SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESC
AAD	AUTOMATIC AIR DAMPER	ipi	CONNECTION - TOP	(DBL)	DOUBLE
ACC	AIR-COOLED CONDENSING UNIT		CONNECTION - BOTTOM	20/10	DUCTSE
AD	ACCESS DOOR	+ 			DUCTOR
AFF	ABOVE FINISHED FLOOR			20/10	DUCISE
AHU	AIR HANDLING UNIT	₽	REDUCER	• • • • • • • • • • • • • • • • • • •	DUCT SE
BBD	BOILER BLOW DOWN]	CAP OR PLUG		DUCT SE
BD	BACKDRAFT DAMPER	с	ELBOW DOWN		ACOUST
CA	COMPRESSED AIR	. — ю	ELBOW UP		FLEXIBLE
CD	COOLING COIL CONDENSATE DRAIN		TEE OUTLET - UP		
CFM	CUBIC FEET PER MINUTE				FLEXIBLE
CHWR	CHILLED WATER RETURN			FC	
CHWS	CHILLED WATER SUPPLY		UNION		FIRE DA
CR	CONDENSER WATER RETURN		GATE VALVE		
CS	CONDENSER WATER SUPPLY	δ	BALL VALVE		SMOKE
CW	DOMESTIC COLD WATER		BALANCING VALVE	۲	JMORE
D (5)		<u> </u>	STRAINER		
(E)		¥			СОМВІ
EA			STRAINER WITH BLOW-DOWN	٢	
		K			VOLUM
		I	BUTTERFLY VALVE		VOLUMI
			BUTTERFLY CONTROL VALVE, PNEUMATIC 2-WAY		DAMPE
FIIH		0.18 13			DAMPE
 F&T			GLOBE VALVE		
FCU	FAN-COIL UNIT			$\dashv ___$	AUTOM
FPM	FEET PER MINUTE				
FT	FIN-TUBE		IRIPLE DUTY VALVE	AAD	
GC	GENERAL CONTRACTOR	I∳	GAS COCK, PLUG VALVE	_	RACKE
GR	GLYCOL RETURN		UNDERCUT DOOR 1"	BDD	
GS	GLYCOL SUPPLY	ф	LOUVERED DOOR W/ SQ. FT. OF FREE AREA		
НС	HVAC CONTRACTOR	А м	AIR VENT - MANUAL		BLAST G
HHWR	HEATING HOT WATER RETURN	ΔΑ		'BG	
HHWS	HEATING HOT WATER SUPPLY				
HP	HEAT PUMP		FLANGE	12X10	AIR DUC
HPC	HIGH PRESSURE CONDENSATE	└────ਲ਼────	CONTROL/SOLENOIND VALVE, ELECTRIC 2-WAY		SECONE
HPS	HIGH PRESSURE STEAM	│────⋩─────	CONTROL VALVE, ELECTRIC 3-WAY		
LF	LINEAR FOOTAGE OF FIN-TUBE RADIATION			10/20 7	
LPC	LOW PRESSURE CONDENSATE		CONIROL VALVE, FNEUMATIC 2-WAT		MULTI-B
LPG	LIQUEFIED PROPANE GAS		CONTROL VALVE, PNEUMATIC 3-WAY	× •	TUDNINI
LPS	LOW PRESSURE STEAM		RELIEF / SAFETY VALVE		
МВН	1,000 BTU/HR	T			EXISTING
