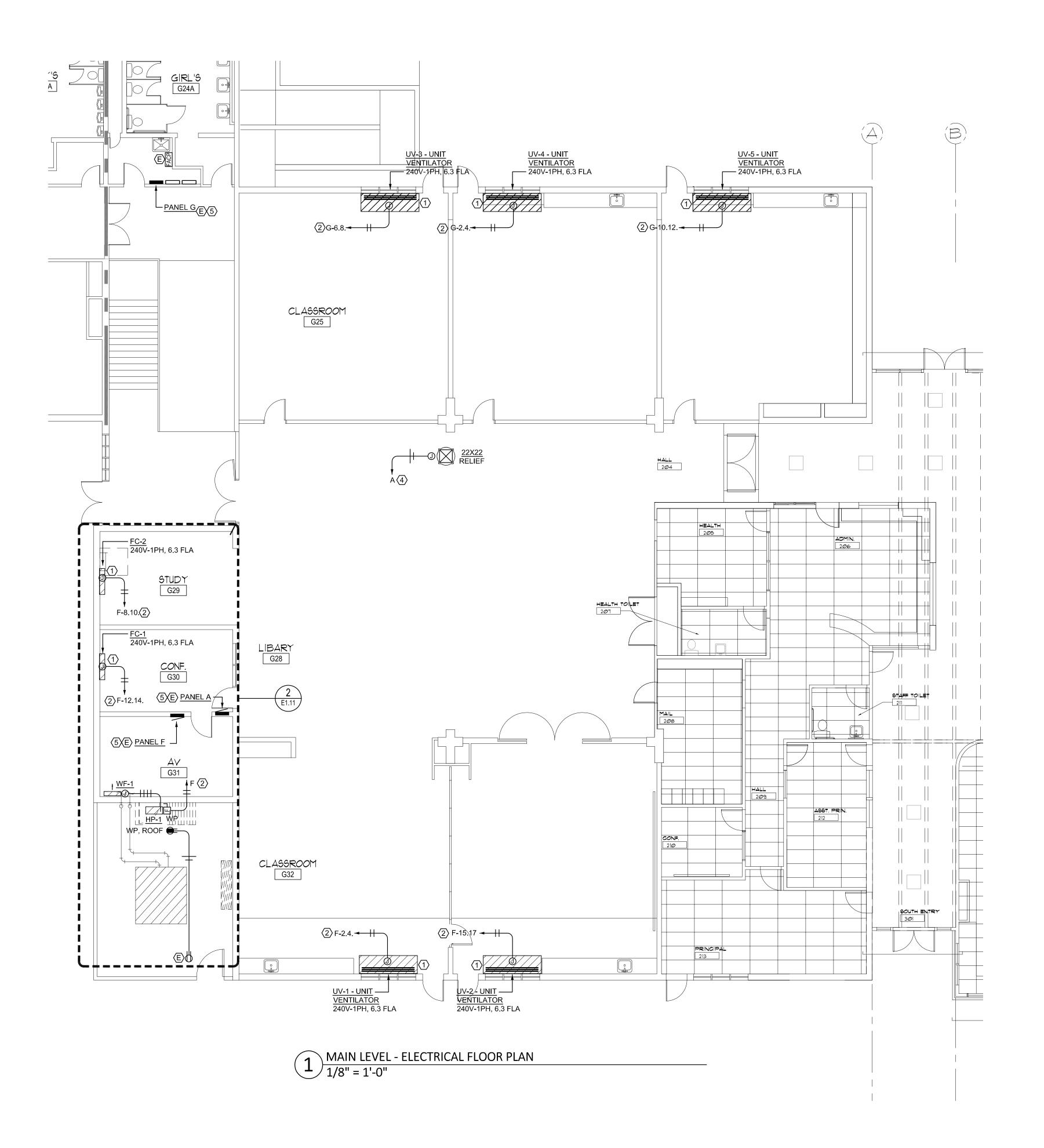
PANEL G :	120/240 VOLT, 3 PHASE, 3 WIR

DELETED LOADS:					
UNIT VENT:	20.0	FLA	3 PH	8300	WATTS
UNIT VENT:	20.0	FLA	3 PH	8300	WATTS
UNIT VENT :	20.0	FLA	3 PH	8300	WATTS
		DE	ELETED CONNECTED :	24900	Watts
			AVERAGE AMPS :	60	Amps
NEW LOADS:					
UV-3	6.3	FLA	1 PH	1512	WATTS
UV-4:	6.3	FLA	1 PH	1512	WATTS
UV-5 :	6.3	FLA	1 PH	1512	WATTS
			CONNECTED:	4536	Watts
			AVERAGE AMPS :	11	Amps

PANEL H: 120/240 VOLT, 3 PHASE, 3 WIRE

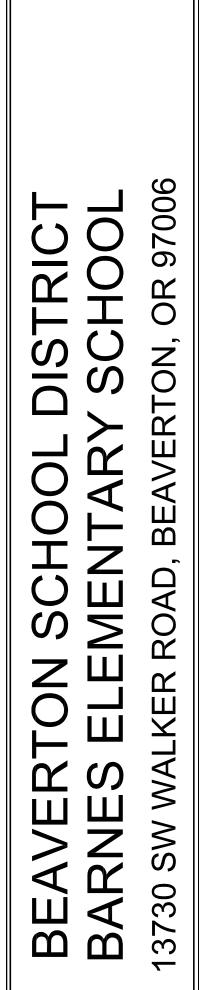
DELETED LOADS:					
AIR HANDLER:	54.0	FLA	3 PH	22240	WATT
		DEI	LETED CONNECTED :	22240	Watts
			AVERAGE AMPS :	54	Amps
NEW LOADS:					
AHU-1:	6.0	FLA	3 PH	2490	WATT
			CONNECTED:	2490	Watts
			AVERAGE AMPS :	6	Amps
OLIMAN DV					
SUMMARY:					
DELETED LOADS:					
Panel F:			3 PH	21580	WATT
Panel G :			3 PH	24900	WATT
Panel H :			3 PH	22240	WATT
		DEI	LETED CONNECTED :	68720	Watts
			AVERAGE AMPS :	166	Amps
NEW LOADS:					
Panel F:			3 PH	11688	WATT
Panel G:			3 PH	4536	WATT
Panel H :			3 PH	2490	WATT
		DEI	LETED CONNECTED :	18714	Watts
			AVERAGE AMPS	45	Amns



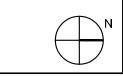


SHEET NOTES:

- 1. RECONNECT EXISTING CONDUCTORS TO NEW MECHANICAL UNIT TO BE INSTALLED. VERIFY CONNECTION LOCATION PRIOR TO ROUGH-IN AND EXTEND CONDUCTORS AS
- 2. PROVIDE NEW 15A-2P CIRCUIT BREAKER IN PANEL DESIGNATED. MATCH PANEL
- 3. PROVIDE NEW 15A-3P CIRCUIT BREAKER IN PANEL DESIGNATED. MATCH PANEL
- MANUFACTURER 4. PROVIDE NEW 20A-1P CIRCUIT BREAKER IN PANEL DESIGNATED. MATCH PANEL
- MANUFACTURER 5. UPDATE PANELS SCHEDULES WITH NEW INFORMATION, SCHEDULES WILL BE TYPED



