GENERAL MECHANICAL SYMBOLS	PLUMBING AND PIPI	NG SYMBOLS
REVISION NUMBER - SHOWN ON PLANS POINT OF CONNECTION	SENSOR TS TEMP	ERATURE & HUMIDITY SENS
NUMBER OF DETAIL ON SHEET	THERMOSTAT 🔲 (T) EXIST	ING THERMOSTAT
DETAIL TITLE # NUMBER OF SHEET WHERE DETAIL APPEARS DETAIL CALLOUT	OR - VOLUME DAMPER	R
NUMBER OF SECTION ON SHEET NUMBER OF SHEET WHERE SECTION APPEARS	AB PIP	E SIZE TAG (DIAMETER) OVE GROUND PIPING E SLOPE TAG
SHEET NOTE SCONTINUATION SYMBOL Room ROOM NAME AND NUMBER	——(E) —— EXI	E INVERT ELEVATION TAG STING PIPE TAG ING BEING REMOVED
ITEM TO BE REMOVED	HEATING WATER:	ATING WATER RETURN
AREA NOT IN CONTRACT	HWS HE	ATING WATER SUPPLY ATING/CHILLED WATER RETU
LIGHT LINE INDICATES BACKGROUND AND EXISTING WORK HEAVY LINE INDICATES NEW WORK	HCS HE	ATING/CHILLED WATER SUPF
DASH LINE INDICATES FUTURE AND OTHER	RE	TURN 6H TEMPERATURE HEATING \
DISCIPLINE WORK HVAC SYMBOLS	SU	PPLY DIANT FLOOR HEAT RETURN
DUCTWORK:		DIANT FLOOR HEAT SUPPLY
(WIDTH x HEIGHT)	REFRIGERATION: ———— RD ———— REI	-RIGERANT DISCHARGE
24"/10" OVAL DUCT SIZE TAG (WIDTH / HEIGHT) 24"Ø ROUND DUCT SIZE TAG (DIAMETER)	HGB REI	FRIGERANT HOT GAS BYPAS
(E) EXISTING DUCT TAG		FRIGERANT SUCTION
DUCT BEING REMOVED		-
S/A SUPPLY AIR		PLUG
R/A RETURN AIR	45 DEGREE TEE	S
T/A TRANSFER AIR	CAP 	- GATE VALVE
EXHAUST AIR	MEASURING VALVE	
	HOE END BALL VAL WITH CAP & CHAIN	VE
DROP RECTANGULAR SUPPLY/OUTSIDE AIR DUCT RISE DROP ROUND SUPPLY/OUTSIDE AIR DUCT RISE		
DROP 🚫 🛛 🐼 ROUND SUPPLY/OUTSIDE AIR DUCT RISE	- THREE WAY VALVE	
DROP		
DROP	PO	OF DRAIN
DROP OVAL RETURN/TRANSFER AIR DUCT RISE	6" ORD-1 - O O - 6" RD-1 DR	AIN SIZE AIN TAG
DROP DUCT RISE DROP DICT RISE ROUND EXHAUST/RELIEF AIR DUCT RISE	⊖ (^{HB}	PE (SEE SCHEDULE/SPECIFIC PLUMBING FIXTURE
DROP		
24"x24" 24"Ø RECTANGULAR TO ROUND TRANSITION	AB ABOVE BASE	COP COEFFIC
SUPPLY/RETURN/EXHAUST 90° ELBOW	ABV ABOVE ACH AIR CHANGES PER H ACOUS ACOUSTICAL AD AREA DRAIN	PERFORI OUR CTE CONNEC CTR CENTER CUFT CUBIC FE
SQUARE CORNER ELBOW	ADD ADDENDUM ADDL ADDITIONAL AF AIR FOIL AFF ABOVE FINISHED FLC	CV CONSTA CW CLOCKW dB DECIBEL OOR D DRAIN
90° RECTANGULAR TAKE-OFF WITH 45°	AG ABOVE GROUND ALT ALTERNATE ALUM ALUMINUM	DB DRY BUL DBD DOWN BI DISCHAR
	AP ACCESS PANEL APPROX APPROXIMATE	DDC DIRECT I CONTRO
90° CONICAL SPIN-IN	ARCH ARCHITECT/ ARCHITECTURAL ATC AUTOMATIC	DEG DEGREE DET DETAIL DIA DIAMETE
45° TAKE-OFF	TEMPERATURE CONT AUTO AUTOMATIC	ROL DIAG DIAGONA DISCH DISCHAR
90° DIVERGING RECTANGULAR TEE	BFF BELOW FINISHED FLC BHD BOTTOM HORIZONTA	OOR DMPR DAMPER L DN DOWN
	DISCHARGE BHP BRAKE HORSEPOWEI BI BACKWARDS INCLINE	
DUCT OR PLENUM LINING (SEE PROJECT GENERAL NOTE 26)	BLDG BUILDING BLW BELOW	INLET DWG DRAWING
HHHHHHHHHHHHHHHH FLEXIBLE DUCT	BOBY OTHERBODBOTTOM OF DUCTBOPBOTTOM OF PIPE	DX DIRECT E EA EACH EAT ENTERIN
	BOS BOTTOM OF STEEL BOT BOTTOM BSMT BASEMENT	TEMPER EER ENERGY RATIO
SUPPLY GRILLE (SG)	BTU BRITISH THERMAL UN BTUH BRITISH THERMAL UN	NTS EFF EFFICIEN NTS EL ELBOW
	PER HOUR BTWN BETWEEN CAP CAPACITY	ELEC ELECTRI ELEV ELEVATIO EQ EQUAL
INLET/OUTLET SIZE GRILLES, REGISTERS, AND DIFFUSERS TAG	CB CATCH BASIN CCW COUNTER CLOCKWIS	EQUIP EQUIPME E ESP EXTERNA
TYPE (SEE SCHEDULE)	CF CABINET FAN CF CHEM FEEDER CFCV CONSTANT FLOW	PRESSUI EWT ENTERIN TEMPER
HVAC SYMBOLS CONT.	CONTROL VALVE CFH CUBIC FEET PER HOU CFM CUBIC FEET PER MIN	EXH EXHAUS ⁻ JR EXIST EXISTING
EQUIPMENT:	CH CABINET HEATER CI CAST IRON	EXT EXTERIO F DEGREE
MECHANICAL EQUIPMENT XX-XX MECHANICAL EQUIPMENT TAG	CLG CEILING CLG COOLING CNTFGL CENTRIFUGAL	FC FORWAR FD FIRE DAM FDC FIRE DEF
MECHANICAL EQUIPMENT	CO CLEAN OUT COL COLUMN COMB COMBINATION	CONNEC FDV FIRE DEF
	CONC CONCRETE COND CONDENSATE/	VALVE FLA FULL LOA FLEX FLEXIBLE
EXISTING MECHANICAL EQUIPMENT EXISTING MECHANICAL EQUIPMENT TAG (TYPICAL FOR ALL EXISTING TAGS)	CONDENSER CONF CONFERENCE CONN CONNECT	FLG FLANGE FLR FLOOR FOB FLAT ON
MECHANICAL EQUIPMENT	CONST CONSTRUCTION CONT CONTINUE/	REDUCE FOT FLAT ON
(E) XX-XX REQUIRING ELECTRICAL CONNECTION TAG	CONTINUATION CONTR CONTRACT/ CONTRACTOR	FPF FINS PEF FPI FINS PEF FPM FEET PEI
EQUIPMENT TAG (REFER TO OTHER DISCIPLINE FOR ADDITIONAL INFORMATION)	COORD COORDINATE COEFFICIENT OF	FRP FIBERGL REINFOR

