# **CONSTRUCTION DOCUMENTS RAVENNA HVAC MODIFICATIONS - PHASE 2 ELEMENTARY SCHOOLS**

OWNER

## **RAVENNA SCHOOL** DISTRICT

531 Washington Ave Ravenna, OH 44266



ELECTRICAL ENGINEER

**FANNING HOWEY ASSOCIATES INC.** 350 EAST NEW YORK ST. **SUITE 300 INDIANAPOLIS, IN 46204** 317.848.0966



## **531 WASHINGTON AVE RAVENNA, OH 44266**

## 221119.00

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ARCHITECT

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FANNING HOWEY

MECHANICAL ENGINEER

**FANNING HOWEY** 

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#### CONSTRUCTION DOCUMENTS

			POWER SYMBOLS		POWER SYMBOLS		
ELECT	<b>RICAL ABBREVIATIONS</b>	SYMBOL	DESCRIPTION	MOU HEIG BOT	NTING GHT TO TTOM	SYMBOL	DESCRIPTION
AB	BREVIATIONS USED ON THE CONTRACT DOCUMENTS, LUDE BUT ARE NOT LIMITED TO THOSE LISTED BELOW		CONDUIT CONCEALED ABOVE CEILING OR IN WALL				STRIBUTION PANEL, SEE ONE LINE DIAGRAM
#	NUMBER	(	CONDUIT CONCEALED IN OR BELOW FLOOR, OR UNDER GROUND			SU	JRFACE CIRCUIT BREAKER PANELBOARD, SEE ONE LINE DIAGRAM
(N)P(N)W ACU	NUMBER OF POLES, NUMBER OF WIRES	⊖x	20 AMP, 125 VOLT, NEMA 5-20R DUPLEX RECEPTACLE WITH COMMON COVER PLATE MOUNTED VERTICALLY +16" TO BOTTOM. LETTER(S) IN FRONT INDICATES LOAD TYPE, SEE BELOW. SINGLE LINE INDICATES HORIZONTAL MOUNTING, DOUBLE LINE INDICATE QUAD, DARK CENTER INDICATES ABOVE COUNTERTOP MOUNTING (44") NEMA 5-20R, UNO.			<u> </u>	USH MOUNTED CIRCUIT BREAKER PANELBOARD, SEE ONE LINE DIAGRAM
AFC AFF AFG	ABOVE FINISHED COUNTERTOP ABOVE FINISHED FLOOR ABOVE FINISHED GRADE	1AL1-1	SERVING RECEPTACLE, UNO. B RECEPTACLE WITH 20 AMP SINGLE POLE SWITCH IN 2 GANG BOX AND COMMON COVER PLATE			<b>M</b> UT	TILITY METER
AHU AIC AID	AIR HANDLER UNIT AMPERE INTERRUPTING CAPACITY ADDRESSABLE INTERFACE DEVICE		C CASEWORK, COORDINATE WITH ARCHITECTURAL CO COPY MACHINE CM COFFEE MAKER E RED RECEPTACE E AND STAINLESS COVER DLATE. CONNECT TO BACKLIP POWER			H● PU	JSH BUTTON STATION, TYPE INDICATED
AR AT ATS	AS REQUIRED AMP TRIP AUTOMATIC TRANSFER SWITCH		GF GROUND FAULT CIRCUIT INTERRUPTING TYPE I ISOLATED GROUND M MONITOR - 60" AFF			H.●● PU	JSH BUTTON STATION, ON/OFF
AWG A/V	AMERICAN WIRE GAUGE AUDIO VISUAL		MW MICROWAVE R REFRIGERATOR - 48" AFF TL TWIST LOCK			H <b>●●●</b> PU	JSH BUTTON STATION, UP/DOWN/STOP
BPS C	BOLTED-PRESSURE CONTACT SWITCH CONDUIT (GENERIC TERM FOR RACEWAY,		TR       TAMPER RESISTANT         U       DUPLEX RECEPTACLE WITH (2) USB PORTS         UR       UNDER COUNTER REFRIGERATOR         V       VENDING MACHINE, EEED EROM 30 ma GECLEREAKER IN BANEL ROARD				ECESSED ADA PUSH BUTTON FOR AUTOMATIC DOOR OPERATOR, FURNISHED BY OTHERS, INSTALLED BY V. 26
Cd CLG	PROVIDE ÀS SPECIFIED) CANDELA CEILING MOUNTED		VP       WALL MOUNTED VIDEO PROJECTOR, 96" AFF UNO         WB       WHITEBOARD         WC       ELECTRIC WATER COOLER. FEED FROM 5 mA GFCI BREAKER IN PANELBOARD.				ECESSED ADA DOUBLE PUSH BUTTON FOR DUAL AUTOMATIC DOOR OPERATORS, FURNISHED BY OTHERS, STALLED BY DIV. 26
CAM CL COL CMF CUH	CAMERA LIGHTING CONTACTOR COLUMN COMBINATION MOTOR FUSIBLE STARTER CABINET UNIT HEATER		<ul> <li>WF WASHFOUNTAIN/LAVATORY. CONNECT TO NEAREST THROUGH FEED GFCI RECEPTACLE.</li> <li>WM WASHING MACHINE. FEED FROM 30 mA GFCI BREAKER IN PANELBOARD.</li> <li>WP WEATHER RESISTANT GFCI WITH IN-USE TYPE WEATHERPROOF COVER HINGED AT TOP</li> <li>X EXPLOSION PROOF</li> </ul>			Ê <sup>RE</sup>	ED MUSHROOM ABORT SWITCH, WALL MOUNTED
D DC DED	DEMO TABLE DIRECT CURRENT DEDICATED DEVICE ON INDIVIDUAL	<del>0</del> :	20 AMP SINGLE RECEPTACLE, NEMA 5-20R	16	5"		HOTOCELL AIMED NORTH
DF DIA DISTR	BRANCH CIRCUIT DUAL FACE DIAMETER DISTRIBUTION	⊖-30	SINGLE STRAIGHT BLADE RECEPTACLE, 30A, 125 VOLT, NEMA 5-30R	16	5"		CESSED WALL BOX FOR HAND DRYER. CIRCUIT WITH 2#10. #10G IN 3/4" C TO PANEL INDICATED
DPST DPDT DT	DOUBLE POLE SINGLE THROW DOUBLE POLE DOUBLE THROW DUST-TIGHT	⊖-c	15 AMP SINGLE RECEPTACLE, SEMI-RECESSED WALL MOUNTED WITH CLOCK HANGER, NEMA 5-15R	76	6"		
EBJ	EQUIPMENT BONDING JUMPER ON LOAD		20 AMP DUPLEX RECEPTACLE FLUSH CEILING MOUNTED , NEMA 5-20R	CL	.G		DN-FUSED DISCONNECT, 3 POLE, NEMA 1, UNO. 30 AMP UNO.
EC EM	SIDE OF AN OVER-CURRENT DEVICE ELECTRICAL CONTRACTOR WIRED ON EMERGENCY CIRCUIT	H⊒∪	SINGLE FLUSH BOX WITH FOUR USB CHARGING PORTS, WITH DECORA STYLE COVER PLATE; MOUNTED ABOVE COUNTERTOP HEIGHT, UNO	44	4"		/P SUFFIX DESIGNATES NEMA 3R ENCLOSURE. /P4X SUFFIX DESIGNATES NEMA 4X STAINLESS STEEL ENCLOSURE. JSED DISCONNECT, 3 POLE, NEMA 1, UNO. 30 AMP UNO.
EOL ETR EWC EX	END OF LINE EXISTING TO REMAIN ELECTRIC WATER COOLER EXISTING	Ø	SPECIAL POWER RECEPTACLE, AMPS, VOLTS AND NEMA CONFIGURATION AS DEFINED ON PLANS BY CODED NOTE	16	5"	100A-3P -W	/P SUFFIX DESIGNATES NEMA 3R ENCLOSURE. /P4X SUFFIX DESIGNATES NEMA 4X STAINLESS STEEL ENCLOSURE.
F F@	FLUSH FUSED AT		SINGLE STRAIGHT BLADE, SPECIAL RECEPTACLE, 20A, 125/250 VOLT, 3P, 4W, NEMA 14-20R	16	5"		JNNING). MBINATION MAGNETIC MOTOR STARTER, WITH 30 AMP - 3 POLE CIRCUIT BREAKER
FA FBO FCU FDN	FIRE ALARM FURNISHED BY OTHERS FAN COIL UNIT FOUNDATION	• W	SINGLE STRAIGHT BLADE, WELDING RECEPTACLE, 60A, 250 VOLT, 3P, 3W, NEMA 15-60R	44	1"		SCONNECT SWITCH, NEMA SIZE 1, UNO WITH H.O.A. SWITCH AND RED PILOT LIGHT (RUNNING). MBINATION MAGNETIC MOTOR STARTER, WITH 30 AMP - 3 POLE MOTOR CIRCUIT PROTECTOR (MCP)
FPB FRE FS	FAN POWERED BOX FIBERGLASS REINFORCED EPOXY CONDUIT FLOW SWITCH	€R	SINGLE STRAIGHT BLADE, RANGE RECEPTACLE, 50A, 125/250 VOLT, 3P, 4W, NEMA 14-50R	8'	"		SCONNECT SWITCH, NEMA SIZE 1, UNO WITH H.O.A. SWITCH AND RED PILOT LIGHT (RUNNING).
H-O-A HTP	HAND-OFF-AUTO HEAT PUMP	D B	SINGLE STRAIGHT BLADE, GROUNDED DRYER RECEPTACLE, 30A, 125/250 VOLT, 3P, 4W, NEMA 14-30R	32	2"		VITCH, NEMA SIZE 1, UNO, WITH H.O.A. SWITCH AND RED PILOT LIGHT (RUNNING).
KEC K/O	KITCHEN EQUIPMENT CONTRACTOR KNOCK-OUT	•т :	30 AMP, 120 VOLT, SINGLE TWIST LOCK RECEPTACLE, UNO, NEMA L5-30R	16	5"	- <del>os</del> -MP FL	ANUAL MOTOR STARTER WITH THERMAL OVERLOAD PROTECTION AND PILOT LIGHT, UNO.
LFMC LFNC	LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT LIQUIDTIGHT FLEXIBLE NONMETALLIC CONDUIT	F s	20 AMP DUPLEX RECEPTACLE IN FLUSH FLOOR MOUNTED BOX,NEMA 5-20R. USE A CAST BOX AT GRADE LEVEL, USE A STAMPED STEEL BOX FOR UPPER FLOORS. REFER TO SPECIFICATIONS FOR REQUIREMENTS.	A _		- <del>co-</del> M FL	ANUAL MOTOR STARTER WITH THERMAL OVERLOAD PROTECTION, UNO.
LS LSIG	LIMIT SWITCH LONG TIME, SHORT TIME, INSTANTANEOUS AND GROUND FAULT TRIP ADJUSTMENTS TO	Т	20 AMP DUPLEX RECEPTACLE IN FIRE RATED POKE-THRU FLOOR DEVICE, NEMA 5-20R. REFER TO SPECIFICATIONS FOR REQUIREMENTS.	-		÷÷÷F ™	PRING WOUND TIMER HP RATED
LV MATV	LOW VOLTAGE MASTER ANTENNA TV MAIN BONDING JUMPER	DP	20 AMP DUPLEX RECEPTACLE IN PEDESTAL MOUNTED ABOVE FLOOR SERVICE FITTING, NEMA 5-20R. REFER TO SPECIFICATIONS FOR REQUIREMENTS.	-			DNTROL SWITCH FOR DEVICES SUCH AS MOTORIZED SHADES, SOLAR LIGHT TUBES,
MC/ER MCB MCC	MAIN CROSS-CONNECT/EQUIPMENT ROOM MAIN CIRCUIT BREAKER MOTOR CONTROL CENTER		HIGH CAPACITY FLOOR BOX WITH 4 DUPLEX RECEPTACLES, NEMA 5-20R, UNO FOR POWER AND DATA. REFER TO SPECIFICATIONS FOR REQUIREMENTS.	-			ECTRICALLY HELD CONTACTOR WITH H-O-A SWITCH, 30A - 3P, UNO. REFER TO SPECIFICATION FOR
MDP M.H. MH	MAIN DISTRIBUTION PANEL MANHOLE (ON SITE PLAN) MOUNTING HEIGHT (ON PLAN), ALL MOUNTING HEIGHTS FOR DEVICE BOXES ARE FROM		COMMUNICATIONS/POWER POLE PRE-WIRED WITH 2 DUPLEX RECEPTACLES, WITH TWO J BOX ABOVE CEILING. REFER TO SPECIFICATIONS FOR REQUIREMENTS.	-			QUIREMENTS.
	FINISHED FLOOR TO BOTTOM OF BOX, UNO. VERIFY OUTLET LOCATIONS WITH OTHER TRADES BEFORE ROUGH-IN		TWO 20 AMP DUPLEX RECEPTACLES IN BOX WITH COVER PLATE, PENDANT MOUNTED WITH 3/C, SJO CORD AND STRAIN RELIEF GRIPS.	84	1"		GITAL TIME CLOCK SWITCH
MLO MOD MOCP	MAIN LUGS ONLY MOTOR OPERATED DISCONNECT SWITCH MAXIMUM OVER-CURRENT PROTECTION MAIN SWITCHBOARD	<b>Φ</b>	RECEPTACLES AND DATA OUTLETS. SEE TECHNOLOGY DRAWINGS. QUANTITY AS SHOWN OR PER SPEC.	-			ARIABLE FREQUENCY CONTROLLER, FURNISHED BY DIV. 23 CONTRACTOR, INSTALLED BY
MSD MSC MTD MTG	MOTOR STARTER CENTER MOUNTED MOUNTING		SINGLE CHANNEL MULTIOUTLET SURFACE RACEWAY PRE-WIRED ASSEMBLY WITH SINGLE RECEPTACLES. QUANTITY PER SPEC.	-			V. 26 CONTRACTOR, UND. COORDINATE FINAL MOUNTING HEIGHT.
MTS MV MZU	MANUAL TRANSFER SWITCH MEDIUM VOLTAGE MULTI-ZONE HVAC UNIT		FIRE ALARM SYMBOLS			R RE	
N +N	GROUNDED CIRCUIT CONDUCTOR (NEUTRAL) INDICATES MOUNTING HEIGHT (N) TO BOTTOM OF DEVICE FROM FINISH FLOOR, UNO	SYMBOL	DESCRIPTION	МН	NOTE	A AC	QUASTAT
N/A NC NFS	NOT APPLICABLE NORMALLY CLOSED NONFUSIBLE SWITCH		ADDRESSABLE INTERFACE DEVICE	-		<b>(\$V)</b> SO	DLENOID VALVE
NIC NL NM NO	NGHT LIGHT NONMETALLIC SHEATHED CABLE NORMALLY OPEN	(H)	HEAT DETECTOR, 190 DEGREES F FIXED TEMPERATURE (UNO), CEILING MOUNTED	CLG		(т) <sup>тн</sup>	IERMOSTAT
NRTL NTS	NATIONALLY RECOGNIZED TESTING LAB		DETECTOR			бмс	DTOR
OC OCPD PA	ON GENTER OVER-CURRENT PROTECTIVE DEVICE PUBLIC ADDRESS SYSTEM	FAA		56"		T DR	RY TYPE TRANSFORMER
PB PE PH	PULL BOX PNEUMATIC/ELECTRIC PROPELLER HEATER	FAPS	FIRE ALARM POWER SUPPLY	-		SPD SU	JRGE PROTECTIVE DEVICE. REFER TO SPECIFICATION FOR REQUIREMENTS.
PIV PR PUH	POST INDICATING VALVE PAIR PROPELLER UNIT HEATER	FAP		-	S	GAE	ENERATOR ANNUNCIATOR PANEL
R RAF RT	RELEASE RETURN AIR FAN RAIN-TIGHT	<b>▼ ▼</b>	WALL MOUNTING AT 80" AFF	CLG	T		FILITY POLE
RVS S	REDUCE VOLTAGE STARTER	<u>\$</u>	V OUCE/ALARM COMMUNICATION AUDIBLE AND VISIBLE NOTIFICATION DEVICE (SPEAKER/STROBE), CEILING MOUNTED, EXTRA LINE INDICATES WALL MOUNTING AT 80" AFF	CLG	Т		JNCTION BOX, PIGTAIL INDICATED FLEXIBLE CONDUIT CONNECTION TO FOURPMENT
SBJ SIG SN SP	SYSTEM BONDING JUMPER SIGNAL SOLID NEUTRAL SPARE		VISIBLE NOTIFICATION APPLIANCE (STROBE), CEILING MOUNTED, EXTRA LINE INDICATES WALL MOUNTING AT 80" AFF	CLG	Т		
SPL SPDT SPST	SPLICE SINGLE POLE DOUBLE THROW SINGLE POLE SINGLE THROW		AT 96" AFF	CLG			EILING PADDLE FAN WITH JUNCTION BOX SECURELY MOUNTED TO STRUCTURE
SS SSBJ ST STP	STAINLESS STEEL SUPPLY-SIDE BONDING JUMPER SHUNT TRIP SHIELDED TWISTED PAIR	F F	ABOVE (HORN/STROBE), WALL MOUNTED	44"/80"	T	<b>RAP</b> RE	EFRIGERANT DETECTION AND ALARM: REFRIGERANT MONITOR CONTROL PANEL
STL SUSP SW	CARBON STEEL SUSPENDED SWITCH			44"		R	EFRIGERANT DETECTION AND ALARM: SENSOR
TC	TELEPHONE CABINET	<u></u> [S] [S] T_↑_	WALL MOUNTING AT 96" AFF         SMOKE DETECTOR BEAM TRANSMITTER	-		R	EFRIGERANT DETECTION AND ALARM: NOTIFICATION APPLIANCE
TCP TEL/DATA TEL TERM	TEMPERATURE CONTROL PANEL TELEPHONE/DATA TELEPHONE TERMINAL(S)	 R↓	SMOKE DETECTOR BEAM RECEIVER	-		RBA RE	
TGB TMGB	TELECOMMUNICATIONS GROUNDING BUSBAR TELECOMMUNICATIONS MAIN GROUNDING BUSBAR	SD	SMOKE DAMPER ACTUATOR AND ASSOCIATED SMOKE DETECTOR, TYPE PER PLANS	-			
TTB UEF	TELEPHONE TERMINATION BOARD	FS	WATER FLOW SWITCH CONNECTION	-	D		
UG UNO UV	UNDERGROUND UNLESS NOTED OTHERWISE UNIT VENTILATOR	sv	SUPERVISORY VALVE TAMPER SWITCH CONNECTION	-	D		IUT GLOGR, WALL MOUNTED. FURINISHED BY UTHERS INSTALLED BY DIV 26
VG VIF VT	VANDAL GUARD VERIFY IN FIELD VAPOR-TIGHT	FH	SURFACE FIRE ALARM MAGNETIC DOOR HOLDER	6" BELOW OP OF DOOR			
WG WH	WIRE GUARD WATTHOUR	SH	SURFACE SECURITY ALARM MAGNETIC DOOR HOLDER	6" BELOW P of Door			
WM WP WT	WALL MOUNTED WEATHERPROOF WATER-TIGHT	S	ELECTRONIC RELEASE DOOR CLOSER	-			
		B		96"			
		КН		HOOD			
		PV					

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SYMBOL		MF
(HB)	OCCUPANCY SENSOR - CEILING MOUNTED (UNO), HIGH BAY INFRARED, 360 DEGREE PATTERN, 36' DIA. COVERAGE PATTERN (MIN.) AT 20' MOUNTING HEIGHT. PROVIDE WITH RELAY OPTION.	CLO
H	APPLICATIONS, 56'x16' (MIN.) RECTANGULAR SHAPED COVERAGE PATTERN. PROVIDE WITH RELAY OPTION. "A" PORTION OF SYMBOL INDICATES AIMING OF ULTRASONIC SENSORS.	CLO
<b>CT</b>	OCCUPANCY SENSOR - CEILING MOUNTED, DUAL TECHNOLOGY, 360 DEGREE PATTERN, 2000 S.F. COVERAGE. PROVIDE WITH RELAY OPTION. "Λ" PORTION OF SYMBOL INDICATES AIMING OF ULTRASONIC SENSORS.	CLO
<b>CD</b>	OCCUPANCY SENSOR - CEILING MOUNTED, DUAL TECHNOLOGY, 360 DEGREE PATTERN, 2000 S.F. COVERAGE. PROVIDE WITH RELAY OPTION. "/\" PORTION OF SYMBOL INDICATES AIMING OF ULTRASONIC SENSORS, PROVIDE WITH INTEGRAL DAYLIGHT SENSOR	CLO
<pre></pre>	OF OLTRASONIC SENSORS. PROVIDE WITH INTEGRAL DATLIGHT SENSOR. OCCUPANCY SENSOR - CEILING MOUNTED, INFRARED, 360 DEGREE PATTERN, 1200 S.F. COVERAGE (MIN.). PROVIDE WITH RELAY OPTION.	CLO
	OCCUPANCY SENSOR - CEILING MOUNTED, ULTRASONIC, 360 DEGREE PATTERN, 2000 S.F. COVERAGE. PROVIDE WITH RELAY OPTION. "Λ" PORTION OF SYMBOL INDICATES AIMING	CLO
Image: Constraint of the second secon	OF ULTRASONIC SENSORS. OCCUPANCY SENSOR - CEILING MOUNTED, DUAL TECHNOLOGY, DIRECTIONAL/180 DEGREE PATTERN, 1200 S.F. COVERAGE (MIN.). PROVIDE WITH RELAY OPTION. PROVIDE WITH CEILING MOUNTING BRACKET ACCESSORY IF NOT SUPPLIED AS STANDARD WITH SENSOR. "Λ" PORTION OF SYMBOL INDICATES AIMING	CLO
ĉ	OCCUPANCY SENSOR - CEILING MOUNTED, INFRARED, DIRECTIONAL/180 DEGREE PATTERN, 1200 S.F. COVERAGE (MIN.). PROVIDE WITH RELAY OPTION. PROVIDE WITH CEILING MOUNTING BRACKET ACCESSORY IF NOT SUPPLIED AS STANDARD WITH SENSOR. "A" PORTION OF SYMBOL INDICATES AIMING.	CL
Ŵ	OCCUPANCY SENSOR - WALL MOUNTED, DUAL TECHNOLOGY, 180 DEGREE PATTERN, 1200 S.F. COVERAGE (MIN.). PROVIDE WITH RELAY OPTION.	96
Ŵ	OCCUPANCY SENSOR - WALL MOUNTED, INFRARED, 180 DEGREE PATTERN, 1200 S.F. COVERAGE (MIN.).	96
<u> </u>	OCCUPANCY SENSOR - WALL SWITCH TYPE, DUAL TECHNOLOGY WITH MANUAL OVERRIDE	44
$\underline{\Upsilon}$	OCCUPANCY SENSOR - DUAL LEVEL WALL SWITCH TYPE. DUAL TECHNOLOGY WITH MANUAL OVERRIDE	
ST ∽	SWITCH	44
<u>si&gt;</u>	OCCUPANCY SENSOR - WALL SWITCH TYPE,INFRARED WITH MANUAL OVERRIDE SWITCH	44
(DS)	DAYLIGHT SENSOR	CL
<del>∙</del> ∕⁄∙K	KEY OPERATED SWITCH, NUMBER INDICATES NUMBER OF POLES, 277V, 20A, FLUSH UNO	44
<del>-09-</del> 3	SWITCH, NUMBER INDICATES NUMBER OF POLES, 277V, 20A, FLUSH UNO	44
<del>∙∽-</del> MK	MOMENTARY CONTACT SNAP KEYED SINGLE POLE SWITCH, DOUBLE THROW, CENTER-OFF	44
<del>ல</del> MC	MOMENTARY CONTACT SNAP SINGLE POLE SWITCH, DOUBLE THROW, CENTER-OFF	44
÷∽−L	SINGLE POLE SWITCH, 277V, 20A, FLUSH UNO WITH LIGHTED HANDLE	44
↔_	SINGLE POLE SWITCH, 277V, 20A, FLUSH UNO TYPICAL, SUBSCRIPT a, b, c INDICATES WHICH	44
а 	SINGLE POLE SWITCH. 277V. 20A. FLUSH UNO WITH PILOT LIGHT	44
	WALL BOX DIMMER 277V. 1200 WATT MINIMUM. FLUSH. UNO. PROVIDE WATTAGE SIZE TO	
	EXCEED CIRCUIT LOAD	44
LC	LIGHTING CONTACTOR, MECHANICALLY HELD, 30A - 3P WITH H-O-A SWITCH, UNO	48
LC⊢	BREAKER, UNO	48
LRP	LIGHTING RELAY PANEL	-
$\oslash$	DOWNLIGHT LUMINAIRE, APPROXIMATE SIZE INDICATED	-
	DOWNLIGHT LUMINAIRE CONNECTED TO EMERGENCY SYSTEM AS INDICATED	-
$\Box$	WALL SCONCE LUMINAIRE	-
$\overrightarrow{\otimes}$	WALL MOUNTED EXIT SIGN, DIRECTIONAL ARROWS AS SHOWN	96
$\mathbf{x}$	CEILING MOUNTED EXIT SIGN, SHADED PORTION(S) INDICATES SINGLE OR DOUBLE FACE	CL
	ARM MOUNTED AREA LUMINAIRE	
• •		
		-
		76
	VVALL-BRAUKE I LUMINAIRE, APPROXIMATE SIZE INDICATED	-
	WALL-BRACKET LUMINAIRE CONNECTED TO EMERGENCY SYSTEM AS INDICATED	-
	RECESSED LUMINAIRE, APPROXIMATE SIZE INDICATED. ("NL", INDICATES NIGHT LIGHT FIXTURES)	CL
	RECESSED LUMINAIRE CONNECTED TO EMERGENCY SYSTEM AS INDICATED	CL
•••	SURFACE OR PENDANT MOUNTED LUMINAIRE, APPROXIMATE SIZE INDICATED	CL
	SURFACE OR PENDANT MOUNTED LUMINAIRE CONNECTED TO EMERGENCY SYSTEM AS INDICATED	CL
•	PENDANT LUMINAIRE, APPROXIMATE SIZE INDICATED	CL
	PENDANT LUMINAIRE CONNECTED TO EMERGENCY SYSTEM AS INDICATED	СІ
$\bigcirc$		-

MH

44"

44"

44"

44"

44"

48"

48"

48"

48"

48"

48"

48"

44"

44"

44"

44"

48"

48"

60"

60"

60"

56"

CLG

56"

56"

