

GENERIC HVAC ABBREVIATIONS (REFER TO CONTROL ABBREVIATIONS FOR ADDITIONAL NOMENCLATURE)			
'F	DEGREES FAHRENHEIT	KW	KILOWATT
'C	DEGREES CELSIUS	KVA	KILOVOLT AMPERE
Ø	DIAMETER	L	LENGTH
ACV	AUTOMATIC CONTROL VALVE	LB	POUND
AD	ACCESS DOOR	LAB	LABORATORY
ADJ	ADJUSTABLE	LF	LINEAR FEET
ADDL	ADDITIONAL	LVG	LEAVING
AFF	ABOVE FINISHED FLOOR	M	ONE THOUSAND
AFG	ABOVE FINISHED GRADE	MAX	MAXIMUM
ALT	ALTERNATE	MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
ARCH	ARCHITECT	MCA	MINIMUM CIRCUIT AMPS
ATC	AUTOMATIC TEMPERATURE CONTROL	MCC	MOTOR CONTROL CENTER
AVG	AVERAGE	MECH	MECHANICAL
BF	BOILER FEED WATER	MEZZ	MEZZANINE
BFF	BELOW FINISHED FLOOR	MFR	MANUFACTURER
BHP	BRAKE HORSEPOWER	MH	MANHOLE
BLDG	BUILDING	MIN	MINIMUM
BOD	BOTTOM OF DUCT	MTD	MOUNTED
BOP	BOTTOM OF PIPE	MU	MAKEUP WATER
BSMT	BASEMENT	N/A	NOT APPLICABLE
BTU	BRITISH THERMAL UNIT	NC	NORMALLY CLOSED
BTUH	BRITISH THERMAL UNIT PER HOUR	NO	NOISE CRITERIA
		NC	NOT IN CONTRACT
		NO	NORMALLY OPEN
CAV	CONSTANT AIR VOLUME	NO	NUMBER
CA	COMPRESSOR AIR	NOM	NOMINAL
CL	CENTERLINE	NTS	NOT TO SCALE
CLG	CEILING		
CO	CLEAN-OUT	OB	OCTAVE BAND
COL	COLUMN	OC	ON CENTER
COMP	COMPRESSOR	OD	OUTSIDE DIAMETER
CONC	CONCRETE	ODP	OPEN DRIP PROOF
CONN	CONNECTION	OV	OUTLET VELOCITY
CONTR	CONTRACTOR		
CORR	CORRIDOR	PCF	POUNDS PER CUBIC FOOT
CUF	CUBIC FEET	PD	PRESSURE DROP
CUH	CABINET UNIT HEATER	PH	PHASE
CYL	CYLINDER	PLBG	PLUMBING
		POS	PROVIDED BY OTHER SECTION(S)
D	DRAIN	PRESS	PRESSURE
(D)	DEMO	PRIM	PRIMARY
DB	DRY BULB TEMPERATURE	PSIA	POUNDS PER SQUARE INCH ABSOLUTE
DDC	DIRECT DIGITAL CONTROL	PSID	POUNDS PER SQUARE INCH DIFFERENTIAL
DDCCFP	DIRECT DIGITAL CONTROL FIELD PANEL	PSIG	POUNDS PER SQUARE INCH GAUGE
DIA	DIAMETER	PVC	POLYVINYL CHLORIDE
DNM	DIMENSION		
DN	DOWN		
DWG	DRAWING	REP	REPRESENTATIVE
		RET	RETURN
E	EXISTING	REQD	REQUIRED
EA	EACH	REQS	REQUIREMENTS
EAT	ENTERING AIR TEMPERATURE	RH	RELATIVE HUMIDITY
EFF	EFFICIENCY	RM	ROOM
ELEC	ELECTRICAL	RPM	REVOLUTIONS PER MINUTE
ELEV	ELEVATION		
EMER	EMERGENCY	SCH	SCHEDULE
ENT	ENTERING	SPECS	SPECIFICATIONS
EQUIP	EQUIPMENT	SQ	SQUARE
EUH	ELECTRIC UNIT HEATER	SOFT	SQUARE FEET
EXH	EXHAUST	SS	STAINLESS STEEL
EXP	EXPANSION	STD	STANDARD
		STDBY	STANDBY
FTR	FINNED TUBE RADIATION	STL	STEEL
FCV	FLOW CONTROL VALVE	SUCT	SUCTION
FLEX	FLEXIBLE	SUP	SUPPLY
FLR	FLOOR		
FLDR	FLOOR DRAIN	TAV	THERMOSTATIC AIR VENT
FP	FIRE PROTECTION	TEFC	TOTALLY ENCLOSED FAN COOLED
FFM	FEET PER MINUTE	TEMP	TEMPERATURE
FT	FEET	TOP	TOP OF DUCT
FT/SEC	FEET PER SECOND	TOP	TOP OF PIPE
FURN	FURNISHED	TYH	TYPICAL
		UH	UNIT HEATER
GA	GAUGE		
GALV	GALLONS	VAV	VARIABLE AIR VOLUME
GALVZD	GALVANIZED	V	VOLUME
GC	GENERAL CONTRACTOR	VD	VOLUME DAMPER
GND	GROUND	VEL	VELOCITY
GRH	GALLONS PER HOUR	VERT	VERTICAL
GPM	GALLONS PER MINUTE	VFC	VARIABLE FREQUENCY CONTROLLER
GRD	GRADE (GROUND LEVEL)	VIF	VERIFY IN FIELD
		VTR	VENT THROUGH ROOF
H	HEIGHT		
HCPD	HANDICAPPED		
HD	HEAD	W	WIDTH
HP	HORSEPOWER	W	WITH
HR	HOUR	WO	WITHOUT
HZ	HERTZ	WT	WET BULB TEMPERATURE
HX	HEAT EXCHANGER	WF	WIDE FLANGE
		WG	WATER GAUGE
ID	INSIDE DIAMETER		
IN	INCHES	XP	EXPLOSION PROOF
INSUL	INSULATION		

ASBESTOS AND HAZARDOUS MATERIALS AWARENESS	
1.	FUME HOOD EXHAUST DUCT CONTAMINATION AWARENESS ALL TRADES SHALL BE AWARE THAT ALL WORK ASSOCIATED WITH FUME HOOD EXHAUST DUCT SYSTEM IS CONSIDERED HAZARDOUS WASTE. REMEDIATION WORK IS COVERED UNDER 02810 HAZARDOUS WASTE AND CONTAMINATED MATERIALS REMOVAL, 028213 ASBESTOS ABATEMENT, AND 028513 EXHAUST DUCT REMEDIATION.