]	
ENSOR ENSOR AG RETURN SUPPLY NG WATER ING WATER URN PLY 'PASS O VALVE VE	FS FT FTG FUT FV GA GALV GALV GCEN GPM GRD DRZ HP HP HR HTR HW HZ IN INNUS INV INV INV INV IPLV IPP IW JST SPC JT KW HU LAT LB HR LF C LP R LWT MAC MATL MAX MBH MECH MISC NON NO NO NO NO NO NO NO NO NO NO NO NO	FLOW SWITCHFOOT/FEETFOOTINGFUTUREFACE VELOCITYGAGE/GAUGEGALLONGALVANIZEDGENERALGALLONS PER HOURGALLONS PER MINUTEGRADEHEADHORIZONTALHORSE POWERHIGH PRESSUREHOURHEATINGHEATERHOT WATER/HEATINGWATERHERTZINCHINLETINSULATIONINTERIORINVERTINCHES WATER GAUGEINTEGRATED PART LOADVALUEINDIRECT WASTEJOIST SPACEJOINTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATTKILOWATKILOWATKILOWATKILOWATKILOWATKILOWATKILOWATKILOWATKILOWATKILOWATKILOWATKILOWATKILOWATKILOWAT	TIONS PD PLBG POC PPH PRELSS PRIM PRV PSI PSIG PVC PW PWR RDC REC REFR REQD RFZ RH RPM SCFM SCFM SCFM SCFM SCFM SCFN SCFS SQ SSS STD STRUCT SUSP SVSI TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TD TDR TCP TCP TCP TCP TCP TCP TCP TCP	PRESSURE DROP PLUMBING POINT OF CONNECTION POUNDS PER HOUR PRELIMINARY PRESSURE PRIMARY PRESSURE REDUCING VALVE POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH OUT RISE R ROOF DRAIN RECESSED REDUCER REFRIGERATION REQUIRED RADIANT FLOOR ZONE RELATIVE HUMIDITY ROOM REVOLUTIONS PER MINUTE STANDARD CUBIC FEET PER MINUTE SCHEDULE SMOKE DAMPER SECTION SEASONAL ENERGY EFFICIENCY RATIO SQUARE FOOT SHEET SIMILAR SLEEVE SURFACE MOUNT SCREENED OPENING STANDPIPE STATIC PRESSURE SPECIFICATION SQUARE STATIC PRESSURE STATIC PRESSURE STANDARD STRUCTURAL SUCTION SUSPENDED SINGLE WIDTH SINGLE INLET TEMPERATURE CONTROL PANEL TEMPERATURE CONTROL PANEL TEMPERATURE TOP OF DUCT TOP OF DUCT TOP OF STEEL TOP OF STEEL TOP OF STEEL TOP OF DUCT TOP OF STEEL TOP OF STEEL TOP OF DUCT TOP OF STEEL TOP OF DUCT TOP OF STEEL TOP OF DUCT TOP OF STEEL TOP OF STEEL TOP OF STEEL TOP OF DUCT TOP OF STEEL TOP OF STE	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	NERAL NOTES: THE FOLLOWING NOTES APPLY TO ALL MECHAI BE INDICATED ON INDIVIDUAL DRAWINGS. DRAWINGS INDICATE CONNECTIONS FOR EQUII TRADES. VERIFY LOCATION OF EQUIPMENT, RC SHOP DRAWINGS OR SUBMITTALS, AND PRIOR ACCESS FOR MAINTENANCE AND REMOVAL OR COORDINATE THE PHASING AND INSTALLATION EXPENSE FOR ANY ADDITIONAL WORK WHICH M LOCATE MECHANICAL DEVICES (E.G. TEMPERA' NOT CONFLICT WITH EXISTING CONSTRUCTION SWITCHES, SPEAKERS, OUTLETS), AND THE WC PROVIDE CONCRETE HOUSEKEEPING PAD FOR COORDINATE EQUIPMENT POWER CONNECTION DRAWINGS AND CONNECTION REQUIREMENTS. SCHEDULED VALUES. CHANGES TO ELECTRICA SUBJECT TO APPROVAL. BEAR THE TOTAL EXPI- BY VARIATION FROM THE SCHEDULED REQUIRE EQUIPMENT SHORT CIRCUIT CURRENT RATING' BRANCH CIRCUIT OVER CURRENT PROTECTIVE SCHEDULES FOR BRANCH CIRCUIT OVER CURF COORDINATE THE LOCATION OF WORK TO PRO MOUNTED DEVICES AS REQUIRED TO ALLOW FOR MOUNTED DEVICES AS REQUIRED TO ALLOW FOR MOUNTED DEVICES AS REQUIRED TO ALLOW FOR SCHEDULES FOR BRANCH CIRCUIT OVER CURRENT SHOWN ON THE DRAWINGS, IF REQUIRED FOR ADDITIONAL STRUCTURAL MEMBERS BETWEEN SEISMIC RESTRAINT REACTIONS (FORCES, MO') DESIGNED BY A PROFESSIONAL ENGINEER LICG STRUCTURAL DRAWINGS FOR DESIGN CRITERIR REVIEW. STRUCTURAL MEMBERS, BOLTS, AND' STRUCTURAL DRAWINGS FOR DESIGN CRITERIR REVIEW. STRUCTURAL MEMBERS, BOLTS, AND' STRUCTURAL DRAWINGS FOR DESIGN CRITERIR REVIEW. STRUCTURAL FRAMING. DO NOT CORE DRILL OR DRILL THROUGH BEAM PROVIDE PIPE SLEEVES AND PENETRATION SE SYSTEMS UNLESS APPROVED BY THE STRUCTUR SUPPORTING STRUCTURAL FRAMING. DO NOT CORE DRILL OR DRILL THROUGH BEAM PROVIDE PIPE SLEEVES AND PENETRATION SE SPECIFICATIONS FOR REQUIREMENTS. COORDINATE THE LAYOUT OF EQUIPMENT, DU' ALLOTTED. PROVIDE SERVICE ACCESS AND CH RECOMMENDED BY THE MANUFACTURER FOR EQUIPMENT FINDA TO INSTALLATION, COORDIN WITH ALL OTHER TRADES. TO AVOID BLOCKING AND EQUIPMENT INSTALLED BY OTHERS. DRAWINGS ARE DIAGRAMMATIC AND SHOW API APOVIDE MAXIMUM HEADROOM AND CLEARANG AND RESTRAINTS. UNLESS OTH
FORMANCE INECT TO EXISTING TER IC FEET ISTANT VOLUME CKWISE IBELS IN BULB VN BLAST CHARGE ECT DIGITAL ITROL REE AIL METER SONAL CHARGE SION IPER VN ERENTIAL SSURE IBLE WIDTH DOUBLE T WING ECT EXPANSION H ERING AIR IPERATURE RGY EFFICIENCY IO CIENCY OW CTRICAL VATION AL IPMENT ERNAL STATIC SSURE ERING WATER IPERATURE AUST STING ANSION ERIOR RES FAHRENHEIT WARD CURVED EDPARTMENT ING ANSION ERIOR RES FAHRENHEIT WARD CURVED EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION EDPARTMENT INECTION ED	OPNG OV PBD	INSTALLED OPENING OUTLET VELOCITY PARALLEL BLADE DAMPER AIR COMPRESSOR AIR CONDITIONING UNIT AIR COOLED CONDENSER AIR COOLED CONDENSING UNIT	BREVIATION	NS ENERGY RECOVERY UNIT FAN COIL UNIT VARIABLE REFRIGERANT FLOW UNIT	17.	INDIVIDUAL SEGMENTS OF DUCT AND PIPE BET SIZE IS NOT SHOWN ON PLANS, THAT SEGMENT INDICATED. PROVIDE CONTROL WIRING FOR ALL CONTROL RACEWAY PER DIVISION 26 SPECIFICATIONS. PROVIDE DECORATIVE COVER FOR ALL EXPOSI PAINTABLE METAL COVER OR PLASTIC COVER. COVER, PROVIDE TWO COATS OF PAINT TO MAY

HANICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS. ADDITIONAL NOTES MAY

QUIPMENT TO BE FURNISHED BY THE OWNER OR AS THE WORK OF OTHER T, ROUGH-IN LOCATIONS, AND TYPE OF CONNECTIONS PRIOR TO PREPARATION OF OR TO INSTALLATION OF SERVICE CONNECTIONS. DO NOT INTERFERE WITH . OR REPLACEMENT OF EQUIPMENT.

TION OF NEW WORK WITH THE WORK OF ALL OTHER TRADES. BEAR THE TOTAL CH MAY BE CAUSED BY IMPROPER SEQUENCING OF CONSTRUCTION ACTIVITIES.

ERATURE AND HUMIDITY SENSORS, PANELS, AND SWITCHES), SO THAT THEY DO TION (E.G. WAINSCOT, DOOR HARDWARE), ELECTRICAL DEVICES (E.G. LIGHT E WORK OF OTHER TRADES.

OR CONDENSING UNIT AS INDICATED BY MANUFACTURER RECOMMENDATIONS.

CTION REQUIREMENTS AND ELECTRICAL CHARACTERISTICS WITH ELECTRICAL NTS. COORDINATE VARIATION IN ELECTRICAL CHARACTERISTICS FROM RICAL CHARACTERISTICS (E.G. VOLTAGE, AMPS, HORSEPOWER, ETC.) SHALL BE EXPENSE FOR REQUIRED REVISION TO THE ELECTRICAL SCOPE OF WORK CAUSED UIREMENTS.

INGS (SCCR) SHALL BE NOT LESS THAN THE INTERRUPTING RATING OF THE FIVE DEVICE SUPPLYING POWER TO THE EQUIPMENT. REFER TO ELECTRICAL URRENT DEVICE INTERRUPTING RATINGS.

PROVIDE CLEARANCES WITH EXISTING LIGHTING FIXTURES AND OTHER CEILING W FOR REMOVAL AND MAINTENANCE ACCESS.

INTS FOR PIPES, DUCTS, AND EQUIPMENT AS SPECIFIED, AS REQUIRED, AND AS OR INSTALLATION OF PIPES, DUCTS, AND EQUIPMENT, DESIGN AND PROVIDE EEN COLUMNS, JOISTS, AND STRUCTURAL FRAME TO MEET SUPPORT AND MOMENTS, DEFLECTIONS). STRUCTURAL MEMBERS AND ANCHORAGES SHALL BE LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED. REFER TO ERIA. SUBMIT STRUCTURAL MEMBER SHOP DRAWINGS AND CALCULATIONS FOR ND WELDS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS SHOWN ON THE I THE SPECIFICATIONS. NO WELDING, BOLTING, OR OTHER MEANS OF ERS SHALL BE MADE ON PORTIONS OF STRUCTURAL MEMBERS AT OR NEAR MBERS ON ANY ELEMENTS DESIGNATED IN THE SEISMIC LOAD RESISTING JCTURAL ENGINEER. SUPPORTS SHALL NOT INDUCE TORSIONAL LOADS INTO

EAMS, COLUMNS OR SHEAR WALLS.