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05/15/2020 Date: Check: JFR

REVISIONS NO. DESCRIPTION DATE

> Sheet Title ELECTRICAL



CONSTRUCTION DOCUMENT SET

BEAVERTON SCHOOL DISTRICT

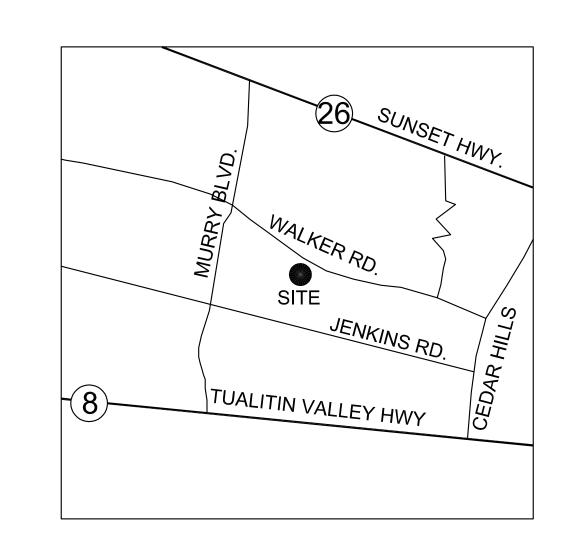
MARCH 2020

MECHANICAL UPGRADE: BARNES ELEMENTARY SCHOOL

13730 SW WALKER RD. BEAVERTON, OREGON 97006

CONTACTS OWNER BEAVERTON SCHOOL DISTRICT 16550 SW MERLO ROAD BEAVERTON, OREGON 97006 503.591.4575 FAX: 503.591.4469 MECHANICAL SYSTEM DESIGN CONSUTANTS, INC 333 SE SECOND AVENUE, SUTIE 100 PORTLAND, OREGON 97214 503.248.0227 FAX: 503.248.0240 CONTACT: GARY BARNES ELECTRICAL SYSTEM DESIGN CONSUTANTS, INC 333 SE SECOND AVENUE, SUTIE 100 PORTLAND, OREGON 97214 503.248.0227 FAX: 503.248.0240 CONTACT: JEFFREY DAVIS

NORTH ARROW O -- GRID BUBBLE & GRID LINE O -- GRID BUBBLE & GRID LINE DRAWING INDEX M0.00 COVER PAGE MECHANICAL SCHEDULES M1.00 MECHANICAL SCHEDULE AND DETAILS M1.10 MECHANICAL DEMO FLOOR PLANS M1.11 MECHANICAL NEW FLOOR PLANS ELECTRICAL SCHEDULES E1.00 ELECTRICAL LEGEND & SCHEDULES E1.10 ELECTRICAL DEMO FLOOR PLANS







GENERAL NOTES

- 1. COORDINATE ALL WORK WITH THE DRAWINGS AND SPECIFICATIONS.
- 2. DO NOT SCALE FROM DRAWINGS.

E1.11 ELECTRICAL NEW FLOOR PLANS

- 3. CONTRACTOR AND SUB-CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS, LOCATIONS, AND PROJECT REQUIREMENTS PRIOR TO SUBMITTING A BID.
- 4. CONTRACTOR AND SUB-CONTRACTORS SHALL FIELD VERIFY DIMENSIONS, AND FAMILIARIZE THEMSELVES WITH PROJECT REQUIREMENTS PRIOR TO COMMENCING WITH THE WORK. CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO ARCHITECT.
- 5. WORK SHALL INCLUDE ALL REQUIRED TRADE PERMITS, LABOR, MATERIALS, AND EQUIPMENT TO COMPLETE ALL WORK INDICATED ON DRAWINGS AND SPECIFICATIONS.

PROVIDE TEMPORARY DUST-PROOF PARTITIONS AS REQUIRED TO PROTECT ALL

- EXISTING AREAS AND EQUIPMENT FROM DAMAGE DUE TO DEMOLITION OR NEW CONSTRUCTION ACTIVITIES. COORDINATE LOCATIONS AND REQUIREMENTS WITH OWNER.
- 7. GENERAL CONTRACTOR TO PATCH, REPAIR AND PAINT (REFINISH) SURFACES AND BUILDING ELEMENTS DAMAGED BY MECHANICAL, ELECTRICAL, AND PLUMBING WORK AND WHERE ITEMS ARE REMOVED, RELOCATED OR ADDED.
- 8. REPAIR FLOORS WHERE DAMAGED BY THE WORK OF THIS PROJECT.9. PATCH AND REPAIR ALL SURFACES TO MATCH EXISTING WHERE ITEMS ARE
- REMOVED OR ALTERED FIELD VERIFY EXTENT REQUIRED.

 10. CONTRACTOR IS RESPONSIBLE FOR FINAL CLEANUP OF WORK AREA AND ALL

EXPOSED BUILDING SURFACES AT SUBSTANTIAL COMPLETION.

- 11. ALL TRASH AND TOOLS SHALL BE REMOVED FROM PREMISES EACH DAY AND THE AREA LEFT CLEAN WHENEVER UNATTENDED. EACH CONTRACTOR SHALL BE
- RESPONSIBLE FOR CLEANUP. COORDINATE WITH OWNER IF SECURE STORAGE IS NEEDED ONSITE.

 12. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO FINISHED SURFACES, EQUIPMENT, FURNITURE, EXISTING MATERIALS OR FINISHES, CAUSED AS A RESULT OF

HIS WORK. REPAIR OR REPLACE DAMAGED ITEMS AS DIRECTED BY BEAVERTON

- 13. ALL WORK SHALL BE DONE IN ACCORDANCE WITH APPLICABLE CODES AND
- WORK SHALL BE DONE BY THOSE SKILLED AND EXPERIENCED IN THEIR RESPECTIVE TRADES. WORK SHALL BE OF THE HIGHEST QUALITY WORKMANSHIP.