2.	GENERAL ASBESTOS AWARENESS ALL TRADES SHALL BE AWARE THAT ASBESTOS-CONTAINING MATERIALS (ACM) EXIST WITHIN THE PROJECT WORK AREA AND SHALL BE FAMILIAR WITH THE REPORTED ACM'S. ALL WORK THAT DISTURBS ACM IS CONSIDERED ASBESTOS ABATEMENT AND IS COVERED UNDER 028213 ASBESTOS ABATEMENT.
3.	CEILING PLENUM ASBESTOS AWARENESS ALL TRADES SHALL BE AWARE THAT THE GYPSUM WALLBOARD PANELS HAVE AN ASBESTOS-CONTAINING DRYWALL JOINT COMPOUND COATING. HOWEVER NO DRYWALL JOINT COMPOUND COATING HAS BEEN OBSERVED ON THE CEILING PLENUM GYPSUM PANELS. AS A RESULT DEMOLITION OF THE CEILING PLENUM WITH NO DRYWALL JOINT COMPOUND CAN OCCUR AS GENERAL DEMOLITION. ALL WORK THAT DISTURBS ANY ASBESTOS-CONTAINING DRYWALL JOINT COMPOUND IS CONSIDERED ASBESTOS ABATEMENT AND IS COVERED UNDER 028213 ASBESTOS ABATEMENT. INCLUDING REMOVAL OF THE PERIMETER CEILING METAL STUDS AND PERIMETER CEILING GRID COMPONENTS THAT ARE ATTACHED TO THE GYPSUM WALLBOARDS PANELS.
4.	LEAD AWARENESS ALL TRADES SHALL BE AWARE OF THE PRESENCE OF LEAD-BASED PAINT (LBP) AND/OR LEAD COATINGS WITHIN THE PROJECT LIMITS. SPECIFICALLY, LBP/LEAD COATINGS ON THE FOLLOWING BUILDING COMPONENTS HAVE BEEN IDENTIFIED: STRUCTURAL STEEL THROUGHOUT THE BUILDING; AND LEAD-COATED COPPER COUNTERFLASHING ON ROOF. ALL TRADES ARE REQUIRED TO COMPLY WITH OSHA 29 CFR 1926.62. LEAD EXPOSURE IN CONSTRUCTION; INTERIM FINAL RULE FOR ALL ACTIVITIES DURING WHICH AN EMPLOYEE MAY BE OCCUPATIONALLY EXPOSED TO LEAD. ALL DISTURBANCE OF LEAD SHALL BE ALSO IN CONFORMANCE WITH SPECIFICATION SECTION 028313 - LEAD REMEDIATION.

PRE-DEMOLITION TEST AND BALANCE (TAB) REQUIREMENTS	
1.	REFER TO SPECIFICATION 230593 FOR DETAILED TEST AND BALANCE REQUIREMENTS, WHICH APPLY TO EXISTING BUILDING SYSTEMS MODIFIED AND INTENDED FOR RESTORATION TO PRE-DEMOLITION PERFORMANCE UPON COMPLETION OF CERTAIN PHASES OF WORK.
2.	REFER TO THE DEMO AND NEW WORK FLOOR PLANS, SYSTEM DIAGRAMS, AND CONTROL DRAWINGS FOR THE DETAILED REQUIREMENTS.
3.	FOR ALL EXISTING SYSTEMS TO REMAIN, THERE ARE SYSTEM LEVEL, ZONE LEVEL, AND DUCT/DIFFUSER LEVEL AIR AND WATER PERFORMANCE REQUIREMENTS THAT THE PROJECT INTENDS TO MAINTAIN AND RESTORE TO THE FULLEST EXTENT POSSIBLE.
4.	THE CONTRACTOR IS DIRECTED TO FULLY DOCUMENT THE BUILDING SYSTEM PERFORMANCE PRIOR TO ANY MODIFICATIONS, DISRUPTION, OR DEMOLITION TO ANY EXISTING BUILDING SYSTEMS IN ORDER TO CORRECTLY DOCUMENT THE BUILDING'S CURRENT STATE OF OPERATION AND PERFORMANCE.
5.	AT VARIOUS POINTS IN THE CONSTRUCTION SCHEDULE, WHEN DIFFERENT WORK PHASES/SEQUENCES ARE COMPLETED, THE EXISTING BUILDING SYSTEMS WILL REQUIRE REBALANCE, RESTORATION, AND VERIFICATION VIA TAB REPORTS THAT THE BUILDING AREAS OUTSIDE OF THE SCOPE OF WORK HAVE BEEN FULLY RESTORED BACK TO THEIR PREVIOUS STATE OF OPERATIONS.
6.	IT IS THE CONTRACTORS RESPONSIBILITY TO IDENTIFY AND DOCUMENT ALL SYSTEM OPERATIONAL DEFICIENCIES DURING THE PRE-DEMOLITION TAB PROCESS TO SEARCH OUT ANY OPERATIONAL ISSUES WITHIN THE BUILDING THAT WERE IN EXISTENCE PRIOR TO THE START OF THE PROJECT.
7.	ALL PRE-DEMOLITION TEST AND BALANCE WORK DONE SHALL BE ISSUED AS A FORMAL SUBMITTAL FOR REVIEW AND ACCEPTANCE BY THE ARCHITECT/ENGINEERING TEAM. IT SHALL CONFORM TO THE TEST AND BALANCE SPECIFICATION SUBMITTAL REQUIREMENTS FOR EACH SYSTEM TYPE.
8.	WHERE REBALANCE OF EXISTING SYSTEM DUCTWORK IS INDICATED, CONTRACTOR SHALL INCLUDE THE INSTALLATION OF MAIN VOLUME/BALANCING DAMPERS INTO THE EXISTING DUCTWORK AT THOSE LOCATIONS.