SEALS AS REQUIRED FOR THE INSTALLATION OF PIPING SYSTEMS. REFER TO

DUCTWORK, PIPING, AND APPURTENANCES SO THAT IT FITS INTO THE SPACE OCLEARANCES AS INDICATED ON DRAWINGS, AS REQUIRED BY CODES, AND AS OR THE INSTALLATION, REMOVAL, ENTRY, SERVICING, AND MAINTENANCE OF RDINATE LAYOUT OF EQUIPMENT, DUCTWORK, PIPING, AND APPURTENANCES ING SERVICE OR REPLACEMENT ACCESS FOR NEW AND EXISTING EQUIPMENT

V APPROXIMATE LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, AND DW REQUIRED TRANSITIONS, OFFSETS, FITTINGS, AND DEVICES. REFER TO FOR REQUIRED SYSTEM APPURTENANCES, CONTROL DEVICES, ETC. INSTALL ANUFACTURER RECOMMENDATIONS. CAREFULLY INVESTIGATE ELEMENTS OF WORK TO BE PERFORMED AND ARRANGE NEW WORK ACCORDINGLY. PREPARE K, WHICH ARE COORDINATED WITH THE APPROVED AND INSTALLED WORK OF SETS, FITTINGS, TRANSITIONS, SUPPORTS AND OTHER APPURTENANCES AS RE-WORK THAT IS CAUSED BY FAILURE TO COORDINATE.

RANCE BELOW DUCTWORK, PIPING AND EQUIPMENT AND ASSOCIATED SUPPORTS DICATED, INSTALL TIGHT TO STRUCTURAL SYSTEMS ABOVE. WHERE WALL POSSIBLE. PROVIDE ADDITIONAL FITTINGS AND OFFSETS AS REQUIRED.

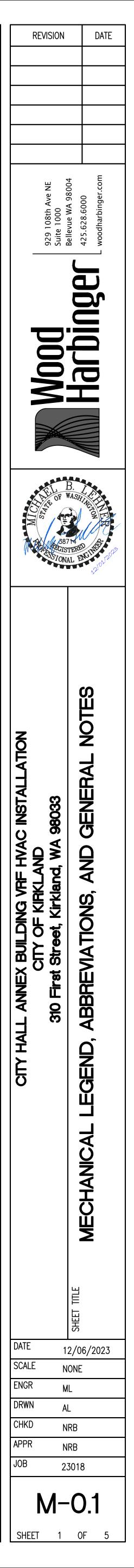
ESIGN CAPACITIES. SCHEDULED VALUES SHALL BE CONSIDERED DESIGN MEETS OR EXCEEDS THE SCHEDULED VALUES. MARK THE CONTRACT DRAWING MANUFACTURER, MODEL AND CAPACITY OF THE ACTUAL APPROVED EQUIPMENT I WITH RECORD DRAWINGS AS PART OF PROJECT CLOSEOUT.

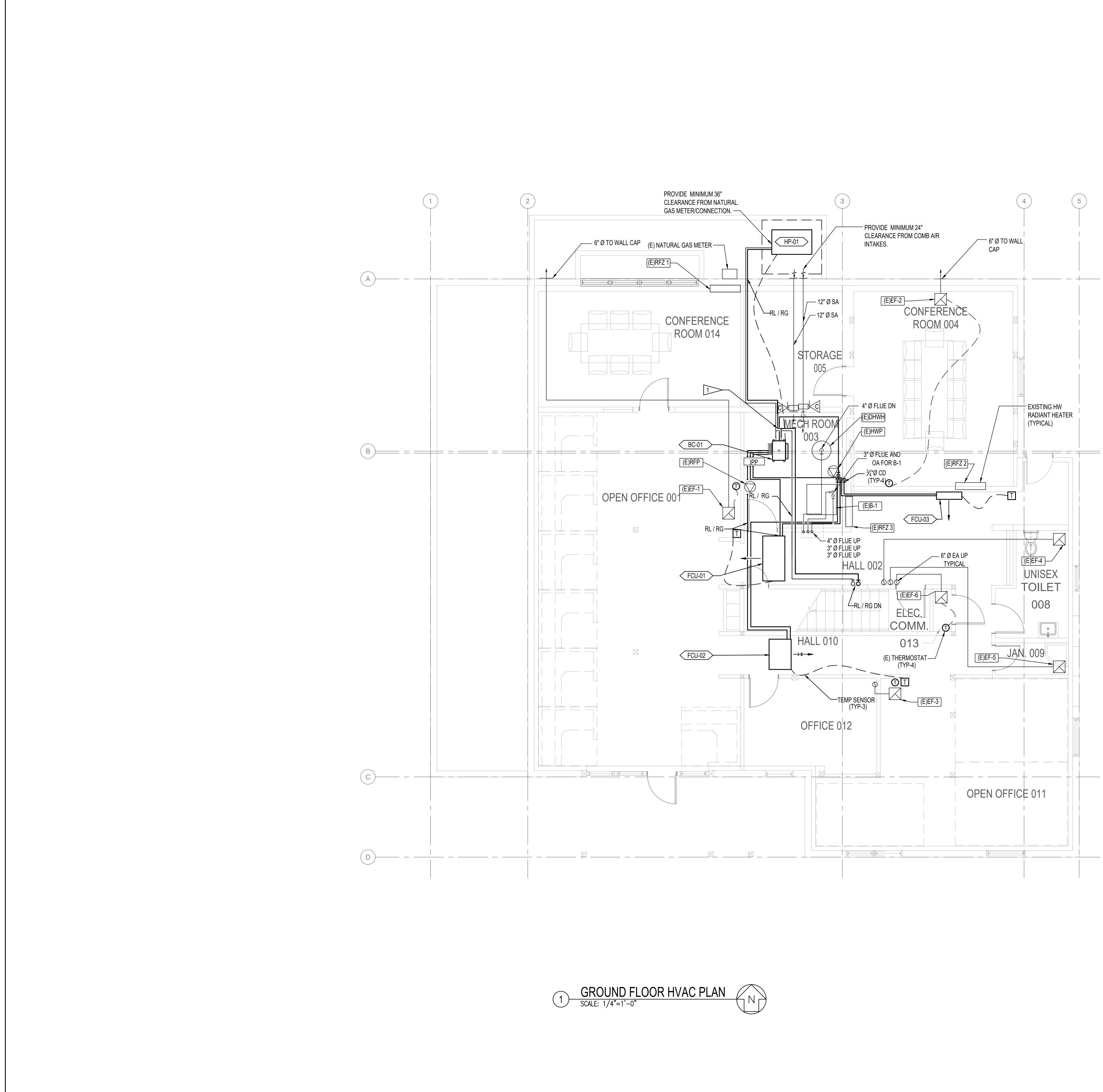
NGS, AND WHERE NOT NECESSARY TO DESCRIBE THE REQUIRED SIZE, BETWEEN CONNECTIONS MAY BE SHOWN WITHOUT A SIZE INDICATED. WHERE IENT SHALL BE THE SAME SIZE AS THE NEXT UPSTREAM SEGMENT WITH A SIZE

ROL DEVICES ON VRF SYSTEM. ROUTE CONTROL WIRING IN SURFACE METAL

POSED REFRIGERANT AND CONDENSATE PIPING AND INSULATION. PROVIDE ER. PLASTIC SHALL BE COLOR MATCHED WITH EXISTING PAINT. ON METAL MATCH EXISTING.