#### ELECTRICAL GENERAL NOTES

1.	THE TERM "PROVIDE" INDICATES CONTRACTOR SHALL FURNISH AND INSTALL ITEMS AND
2.	COORDINATE DEVICE LOCATIONS WITH ARCHITECTURAL PLANS, CASEWORK, WINDOWS,
	WALL FINISHES, EQUIPMENT, AND OTHER TRADES PRIOR TO ROUGH IN. DEVICES ARE
	INTENDED TO BE ACCESSIBLE, DO NOT INSTALL BEHIND CASEWORK, DOORS OR FOUIPMENT LINEESS INDICATED ON PLANS. NOTIFY ARCHITECT IN WRITING OF CONFLICTS
	PRIOR TO PROCEEDING WITH WORK.
3.	WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ALL LOCAL, STATE AND
	NATIONAL CODES INCLUDING, BUT NOT LIMITED TO NFPA 70 (NATIONAL ELECTRIC CODE),
4.	CONFLICTS BETWEEN THE APPLICABLE CODES, STANDARDS, AND THE PLANS AND
	SPECIFICATIONS SHALL BE SUBMITTED TO THE ARCHITECT IN WRITING PRIOR TO
-	PROCEEDING WITH WORK.
5. 6	REFER TO E8.1 FOR LUMINAIRE SCHEDULE. REFER TO E8 SERIES FOR PANEL SCHEDULES
7.	E3 SERIES DRAWINGS ARE FOR TECHNOLOGY ROUGH-INS
8.	REFER TO TECHNOLOGY PLANS, T1 SERIES FOR COMMUNICATIONS, SECURITY AND ACCESS
9	CONTROL. CONTRACTOR SHALL FOLLOW SEISMIC RESTRANT AND DESIGN REQUIREMENTS
0.	CONTAINED IN LATEST ADOPTED STATE AND INTERNATIONAL BUILDING CODES WITH ALL
	AMENDMENTS AS ADOPTED.
10.	ADDITIONAL ELECTRICAL REQUIREMENTS MAY BE SHOWN ON PLANS FROM OTHER DISCIPLINES IN THIS SET. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL PLANS
	AND SPECIFICATIONS FOR A COMPLETE UNDERSTANDING OF THE PROJECT
	REQUIREMENTS.
11.	WHERE CONFLICTS ARE FOUND BETWEEN DRAWINGS, DETAILS, OR SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY, NOTICY ARCHITECT OF DISCREPANCY IN
	WRITING.
12.	INITIATING WORK CONSTITUTES CONTRACTOR ACCEPTANCE OF THE EXISTING CONDITIONS
12	ASSOCIATED WITH THE WORK IN QUESTION.
15.	COMMENCING CONSTRUCTION. CONFLICTS BETWEEN UTILITY REQUIREMENTS AND THE
	PLANS OR SPECIFICATIONS SHALL BE SUBMITTED TO THE ARCHITECT IN WRITING PRIOR TO
	PROCEEDING WITH WORK. CONTRACTOR SHALL ARRANGE A PRE-CONSTRUCTION MEETING
	AND SUBSTRUCTURES SHALL BE INSTALLED PER UTILITY COMPANY STANDARDS.
14.	THESE DRAWINGS AND SPECIFICATIONS DO NOT INDICATE METHODS OF CONSTRUCTION.
	THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND IS RESPONSIBLE FOR
	PRACTICES.
15.	DRAWINGS ARE DIAGRAMMATIC IN NATURE AND CANNOT SHOW EVERY CONNECTION,
	JUNCTION BOX, WIRE, AND CONDUIT, ETC. THE EXACT LOCATIONS AND ARRANGEMENT OF
	DRAWINGS REASONABLY INFERRED TO BELONG TO THE WORK DESCRIBED SHALL BE
	FURNISHED AND INSTALLED TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM.
16.	WORK SHALL BE COORDINATED WITH EXISTING CONDITIONS, NEW CONSTRUCTION,
	OWNER'S VENDORS, OTHER TRADES, AND THEIR DOCUMENTS. THE CONTRACTOR SHALL
	AN APPOINTMENT TO VISIT THE SITE.
17.	AN INSULATED GROUND CONDUCTOR SIZED PER NEC SHALL BE PROVIDED WITH EACH
18	FEEDER AND BRANCH CIRCUIT. DROVIDE A DEDICATED NEUTRAL FOR EACH LINE TO NEUTRAL CIRCUIT. MULTUWIDE
10.	BRANCH CIRCUITS ARE NOT PERMITTED UNLESS SPECIFICALLY INDICATED ON PLANS.
19.	MINIMUM WIRE SIZE IS #12 AWG. SEE SPECIFICATIONS FOR MINIMUM CONDUIT SIZE.
20.	CONDUIT SHALL BE CONCEALED WHEREVER POSSIBLE ABOVE CEILINGS, INSIDE WALLS, OR
	EXPOSED CONDUIT AS HIGH AS POSSIBLE AND PARALLEL TO NEARBY SURFACES OR
	EXISTING RACEWAYS. CONDUIT SHALL NOT BE INSTALLED IN FLOOR SLAB UNLESS
	SPECIFICALLY INDICATED ON PLANS AND WHERE APPROVED BY STRUCTURAL ENGINEER.
21.	CONTRACTOR SHALL PROVIDE RIGID METAL SLEEVES TO FACILITATE PATHWAYS THROUGH
	FULL HEIGHT WALLS FOR ELECTRICAL AND TELECOMMUNICATION WIRING.
22.	PROVIDE TEMPORARY OR PERMANENT END CAPS FOR STUBBED CONDUITS. PROVIDE
23.	SEE ARCHITECTURAL PLANS FOR LOCATIONS OF FIRE RATED ASSEMBLIES AND SMOKE
	BARRIERS. SEAL PENETRATIONS IN ACCORDANCE WITH UL AND PROJECT SPECIFICATIONS.
24.	MOUNTING HEIGHTS FOR WALL MOUNTED DEVICES INDICATED ABOVE FINISHED FLOOR ARE
	BOTTOM OF DEVICE UNO.
25.	PROVIDE SOUND INSULATING PUTTY AROUND DEVICES INSTALLED ON OPPOSITE SIDES OF
	A WALL IN THE SAME VERTICAL CHANNEL. IF DEVICES ARE LOCATED AT LEAST 8" HORIZONITALLY APART NO SOLIND INSULATING PLITTY IS REQUIRED
26.	COORDINATE CEILING MOUNTED DEVICES WITH MECHANICAL AND ARCHITECTURAL
	REFLECTED CEILING PLANS. NOTIFY ARCHITECT IN WRITING OF CONFLICTS PRIOR TO
97	PROCEEDING WITH WORK.
21.	THAN 36" ABOVE CEILING LEVEL. LABEL EACH BOX IN AREA OF WORK WITH A PERMANENT
	MARKER OR IN ACCORDANCE WITH SPECIFICATIONS, WHICHEVER IS MORE STRINGENT.
28.	CONDUITS DESIGNATED AS EMPTY OR FUTURE SHALL BE PROVIDED WITH A #12 PULL LINE.
29.	FOR LUMINAIRES. CIRCUIT NUMBER IS SHOWN ONLY ONCE IN EVERY ROOM. PROVIDE
	CIRCUIT INDICATED TO EVERY LIGHT FIXTURE INDICATED IN SAME ROOM UNLESS
20	OTHERWISE INDICATED.
30.	ONLY. VERIFY EXACT QUANTITY AND LOCATIONS WITH SPRINKLER CONTRACTOR PRIOR TO
	FIRE ALARM SHOP DRAWING SUBMITTAL.
31.	ELECTRICAL PANELS INCLUDING BUT NOT LIMITED TO FIRE ALARM CONTROL PANELS,
	72" AFF.
32.	PROVIDE GROUNDING TYPE EXPANSION FITTINGS OR OTHER APPROVED METHODS TO
	ALLOW FOR EXPANSION, CONTRACTION, AND DEFLECTION WHERE CONDUITS CROSS
33.	PROVIDE SEPARATE RACEWAY FOR EMERGENCY SYSTEM WIRING PER NEC ARTICLE 700.
	MINIMUM WIRE SIZE #10AWG.
34. 25	ALL CONDUITS SHALL INCLUDE AN INSULATED GROUND WIRE, SIZED PER N.E.C.
JJ.	CONDUIT AND BOX ROUGH-INS FOR MOTORS AND PUSHRUTTONS MAKE FINAL POWER
	CONNECTIONS. ALL CONTROL WIRING BY OTHERS.
36.	MASONRY LOAD-BEARING WALLS AND MASONRY SHEAR WALLS: DO NOT PENETRATE CMU
	WALLS INDIGATED AS BEAKING WALLS AND SHEAK WALLS ON STRUCTURAL DRAWINGS UNI ESS NOTED OTHERWISE ON PLAN. DO NOT CORE THROUGH CMU BOND REAMS OR
	LINTELS. DO NOT CUT ANY VERTICAL REINFORCING IN CMU WALLS. OBTAIN PRIOR
	APPROVAL FROM ENGINEER BEFORE PENETRATING ANY OF THE STRUCTURAL ELEMENTS
37	LISTED ABOVE. CONCRETE BEARING WALLS AND REAMS: DO NOT PENETRATE CONCRETE WALLS.
	INDICATED AS BEARING WALLS AND SHEAR WALLS ON STRUCTURAL DRAWINGS UNLESS
	NOTED OTHERWISE ON PLAN. DO NOT CORE THROUGH CONCRETE BEAMS, GIRDERS, OR
	APPROVAL FROM STRUCTURAL ENGINEER BEFORE PENETRATING ANY OF THE

 STRUCTURAL ELEMENTS LISTED ABOVE.
 STEEL FRAMING: DO NOT CUT OR CORE THROUGH ANY STRUCTURAL STEEL BEAMS, GIRDERS, OR COLUMNS UNLESS NOTED OTHERWISE ON PLAN. NOTIFY ENGINEER OF POTENTIAL CONFLICTS BETWEEN FRAMING AND ELECTRICAL WORK.
 CONCRETE FLOOR SYSTEMS (APPLIES TO CONCRETE BLDG. OR STEEL WITH CONCRETE DECK, MASONRY W/ CONC. FLOOR): DO NOT CUT HOLES OR CORE THROUGH CONCRETE FLOOR SLAB UNLESS NOTED OTHERWISE ON PLAN OR IN TYPICAL STRUCTURAL DETAILS. PENETRATIONS THROUGH EXISTING SLABS SHALL BE X-RAYED PRIOR TO CORING HOLES.

NO EXISTING REINFORCEMENT SHALL BE CUT WITHOUT PERMISSION OF THE STRUCTURAL ENGINEER. PENETRATIONS THROUGH EXISTING BEAMS AND COLUMNS IS NOT PERMITTED.





#### UNIT A - FIRST FLOOR POWER PLAN SCALE: 1/8" = 1'-0"

## **GENERAL NOTES - POWER**

- PROVIDE REVISED TYPED PANELBOARD DIRECTORIES FOR EACH PANELBOARD ADDED OR MODIFIED DURING CONSTRUCTION. FIELD VERIFY EXISTING CIRCUIT 1.
- INFORMATION WITH OWNER'S ASSISTANCE TO ENSURE FINAL DIRECTORY IS ACCURATE. UNUSED SPARE BREAKERS SHALL BE IN THE OFF POSITION. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES AND ALL EXISTING
- FIELD CONDITIONS BEFORE STARTING CONSTRUCTION. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF CONDITIONS. SHOULD DIFFERENT CONDITIONS BE ENCOUNTERED, CONTACT THE ARCHITECT BEFORE PROCEEDING WITH WORK.
- LABEL EACH RECEPTACLE WITH THE PANEL NAME AND CIRCUIT NUMBER ON THE FACE OF EACH COVER PLATE WITH A TYPED LAMINATED LABEL. PROVIDE "GFCI PROTECTED" LABEL ON COVER PLATE FOR ANY GFCI PROTECTED

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- TROVIDE OF NOTEOTED ENDER OF CONTRACTOR STELLET ENDER OF CONTRACTOR SHALL INCREASE CIRCUIT CONDUCTOR SIZE TO COMPENSATE FOR VOLTAGE DROP DUE TO EXCESSIVE CIRCUIT LENGTHS. IN NO CASE SHALL VOLTAGE
  - DROP EXCEED NFPA 70 (N.E.C.) REQUIREMENTS. REFER TO MECHANICAL PLANS FOR LOCATION OF MECHANICAL EQUIPMENT. LOCATE
- DISCONNECT SWITCHES PER NEC. REFER TO "CONTROL SCHEMATICS" MECHANICAL DRAWINGS FOR ADDITIONAL CONTROL WIRING AND CONTROL CONNECTIONS.
   ALL DEVICES, EQUIPMENT, FIXTURES, AND THE LIKE, SHALL BE BONDED WITH A
- PROPERLY SIZED EQUIPMENT GROUNDING CONDUCTOR. MAINTAIN MECHANICAL/ELECTRICAL BONDS OF METALLIC RACEWAY SYSTEM.
- ALL EXISTING ELECTRICAL EQUIPMENT, DEVICES, CONDUIT, WIRING, ETC. NOT SHOWN ON THIS DRAWING AND NOT IMPACTED BY RENOVATIONS SHALL REMAIN IN SERVICE, UNLESS OTHERWISE NOTED. EXISTING ELECTRICAL ELECTRICAL EQUPMENT DEVICES, CONDUIT, WIRING, ETC. NOT SHOWN ON THIS DRAWING THAT IS MADE OBSOLETE BY RENOVATIONS SHALL BE DISCONNECTED AND REMOVED. EXISTING CONDUIT, WIRING AND BOXES, ETC. NOT SHOWN ON THIS DRAWING THAT PASS THROUGH RENOVATION AREAS AND IS AFFECTED BY RENOVATIONS SHALL BE REWORKED AS REQUIRED.

EXISTING OR REWORKED JUNCTION BOXES SHALL BE ACCESSIBLE UPON COMPLETION OF WORK.

ROOM NO.	ROOM NAME	AF (\$
1	ENTRY	65
3	TOILET	30
4	TOILET	36
5	STORAGE	43
6	KINDERGARTEN	94
/	KINDERGARTEN	94
8		4
9 10	STORAGE	43
10	WORK	15
12	LIBRARY	110
13	AUDIO-VISUAL	12
14	CONFERENCE	21
15	FACULTY	34
16	WOMEN	34
17	MEN	34
18	CORRIDOR	13
19	CORRIDOR	11
30	WASHAREA	24
31	GIRLS	17
32	JANITOR	8
33	BUYS	18
34		40
30		3
37		28
38	PRINCIPAL	17
39	WORK	17
40	BOYS	18
41	JANITOR	8
42	GIRLS	17
43	WASH AREA	25
44	PHYSICAL HANDICAP	83
45	4TH GRADE	83
46	4TH GRADE	83
47	RESOURCE II L.D.	83
48	3RD GRADE	83
49	CORRIDOR	18
50		83
51		03
52 53		  
54	BOILER ROOM	70
55	PASSAGE	15
56	BOOKS	17
57	RECEIVE	32
58	FOOD	12
59	TOILET	32
60	KITCHEN	92
61	SOILED DISH AREA	9
62	PASSAGE	59
63	PASSAGE	24
64	BOYSLOCKER	33
65	GIRLS LOCKER	26
66	BOYS SHOWER	8
67	GIRLS SHOWER	8
68	ISTORAGE	30
69		36
70		209
70		
73	BOYS	2
74	GIRI S	
75		52

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	KEYNOTES				
P1	REWIRE EXISTING LIGHTING IN THIS ROOM TO BE ON ONE CIP INSTEAD OF TWO TO FREE UP A POLE SPACE IN EXISTING PA RETAIN SWITCHING AS-IS.				
P2	NEW PAD MOUNTED OUTDOOR CONDENSING UNIT AND WALL MOUNTED INDOOR EVAPORATOR UNIT FOR SPLIT SYSTEM TY SYSTEM BOTH TO BE POWERED VIA CIRCUIT SERVING THE O CONDENSING UNIT. PROVIDE BRANCH CIRCUIT INDICATED TO OUTDOOR CONDENSING UNIT AND PROVIDE A 30A-2P-WP NON-FUSIBLE DISCONNECT SWITCH NEAR UNIT FOR INPUT PO DISCONNECTING MEANS. WIRE BRANCH CIRCUIT FROM TERM BLOCK ON OUTDOOR CONDENSING UNIT TO INDOOR EVAPOF UNIT WITH 2#12, 1#12, 3/4°C. (MINIMUM, OR QUANTITY AS REQ FOR SUPPLIED UNIT). RUN CONDUIT FOLLOWING SAME ROUT INDOOR UNIT REFRIGERANT PIPING. PROVIDE A 20 AMP, 2-PC MOTOR RATED SNAP-SWITCH AT INDOOR UNIT LOCATION TO AS LOCAL DISCONNECTING MEANS. MOUNT SWITCH NEXT TO PROVIDE FINISH TYPE SURFACE MOUNTED RACEWAY/BOX TO CONNECT INDOOR UNIT AND INSTALL SNAP-SWITCH DISCONI LOCATION OF DISCONNECT SWITCHES ON PLAN IS SCHEMAT COORDINATE LOCATION OF DISCONNECT SWITCHES ADJACE RESPECTIVE UNITS WITH EXISTING CONDITIONS AND UNIT CONNECTION LOCATION TO MOUNT IN A LOCATION THAT PRO CODE REQUIRED MOUNTING HEIGHT, CLEARANCES AND ACC SERVICEABILITY AND TO MAINTAIN EQUIPMENT FUNCTIONALL COORDINATE EXACT ROUGH-IN LOCATIONS AND FINAL CONN REQUIRED MOUNTING HEIGHT, CLEARANCES AND ACC SERVICEABILITY AND TO MAINTAIN EQUIPMENT FUNCTIONALL COORDINATE EXACT ROUGH-IN LOCATIONS AND FINAL CONN REQUIREMENTS WITH EQUIPMENT SUPPLIER/INSTALLER AND EXISTING CONDITIONS PRIOR TO ROUGH-IN AND PROVIDE AL WIRING AS REQUIRED AND MAKE ALL FINAL CONNECTIONS. INDIVIDUAL BRANCH CIRCUIT FOR POWER TO MSCU OUTDOOC TO BE INSTALLED BACK TO SOURCE INDICATED THROUGH TH BUILDING INTERIOR, ABOVE EXISTING CEILINGS. ANY EXTERI BRANCH CIRCUIT WIRING SHALL BE INSTALLED IN IMC TYPE O BRANCH CIRCUIT WIRING SHALL BE INSTALLED IN IMC TYPE O BRANCH CIRCUIT WIRING SHALL BE INSTALLED IN IMC TYPE O BRANCH CIRCUIT WIRING SHALL BE INSTALLED IN IMC TYPE O BRANCH CIRCUIT WIRING SHALL BE INSTALLED IN CONDUT UNLESS OTHERWISE INDICATED. COORDINATE ROUTING WIT EXISTING CONDITIONS PRIOR TO ROUGH-IN.P				
P3	CONNECT TO EXISTING PANELBOARD INDICATED WITH 2 #10. G IN 3/4" CONDUIT. PROVIDE A NEW 20 AMP, 208V, 2-POLE BRE (OR SIZE AS RECOMMENDED BY MECHANICAL EQUIPMENT MANUFACTURER) TO MATCH EXISTING EQUIPMENT (SQUARE NQOB) CIRCUITS ARE INDICATED BY ALPHABETIC INDICATOR ARRANGE BASED ON PANEL REWORK AND UPDATE DIRECTO				
P4	REWORK EXISTING CIRCUIT BREAKERS AS NEEDED FOR NEW POLE CIRCUIT BREAKERS FOR LOADS SHOWN.				
P9	AS AN ALTERNATE BID, PROVIDE A WEATHER-RESISTANT LISTED/TAMPER-RESISTANT GFCI TYPE DUPLEX RECEPTACLE WHILE-IN-USE WEATHERPROOF COVER AND MOUNT USING A WEATHERPROOF BOX ADJACENT TO OUTDOOR MSCU UNIT DISCONNECT SWITCH TO PROVIDE OUTDOOR HVAC EQUIPME SERVICE RECEPTACLE PER REQUIREMENTS OF NEC 210.63. 120 VOLT RECEPTACLES LABELED THE SAME FROM A SPARE POLE CIRCUIT BREAKER IN NEW PANEL INDICATED. RECEPTA COVER SHALL BE: HUBBELL CATALOG NO. GFTW15 - WEATHER/TAMPER RESISTANT SELF-TEST GFCI RECEPTACLE 5-15R, 15A, BROWN COLOR AND HUBBELL CATALOG NO. RW5' STANDARD 1-GANG SIZE, POLYCARBONATE, HIGH IMPACT CONSTRUCTION WITH WHILE-IN-USE NON-METALLIC WEATHE CLEAR TINTED/LOCKABLE COVER.				
P10	AS AN ALTERNATE BID, REWIRE EXISTING LIGHTING IN THIS R BE ON ONE CIRCUIT INSTEAD OF TWO TO FREE UP A CIRCUIT BREAKER FOR OUTDOOR RECEPTACLE IN EXISTING PANEL.				





#### **UNIT B - FIRST FLOOR POWER PLAN**

SCALE: 1/8" = 1'-0"

#### **GENERAL NOTES - POWER** PROVIDE REVISED TYPED PANELBOARD DIRECTORIES FOR EACH PANELBOARD ADDED OR MODIFIED DURING CONSTRUCTION. FIELD VERIFY EXISTING CIRCUIT INFORMATION WITH OWNER'S ASSISTANCE TO ENSURE FINAL DIRECTORY IS ACCURATE. UNUSED SPARE BREAKERS SHALL BE IN THE OFF POSITION. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES AND ALL EXISTING 2 FIELD CONDITIONS BEFORE STARTING CONSTRUCTION. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF CONDITIONS. SHOULD DIFFERENT CONDITIONS BE ENCOUNTERED, CONTACT THE ARCHITECT BEFORE PROCEEDING WITH WORK. 3. LABEL EACH RECEPTACLE WITH THE PANEL NAME AND CIRCUIT NUMBER ON THE FACE OF EACH COVER PLATE WITH A TYPED LAMINATED LABEL. PROVIDE "GFCI PROTECTED" LABEL ON COVER PLATE FOR ANY GFCI PROTECTED

- DEVICE. 5. CONTRACTOR SHALL INCREASE CIRCUIT CONDUCTOR SIZE TO COMPENSATE FOR VOLTAGE DROP DUE TO EXCESSIVE CIRCUIT LENGTHS. IN NO CASE SHALL VOLTAGE
- DROP EXCEED NFPA 70 (N.E.C.) REQUIREMENTS. REFER TO MECHANICAL PLANS FOR LOCATION OF MECHANICAL EQUIPMENT. LOCATE 6. DISCONNECT SWITCHES PER NEC.
- REFER TO "CONTROL SCHEMATICS" MECHANICAL DRAWINGS FOR ADDITIONAL CONTROL WIRING AND CONTROL CONNECTIONS.
   ALL DEVICES, EQUIPMENT, FIXTURES, AND THE LIKE, SHALL BE BONDED WITH A PROPERLY SIZED EQUIPMENT GROUNDING CONDUCTOR. MAINTAIN
- MECHANICAL/ELECTRICAL BONDS OF METALLIC RACEWAY SYSTEM. ALL EXISTING ELECTRICAL EQUIPMENT, DEVICES, CONDUIT, WIRING, ETC. NOT SHOWN 9.