MC	MECHANICAL CONTRACTOR	X	PRESSURE REDUCING VALVE	P	POINT C
MPC	MEDIUM PRESSURE CONDENSATE	₽∨	VACUUM BREAKER	R	POINT C
MPS	MEDIUM PRESSURE STEAM		FLEXIBLE PIPE CONNECTOR		AIR FLO
MRD	MONOFLO FITTING DOWN – HHWR		EXPANSION COMPENSATOR W/ GUIDES	R	FILTER
MSD	MONOFLO FITTING DOWN – HHWS				
MUW	MAKE-UP WATER				TRANSIT
NC	NORMALLY CLOSED	X	PIPE ANCHOR		
NG	NATURAL GAS		PIPE GUIDE		HIIMIDIE
NO		т о	THERMOSTATIC TRAP	k	
NTS		FT D	FLOAT & THERMOSTATIC TRAP	RISE	
OA		BT	BUCKET TRAP		RISE IN E
PC					
PD				┥	DROP IN
rHWK			THERMOMETER		
rhw5			WELL		SQUARE
КА 			PRESSURE GAUGE	©—	ROUND
<u>впс</u>		(\land)			SQUARE
RII		Ğ.	WITH 1/4" NEEDLE VALVE		SIIPPIV
RSI				I I	JUITLI
RTII			PRESSURE GAUGE		SUPPLY
RV	ROOF VENT	YY	WIIN 1/4 NEEDLE VALVE	1-WAY 2-WAY 3-WAY	
SA	SUPPLY AIR		PNEUMATIC (CONTROL) TUBING		CEILING
SHWR	SECONDARY HEATING HOT WATER RETURN		BUTTERFLY VALVE WITH PNEUMATIC AND MANUAL OPERATORS	300 CFM	
SHWS	SECONDARY HEATING HOT WATER SUPPLY	XX	PIPING		CEUNO
SSI	SPLIT SYSTEM INDOOR SECTION (EVAPORATOR SECTION)	xx	PIPING BELOW GRADE	10"x10", G-3_/,	
SSO	SPLIT SYSTEM OUTDOOR SECTION (CONDENSING UNIT)			300 CFM	
TC	TEMPERATURE CONTROLS CONTRACTOR		BASE MOUNIED FUMP	10"x8", R-2 300 CFM	SUPPLY WITH SI7
UH	UNIT HEATER		IN-LINE PUMP	, <u> </u>	
UV	UNIT VENTILATOR			10"x8", G-2	RETURN
-	VENT		ATTENUATOR	<u>}</u> 300 CFM [↓]	WITH SIZ
V	WATER-TO-AIR HEAT PUMP		AIR TERMINAL UNIT WITH		AIR FLO
VWAHP			SOUND ATTENUATOR	L	ACOUST
V WAHP WWHP	WATER-TO-WATER HEAT PUMP			— , , I	
V WAHP WWHP	WATER-TO-WATER HEAT PUMP		AIR TERMINAL UNIT WITH REHEAT COIL	L1	
V WAHP WWHP	WATER-TO-WATER HEAT PUMP		AIR TERMINAL UNIT WITH REHEAT COIL	L1 L2	1 INCH ACOUST 2 INCH
V WAHP WWHP	WATER-TO-WATER HEAT PUMP		AIR TERMINAL UNIT WITH REHEAT COIL AIR TERMINAL UNIT	L1 L2 PL1	1 INCH ACOUST 2 INCH ACOUST LINING