DEFERRED SUBMITTAL

1. SEISMIC EQUIPMENT DETAILS AND CALCULATIONS BY MECHANICAL CONTRACTOR

KEYPLAN

Drawn:

Date: 05/15/2020

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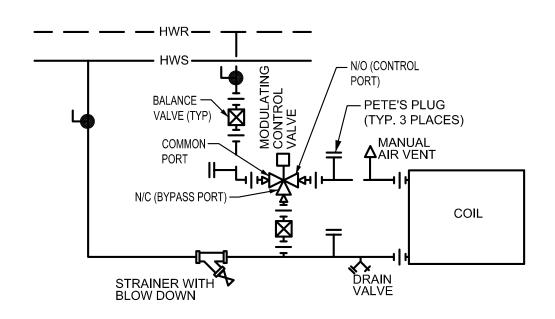
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EXPIRES 12/31/21

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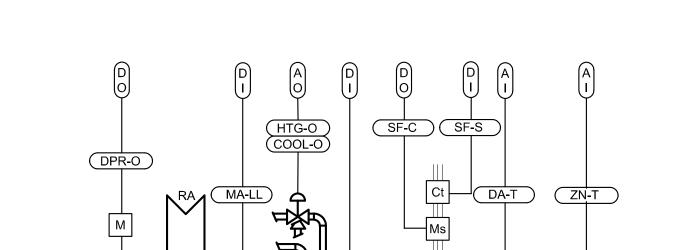
BEAVERTON SCHOOL 2020 MECHANICAL UPGRADE F

MO.00 Job No: BSD1901



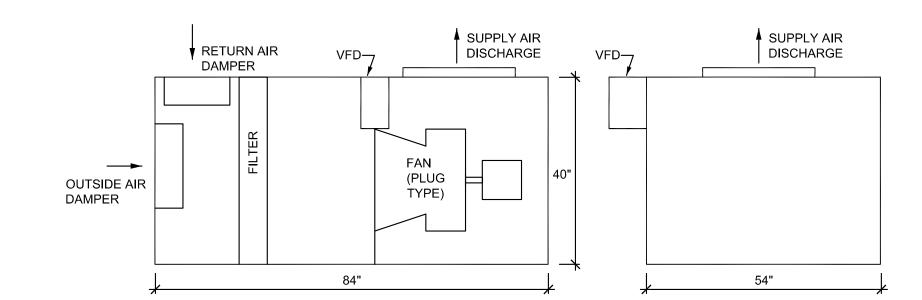
NOTE - THIS SCHEMATIC IS DIAGRAMMATIC - COORDINATE THE VALVE PORT NOMENCLATURE ON THE VALVES SUPPLIED TO THE PROJECT WITH THE MANUFACTURERS INSTALLATION INSTRUCTIONS AND THE REQUIREMENTS OF THIS SCHEMATIC DIAGRAM. INSTALL THE VALVE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS TO PERFORM THE CONTROL SEQUENCE REQUIRED BY THIS DIAGRAM AND THE SPECIFICATIONS

3-WAY HEATING WATER VALVE PIPING SCHEMATIC M1.00 DIAGRAMMATIC

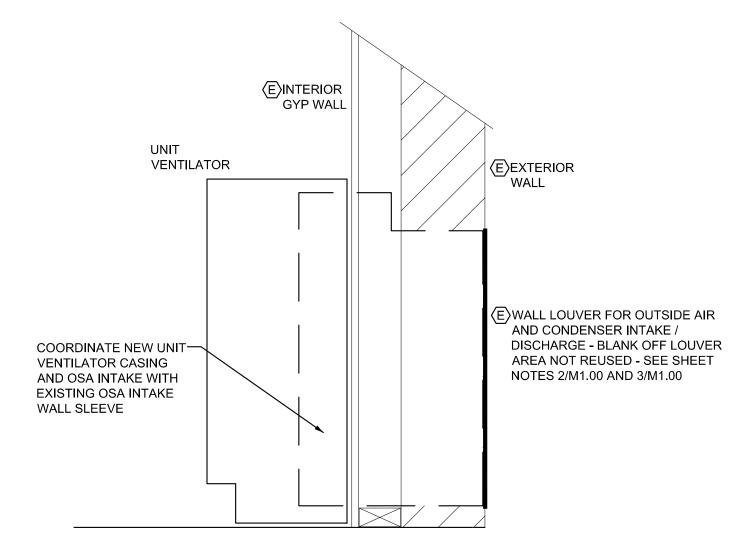


CONTROL FUNCTION	POINT	CONTROL FUNCTION	POINT
SPACE TEMPERATURE	Al	DRAIN PAN OVERFLOW SWITCH	DI
DISCHARGE AIR TEMPERATURE	Al	CHANGEOVER VALVE POSITION	AO
SUPPLY FAN STATUS	DI	MIXED AIR TEMPERATURE (FREEZE)	Al
SUPPLY FAN STOP / START	DO	OUTSIDE AIR DAMPER POSITION	DO

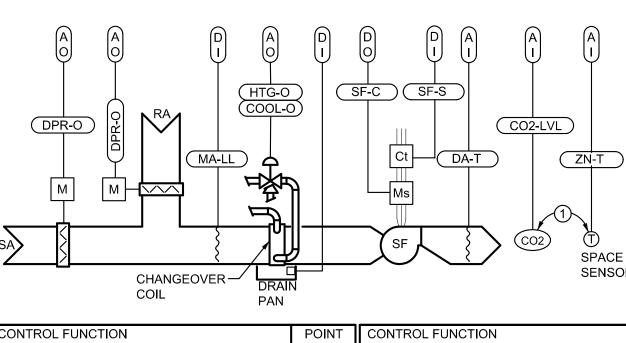
FAN COIL CONTROL SCHEMATIC



AH-1 SCHEMATIC



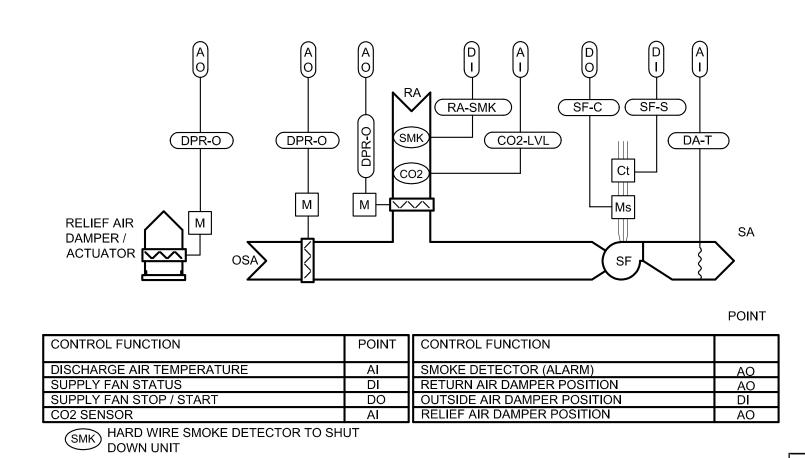
UNIT VENT DETAIL



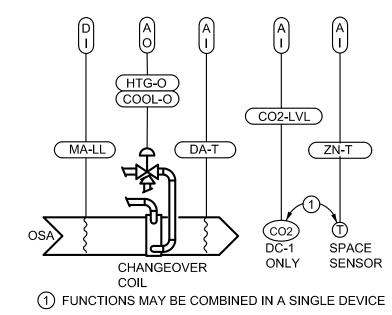
CHANGEOVER DRAI COIL PAN]	SPACE SENSOR	
CONTROL FUNCTION	POINT	CONTROL FUNCTION	POINT
SPACE TEMPERATURE	Al	DRAIN PAN OVERFLOW SWITCH	Al
CO2 SENSOR	Al	CHANGEOVER VALVE POSITION	AO
DISCHARGE AIR TEMPERATURE	Al	MIXED AIR TEMPERATURE (FREEZE)	AO
SUPPLY FAN STATUS	DI	RETURN AIR DAMPER POSITION	DI
SLIDDLY EAN STOD / STADT	\Box	OUTSIDE AID DAMBED DOSITION	^