<ul> <li>P1 REWIRE EXISTING LIGHTING IN THIS ROOM TO BE ON ONE CIRCUIT INSTEAD OF TWO TO FREU PA POLE SPACE IN EXISTING PAREL. RETAIN SWITCHING AS-IS.</li> <li>P2 NEW PAD MOUNTED OUTDOR CONDENSING UNIT AND WALL MOUNTED INDOOR EVAPORATOR UNIT FOR SPLIT SATEM TYPE AC SYSTEM BOTH TO BE POWERED VIA CIRCUIT SERVING THE OUTDOC CONDENSING UNIT. PROVIDE BRANCH CIRCUIT SYSTEM TYPE AC OUTDOOR CONDENSING UNIT AND PROVIDE A 30A-2P-WP NON-FUSIBLE DISCONNECT SWITCH NEAR UNIT FOR INFUNITY BLOCK ON OUTDOOR CONDENSING UNIT TO INDOOR EVAPORATOR UNIT WIT 2#12, 1412, 34°C. (MINIMUM, OR QUANTTY AS REGUIRED FOR SUPPLIED UNIT, RUN CONDUIT FOLLOWING SAME ROUTING AS NIDDOOR UNIT REFRICTING MEANS. MOUNT SWITCH NEXT OUTTY AS ELOCAL DISCONNECT SWITCH NEAR UNIT FOR INFUNITY AS ELOCAL DISCONNECTING MEANS. MOUNT SWITCH NEXT TO UNIT. PROVIDE FINISH TYPE SURRACE MOUNTED RACEWAYBOX TO CONNECTING DEALS. MOUNT SWITCH DISCONNECT. LICATION OF DISCONNECT SWITCHES ANJACENT TO UNIT. RESPECTIVE UNITS WITH FE SURRACE MOUNTED RACEWAYBOX TO CONNECTING ONDUTINA DI INSTALL SWAP-SWITCH DISCONNECT. LICATION OF DISCONNECT SWITCHES ANJACENT TO CONNECTIVE UNITS WITH FEXISTING CONDITIONS AND UNIT CONNECTIVE UNITS WITH FEXISTING CONDITIONS AND UNIT CONNECTIVE UNITS WITH FUNCTIONS AND DIAT CONNECTIVE UNITS WITH EVISTING CONDITION ALL FELL WIRING AS REQUIRED AND MAKE ALL FINAL CONNECTION. INDIVIDUAL BRANCH CIRCUIT FOR POWER TO MOSCI OUTDOOR UNIT TO BE INSTALLED BACK TO SOURCE INDICATED THAL CONNECTIONS. INDIVIDUAL BRANCH CIRCUIT FOR POWER TO MOSCI OUTDON UNIT TO BE INSTALLED AND MAKE ALL FINAL CONNECTIONS. INDIVIDUAL BRANCH CIRCUIT FOR THE NECL ANY BELOV CIELLING WIRING AS REQUIRED AND MAKE ALL FILL WIRING AS REQUIRED AND MAKE ALL FILL WIRING AS REQUIRED AND MAKE ALL FILL WIRI</li></ul>		KEYNOTES
P2         NEW PAD MOUNTED OUTDOOR CONDENSING UNIT AND WALL MOUNTED INDOOR EVAPORATOR UNIT CIRCUIT SYSTEM TYPE AC SYSTEM BOTH TO BE POWERED VIA CIRCUIT SYSTEM TYPE AC SYSTEM BOTH TO BE POWERED VIA CIRCUIT SYSTEM TYPE AC SYSTEM BOTH TO BE POWERED VIA CIRCUIT INDICATED TO OUTDOOR CONDENSING UNIT AND PROVIDE A3 A2P-WP NON-FUSIBLE DISCONNECT SWITCH NEAR UNIT FOR INPUT POWER DISCONDECTING MEANS. WIRE BRANCH CIRCUIT FROM TERMINAL BLOCK ON OUTDOOR CONDENSING UNIT TO INDOOR EVAPORATOR UNIT WIT 2412, 1412, 347C. (MINIMUM) OR QUANTITY AS REDUIRED FOR SUPPLIED UNIT). RUN CONDUIT FOILOWING SAME ROUTING AS INDOOR UNIT REFNGERARY. 347C. (MINIMUM) OR QUANTITY AS REDUIRED FOR SUPPLIED UNIT]. RUN CONDUIT FOILOWING SAME ROUTING AS LOCAL DISCONNECTING MEANS. MOUTED RACEWAYBOX TO CONNECTIND PE SURFACE MOUNTED NACEWAYBOX TO CONNECTION OF DISCONNECT SWITCHES ON PLAN. IS SCHEMATIC. LOCATION OF DISCONNECT SWITCHES ON PLAN. IS SCHEMATIC. COORDINATE LOCATION TO MOUNT IN A LOCATION THAT PROVIDES CODE REQUIRED MOUNTING HEIGHT, CLERANCES AND ACCESS TO SERVICEABILITY AND TO MAINTAIN EQUIPMENT FUNCTIONALITY. COORDINATE EXACT ROUGHNL COATIONS AND FINAL CONNECTION REQUIRED MOUNTING TO ROUGHNL AD AND WIT CONNECTION LOCATION SPRIOR TO ROUGHNL AD ROVIDE ALL FIELD WIRING AS REQUIRED AND MAKE ALL FINAL CONNECTIONS. INDIVIDUAL BRANCH CIRCUT FOR POWER TO MSCU OUTDOOR UNIT TO DE INSTALLED AND MAKE ALL FINAL CONNECTIONS. INDIVIDUAL BRANCH CIRCUT FOR POWER TO MSCU OUTDOOR UNIT TO DE INSTALLED AND MAKE ALL FINAL CONNECTIONS. INDIVIDUAL BRANCH CIRCUT FOR POWER TO MSCU OUTDOOR UNIT TO DE INSTALLED AND MAKE ALL FINAL CONNECTIONS. INDIVIDUAL BRANCH CIRCUT FOR POWER TO MOCI CONDOC ALL FIELD WIRING SA REQUIRED AND MAKE ALL FILLED USING MC CABLE, PROPERLY SUPPORTED PER THE NEC. ANY BELOW CELLING IN 347 CONDUTT. SPRIOR TO ROUGHN MAY EXTERIOR BRANCH CIRCUT WORE ON CORD ROUGHNED TO MINICUM BRANCH CIRCUT WIRING IN INSING SPRIOR TO ROUGHNET KOUTDOR UNIT UNESS OTHERWISE INDICATED ANY EMECHANICAL EQUIPMENT MANUFACURED TO SERVIDE AND HEL	P1	REWIRE EXISTING LIGHTING IN THIS ROOM TO BE ON ONE CIRCUIT INSTEAD OF TWO TO FREE UP A POLE SPACE IN EXISTING PANEL. RETAIN SWITCHING AS-IS.
<ul> <li>P3 CONNECT TO EXISTING PANELBOARD INDICATED WITH 2 #10 AND #1 G IN 3/4" CONDUIT. PROVIDE A NEW 20 AMP, 208V, 2-POLE BREAKER (OR SIZE AS RECOMMENDED BY MECHANICAL EQUIPMENT MANUFACTURER) TO MATCH EXISTING EQUIPMENT (SQUARE D TYPI NQOB) CIRCUITS ARE INDICATED BY ALPHABETIC INDICATORS, ARRANGE BASED ON PANEL REWORK AND UPDATE DIRECTORY.</li> <li>P4 REWORK EXISTING CIRCUIT BREAKERS AS NEEDED FOR NEW TWO POLE CIRCUIT BREAKERS FOR LOADS SHOWN.</li> <li>P5 CONNECT TO EXISTING PANELBOARD INDICATED WITH 2 #8 AND #8 ( IN 3/4" CONDUIT. PROVIDE A NEW 35 AMP, 208V, 2-POLE BREAKER (C SIZE AS RECOMMENDED BY MECHANICAL EQUIPMENT MANUFACTURER) TO MATCH EXISTING EQUIPMENT (SQUARE D TYPI NQOB) CIRCUITS ARE INDICATED BY ALPHABETIC INDICATORS, ARRANGE BASED ON PANEL REWORK AND UPDATE DIRECTORY.</li> <li>P6 AS AN ALTERNATE BID, PROVIDE A WEATHER-RESISTANT LISTED/TAMPER-RESISTANT GFCI TYPE DUPLEX RECEPTACLE IN A WHILE-IN-USE WEATHERPROOF COVER AND MOUNT USING A 1-GAN WEATHERPROOF BOX ADJACENT TO OUTDOOR MSCU UNIT DISCONNECT SWITCH TO PROVIDE OUTDOOR MSCU UNIT DISCONNECT SWITCH TO PROVIDE OUTDOOR MSCU UNIT SERVICE RECEPTACLE PER REQUIREMENTS OF NEC 210.63. FEED EACH 120 VOLT RECEPTACLE FROM LINE-SIDE OF ADJACENT TO OUTDOOR MSCU UNIT DISCONNECT SWITCH VIA A 208V/120V 1000// TRANSFORMER IN A NEMA 3R ENCLOSURE TO DERIVE 120 VOLTS FROM 208 VOLT CIRCUIT SERVING ADJACENT TO DUTDOOR MSCU UNIT TO SERVE 120 VOLT RECEPTACLE. PROVIDE FUSE BLOCK AND TWO (2 8-AMP CLASS CC FUSES FOR TRANSFORMER PRIMARY OVERCURRE PROTECTION AND INSTALL ON TRANSFORMER AND WIRE COMPLETI RECEPTACLE AND COVER SHALL BE: HUBBELL CATALOG NO. GFTW: WEATHER/TAMPER RESISTANT SELF-TEST GFCI RECEPTACLE, NEM/ 5-15R, 15A, BROWN COLOR AND HUBBELL CATALOG NO. RW57300 – STANDARD 1-GANG SIZE, POLYCARBONATE, HIGH IMPACT CONSTRUCTION WITH WHILE-IN-USE NON-METALLIC WEATHERPROC CLEAR TINTED/LOCKABL</li></ul>	P2	NEW PAD MOUNTED OUTDOOR CONDENSING UNIT AND WALL MOUNTED INDOOR EVAPORATOR UNIT FOR SPLIT SYSTEM TYPE A/C SYSTEM BOTH TO BE POWERED VIA CIRCUIT SERVING THE OUTDOO CONDENSING UNIT. PROVIDE BRANCH CIRCUIT INDICATED TO OUTDOOR CONDENSING UNIT AND PROVIDE A 30A-2P-WP NON-FUSIBLE DISCONNECT SWITCH NEAR UNIT FOR INPUT POWER DISCONNECTING MEANS. WIRE BRANCH CIRCUIT FROM TERMINAL BLOCK ON OUTDOOR CONDENSING UNIT TO INDOOR EVAPORATOR UNIT WITH 2#12, 1#12, 3/4"C. (MINIMUM, OR QUANTITY AS REQUIRED FOR SUPPLIED UNIT). RUN CONDUIT FOLLOWING SAME ROUTING AS INDOOR UNIT REFRIGERANT PIPING. PROVIDE A 20 AMP, 2-POLE MOTOR RATED SNAP-SWITCH AT INDOOR UNIT LOCATION TO SERVE AS LOCAL DISCONNECTING MEANS. MOUNT SWITCH NEXT TO UNIT. PROVIDE FINISH TYPE SURFACE MOUNTED RACEWAY/BOX TO CONNECT INDOOR UNIT AND INSTALL SNAP-SWITCH DISCONNECT. LOCATION OF DISCONNECT SWITCHES ON PLAN IS SCHEMATIC, COORDINATE LOCATION OF DISCONNECT SWITCHES ADJACENT TO RESPECTIVE UNITS WITH EXISTING CONDITIONS AND UNIT CONNECTION LOCATION TO MOUNT IN A LOCATION THAT PROVIDES CODE REQUIRED MOUNTING HEIGHT, CLEARANCES AND ACCESS FO SERVICEABILITY AND TO MAINTAIN EQUIPMENT FUNCTIONALITY. COORDINATE EXACT ROUGH-IN LOCATIONS AND FINAL CONNECTION REQUIRED MOUNTING HEIGHT, CLEARANCES AND ACCESS FO SERVICEABILITY AND TO MAINTAIN EQUIPMENT FUNCTIONALITY. COORDINATE EXACT ROUGH-IN LOCATIONS AND FINAL CONNECTION INDIVIDUAL BRANCH CIRCUIT FOR POWER TO MSCU OUTDOOR UNIT TO BE INSTALLED BACK TO SOURCE INDICATED THROUGH THE BUILDING INTERIOR, ABOVE EXISTING CEILINGS. ANY EXTERIOR BRANCH CIRCUIT WIRING SHALL BE INSTALLED IN IMC TYPE CONDU BRANCH CIRCUIT WIRING SHALL BE INSTALLED IN IMC TYPE CONDU WIRING IN FINISHED BUILDING INTERIOR SPACES SHALL BE INSTALLE IN EMT CONDUIT SUFFACE MOUNTED. MINIMUM BRANCH CIRCUIT WIRING IS 2#12, 1#12 (IN 3/4"C. WHERE INSTALLED IN CONDUIT), UNLESS OTHERWISE INDICATED. COORDINATE ROUTING WITH EXISTING CONDITIONS PRIOR TO ROUGH-IN.P
<ul> <li>P4 REWORK EXISTING CIRCUIT BREAKERS AS NEEDED FOR NEW TWO POLE CIRCUIT BREAKERS FOR LOADS SHOWN.</li> <li>P5 CONNECT TO EXISTING PANELBOARD INDICATED WITH 2 #8 AND #8 ( IN 3/4" CONDUIT. PROVIDE A NEW 35 AMP, 208V, 2-POLE BREAKER (C SIZE AS RECOMMENDED BY MECHANICAL EQUIPMENT MANUFACTURER) TO MATCH EXISTING EQUIPMENT (SQUARE D TYPI NQOB) CIRCUITS ARE INDICATED BY ALPHABETIC INDICATORS, ARRANGE BASED ON PANEL REWORK AND UPDATE DIRECTORY.</li> <li>P6 AS AN ALTERNATE BID, PROVIDE A WEATHER-RESISTANT LISTED/TAMPER-RESISTANT GFCI TYPE DUPLEX RECEPTACLE IN A WHILE-IN-USE WEATHERPROOF COVER AND MOUNT USING A 1-GAN WEATHERPROOF BOX ADJACENT TO OUTDOOR MSCU UNIT DISCONNECT SWITCH TO PROVIDE OUTDOOR HVAC EQUIPMENT SERVICE RECEPTACLE PER REQUIREMENTS OF NEC 210.63. FEED EACH 120 VOLT RECEPTACLE FROM LINE-SIDE OF ADJACENT TO OUTDOOR MSCU UNIT DISCONNECT SWITCH VIA A 208V/120V 1000// TRANSFORMER IN A NEMA 3R ENCLOSURE TO DERIVE 120 VOLTS FROM 208 VOLT CIRCUIT SERVING ADJACENT OUTDOOR MSCU UNIT TO SERVE 120 VOLT RECEPTACLE. PROVIDE FUSE BLOCK MOUNTIN ACCESSORY FOR TRANSFORMER, 2-POLE FUSE BLOCK MOUNTIN ACCESSORY FOR TRANSFORMER PRIMARY OVERCURRE PROTECTION AND INSTALL ON TRANSFORMER AND WIRE COMPLET RECEPTACLE AND COVER SHALL BE: HUBBELL CATALOG NO. GFTW: WEATHER/TAMPER RESISTANT SELF-TEST GFCI RECEPTACLE, NEW/ 5-15R, 15A, BROWN COLOR AND HUBBELL CATALOG NO. RW57300 – STANDARD 1-GANG SIZE, POLYCARBONATE, HIGH IMPACT CONSTRUCTION WITH WHILE-IN-USE NON-METALLIC WEATHERPROC CLEAR TINTED/LOCKABLE COVER.</li> <li>P8 CONNECT THIS RECEPTACLE TO ADJACENT RECEPTACLE CIRCUIT TRANSFORMER.</li> </ul>	P3	CONNECT TO EXISTING PANELBOARD INDICATED WITH 2 #10 AND #1 G IN 3/4" CONDUIT. PROVIDE A NEW 20 AMP, 208V, 2-POLE BREAKER (OR SIZE AS RECOMMENDED BY MECHANICAL EQUIPMENT MANUFACTURER) TO MATCH EXISTING EQUIPMENT (SQUARE D TYPI NQOB) CIRCUITS ARE INDICATED BY ALPHABETIC INDICATORS, ARRANGE BASED ON PANEL REWORK AND UPDATE DIRECTORY.
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·	P8	CONNECT THIS RECEPTACLE TO ADJACENT RECEPTACLE CIRCUIT TRANSFORMER.



## **MECHANICAL ABBREVIATIONS**

A/C	AIR CONDITIONING	ID IN	INSIDE DIAMETER (IN INCHES, UNL
ACU		IN WC	IN INCHES OF WATER COLUMN
AD AE	DUCT/PLENUM ACCESS DOOR ACOUSTICAL ELBOW (REFER TO DETAIL THIS SHEET)	INSUL INV	INSULATION/INSULATE
AFF	ABOVE FINISHED FLOOR		
afms Afp	AIR FLOW MONITOR/MEASURING STATION AIR FLOW MEASUREMENT PROBE	KH KW	KITCHEN HOOD KILOWATTS
AFT	AIR FLOW TRANSDUCER/TEMPERATURE MONITOR	1 AT	
AHU	FILTRATION OF THE CIRCULATED AIR). TERM MAY BE USED INTERCHANGEABLY WITH ADU'S	LAI	LINEAR FEET
	AND ARU'S.	LLS	
ARU	AIR HANDLING UNIT, W/ INTEGRAL DEVICES FOR ENERGY RECOVERY	LPS	LOW PRESSURE STEAM SUPPLY
		LVR	
ALI	AMBIENT		LEAVING WATER TEMPERATURE (
AP		M	MOTOR
APD As	AIR PRESSURE DROP (IN INCHES OF WATER COLUMN) AIR SEPARATOR	MAI MAX	MIXED AIR TEMPERATURE (IN °F, U MAXIMUM
AR	ACID RESISTANT	MBH	EQUIVALENT TO 1,000 BTUH
ARV AT	AIR RELIEF VALVE, MANUAL AIR VENT AIR TRANSFER	MECH MFR	MECHANICAL MANUFACTURER
ATD	AIR TEMPERATURE DROP (IN °F, UNLESS OTHERWISE NOTED)	МН	MANHOLE
ATR ATV	AIR TEMPERATURE RISE (IN °F, UNLESS OTHERWISE NOTED) AIR TURNING VANES	MIN MISC	MINIMUM MISCELLANEOUS
AUTO	AUTOMATIC	MOD	MOTORIZED OPERATED DAMPER
AVE	AIR VOLUME EXTRACTOR	MPS MTD	MEDIUM PRESSURE STEAM SUPPI MOUNTED
BCP	BOILER CIRCULATION PUMP	MUA	MAKE-UP AIR HANDLING UNIT
BD BDD	BAROMETRIC DAMPER OR BAROMETRIC, COUNTER BALANCED GRAVITY OPERATED DAMPER BACKDRAFT DAMPER	R NIC	NOT IN CONTRACT
BHP	BREAK HORSPOWER.(IN HORSEPOWER)	No. / #	NUMBER
BLDG BLR	BOILER	NTS	NOMINAL NOT TO SCALE
BMS	BUILDING MANAGEMENT SYSTEM	NG	NATURAL GAS
BOD BP	BOTTOM OF DUCT/DEVICE (IN UNITS NOTED) BAROMETRIC PRESSURE (IN INCHES OF MERCURY, UNLESS OTHERWISE NOTED)	NP	NON-POTABLE WATER
BTU	BRITISH THERMAL UNITS	OA	
втин	BRITISH THERMAL UNITS PER HOUR		OUTDOOR AIR TEMPERATURE (IN ON CENTER
CAU	COMBUSTION AIR UNIT	OD	OUTDOOR DIAMETER (IN INCHES,
CBA CBD	CHILLED BEAM, ACTIVE CHILLED BEAM, ACTIVE DISPLACEMENT AIR UNIT	OR OS	OIL RETURN OIL SUPPLY
СВР	CHILLED BEAM, PASSIVE		
UC CCP	COOLING COIL COIL CIRCULATION PUMP	P/E P/T	PNEUMATIC/ELECTRIC PRESSURE/TEMPERATURE PORT
CD	CONTROL DAMPER	P	PUMP
CF CFH	CARTRIDGE FILTER CUBIC FEET PER HOUR (GAS UNIT OF MEASURE)	PC PHC	PUMPED CONDENSATE
CFM	AIR/GAS FLOW RATE (IN CUBIC FEET PER MINUTE)	PREFAB	PREFABRICATED
CSF CHI P	CHEMICAL SHOT FEEDER	PRES PRV	PRESSURE
CHP	CHILLED WATER PUMP	PSF	POUNDS PER SQUARE FOOT
CHR			POUNDS PER SQUARE INCH
Cho CL	CENTER LINE	PUH	PROPELLER UNIT HEATER
CLG	CEILING	PVC	POLYVINYL CHLORIDE
COMP CO	COMPRESSOR CLEAN OUT	R	RADIANT
COL	COLUMN	RAD	RADIUS
COND CP	CONDENSER CONDENSATE PUMP	KA RCP	KETURN AIR RADIANT CEILING PANFI
CRU	COMPUTER ROOM UNIT	REQ'D	REQUIRED
CSR CT	CURRENT SENSING RELAY	RFM RG	REFRIGERANT MONITOR RETURN AIR GRILLE
CU	CONDENSING UNIT	RH	RELIEF HOOD
CUH		RHC	
CWP	CONDENSER WATER PUMP	RM	ROOM
CWR	CONDENSER WATER RETURN	RPM	REVOLUTIONS PER MINUTE
UWS	CONDENSER WATER SUPPLY	หง RTU	REFRIGERANT SUCTION
DB	DRY BULB TEMPERATURE (IN °F, UNLESS OTHERWISE NOTED)	RV	ROOF MOUNTED VENTILATOR
		RWO	RETURN AIR WALL OPENING (ABO
DELTA T / ΔT	TEMPERATURE DIFFERENCE	S	SENSOR
		SA SAG	SUPPLY AIR (WITH A UNIT MEASUF
DIA / Ø DOAS	DIAMETER (IN INCHES, UNLESS OTHERWISE NOTED) DEDICATED OUTDOOR AIR SYSTEM	SAG	STEAM CONDENSATE
DP	DIFFERENTIAL PRESSURE (IN FEET OF HEAD, UNLESS OTHERWISE NOTED)	SCHED	SCHEDULE
DPS DPT	DIFFERENTIAL PRESSURE SWITCH DIFFERENTIAL PRESSURE TRANSMITTER	SD SF	SMOKE DAMPER SUPPLY FAN
DS	DUCT SILENCER	SHT	SHEET
DT DU	DIFFERENTIAL TEMPERATURE (IN °F, UNLESS OTHERWISE NOTED) DEHUMIDIFICATION UNIT	SIM SL	SIMILAR LINEAR SLOT DIFFUSER
SUC	DOOR UNDER CUT (IN INCHES, UNLESS OTHERWISE NOTED)	SP	STATIC PRESSURE (IN INCHES OF
DWG	DRAWING	SPEC STD	SPECIFICATION(S) STANDARD
E/P	ELECTRICAL/PNEUMATIC	SF	SHOT FEEDER
	ENTERING AIR TEMPERATURE (IN °F, UNLESS OTHERWISE NOTED)	т	
EF	EXHAUST FAN	TA	TRANSFER AIR
EFF		TC	
EG EH	EXHAUST GRILLE EXHAUST HOOD	TCP	TEMPERATURE CONTROL CONTRA
ELEV	ELEVATION	TCS	TEMPERATURE CONTROL SYSTEM
ELEC EM	ELECTRIC, ELECTRICAL EXPANDED METAL (MINIMUM OF 70% FREE AREA LUNI ESS OTHERWISE NOTED)	ID TEMP	TEMPERATURE DROP (IN °F, UNLE TEMPERATURE (IN °F, UNLESS OT
EMER	EMERGENCY	TOD	TOP OF DUCT/DEVICE (IN UNITS N
EQUIP		TR TXV	TEMPERATURE RISE (IN °F, UNLES THERMAL EXPANSION VALVE
ERW	ENERGY RECOVERY WHEEL, ALSO REFERRED TO AS A HEAT WHEEL	ТҮР	TYPICAL
ERV	ENERGY RECOVERY VENTILATOR	IIH	
EN EML	EAFAINSIUN TAINK ENTERING WATER TEMPERATURE (IN °F, UNLESS OTHERWISE NOTED)	UV	UNIT VENTILATOR
EX	EXISTING	V	
EXH EXP		V VAC	
EXT	EXTERIOR	VAV	
F&T	FLOAT AND THERMOSTATIC TRAP	VD VEL	VOLUME DAMPER VELOCITY (IN FEET PER MINUTE LI
F/SD	COMBINATION FIRE/SMOKE DAMPER	VF	VENTILATION FAN
FC FCV	FAN COIL UNIT FAN COIL UNIT FOR VRE SYSTEMS	VFC VHP	VARIABLE FREQUENCY CONTROLI
FD	FIRE DAMPER	VIF	VERIFY IN FIELD
FOR			REFRIGERANT SYSTEM CONTROL
FOS FOV	FUEL OIL SUPPLY FUEL OIL VENT		VARIADLE REFRIGERANT FLOW DUAL INLET VARIABLE PRIMARY A
FP	FIRE PROTECTION	VVR	VARIABLE PRIMARY AIR VOLUME 1
⊦PM FR	FEET PER MINUTE FILTER RACK	VVF	FAN POWERED VARIABLE PRIMAR
FT	FEET	W	WATTS
FT HD FTR	FEET OF HEAD	W/ W/O	WITH WITHOUT
IK		WB	WET BULB TEMPERATURE (IN °F, U
G	GAS	WPD WP	WATER PRESSURE DROP (IN FEET
GAL	GAUGE GALLON(S)	¥¥IK	WALL REGIDIEK
GALV			
GC GF	CONDENSATE PIPING - GRAVITY DRAINAGE GLYCOL FEEDER		
GLR			
GLR GLS	GROUND/GEOTHERMAL LOOP SUPPLY		
GLR GLS GPM	GROUND/GEOTHERMAL LOOP SUPPLY GALLONS PER MINUTE		
GLR GLS GPM HC	GROUND/GEOTHERMAL LOOP SUPPLY GALLONS PER MINUTE HEATING COIL		
GLR GLS GPM HC HDG HG	GROUND/GEOTHERMAL LOOP SUPPLY GALLONS PER MINUTE HEATING COIL HEAVY DUTY GRILLE REFRIGERANT HOT GAS		
GLR GLS GPM HC HDG HG HHR	GROUND/GEOTHERMAL LOOP SUPPLY GALLONS PER MINUTE HEATING COIL HEAVY DUTY GRILLE REFRIGERANT HOT GAS HEATING HOT WATER RETURN		
GLR GLS GPM HC HDG HG HR HR HS HLS	GROUND/GEOTHERMAL LOOP SUPPLY GALLONS PER MINUTE HEATING COIL HEAVY DUTY GRILLE REFRIGERANT HOT GAS HEATING HOT WATER RETURN HEATING HOT WATER SUPPLY HIGH LIMIT SWITCH		
GLR GLS GPM IC IDG IG IHR IHS ILS IP	GROUND/GEOTHERMAL LOOP SUPPLY GALLONS PER MINUTE HEATING COIL HEAVY DUTY GRILLE REFRIGERANT HOT GAS HEATING HOT WATER RETURN HEATING HOT WATER SUPPLY HIGH LIMIT SWITCH HORSEPOWER		
GLR GLS GPM HC HDG HG HR HR HS HP HPR HPR HPS	GROUND/GEOTHERMAL LOOP SUPPLY GALLONS PER MINUTE HEATING COIL HEAVY DUTY GRILLE REFRIGERANT HOT GAS HEATING HOT WATER RETURN HEATING HOT WATER SUPPLY HIGH LIMIT SWITCH HORSEPOWER HEAT PUMP LOOP RETURN HEAT PUMP LOOP SUPPLY		
GLR GLS GPM HC HC HG HR HR HS HP HPR HPR HPS HPU	GROUND/GEOTHERMAL LOOP SUPPLY GALLONS PER MINUTE HEATING COIL HEAVY DUTY GRILLE REFRIGERANT HOT GAS HEATING HOT WATER RETURN HEATING HOT WATER SUPPLY HIGH LIMIT SWITCH HORSEPOWER HEAT PUMP LOOP RETURN HEAT PUMP LOOP SUPPLY HEAT PUMP AIR HANDLING UNIT, AIR OR WATER SOURCE		

HVAC HWP

WATER TO WATER HEAT PUMP UNIT HEATING/VENTILATING/AIR CONDITIONING HEATING HOT WATER PUMP

INLESS OTHERWISE NOTED)	
I °F, UNLESS OTHERWISE NOTED)	
Y	
E (IN °F, UNLESS OTHERWISE NOTED)	
F, UNLESS OTHERWISE NOTED)	
R	
PPLY	
IN °F, UNLESS OTHERWISE NOTED)	
S, UNLESS OTHERWISE NOTED)	
RT, PETE'S PLUG	
BOVE CEILING, UNLESS OTHERWISE NOTED)	
SUREMENT OF CFM)	
DE WATER COLUMN FOR AIR/GAS SYSTEMS)	
OF WATER COLOMINT OR AIR/GAS STOTEMS)	
TRACTOR EM CONTROL PANEL EM.	
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ESS OTHERWISE STATED)	
E UNLESS OTHERWISE NOTED)	
OLLER (OR VFD) ME HEAT PUMP UNIT, FOR VRF SYSTEMS	
OLLER, FOR VRF SYSTEMS	
AIR VOLUME TERMINAL UNIT E TERMINAL UNIT	
ARTAIR VULUME LERMINAL UNIT	
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PIPE ELBOW DOWN
PIPE ELBOW UP
PIPE TEE BELOW WITH BRANCH ELBOW AT DOWN
PIPE TEE ABOVE BRANCH PIPE BELOW
INDICATES DIRECTION OF DOWNWARD PITCH
PIPE EXPANSION U-LOOP (DIMENSIONS SHOWN AS 24"x48")
PIPE EXPANSION Z-LOOP (Z DIMENSION SHOWN AS 24")
PIPE EXPANSION L-LOOP (DIMENSIONS NOT SHOWN)
PIPE ANCHOR
PIPE ALIGNMENT GUIDE
PIPE EXPANSION/COMPRESSION JOINT
STRAINER
STRAINER, BLOW-OFF VALVE
SUCTION DIFFUSER, WITH STRAINER AND DRAIN
SUCTION DIFFUSER, WITH DRAIN AND NO STRAINER
UNION
VALVE (REFER TO SECTION 230532 FOR APPROPRIATE TYPE)
CHECK VALVE
- ARROW SHOWS DIRECTION OF FLOW SPRING LOADED CHECK VALVE
- ARROW SHOWS DIRECTION OF FLOW MANUAL BALANCING VALVE
MULTIPURPOSE VALVE (TRIPLE DUTY VALVE)
AUTOMATIC FLOW CONTROL BALANCING VALVE
PNEUMATIC-OPERATED VALVE
SOLENOID-OPERATED VALVE
MOTOR OPERATED 2-WAY CONTROL VALVE
MOTOR OPERATED 3-WAY CONTROL VALVE
MANUAL AIR RELIEF VENT
- PIPE TO NEAREST DRAIN AUTOMATIC AIR RELIEF VENT
- PIPE TO NEAREST DRAIN FLEXIBLE CONNECTION, RUBBER
FLEXIBLE CONNECTION, BRAIDED
A.S.M.E. PRESSURE RELIEF VALVE
- PRESSURE RATING INDICATED IN PSI
FLOW SWITCH
THERMOMETER, MOUNTED IN THERMOWELL
PRESSURE GAUGE, WITH SHUTOFF VALVE
PRESSURE SENSOR, WITH SHUTOFF VALVE
TEMPERATURE SENSOR, MOUNTED IN THERMOWELL
FLOW METER (RETRACTABLE), WITH SHUTOFF VALVE WATER METER, IN UNITS OF GALLONS PER MINUTE (GPM)
DIFFERENTIAL PRESSURE TRANSMITTER
LIQUID LOW LIMIT SWITCH
CODED NOTE
EQUIPMENT SCHEDULE TAG
# - AIR DEVICE TAG (REFER TO DEVICE SCHEDULE)         * - DESIGNATIONS       DEVICE DESIGNATIONS SHALL BE USED         FOR CLARIFICATION PURPOSE IN ANY         CONFIGURATION AND MAY NOT BE USED         ON EVERY DEVICE.
<ul> <li>A TWO DIMENSIONAL NOTE SEPARATED BY A "x" INDICATES THE AIR DEVICE SIZE IN INCHES, 24x24</li> <li>A SINGLE DIMENSION NOTE INDICATED BOD ELEVATION, 10'8"</li> <li>A UNITLESS NUMBER NOTE INDICATES AIR FLOW IN CFM, 400</li> <li>A DEGREE SYMBOL INDICATES VANE DEFLECTION, 35°</li> <li>CONNECT NEW TO EXISTING, FIELD VERIFY EXISTING CONDITIONS</li> </ul>
DETAIL REFERENCE BUBBLE



\*

\* - SENSOR DESIGNATION\*\* - OTHER INDICATIONC - CARBON DIOXIDE SENSORE - ELECTRICH - HUMIDITY SENSORG - INSTALL PROTECTIVE WALL GUARD P - STATIC PRESSURE SENSOR R - REVERSE ACTING