HYDRONIC SYSTEM SPECIFIC ABBREVIATIONS			
ACV	AUTOMATIC CONTROL VALVE	HWR	HOT WATER RETURN
AS	AIR SEPARATOR	HWS	HOT WATER SUPPLY
AAV	AUTOMATIC AIR VENT	HCF	DUAL TEMP WATER FEED TO INDUCTION UNITS
AIV	AUTOMATIC ISOLATION VALVE	HCR	DUAL TEMP WATER RETURN TO INDUCTION UNITS
		HTWF	HIGH TEMP HOT WATER FEED (ORIGINAL BLDG SYSTEM)
CD	CONDENSATE DRAIN	HTWR	HIGH TEMP HOT WATER RETURN (ORIGINAL BLDG SYSTEM)
CBA	CHEMICAL FEED	HTHWS	HIGH TEMP HOT WATER SUPPLY
CHW	CHILLED WATER	HTHWR	HIGH TEMP HOT WATER RETURN
CHWR	CAMPUS CHILLED WATER RETURN		
CHWS	CAMPUS CHILLED WATER SUPPLY		
CHWR	CHILLED WATER RETURN	LWT	LEAVING WATER TEMPERATURE
CHWS	CHILLED WATER SUPPLY	LWTF	LOW TEMPERATURE WATER FEED (ORIGINAL BLDG SYSTEM)
CHR	CHILLED WATER RETURN (ORIGINAL CHW SYSTEM)	LTWR	LOW TEMPERATURE WATER RETURN (ORIGINAL BLDG SYSTEM)
		LPS	LOW PRESSURE STEAM SUPPLY (ORIGINAL BLDG SYSTEM)
DOV	DRAIN OFF VALVE	LPR	LOW PRESSURE STEAM RETURN (ORIGINAL BLDG SYSTEM)
EEV	ELECTRONIC EXPANSION VALVE		
ET	EXPANSION TANK	MAV	MANUAL AIR VENT
EWT	ENTERING WATER TEMPERATURE		
GWR	DUAL TEMP GLYCOL RETURN (ORIGINAL BLDG SYSTEM)	NPSH	NET POSITIVE SUCTION HEAD
GWS	DUAL TEMP GLYCOL SUPPLY (ORIGINAL BLDG SYSTEM)	P	PUMP
		PHX	PLATE HEAT EXCHANGER
		PICCV	PRESSURE INDEPENDENT CHARACTERIZED CONTROL VALVE
HB	HOSE BIBB CONN W/CHAINED CAP		
HCR	HOT COLD WATER RETURN (ORIGINAL INDUCTION UNIT SYSTEM)		
HCF	HOT OR COLD WATER FEED (ORIGINAL INDUCTION UNIT SYSTEM)	RS	REFRIGERANT SUPPLY
HRS	HEAT RECOVERY SUPPLY	RR	REFRIGERANT RETURN
HRR	HEAT RECOVERY RETURN	TDB	TOTAL DYNAMIC HEAD
		TDH	TEST AND BALANCE

AIR SYSTEM SPECIFIC ABBREVIATIONS			
AC	AIR CONDITIONING	LAT	LEAVING AIR TEMPERATURE
ACC	AIR COOLED CONDENSER	LD	LINEAR DIFFUSER
ACCU	AIR COOLED CONDENSING UNIT	LUVR	LOUVER
ACU	AUTOMATIC CONTROL DAMPER	LVDOR	LOUVERED DOOR
AF	AIR FOIL	OA	OUTSIDE AIR
AHU	AIR HANDLING UNIT	OAI	OUTSIDE AIR INTAKE
ALD	ACoustically Lined Ductwork	OB	OPPOSED BLADE DAMPER
ATD	AIR TERMINAL DEVICE	OED	OPEN END DUCT
AVS	AIR VOLUME TRAVERSE STATION		
BDD	BACKDRAFT DAMPER	PHC	PREHEAT COIL
BI	BACKWARD INCLINED		
BOD	BOTTOM OF DUCT	RA	RETURN AIR
		RAF	RETURN FAN
		RG	RETURN GRILLE
CC	COOLING COIL	RHC	REHEAT COIL
CD	CEILING DIFFUSER	RL	REFRIGERANT LIQUID
CFM	CUBIC FEET PER MINUTE	RLF	RELIEF
CG	CEILING GRILLE	RR	RETURN REGISTER
		RS	REFRIGERANT SUCTION
DIFF	DIFFUSER	RTU	ROOF TOP UNIT
DWID	DOUBLE WIDTH DOUBLE INLET		
DWSI	DOUBLE WIDTH SINGLE INLET	SA	SUPPLY AIR
DX	DIRECT EXPANSION	SATT	SOUND ATTENUATOR
EAV	EXHAUST AIR VALVE	SAV	SUPPLY AIR VALVE
EB	EXHAUST BOX	SB	SUPPLY BOX
EF	EXHAUST FAN	SCR	SCREEN
EG	EXHAUST GRILLE	SD	SMOKE DAMPER
ER	EXHAUST REGISTER	SDT	SMOKE DETECTOR
ESP	EXTERNAL STATIC PRESSURE	SF	SUPPLY FAN
F	FAN	SG	SUPPLY GRILLE
F&B	FACE AND BYPASS	SM	SHEETMETAL
FB	FAN BOX	SP	STATIC PRESSURE
FC	FORWARD CURVED	SR	SUPPLY REGISTER
FA	FREE AREA	SWI	SINGLE WIDTH DOUBLE INLET
FCU	FAN COIL UNIT	DWSI	SINGLE WIDTH SINGLE INLET
FD	FIRE DAMPER (W/ ACCESS DOOR)		
FLTR	FILTER	TAB	TEST AND BALANCE
FRTI	FINS PER INCH	TE	TOILET EXHAUST
FSD	COMBINATION AUTOMATIC FIRE/SMOKE DAMPERS WITH ACCESS DOOR	TF	TRANSFER FAN
--		TG	TRANSFER GRILLE
GE	GENERAL EXHAUST	TSP	TOTAL STATIC PRESSURE
GH	GRAVITY HOOD	TU	TERMINAL UNIT
HC	HEATING COIL	UC	UNDERCUT DOOR
HE	HOOD EXHAUST		
HPU	HEAT PUMP UNIT	VD	VOLUME DAMPER
HRU	HEAT RECOVERY UNIT	VV	VARIABLE VOLUME SUPPLY AIR
HV	HEATING & VENTILATING UNIT	VVB	VARIABLE VOLUME EXHAUST AIR
		VVE	VARIABLE VOLUME EXHAUST AIR TERMINAL BOX
IH	INTAKE HOOD		
		WMS	WIRE MESH SCREEN

RENOVATION AND DEMOLITION NOTES	
DEMOLITION NOTES	
1.	SITE VISIT: BEFORE SUBMITTING BID, IT IS HIGHLY ENCOURAGED TO VISIT AND CAREFULLY EXAMINE SITE TO IDENTIFY EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT WORK OF THIS SECTION. NO EXTRA PAYMENT WILL BE ALLOWED FOR ADDITIONAL WORK CAUSED BY UNFAMILIARITY WITH SITE CONDITIONS THAT ARE VISIBLE OR READILY CONTRASTED BY EXPERIENCED OBSERVER. SITE VISIT IS PARTICULARLY IMPORTANT BECAUSE THIS IS RENOVATION WORK.