1) FUNCTIONS MAY BE COMBINED IN A SINGLE DEVICE UNIT VENTILATOR CONTROL SCHEMATIC

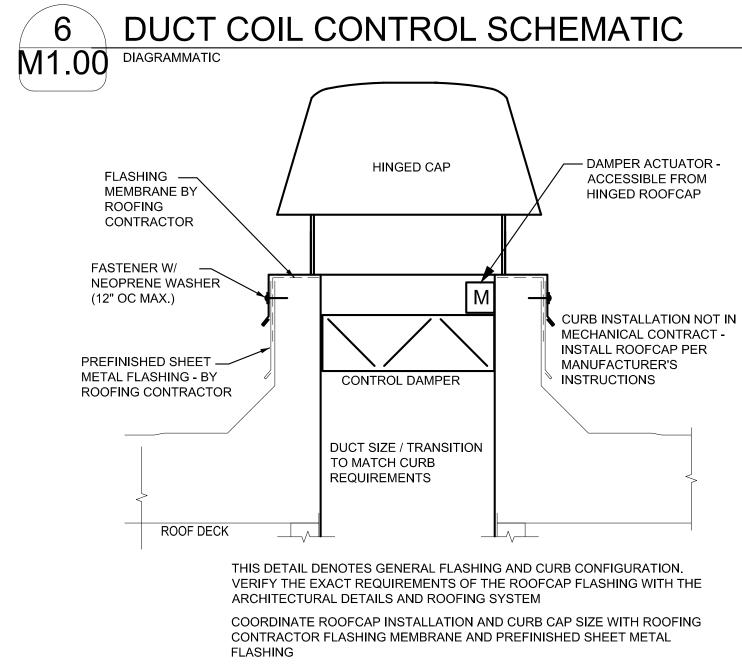
DIAGRAMMATIC



AIR HANDLING UNIT CONTROL SCHEMATIC



E DEVICE
POINT
Al
Al
Al
AO
Al





	MECHANICAL EQUIPMENT SCHEDULE						
SYMBOL	DESCRIPTION	AREA SERVED	CONTROL	ELECTRICAL			
UV-1 UV-2 UV-3 UV-4 UV-5	UNIT VENTILATOR, VERTICAL, FLOOR MOUNTED STYLE - 1,250 CFM SUPPLY AIR, 895 CFM RETURN AIR, 355 CFM OUTSIDE AIR, 98" LONG X 17" WIDE X 30" HIGH, CONNECTION TO EXISTING OUTSIDE AIR LOUVER SLEEVE, SINGLE CHANGEOVER HEATING / COOLING WATER COIL, DISCHARGE AIR GRILLE, MOTORIZED RA / OSA DAMPER, FILTER, END CAPS - VERIFY COIL CONNECTION LOCATION COOLING: 32 MBH SENSIBLE / 42 MBH TOTAL, 42 °F ENTERING WATER TEMPERATURE, 7 GPM HEATING: 60 MBH, 180 °F ENTERING WATER TEMPERATURE, 3 GPM 5-FT MAX. COIL WATER PRESSURE DROP, 3-WAY VALVE - SEE DETAIL 1/M1.00 BASIS OF DESIGN: DAIKIN MODEL UAVV9H15 OPERATING WEIGHT: 575 LBS	LIBRARY CLASSROOMS (TYP)	DDC	6.3 MCA 15 MOCP 120 V, 1 PH			
<u>AH-1</u>	AIR HANDLING UNIT - HORIZONTAL STYLE, VERTICAL DISCHARGE, 3000 CFM AT 1.5-INCHES EXTERNAL STATIC PRESSURE, 2280 CFM RETURN AIR, 720 CFM OSA, SUPPLY FAN, MERV 8 FILTER SECTION W/ GAUGE, RETURN AIR / OUTSIDE AIR MIXING BOX FOR ECONOMIZER, VFD, SPRING ISOLATION - SEE 5/M1.00 FOR SCHEMATIC DIAGRAM BASIS OF DESIGN: DAIKIN CAH009GVGM OPERATING WEIGHT: 950 LBS	LIBRARY, HALLWAY	DDC	1.5 HP 208 V, 3 PH			
<u>DC-1</u>	DUCT COIL, HOT WATER / CHILLED WATER - 2400 CFM, 30-INCH FIN LENGTH X 24-INCH FIN HEIGHT, 45-INCH OVERALL LENGTH X 25-INCH OVERALL HEIGHT, CASED COIL WITH DRAIN PAN / CONNECTION COOLING: 80 MBH SENSIBLE / 90 MBH TOTAL, 42°F ENTERING WATER TEMPERATURE, 12 GPM HEATING: 104 MBH, 180°F ENTERING WATER TEMPERATURE, 2 GPM 5-FT MAX. COIL WATER PRESSURE DROP, 3-WAY VALVE - SEE DETAIL 1/M1.00 1-1/4 INCH RUNOUT PIPING BASIS OF DESIGN: RAE MODEL 12W23.75X30-10-5-W-Z-R OPERATING WEIGHT: 100 LBS	LIBRARY	DDC				
DC-2	DUCT COIL, HOT WATER / CHILLED WATER - 600 CFM, 15-INCH FIN LENGTH X 15-INCH FIN HEIGHT, 28-INCH OVERALL LENGTH X 16.25-INCH OVERALL HEIGHT, CASED COIL WITH DRAIN PAN / CONNECTION COOLING: 18 MBH SENSIBLE / 23 MBH TOTAL, 42 °F ENTERING WATER TEMPERATURE, 4.5 GPM HEATING: 27 MBH, 180 °F ENTERING WATER TEMPERATURE, 0.5 GPM 5-FT MAX. COIL WATER PRESSURE DROP, 3-WAY VALVE - SEE DETAIL 6/M1.00 3/4-INCH RUNOUT PIPING BASIS OF DESIGN: RAE MODEL 12W15X15-10-5-W-J-R OPERATING WEIGHT: 45 LBS	HALL	DDC				
FC-1 FC-2	FAN COIL, VERTICAL, FLOOR MOUNTED STYLE - 400 CFM SUPPLY AIR, 375 CFM RETURN AIR, 25 CFM OUTSIDE AIR, 46" LONG X 10" WIDE X 25" HIGH, CONNECTION TO EXISTING OUTSIDE AIR LOUVER SLEEVE, SINGLE CHANGEOVER HEATING / COOLING WATER COIL, DISCHARGE AIR GRILLE, FILTER, DRAIN PAN, END CAPS - VERIFY COIL CONNECTION LOCATION COOLING: 13 MBH SENSIBLE / 15 MBH TOTAL, 42°F ENTERING WATER TEMPERATURE, 3 GPM HEATING: 20 MBH, 180°F ENTERING WATER TEMPERATURE, 1.5 GPM 5-FT MAX. COIL WATER PRESSURE DROP, 3-WAY VALVE - SEE DETAIL 1/M1.00 BASIS OF DESIGN: DAIKIN MODEL FCVC104 OPERATING WEIGHT: 125 LBS	OFFICES	DDC	15 MOCP 120 V, 1 PH			
	SPLIT SYSTEM AIR CONDITIONING	STORAGE	PACKAGE				
<u>WF-1</u>	WALL MOUNT FAN COIL UNIT - 300 CFM AIR DELIVERY THROUGH INTEGRAL DIFFUSER, DX REFRIGERANT COIL TO MATCH RESPECTIVE CONDENSING UNIT BASIS OF DESIGN: DAIKIN FTXO9NMVJU OPERATING WEIGHT = 20 LBS			21 WATTS			
<u>HP-1</u>	HEAT PUMP UNIT, AIR COOLED: 9 MBH TOTAL COOLING AT 95 °F ENTERING HEAT PUMP UNIT, 80 °F DB, 67 °F WB ENTERING INDOOR COIL, 6MBH TOTAL HEATING AT 17 °F ENTERING HEAT PUMP UNIT, 300 CFM EVAPORATOR AIRFLOW, R-410A REFRIGERANT EFFICIENCY: 19 SEER, 9 HSPF BASIS OF DESIGN: DAIKIN RX09NMVJU OPERATING WEIGHT = 60 LBS			12.1 MCA 15 FUSE/BRKR 208 V, 1 PH			
	CONDENSING UNIT - COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR PROPER WIRING - VERIFY WITH MANUFACTURER						