HVAC SYMBOL	S LIST						SYMBOLS GENERAL NOTES:
		SYMBOL	DESCRIPTION		SYMBOL	DESCRIPTION	1) VALVE AND DAMPER ACTUATOR TYPES (ELECTRIC OR PNEUMATIC) WHICH
				***			ARE INDICATED IN HVAC TEMPERATURE CONTROL DRAWINGS SHALL
		24X12		1-1/2 TIMES BRANCH SIZE			SUPERSEDE TYPE INDICATED ON ALL OTHER HVAC DRAWINGS.
SECTION - SUPPLY			EXHAUST AIR				HVAC CONTRACTOR GENERAL NOTES:
SECTION - RETURN/EXHAUST		- VD	TAKEOFFS	VD			
SECTION - ROUND DUCT IN INCHES						OPEN/CLOSED	A. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY EXISTING
SECTION - FLAT OVAL DUCT IN INCHES		24X12		1-1/2 TIMES BRANCH SIZE		START/STOP	DEMOLITION AND NEW WORK.
JSTIC THERMAL LINING			SUPPLY / RETURN / EXHAUST AIR			ENABLE/DISABLE	B. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE AND REPLACE
BLE DUCTWORK	- FILLER		TAKEOFFS			TEMPERATURE SENSOR (DUCT OR PIPE MOUNTED)	EXISTING CEILINGS, UNLESS OTHERWISE NOTED ON THE ARCHITECTURAL
					H	HUMIDITY SENSOR (DUCT MOUNTED)	BUILDING. THE EXISTING CEILINGS SHALL BE REMOVED IN A MANNER TO AVOID
BLE CONNECTION		14"Ø			F	FLOW TRANSMITTER	DAMAGE TO THE CEILING SYSTEMS. STORAGE OF CEILING SYSTEM
	ļ — ļ		SUPPLY AIR			PRESSURE TRANSMITTER	CONTRACTOR. THE STORAGE OF ALL MATERIAL SHALL BE IN AREAS OR
AMPER			TAKEOFFS		A A A A A A A A A A A A A A A A A A A	DIFFERENTIAL PRESSURE TRANSMITTER	FOR ANY DAMAGED OR LOST MATERIAL WHILE IN STORAGE. AFTER
						ELECTRIC/PNEUMATIC TRANSDUCER	COMPLETION OF ALL DEMOLITION OR NEW WORK, THE CONTRACTOR SHALL
E DAMPER		Г <u>г</u>		\sim			
		14"Ø					C. DEMOLITION DRAWINGS SHOW MAJOR EQUIPMENT, PIPING, AND DUCTWORK REMOVALS. THE INTENT IS NOT TO IDENTIFY ALL MISCELLANEOUS PIPING, PIPING
			TAKEOFFS				ACCESSORIES, DUCTWORK, DUCTWORK ACCESSORIES, SUPPORTS, CONTROLS,
SINATION FIRE AND SMORE DAMPER	۲	VD		VD		SPACE THERMOSTAT	CONTROL ACCESSORIES, CONTROL WIRING, CONDUIT, AND PREDMATIC CONTROL TUBING TO BE DISCONNECTED AND REMOVED, BUT IS THE
	└─── ┠ ────┤			8		SPACE TEMPERATURE SENSOR	REQUIREMENT UNDER THIS CONTRACT. NO EQUIPMENT, PIPING, OR DUCTWORK
		24X12		24X12		SPACE CARBON DIOXIDE SENSOR	DRAWINGS.
PER CONTROL, PARALLEL BLADE			SUPPLY AIR	18X12 • • • 12X10 •	CH4	SPACE NATURAL GAS SENSOR	D. ALL EQUIPMENT INDICATED TO BE TURNED OVER TO THE OWNER SHALL BE
PER CONTROL, OPPOSED BLADE			TAKEOFFS	6X12		SPACE CARBON MONOXIDE SENSOR	DISCONNECTED AND REMOVED FROM THE EXISTING SYSTEMS AND DELIVERED
		20X12			∇_{G}	SPACE SENSOR WITH GUARD	BUILDING AS SELECTED BY THE OWNER. IT WILL BE THE RESPONSIBILITY OF THE
MATIC AIR DAMPER				T-1	(H)	SPACE HUMIDISTAT	CONTRACTOR TO REPAIR ANY EQUIPMENT DAMAGED DURING REMOVAL AND DELIVERY, ANY DAMAGE TO EQUIPMENT PRIOR TO DISCONNECTING SHOULD
		24X12	SUPPLY/RETURN				BE REPORTED TO THE OWNER'S REPRESENTATIVE. IF NOT REPORTED, THE
	AAD		TAKEOFFS W/				CONTRACTOR TAKES FULL RESPONSIBILITY FOR REPAIRS TO THE EQUIPMENT.
DRAFT DAMPER			REGISTER/GRILLE/ DIFFUSER				E. BEFORE DISCONNECTING, REMOVING, OR SERVICING ANY AIR
	BDD					ELECTRIC ACTUATOR	EQUIPMENT OR SYSTEMS CONTAINING REFRIGERANTS, THE