SECTION REFERENCE BUBBLE

S - TEMPERATURE SENSOR T - TEMPERATURE THERMOSTAT

SENSOR WITH PROTECTIVE WALL GUARD \*APPROPRIATE SENSOR WILL BE SIGNIFIED



"OR" "OR" BDD BDD "OR" FD FD-2B "OR" SD SD "OR" F/SD F/SD "OR" MOD Н С -+ \_\_\_\_ 

### MECHANICAL SYMBOLS

<form><form><form><form><form><form><form><form><form><form><form><form><form><form><form><form><form><form></form></form></form></form></form></form></form></form></form></form></form></form></form></form></form></form></form></form>		PRESSURE/TEMPERATURE PORT, (P/T PORT)		
<form>         Control       Control         <td< td=""><td></td><td>WATER PRESSURE REDUCING/REGULATING VALVE (PLAN VIEW)</td><td></td><td>RECTANGULAR DUCT SUPPLY AIR ELBOW UP/DOWN</td></td<></form>		WATER PRESSURE REDUCING/REGULATING VALVE (PLAN VIEW)		RECTANGULAR DUCT SUPPLY AIR ELBOW UP/DOWN
<form>      Important in the important interface i</form>		WATER PRESSURE RELIEF VALVE (PLAN VIEW)		RECTANGULAR DUCT RETURN/EXHAUST AIR FLBOW UP/DOWN
<form>         Land Landal         Mark Landal</form>		GAS SHUTOFF COCK		
<form>         And the stand of the stan</form>		LUBRICATED PLUG VALVE		ALL MITERED ELBOW; RADIOS (R) = 0 ALL MITERED ELBOWS ARE TO CONTAIN TURNING VANES UNLESS OTHERWISE NOTED. REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION DETAILS.
<form>         Control Contro</form>		STEAM PRESSURE REDUCING VALVE		90° RECTANGULAR DUCT ELEVATION TRANSITION
<form><ul> <li>Algorithment and an and and</li></ul></form>		GAS PRESSURE REDUCING/REGULATING VALVE		
<form>         Control Contro</form>		DOUBLE CHECK VALVE, BACKFLOW ASSEMBLY		ANGULAR DIMENSIONS TO BE COORDINATED BY THE CONTRACTOR
<text><text><text></text></text></text>		DOUBLE CHECK VALVE, PRESSURE REDUCING BACKFLOW ASSEMBLY		RECTANGULAR DUCT TOP OR BOTTOM TRANSITION
<form>         Provide       Provide</form>		ATMOSPHERIC VACUUM BREAKER		RECTANGULAR DUCT MULTI SIDE TRANSITION
<text></text>		PRESSURE VACUUM BREAKER		MINIMUM SLOPE = 15° MAXIMUM SLOPE = 45° SIDE WITH MAXIMUM SLOPE DETERMINES FITTING LENGTH.
<text><text><text><text><text></text></text></text></text></text>		STEAM TRAP		$\frac{\text{RECTANGULAR DUCT SINGLE SIDE TRANSITION}{\text{MINIMUM SLOPE = 15°}}$ $\text{MAXIMUM SLOPE = 45°}$
<text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text>		BLIND FLANGE		REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION DETAILS. REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION DETAILS.
<text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text>	-	HEATING HOT WATER SUPPLY		OVAL TO SPIRAL DUCT DIMENSION DESCRIPTION
<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>	-	CHILLED WATER SUPPLY		INCHES, UNLESS OTHERWISE NOTED. 24/16 = FLAT OVAL DUCT 24" WIDE WITH 16" DIAMETER SIDES
<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>	-	CHILLED WATER RETURN		
<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>	-	NON-POTABLE WATER		SPIRAL DUCT ELDOW OF/DOWN
<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>	-	CHILLED BEAM WATER SUPPLY CHILLED BEAM WATER RETURN		SPIRAL DUCT ELEVATION TRANSITION. APPROPRIATE ANGULAR DIMENSIONS TO BE COORDINATED BY THE CONTRACTOR.
<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>	-	HEAT PUMP LOOP SUPPLY		
<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>	-	HEAT PUMP LOOP RETURN	24x24	<u>STANDARD RECTANGULAR ELBOW; RADIUS (R) = DUCT DIAMETER</u> REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION DETAILS.
<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>	-	MEDIUM PRESSURE STEAM SUPPLY	T A RADILLE	
<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>	-	STEAM CONDENSATE	24"Ø	STANDARD SPIRAL ELBOW; RADIUS (R) = $1.5 \times DUCT DIAMETER$ REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION DETAILS.
<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>	-	IN-FLOOR RADIANT PIPING	H PROUL	
<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>	-		<u>س</u>	SPIRAL MITERED ELBOW; RADIUS (R) = 0" ALL MITERED ELBOWS ARE TO CONTAIN TURNING VANES UNLESS OTHERWISE NOTED REFER TO PROJECT SPECIECATIONS FOR
<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>	-	CONDENSER WATER SUPPLY		CONSTRUCTION DETAILS.
<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>	-	REFRIGERANT LIQUID	PLAIN PLAIN BEVELE TAP TAP TAP	ED
<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>	-	REFRIGERANT SUCTION		MAIN TO BRANCH TAKEOFFS FOR DUCT INSTALLATIONS SERVING MULTIPLE AIR DEVICES. INSTALL
<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>	-	ICE LOOP WATER SUPPLY		BALANCING DAMPERS AFTER THE BRANCH TAKEOFFS SERVING SINGLE AIR DEVICES. SEVERAL TYPES OF TAKEOFFS ARE AVAILABLE, SELECT
<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>	-	ICE LOOP WATER RETURN		THE TAKEOFF AS INDICATED ON THE PLAN DRAWINGS. *TAPS MAY BE UTILIZED WITH VARIOUS TAKEOFF ANGLES OTHER THAN 90 DEGREES FROM THE MAIN. REFER TO PLANS FOR INDICATION.
<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>	-	PUMPED CONDENSATE		
<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>	-	GRAVITY CONDENSATE DRAIN		
<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>	-	ATMOSPHERIC VENT	WxH	ACOUSTICAL ELBOW (AE): FOR AIR TRANSFER PURPOSES ACOUSTICAL BOOTS NOT ATTACHED TO EQUIPMENT, AIR DEVICES, OR
<form><ul> <li>A DECREMENT ADMILTION OF ADMIL</li></ul></form>		METAL DUCT REFER TO PROJECT SPECIFICATIONS FOR DUCT INSTALLATION	W + 2	OTHERWISE INDICATED ON THE CONSTRUCTION DRAWINGS SHALL BE INSTALLED AS HIGH AS POSSIBLE TO MINIMIZED NOISE TRANSFERRED BETWEEN SPACES. IN MOST CASES, ACOUSTICAL ELBOWS WILL NOT
<text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text>		REQUIREMENTS. DIMENSIONS SHOWN INDICATED FREE AREA, INSIDE DUCT MEASUREMENTS. DUCT SIZE INDICATED IN INCHES WITH SHOWN DIMENSION INDICATED FIRST.		BE TAGGED OR LABELED AS AN ACOUSTICAL ELBOW (AE), BUT THEIR INTENDED USE SHALL INFER THE APPROPRIATE CONSTRUCTION DIMENSION.
<ul> <li>Must BOARD BOAR</li></ul>		ACCOUSTICALLY LINED DUCT REFER TO PROJECT SPECIFICATIONS FOR DUCT INSTALLATION		
<ul> <li>DUCT MOUNTED AR VOLUME BALANCING DAMPES REFER TO PROJECT SECTION AND REPORT TO THE SECTION. REPORT DAMPES REFER TO PROJECT SECTION AND REPORT TO THE SECTION. REPORT DAMPES REFER TO PROJECT SECTION AND REPORT TO THE SECTION. REPORT DAMPES REFER TO PROJECT SECTION AND REPORT TO THE SECTION. REPORT DAMPES REFER TO PROJECT SECTION AND REPORT TO THE SECTION. REPORT DAMPES REFER TO PROJECT SECTION AND REPORT TO THE SECTION. REPORT DAMPES REFER TO PROJECT SECTION AND REPORT TO THE SECTION. REPORT DAMPES REFER TO PROJECT SECTION AND REPORT TO THE SECTION AND REPORT TO PROJECT SECTION AND REPORT TO THE SECTION AND REPORT TO PROJECT SECTION AND REPORT TO THE SECTION AND REPORT TO PROJECT SECTION AND REPORT TO THE SECTION AND REPORT TO PROJECT SECTION AND REPORT TO AND REPORT TO PROJECT SECTION AND REPORT TO AND REPORT REPORT TO PROJECT SECTION AND REPORT TO AND REPORT REPORT TO PROJECT SECTION AND REPORT TO AND REPORT TO AND REPORT REPORT TO PROJECT SECTION AND REPORT TO AND REPORT TO PROJECT SECTION AND REPORT TO AND REPORT</li></ul>		REQUIREMENTS. DIMENSIONS SHOWN INDICATED FREE AREA, INSIDE DUCT MEASUREMENTS.	GENERAL NOTES	
<ul> <li>DUCT MOUNTED AND YOU AND REAM CONTRUCTION AND REAM CONTRUCTION</li></ul>			TRADES DURING C LISTED CONSTRUC	ONSTRUCTION. REFER TO DIVISION 9 SPECIFICATIONS FOR TION FINISHES OF EXPOSED EQUIPMENT, DUCT, PIPE, ETC. UNLISTED
<ul> <li>International distance in the second construction and mean and and construction and mean and and and and and and and and and a</li></ul>		DUCT MOUNTED AIR VOLUME BALANCING DAMPER	TIEMS SHALL BE SU PIPE, EQUIPMENT, TO BE PAINTED AN	DBMITTED TO THE PROJECT ARCHITECT FOR CLARIFICATION. ANY DUCT, OR ETC. INSTALLED IN A FINISHED EXPOSED SPACE SHALL BE ASSUMED D SHALL THEREFORE BE THOROUGHLY CLEANED AND PREPARED UNLESS
AND EXTENDATED COUNTER WEIGHTED BACK DRAFT DAMPER REFER TO PRAJECT SPECIFICATIONS FOR CONSTRUCTION AND INSTALLATION DETAILS.		REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION AND INSTALLATION DETAILS. AS SYMBOLIZED WITH OR WITHOUT NOTATION.	2. CONTRACTOR SHA	D. LL COORDINATE AIR DEVICE LOCATIONS WITH REFLECTED CEILING, INTERIOR
<ul> <li>HERE TO MULEE INFLUENCE TO USE AND CONSTRUCTION AND INSTALLATION DETAILS.</li> <li>CONTRACTOR IS RESONANCE REQUIREMENTS AND CONSTRUCTION DOCUMENTS FOR MINIMUM INSTALLATION ACROSS THE DAMPER. ADDITIONAL DESIGNATIONS MAY ACSO BE USED SUCH AS A NUMBER TO NOLCATE THE MANDROR THE EXTERN NO. THE TYPE OR TATLE OF A PRE-DAMPER. OF TYPESA B, OR C.</li> <li>UNLESS OTHERWISE INCOMES DAMPER REFERE TO ANDROE DAMPER METERITO NOLCATE THE SUBJECT ON DOCATE THE MANDROR THE EXTERN NO. THE TYPE OR STALE OF A DUNCTED SMOKE DAMPER REFERE TO ANDROE DAMPER REFERE TO SUBJECT SPECIFICATIONS FOR CONSTRUCTION AND INSTALLATION CONTACTION SPECIAL DAMPER REFERE TO SUBJECT SPECIFICATIONS FOR CONSTRUCTION AND INSTALLATION CONTACTION SPECIAL DAMPER REFERE TO SUBJECT SPECIFICATIONS FOR CONSTRUCTION AND INSTALLATION CONTACTION SPECIAL DAMPER REFERE TO SUBJECT SPECIFICATIONS FOR CONSTRUCTION AND INSTALLATION CONTACTION SPECIAL DAMPER REFERE TO SUBJECT SPECIFICATIONS FOR CONSTRUCTION AND INSTALLATION CONTACTION SPECIAL DAMPER REFERE TO SUBJECT SPECIFICATIONS FOR CONSTRUCTION AND INSTALLATION CONTACTION SPECIAL DUCT OR EQUIPMENT MOUNTED TEMPERATURE SENSOR</li> <li>DUCT OR EQUIPMENT MOUNTED DIFFERITIAL PRESSURE BENSOR AS COMPARES WITH A MONSTREE TO AND INSTALE DATA AND AND REFERE AND CONSTRUCTION AND REAL DATA AND INSTALE DATA AND AND REFERE AND CONSTRUCTION AND INSTALE DATA AND AND REFERE AND CONSTRUCTION AND INSTALE DATA AND AND REAL DATA AND AND REAL DATA AND AND REAL DATA INSTALE DATA AND AND REAL DATA AND AND REAL DATA INSTALLATION DETALES D</li></ul>		DUCT MOUNTED COUNTER WEIGHTED BACK DRAFT DAMPER	AND EXTERIOR ELE 3. CONTRACTOR SHA	EVATION PLANS. LL REFER TO EQUIPMENT SCHEDULE SHEETS FOR TAGGED EQUIPMENT
<ul> <li>CONTRACTOR IS REPONDER: ADDITIONAL DESIGNATIONS MAY ALSO BE USED, SUCH AS A NUMBER TO INDICATE THE MADROR THE LETTER NIDOLATE THE ON DICATE THE ANDROR THE LETTER NIDOLATE THE ON DICATE THE MADROR THE LETTER NIDOLATED THE TYPE OR STALE OF A INFEL MADRER, OF TYPES A, B, OR C.</li> <li>UNLESS OTHERWISE INDICATE DESIGNATIONS THE TYPE OR STALE OF A DICATE DESIGNATION OF THE SUED.</li> <li>UNLESS OTHERWISE INDICATE DESIGNATIONS THE THE ON DICATE THE METRIC TO SMOKE DAMPER THE PERIOD AND PIRE THE SUED.</li> <li>UNLESS OTHERWISE INDICATE DESIGNATIONS FOR CONSTRUCTION AND INSTALED AND MADRO STADE CONSTRUCTION AND INSTALED CONSTRUCTIONS FOR CONSTRUCTION AND INSTALED CONSTRUCTIONS FOR CONSTRUCTION AND INSTALED CONSTRUCTIONS FOR CONSTRUCTION AND INSTALED CONSTRUCTION FOR SUED ON DICATE DESIGNATIONS FOR THE SUED.</li> <li>MOTOR OFFICATED DAMPIE MEDITION OF FASE DESIGNATIONS FOR CONSTRUCTION AND INSTALED CONSTRUCTION STOR SUBJECT ON SUBJECT ON SUPERIAL STATUS INSTALED CONSTRUCTION STOR SUBJECT ON SUBJECT ON SUPERIAL STATUS INSTALED CONSTRUCTION SUPERIAL SUBJECT ON SUPERIAL STATUS INSTALED CONSTRUCTION SUBJECT ON SUPERIAL STATUS INSTALED CONSTRUCTION SUBJECT ON SUPERIAL SUBJECT ON SUPERIAL STATUS INSTALED CONSTRUCTION SUBJECT ON SUBJECT ON SUBJECT ON SUBJECT ON SUPERIAL SUBJECT SUBJECT ON SU</li></ul>		REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION AND INSTALLATION DETAILS.	PERFORMANCE RE REQUIREMENTS.	QUIREMENTS AND CONSTRUCTION DOCUMENTS FOR MINIMUM INSTALLATION
<ul> <li>ANDIG OF THE FIRE DAMPER FOR 2016 SHOULD AMPERS AND CREATER AND RECEIVED A</li></ul>		<u>FIRE DAMPER</u> FD INDICATES FIRE DAMPER; ADDITIONAL DESIGNATIONS MAY ALSO BE USED. SUCH AS A NUMBER TO INDICATE THE	4. CONTRACTOR IS R EQUIPMENT AS NE	ESPONSIBLE TO INSTALL DUCT AND PIPE TRANSITIONS FOR THE SELECTED CESSARY FOR CONNECTION OF THE INDICATED DUCT AND PIPE SIZES.
WALL MOUNTED SNOKE DAMBER REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION AND INSTALLATION DETAILS       WHEN VER POSSIBLE, DUCT, PIPING, CONTROL DEWICES, AND EQUIPMENT SHALL BE MISTEL TO AND DETAILS         WALL MOUNTED CONSISTING TO REFERENCE NOTION DETAILS       WHEN VER POSSIBLE, DUCT, PIPING, CONTROL DEWICES, AND EQUIPMENT SHALL BE MISTEL ATTOM STALLATION DETAILS         WALL MOUNTED CONSISTING TION FROM CONSTRUCTION AND INSTALLATION DETAILS.       INSTALLATION THREES MORE DAMPER REFER TO SPECIFICATIONS FOR CONSTRUCTION AND INSTALLATION DETAILS.         MOTOR OPERATED DAMPER REFER TO SPECIFICATION SECTION 23900 FOR INSTALLATION REQUIREMENTS. DAMPERS TO BE S2ED TO INSIDE DUCT DO BROWNENS.       INSTALL SPECIFICATION SECTION 23900 FOR INSTALLATION REQUIREMENTS.         DUCT OR EQUIPMENT MOUNTED TEMPERATURE SENSOR       WHEN VER LOSS THERWISE NOTED.       INSTALL SPECIFICATIONS FOR CONSTRUCTION AND INSTALLATION TO THE STRUCTURAL STEEL FOR SUPPORT OF DUCT, PIPE AND EQUIPMENT HANGERS, ATTACHMENT TO THE STRUCTURAL STEEL SHALL OCCUR AT THE TOP OR BOTTOM FLANCE OF THE STRUCTURAL STEEL FOR SUPPORT OF DUCT, PIPE AND EQUIPMENT HANGERS, ATTACHMENT TO THE STRUCTURAL STEEL FOR SUPPORT OF DUCT, PIPE AND EQUIPMENT HANGERS, ATTACHMENT TO THE STRUCTURAL STEEL FOR SUPPORT OF DUCT, PIPE AND EQUIPMENT HANGERS, ATTACHMENT TO THE STRUCTURAL STEEL FOR SUPPORT OF DUCT, PIPE AND EQUIPMENT HANGERS, ATTACHMENT TO THE STRUCTURAL STEEL FOR SUPPORT OF DUCT, PIPE AND EQUIPMENT HANGERS, ATTACHMENT TO THE STRUCTURAL STEEL FOR SUPPORT OF DUCT, PIPE AND EQUIPMENT HANGERS, ATTACHMENT TO THE STRUCTURAL STEEL FOR SUPPORT OF DUCT, PIPE AND EQUIPMENT HANGERS, ATTACHMENT TO THE STRUCTURAL STEEL FOR SUPPORT DUCT OR EQUIPMENT MOUNTED CARBON DIOXIDE SENSOR         DUCT OR EQUIPMENT MOUNTED DIFFERITIAL PRESSURE SENSOR MONITORING INTERVAL S		RATING OF THE FIRE DAMPER, FOR 2 OR 3 HOUR DAMPERS, AND/OR THE LETTER INDICATING THE TYPE OR STYLE OF A FIRE DAMPER OF TYPES A B OR C	5. UNLESS OTHERWIS OF THE RETURN AIF	SE INDICATED, ALL ABOVE CEILING SPACE(S) SHALL BE CONSIDERED PART R PLENUM. THEREFORE ALL PIPE, DUCT, CONTROL DEVICES, WIRING, AND BE RATED AND ACCEPTABLE FOR INSTALLATION IN A PLENUM SPACE
<ul> <li>REPER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION AND INSTALLATION COENCIC'S WITH CELLING MOUNTED DEVECS AND UNLESS OTHERWISE NOTED. THE BOTTOM CENTRAL TO RECTING SPECIFICATIONS FOR CONSTRUCTION AND INSTALLATION DETAILS.</li> <li>MOTOR OPERATED DAMPER REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION AND INSTALLATION DETAILS.</li> <li>MOTOR OPERATED DAMPER REFER TO SPECIFICATION SECTION 22000 FOR INSTALLATION REQUIREMENTS. DAMPER SPECIFICATION SECTION 2000 FOR INSTALLATION REQUIREMENTS. DAMPER SPECIFICATION SECTION 20000 FOR INSTALLATION REQUIREMENTS. DAMPER SPICE SPECIFICATION SECTION 20000 FOR INSTALLATION REQUIREMENTS. DAMPER SPICE SPECIFICATION SECTION SUB DUCT.</li> <li>DUCT OR EQUIPMENT MOUNTED TEMPERATURE SENSOR</li> <li>DUCT OR EQUIPMENT MOUNTED DIFFERITIAL PRESSURE SENSOR AS COMPARED WITH ATMOSPHERIC CONDITIONS</li> <li>DUCT OR EQUIPMENT MOUNTED DIFFERITIAL PRESSURE SENSOR AS COMPARED WITH ATMOSPHERIC CONDITIONS</li> <li>DUCT OR EQUIPMENT MOUNTED DIFFERITIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS</li> <li>DUCT OR EQUIPMENT MOUNTED DIFFERITIAL PRESSURE SENSOR AS COMPARED WITH ATMOSPHERIC CONDITIONS</li> <li>DUCT OR EQUIPMENT MOUNTED DIFFERITIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS</li> <li>DUCT OR EQUIPMENT MOUNTED DIFFERITIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS</li> <li>DUCT OR EQUIPMENT MOUNTED DIFFERITIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS</li> <li>DUCT OR EQUIPMENT MOUNTED DIFFERITIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS</li> <li>DUCT OR EQUIPMENT MOUNTED DIFFERITIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS</li> <li>DUCT OR EQUIPMENT MOUNTED DIFFERITIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS</li> <li>DUCT OR EQUIPMENT MOUNTED DIFFERITIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS</li> <li>DUCT OR EQUIPMENT MOUNTED DIFFERITIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS</li> <li>DUCT OR EQUIPMENT MOUNTED DIFFERITIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS</li> <li>DUCT OR EQUIPMENT MOUNTED DIFFERITIAL PRES</li></ul>		WALL MOUNTED SMOKE DAMPER	6. WHENEVER POSSI	BLE, DUCT, PIPING, CONTROL DEVICES, AND EQUIPMENT SHALL BE
MAINTENANCE PURPOSES. MAINTENANCE PURPOSES.		REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION AND INSTALLATION DETAILS.	INSTALLATION CON THE BOTTOM OF H' AND UNOBSTRUCT	IFLICTS WITH CEILING MOUNTED DEVICES AND UNLESS OTHERWISE NOTED, VAC EQUIPMENT SHALL BE A MAXIMUM OF 24" ABOVE CEILING ELEVATIONS ED BY DUCT, PIPING, EQUIPMENT AND ETC, FOR SERVICE AND
<ul> <li>INSTALLATION DETAILS.</li> <li>MOTOR OPERATED DAMPER</li> <li>REFER TO SPECIFICATION SECTION 23000 FOR INSTALLATION</li> <li>REFER TO SPECIFICATION SECTION 23000 FOR INSTALLATION</li> <li>REGUIREMENTS. DAMPERS TO BE SZED TO INSIDE DUCT</li> <li>DIMENSINGS. DAMPER SHALL BE OPPOSED BLADE UNLESS</li> <li>OTHERWISE NOTED.</li> <li>DUCT OR EQUIPMENT MOUNTED TEMPERATURE SENSOR</li> <li>DUCT OR EQUIPMENT MOUNTED DIFFERITIAL PRESSURE</li> <li>DUCT OR EQUIPMENT MOUNTED HIGH TEMPERATURE SENSOR</li> </ul>		WALL MOUNTED COMBINATION FIRE/SMOKE DAMPER REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION AND	MAINTENANCE PUF	RPOSES.
REFER TO SPECIFICATION SECTION 230000 POR INSTALLATION REQUIREMENTS. DAMPER STO BE 320000 POR INSTALLATION REQUIREMENTS. DAMPERS TO BE 320000 POR INSTALLATION DIMENSIONS. DAMPER SHALL BE OPPOSED BLADE UNLESS OTHERWISE NOTED. DUCT OR EQUIPMENT MOUNTED TEMPERATURE SENSOR DUCT OR EQUIPMENT MOUNTED HUMIDITY SENSOR DUCT OR EQUIPMENT MOUNTED CARBON DIOXIDE SENSOR DUCT OR EQUIPMENT MOUNTED DIFFERNTIAL PRESSURE SENSOR AS COMPARED WITH ATMOSPHERIC CONDITIONS DUCT OR EQUIPMENT MOUNTED DIFFERNTIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS DUCT OR EQUIPMENT MOUNTED LIGH TEMPERATURE SENSOR DUCT OR EQUIPMENT MOUNTED DIFFERNTIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS		INSTALLATION DETAILS. <u>MOTOR OPERATED DAMPER</u>	CONSTRUCTION M ARCHITECTURAL S	ATERIALS. INSTALL FIRE CAULKING AS NECESSARY, REFER TO THE HEETS FOR DESIGNATION OF FIRE AND SMOKE RATED WALL ASSEMBLIES.
OTHERWISE NOTED.         DUCT OR EQUIPMENT MOUNTED TEMPERATURE SENSOR         DUCT OR EQUIPMENT MOUNTED HUMIDITY SENSOR         DUCT OR EQUIPMENT MOUNTED HUMIDITY SENSOR         DUCT OR EQUIPMENT MOUNTED CARBON DIOXIDE SENSOR         DUCT OR EQUIPMENT MOUNTED DIFFERNTIAL PRESSURE SENSOR AS COMPARED WITH ATMOSPHERIC CONDITIONS         DUCT OR EQUIPMENT MOUNTED DIFFERNTIAL PRESSURE SENSOR AS COMPARED WITH ATMOSPHERIC CONDITIONS         DUCT OR EQUIPMENT MOUNTED LIFFERNTIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS         DUCT OR EQUIPMENT MOUNTED LIFFERNTIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS         DUCT OR EQUIPMENT MOUNTED DIFFERNTIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS         DUCT OR EQUIPMENT MOUNTED LIFFERNTIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS         DUCT OR EQUIPMENT MOUNTED LIFFERNTIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS         DUCT OR EQUIPMENT MOUNTED LIFFERNTIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS         DUCT OR EQUIPMENT MOUNTED LIFFERNTIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS         DUCT OR EQUIPMENT MOUNTED LIGH TEMPERATURE SENSOR         DUCT OR EQUIPMENT MOUNTED HIGH TEMPERATURE SENSOR		REFER TO SPECIFICATION SECTION 230900 FOR INSTALLATION REQUIREMENTS. DAMPERS TO BE SIZED TO INSIDE DUCT DIMENSIONS. DAMPER SHALL BE OPPOSED BLADE UNLESS	8. WHEN UTILIZING ST	IRUCTURAL STEEL FOR SUPPORT OF DUCT, PIPE AND EQUIPMENT
DUCT OR EQUIPMENT MOUNTED TEMPERATURE SENSOR       9. SYMBOLS AND ABBREVATIONS ON THIS SHEET MAY NOT ALL BE USED WITHIN THIS SET OF PROJECT DOCUMENTS.         DUCT OR EQUIPMENT MOUNTED HUMIDITY SENSOR       10. A 48" LONG SECTION (MIN.) OF SUPPLY AIR DUCT WORK DOWNSTREAM OF V/R TERMINAL UNIT SHALE DUCT WITH DUCT LINER PER THE PROJECT MANUAL. SOME DUCT/WORK SHALL BE INTERNALLY LINED THE ENTITE LENSTH.         DUCT OR EQUIPMENT MOUNTED CARBON DIOXIDE SENSOR       10. A 48" LONG SECTION OF THE SUPPLY AIR BRANCH DUCTS TO THE MAIN SUPPLY AIR DUCT DOWNSTREAM OF V/R TERMINAL MOUNTED THE ENTITE LENSTH.         DUCT OR EQUIPMENT MOUNTED DIFFERNTIAL PRESSURE SENSOR AS COMPARED WITH ATMOSPHERIC CONDITIONS       11. THE CONNECTION OF THE SUPPLY AIR BRANCH DUCTS TO THE MAIN SUPPLY AIR DUCT DOWNSTREAM OF V/R TERMINAL MAPPENT MOUNTED DIFFERNTIAL PRESSURE         DUCT OR EQUIPMENT MOUNTED DIFFERNTIAL PRESSURE       12. ALL EXPOSED DUCTWORK NOTED TO BE A FIELD PAINTED SHALL BE PROFERLY THERE IN A MINIMUM 8" CMU ON EITHER SIDE OF THE WALL OPENINGS AND 16" FROM ANY BEAM SUPPORTED ON THE WALL.         DUCT OR EQUIPMENT MOUNTED DIFFERNTIAL PRESSURE       13. AIR TRANSFER WALL OPENING AND 16" FROM ANY BEAM SUPPORTED ON THE WALL.         DUCT OR EQUIPMENT MOUNTED LOW TEMPERATURE SENSOR       DUCT OR EQUIPMENT MOUNTED HIGH TEMPERATURE SENSOR         DUCT OR EQUIPMENT MOUNTED HIGH TEMPERATURE SENSOR       DUCT OR EQUIPMENT MOUNTED HIGH TEMPERATURE SENSOR		OTHERWISE NOTED.	FLANGE OF THE ST	RUCTURAL ELEMENT.
DUCT OR EQUIPMENT MOUNTED HUMIDITY SENSOR DUCT OR EQUIPMENT MOUNTED CARBON DIOXIDE SENSOR DUCT OR EQUIPMENT MOUNTED CARBON DIOXIDE SENSOR DUCT OR EQUIPMENT MOUNTED DIFFERNTIAL PRESSURE SENSOR AS COMPARED WITH ATMOSPHERIC CONDITIONS DUCT OR EQUIPMENT MOUNTED DIFFERNTIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS DUCT OR EQUIPMENT MOUNTED LOW TEMPERATURE SENSOR DUCT OR EQUIPMENT MOUNTED LOW TEMPERATURE SENSOR DUCT OR EQUIPMENT MOUNTED LOW TEMPERATURE SENSOR		DUCT OR EQUIPMENT MOUNTED TEMPERATURE SENSOR	9. SYMBOLS AND ABB PROJECT DOCUME	REVIATIONS ON THIS SHEET MAY NOT ALL BE USED WITHIN THIS SET OF NTS.
DUCT OR EQUIPMENT MOUNTED CARBON DIOXIDE SENSOR       11. THE CONNECTION OF THE SUPPLY AIR BRANCH DUCTS TO THE MAIN SUPPLY AIR DUCT DOWNSTREAM OF THE VVR TERMINAL TO BE INSTALLED WITH A CONICAL LOW LOSS DUCT TEE AND VOLUME DAMPE         DUCT OR EQUIPMENT MOUNTED DIFFERNTIAL PRESSURE SENSOR AS COMPARED WITH ATMOSPHERIC CONDITIONS       12. ALL EXPOSED DUCTWORK NOTED TO BE A FIELD PAINTED SHALL BE PROPERLY TREATED WITH A COMPATIBLE GALVANIZED STEEL PRIMER AND CLEANED IN ORDER FOR THE PAINT TO BE APPLIED.         DUCT OR EQUIPMENT MOUNTED DIFFERNTIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS       13. AIR TRANSFER WALL OPENINGS SHALL BE LOCATED SO THAT THERE IS A MINIMUM 8° CMU ON EITHEF SIDE OF THE WALL OPENING AND 16° FROM ANY BEAM SUPPORTED ON THE WALL.         DUCT OR EQUIPMENT MOUNTED LOW TEMPERATURE SENSOR       13. AIR TRANSFER WALL OPENING AND 16° FROM ANY BEAM SUPPORTED ON THE WALL.         DUCT OR EQUIPMENT MOUNTED LOW TEMPERATURE SENSOR       DUCT OR EQUIPMENT MOUNTED HIGH TEMPERATURE SENSOR		DUCT OR EQUIPMENT MOUNTED HUMIDITY SENSOR	10. A 48" LONG SECTIO SHALL BE INTERNA SHOWN ON TE PLA	ON (MIN.) OF SUPPLY AIR DUCTWORK DOWNSTREAM OF VVR TERMINAL UNIT ALLY LINED WITH DUCT LINER PER THE PROJECT MANUAL. SOME DUCTWORK ANS ARE TO BE INTERNALLY LINED THE ENTIRE LENGTH.
DUCT OR EQUIPMENT MOUNTED CARBON DIOXIDE SENSOR       12. ALL EXPOSED DUCTWORK NOTED TO BE A FIELD PAINTED SHALL BE PROPERLY TREATED WITH A         DUCT OR EQUIPMENT MOUNTED DIFFERNTIAL PRESSURE       13. AIR TRANSFER WALL OPENINGS SHALL BE LOCATED SO THAT THERE IS A MINIMUM 8" CMU ON EITHEF         SENSOR AS COMPARED WITH ATMOSPHERIC CONDITIONS       13. AIR TRANSFER WALL OPENING SHALL BE LOCATED SO THAT THERE IS A MINIMUM 8" CMU ON EITHEF         SIDE OF THE WALL OPENING AND 16" FROM ANY BEAM SUPPORTED ON THE WALL.       13. AIR TRANSFER WALL OPENING AND 16" FROM ANY BEAM SUPPORTED ON THE WALL.         DUCT OR EQUIPMENT MOUNTED LOW TEMPERATURE SENSOR       DUCT OR EQUIPMENT MOUNTED LOW TEMPERATURE SENSOR         DUCT OR EQUIPMENT MOUNTED HIGH TEMPERATURE SENSOR       DUCT OR EQUIPMENT MOUNTED HIGH TEMPERATURE SENSOR			11. THE CONNECTION OF THE VVR TERM	OF THE SUPPLY AIR BRANCH DUCTS TO THE MAIN SUPPLY AIR DUCT DOWNSTREAM INAL TO BE INSTALLED WITH A CONICAL LOW LOSS DUCT TEE AND VOLUME DAMPER.
DUCT OR EQUIPMENT MOUNTED DIFFERNTIAL PRESSURE SENSOR AS COMPARED WITH ATMOSPHERIC CONDITIONS       13. AIR TRANSFER WALL OPENINGS SHALL BE LOCATED SO THAT THERE IS A MINIMUM 8" CMU ON EITHER SIDE OF THE WALL OPENING AND 16" FROM ANY BEAM SUPPORTED ON THE WALL.         DUCT OR EQUIPMENT MOUNTED DIFFERNTIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS       13. AIR TRANSFER WALL OPENING AND 16" FROM ANY BEAM SUPPORTED ON THE WALL.         DUCT OR EQUIPMENT MOUNTED LOW TEMPERATURE SENSOR       DUCT OR EQUIPMENT MOUNTED HIGH TEMPERATURE SENSOR         DUCT OR EQUIPMENT MOUNTED HIGH TEMPERATURE SENSOR       DUCT OR EQUIPMENT MOUNTED HIGH TEMPERATURE SENSOR		DUCT OR EQUIPMENT MOUNTED CARBON DIOXIDE SENSOR	12. ALL EXPOSED DUC COMPATIBLE GAL	TWORK NOTED TO BE A FIELD PAINTED SHALL BE PROPERLY TREATED WITH A ANIZED STEEL PRIMER AND CLEANED IN ORDER FOR THE PAINT TO BE APPI IFD
DUCT OR EQUIPMENT MOUNTED DIFFERNTIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS DUCT OR EQUIPMENT MOUNTED LOW TEMPERATURE SENSOR DUCT OR EQUIPMENT MOUNTED HIGH TEMPERATURE SENSOR		DUCT OR EQUIPMENT MOUNTED DIFFERNTIAL PRESSURE SENSOR AS COMPARED WITH ATMOSPHERIC CONDITIONS	13. AIR TRANSFER WA	ALL OPENINGS SHALL BE LOCATED SO THAT THERE IS A MINIMUM 8" CMU ON EITHER
SENSOR MONITORING INTERNAL SYSTEM LOSS DUCT OR EQUIPMENT MOUNTED LOW TEMPERATURE SENSOR DUCT OR EQUIPMENT MOUNTED HIGH TEMPERATURE SENSOR		DUCT OR EQUIPMENT MOUNTED DIFFERNTIAL PRESSURE	C.C.C. THE WALL	
DUCT OR EQUIPMENT MOUNTED LOW TEMPERATURE SENSOR DUCT OR EQUIPMENT MOUNTED HIGH TEMPERATURE SENSOR		SENSOR MONITORING INTERNAL SYSTEM LOSS		
DUCT OR EQUIPMENT MOUNTED HIGH TEMPERATURE SENSOR		DUCT OR EQUIPMENT MOUNTED LOW TEMPERATURE SENSOR		
		DUCT OR EQUIPMENT MOUNTED HIGH TEMPERATURE SENSOR		