STANDARD CASE: ASHRAE 62.1-2019-2016 MECHANICAL STATE ENERGY CODE							DESIGN CASE FOR							
OCCUPA NCY	OCCUPANCY	ZONE	AREA	PEOPLE	AREA	OCCUPANT	BREATHING		ZONE	TABLE 6-3	MINIMUM	ZONE	SYSTEM	
CATEGORY	CATEGORY	POP	SQ. FT.	OUTDOOR	OUTDOOR	DENSITY	ZONE OSA	ZONE AIR DISTR	OUTDOOR	SYST⊟M	OUTDOOR AIR	PRIMARY	OSA CFM	EXHAUST
				AIR RATE	AIR RATE	#/1000	FLOW RATE	EFFECTIVENESS	AIR ZONE	VENT	INTAKE FLOW	AIRFLOW	SUPPLIED	RATE
				CFMPERSON	CFM/SQ. FT.	SQFT	(Pz*Rp+Az*Ra)		Voz (CFM)	EFFICIENCY	(CFM)			CFM
		(Pz)	(Az)	(Rp)	(Ra)	-	Vbz (CFM)	(Ez)	Vbz/Ez	Ev	Vot= Vbz/Ez	Vpz/(CFM)		
CLASSROOM	CLASSROOM	27	750	5	0.12	35	225	0.8	281	0.8	352	1000	355	
UV-	1		750						281		352	1000	355	0
CLASSROOM	CLASSROOM	27	750	5	0.12	35	225	0.8	281	0.8	352	1000	355	
UV-	2		750						281		352	1000	355	0
CLASSROOM	CLASSROOM	27	750	5	0.12	35	225	0.8	281	0.8	352	1000	355	
UV-	3		750						281		352	1000	355	0
CLASSROOM	CLASSROOM	27	750	5	0.12	35	225	0.8	281	0.8	352	1000	355	
UV-	4		750						281		352	1000	355	0
CLASSROOM	CLASSROOM	27	750	5	0.12	35	225	0.8	281	0.8	352	1000	355	
UV-	5		750						281		352	1000	355	0
LIBRARY	LIBRARY	27	2700	5	0.12	10	4 59	0.8	574	0.8	717	2000	720	
X	K		2700						574		717	2000	720	0

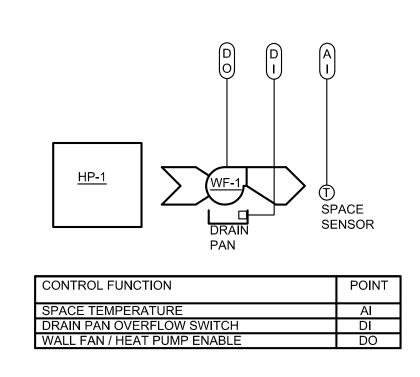
CONTROL SCHEMATIC LEGEND

GENERAL NOTE - PROVIDE ALL DEVICES AND POINTS REQUIRED IN ADDITION TO THOSE NOTED TO ACCOMPLISH THE SEQUENCE

	ERATION NOTED IN THE SPECIFIC		13 REQUIRED IN ADDITION TO THOSE NO	IED IO AC	COMPLISH THE SEQUENC
M	MOTORIZED DAMPER ACTUATOR	T	SENSOR / THERMOSTAT	SF	SUPPLY FAN
	A / D - ANALOG / DIGITAL	(s)	DDC TEMPERATURE SENSOR	RF	RETURN FAN
Ū	1 / O - INPUT / OUTPUT	(S)	DDC TEMPERATURE SENSOR	EF	EXHAUST FAN
Ms	MOTOR STARTER	K	CONTROL VALVE	SMK	DUCT MOUNTED SMOKE DETECTOR
R	RELAY		— MOTORIZED DAMPER	CO2	CARBON DIOXIDE SENSOR

TEMPERATURE SENSOR

MECHANICAL SEISMIC DESIGN CRITERIA						
BUILDING SYSTEM	OCCUPANCY CLASSIFICATION	SEISMIC DESIGN CATAGORY	COMPONENT IMPORTANCE FACTOR (Ip)			
OTHER HVAC COMPONENTS	li li	D	1.0			



SPLIT SYSTEM CONTROL SCHEMATIC M1.00 DIAGRAMMATIC

MECHANICAL LEGEND

	HCS	HEATING / CHILLED WATER SUPPLY
	HCR	HEATING / CHILLED WATER RETURN
	С	COOLING CONDENSATE
		BALL VALVE
──	BAL	BALANCING FITTING (CIRCUIT SETTER)
——————————————————————————————————————		UNION
		CAP OR PLUG
> , DV		HOSE END DRAIN VALVE
4		SUPPLY AIR RISER
		RETURN, EXHAUST AIR RISER
30° MAX.		TRANSITION
15° MAX.		TRANSITION
		SQUARE TO ROUND TRANSITION
T		WALL MOUNTED THERMOSTAT
W =		NECK THROW PATTERN SIZE OR TYPE 8x8-4W 150
R=W		CFM——
RADIUS ELBOW		GRILLE/DIFFUSER DESIGNATION
TURNING VANES		0.25W & 4"MIN — 45°—— W—
MITER ELBOW		BRANCH TAP
→VD →		MANUAL VOLUME DAMPER
		MOTORIZED DAMPER NOTE: ACTUATOR SYMBOL IS DIAGRAMMATIC ONLY - EXACT LOCATION OF ACTUATOR TO BE FIELD COORDINATED FOR PROPER SERVICE ACCESS