GATE				VD	VSD VFD	VARIABLE SPEED / FREQUENCY DRIVE	LATEST ADOPTED RULES AND REGULATIONS BY THE UNITED STATES
	BG		EXHAUST AIR		C C	COOLING COIL	TECHNICIAN PERFORMING THE WORK SHALL BE CERTIFIED BY AN EPA
			END OF MAIN		HC	HEATING COIL	APPROVED CERTIFYING AGENCY OR ORGANIZATION.
UCT				VD	G	GAS FURNACE	F. ALL DUCTWORK, PIPING, AND CONDUIT PENETRATIONS THROUGH RATED WALLS
FIGURE IS DUCT WIDTH/TOP, ND FIGURE IS DUCT DEPTH)				TTIVD	н	HUMIDIFIER	SPECIFICATION. REFER TO CODE ANALYSIS DRAWING FOR ALL RATED WALL
			SUPPLY/RETURN			ALARM	LOCATIONS. ALL FLOORS SHALL BE CONSIDERED RATED.
			EXHAUST AIR END OF MAIN			STATUS	G. UNLESS SHOWN ON THE ARCHITECTURAL DRAWINGS, IT IS THE RESPONSIBILITY
			BRANCH TAKEOFFS	VD '			OF THIS CONTRACT TO PATCH AND FINISH ALL EXISTING DUCTWORK OR PIPE PENETRATIONS THROUGH FLOORS, ROOFS, INTERIOR WALLS, AND EXTERIOR
							WALLS AFTER DEMOLITION WORK. IN ADDITION, ALL NEW PENETRATIONS SHALL
NG VANES		-		TT			NOT LIMITED TO, EQUIPMENT, CURBING, DUCTWORK, PIPING, CONTROLS, ETC.
NG WORK TO BE REMOVED (HATCHED)			90° ELBOW		R	RELAY	PATCHING AND FINISHING SHALL MATCH EXISTING CONSTRUCTION
OF CONNECTION			R/W=1.5		\oslash	PRESSURE GAUGE	
OF DISCONNECTION					FZ	FREEZE-STAT	H. IT IS NOT THE INTENT OF THE DRAWINGS TO SHOW ALL AIR VENTS AND DRAINS IN THE PIPING SYSTEMS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO
OW SENSOR						DIGITAL INPUT (TO BUILDING MANAGEMENT SYSTEM)	PROVIDE AIR VENTS AT ALL SYSTEM HIGH POINTS AND AT AREAS WITHIN THE
], λ				DIGITAL OUTPUT (FROM BUILDING MANAGEMENT SYSTEM)	PREVENT PROPER VENTING OR OPERATION OF THE SYSTEMS. DRAINS SHALL BE
			R/W=1.5			ANALOG OUTPUT (FROM BUILDING MANAGEMENT SYSTEM)	PROVIDED AT ALL LOW POINTS WITHIN THE PIPING SYSTEM TO FACILITATE COMPLETE DRAINING OF THE SYSTEM .
SITION SQUARE TO ROUND				I			
						ANALOG INPUT (TO BUILDING MANAGEMENT SYSTEM)	LOOPS IN PIPING SYSTEM PER INDUSTRY STANDARDS.
DIFIER DISPERSION TUBE		\sim	90° ELBOW	TT			
			WITH TURNING	4			
N DUCT			VANES		SF	SPEED FEED BACK	
					ES	END SWITCH	
IN DUCT				18X8	PF	POSITION FEEDBACK	
			SPLIT OFF	Э	~~	TRAVERSE AVERAGING SENSOR	
RE CEILING DIFFUSER (4 WAY)			(PLAN VIEW)	18X16 18X8	•	PROBE SENSOR	
D CEILING DIFFUSER						FREEZE STAT SENSOR	
RE OR RECTANGULAR CEILING GRILLE		20X10 20X10				·	
Y REGISTER, RETURN OR EXHAUST GRILLE		20X10	UP OR DOWN	20X10			
			AIR TERMINAL UNIT-DU	CTWORK	1		
Y DIFFUSER, 1-WAY, 2-WAY, 3-WAY			U - UNIT TYPE MAX = MAXIMUM CFM	١			
			AIR TERMINAL UNIT-DU	CTWORK	-		
IG DIFFUSER NECK SIZE, TYPE, & CFM			U - UNIT TYPE GPM = GALLONS PER <i>N</i>	AIN			
				٨	-		
		MAX	TERMINAL UNIT				
		U MIN FAN					
Y REGISTER			FAN = FAN CFM	F/M			
SIZE, TYPE, & CFM		TYPE					
N OR EXHAUST GRILLE		COIL SIZE CLING GPM	COIL SIZE = COIL LENG	TH G GPM			
SIZE, TYPE, & CFM		HING GPM	HTNG GPM = HEATING	GPM			
OW					1		
JSTIC/THERMAL DUCTWORK LINING -			XX = AIR FLOW VALUE	E (CFM)			
H THICK ISTIC/THERMAL DUCTWORK LINING -			1				
H THICK JSTIC/THERMAL DUCTWORK PLENUM		4					
		4					
G - 2 INCH THICK]					