2.	EXISTING CONDITIONS AND PREPARATORY WORK: BEFORE STARTING WORK IN A PARTICULAR AREA OF THE PROJECT, VISIT SITE AND EXAMINE CONDITIONS UNDER WHICH WORK MUST BE PERFORMED INCLUDING PREPARATORY WORK DONE UNDER OTHER CONTRACTORS OWNER. REPORT CONDITIONS THAT MIGHT AFFECT WORK ADVERSELY IN WRITING TO ARCHITECT AND OWNER. DO NOT PROCEED WITH WORK UNTIL DEFECTS HAVE BEEN CORRECTED AND CONDITIONS ARE SATISFACTORY. COMMENCEMENT OF WORK SHALL BE CONSTRUED AS COMPLETE ACCEPTANCE OF EXISTING CONDITIONS AND PREPARATORY WORK.
3.	REFER TO ALL DRAWINGS FOR GENERAL DESCRIPTION OF AREAS REQUIRING DEMOLITION.
4.	ITEMS WHICH ARE NOT DIRECTED TO BE RETURNED TO THE OWNER, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM SITE AND LEGALLY DISPOSED OF. STORAGE OR SALE OF ITEMS ON THE PROJECT SITE IS PROHIBITED.
5.	PROTECTION: ENSURE THE SAFE PASSAGE OF PERSONS IN AND AROUND THE BUILDING DURING DEMOLITION. PREVENT INJURY TO PERSONS AND DAMAGE TO PROPERTY. PROVIDE ADEQUATE SHORING AND BRACING TO PREVENT COLLAPSE. IMMEDIATELY REPAIR DAMAGED PROPERTY TO THE CONDITION BEFORE BEING DAMAGED. TAKE EFFECTIVE MEASURES TO PREVENT WINDBLOWN DUST.
6.	UTILITIES: MAINTAIN ALL UTILITIES EXCEPT THOSE REQUIRING REMOVAL OR RELOCATION. KEEP UTILITIES IN SERVICE AND PROTECT FROM DAMAGE. DO NOT INTERRUPT UTILITIES SERVING OCCUPIED AREAS WITHOUT FIRST OBTAINING PERMISSION FROM THE OWNER IN WRITING. PROVIDE TEMPORARY SERVICES.
7.	DRAWINGS ARE DIAGRAMMATIC ONLY AND REFLECT OVERALL SYSTEM REMOVAL. NOT EVERY ITEM OR COMPONENT OF A SYSTEM IS SHOWN.

EXISTING REFRIGERATION SYSTEM MODIFICATION REQUIREMENTS	
1.	ALL EXISTING SYSTEMS REMOVED, RELOCATED, OR REQUIRING PIPING MODIFICATIONS SHALL BE IN ACCORDANCE WITH THE EPA CLEAN AIR ACT.
2.	FOR FULL LEGAL REQUIREMENTS REFER TO EPA REGULATIONS 40 CFR PART 82, SUBPART F UNDER SECTION 608 OF THE CLEAN AIR ACT.
3.	INTENTIONALLY VENTING REFRIGERANT TO THE ATMOSPHERE IS PROHIBITED.
4.	TECHNICIANS MUST EVACUATED REFRIGERANT TO ESTABLISHED VACUUM LEVELS PRIOR TO ANY MODIFICATION TO THE REFRIGERANT PIPING/EQUIPMENT SYSTEM.
5.	RECOVERED REFRIGERANT CAN BE RETURNED TO THE SAME SYSTEM, OTHER SYSTEMS UNDER THE SAME OWNERSHIP, OR OTHERWISE SHIPPED AND RECLAIMED BY AN EPA CERTIFIED REFRIGERANT RECLAIMER.

HVAC GENERAL NOTES	
GENERAL	
1.	HVAC GENERAL NOTES, SYMBOLS LIST AND DETAILS ARE APPLICABLE TO ALL "M" SERIES DRAWINGS.
2.	DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO INDICATE CAPACITY, SIZE, APPROXIMATE LOCATION AND GENERAL ARRANGEMENT. DETERMINE EXACT LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD.
3.	DRAWINGS CANNOT BE FULLY AND CORRECTLY INTERPRETED WITHOUT REFERENCE TO LEGENDS, DETAILS, SCHEDULES AND SPECIFICATIONS. IT IS THE INTENT OF THE DRAWINGS TO SHOW THE INSTALLATION, AS DETAILED BY THE TYPICAL ARRANGEMENT. ITEMS SHOWN ONCE ON THE FLOOR PLANS, ELEVATIONS, DETAILS, OR DIAGRAMS MAY NOT BE REPEATED IN FULL FOR OTHER TYPICAL INSTANCES.
4.	REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
5.	PROVIDE INFORMATION AND HARDWARE AS NECESSARY TO COORDINATE CONCRETE PADS AND STEEL PLATFORMS REQUIRED FOR MECHANICAL WORK.
6.	COORDINATE ROOF AND WALL PENETRATIONS WITH WORK OF OTHER SECTIONS AND WITH FLASHING REQUIREMENTS. COORDINATE SLAB PENETRATIONS WITH WORK OF OTHER SECTIONS AND WITH EXISTING POST-TENSION CABLES.
7.	RUN DUCTS AND PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS. ALL DUCTWORK SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO WALL AND UNDERSIDE OF BEAMS AND JOISTS.
8.	INSTALL SENSORS (TEMPERATURE, HUMIDITY, CO2, THERMOSTATS) AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED BY ARCHITECT. MOUNTING HEIGHT AFF SHALL COMPLY WITH ADA AND SHALL BE MOUNTED LEVEL WITH ADJACENT SWITCHES (IE LIGHT SWITCHES).
9.	COORDINATE WORK OF THIS SECTION WITH THAT OF OTHER SECTIONS AND WITH ALL TRADES INVOLVED. PROVIDE OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS.
10.	ACCESS PANELS SHALL BE PROVIDED TO CLEAN COILS AND SERVICE DAMPERS, HEATERS, VALVES AND ALL CONCEALED MECHANICAL EQUIPMENT. PROVIDE ACCESS PANELS THROUGH BUILDING ASSEMBLIES TO SERVICE AND MAINTAIN EQUIPMENT UNLESS SUCH EQUIPMENT IS INSTALLED IN EXPOSED LOCATIONS OR ABOVE LAY-IN ACCESS DOORS AND COORDINATE WITH ARCHITECT FOR THE LOCATION OF PANELS AND VERIFY THE EXACT QUANTITY, SIZE, AND LOCATIONS AFTER THE SYSTEMS AND EQUIPMENT REQUIRING ACCESS HAVE BEEN INSTALLED AND PRIOR TO THE CLOSURE OF THE AFFECTED CEILING AND BUILDING ASSEMBLIES. MINIMUM ACCESS PANEL AND DOOR SIZE SHALL BE 18"x18" UNLESS OTHERWISE NOTED. OBTAIN APPROVAL FOR ALL PANEL LOCATIONS FROM ARCHITECT.