ABBREVIATIONS

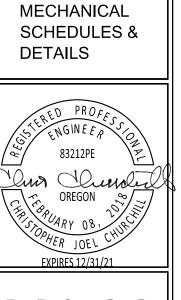
8Ø	ROUND DUCT DIAMETER, INCHES	OSA	OUTSIDE AIR
12X8	RECTANGULAR DUCT SIZE, INCHES	PLEN	PLENUM
М	MOTORIZED DAMPER	RA	RETURN AIR
DN	DOWN	SA	SUPPLY AIR
EA	EXHAUST AIR	TYP	TYPICAL
N.C.	NORMALLY CLOSED	W.C.	WATER COLUMN
N.O.	NORMALLY OPEN	MAV	MANUAL AIR VENT
OBD	OPPOSED BLADE DAMPER		

SYMBOLS

EQUIPMENT CONTROL FUNCTIONS

_	<u> </u>			
		ARANDON	(A)	
	(A)	ABANDON	(P)	CAP OR PLUG
	<u>(c)</u>	CONNECT TO EXISTING	(X)	REMOVE EXISTING
	Œ	EXISTING TO REMAIN		

		BSD					
EQUIPMENT	CONTROL FUNCTION	SYMBOL	DI	DO	AI	АО	ALARM
UNIT VENTILATOR	SPACE TEMPERATURE HIGH SPACE TEMPERATURE LOW SPACE TEMPERATURE	ZN-T			x		X
	CO2 SENSOR HIGH CO2 LEVEL	CO2-LVL			х		X
	DISCHARGE AIR TEMPERATURE SUPPLY FAN STATUS	DA-T SF-S	х		x		V
	RUN STATUS SUPPLY FAN START / STOP DRAIN PAN OVERFLOW SWITCH	SF-C	x	х			X
	HEAT / COOL VALVE POSITION	HTG-O COOL-O				Х	
	MIXED AIR LOW LIMIT (FREEZE) LOW TEMPERATURE RETURN AIR DAMPER POSITION	MA-LL DPR-O	Х			x	х
	OUTSIDE AIR DAMPER POSITION	DPR-0				X	
FAN COIL	SPACE TEMPERATURE HIGH SPACE TEMPERATURE LOW SPACE TEMPERATURE	ZN-T			х		×
	DISCHARGE AIR TEMPERATURE SUPPLY FAN STATUS	DA-T SF-S	X		х		
	RUN STATUS SUPPLY FAN START / STOP DRAIN PAN OVERFLOW SWITCH	SF-C	X	х			X
	HEAT / COOL VALVE POSITION	HTG-O COOL-O	^			х	
	MIXED AIR LOW LIMIT (FREEZE) LOW TEMPERATURE OUTSIDE AIR DAMPER POSITION	MA-LL DPR-0	Х	X			X
AIR HANDLING UNIT	DISCHARGE AIR TEMPERATURE SUPPLY FAN STATUS RUN STATUS	DA-T SF-S	Х		х		X
	SUPPLY FAN START / STOP CO2 SENSOR - LIBRARY ONLY	SF-C CO2-LVL		х	х		
	HIGH CO2 LEVEL SMOKE DETECTOR ALARM SMOKE DETECTOR ACTIVATED	RA-SMK	Х				×
	RETURN AIR DAMPER POSITION OUTSIDE AIR DAMPER POSITION RELIEF AIR POSITION	DPR-O DPR-O DPR-O				X X X	
(DC-1, DC-2)	SPACE TEMPERATURE HIGH SPACE TEMPERATURE	ZN-T			Х		X
	LOW SPACE TEMPERATURE DISCHARGE AIR TEMPERATURE CHANGEOVER VALVE POSITION	DA-T HTG-O COOL-O			х	х	X
	MIXED AIR LOW LIMIT (FREEZE) LOW TEMPERATURE	MA-LL	Х				х
SPLIT SYSTEM	SYSTEM STATUS RUN STATUS	SF-S	Х	.,			×
	SUPPLY FAN START / STOP SPACE TEMPERATURE HIGH SPACE TEMPERATURE LOW SPACE TEMPERATURE	SF-C ZN-T		Х	х		X



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05/15/2020

REVISIONS

NO. DESCRIPTION DATE

Sheet Title

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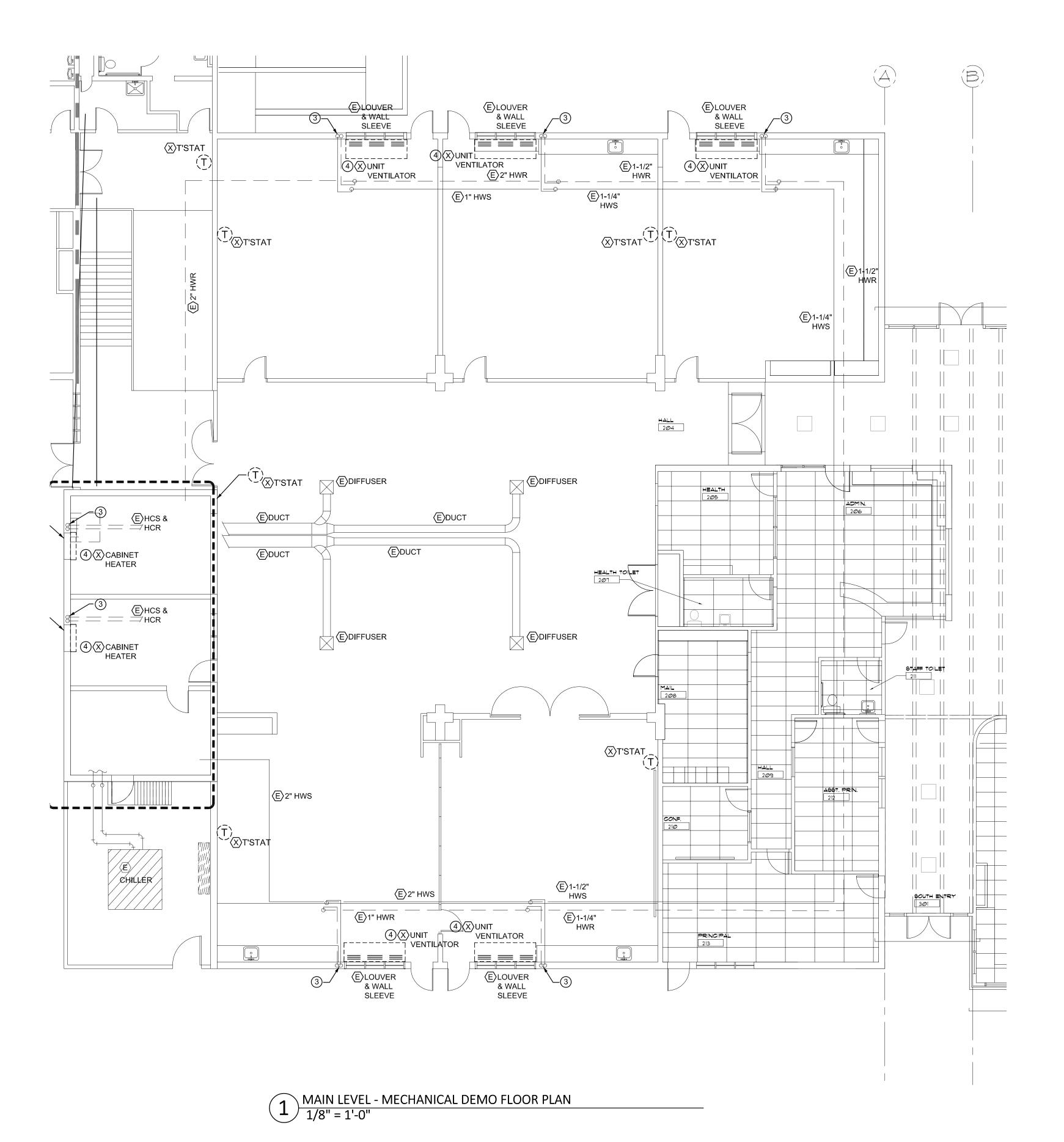
KEYPLAN