DRAWING LIST									
No.	SHEET TITLE								
M0.1	MECHANICAL LEGEND, ABBREVIATIONS, AND GENERAL NOTES								
M3.1	GROUND FLOOR HVAC PLAN								
M3.2	FIRST FLOOR HVAC PLAN								
M6.1	MECHANICAL SCHEDULES								
M7.1	MECHANICAL CONTROL								







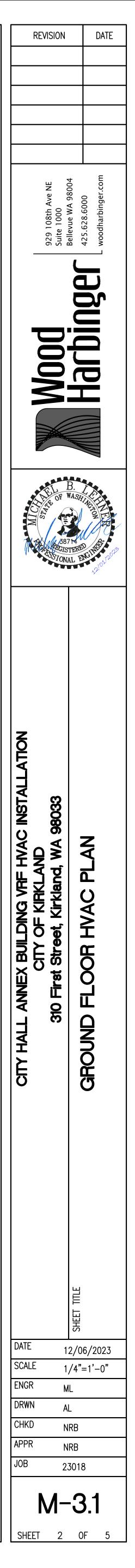


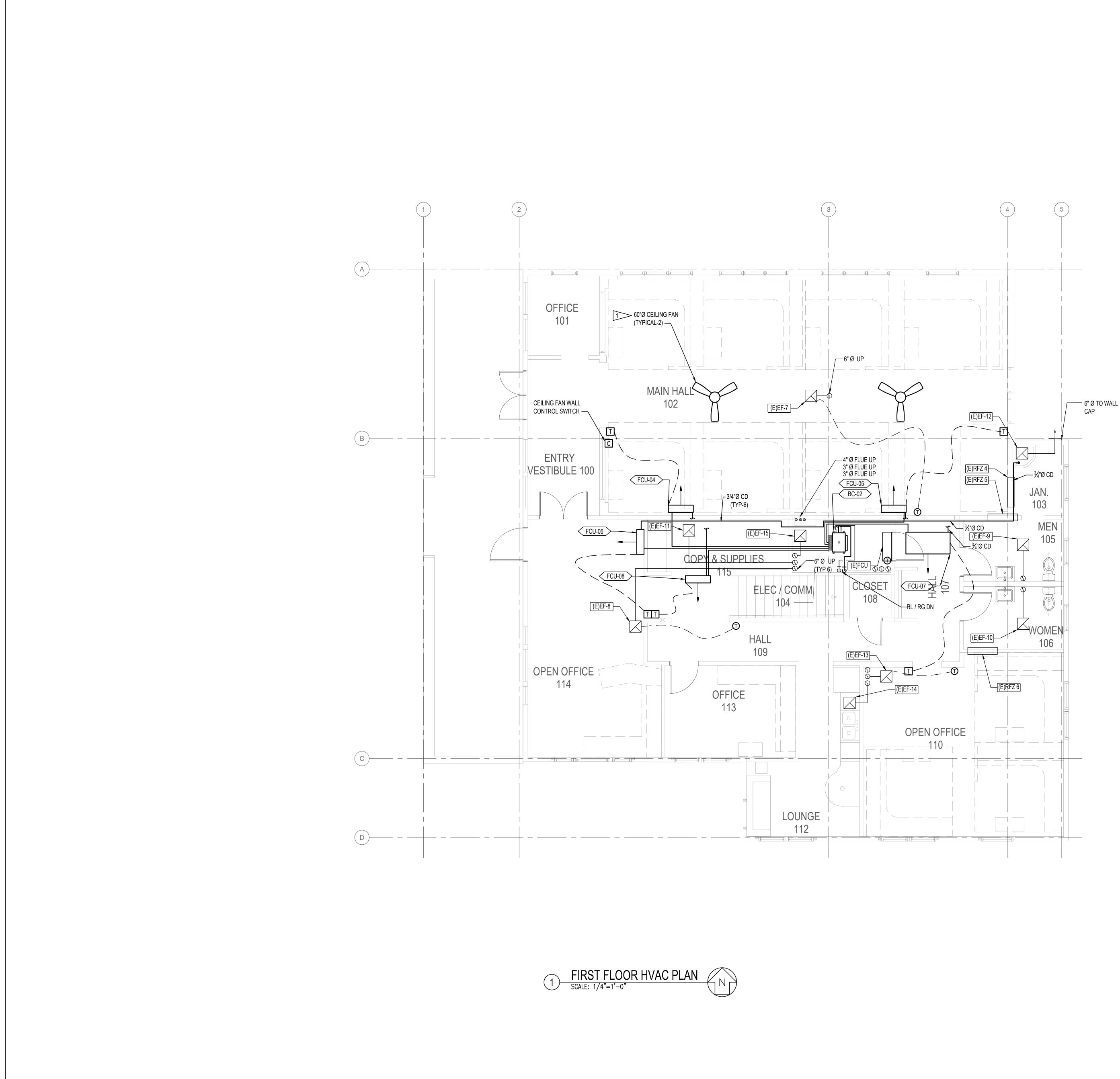
GENERAL NOTES:

- 1. COORDINATE ALL SHUTDOWNS WITH OWNER PRIOR TO START OF WORK.
- 2. PROVIDE NECESSARY CUTTING, PAINTING, PATCHING, ETC., TO FACILITATE MECHANICAL WORK.
- TAB WORK: PERFORM PRE-CONSTRUCTION 3 TAB OF EXISTING EXHAUST FANS PER SPECIFICATIONS. PERFORM TAB AFTER ALL DUCTWORK HAS BEEN CLEANED PER SPECIFICATIONS.
- 4. CLEAN ALL EXISTING DUCTWORK AND EXHAUST FANS PER SPECIFICATIONS.
- 5. PROVIDE COMMISSIONING FOR NEW VRF SYSTEM PER SPECIFICATIONS.

SHEET NOTES

PROVIDE Y-BRANCH TO EACH REFRIGERATION LINE







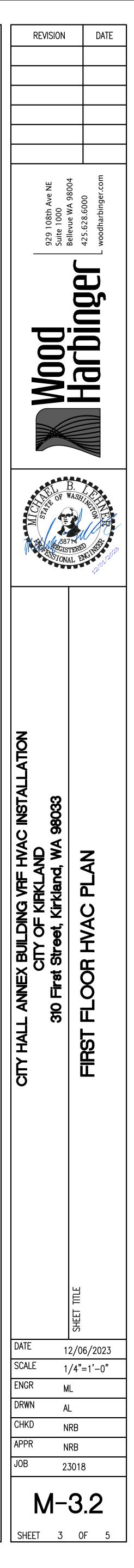


GENERAL NOTES:

- 1. COORDINATE ALL SHUTDOWNS WITH OWNER PRIOR TO START OF WORK.
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- 4. CLEAN ALL EXISTING DUCTWORK AND EXHAUST FANS PER SPECIFICATIONS.
- 5. PROVIDE COMMISSIONING FOR NEW VRF SYSTEM PER SPECIFICATIONS.

SHEET NOTES

PROVIDE TWO CEILING FANS WITH WALL MOUNTED CONTROL PER SPECIFICATION.



ROOM DESI	IGN CRITERIA																		BRANCH CIRCUIT CONTRO	LLER (BC)	
												HVAC									
								Ι						1				_	EQUIPMENT NUMBER	BC-01	BC-0
					BO	OM TEMPERATU	DE				HEAT GAIN [BT								EQUIPMENT SERVED	HP-01	HP-0
			HEIGHT		KU		KE	MINIMUM													
ROOM NO.	ROOM NAME			MAX NOISE DESIGN		AREA SERVED	GROUND LEVEL	LEVE													
							RELATIVE	CFM/SF	EXHAUST CFM	[PEOPLE] PEOPLE/ SF [2]			COUNT	EQUIPMENT W/SQFT [W]	W/SF rwi	W/SF [W]	CRITERIA [2] NC				
					HEATING SETPOINT (F)	COOLING SETPOINT (F)	HUMIDITY	[ACH] [4]		. 201 22, 01 [2]	SENSIBLE	LATENT			[]	[]			LOCATION		
							[%]											NOTES			
GROI	UND FLOOR PLAN																	NOTES	PERFORMANCE		
001	OPEN OFFICE	815	7.75	8.66	70	75	-	-	-	[7]	250	200	7	-	0.5	0.66	45		HP-01 NOMINAL CAPACITY - TONS	8	8
002	HALL	63	7.75	8.66	70	75	-	-	_	-		-	 _	-	0.25	0.84	45		HP-01 CAPACITY - MBH	75.6	75
003	MECH ROOM	138	7.75	8.66	70	-	_		_	_	-	_	-	-	1	0.71	-		INDOOR UNIT'S CAPACITY - MBH	34.5	40
004	CONFERENCE ROOM	385	7.75	8.66	70	75	-	-	-	[12]	250	200	1	-	0.5	0.66	35		NUMBER OF BRANCHES	8	8
005	STORAGE	143	7.75	8.66	70	-	-	-	-		-	-	-	-	0.25	0.49	45				
006	VESTIBULE	49	7.75	8.66	70	75	-	-	-	-	250	200	-	-	-	0.84	45		REFRIGERANT	R-410A	R-4′
007	HALL	184	7.75	8.66	70	75	-	-	-	-	-	-	-	-	0.25	0.84	45				
008	UNISEX TOILET	89	7.75	8.66	70	75	-	75	-	-			-	-	-	0.74	45				
009	JANITOR	31	7.75	8.66	70	-	-	75	-	[1]	250	200	1	-	0.25	0.51	45		BRANCH PIPE CONNECTIONS		
010	HALL	85	7.75	8.66	70	75	-	-	-	-	-	-	-	-	0.25	0.84	45		LIQUID - IN	3/8	3
011	OPEN OFFICE	453	7.75	8.66	70	75	-	-	-	[7]	250	200	7	-	0.5	0.66	45		GAS - IN	5/8	5/
012	OFFICE	151	7.75	8.66	70	75	-	-	-	[1]	250	200	1	-	0.5	0.66	35		DISCHARGE - IN	1/2	1/
013	ELEC / COMM	13	7.75	8.66	70	75	-	-	-	-	-	-	-	[XXX]	2	0.71	-	[6]			
014	CONFERENCE ROOM	300	7.75	8.66	70	75	-	-	-	[8]	250	200	8	-	0.5	0.66	35		SOUND PRESSURE (DBA)		
	T FLOOR				1	_	1	1	-1		Τ	1		-			-				
100	ENTRY VESTIBULE	138	9	13.00	70	75	-	-	-	-	250	200	-	-	-	0.84	45		ELECTRICAL		
101	OFFICE	75	9	13.00	70	75	-	-	-	[1]	250	200	1	-	0.5	0.66	35		VOLTS-PHASE-HERTZ	208-1-60	208-1
102	MAIN HALL	832	9	13.00	70	75	-	-	-	[7]	250	200	7	-	0.5	0.66	45		MCA	0.8	0.8
103	JANITOR	50	9	13.00	70	-	-	75	-	[1]	250	200	1	-	0.25	0.51	45	[0]		0.0	0.0
104	ELEC/ COMM	64	9	13.00	70	75	-	-	-	-	-	-	-	[XXX]	2	0.71	-	[6]	STANDARD OF ACCEPTANCE		
105	MEN	79	9	13.00	70	75	-	/5	-	-			-	-	-	0.74	45		MAKE	DAIKIN	DAIK
106	WOMEN	78	9	13.00	70	75	-	/5	-	-			-	-	-	0.74	45		MODEL	BSF8Q54TVJ	BSF8Q
107	HALL	103	9	13.00	70	/5	-	-	-	-	-	-	-	-	0.25	0.84	45				81.
108	CLOSET	26	9	13.00	70	-	-	-	-	-	-	-	-	-	0.25	0.49	45		MAX. OPERATING WEIGHT-LBS	81.6	01
109		108	9	13.00	70	75	-	-	-	-	-	-		-	0.25	0.84	45				
110	OPEN OFFICE LOUNGE	408	9	13.00 13.00	70 70	75	-	-	-	زی [۸]	250 250	200	3	-	0.5	0.66	45				
112 113	OFFICE	175	9 0	13.00	70	75	-	-	-	[+] [1]	250	200	- 1	-	0.5	0.84	25				
113	OPEN OFFICE	367	9	13.00	70	75	-	-	-	[1]	250	200	۱ ۵	-	0.5	0.66					
114	COPY / SUPPLIES	95	9 0	13.00	70	75	-	- 75	-	[0]	250	200	3	-	1.0	0.66	40	+	[3]		
115	COPY / SUPPLIES	90	9	13.00	70	75	-	75	-	-	250	200	-	-	I	0.00	40		-		

[1] EQUIPMENT LOAD ON COORDINATION. 5850 W TYPICAL HEAT REJACTION FROM TRANSFORMERS X 3.

[2] ASHRAE APLICATIONS 2015 CHAPTER 48 TABLE 1

[3] ASHRAE 90.1 -2022 TABLE 9.5.2.1-1 SPACE BY SPACE LPD...

[4] ASHRE 62.1-2022 TABLE 6.1

[5] 2018 INTERNATIONAL MECHANICAL CODE WAC CHAPTER 51-52 [6] THESE ROOM'S ARE EXISTING SPLIT AC SYSTEM

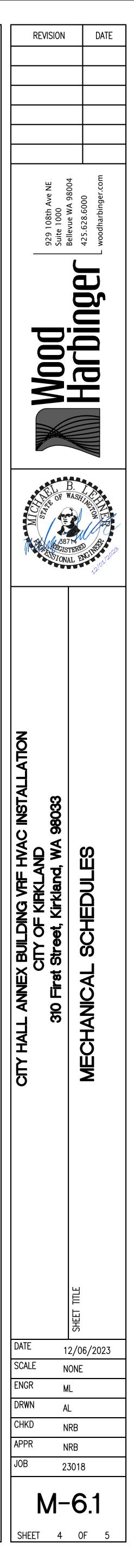
			E011.02					
QUIPMENT NUMBER	FCU-01	FCU-02	FCU-03	FCU-04	FCU-05	FCU-06	FCU-07	FCU-08
IDIRECTLY AREA SERVED	OPEN OFFICE-001	OPEN OFFICE-011	CONFERENCE-004	MAIN HALL-102	MAIN HALL-102	OPEN OFFICE-114	HALL-107	HALL-109
	CONFERENCE-014	HALL-010	VESTIBULE-006	OFFICE-101		VESTIBULE-100	OPEN OFFICE-110	OFFICE-113
	OFFICE-012	HALL-002	HALL-007				LOUNGE-112	COPY-115
DCATION	HALL	HALL	HALL	MAIN HALL	MAIN HALL	OPEN OFFICE	HALL	HALL
	002	010	002	102	102	114	107	109
/PE	CEILING	CEILING	WALL	WALL	WALL	WALL	CEILING	WALL
	SUSPENDED	SUSPENDED	MOUNTED	MOUNTED	MOUNTED	MOUNTED	SUSPENDED	MOUNTED
EFRIGERANT TYPE	R-410A	R-410A	R-410A	R-410A	R-410A	R-410A	R-410A	R-410A
N								
AIRFLOW CFM	600	340	260	240	240	250	300	160
AIRFLOW RATE CFM	710-600	410-340	300-180	300-180	300-180	300-180	710-600	300-18
DOLING								
NOMINAL CAPACITY - TON	2.0	1.0	1.0	1.0	1.0	1.0	2.0	1.0
NOMINAL CAPACITY - BTUH	24000	12000	12000	12000	12000	12000	24000	12000
TOTAL CAPACITY - BTUH	17000	8200	9200	7500	7500	11200	11200	3600
SENS CAPACITY - BTUH	5700	3000	2800	2450	2450	4100	4000	1200
EAT-DEG F DB	75	75	75 67	75 67	75	75	75 67	75
EAT-DEG F WB LAT-DEG F DB	67 55	<u>67</u> 55.3	55.70	55.40	67 55.40	67 56.70	55.60	67 55.50
	00	00.0	55.70	55.40	00.40	00.10	00.00	00.00
EATING								
NOMINAL CAPACITY - BTUH	27000	9000	13500	13500	13500	13500	13500	13500
CAPACITY - BTUH	15200	7600	8600	7600	7600	12800	12800	4300
EAT-DEG F DB	70	70	70	70	70	70	70	70
LAT-DEG F DB	88	88.1	88.5	88	88	88	88	88
PE CONNECTIONS								
LIQUID - IN	3/8	1/4	1/4	1/4	1/4	1/4	3/8	1/4
GAS - IN	5/8	1/2	1/2	1/2	1/2	1/2	5/8	1/2
CONDENSATE DRAIN - IN	1	1	2/3	2/3	2/3	2/3	1	2/3
FILTER TYPE THICKNESS - INCHES	1	1	1	RESIN NET WASHABLE	1	1	1	1
ALLOWANCE FOR DIRTY FILTER -APROX HRS	200	200	200	200	200	200	200	200
OUND PRESSURE - dBA	44	42	31-38	31-38	31-38	31-38	44	31-38
LECTRICAL								
VOLTS - PHASE - HERTZ	230-1-60	230-1-60	230-1-60	230-1-60	230-1-60	230-1-60	230-1-60	230-1-60
MCA	1.0	0.8	0.4	0.4	0.4	0.4	1.0	0.4
МОСР	15	15	15	15	15	15	15	15
ESIGN BASIS								
MAKE	DAIKIN	DAIKIN	DAIKIN	DAIKIN	DAIKIN	DAIKIN	DAIKIN	DAIKIN
MODEL	FXHQ-24MVJU	FXHQ-12MVJU	FXAQ12PVJU	FXAQ12PVJU	FXAQ12PVJU	FXAQ12PVJU	FXHQ-24MVJU	FXAQ12PVJ
MAX OPERATING WEIGHT-LBS	80	55	26.5	26.5	26.5	26.5	80	26.5