11.	ELEMENTS OF THE WORK SHALL BE INSTALLED IN A MANNER SUCH THAT AT SUBSTANTIAL COMPLETION THE FOLLOWING ITEMS, NEW OR EXISTING SHALL BE "FULLY AND REASONABLY ACCESSIBLE": HVAC CONTROL BOXES, JUNCTION BOXES, VALVES (OF EVERY SHAPE, SORT AND FUNCTION), DDC CONTROL BOXES, ELECTRICAL PANELS, FILTERS, BELTS, WATER COILS, DISCONNECT SWITCHES, AND MAINTENANCE ACCESS ELEMENTS INCLUDING PULL SPACE. <ul style="list-style-type: none"> A. "ELECTRICAL/CONTROLS ELEMENTS: FULLY AND REASONABLY ACCESSIBLE" SHALL BE DEFINED AS: NATIONAL ELECTRIC CODE REQUIRED CLEARANCE FOR POWERED EQUIPMENT AND CAPABLE OF BEING ACCESSED FOR SERVICE, REPAIR OR REPLACEMENT BY AN AVERAGE SIZED INDIVIDUAL (ON A LADDER IF NECESSARY) AND CAPABLE OF BEING SERVICED OR REMOVED WITHOUT REMOVING OR MODIFYING OR DISTORTING OTHER COMPONENTS OF THE WORK. THE DESIGN INTENT PROVIDES A MINIMUM 2'x2' ZONE FOR MAINTENANCE ACCESSIBLE WITHOUT OBSTRUCTION FROM FLOOR LEVEL. B. HVAC SYSTEM COMPONENTS SHALL BE ACCESSIBLE FOR INSPECTION, SERVICE, REPAIR AND REPLACEMENT WITHOUT DISABLING THE FUNCTION OF A FIRE RESISTANCE-RATED ASSEMBLY OR REMOVING PERMANENT CONSTRUCTION, OTHER APPLIANCES, VENTING SYSTEMS OR ANY OTHER PIPING OR DUCTS NOT CONNECTED TO THE APPLIANCE BEING INSPECTED, SERVICED, REPAIRED OR REPLACED. A LEVEL WORKING SPACE NOT LESS THAN 30 INCHES DEEP AND 30 INCHES WIDE SHALL BE PROVIDED. 30 INCHES WIDE SHALL BE PROVIDED FOR MAINTENANCE ACCESSIBLE WITHOUT OBSTRUCTION FROM FLOOR LEVEL. C. CONFLICT WITH MEETING THESE REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IN A TIMELY MANNER AND SHALL BE CORRECTED AT NO ADDITIONAL COST.
12.	SUPPORT ALL EQUIPMENT, PIPING AND DUCTWORK FROM BUILDING STRUCTURE. PROVIDE VIBRATION ISOLATION FOR ROTATING EQUIPMENT, DUCTWORK AND PIPING IN ACCORDANCE WITH THE SPECIFICATIONS. PROVIDE A LIST OF ALL WEIGHTS AND METHODS OF SUPPORT FOR COORDINATION. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
13.	ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH NEC, AND DIVISION 230000 & 260000 SPECIFICATIONS.
14.	ALL MATERIALS AND EQUIPMENT SHALL BE NEW.
AIR SYSTEM SPECIFIC NOTES:	
1.	VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION.
2.	SHEETMETAL FITTINGS SHOWN ARE TO BE PROVIDED. NO SUBSTITUTES SHALL BE ALLOWED WITHOUT PRIOR CONSENT FROM ARCHITECT/ENGINEER.
3.	REFER TO SPECIFICATIONS FOR DUCTWORK CONSTRUCTION CLASSES, SEAL, AND LEAKAGE CLASSES.
4.	EXTERIOR LOUVERS ARE INDICATED FOR LOCATION ONLY.
5.	SMOKE DETECTORS SHALL BE FURNISHED AND WIRED TO THE FIRE ALARM SYSTEM. MOUNT THE DETECTORS IN DUCTWORK, WHERE REQUIRED BY CODE. WIRE THE DETECTORS TO THE BAS SYSTEM AND FAN STARTERS FOR SHUTDOWN.
6.	SMOKE DAMPERS SHALL BE UL565 LISTED. FIRE DAMPERS SHALL BE UL556 LISTED. PROVIDE FIRE DAMPERS, SMOKE DAMPERS AND ASSOCIATED ACCESS PANELS WHERE DAMPERS ARE SHOWN ON THE DRAWINGS IN COMPLIANCE WITH APPLICABLE BUILDING AND MECHANICAL CODES AND NFPA 90A.
7.	REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR COORDINATED ARRANGEMENT OF CEILING MOUNTED AIR DELIVERY DEVICES (GRILLES, REGISTERS, DIFFUSERS).
8.	INTERNAL AIR FLOW DIMENSIONS ARE SHOWN FOR DUCTS. INCREASE SIZE FOR LINER IF APPLICABLE.
9.	DIFFUSER SIZES SHOWN ARE NECK SIZES. REGISTER AND GRILLE SIZE ARE NOMINAL. REFER TO DIFFUSER SCHEDULE FOR DUCT RUN-OUT SIZES.
10.	PROVIDE FLEXIBLE CONNECTIONS ON ALL DUCTS CONNECTING TO FANS AND AIR HANDLING UNITS UNLESS INTERNALLY ISOLATED. ALL DUCTS TO BE GROUNDED ACROSS FLEXIBLE CONNECTION WITH FLEXIBLE COPPER GROUNDING STRAPS.
11.	THE INSIDE OF DUCTWORK VISIBLE THROUGH A GRILLE OR DIFFUSER SHALL BE PAINTED FLAT BLACK.
12.	ALL RETURN AIR OPENINGS ABOVE CEILING SHALL BE PROVIDED WITH A 1/4" MESH ALUMINUM OR GALVANIZED SCREEN (80% FREE AREA MINIMUM).