Date:

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SHEET NOTES

- 1 REMOVE EXISTING HOT WATER COIL, VALVES AND 3/4-INCH CONNECTION PIPING PROTECT PIPING FOR CONNECTION TO NEW COIL
- (2) REMOVE EXISTING HOT WATER COIL, VALVES AND 1-INCH CONNECTION PIPING
- 3 EXISTING RUNOUT SUPPLY AND RETURN PIPING PROTECT WATER PIPING FOR CONNECTION OF NEW UNIT VENTILATOR / FAN COIL
- (4) REMOVE EXISTING UNIT VENTILATOR / FAN COIL PROTECT WALL SLEEVE AND EXTERIOR LOUVER FOR USE WITH NEW UNIT VENTILATOR INSTALLATION
- (5) REMOVE OUTSIDE AIR DUCT, RETURN AIR DUCT AND CONDENSER INTAKE DUCT PROTECT LOUVER AND SLEEVE FOR REUSE
- 6 EXISTING AIR HANDLING UNIT HAS INTEGRAL COMPRESSOR / CONDENSER / REFRIGERATION SYSTEM BEAVERTON SCHOOL DISTRICT WILL EVACUATE THE REFRIGERANT INCLUDE COST IN THE BID PRICE FOR VERIFICATION THAT REFRIGERANT IS REMOVED IN COMPLIANCE WITH CURRENT CODES AND DISPOSAL OF OIL AND REMAINING REFRIGERATION COMPONENTS FROM THE EQUIPMENT AND REMOVAL FROM SITE
- 7 REMOVE EXISTING COIL TRANSITION DUCTWORK AND PROTECT DOWNSTREAM DUCTWORK IN THE MECHANICAL ROOM FOR FUTURE CONNECTIONS



BEAVERTON SCHOOL DISTRICT BARNES ELEMENTARY SCHOOL 13730 SW WALKER ROAD, BEAVERTON, OR 97006

KEYPLAN

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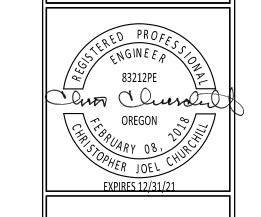
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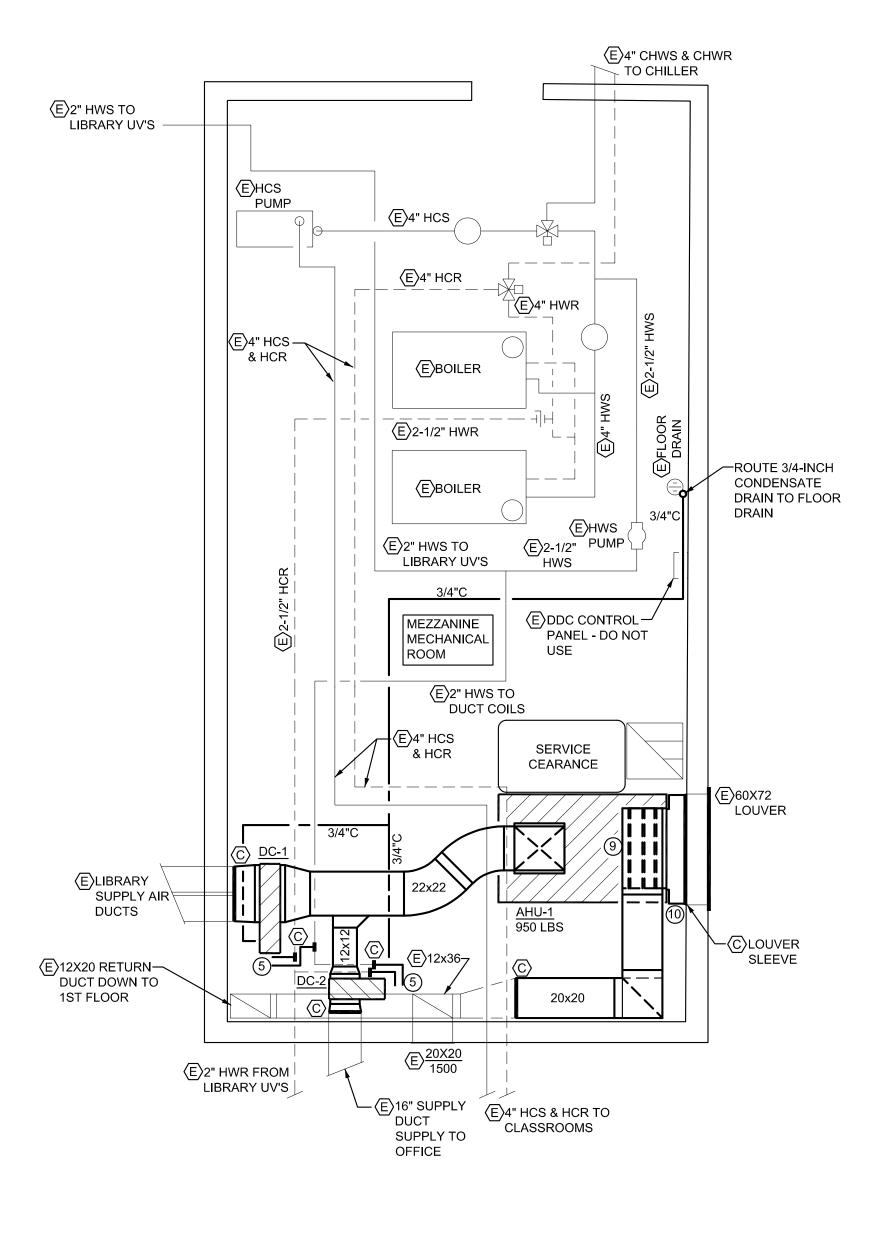
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Sheet Title MECHANICAL DEMO FLOOR PLANS