DAMPER.



OUT CONDEN	DOOR ISING UNIT				
AIRFLOW CFM	MODEL NUMBER	SEER			
1,083-1,103	RX09AXVJU	19.0			
,905-2,005	RX18AXVJU	20.3			
908	RX24AXVJU	20.0			
,274-2,528	RX30NMVJUA	17.5			
THERMOSTATIC EXPANSION VALVE, AND					
JRER'S REQUIREMENTS.					

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			MU	JLTI MINI-SPLIT	HEAT PUMP U	JNIT					
EVAPORATOR/FAN COIL UNIT				OUTDOOR CONDENSING UNIT							
	NOMINAL TONS	AIRFLOW	COOLING	HEATING	MODEL	ELEC	UNIT			ELEC	MODEL
MARK	CLG CAPACITY	CFM	BTUH	BTUH	NUMBER	SERV	MARK	BREAKER	MCA	SERV	NUMBER
FC-20	2.0 TON	643/494/350/328	5,500-24,000	5,500-27,000	FTXS24WVJU9	000/4	011.40	35	30.8	208/1	5MXS48WVJU9
FC-20	2.0 TON	643/494/350/328	5,500-24,000	5,500-27,000	FTXS24WVJU9	208/1	CU-40				
NOTES 1. EACH INDOOR UNIT TO BE PROVIDED WITH HARDWIRED OR WIRELESS 6. EVAPORATOR SECTION COMPLETE WITH COIL, THERMOSTATIC EXPANSION VALVE,					PANSION VALVE,						
	TEMPERATURE TH	IERMOSTAT MOUNTED	ON WALL.		AND FIL	TER DRIEI	٦.				
	2. INCOMING POWER	R SHALL BE TO CONDEN	ISING UNIT. ELECTR	ICAL CONTRACTOR	7. INSTALL	REFRIGE	RANT PIPIN	NG PER MANUF	ACTURER'S	REQUIREM	ENTS.
	SHALL TAP OFF 10	DINDOOR UNIT.			8. MINIMUN		AN SPEED	SETTINGS AN	D AUTO SET	TTING.	
	3. COOLING EAT = 75	5 DEGREES F @ 50% RH	I, HEATING = 47 DEG	REES F							
	4. SUPPORT INDOOF	R UNIT FROM WALL BEL	OW CEILING. OUTDO	OR CONDENSER	9. DISCONI	NECTSWI	ITCH BY DIV	/ISION 26-ELEC	TRICAL.		
	SHALL BE INSTAL	ED ON CONCRETE HO	JSEKEEPING PAD ON	I GRADE OR							
		: WALL USING MANUFA( THE DRAWINGS. REFER	TO SPECIFICATION	VALL BRACKET AS 230529.							

- SLOPE AT MINIMUM 1/8" PER LINEAL FOOT - CONDENSATE PIPING

NO SCALE



R	OOM LEGEND - FIRST FLC	OR
ROOM NO.	ROOM NAME	AREA (SF)
1		650 SE
2		376 SF
3	TOILET	36 SF
4	TOILET	36 SF
5	STORAGE	43 SF
6	KINDERGARTEN	946 SF
7	KINDERGARTEN	946 SF
8	STORAGE	43 SF
9		432 SF
10	SIURAGE	117 SF
12		1169 SF
13		128 SF
14	CONFERENCE	219 SF
15	FACULTY	344 SF
16	WOMEN	34 SF
17	MEN	34 SF
18	CORRIDOR	1317 SF
19		116 SF
20	1ST GRADE	844 SF
21		044 SF 811 CE
22	READING	844 SF
24	2ND GRADE	844 SF
25	CORRIDOR	1165 SF
26	2ND GRADE	844 SF
27	2ND GRADE	844 SF
28	MUSIC	844 SF
29	ART	844 SF
30	WASH AREA	240 SF
31	GIRLS	171 SF
32		85 SF
34		185 SF 401 SF
35	WORK	107 SF
36	TOILET	32 SF
37	CLINIC	280 SF
38	PRINCIPAL	174 SF
39	WORK	174 SF
40	BOYS	185 SF
41	JANITOR	85 SF
42		171 SF
43	PHYSICAL HANDICAP	230 SI 835 SF
45	4TH GRADE	835 SF
46	4TH GRADE	835 SF
47	RESOURCE II L.D.	835 SF
48	3RD GRADE	835 SF
49	CORRIDOR	1878 SF
50	3RD GRADE	835 SF
51	KESOURCE L.D.	835 SF
52		030 SF 835 SE
54		705 SF
55	PASSAGE	152 SF
56	BOOKS	171 SF
57	RECEIVE	325 SF
58	FOOD	127 SF
59	TOILET	32 SF
60	KITCHEN	921 SF
61	SOILED DISH AREA	91 SF
62	PASSAGE	59 SF
64	BOYSIOCKER	240 OF 220 CE
65	GIRLSIOCKER	266 SF
66	BOYS SHOWFR	87 SF
67	GIRLS SHOWER	87 SF
68	STORAGE	307 SF
69	PLAYROOM	3672 SF
70	PLATFORM / CAFETERIA	2096 SF
71	VESTIBULE	19 SF
72	PASSAGE	28 SF
/3		50 SF
75		44 SF
1 15		

MEC	HANICAL PLAN GENERAL NOTES
A.	ALL PIPING AND VALVES SHALL BE CONCEALED ABOVE DROP CEILING. WHEN NO DROP CEILING IS PRESENT, ALL PIPING AND VALVES SHALL BE EXPOSED ALONG THE INTERIOR AND EXTERIOR WALLS. ALL EXPOSED PIPING IN FINISHED SPACES TO BE PROTECTED WITH WHITE PVC. JACKET
В.	REFER TO THE SPECIFICATIONS FOR REQUIREMENTS RELATED TO EQUIPMENT QUALITY, CONSTRUCTION AND FINISH OF MATERIALS.
C.	ARRANGE PIPING, ETC. TO ALLOW FOR EASY ACCESS TO COILS, VALVES AND CONTROLS. KEEP AREAS ADJACENT TO ACCESS PANELS FREE AND CLEAR OF ANY OBSTRUCTIONS
D.	MECHANICAL CONTRACTOR IS RESPONSIBLE FOR HIS RESPECTIVE WORK FOR REPAIRING AND PATCHING TO MATCH EXISTING SURFACES, SIDEWALKS, STREETS, ELOORS, WALLS, ROOFS, CEILING AND PAVEMENT
E.	INSTALL WALL THERMOSTATS, TEMPERATURE SENSORS, HUMIDISTATS, ETC. 44" ABOVE THE FINISH
F.	COORDINATE ALL REQUIRED WALL, ROOF AND FLOOR OPENINGS (BOTH DIMENSIONS AND LOCATIONS) WITH
G.	ALL OTHER TRADES. COORDINATE MECHANICAL SYSTEM INSTALLATION WITH STRUCTURE, FIRE PROTECTION AND LIGHTING
H.	PROVIDE ALL NECESSARY TRANSITIONS TO EQUIPMENT
I.	EXISTING MECHANICAL SYSTEMS SHOWN AS DOTTED LINES AND FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS BEFORE STARTING CONSTRUCTION.
MEC	HANICAL PLAN NOTES
(ALL N <u>NO.</u>	OTES MAY NOT BE INDICATED ON THIS SHEET) DESCRIPTION
1	REFRIGERANT SUCTION AND DISCHARGE LINES TO MINI-SPLIT CONDENSING UNIT. ALL PIPING PENETRATING THE WALL OR ROOF SHALL BE SEALED WATER TIGHT. REFRIGERANT PIPING SHALL BE INSULATED THE FULL LENGTH. REFRIGERANT PIPING ON THE EXTERIOR OF THE BUILDING SHALL BE PROTECTED WITH A SELF-SEALING JACKET. ALL EXPOSED INTERIOF PIPING IN FINISHED SPACES TO BE PROVIDED WITH WHITE PVC JACKET.
2	LINE SIZE COPPER CONDENSATE PIPING FROM

- INDOOR EVAPORATOR TO GRADE OUTSIDE. TERMINATE CONDENSATE PIPING A MINIMUM OF 18" ABOVE GRADE. COORDINATE EXACT LOCATION WITH EXISTING UTILITIES, EQUIPMENT AND GRADE.
- OUTDOOR CONDENSING UNIT FOR INDOOR SPLIT SYSTEM SHALL BE INSTALLED ON CONCRETE HOUSEKEEPING PAD. COORDINATE EXACT LOCATION WITH EXISTING FIELD CONDITIONS. COORDINATE INSTALLATION WITH MANUFACTURER'S INSTALLATION REQUIREMENTS.
- INSTALL THE TOP OF THE INDOOR WALL MOUNTED EVAPORATOR AT 8'-0" AFF. EXACT MOUNTING LOCATION SHALL BE COORDINATED WITH THE OWNER AND THE EXISTING FIELD CONDITIONS PRIOR TO INSTALLATION. INDOOR UNIT SHALL BE LABELED WITH THE ROOM NUMBER WHERE THE UNIT IS LOCATED. FIELD VERIFY/COORDINATE THE EXACT ROOM

NUMBERS WITH THE OWNER.

#### VERIFICATION NOTE

WORK.

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES AND ALL EXISTING FIELD CONDITIONS BEFORE STARTING CONSTRUCTION. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF CONDITIONS. SHOULD DIFFERENT CONDITIONS BE ENCOUNTERED, CONTACT THE ARCHITECT BEFORE PROCEEDING WITH



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UNIT B - FIRST FLOOR MECHANICAL PLAN SCALE: 1/8" = 1'-0"

<b>ROOM LEGEND - FIRST FLOOR</b>			
ROOM NO.	ROOM NAME	AREA (SF)	
1	ENTRY	650 SF	
2		376 SF	
3		36 SF	
4	TOILET	36 SF	
5	STORAGE	43 SF	
6	KINDERGARTEN	946 SF	
7	KINDERGARTEN	946 SF	
8	STORAGE	43 SF	
9		432 SF	
10	STORAGE	117 SF	
11	WORK	155 SF	
12		1169 SF	
13	AUDIO-VISUAL	128 SF	
14		219 SF	
15	FACULTY	344 SF	
16	WOMEN	34 SF	
17	MEN	34 SF	
18	CORRIDOR	1317 SF	
19	CORRIDOR	116 SF	
20	1ST GRADE	844 SF	
21	1ST GRADE	844 SF	
22	L.D.	844 SF	
23	READING	844 SF	
24	2ND GRADE	844 SF	
25	CORRIDOR	1165 SF	
26	2ND GRADE	844 SF	
27	2ND GRADE	844 SF	
28	MUSIC	844 SF	
29	ART	844 SF	
30	WASH AREA	240 SF	
31	GIRLS	171 SF	
32	JANITOR	85 SF	
33	BOYS	185 SF	
34	GENERAL OFFICE	401 SF	
35	WORK	107 SF	
36	TOILET	32 SF	
37	CLINIC	280 SF	
38	PRINCIPAL	174 SF	
39	WORK	174 SF	
40	BOYS	185 SF	
41	JANITOR	85 SF	
42	GIRLS	171 SF	
43	WASH AREA	256 SF	
44	PHYSICAL HANDICAP	835 SF	
45	4TH GRADE	835 SF	
46	4TH GRADE	835 SF	
47		835 SF	
48	3RD GRADE	835 SF	
49	CORRIDOR	1878 SF	
50	3RD GRADE	835 SF	
51		835 SF	
	5TH GRADE	835 SF	
53	4TH GRADE	835 SF	
54	BOILER ROOM	705 SF	
55	PASSAGE	152 SF	
56	BOOKS	171 SF	
57	BECEIVE	325 95	
51		107 95	
50		22 65	
60		02 OF	
61		01 CE	
01 60		50 55	
62		03 OF	
64		240 35	
65		209 OF	
C0		200 5F	
00		07 SF	
67		8/51	
68	SIUKAGE	307 SF	
69		3672 SF	
70	PLATFORM / CAFETERIA	2096 SF	
71	VESTIBULE	19 SF	
72	PASSAGE	28 SF	
		=	
73	BOYS	50 SF	
73	BOYS GIRLS	50 SF 44 SF	

IECH	HANICAL PLAN GENERAL NOTES
	ALL PIPING AND VALVES SHALL BE CONCEALED ABOVE DROP CEILING. WHEN NO DROP CEILING IS PRESENT,
	THE INTERIOR AND EXTERIOR WALLS. ALL EXPOSED PIPING IN FINISHED SPACES TO BE PROTECTED WITH
	WHITE PVC JACKET.
	REFER TO THE SPECIFICATIONS FOR REQUIREMENTS RELATED TO EQUIPMENT QUALITY, CONSTRUCTION
	AND FINISH OF MATERIALS.
	ARRANGE PIPING, ETC. TO ALLOW FOR EASY ACCESS TO COILS, VALVES AND CONTROLS. KEEP AREAS
	ADJACENT TO ACCESS PANELS FREE AND CLEAR OF
	MECHANICAL CONTRACTOR IS RESPONSIBLE FOR HIS RESPECTIVE WORK FOR REPAIRING AND PATCHING TO
	MATCH EXISTING SURFACES, SIDEWALKS, STREETS, FLOORS, WALLS, ROOFS, CEILING AND PAVEMENT.
	INSTALL WALL THERMOSTATS, TEMPERATURE
	FLOOR IN ACCORDANCE WITH ADA REQUIREMENTS.
	COORDINATE ALL REQUIRED WALL, ROOF AND FLOOR OPENINGS (BOTH DIMENSIONS AND LOCATIONS) WITH
	COORDINATE MECHANICAL SYSTEM INSTALLATION
	WITH STRUCTURE, FIRE PROTECTION AND LIGHTING LAYOUT.
	PROVIDE ALL NECESSARY TRANSITIONS TO EQUIPMENT FROM SIZES SHOWN ON PLAN.
	EXISTING MECHANICAL SYSTEMS SHOWN AS DOTTED
	LINES AND FOR REFERENCE ONLY. CONTRACTOR
	SHALL VERIFY ALL FIELD CONDITIONS BEFORE
	STARTING CONSTRUCTION.

MECHANICAL PLAN NOTES (ALL NOTES MAY NOT BE INDICATED ON THIS SHEET)

<u>NO.</u>	DESCRIPTION
1	REFRIGERANT SUCTION AND DISCHARGE TO MINI-SPLIT CONDENSING UNIT. ALL PIE PENETRATING THE WALL OR ROOF SHALI SEALED WATER TIGHT. REFRIGERANT PIE SHALL BE INSULATED THE FULL LENGTH. REFRIGERANT PIPING ON THE EXTERIOR THE BUILDING SHALL BE PROTECTED WIT SELF-SEALING JACKET. ALL EXPOSED INT PIPING IN FINISHED SPACES TO BE PROV

- WITH WHITE PVC JACKET. LINE SIZE COPPER CONDENSATE PIPING FROM INDOOR EVAPORATOR TO GRADE OUTSIDE. TERMINATE CONDENSATE PIPING A MINIMUM OF 18" ABOVE GRADE. COORDINATE EXACT LOCATION WITH EXISTING UTILITIES, EQUIPMENT AND GRADE.
- OUTDOOR CONDENSING UNIT FOR INDOOR SPLIT SYSTEM SHALL BE INSTALLED ON CONCRETE HOUSEKEEPING PAD. COORDINATE EXACT LOCATION WITH EXISTING FIELD CONDITIONS. COORDINATE INSTALLATION WITH MANUFACTURER'S INSTALLATION REQUIREMENTS.
- INSTALL THE TOP OF THE INDOOR WALL MOUNTED EVAPORATOR AT 8'-0" AFF. EXACT MOUNTING LOCATION SHALL BE COORDINATED WITH THE OWNER AND THE EXISTING FIELD CONDITIONS PRIOR TO INSTALLATION. INDOOR UNIT SHALL BE LABELED WITH THE ROOM NUMBER WHERE THE UNIT IS LOCATED. FIELD VERIFY/COORDINATE THE EXACT ROOM NUMBERS WITH THE OWNER.

VERIFICATION NOTE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES AND ALL EXISTING FIELD CONDITIONS BEFORE STARTING CONSTRUCTION. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF CONDITIONS. SHOULD DIFFERENT CONDITIONS BE ENCOUNTERED, CONTACT THE ARCHITECT BEFORE PROCEEDING WITH WORK.