AR	50 FRC EWBUR TE FA	DNT ST GH, N L (800 X (845	201 GINEE REET,)) 27 ²)) 567	N.CC RING = 1 SUITE (ORK 4-9000 7-9614	202 12550
	DESCRIPTION				
REVISIONS	NO. DATE BY				
		ATE OL	F NEW R. 6 07579 25510	JORA A CAR	le t
	ATRAL SCHOOL DISTRICT	OPEN DOOR SBHC /	SCHOOL HEALTH OFFICE	3UTUCK MIDDLE/HIGH SCHOOL	ED # 13-11-01-04-0-002-020

SCHOOL HEALTH OF	WEBUIUCK MIJULE/HIGH SED # 13-11-01-04-0-00						
) BKM	CHECKED JJM						
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	OPEN DOOR SBH						

	WEBUTUCK HEALTH SUITE OUTSIDE AIR CALCULATIONS										
					TOTAL						
				Occupant	OCCUPANCY	O.A. PER	O.A. PER				
Equipment			TOTAL	Density	FOR	PERSON	SQ. FT.	Vbz		Voz=Vot	
Тад	Space	Occupancy Classification	SQ. FT.	#/1000sq.ft.	VENTILATION	(CFM)	(CFM)	(CFM)	Ez	(CFM)	Provided OA
RTU-7	Exam 1	Office Space	98	5	2	5	0.06	16	0.8	20	75
RTU-7	Exam 2	Office Space	129	5	2	5	0.06	18	0.8	22	75
RTU-7	M.A.	Reception Area	193	30	6	5	0.06	42	0.8	52	75
RTU-7	Wating 100	Main Entry Lobby	56	10	3	5	0.06	18	0.8	23	75
RTU-8	Nurse	Office Space	186	5	3	5	0.06	26	0.8	33	150
RTU-8	BH/Consultant	Office Space	75	5	3	5	0.06	20	0.8	24	50
RTU-8	Assistant	Reception Area	150	30	5	5	0.06	34	0.8	43	100
RTU-8	Waiting	Main Entry Lobby	270	10	4	5	0.06	36	0.8	45	100



GENERAL NOTES:

1. VERIFY ALL DUCT AND PIPE SIZES AND LOCATIONS PRIOR TO DEMOLITION.

DEMOLITION NOTES:

- DI REMOVE EXISTING SUPPLY DIFFUSERS AND ALL ASSOCIATED DUCTWORK TO POINT INDICATED BEFORE HEATING COIL. PREPARE FOR NEW WORK.
- **(D2)** REMOVE EXISTING RETURN GRILLE AND ALL ASSOCIATED DUCTWORK BACK TO DROP FROM ROOFTOP UNIT. PREPARE FOR NEW WORK.

		R	REGISTE	RS, GRIL	LES, A	ND DIFF	USERS				
	MARK	APPLICATION	MATERIAL	TYPE	FINISH	FACE SIZE	DESIGN EQUIP.	REMARKS			
	D1	SUPPLY	STEEL	LAY IN	WHITE	24X24	PRICE SCD				
ſ	G1	RETURN/EA	STEEL	LAY IN	WHITE	24X24	PRICE PDDR				
	G2	RETURN/EA	STEEL	LAY IN	WHITE	-	PRICE 530				
	REMARKS:										



KEY NOTES: (1) RUN DUCTWORK THROUGH JOISTS.