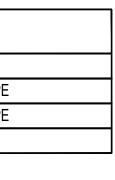
PIPING MATERIAL SCHEDULE

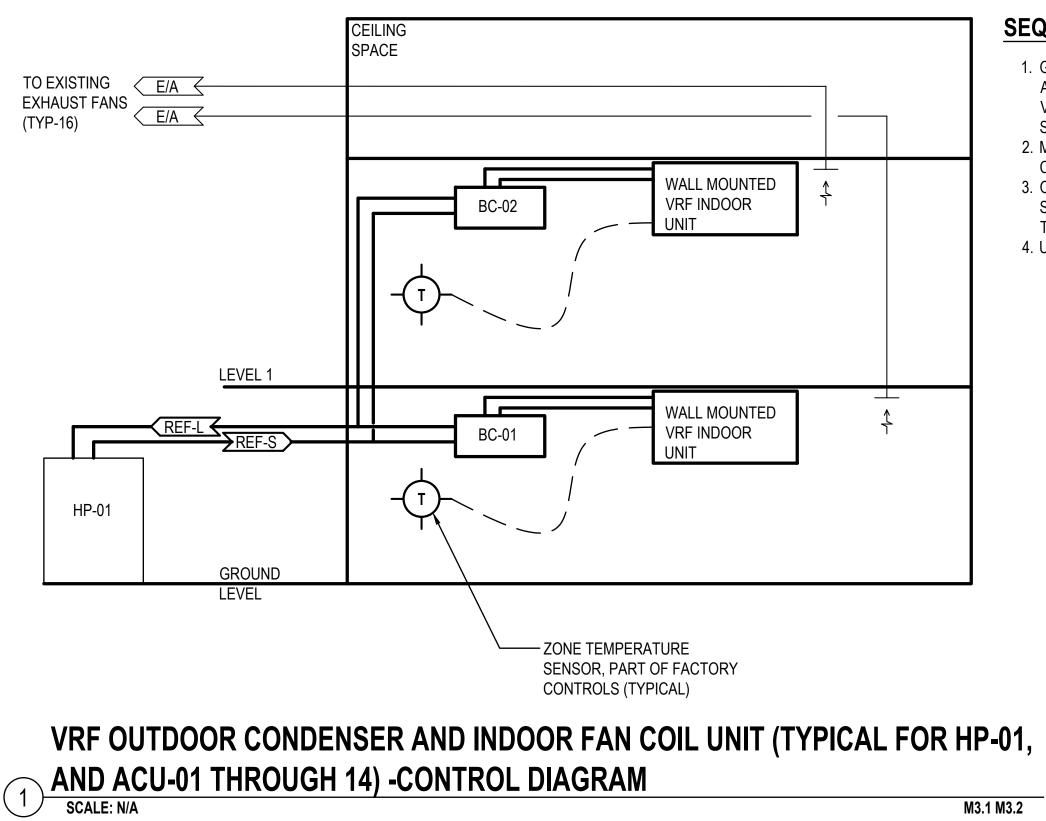
SERVICE REFRIGERANT LIQUID (RL) REFRIGERANT SUCTION (RS) CONDENSATE DRAIN

EQUIPMENT NUMBER	HP-01
EQUIPMENT SERVED	BC-01 / BC-02
AREA SERVED	BLDG
OCATION	GROUND LEVEL
COMPRESSOR	
NOMINAL CAPACITY - TONS	8.0
TOTAL CAPACITY - MBH	100 COOL
TOTAL CAPACITY - MBH	100 HEAT
EER NON- DUCTED	15.8
IEER NON- DUCTED	27.8
COP47 NON- DUCTED	4.23
COP17 NON-DUCTED	2.63
TEST PROCEDURE	AHRI 1230
REFRIGERANT	
TYPE	R-410A
FACTORY CHARGE - LBS	25.79
MAX ADDITIONAL CHARGE - LBS	14.91
MAX TOTAL CHARGE - LBS	40.7
PIPE CONNECTIONS	
LIQUID - IN	3/8
GAS - IN	3/4
DISCHARGE - IN	5/8
DIODITATOL - IN	3/0
SOUND PRESSURE (DBA)	61
ELECTRICAL VOLTS-PHASE-HERTZ	208/3/60
MCA	34.1
MOP	35
STANDARD OF ACCEPTANCE	
MAKE	DAIKIN
MODEL	REYQ96AATJA
MAX. OPERATING WEIGHT-LBS	725.3
REMARKS	
[1] PROVIDE WITH MANUFACTURER'S COAT	ING FOR MARINE

	MATERIAL	WEIGHT	TYPE	FITTINGS	JOINING METHOD
	COPPER, ASTM B88	TYPE L	HARD DRAWN TUBE	WROUGHT COPPER, ANSI B16.22	SOLDER, THREADED ADAPTER WITH PTFE TAPE
)	COPPER, ASTM B88	TYPE L	HARD DRAWN TUBE	WROUGHT COPPER, ANSI B16.22	SOLDER, THREADED ADAPTER WITH PTFE TAPE
	PVC	SCH 40	TUBE	PVC	SOLVENT CONNECTIONS







SEQUENCE OF OPERATION - VRF OUTDOOR CONDENSER AND INDOOR FAN COIL UNITS.

- GENERAL: PROVIDE FACTORY CONTROLS FOR VRF SYSTEM. PROVIDE CAPABILITY TO ENABLE/DISABLE TO THE UNIT BASED ON A PROGRAMMABLE SCHEDULE. VENTILATION AIR PROVIDED BY A SEPARATE EXHAUST AIR SYSTEM WHICH IS NOT PART OF THE VRF SYSTEM. VRF FAN COIL UNITS SHALL BE CONTROLLED TO CYCLE WITH LOAD. AN EXISTING HOT WATER RADIANT HEATING SYSTEM IS PROVIDED AND WILL PROVIDE THE BULK OF HEATING.
- 2. MORNING WARM-UP: THE HOT WATER HEATING SYSTEM WILL PERFORM MORNING WARMUP BASED ON EXISTING LOCAL CONTROL SYSTEM.
- OCCUPIED MODE: VRF FAN COIL UNIT SHALL USE FACTORY PACKAGED CONTROLS TO SATISFY ROOM TEMPERATURE SETPOINT. PROVIDE HEATING SPACE TEMPERATURE SETPOINT OF 68°F (ADJUSTABLE) AND PROVIDE COOLING SPACE TEMPERATURE SETPOINT OF 76°F (ADJUSTABLE).
 4. UNOCCUPIED MODE: DISABLE UNIT VIA SCHEDULE ON FACTORY CONTROLLER.

M3.1 M3.2