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	KEYNOTES
P1	REWIRE EXISTING LIGHTING IN THIS ROOM TO BE ON ONE CIRCUIT INSTEAD OF TWO TO FREE UP A POLE SPACE IN EXISTING PANEL. RETAIN SWITCHING AS-IS.
P2	NEW PAD MOUNTED OUTDOOR CONDENSING UNIT AND WALL MOUNTED INDOOR EVAPORATOR UNIT FOR SPLIT SYSTEM TYPE A/C SYSTEM BOTH TO BE POWERED VIA CIRCUIT SERVING THE OUTDOOR CONDENSING UNIT. PROVIDE BRANCH CIRCUIT INDICATED TO OUTDOOR CONDENSING UNIT AND PROVIDE A 30A-2P-WP NON-FUSIBLE DISCONNECT SWITCH NEAR UNIT FOR INPUT POWER DISCONNECTING MEANS. WIRE BRANCH CIRCUIT FROM TERMINAL BLOCK ON OUTDOOR CONDENSING UNIT TO INDOOR EVAPORATOR UNIT WITH 2#12, 1#12, 3/4°C. (MINIMUM, OR QUANTITY AS REQUIRED FOR SUPPLIED UNIT). RUN CONDUIT FOLLOWING SAME ROUTING AS INDOOR UNIT REFRIGERANT PIPING. PROVIDE A 20 AMP, 2-POLE MOTOR RATED SNAP-SWITCH AT INDOOR UNIT LOCATION TO SERVE AS LOCAL DISCONNECTING MEANS. MOUNT SWITCH NEXT TO UNIT. PROVIDE FINISH TYPE SURFACE MOUNTED RACEWAY/BOX TO CONNECT INDOOR UNIT AND INSTALL SNAP-SWITCH DISCONNECT. LOCATION OF DISCONNECT SWITCHES ADJACENT TO RESPECTIVE UNITS WITH EXISTING CONDITIONS AND UNIT CONNECTION LOCATION TO MOUNT IN A LOCATION THAT PROVIDES CODE REQUIRED MOUNTING HEIGHT, CLEARANCES AND ACCESS FOR SERVICEABILITY AND TO MAINTAIN EQUIPMENT FUNCTIONALITY. COORDINATE EXACT ROUGH-IN LOCATIONS AND FINAL CONNECTION REQUIRED MOUNTING HEIGHT, CLEARANCES AND ACCESS FOR SERVICEABILITY AND TO MAINTAIN EQUIPMENT FUNCTIONALITY. COORDINATE EXACT ROUGH-IN LOCATIONS AND FINAL CONNECTION REQUIRED AND MAKE ALL FINAL CONNECTIONS. INDIVIDUAL BRANCH CIRCUIT FOR POWER TO MSCU OUTDOOR UNIT TO BE INSTALLED BACK TO SOURCE INDICATED THROUGH THE BUILDING INTERIOR, ABOVE EXISTING CEILINGS. ANY EXTERIOR BRANCH CIRCUIT WIRING SHALL BE INSTALLED IN IMC TYPE CONDUIT. BRANCH CIRCUIT WIRING SHALL BE INSTALLED IN INC TYPE CONDUIT. BRANCH CIRCUIT WIRING SHALL BE INSTALLED IN INC TYPE CONDUIT. BRANCH CIRCUIT WIRING SHALL BE INSTALLED IN INC TYPE CONDUIT. BRANCH CIRCUIT WIRING SHALL BE INSTALLED IN INC TYPE CONDUIT. BRANCH CIRCUIT WIRING SHALL BE INSTALLED IN INC TYPE CONDUIT. BRANCH CIRCUIT WIRING SHALL BE INSTALLED IN INC TYPE CONDUIT. BRANCH CIRCUIT WIRING SHALL BE INSTALLED IN CONDUIT), UNIESS OTHERWISE INDICATED. COORDI
P3	CONNECT TO EXISTING PANELBOARD INDICATED WITH 2 #10 AND #10 G IN 3/4" CONDUIT. PROVIDE A NEW 20 AMP, 208V, 2-POLE BREAKER (OR SIZE AS RECOMMENDED BY MECHANICAL EQUIPMENT MANUFACTURER) TO MATCH EXISTING EQUIPMENT. CIRCUITS ARE INDICATED BY ALPHABETIC INDICATORS, ARRANGE BASED ON PANEL REWORK AND UPDATE DIRECTORY.
P4	REWORK EXISTING CIRCUIT BREAKERS AS NEEDED FOR NEW TWO POLE CIRCUIT BREAKERS FOR LOADS SHOWN.
P5	CONNECT TO EXISTING PANELBOARD INDICATED WITH 2 #8 AND #8 G IN 3/4" CONDUIT. PROVIDE A NEW 35 AMP, 208V, 2-POLE BREAKER (OR SIZE AS RECOMMENDED BY MECHANICAL EQUIPMENT MANUFACTURER) TO MATCH EXISTING EQUIPMENT. CIRCUITS ARE INDICATED BY ALPHABETIC INDICATORS, ARRANGE BASED ON PANEL REWORK AND UPDATE DIRECTORY.
P6	AS AN ALTERNATE BID, PROVIDE A WEATHER-RESISTANT LISTED/TAMPER-RESISTANT GFCI TYPE DUPLEX RECEPTACLE IN A WHILE-IN-USE WEATHERPROOF COVER AND MOUNT USING A 1-GANG WEATHERPROOF BOX ADJACENT TO OUTDOOR MSCU UNIT DISCONNECT SWITCH TO PROVIDE OUTDOOR HVAC EQUIPMENT SERVICE RECEPTACLE PER REQUIREMENTS OF NEC 210.63. FEED EACH 120 VOLT RECEPTACLE FROM LINE-SIDE OF ADJACENT TO OUTDOOR MSCU UNIT DISCONNECT SWITCH VIA A 208V/120V 1000VA TRANSFORMER IN A NEMA 3R ENCLOSURE TO DERIVE 120 VOLTS FROM 208 VOLT CIRCUIT SERVING ADJACENT OUTDOOR MSCU UNIT TO SERVE 120 VOLT RECEPTACLE. PROVIDE FUSE BLOCK MOUNTING ACCESSORY FOR TRANSFORMER, 2-POLE FUSE BLOCK AND TWO (2) 8-AMP CLASS CC FUSES FOR TRANSFORMER PRIMARY OVERCURRENT PROTECTION AND INSTALL ON TRANSFORMER AND WIRE COMPLETE. RECEPTACLE AND COVER SHALL BE: HUBBELL CATALOG NO. GFTW15 - WEATHER/TAMPER RESISTANT SELF-TEST GFCI RECEPTACLE, NEMA 5-15R, 15A, BROWN COLOR AND HUBBELL CATALOG NO. RW57300 – STANDARD 1-GANG SIZE, POLYCARBONATE, HIGH IMPACT CONSTRUCTION WITH WHILE-IN-USE NON-METALLIC WEATHERPROOF CLEAR TINTED/LOCKABLE COVER. CHANGE BREAKER IN PANEL TO 40 AMP, 208V, 2-POLE BREAKER TO ACCOMODATE ADDITIONAL LOAD OF TRANSFORMER.
P8	CONNECT THIS RECEPTACLE TO ADJACENT RECEPTACLE CIRCUIT TRANSFORMER.
P10	PANEL IS NOTED AS PANELBOARD "C" FOR CIRCUITING PURPOSES ON THIS SHEET.







#### UNIT A - SECOND FLOOR POWER PLAN SCALE: 1/8" = 1'-0"





## **MECHANICAL ABBREVIATIONS**

A/C AC ACU AD AE	AIR CONDITIONING AIR CURTAIN AIR CONDITIONING UNIT DUCT/PLENUM ACCESS DOOR ACOUSTICAL ELBOW (REFER TO DETAIL THIS SHEET)	ID IN IN WC INSUL INV	INSIDE DIAMETER (IN INCHES, UNLESS ( INTAKE HOOD IN INCHES OF WATER COLUMN INSULATION/INSULATE INVERT
AFF AFMS AFP AFT	ABOVE FINISHED FLOOR AIR FLOW MONITOR/MEASURING STATION AIR FLOW MEASUREMENT PROBE AIR FLOW TRANSDUCER/TEMPERATURE MONITOR	KH KW	KITCHEN HOOD KILOWATTS
AHU	AIR HANDLING UNIT (W/ INTEGRAL DEVICES FOR COOLING, HEATING, CLEANING AND/OR FILTRATION OF THE CIRCULATED AIR). TERM MAY BE USED INTERCHANGEABLY WITH ADU'S AND ADU'S	LAT LF	LEAVING AIR TEMPERATURE (IN °F, UNL LINEAR FEET LOW LIMIT SWITCH
ADU ARU	AIR HANDLING UNIT, W/ INTEGRAL DEVICES FOR INCREASED DEHUMIDIFICATION AIR HANDLING UNIT, W/ INTEGRAL DEVICES FOR ENERGY RECOVERY	LLO LP LPS	LIQUID PETROLEUM LOW PRESSURE STEAM SUPPLY
AL ALT AMB	ALTERNATE, ALTERNATIVE AMBIENT	LWT	LEAVING WATER TEMPERATURE (IN °F,
AP APD AS	ACCESS PANEL AIR PRESSURE DROP (IN INCHES OF WATER COLUMN) AIR SEPARATOR	M MAT MAX	MOTOR MIXED AIR TEMPERATURE (IN °F, UNLES MAXIMUM
AR ARV AT	ACID RESISTANT AIR RELIEF VALVE, MANUAL AIR VENT AIR TRANSFER	MBH MECH MFR	EQUIVALENT TO 1,000 BTUH MECHANICAL MANUFACTURER
ATD ATR ATV	AIR TEMPERATURE DROP (IN °F, UNLESS OTHERWISE NOTED) AIR TEMPERATURE RISE (IN °F, UNLESS OTHERWISE NOTED) AIR TURNING VANES	MH MIN MISC	MANHOLE MINIMUM MISCELLANEOUS
UTO VE	AUTOMATIC AIR VOLUME EXTRACTOR	MOD MPS MTD	MOTORIZED OPERATED DAMPER MEDIUM PRESSURE STEAM SUPPLY MOUNTED
SCP SD SDD	BOILER CIRCULATION PUMP BAROMETRIC DAMPER OR BAROMETRIC, COUNTER BALANCED GRAVITY OPERATED DAMPER BACKDRAFT DAMPER	MUA	MAKE-UP AIR HANDLING UNIT
3HP 3LDG 3LR	BREAK HORSPOWER.(IN HORSEPOWER) BUILDING BOILER	No. / # NOM NTS	NUMBER NOMINAL NOT TO SCALE
SMS SOD	BUILDING MANAGEMENT SYSTEM BOTTOM OF DUCT/DEVICE (IN UNITS NOTED) BAROMETRIC PRESSURE (IN INCHES OF MERCURY, UNI ESS OTHERWISE NOTED)	NG NP	NATURAL GAS NON-POTABLE WATER
r TU TUH	BRITISH THERMAL UNITS BRITISH THERMAL UNITS PER HOUR	OA OAT	OUTDOOR AIR OUTDOOR AIR TEMPERATURE (IN °F, UN ON CENTER
AU BA	COMBUSTION AIR UNIT CHILLED BEAM, ACTIVE	OD OR	ON CENTER OUTDOOR DIAMETER (IN INCHES, UNLE OIL RETURN
BP C	CHILLED BEAM, ACTIVE DISPLACEMENT AIR UNIT CHILLED BEAM, PASSIVE COOLING COIL	P/E	OIL SUPPLY PNEUMATIC/ELECTRIC
:СР :D :F	COIL CIRCULATION PUMP CONTROL DAMPER CARTRIDGE FILTER	P/I P PC	PRESSURE/TEMPERATURE PORT, PETE PUMP PUMPED CONDENSATE
rH FM SF	CUBIC FEET PER HOUR (GAS UNIT OF MEASURE) AIR/GAS FLOW RATE (IN CUBIC FEET PER MINUTE) CHEMICAL SHOT FEEDER	PHC PREFAB PREFA PRES	PREHEAT COIL ABRICATED PRESSURE
HLR HP HR	CHILLER CHILLED WATER PUMP CHILLED WATER RETURN	PRV PSF PSI	PRESSURE REDUCING VALVE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH
HS /L ;LG	CHILLED WATER SUPPLY CENTER LINE CEILING	PTAC PUH PVC	PACKAGE TERMINAL AIR CONDITIONING PROPELLER UNIT HEATER POLYVINYL CHLORIDE
omp o ol	COMPRESSOR CLEAN OUT COLUMN	R RAD	RADIANT RADIUS
ond P RU	CONDENSER CONDENSATE PUMP COMPUTER ROOM UNIT	RA RCP REQ'D	RETURN AIR RADIANT CEILING PANEL REQUIRED
SR T U	CURRENT SENSING RELAY COOLING TOWER CONDENSING UNIT	RFM RG RH	REFRIGERANT MONITOR RETURN AIR GRILLE RELIEF HOOD
UH V WP	CABINET UNIT HEATER CONVECTOR CONDENSER WATER PUMP	RHC RL RM	REHEAT COIL REFRIGERANT LIQUID ROOM
WR WS	CONDENSER WATER RETURN CONDENSER WATER SUPPLY	RPM RS RTU	REVOLUTIONS PER MINUTE REFRIGERANT SUCTION ROOF TOP AIR HANDLING UNIT
B C CW	DRY BULB TEMPERATURE (IN °F, UNLESS OTHERWISE NOTED) DUST COLLECTOR DOMESTIC COLD WATER	RV RWO	ROOF MOUNTED VENTILATOR RETURN AIR WALL OPENING (ABOVE CE
ELTAΤ/ΔΤ HW A/Ø	TEMPERATURE DIFFERENCE DOMESTIC HOT WATER DIAMETER (IN INCHES, UNLESS OTHERWISE NOTED)	S SA SAG	SENSOR SUPPLY AIR (WITH A UNIT MEASUREME SUPPLY AIR GRILLE
OAS P PS	DEDICATED OUTDOOR AIR SYSTEM DIFFERENTIAL PRESSURE (IN FEET OF HEAD, UNLESS OTHERWISE NOTED) DIFFERENTIAL PRESSURE SWITCH	SC SCHED SD	STEAM CONDENSATE SCHEDULE SMOKE DAMPER
PT S T	DIFFERENTIAL PRESSURE TRANSMITTER DUCT SILENCER DIFFERENTIAL TEMPERATURE (IN °F. UNLESS OTHERWISE NOTED)	SF SHT SIM	SUPPLY FAN SHEET SIMILAR
JC NG	DEHUMIDIFICATION UNIT DOOR UNDER CUT (IN INCHES, UNLESS OTHERWISE NOTED) DRAWING	SL SP SPEC	LINEAR SLOT DIFFUSER STATIC PRESSURE (IN INCHES OF WATE SPECIFICATION(S)
P AT	ELECTRICAL/PNEUMATIC ENTERING AIR TEMPERATURE (IN °F. UNLESS OTHERWISE NOTED)	STD SF	STANDARD SHOT FEEDER
CON	ECONOMIZER EXHAUST FAN EFFICIENCY	T TA TC	TEMPERATURE (IN °F, UNLESS OTHERW TRANSFER AIR TEMPERATURE CONTROL
G G EV	EXHAUST GRILLE EXHAUST HOOD	TCC TCP TCS	TEMPERATURE CONTROL TEMPERATURE CONTROL CONTRACTOR TEMPERATURE CONTROL SYSTEM CON
	ELEVATION ELECTRIC, ELECTRICAL EXPANDED METAL (MINIMUM OF 70% FREE AREA, UNLESS OTHERWISE NOTED)	TD TEMP	TEMPERATURE CONTROL STSTEM. TEMPERATURE DROP (IN °F, UNLESS O' TEMPERATURE (IN °F, UNLESS OTHERW
NER QUIP RC	ENERGENCY EQUIPMENT ENERGY RECOVERY CHILLER ENERGY RECOVERY MUTCH. ALSO RECERDED TO AS A USAT WITCH	TOD TR TXV	TEMPERATURE RISE (IN °F, UNLESS OT THERMAL EXPANSION VALVE
RV T	ENERGY RECOVERY VENTILATOR ENERGY RECOVERY VENTILATOR EXPANSION TANK ENTEDING WATER TEMPEDATURE (IN SELINILESS OTHERWISE MOTOR)	UH	
K K K H	ENTERING WATER TEMPERATURE (IN T, UNLESS OTHERWISE NOTED) EXISTING EXHAUST EXDANSION	V	
лг XT өт		VAC VAV VD	
×I SD C	FLOAT AND THERMOSTATIC TRAP COMBINATION FIRE/SMOKE DAMPER FAN COIL UNIT FAN COIL UNIT FOR VIE SYSTEMS	VEL VF VFC	VELOCITY (IN FEET PER MINUTE UNLES VENTILATION FAN VARIABLE FREQUENCY CONTROLLER (
D D DR	FAN COLL UNIT, FOR VRF STSTEMS FIRE DAMPER FUEL OIL RETURN	VHP VIF VRC	VARIABLE REFRIGERANT VOLUME HEA VERIFY IN FIELD REFRIGERANT SYSTEM CONTROLLER, F
US OV P	FUEL OIL SUPPLY FUEL OIL VENT FIRE PROTECTION	VRF VVD VVR	VARIABLE REFRIGERANT FLOW DUAL INLET VARIABLE PRIMARY AIR VO VARIABLE PRIMARY AIR VOLUME TERM
PM R T	FEET PER MINUTE FILTER RACK FEET	VVF W	FAN POWERED VARIABLE PRIMARY AIR
r HD Fr	FEET OF HEAD FIN TUBE RADIATION	W/ W/O WB	WITH WITHOUT WET BULB TEMPERATURE (IN °F, UNLES
A AL	GAS GAUGE GALLON(S)	WPD WR	WATER PRESSURE DROP (IN FEET OF H WALL REGISTER
ALV iC iF	GALVANIZED CONDENSATE PIPING - GRAVITY DRAINAGE GLYCOL FEEDER		
ilr ils ipm	GROUND/GEOTHERMAL LOOP RETURN GROUND/GEOTHERMAL LOOP SUPPLY GALLONS PER MINUTE		
C DG	HEATING COIL HEAVY DUTY GRILLE		
IG IHR IHS	REFRIGERANT HOT GAS HEATING HOT WATER RETURN HEATING HOT WATER SUPPLY		
LS P	HIGH LIMIT SWITCH HORSEPOWER HEAT PUMP LOOP RETURN		
IPR	HEAT PUMP LOOP SUPPLY		
IPR IPS IPU IPW	HEAT PUMP AIR HANDLING UNIT, AIR OR WATER SOURCE WATER TO WATER HEAT PUMP UNIT		



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PIPE ELBOW DOWN
PIPE ELBOW UP
PIPE TEE BELOW WITH BRANCH ELBOW AT DOWN
PIPE TEE ABOVE BRANCH PIPE BELOW
INDICATES DIRECTION OF DOWNWARD PITCH
PIPE EXPANSION U-LOOP (DIMENSIONS SHOWN AS 24"x48")
PIPE EXPANSION Z-LOOP (Z DIMENSION SHOWN AS 24")
PIPE EXPANSION L-LOOP (DIMENSIONS NOT SHOWN)
PIPE ANCHOR
PIPE ALIGNMENT GUIDE
PIPE EXPANSION/COMPRESSION JOINT
STRAINER
STRAINER, BLOW-OFF VALVE
SUCTION DIFFUSER, WITH STRAINER AND DRAIN
SUCTION DIFFUSER, WITH DRAIN AND NO STRAINER
UNION
VALVE (REFER TO SECTION 230532 FOR APPROPRIATE TYPE)
SPRING LOADED CHECK VALVE
MANUAL BALANCING VALVE
MULTIPURPOSE VALVE (TRIPLE DUTY VALVE)
AUTOMATIC FLOW CONTROL BALANCING VALVE
PNEUMATIC-OPERATED VALVE
SOLENOID-OPERATED VALVE
MOTOR OPERATED 2-WAY CONTROL VALVE
MOTOR OPERATED 3-WAY CONTROL VALVE
MANUAL AIR RELIEF VENT
AUTOMATIC AIR RELIEF VENT
FLEXIBLE CONNECTION, RUBBER
FLEXIBLE CONNECTION, BRAIDED
A.S.M.E. PRESSURE RELIEF VALVE - PRESSURE RATING INDICATED IN PSI
FLOW SWITCH
THERMOMETER, MOUNTED IN THERMOWELL
PRESSURE GAUGE, WITH SHUTOFF VALVE
PRESSURE SENSOR, WITH SHUTOFF VALVE
TEMPERATURE SENSOR, MOUNTED IN THERMOWELL
FLOW METER (RETRACTABLE), WITH SHUTOFF VALVE
DIFFERENTIAL PRESSURE TRANSMITTER
LIQUID LOW LIMIT SWITCH
CODED NOTE
EQUIPMENT SCHEDULE TAG
EQUIPMENT NOTE
<u># - AIR DEVICE TAG (REFER TO DEVICE SCHEDULE)</u> * - DESIGNATIONS DEVICE DESIGNATIONS SHALL BE USED FOR CLARIFICATION PURPOSE IN ANY CONFIGURATION AND MAY NOT BE USED ON EVERY DEVICE.
<ul> <li>A TWO DIMENSIONAL NOTE SEPARATED BY A "x" INDICATES THE AIR DEVICE SIZE IN INCHES, 24x24</li> <li>A SINGLE DIMENSION NOTE INDICATED BOD ELEVATION, 10'8"</li> <li>A UNITLESS NUMBER NOTE INDICATES AIR FLOW IN CFM, 400</li> <li>A DEGREE SYMBOL INDICATES VANE DEFLECTION, 35°</li> <li>CONNECT NEW TO EXISTING, FIELD VERIFY EXISTING CONDITIONS</li> </ul>

DETAIL REFERENCE BUBBLE

SECTION REFERENCE BUBBLE

X

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<u>\* - SENSOR DESIGNATION</u> C - CARBON DIOXIDE SENSOR H - HUMIDITY SENSOR P - STATIC PRESSURE SENSOR S - TEMPERATURE SENSOR T - TEMPERATURE THERMOSTAT SENSOR WITH PROTECTIVE WALL GUARD

<u>\*\* - OTHER INDICATION</u> E - Electric G - INSTALL PROTECTIVE WALL GUARD R - REVERSE ACTING

\*APPROPRIATE SENSOR WILL BE SIGNIFIED

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#### MECHANICAL SYMBOLS

	PRESSURE/TEMPERATURE PORT, (P/T PORT)		
$\overbrace{\hspace{1.5cm}}^{\hspace{1.5cm}} \bigotimes \overbrace{\hspace{1.5cm}}^{\hspace{1.5cm}}$	WATER PRESSURE REDUCING/REGULATING VALVE (PLAN VIEW)		RECTANGULAR DUCT SUPPLY AIR ELBOW UP/DOWN
<i>}</i>	WATER PRESSURE RELIEF VALVE (PLAN VIEW)		RECTANGULAR DUCT RETURN/EXHAUST AIR ELBOW UP/DOWN
	GAS SHUTOFF COCK		RECTANGULAR MITERED ELBOW; RADIUS (R) = 0" ALL MITERED ELBOWS ARE TO CONTAIN TURNING VANES
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	LUBRICATED PLUG VALVE		UNLESS OTHERWISE NOTED. REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION DETAILS.
${\underset{\bigcirc}{\longrightarrow}}$	STEAM PRESSURE REDUCING VALVE		90° RECTANGULAR DUCT ELEVATION TRANSITION
	GAS PRESSURE REDUCING/REGULATING VALVE		RECTANGULAR DUCT ELEVATION TRANSITION. APPROPRIATE
	DOUBLE CHECK VALVE, BACKFLOW ASSEMBLY		
чУЦУ Ф	DOUBLE CHECK VALVE, PRESSURE REDUCING BACKFLOW ASSEMBLY		RECTANGULAR DUCT TOP OR BOTTOM TRANSITION
	ATMOSPHERIC VACUUM BREAKER		<u>RECTANGULAR DUCT MULTI SIDE TRANSITION</u> MINIMUM SLOPE = 15° MAXIMUM SLOPE = 45°
<u>بــــــــــــــــــــــــــــــــــــ</u>	PRESSURE VACUUM BREAKER		SIDE WITH MAXIMUM SLOPE DETERMINES FITTING LENGTH. REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION DETAILS. RECTANGULAR DUCT SINGLE SIDE TRANSITION
	STEAM TRAP		MINIMUM SLOPE = 15° MAXIMUM SLOPE = 45° REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION DETAILS.
<u>}</u>	BLIND FLANGE		RECTANGULAR TO SPIRAL DUCT TRANSITION REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION DETAILS.
HHS			OVAL TO SPIRAL DUCT DIMENSION DESCRIPTION
			OVAL TO SPIRAL DUCT TRANSITION SHOWN. ALL SIZES SHOWN IN INCHES, UNLESS OTHERWISE NOTED.
——————————————————————————————————————	CHILLED WATER RETURN		24/10 - FLAT OVAL DUCT 24 WIDE WITH 10 DIAMETER SIDES
NP	NON-POTABLE WATER	$\bigotimes$	SPIRAL DUCT ELBOW UP/DOWN
	CHILLED BEAM WATER SUPPLY		
— —CBWR— —	CHILLED BEAM WATER RETURN		SPIRAL DUCT ELEVATION TRANSITION. APPROPRIATE ANGULAR DIMENSIONS TO BE COORDINATED BY THE CONTRACTOR.
HPS	HEAT PUMP LOOP SUPPLY		
– — -HPR- — -	HEAT PUMP LOOP RETURN	24x24-	<u>STANDARD RECTANGULAR ELBOW; RADIUS (R) = DUCT DIAMETER</u> REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION DETAILS.
MPS	MEDIUM PRESSURE STEAM SUPPLY	T A BROW	
LPS	LOW PRESSURE STEAM SUPPLY	<u>م</u> <u>ک</u>	STANDARD SPIRAL ELBOW; RADIUS (R) = 1.5 x DUCT DIAMETER
sc	STEAM CONDENSATE		REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION DETAILS.
	PIPE WITH HEAT TRACING	- Capillas	
CS	CONDENSER WATER SUPPLY		ALL MITERED ELBOWS ARE TO CONTAIN TURNING VANES UNLESS OTHERWISE NOTED. REFER TO PROJECT SPECIFCATIONS FOR
- — — CR— — -	CONDENSER WATER RETURN		CONSTRUCTION DETAILS.
RL	REFRIGERANT LIQUID	PLAIN PLAIN BEVELEC	)
- — —RS— — -	REFRIGERANT SUCTION		MAIN TO BRANCH TAKEOFFS
— - — - —RG— - — - —	REFRIGERANT HOT GAS		FOR DUCT INSTALLATIONS SERVING MULTIPLE AIR DEVICES, INSTALL BALANCING DAMPERS AFTER THE BRANCH TAKEOFFS SERVING SINGLE
ILS	ICE LOOP WATER SUPPLY		AIR DEVICES. SEVERAL TYPES OF TAKEOFFS ARE AVAILABLE, SELECT THE TAKEOFF AS INDICATED ON THE PLAN DRAWINGS. *TADS MAY BE UTILIZED WITH VAPIOUS TAKEOFE ANGLES OTHER
- — — — ILR— — -	ICE LOOP WATER RETURN		THAN 90 DEGREES FROM THE MAIN. REFER TO PLANS FOR INDICATION.
———РС————	PUMPED CONDENSATE	CONICAL BEVELED BELL TAP TAP MOUTH	
۵۲ ۵۷		ТАР ~ +	
			ACOUSTICAL ELBOW (AE): FOR AIR TRANSFER PURPOSES ACOUSTICAL BOOTS NOT ATTACHED TO EQUIPMENT, AIR DEVICES, OR OTHERWISE INDICATED ON THE CONSTRUCTION DRAWINGS SHALL BE
	METAL DUCT REFER TO PROJECT SPECIFICATIONS FOR DUCT INSTALLATION	W + 2	INSTALLED AS HIGH AS POSSIBLE TO MINIMIZED NOISE TRANSFERRED BETWEEN SPACES. IN MOST CASES, ACOUSTICAL ELBOWS WILL NOT
	REQUIREMENTS. DIMENSIONS SHOWN INDICATED FREE AREA, INSIDE DUCT MEASUREMENTS. DUCT SIZE INDICATED IN INCHES WITH SHOWN DIMENSION INDICATED FIRST.		BE TAGGED OR LABELED AS AN ACOUSTICAL ELBOW (AE), BUT THEIR INTENDED USE SHALL INFER THE APPROPRIATE CONSTRUCTION DIMENSION.
	ACCOUSTICALLY LINED DUCT REFER TO PROJECT SPECIFICATIONS FOR DUCT INSTALLATION REQUIREMENTS, DIMENSIONS SHOWN INDICATED FREE AREA		
	INSIDE DUCT MEASUREMENTS.	1 CONTRACTOR SHALL BE	
		TRADES DURING CONST LISTED CONSTRUCTION	RUCTION. REFER TO DIVISION 9 SPECIFICATIONS FOR FINISHES OF EXPOSED EQUIPMENT, DUCT, PIPE, ETC. UNLISTED
"OR"		ITEMS SHALL BE SUBMIT PIPE, EQUIPMENT, OR ET TO BE PAINTED AND SH/	ITED TO THE PROJECT ARCHITECT FOR CLARIFICATION. ANY DUCT, IC. INSTALLED IN A FINISHED EXPOSED SPACE SHALL BE ASSUMED ALL THEREFORE BE THOROUGHLY CLEANED AND PREPARED UNLESS
	REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION AND INSTALLATION DETAILS. AS SYMBOLIZED WITH OR WITHOUT NOTATION	OTHERWISE NOTED.	OORDINATE AIR DEVICE LOCATIONS WITH REFLECTED CEILING INTERIOR
	DUCT MOUNTED COUNTER WEIGHTED BACK DRAFT DAMPER	AND EXTERIOR ELEVATION	
	REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION AND INSTALLATION DETAILS.	PERFORMANCE REQUIRE REQUIREMENTS.	EMENTS AND CONSTRUCTION DOCUMENTS FOR MINIMUM INSTALLATION
"OR" FD FD-2B	FIRE DAMPER FD INDICATES FIRE DAMPER; ADDITIONAL DESIGNATIONS MAY ALSO BE USED, SUCH AS A NUMBER TO INDICATE THE	4. CONTRACTOR IS RESPON EQUIPMENT AS NECESS	NSIBLE TO INSTALL DUCT AND PIPE TRANSITIONS FOR THE SELECTED ARY FOR CONNECTION OF THE INDICATED DUCT AND PIPE SIZES.
	ALSO BE USED, SUCH AS A NUMBER TO INDICATE THE RATING OF THE FIRE DAMPER, FOR 2 OR 3 HOUR DAMPERS, AND/OR THE LETTER INDICATING THE TYPE OR STYLE OF A	5. UNLESS OTHERWISE IND OF THE RETURN AIR PLE	DICATED, ALL ABOVE CEILING SPACE(S) SHALL BE CONSIDERED PART NUM. THEREFORE ALL PIPE, DUCT, CONTROL DEVICES, WIRING, AND
"OR" SD SD	FIRE DAMPER, OF TYPES A, B, OR C.		ATED AND ACCEPTABLE FOR INSTALLATION IN A PLENUM SPACE.
	REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION AND INSTALLATION DETAILS.	INSTALLED A MINIMUM C INSTALLATION CONFLIC THE BOTTOM OF HVAC E	DF 8" ABOVE THE FINISHED CEILING ELEVATION TO AVOID TS WITH CEILING MOUNTED DEVICES AND UNLESS OTHERWISE NOTED, EQUIPMENT SHALL BE A MAXIMUM OF 24" ABOVE CEILING ELEVATIONS
F/SD F/SD	WALL MOUNTED COMBINATION FIRE/SMOKE DAMPER REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION AND INSTALLATION DETAILS.	AND UNOBSTRUCTED BY MAINTENANCE PURPOSE 7. INSTALL METAL SLEEVE	Y DUCT, PIPING, EQUIPMENT AND ETC. FOR SERVICE AND ES. IS THROUGH WALL PENETRATION CONSISTING OF UNIFORM
"OR" M MOD	MOTOR OPERATED DAMPER	CONSTRUCTION MATERI ARCHITECTURAL SHEET	ALS. INSTALL FIRE CAULKING AS NECESSARY, REFER TO THE S FOR DESIGNATION OF FIRE AND SMOKE RATED WALL ASSEMBLIES. RECIFICATIONS FOR FIRE STORDING MATERIAL DETAILS
	REQUIREMENTS. DAMPERS TO BE SIZED TO INSIDE DUCT DIMENSIONS. DAMPER SHALL BE OPPOSED BLADE UNLESS OTHERWISE NOTED	8. WHEN UTILIZING STRUC	TURAL STEEL FOR SUPPORT OF DUCT, PIPE AND EQUIPMENT
T	DUCT OR EQUIPMENT MOUNTED TEMPERATURE SENSOR	FLANGE OF THE STRUCT 9. SYMBOLS AND ABBREVI	TURAL ELEMENT. ATIONS ON THIS SHEET MAY NOT ALL BE USED WITHIN THIS SET OF
		PROJECT DOCUMENTS. 10. A 48" LONG SECTION (M	IN.) OF SUPPLY AIR DUCTWORK DOWNSTREAM OF VVR TERMINAL UNIT
		SHALL BE INTERNALLY SHOWN ON TE PLANS AT 11. THE CONNECTION OF TH	RE TO BE INTERNALLY LINED THE ENTIRE LENGTH. HE SUPPLY AIR BRANCH DUCTS TO THE MAIN SUPPLY AIR DUCT DOWNSTREAM
P	DUCT OR EQUIPMENT MOUNTED CARBON DIOXIDE SENSOR	OF THE VVR TERMINAL 1 12. ALL EXPOSED DUCTWO COMPATIBLE CALVANIT	TO BE INSTALLED WITH A CONICAL LOW LOSS DUCT TEE AND VOLUME DAMPER. RK NOTED TO BE A FIELD PAINTED SHALL BE PROPERLY TREATED WITH A ZED STEEL PRIMER AND CLEANED IN ORDER FOR THE PAINT TO BE ADDULED.
	DUCT OR EQUIPMENT MOUNTED DIFFERNTIAL PRESSURE SENSOR AS COMPARED WITH ATMOSPHERIC CONDITIONS	13. AIR TRANSFER WALL OF SIDE OF THE WALL OPE	PENINGS SHALL BE LOCATED SO THAT THERE IS A MINIMUM 8" CMU ON EITHER NING AND 16" FROM ANY BEAM SUPPORTED ON THE WALL.
	DUCT OR EQUIPMENT MOUNTED DIFFERNTIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS		
	DUCT OR EQUIPMENT MOUNTED LOW TEMPERATURE SENSOR		