13.	INSULATE DUCTWORK: PERFORM TESTS BEFORE INSULATING.
14.	ELBOWS IN DUCT SYSTEMS SHALL BE FULL RADIUS (CENTERLINE RADIUS = 1.5 DUCT WIDTH) WHERE SPACE PERMITS. WHERE LIMITED CLEARANCE OCCURS, PROVIDE SHORT RADIUS ELBOW WITH FULL LENGTH SPLITTER VANES PER SMACNA. MITERED (SQUARE) ELBOWS WITH TURNING VANES MAY NOT BE USED.
15.	MANUAL DAMPERS ARE NOT SHOWN ON THE DRAWINGS IN ORDER FOR DRAWING CLARITY. PROVIDE MANUAL ADJUSTABLE DAMPERS ON EACH LOW PRESSURE SUPPLY, RETURN, AND EXHAUST DUCT TAKE OFF, AND AT EACH TAKE OFF TO REGISTERS, GRILLES, DIFFUSERS.
PIPING SYSTEM SPECIFIC NOTES:	
1.	VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER CERTIFIED DRAWINGS. VERIFY AND PROVIDE FIT

TAG	NAME	#	DESCRIPTION	TRADE	LOAD			VOLTAGE	Φ	POWER SYSTEM	CIRCUIT BREAKER	BRANCH CIRCUITRY			PANEL	CKT	DEVICE	FUSE	LOCATION	KEY NOTE	Comments
					HP	W	FLA					CONDUCTORS	GROUND	CONDUIT							
EF	ELECTRIC FAN	2		HVAC	0	0	5	120	1	NORMAL	20A-1P	2-12 AWG	1-12 AWG	3/4"	NP-1	30	FDS	10A	REFER TO HVAC DRAWINGS	-	SURGE
EH	ELECTRIC HEATER	1		HVAC	0	1000	14	120	1	NORMAL	25A-1P	2-12 AWG	1-12 AWG	3/4"	NP-2	31	FDS	25A	REFER TO HVAC DRAWINGS	-	SURGE

ABBREVIATION	DESCRIPTION
CP	CONTROL PANEL: EQUIPMENT HAVING A CONTROL PANEL SHALL BE FURNISHED AND INSTALLED BY DIVISION 23 AND WIRED BY DIVISION 26.
CSD	COMBINATION FUSED DISCONNECT & STARTER: EQUIPMENT REQUIRING A STARTER SHALL BE FURNISHED WITH A COMBINATION STARTER/FUSED DISCONNECT BY DIVISION 26. THE CONTRACTOR SHALL INSTALL AND WIRE THE COMBINATION STARTER/FUSED DISCONNECT.
FDS	FUSED DISCONNECT SWITCH: UNLESS OTHERWISE INDICATED, ALL FUSED DISCONNECT SWITCHES ARE PROVIDED BY DIVISION 26.
JB	JUNCTION BOX: UNLESS OTHERWISE INDICATED, JUNCTION BOX PROVIDED AND INSTALLED BY DIVISION 26.
MMS	MANUAL MOTOR STARTER: THERMAL OVERLOAD PROVIDED AND INSTALLED BY DIV. 26.
VFD	VARIABLE FREQUENCY DRIVE: UNLESS OTHERWISE INDICATED, VARIABLE FREQUENCY DRIVES PROVIDED AND INSTALLED BY DIV. 26. PROVIDE FILTERS AT EACH VFD TO REDUCE HARMONIC DISTORTION. REFER TO SPECIFICATIONS FOR COORDINATE LOCATION OF VFD WITH FIELD CONDITIONS. EQUIPMENT WITH VFD NOT WITHIN SIGHT OF THE ASSOCIATED EQUIPMENT SHALL BE PROVIDED WITH A LOCAL DISCONNECT. DISCONNECT SWITCHES LOCATED AT MOTORS, SERVED BY A VFD, SHALL HAVE ELECTRICAL INTERLOCK KIT FOR INTERFACE TO VFD SHUTDOWN. A PIVOT ARM OPERATES FROM THE SWITCH MECHANISM, BREAKING THE CONTROL CIRCUIT BEFORE THE MAIN SWITCH BLADES BREAK. PROVIDE, IN ADDITION TO THE MOTOR FEED, 2#12 IN A 3/4" CONDUIT FROM THE DISCONNECT TO THE VFD.
VFD*	VFD'S SHOWN IN THIS SCHEDULE DENOTED WITH "*" INDICATES VFD PROVIDED WITH EQUIPMENT. CONTRACTOR SHALL PROVIDE FUSED DISCONNECT SWITCH WITH PIVOT ARM CONTACTS AT EQUIPMENT EXTERIOR. THE PIVOT ARM OPERATES FROM THE SWITCH MECHANISM, BREAKING THE CONTROL CIRCUIT BEFORE THE MAIN SWITCH BLADES BREAK. PROVIDE, IN ADDITION TO THE MOTOR FEED, 2#12 IN A 3/4" CONDUIT FROM THE DISCONNECT TO THE VFD.

NO.	DESCRIPTION
1	REFER TO THE MECHANICAL, PLUMBING AND FIRE PROTECTION DRAWINGS AND SPECIFICATIONS FOR THE LOCATIONS OF ALL EQUIPMENT REQUIRING AN ELECTRICAL CONNECTION. PROVIDE FLEXIBLE CONNECTIONS TO ASSOCIATED EQUIPMENT.
2	LOCATE DISCONNECT SWITCHES, COMBINATION CONTROLLERS AND VFD'S AS CLOSE AS PRACTICABLE TO EQUIPMENT SERVED, AND IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE. CONTROL EQUIPMENT NOT WITHIN SIGHT OF THE MOTOR SHALL BE PROVIDED WITH A LOCAL FUSED DISCONNECT WITH ENCLOSURE PROPERLY RATED FOR THE APPLICATION. ELECTRICAL EQUIPMENT SHALL BE RATED FOR THE MAXIMUM AVAILABLE FAULT CURRENT, AND SHALL BE RATED IN HORSEPOWER TO MEET THE REQUIREMENTS OF THE EQUIPMENT SERVED.
3	PROVIDE NAMEPLATE FOR EACH CONTROLLER AND/OR DISCONNECT MOUNTED ON FRONT OF UNIT ENCLOSURE. NAMEPLATE SHALL INDICATE EQUIPMENT NAME (I.E. AHU), CONTROLLER DESIGNATION (I.E. VFD, STARTER, ETC), EQUIPMENT ELECTRICAL CHARACTERISTICS (I.E. VOLTAGE, PHASE, HP), SOURCE FED FROM (I.E. FED FROM PANEL M432) AND LOCATION OF SOURCE (I.E. LOCATED IN ELEC RM 442).