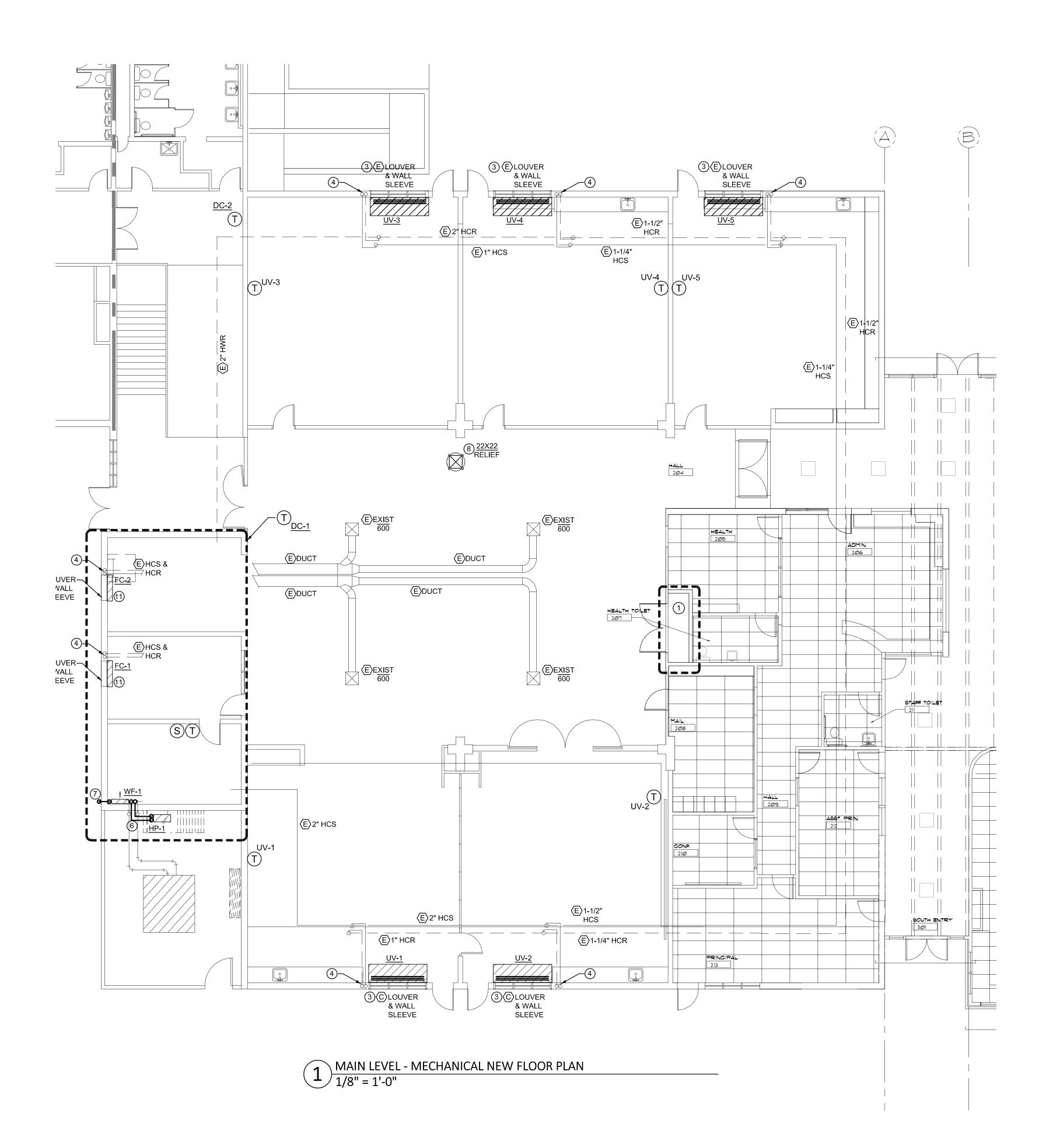


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Job No: BSD1901



2 MECHANICAL MEZZANINE NEW FLOOR PLAN 1/4" = 1'-0"



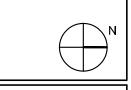
GENERAL NOTES

PIPING IS DIAGRAMMATIC - CONTRACTOR IS TO SITE VERIFY PRIOR TO SITE WORK.

SHEET NOTES

- (1) ESTABLISH COMMUNICATION TO THE NEW EQUIPMENT THROUGH BACNET IP PROTOCOL VIA THE EXISTING MSTP CONTROLLERS IN THIS AREA. DO NOT ESTABLISH COMMUNICATION THROUGH THE EXISTING N2 CONTROLLER(S) IN THE MEZZANINE MECHANICAL ROOM. BRING THE SYSTEM DDC POINTS INTO THE DISTRICT SERVER AND INTEGRATE THE SYSTEM GRAPHICS TO MATCH BEAVERTON SCHOOL DISTRICT (BSD) STANDARDS
- (2) SEE DETAIL 7/M1.00. EXISTING LOUVER USED FOR OUTSIDE AIR AND INTEGRAL REFRIGERATION SYSTEM AIR DISCHARGE - BLANK OFF LOUVER AREA NOT USED FOR NEW OUTSIDE AIR INTAKE WITH SHEET METAL AND RIGID INSULATION (R21). PROVIDE A MOTORIZED DAMPER IN THE OUTSIDE AIR DUCT SLEEVE WITH ACCESSIBLE ACTUATOR
- (3) SEE DETAIL 7/M1.00. EXISTING LOUVER USED FOR OUTSIDE AIR AND INTEGRAL REFRIGERATION SYSTEM AIR DISCHARGE - BLANK OFF LOUVER AREA NOT USED FOR NEW OUTSIDE AIR INTAKE WITH SHEET METAL AND RIGID INSULATION (R21)
- (4) CONNECT NEW HCS AND HCR RUNOUT PIPING TO THE NEW UNIT VENTILATOR / FAN COIL SEE
- (5) SEE DETAIL 1/M1.00 FOR DUCT COIL CONNECTION DETAIL SEE COIL SCHEDULE FOR RUNOUT
- (6) ROUTE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS FROM HEAT PUMP TO FAN
- (7) ROUTE 3/4-INCH CONDENSATE FROM WF-1 THROUGH WALL AND DOWN TO 12-INCHES ABOVE
- (8) ROUTE 22X22 LINED RELIEF DUCT UP TO ROOFCAP WITH MOTORIZED DAMPER INSTALL DAMPER / ACTUATOR IN ROOFCAP NECK ACCESSIBLE FROM ROOF THROUGH HINGED ROOFCAP . SEE DETAIL
- (9) CONNECT RETURN DUCT TO RETURN AIR DAMPER ASSEMBLY
- 10) PROVIDE A LINED PLENUM BOX FOR CONNECTION OF UNIT OUTSIDE AIR DAMPER TO EXISTING
- LOUVER SLEEVE (1) INSTALL FAN COIL UNITS TO ALLOW NEC CLEARANCE FOR ELECTRICAL BOX ACCESS

KEYPLAN

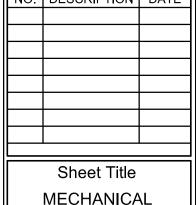


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GCB 05/15/2020 Date:

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MECHANICAL NEW FLOOR **PLANS**