DUCT OR EQUIPMENT MOUNTED HIGH TEMPERATURE SENSOR









#### WHITE PVC JACKET. REFER TO THE SPECIFICATIONS FOR REQUIREMENTS RELATED TO EQUIPMENT QUALITY, CONSTRUCTION AND FINISH OF MATERIALS. ARRANGE PIPING, ETC. TO ALLOW FOR EASY ACCESS TO COILS, VALVES AND CONTROLS. KEEP AREAS ADJACENT TO ACCESS PANELS FREE AND CLEAR OF ANY OBSTRUCTIONS. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR HIS RESPECTIVE WORK FOR REPAIRING AND PATCHING TO MATCH EXISTING SURFACES, SIDEWALKS, STREETS, FLOORS, WALLS, ROOFS, CEILING AND PAVEMENT. INSTALL WALL THERMOSTATS, TEMPERATURE SENSORS, HUMIDISTATS, ETC. 44" ABOVE THE FINISH FLOOR IN ACCORDANCE WITH ADA REQUIREMENTS. COORDINATE ALL REQUIRED WALL, ROOF AND FLOOR OPENINGS (BOTH DIMENSIONS AND LOCATIONS) WITH ALL OTHER TRADES. COORDINATE MECHANICAL SYSTEM INSTALLATION WITH STRUCTURE, FIRE PROTECTION AND LIGHTING LAYOUT. PROVIDE ALL NECESSARY TRANSITIONS TO EQUIPMENT FROM SIZES SHOWN ON PLAN. EXISTING MECHANICAL SYSTEMS SHOWN AS DOTTED LINES AND FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS BEFORE STARTING CONSTRUCTION. MECHANICAL PLAN NOTES < x (ALL NOTES MAY NOT BE INDICATED ON THIS SHEET) **DESCRIPTION** <u>NO.</u> REFRIGERANT SUCTION AND DISCHARGE LINES TO MINI-SPLIT CONDENSING UNIT. ALL PIPING PENETRATING THE WALL OR ROOF SHALL BE SEALED WATER TIGHT. REFRIGERANT PIPING SHALL BE INSULATED THE FULL LENGTH. REFRIGERANT PIPING ON THE EXTERIOR OF THE BUILDING SHALL BE PROTECTED WITH A SELF-SEALING JACKET. ALL EXPOSED INTERIOR PIPING IN FINISHED SPACES TO BE PROVIDED WITH WHITE PVC JACKET. LINE SIZE COPPER CONDENSATE PIPING FROM INDOOR EVAPORATOR TO GRADE OUTSIDE. TERMINATE CONDENSATE PIPING A MINIMUM OF 18" ABOVE GRADE. COORDINATE EXACT LOCATION WITH EXISTING UTILITIES, EQUIPMENT AND GRADE. OUTDOOR CONDENSING UNIT FOR INDOOR SPLIT SYSTEM SHALL BE INSTALLED ON CONCRETE HOUSEKEEPING PAD. COORDINATE EXACT LOCATION WITH EXISTING FIELD CONDITIONS. COORDINATE INSTALLATION WITH MANUFACTURER'S INSTALLATION REQUIREMENTS. INSTALL THE TOP OF THE INDOOR WALL MOUNTED EVAPORATOR AT 8'-0" AFF. EXACT MOUNTING LOCATION SHALL BE COORDINATED WITH THE OWNER AND THE EXISTING FIELD CONDITIONS PRIOR TO INSTALLATION. INDOOR UNIT SHALL BE LABELED WITH THE ROOM NUMBER WHERE THE UNIT IS LOCATED. FIELD VERIFY/COORDINATE THE EXACT ROOM NUMBERS WITH THE OWNER. PROVIDE INDOOR EVAPORATOR UNIT WITH A

MECHANICAL PLAN GENERAL NOTES

ALL PIPING AND VALVES SHALL BE CONCEALED ABOVE DROP CEILING. WHEN NO DROP CEILING IS PRESENT,

ALL PIPING AND VALVES SHALL BE EXPOSED ALONG THE INTERIOR AND EXTERIOR WALLS. ALL EXPOSED

PIPING IN FINISHED SPACES TO BE PROTECTED WITH

CONDENSATE PUMP. OUTDOOR CONDENSING UNIT FOR INDOOR SPLIT SYSTEM SHALL BE WALL MOUNTED USING MANUFACTURER'S PROVIDED WALL BRACKET. MOUNT BOTTOM OF UNIT AT OR ABOVE THE EXISTING WINDOW SILL ELEVATION. COORDINATE EXACT LOCATION WITH EXISTING FIELD CONDITIONS. COORDINATE INSTALLATION WITH MANUFACTURER'S INSTALLATION

REQUIREMENTS.

VERIFICATION NOTE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES AND ALL EXISTING FIELD CONDITIONS BEFORE STARTING CONSTRUCTION. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF CONDITIONS. SHOULD DIFFERENT CONDITIONS BE ENCOUNTERED, CONTACT THE ARCHITECT BEFORE PROCEEDING WITH





ROOM LEGEND - SECOND FLOOR UNIT A							
ROOM NO.	ROOM NAME	AREA (SF)					
201	LEVEL 3	836 SF					
202	LEVEL 3	835 SF					
203	L.D. TUTOR	199 SF					
204	LEVEL 3	835 SF					
205	GIRLS	262 SF					
206	BOYS	290 SF					
207	LEVEL 2	835 SF					
208	ART / MULTI-PURPOSE	916 SF					
209	LEVEL 3	835 SF					
210	LEVEL 3	835 SF					
211	LEVEL 3	835 SF					
212	LEVEL 2	835 SF					
213	TOILET	18 SF					
214	HALL	2165 SF					
215	ART SUPPLIES	188 SF					
216	JANITOR	24 SF					

				MINI-SPLIT	HEAT PUMP L	JNIT					
				P	OWER		OUT CONDEN				
MARK	NOMINAL TONS CLG CAPACITY	AIRFLOW CFM	COOLING BTUH	HEATING BTUH	MODEL NUMBER	BREAKER	RLA	ELEC SERV	AIRFLOW CFM	MODEL NUMBER	SEER
MSCU-075	3/4 TON	219/249/322/431	4,400-10,200	4,400-13,000	FTX09AXVJU	15 AMP	8.5	208/1	1,083-1,103	RX09AXVJU	19.0
MSCU-15	1.5 TON	395/467/605/716	5,500-20,000	5,500-24,000	FTX18AXVJU	20 AMP	18.25	208/1	1,905-2,005	RX18AXVJU	20.3
MSCU-20	2 TON	395/467/605/716	5,500-24,000	5,800-27,600	FTX24AXVJU	20 AMP	18.25	208/1	1908	RX24AXVJU	20.0
MSCU-25	2.5 TON	512/572/727/890	10,200-31,400	10,200-34,800	FTX30NVJU	20 AMP	18.25	208/1	2,274-2,528	RX30NMVJUA	17.5
NOTES       1. HARDWIRED OR WIRELESS TEMPERATURE THERMOSTAT MOUNTED ON WALL.         2. INCOMING POWER SHALL BE TO CONDENSING UNIT. ELECTRICAL CONTRACTOR SHALL TAP OFF TO INDOOR UNIT.         3. ENTERING AIR CONDITIONS = 75 DEGREES F @ 50% RH.         4. SUPPORT INDOOR UNIT FROM WALL BELOW CEILING. OUTDOOR CONDENSER SHALL BE INSTALLED ON CONCRETE HOUSEKEEPING PAD ON GRADE OR MOUNTED TO THE WALL USING MANUFACTURER PROVIDED WALL BRACKET AS DETERMINED ON THE DRAWINGS. REFER TO SPECIFICATION 230529.			6. EVAPO FILTER 7. INSTAL 8. MINIMU 9. DISCO	PRATOR SECTI DRIER. L REFRIGERA JM THREE FAN NNECT SWITC	on comple Nt Piping F I Speed Se H by Divisio	ETE WITH CO PER MANUFA TTINGS AND A DN 26-ELECT	IL, THERMOSTATIC CTURER'S REQUIR AUTO SETTING. RICAL.	EXPANSION VAL	_VE, AND		

NO SCALE



HEATING: 5° - 65°

#### UNIT A - SECOND FLOOR MECHANICAL PLAN SCALE: 1/8" = 1'-0"

			ML	JLTI MINI-SPLIT	HEAT PUMP I	JNIT						
			EVAPORATOR/	FAN COIL UNIT				C	OUTD ONDENS	oor Ing Unit		
MARK	NOMINAL TONS CLG CAPACITY	AIRFLOW CFM	COOLING BTUH	HEATING BTUH	MODEL NUMBER	ELEC SERV	UNIT MARK	BREAKER	MCA	ELEC SERV	MODEL NUMBER	
FC-10	1.0 TON	403/307/205/155	12,000	14,000	FTXS12WVJU9	209/4	011.00	25	20.9	208/1	4MXS36WVJU9	
FC-20	2.0 TON	643/494/350/328	24,000	27,000	FTXS24WVJU9	200/1	CU-30	25				
FC-20	2.0 TON	643/494/350/328	24,000	27,000	FTXS24WVJU9	209/1	CU 40	CU 40	25	20.9	208/1	5MXS48WVJU9
FC-20	2.0 TON	643/494/350/328	24,000	27,000	FTXS24WVJU9		00-40	55	30.0	200/1		
NOTES	<ol> <li>EACH INDOOR UN TEMPERATURE TH</li> <li>INCOMING POWER SHALL TAP OFF TO</li> <li>COOLING EAT = 75</li> <li>SUPPORT INDOOF SHALL BE INSTALL MOUNTED TO THE DETERMINED ON TO</li> <li>OUTDOOR TEMPE</li> </ol>	IT TO BE PROVIDED WIT HERMOSTAT MOUNTED ( R SHALL BE TO CONDEN O INDOOR UNIT. 5 DEGREES F @ 50% RH R UNIT FROM WALL BELO LED ON CONCRETE HOU E WALL USING MANUFAC THE DRAWINGS. REFER RATURE OPERATING RA HEATING: 5°	H HARDWIRED OR W ON WALL. SING UNIT. ELECTRI , HEATING = 47 DEGR OW CEILING. OUTDOO ISEKEEPING PAD ON TURER PROVIDED W TO SPECIFICATION 2 ANGES: COOLING: 14 - 60°	IRELESS CAL CONTRACTOR REES F DR CONDENSER GRADE OR VALL BRACKET AS 230529. 2 - 115°	<ol> <li>EVAPOR AND FIL<sup>-</sup></li> <li>INSTALL</li> <li>MINIMUN</li> <li>DISCONI</li> </ol>	ATOR SEC TER DRIEF REFRIGE // THREE F NECT SWI	CTION CON RANT PIPIN AN SPEED TCH BY DI	IPLETE WITH C NG PER MANUF SETTINGS AN VISION 26-ELEC	COIL, THERN FACTURER'S D AUTO SE CTRICAL.	IOSTATIC EX S REQUIREME TTING.	PANSION VALVE, ENTS.	





VERIFICATION NOTE

WORK.

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES AND ALL EXISTING FIELD CONDITIONS BEFORE STARTING CONSTRUCTION. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF CONDITIONS. SHOULD DIFFERENT CONDITIONS BE ENCOUNTERED, CONTACT THE ARCHITECT BEFORE PROCEEDING WITH





ROOM		A
NO.	ROOM NAME	(
101	CORRIDOR	6
102	CORRIDOR	5
103	CORRIDOR	4:
104	CORRIDOR	10
105	CORRIDOR	6
106	CORRIDOR	5
107	CLASSROOM	86
108	CLASSROOM	86
109	CLASSROOM	86
110	CLASSROOM	86
111	CLASSROOM	86
112	CLASSROOM	80
113	CLASSROOM	80
114	CLASSROOM	80
115	CLASSROOM	80
116	CLASSROOM	80
117	CLASSROOM	80
118	CLASSROOM	80
119	KINDERGARTEN	10
120	KINDERGARTEN	10
121	BOILER RM	42
122	GIRLS TOILET	18
123	BOYS TOILET	22
124	JANITOR	12
125	MPR STORAGE	32
126	KITCHENETTE	1:
127	MULTI-PURPOSE RM	48
128	STAFF RM4	1:
129	GIRLS TOILET	28
130	BOYS TOILET	3
131	JANITOR	6
132	TOILET	1
133	LIBRARY	5
134	TOILET	2
135	TOILET	2
136	WORK RM	16
136A	Room	1(
137	TEACHERS LOUNGE	1:
138	RECEPTION	1
139	OFFICE	12
140	TOILET	1
141	CLINIC	20
142	CLOSET	1
143	TOILET	1



## **MECHANICAL ABBREVIATIONS**

A/C AC ACU AD AE	AIR CONDITIONING AIR CURTAIN AIR CONDITIONING UNIT DUCT/PLENUM ACCESS DOOR ACOUSTICAL ELBOW (REFER TO DETAIL THIS SHEET)	ID IN IN WC INSUL INV	INSIDE DIAMETER (IN INCHES, UN INTAKE HOOD IN INCHES OF WATER COLUMN INSULATION/INSULATE INVERT
AFF AFMS AFP	ABOVE FINISHED FLOOR AIR FLOW MONITOR/MEASURING STATION AIR FLOW MEASUREMENT PROBE	KH KW	KITCHEN HOOD KILOWATTS
AFT AHU	AIR FLOW TRANSDUCER/TEMPERATURE MONITOR AIR HANDLING UNIT (W/ INTEGRAL DEVICES FOR COOLING, HEATING, CLEANING AND/OR	LAT	LEAVING AIR TEMPERATURE (IN
ADU	AND ARU'S. AIR HANDLING UNIT. W/ INTEGRAL DEVICES FOR INCREASED DEHUMIDIFICATION	LF LLS LP	LINEAR FEET LOW LIMIT SWITCH LIQUID PETROLEUM
ARU AL	AIR HANDLING UNIT, W/ INTEGRAL DEVICES FOR ENERGY RECOVERY ALUMINUM	LPS LVR	LOW PRESSURE STEAM SUPPLY LOUVER
ALT AMB	ALTERNATE, ALTERNATIVE AMBIENT	LWT	LEAVING WATER TEMPERATURE
AP APD AS	ACCESS PANEL AIR PRESSURE DROP (IN INCHES OF WATER COLUMN) AIR SEPARATOR	M MAT MAX	MOTOR MIXED AIR TEMPERATURE (IN °F, MAXIMUM
AR ARV	ACID RESISTANT AIR RELIEF VALVE, MANUAL AIR VENT	MBH MECH	EQUIVALENT TO 1,000 BTUH MECHANICAL
AT ATD	AIR TRANSFER AIR TEMPERATURE DROP (IN °F, UNLESS OTHERWISE NOTED)	MFR MH	MANUFACTURER MANHOLE
ATR ATV AUTO	AIR TEMPERATURE RISE (IN °F, UNLESS OTHERWISE NOTED) AIR TURNING VANES AUTOMATIC	MIN MISC MOD	MINIMUM MISCELLANEOUS MOTORIZED OPERATED DAMPER
AVE	AIR VOLUME EXTRACTOR	MPS MSCU	MEDIUM PRESSURE STEAM SUP MINI SPLIT COOLING UNIT
BCP BD	BOILER CIRCULATION PUMP BAROMETRIC DAMPER OR BAROMETRIC, COUNTER BALANCED GRAVITY OPERATED DAMPER	MTD MUA	MOUNTED MAKE-UP AIR HANDLING UNIT
BDD BHP BLDG	BACKDRAFT DAMPER BREAK HORSPOWER.(IN HORSEPOWER) BUILDING	NIC No. / #	NOT IN CONTRACT
BLR BMS	BOILER BUILDING MANAGEMENT SYSTEM	NOM NTS	NOMINAL NOT TO SCALE
BOD BP	BOTTOM OF DUCT/DEVICE (IN UNITS NOTED) BAROMETRIC PRESSURE (IN INCHES OF MERCURY, UNLESS OTHERWISE NOTED)	NG NP	NATURAL GAS NON-POTABLE WATER
BTUH	BRITISH THERMAL UNITS PER HOUR	OA OAT	OUTDOOR AIR OUTDOOR AIR TEMPERATURE (II
CAU CBA	COMBUSTION AIR UNIT CHILLED BEAM, ACTIVE	OC OD	ON CENTER OUTDOOR DIAMETER (IN INCHES
CBD CBP	CHILLED BEAM, ACTIVE DISPLACEMENT AIR UNIT CHILLED BEAM, PASSIVE	OR OS	OIL RETURN OIL SUPPLY
CCP CD	COLLING COLL COIL CIRCULATION PUMP CONTROL DAMPER	P/E P/T	PNEUMATIC/ELECTRIC PRESSURE/TEMPERATURE POR
CF CFH	CARTRIDGE FILTER CUBIC FEET PER HOUR (GAS UNIT OF MEASURE)	P PC	PUMP PUMPED CONDENSATE
CFM CSF	AIR/GAS FLOW RATE (IN CUBIC FEET PER MINUTE) CHEMICAL SHOT FEEDER	PHC PREFAB	PREHEAT COIL PREFABRICATED
CHP CHR	CHILLER CHILLED WATER PUMP CHILLED WATER RETURN	PRV PSF	PRESSURE REDUCING VALVE POUNDS PER SQUARE FOOT
CHS CL	CHILLED WATER SUPPLY CENTER LINE	PSI PTAC	POUNDS PER SQUARE INCH PACKAGE TERMINAL AIR CONDIT
CLG COMP	CEILING COMPRESSOR CLEAN OUT	PUH PVC	PROPELLER UNIT HEATER POLYVINYL CHLORIDE
COL COND	COLUMN CONDENSER	R RA	RADIANT RETURN AIR
CP CRU	CONDENSATE PUMP COMPUTER ROOM UNIT	RACCU RAD	REMOTE AIR COOLED CONDENS RADIUS
CSR CT	CURRENT SENSING RELAY COOLING TOWER	RCP REQ'D REM	RADIANT CEILING PANEL REQUIRED REERIGERANT MONITOR
CUH CV	CABINET UNIT HEATER CONVECTOR	RG RH	RETURN AIR GRILLE RELIEF HOOD
CWP CWR	CONDENSER WATER PUMP CONDENSER WATER RETURN	RHC RL	REHEAT COIL REFRIGERANT LIQUID
CWS		RM RPM RS	ROOM REVOLUTIONS PER MINUTE REERIGERANT SUCTION
DC DCW	DUST COLLECTOR DOMESTIC COLD WATER	RTU RV	ROOF TOP AIR HANDLING UNIT ROOF MOUNTED VENTILATOR
DELTA T / ΔT DHW	TEMPERATURE DIFFERENCE DOMESTIC HOT WATER	RWO	RETURN AIR WALL OPENING (AB
DIA / Ø DOAS DB	DIAMETER (IN INCHES, UNLESS OTHERWISE NOTED) DEDICATED OUTDOOR AIR SYSTEM DIEEEDENTIAL DRESSURE (IN EEET OF HEAD, UNLESS OTHERWISE NOTED)	S SA SAG	SENSOR SUPPLY AIR (WITH A UNIT MEASU SUPPLY AIR GRILLE
DPS DPT	DIFFERENTIAL PRESSURE SWITCH DIFFERENTIAL PRESSURE TRANSMITTER	SC SCHED	STEAM CONDENSATE SCHEDULE
DS DT	DUCT SILENCER DIFFERENTIAL TEMPERATURE (IN °F, UNLESS OTHERWISE NOTED)	SD SF	SMOKE DAMPER SUPPLY FAN
DU DUC DWG	DEHUMIDIFICATION UNIT DOOR UNDER CUT (IN INCHES, UNLESS OTHERWISE NOTED) DRAWING	SIM	SINEET SIMILAR LINEAR SLOT DIFFUSER
E/P	ELECTRICAL/PNEUMATIC	SP SPEC	STATIC PRESSURE (IN INCHES O SPECIFICATION(S)
EAT ECON	ENTERING AIR TEMPERATURE (IN °F, UNLESS OTHERWISE NOTED) ECONOMIZER EXHAUST FAN	STD SF	STANDARD SHOT FEEDER
EF EFF EG	EXHAUST FAN EFFICIENCY EXHAUST GRILLE	T TA	TEMPERATURE (IN °F, UNLESS O TRANSFER AIR
EH ELEV	EXHAUST HOOD ELEVATION	TC TCC	TEMPERATURE CONTROL TEMPERATURE CONTROL CONT
ELEC EM EMED	ELECTRIC, ELECTRICAL EXPANDED METAL (MINIMUM OF 70% FREE AREA, UNLESS OTHERWISE NOTED) EMERGENCY	TCP TCS TD	TEMPERATURE CONTROL SYSTE TEMPERATURE CONTROL SYSTE TEMPERATURE DROD (IN SECTION
ENIER EQUIP ERC	EQUIPMENT ENERGY RECOVERY CHILLER	TEMP TOD	TEMPERATURE (IN °F, UNLESS O TOP OF DUCT/DEVICE (IN UNITS
ERW ERV	ENERGY RECOVERY WHEEL, ALSO REFERRED TO AS A HEAT WHEEL ENERGY RECOVERY VENTILATOR	TR TXV	TEMPERATURE RISE (IN °F, UNLE THERMAL EXPANSION VALVE
ET EWT E¥	EXPANSION TANK ENTERING WATER TEMPERATURE (IN °F, UNLESS OTHERWISE NOTED) EXISTING	I YP LIH	
EXH EXP	EXHAUST EXPANSION	UV	UNIT VENTILATOR
EXT		V VAC	
F&T F/SD	FLOAT AND THERMOSTATIC TRAP COMBINATION FIRE/SMOKE DAMPER	VAV VD VEI	VARIABLE AIR VOLUME VOLUME DAMPER
FC FCV FD	FAN COIL UNT FAN COIL UNIT, FOR VRF SYSTEMS FIRE DAMPER	VEL VF VFC	VELOCITY (IN FEET PER MINUTE VENTILATION FAN VARIABLE FREQUENCY CONTRO
FOR FOS	FUEL OIL RETURN FUEL OIL SUPPLY	VHP VIF	VARIABLE REFRIGERANT VOLUM
FOV FP	FUEL OIL VENT FIRE PROTECTION		REFRIGERANT SYSTEM CONTRO VARIABLE REFRIGERANT FLOW
FPM FR FT	FEET PER MINUTE FILTER RACK FEET	VVR VVF	VARIABLE PRIMARY AIR VOLUME FAN POWERED VARIABI F PRIMA
 FT HD FTR	FEET OF HEAD FIN TUBE RADIATION	W	WATTS
G	GAS	W/ W/O	
GA GAL GAL V	GAUGE GALLON(S) GALVANIZED	WPD WR	WET BULD TEMPERATURE (IN °F. WATER PRESSURE DROP (IN FEI WALL REGISTER
GC GF	CONDENSATE PIPING - GRAVITY DRAINAGE GLYCOL FEEDER		
GLR GLS	GROUND/GEOTHERMAL LOOP RETURN GROUND/GEOTHERMAL LOOP SUPPLY		
GPM	GALLONS PER MINUTE		
HDG HG	HEATING COIL HEAVY DUTY GRILLE REFRIGERANT HOT GAS		
HHR HHS	HEATING HOT WATER RETURN HEATING HOT WATER SUPPLY		
HLS HP	HIGH LIMIT SWITCH HORSEPOWER		
HPR HPS HPU	HEAT PUMP LOOP RETURN HEAT PUMP LOOP SUPPLY HEAT PUMP AIR HANDLING LINIT, AIR OR WATER SOURCE		
HPW HVAC	HEAT FOR AIN HANDLING UNIT, AIR OR WATER SOURCE WATER TO WATER HEAT PUMP UNIT HEATING/VENTILATING/AIR CONDITIONING		
HWP	HEATING HOT WATER PUMP		