4	REFER TO POWER PLANS FOR ALL FAN COIL, FAN BOX, CONDENSATE PUMP, AND UNIT HEATER BRANCH CIRCUIT WIRING INFORMATION.
5	AQUASTAT FOR WATER HEATER CIRCULATION PUMP. FURNISHED AND INSTALLED BY CONTRACTOR. WIRED BY CONTRACTOR.

PANEL NAME: NP-3			BUS AMPS: 100			PANELBOARD OPTIONS & ACCESSORIES								
MOUNTING: Surface			MLO: No			NEUTRAL BUS: Yes								
VOLTAGE: 208Y/120V			MCB: Yes			SUB-FEED LUGS: No								
FED FROM: LAB-3L SEC 1			SSC RATING: 10K			FEED-THRU LUGS: No								
			MCB RATING: 100A			EQUIPMENT GROUND: Yes								
			SHUNT TRIP: No			SURGE SUPPRESSION: No								
			ISOLATED GROUND: No											
CKT TYPE	DESCRIPTION	BKR TYPE	TRIP	POLE	A (kVA)	B (kVA)	C (kVA)	POLE	TRIP	BKR TYPE	DESCRIPTION	TYPE	CKT	
1 R	3016 RESEACH RCPTS	20 1	0.6	0.9				1	20	3032 CLASS LAB		R	2	
3 R	3016 RESEACH C-CHAMBER	20 1			1.08	0.18		1	20	3032 CLASS LAB RCPTS		R	4	
5 R	3016 RESEACH MICROWAVE	20 1					1.2	0.36	1	20	3006A/B OFFICE RCPTS		R	6
7 R	3016 RESEACH RCPTS	20 1	0.48	1.8				1	20	3046 RESEARCH CENTRIFUGE		R	8	
9 R	3036 BIO PREP GLASSWASH	20 1			1.92	1.8		1	20	3046 RESEARCH CENTRIFUGE		R	10	
11 R	3036 BIO PREP RCPTS	20 1					0.54	1.8	1	20	3046 RESEARCH DRYING...		R	12
13 R	3036 BIO PREP RCPTS	20 1	0.78	1.8				1	20	3046 RESEARCH DRYING...		R	14	
15 R	3036 BIO PREP ICE MAKER	20 1			1.8	1.8		1	20	3046 RESEARCH UV CHAMBER		R	16	
17 R	3036 BIO PREP AUTOCLAVE	20 2	2.1	0.72			2.1	0.72	1	20	3046 RESEARCH FRIDGE		R	18
19 R	3036 BIO PREP AUTOCLAVE	20 2	2.1	0.72				1	20	3046 RESEARCH G-CHAMBER		R	20	
21 R	3053 STORAGE REFRIG BASE	20 1			1.8	0.11		2	20	3046 RESEARCH FUME HOOD		R	22	
23 R	3053 STORAGE RCPTS	20 1					0.9	0.11	2	20	3046 RESEARCH FUME HOOD		R	24
25 R	3032 CLASS LAB RCPTS	20 1	1.38	1.62				1	20	3032 CLASS LAB RCPTS		R	26	
27 R	3032 CLASS LAB SANITIZER	20 1			0.72	0.72		1	20	3032 CLASS LAB RCPTS		R	28	
29 R	3032 CLASS LAB SANITIZER	20 1					0.72	1.62	1	20	3032 CLASS LAB RCPTS		R	30
31 R	3032 CLASS LAB RCPTS	20 1	0.9	1.26				1	20	3032 CLASS LAB RCPTS		R	32	
33 R	3032 CLASS LAB RCPTS	20 1					0.72	0	1	20	SPARE		R	34
35 --	SPARE	--	20	1			0	0	0	1	20	SPARE	--	36
37 --	SPARE	--	20	1	0	0			1	20	SPARE	--	38	
39 --	SPARE	--	20	1			0	0	1	20	SPARE	--	40	
41 --	SPARE	--	20	1			0	0	1	20	SPARE	--	42	
PHASE LOAD:					14.34	12.65	10.07							
PHASE AMPS:					123	109	84							
LOAD TYPE	CONNECTED (kVA)	DEMAND (kVA)	LOAD TYPE KEY	BREAKER TYPE KEY	PANEL TOTALS									
R	37.06	23.53	R = RECEPTACLE L = LIGHTING M = MECH/EQUIP K = KITCHEN C = CONTINUOUS N = NONCONTINUOUS	BLANK = STANDARD G3 = GROUND FAULT 30 mA (EQUIP) G = GROUND FAULT 5 mA... A = ARC FAULT ST = SHUNT TRIP LH = LOCKING HASP HT = HANDLE TIE	CONNECTED LOAD (kVA):	37.06	DEMAND LOAD (kVA):	23.53	CONNECTED LOAD (AMPS):	103	DEMAND LOAD (AMPS):	65	DEMAND LOAD x 125% (AMPS):	82

PANEL NAME: NP-2			BUS AMPS: 100			PANELBOARD OPTIONS & ACCESSORIES								
MOUNTING: Surface			MLO: No			NEUTRAL BUS: Yes								
VOLTAGE: 208Y/120V			MCB: Yes			SUB-FEED LUGS: No								
FED FROM: L-2N SEC 1			SSC RATING: 10K			FEED-THRU LUGS: No								
			MCB RATING: 100A			EQUIPMENT GROUND: Yes								
			SHUNT TRIP: No			SURGE SUPPRESSION: No								
			ISOLATED GROUND: No											
CKT TYPE	DESCRIPTION	BKR TYPE	TRIP	POLE	A (kVA)	B (kVA)	C (kVA)	POLE	TRIP	BKR TYPE	DESCRIPTION	TYPE	CKT	
1 R	2026 SUPPORT RCPTS	20 1	0.54	0.09				2	20	2030 RESEARCH FUME HOOD		R	2	
3 R	2026 SUPPORT RCPTS	20 1				0.72	0.09		1	20	2030 RESEARCH FUME HOOD		R	4
5 R	2030 RESEARCH DRYING...	20 1					0.18	0	1	20	SPARE		R	6
7 R	2030 RESEARCH RCPTS	20 1	0.72	0				1	20	SPARE		R	8	
9 R	2030 RESEARCH RCPTS	20 1			0.54	0		1	20	SPARE		R	10	
11 R	2049B RCPTS	20 1					0.36	0	1	20	SPARE		R	12
13 R	2027 MULTIPURPOSE RCPTS	20 1	0.72	0				1	20	SPARE		R	14	
15 R	2027 MULTIPURPOSE RCPTS	20 1			0.72	0		1	20	SPARE		R	16	
17 R	2041 RESEARCH F-CYCLER	20 1					1.15	0	1	20	SPARE		R	18
19 R	2041 RESEARCH CENTRIFUGE	20 1	0.96	0				1	20	SPARE		R	20	
21 R	2041 RESEARCH WATER BATH	20 1			0.96	0		1	20	SPARE		R	22	
23 R	2041 RESEARCH MICROWAVE	20 1					1.2	0	1	20	SPARE		R	24
25 R	2041 RESEARCH RCPTS	20 1	0.87	0				1	20	SPARE		R	26	
27 R	2044 CLASS LAB FREEZERS	20 1			0.84	0		1	20	SPARE		R	28	
29 R	2044 CLASS LAB MSCOPES	20 1					0.9	0	1	20	SPARE		R	30
31 M	EH-1	25 1	1.68	0				1	20	SPARE		R	32	
33 --	SPARE	--	20	1			0	0	1	20	SPARE	--	34	
35 --	SPARE	--	20	1			0	0	1	20	SPARE	--	36	
37 --	SPARE	--	20	1	0	0			1	20	SPARE	--	38	
39 --	SPARE	--	20	1			0	0	1	20	SPARE	--	40	
41 --	SPARE	--	20	1			0	0	1	20	SPARE	--	42	
PHASE LOAD:					5.34	3.87	3.79							
PHASE AMPS:					45	32	32							
LOAD TYPE	CONNECTED (kVA)	DEMAND (kVA)	LOAD TYPE KEY	BREAKER TYPE KEY	PANEL TOTALS									
M	1.68	1.68	R = RECEPTACLE L = LIGHTING M = MECH/EQUIP K = KITCHEN C = CONTINUOUS N = NONCONTINUOUS	BLANK = STANDARD G3 = GROUND FAULT 30 mA (EQUIP) G = GROUND FAULT 5 mA... A = ARC FAULT ST = SHUNT TRIP LH = LOCKING HASP HT = HANDLE TIE	CONNECTED LOAD (kVA):	12.94	DEMAND LOAD (kVA):	12.17	CONNECTED LOAD (AMPS):	36	DEMAND LOAD (AMPS):	34	DEMAND LOAD x 125% (AMPS):	42

PANEL NAME: NP-1			BUS AMPS: 100			PANELBOARD OPTIONS & ACCESSORIES								
MOUNTING: Surface			MLO: No			NEUTRAL BUS: Yes								
VOLTAGE: 208Y/120V			MCB: Yes			SUB-FEED LUGS: No								
FED FROM: LAB-1, SEC 1			SSC RATING: 10K			FEED-THRU LUGS: No								
			MCB RATING: 100A			EQUIPMENT GROUND: Yes								
			SHUNT TRIP: No			SURGE SUPPRESSION: No								
			ISOLATED GROUND: No											
CKT TYPE	DESCRIPTION	BKR TYPE	TRIP	POLE	A (kVA)	B (kVA)	C (kVA)	POLE	TRIP	BKR TYPE	DESCRIPTION	TYPE	CKT	
1 R	1023 STOCKROOM RCPTS	20 1	0.38	0.72				1	20	1050 FIELD GEAR RCPTS		R	2	
3 R	1023 SNAILS FREEZER	20 1			0.15	0.54		1	20	1050 FIELD GEAR RCPTS		R	4	
5 R	1018 LOBSTER RCPTS	20 1					0.72	1.08	1	20	1050 FIELD GEAR RCPTS		R	6
7 R	1018 LOBSTER RCPTS	20 1	0.72	1.08				1	20	1050 FIELD GEAR RCPTS		R	8	
9 R	1017 FISH RCPTS	20 1			0.9	1.08		1	20	1050 FIELD GEAR RCPTS		R	10	
11 R	1017 FISH RCPTS	20 1					0.72	1.08	1	20	1008 CLASSROOM RCPTS		R	12
13 R	1017 FISH FRIDGE	20 1	0.72	1.26				1	20	1008 CLASSROOM RCPTS		R	14	
15 R	1016 BEES HONEY...	20 1			1.1	1.08		1	20	1008 CLASSROOM RCPTS		R	16	
17 R	1006 TROUT TANKS	20 1					0.72	1.8	1	20	1009A RESEARCH DRYING...		R	18
19 R	1059 GEO LIBRARY MUF BRNR	20 1	1.8	0.72				1	20	1009A RESEARCH RCPTS		R	20	
21 R	1059 GEO LIBRARY MUF BRNR	20 1			1.8	0.54		1	20	1009A RESEARCH RCPTS		R	22	
23 R	1059 GEO LIBRARY MUF BRNR	20 1					1.8	1.8	1	20	1009B LAPIDARY SLAB SAW		R	24
25 R	1059 GEO LIBRARY DRY OVEN	20 1	1.8	0.72				1	20	1009B LAPIDARY RCPTS		R	26	
27 R	1059 GEO LIBRARY DRY OVEN	20 1			1.8	0.72		1	20	1009B LAPIDARY RCPTS		R	28	
29 R	1059 GEO LIBRARY DRY OVEN	20 1					1.8	0.54	1	20	EF-2	M	30	
31 R	1059 GEO LIBRARY RCPTS	20 1	0.36	1.08				1	20	1050 FIELD GEAR RCPTS		R	32	
33 R	1050 FIELD GEAR RCPTS	20 1			0.54	1.08		1	20	1008 CLASSROOM RCPTS		R	34	
35 --	SPARE	--	20	1			0	0	1	20	SPARE	--	36	
37 --	SPARE	--	20	1	0	0			1	20	SPARE	--	38	
39 --	SPARE	--	20	1			0	0	1	20	SPARE	--	40	
41 --	SPARE	--	20	1			0	0	1	20	SPARE	--	42	
PHASE LOAD:					11.34	11.33	11.96							
PHASE AMPS:					95	94	100							
LOAD TYPE	CONNECTED (kVA)	DEMAND (kVA)	LOAD TYPE KEY	BREAKER TYPE KEY	PANEL TOTALS									
M	0.54	0.54	R = RECEPTACLE L = LIGHTING M = MECH/EQUIP K = KITCHEN C = CONTINUOUS N = NONCONTINUOUS	BLANK = STANDARD G3 = GROUND FAULT 30 mA (EQUIP) G = GROUND FAULT 5 mA... A = ARC FAULT ST = SHUNT TRIP LH = LOCKING HASP HT = HANDLE TIE	CONNECTED LOAD (kVA):	34.62	DEMAND LOAD (kVA):	22.53	CONNECTED LOAD (AMPS):	96	DEMAND LOAD (AMPS):	63	DEMAND LOAD x 125% (AMPS):	78