NLESS OTHERWISE NOTED)	
T, UNLESS OTHERWISE NOTED)	
Y	
E (IN °F, UNLESS OTHERWISE NOTED)	
, UNLESS OTHERWISE NOTED)	
R PPLY	
IN °F, UNLESS OTHERWISE NOTED)	
3, UNLESS OTHERWISE NOTED)	
RT, PETE'S PLUG	
TIONING UNIT	
SING UNIT	
BOVE CEILING, UNLESS OTHERWISE NOTED)	
SUREMENT OF CFM)	
OF WATER COLUMN FOR AIR/GAS SYSTEMS)	
OTHERWISE NOTED)	
IRACTOR	
EM CONTROL PANEL EM. LESS OTHERWISE STATED)	
DTHERWISE STATED) NOTED) ESS OTHERWISE STATED)	
UNLESS OTHERWISE NOTED)	
DLLER (OR VFD) ME HEAT PUMP UNIT, FOR VRF SYSTEMS	
OLLER, FOR VRF SYSTEMS	
AIR VOLUME TERMINAL UNIT	
, UNLESS OTHERWISE STATED)	
ET OF HEAD, UNLESS OTHERWISE NOTED)	

$\subset \longrightarrow$	PIPE ELB
$\bigcirc \longrightarrow$	PIPE ELB
Ç	PIPE TEE
$\begin{array}{c} \downarrow \\ (\tilde{)} \end{array}$	PIPE TEE
۔ بر	INDICATE
54/48	PIPE EXF
EXP 24	PIPE EXF
	PIPE EXF
۔ ب	PIPE ANC
<u>نے جن</u>	PIPE ALIC
,	PIPE EXF
، ۲→	STRAINE
، بربانی ا	STRAINE
ĨSD ⊪⊳≷⊶l ↓ +	SUCTION
ĨSD	SUCTION
,	UNION
	VALVE (F
	CHECK V
, , , , , , , , , , , , , , , , , , ,	SPRING I
	MANUAL
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	SOLENO
	MOTOR (
	MOTOR
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	FLEXIBLE
·{ ∭]}	FLEXIBLE
	A.S.M.E.
,	FLOW SV
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, <u> </u>	PRESSU
	PRESSU
(T)	TEMPER
( <u>M)</u> +	FLOW ME
	WATER N
→ DPT →	DIFFERE
	LIQUID LO
$\langle 1 \rangle$	CODED N
B-A101	EQUIPME
(#) 24x24*	EQUIPME <u>#</u> - AIR DF
35°* / 10'8"* 400*	* - DESIG
Ð	- A TWO THE AIR - A SINGL - A UNITL - A DEGR CONNEC

(NUM)

SHEET

X

\*

PIPE ELBOW DOWN
PIPE ELBOW UP
PIPE TEE BELOW WITH BRANCH ELBOW AT DOWN
PIPE TEE ABOVE BRANCH PIPE BELOW
INDICATES DIRECTION OF DOWNWARD PITCH
PIPE EXPANSION U-LOOP (DIMENSIONS SHOWN AS 24"x48")
PIPE EXPANSION Z-LOOP (Z DIMENSION SHOWN AS 24")
PIPE EXPANSION L-LOOP (DIMENSIONS NOT SHOWN)
PIPE ANCHOR
PIPE ALIGNMENT GUIDE
PIPE EXPANSION/COMPRESSION JOINT
STRAINER
STRAINER, BLOW-OFF VALVE
SUCTION DIFFUSER, WITH STRAINER AND DRAIN
SUCTION DIFFUSER, WITH DRAIN AND NO STRAINER
UNION
VALVE (REFER TO SECTION 230532 FOR APPROPRIATE TYPE)
CHECK VALVE - ARROW SHOWS DIRECTION OF FLOW
SPRING LOADED CHECK VALVE - ARROW SHOWS DIRECTION OF FLOW
MANUAL BALANCING VALVE
MULTIPURPOSE VALVE (TRIPLE DUTY VALVE)
AUTOMATIC FLOW CONTROL BALANCING VALVE
PNEUMATIC-OPERATED VALVE
SOLENOID-OPERATED VALVE
MOTOR OPERATED 2-WAY CONTROL VALVE
MOTOR OPERATED 3-WAY CONTROL VALVE
MANUAL AIR RELIEF VENT - PIPE TO NEAREST DRAIN
AUTOMATIC AIR RELIEF VENT - PIPE TO NEAREST DRAIN
FLEXIBLE CONNECTION, RUBBER
FLEXIBLE CONNECTION, BRAIDED
A.S.M.E. PRESSURE RELIEF VALVE - PRESSURE RATING INDICATED IN PSI
FLOW SWITCH
THERMOMETER, MOUNTED IN THERMOWELL
PRESSURE GAUGE, WITH SHUTOFF VALVE
PRESSURE SENSOR, WITH SHUTOFF VALVE
TEMPERATURE SENSOR, MOUNTED IN THERMOWELL
FLOW METER (RETRACTABLE), WITH SHUTOFF VALVE
WATER METER, IN UNITS OF GALLONS PER MINUTE (GPM)
DIFFERENTIAL PRESSURE TRANSMITTER
LIQUID LOW LIMIT SWITCH
CODED NOTE
EQUIPMENT SCHEDULE TAG
<u>* - AIR DEVICE TAG (REFER TO DEVICE SCHEDULE)</u> * - DESIGNATIONS DEVICE DESIGNATIONS SHALL BE USED FOR CLARIFICATION PURPOSE IN ANY CONFIGURATION AND MAY NOT BE USED ON EVERY DEVICE.
- A TWO DIMENSIONAL NOTE SEPARATED BY A "x" INDICATES THE AIR DEVICE SIZE IN INCHES, 24x24 - A SINGLE DIMENSION NOTE INDICATED BOD ELEVATION, 10'8" - A UNITLESS NUMBER NOTE INDICATES AIR FLOW IN CFM, 400 - A DEGREE SYMBOL INDICATES VANE DEFLECTION, 35°

ECT NEW TO EXISTING, FIELD VERIFY EXISTING CONDITIONS

DETAIL REFERENCE BUBBLE

SECTION REFERENCE BUBBLE

\* - SENSOR DESIGNATION\*\* - OTHER INDICATIONC - CARBON DIOXIDE SENSORE - ELECTRICH - HUMIDITY SENSORG - INSTALL PROTECTIVE WALL GUARD P - STATIC PRESSURE SENSOR R - REVERSE ACTING S - TEMPERATURE SENSOR T - TEMPERATURE THERMOSTAT

SENSOR WITH PROTECTIVE WALL GUARD \*APPROPRIATE SENSOR WILL BE SIGNIFIED





### MECHANICAL SYMBOLS

	PRESSURE/TEMPERATURE PORT, (P/T PORT)		
$\sim$	WATER PRESSURE REDUCING/REGULATING VALVE (PLAN VIEW)		RECTANGULAR DUCT SUPPLY AIR ELBOW UP/DOWN
·€	WATER PRESSURE RELIEF VALVE (PLAN VIEW)		RECTANGULAR DUCT RETURN/EXHAUST AIR ELBOW UP/DOWN
	GAS SHUTOFF COCK		<u>RECTANGULAR MITERED ELBOW; RADIUS (R) = 0"</u> ALL MITERED ELBOWS ARE TO CONTAIN TURNING VANES UNLESS OTHERWISE NOTED. REFER TO PROJECT
	LUBRICATED PLUG VALVE STEAM PRESSURE REDUCING VALVE		SPECIFICATIONS FOR CONSTRUCTION DETAILS.
$\Phi$			
			RECTANGULAR DUCT ELEVATION TRANSITION. APPROPRIATE ANGULAR DIMENSIONS TO BE COORDINATED BY THE CONTRACTOR
	DOUBLE CHECK VALVE, BACKFLOW ASSEMBLY		
$\frac{1}{2}$	DOUBLE CHECK VALVE, PRESSURE REDUCING BACKFLOW ASSEMBLT		RECTANGULAR DUCT TOP OR BOTTOM TRANSITION
	ATMOSPHERIC VACUUM BREAKER		<u>RECTANGULAR DUCT MULTI SIDE TRANSITION</u> MINIMUM SLOPE = 15° MAXIMUM SLOPE = 45°
,	PRESSURE VACUUM BREAKER		SIDE WITH MAXIMUM SLOPE DETERMINES FITTING LENGTH. REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION DETAILS.
,—X	STEAM TRAP		<u>RECTANGULAR DUCT SINGLE SIDE TRANSITION</u> MINIMUM SLOPE = 15° MAXIMUM SLOPE = 45° REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION DETAILS.
<u>}</u>	BLIND FLANGE		RECTANGULAR TO SPIRAL DUCT TRANSITION REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION DETAILS.
HHS	HEATING HOT WATER SUPPLY		OVAL TO SPIRAL DUCT DIMENSION DESCRIPTION
– — -HHR- — –	HEATING HOT WATER RETURN		OVAL TO SPIRAL DUCT TRANSITION SHOWN. ALL SIZES SHOWN IN IN IN INCHES, UNLESS OTHERWISE NOTED.
— — — CHWS— —	CHILLED WATER SUPPLY		24/16 = FLAT OVAL DUCT 24" WIDE WITH 16" DIAMETER SIDES
	CHILLED WATER RETURN	$\bigotimes$	
NP	NON-POTABLE WATER		
	CHILLED BEAM WATER SUPPLY		
— CBWR—	CHILLED BEAM WATER RETURN		SPIRAL DUCT ELEVATION TRANSITION. APPROPRIATE ANGULAR DIMENSIONS TO BE COORDINATED BY THE CONTRACTOR.
HPS	HEAT PUMP LOOP SUPPLY		
– — -HPR- — –	HEAT PUMP LOOP RETURN		STANDARD RECTANGULAR ELBOW; RADIUS (R) = DUCT DIAMETER
MPS	MEDIUM PRESSURE STEAM SUPPLY	P P P P	REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION DETAILS.
LPS	LOW PRESSURE STEAM SUPPLY	101US	
SC	STEAM CONDENSATE	24"Ø	<u>STANDARD SPIRAL ELBOW; RADIUS (R) = 1.5 x DUCT DIAMETER</u> REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION DETAILS.
R	IN-FLOOR RADIANT PIPING	H PR	
$\times \times \times$	PIPE WITH HEAT TRACING	OILS,	SPIRAL MITERED ELBOW; RADIUS (R) = $0$ "
CS	CONDENSER WATER SUPPLY		ALL MITERED ELBOWS ARE TO CONTAIN TURNING VANES UNLESS OTHERWISE NOTED. REFER TO PROJECT SPECIFCATIONS FOR
- — -CR- — -	CONDENSER WATER RETURN		CONSTRUCTION DETAILS.
RL	REFRIGERANT LIQUID	PLAIN PLAIN BEVEL	ED
– – –RS– – –	REFRIGERANT SUCTION		
RG	REFRIGERANT HOT GAS		MAIN TO BRANCH TAKEOFFS FOR DUCT INSTALLATIONS SERVING MULTIPLE AIR DEVICES, INSTALL
ILS	ICE LOOP WATER SUPPLY	AIR FLOW	AIR DEVICES. SEVERAL TYPES OF TAKEOFFS ARE AVAILABLE, SELECT THE TAKEOFF AS INDICATED ON THE PLAN DRAWINGS
- — -ILR- — -	ICE LOOP WATER RETURN		*TAPS MAY BE UTILIZED WITH VARIOUS TAKEOFF ANGLES OTHER THAN 90 DEGREES FROM THE MAIN. REFER TO PLANS FOR INDICATION.
PC	PUMPED CONDENSATE		
GC	GRAVITY CONDENSATE DRAIN	TAP TAP MOUT TAP	Ή
AV	ATMOSPHERIC VENT	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
	<u>METAL DUCT</u> REFER TO PROJECT SPECIFICATIONS FOR DUCT INSTALLATION REQUIREMENTS. DIMENSIONS SHOWN INDICATED FREE AREA, INSIDE DUCT MEASUREMENTS. DUCT SIZE INDICATED IN INCHES WITH SHOWN DIMENSION INDICATED FIRST.	WxH W+2 W+2 + S 1" DUCT LINEF	ACOUSTICAL BOOTS NOT ATTACHED TO EQUIPMENT, AIR DEVICES, OR OTHERWISE INDICATED ON THE CONSTRUCTION DRAWINGS SHALL BE INSTALLED AS HIGH AS POSSIBLE TO MINIMIZED NOISE TRANSFERRED BETWEEN SPACES. IN MOST CASES, ACOUSTICAL ELBOWS WILL NOT BE TAGGED OR LABELED AS AN ACOUSTICAL ELBOW (AE), BUT THEIR INTENDED USE SHALL INFER THE APPROPRIATE CONSTRUCTION DIMENSION.
	ACCOUSTICALLY LINED DUCT REFER TO PROJECT SPECIFICATIONS FOR DUCT INSTALLATION		
*****	REQUIREMENTS. DIMENSIONS SHOWN INDICATED FREE AREA, INSIDE DUCT MEASUREMENTS.	GENERAL NOTE	<u>s</u>
		1. CONTRACTOR SHA TRADES DURING C	ALL BE RESPONSIBLE FOR COORDINATION OF THE WORK WITH OTHER CONSTRUCTION. REFER TO DIVISION 9 SPECIFICATIONS FOR
		LISTED CONSTRUC ITEMS SHALL BE S	CTION FINISHES OF EXPOSED EQUIPMENT, DUCT, PIPE, ETC. UNLISTED UBMITTED TO THE PROJECT ARCHITECT FOR CLARIFICATION. ANY DUCT,
"OR"	DUCT MOUNTED AIR VOLUME BALANCING DAMPER	TO BE PAINTED AN	ID SHALL THEREFORE BE THOROUGHLY CLEANED AND PREPARED UNLESS
	INSTALLATION DETAILS. AS SYMBOLIZED WITH OR WITHOUT	2 CONTRACTOR SH	D.
"OR" BDD DD	NOTATION.	AND EXTERIOR EL	EVATION PLANS.
	DUCT MOUNTED COUNTER WEIGHTED BACK DRAFT DAMPER REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION AND	3. CONTRACTOR SHA PERFORMANCE RE	ALL REFER TO EQUIPMENT SCHEDULE SHEETS FOR TAGGED EQUIPMENT EQUIREMENTS AND CONSTRUCTION DOCUMENTS FOR MINIMUM INSTALLATION
		REQUIREMENTS.	
FD FD-2B	FIRE DAMPER FD INDICATES FIRE DAMPER; ADDITIONAL DESIGNATIONS MAY	4. CONTRACTOR IS P EQUIPMENT AS NE	ECESSARY FOR CONNECTION OF THE INDICATED DUCT AND PIPE SIZES.
	RATING OF THE FIRE DAMPER, FOR 2 OR 3 HOUR DAMPERS, AND/OR THE LETTER INDICATING THE TYPE OR STYLE OF A	5. UNLESS OTHERWI OF THE RETURN AI	SE INDICATED, ALL ABOVE CEILING SPACE(S) SHALL BE CONSIDERED PART R PLENUM. THEREFORE ALL PIPE, DUCT, CONTROL DEVICES, WIRING, AND
"OR"	FIRE DAMPER, OF TYPES A, B, OR C.	EQUIPMENT SHALL	BE RATED AND ACCEPTABLE FOR INSTALLATION IN A PLENUM SPACE.
	WALL MOUNTED SMOKE DAMPER REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION AND INSTALLATION DETAILS.	6. WHENEVER POSS INSTALLED A MININ INSTALLATION COI THE BOTTOM OF H	IBLE, DUCT, PIPING, CONTROL DEVICES, AND EQUIPMENT SHALL BE MUM OF 8" ABOVE THE FINISHED CEILING ELEVATION TO AVOID NFLICTS WITH CEILING MOUNTED DEVICES AND UNLESS OTHERWISE NOTED, IVAC EQUIPMENT SHALL BE A MAXIMUM OF 24" ABOVE CEILING ELEVATIONS
F/SD F/SD	WALL MOUNTED COMBINATION FIRE/SMOKE DAMPER REFER TO PROJECT SPECIFICATIONS FOR CONSTRUCTION AND INSTALLATION DETAILS.	AND UNOBSTRUCT MAINTENANCE PU 7. INSTALL METAL SL	EED BT DUCT, PIPING, EQUIPMENT AND ETC. FOR SERVICE AND RPOSES. EEVES THROUGH WALL PENETRATION CONSISTING OF UNIFORM
	MOTOR OPERATED DAMPER		IATERIALS. INSTALL FIRE CAULKING AS NECESSARY, REFER TO THE SHEETS FOR DESIGNATION OF FIRE AND SMOKE RATED WALL ASSEMBLIES. N 07 SPECIFICATIONS FOR FIRE STORDING MATERIAL DETAILS.
	REFER TO SPECIFICATION SECTION 230900 FOR INSTALLATION REQUIREMENTS. DAMPERS TO BE SIZED TO INSIDE DUCT DIMENSIONS. DAMPER SHALL BE OPPOSED BLADE UNLESS OTHERWISE NOTED.	8. WHEN UTILIZING S HANGERS, ATTAC FLANGE OF THE S	TRUCTURAL STEEL FOR SUPPORT OF DUCT, PIPE AND EQUIPMENT HMENT TO THE STRUCTURAL STEEL SHALL OCCUR AT THE TOP OR BOTTOM TRUCTURAL FLEMENT
	DUCT OR EQUIPMENT MOUNTED TEMPERATURE SENSOR	9. SYMBOLS AND ABI	BREVIATIONS ON THIS SHEET MAY NOT ALL BE USED WITHIN THIS SET OF
H		10. A 48" LONG SECTI SHALL BE INTERN	ON (MIN.) OF SUPPLY AIR DUCTWORK DOWNSTREAM OF VVR TERMINAL UNIT ALLY LINED WITH DUCT LINER PER THE PROJECT MANUAL. SOME DUCTWORK
	DUCT OR EQUIPMENT MOUNTED HUMIDITY SENSOR	SHOWN ON TE PL 11. THE CONNECTION OF THE VVR TERM	ANS ARE TO BE INTERNALLY LINED THE ENTIRE LENGTH.
P	DUCT OR EQUIPMENT MOUNTED CARBON DIOXIDE SENSOR	12. ALL EXPOSED DU COMPATIBLE GAL	CTWORK NOTED TO BE A FIELD PAINTED SHALL BE PROPERLY TREATED WITH A VANIZED STEEL PRIMER AND CLEANED IN ORDER FOR THE PAINT TO BE APPLIED.
	DUCT OR EQUIPMENT MOUNTED DIFFERNTIAL PRESSURE SENSOR AS COMPARED WITH ATMOSPHERIC CONDITIONS	13. AIR TRANSFER W/ SIDE OF THE WAL	ALL OPENINGS SHALL BE LOCATED SO THAT THERE IS A MINIMUM 8" CMU ON EITHER L OPENING AND 16" FROM ANY BEAM SUPPORTED ON THE WALL.
	DUCT OR EQUIPMENT MOUNTED DIFFERNTIAL PRESSURE SENSOR MONITORING INTERNAL SYSTEM LOSS		
	DUCT OR EQUIPMENT MOUNTED LOW TEMPERATURE SENSOR		
	DUCT OR EQUIPMENT MOUNTED HIGH TEMPERATURE SENSOR		





UNIT		F	POWER	1	cc		OOR NG UNIT	
ATING TUH	MODEL NUMBER	BREAKER	RLA	ELEC SERV	AIRFL CFI	LOW M	MODEL NUMBER	SEER
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s,000 4,000	F1X09AXVJU	15 AMP 20 AMP	8.5	208/1	1,083-1,1	103 F 05 R	X18AXVJU	20.3
,600	FTX24AXVJU	20 AMP	18.25	208/1	1908	R	X24AXVJU	20.0
800	FTX30NVJU	20 AMP	18.25	208/1	2,274-2,5	28 F	X30NMVJUA	17.5
ON WALL. NTRACTOR DENSER OR ACKET AS	<ol> <li>EVAPOR FILTER I</li> <li>INSTALL</li> <li>MINIMUN</li> <li>DISCONI</li> </ol>	ATOR SEC DRIER. REFRIGER I THREE FA	TION COMF ANT PIPING N SPEED S CH BY DIVI	PLETE WITH CC G PER MANUFA SETTINGS AND ISION 26-ELECT	NIL, THERMO CTURER'S I AUTO SETT RICAL.	DSTATIC EX REQUIREMI FING.	PANSION VAL	₋ve, and
VINI-SPLIT COIL UNIT	HEAT PUMP	UNIT		CC		DOR NG UNIT		
IEATING	MODEL	ELEC	UNIT	BREAKFR	MCA	ELEC	MODE	L
3TUH	NUMBER	SERV	MARK			SERV	NUMBE	:K
0-27,000 0-27,000	FTXS24WVJU9 FTXS24WVJU9	_ 208/1	CU-40	35	30.8	208/1	5MXS48WV	VJD9
S	6. EVAPO AND FIL	RATOR SEC	CTION COM	IPLETE WITH C	OIL, THERM	OSTATIC E	XPANSION VA	LVE,
NTRACTOR	7. INSTAL	L REFRIGE	RANT PIPIN	NG PER MANUF	ACTURER'S	REQUIREN	IENTS.	
NDENSER E OR RACKET AS	8. MINIMU 9. DISCON	M THREE F	AN SPEED	SETTINGS ANE	) AUTO SET TRICAL.	LING.		
		(	115 〕 ① ①	EX-UV		——————————————————————————————————————	117 ```````````````````````````````````	Ð
105		Ţ	ب ```````` 116	۲ ۲C-20			(† , ' , ' , ' , ' , ' , ' , ' , ' , ' , '	) (†)
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				3		\		

ECHANICAL PLAN GENERAL NOTES
<ul> <li>ALL PIPING AND VALVES SHALL BE CONCEALED ABOV DROP CEILING, WHEN NO DROP CEILING IS PRESENT ALL PIPING AND VALVES SHALL BE EXPOSED ALONG THE INTERIOR AND EXTERIOR WALLS. ALL EXPOSED PIPING IN FINISHED SPACES TO BE PROTECTED WITH WHITE PVC JACKET.</li> <li>REFER TO THE SPECIFICATIONS FOR REQUIREMENTS RELATED TO EQUIPMENT QUALITY, CONSTRUCTION AND FINISH OF MATERIALS.</li> <li>ARRANGE PIPING, ETC. TO ALLOW FOR EASY ACCESS TO COILS, VALVES AND CONTROLS. KEEP AREAS ADJACENT TO ACCESS PANELS FREE AND CLEAR OF ANY OBSTRUCTIONS.</li> <li>MECHANICAL CONTRACTOR IS RESPONSIBLE FOR HIS RESPECTIVE WORK FOR REPAIRING AND PATCHING T MATCH EXISTING SURFACES, SIDEWALKS, STREETS, FLOORS, WALLS, ROOFS, CEILING AND PAVEMENT.</li> <li>INSTALL WALL THERMOSTATS, TEMPERATURE SENSORS, HUMIDISTATS, ETC. 44" ABOVE THE FINISH FLOOR IN ACCORDANCE WITH ADA REQUIREMENTS. COORDINATE ALL REQUIRED WALL, ROOF AND FLOOI OPENINGS (BOTH DIMENSIONS AND LOCATIONS) WIT ALL OTHER TRADES.</li> <li>COORDINATE MECHANICAL SYSTEM INSTALLATION WITH STRUCTURE, FIRE PROTECTION AND LIGHTING LAYOUT.</li> <li>PROVIDE ALL NECESSARY TRANSITIONS TO EQUIPME FROM SIZES SHOWN ON PLAN.</li> <li>EXISTING MECHANICAL SYSTEMS SHOWN AS DOTTED LINES AND FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS BEFORE STARTING CONSTRUCTION.</li> </ul>
L NOTES MAY NOT BE INDICATED ON THIS SHEET)
D. DESCRIPTION
REFRIGERANT SUCTION AND DISCHARGE L TO MINI-SPLIT CONDENSING UNIT. ALL PIPIN PENETRATING THE WALL OR ROOF SHALL E SEALED WATER TIGHT. REFRIGERANT PIPIN SHALL BE INSULATED THE FULL LENGTH. REFRIGERANT PIPING ON THE EXTERIOR OF THE BUILDING SHALL BE PROTECTED WITH SELF-SEALING JACKET. ALL EXPOSED INTEL PIPING IN FINISHED SPACES TO BE PROVID WITH WHITE PVC JACKET. LINE SIZE COPPER CONDENSATE PIPING FF INDOOR EVAPORATOR TO GRADE OUTSIDE TERMINATE CONDENSATE PIPING A MINIMU OF 18" ABOVE GRADE. COORDINATE EXACT LOCATION WITH EXISTING UTILITIES, EQUIPMENT AND GRADE. OUTDOOR CONDENSING UNIT FOR INDOOR SPLIT SYSTEM SHALL BE INSTALLED ON CONCRETE HOUSEKEEPING PAD. COORDIN EXACT LOCATION WITH EXISTING FIELD CONDITIONS. COORDINATE INSTALLATION V MANUFACTURER'S INSTALLATION REQUIREMENTS. INSTALL THE TOP OF THE INDOOR WALL MOUNTED EVAPORATOR AT 8'-0" AFF. EXACT MOUNTING LOCATION SHALL BE COORDINA WITH THE OWNER AND THE EXISTING FIELD CONDITIONS PRIOR TO INSTALLATION. INDO UNIT SHALL BE LABELED WITH THE ROOM NUMBER WHERE THE UNIT IS LOCATED. FIE VERIEV(COOPDINATE THE EXACT POOM

ROOM LEGEND - FIRST FLOOR		
ROOM NO.	ROOM NAME	AREA (SF
		<b>X</b> -
101	CORRIDOR	600 SF
102	CORRIDOR	558 SF
103	CORRIDOR	434 SF
104	CORRIDOR	1000 SF
105	CORRIDOR	612 SF
106	CORRIDOR	576 SF
107	CLASSROOM	863 SF
108	CLASSROOM	863 SF
109	CLASSROOM	863 SF
110	CLASSROOM	864 SF
111	CLASSROOM	863 SF
112	CLASSROOM	863 SF
113	CLASSROOM	863 SF
114	CLASSROOM	864 SF
115	CLASSROOM	863 SF
116	CLASSROOM	863 SF
117	CLASSROOM	863 SF
118	CLASSROOM	864 SF
119	KINDERGARTEN	1004 SF
120	KINDERGARTEN	1004 SF
121	BOILER RM	424 SF
122	GIRLS TOILET	186 SF
123	BOYS TOILET	220 SF
124	JANITOR	128 SF
125	MPR STORAGE	322 SF
126	KITCHENETTE	155 SF
127	MULTI-PURPOSE RM	4852 SF
128	STAFF RM4	156 SF
129	GIRLS TOILET	287 SF
130	BOYS TOILET	355 SF
131	JANITOR	60 SF
132	TOILET	18 SF
133	LIBRARY	516 SF
134	TOILET	22 SF
135	TOILET	22 SF
136	WORK RM	161 SF
136A	Room	109 SF
137	TEACHERS LOUNGE	153 SF
138	RECEPTION	171 SF
139	OFFICE	120 SF
140	TOILET	18 SF
141	CLINIC	204 SF
142	CLOSET	18 SF
143	TOILET	18 SF
-	1	-

VERIFICATION NOTE

WORK.

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES AND ALL EXISTING FIELD CONDITIONS BEFORE STARTING CONSTRUCTION. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF CONDITIONS. SHOULD DIFFERENT CONDITIONS BE ENCOUNTERED, CONTACT THE ARCHITECT BEFORE PROCEEDING WITH

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WEST PARK

HVAC

ELEMENTARY:

