

Testing, Adjusting and Balancing

Project

Address Architect Mechanical Engineer Contractor Balancing Supervisors Date Job Number

Steamboat Middle School

39610 Amethyst Dr. Steamboat Springs, CO 80487 TAB Associates BG Building Works R&H Mechanical Greg Barnes // Daniel Takacs December 1, 2020 3501







ABBREVIATION INDEX

AHU: Air Handling Unit Motor FLA: Full Load Amperage **RTU:** Roof Top Unit **S.F.:** Service Factor MAU: Make Up Air Unit P.F.: Power Factor FCU: Fan Coil Unit Nom. Eff.: Nominal Efficiency **CRAC:** Computer Room Air Conditioning Unit **RPM:** Revolutions per Minute **VAV:** Variable Air Volume **FPB:** Fan Powered Box **K Factor:** Correction Factor **T1:** Terminal 1 T2: Terminal 2 T3: Terminal 3 **AK:** Area Correction **OD:** Outside Diameter **CUH:** Cabinet Unit Heater **UH:** Unit Heater **ERV:** Energy Recovery Ventilator TDH: Total Dynamic Head ERU: Energy Recovery Unit **PSI:** Pounds per Square Inch **EF:** Exhaust Fan **BV:** Balance Valve **KEF:** Kitchen Exhaust Fan **CS:** Circuit Setter SF: Supply Fan Valve D.P.: Discharge Pressure **RF:** Return Fan Valve S.P.: Suction Pressure **TF:** Transfer Fan **Diff.:** Differential SEF: Smoke Exhaust Fan Design D.P.: Design Differential Pressure

SPF: Stairwell Pressurization Fan Actual D.P.: Recorded Differential Pressure **SP:** Static Pressure Ind.Imp.Dia.: Indicated Impeller Diameter **TSP:** Total Static Pressure in.wc.: Inches of Water **ESP:** External Static Pressure HW: Heating Water **VP:** Velocity Pressure **CHW:** Cooling Water **SA:** Supply Air **CW:** Condenser Water **RA:** Return Air **HX:** Heat Exchanger **OSA:** Outside Air **DX:** Direct Expansion **OA:** Outside Air **EAT:** Entering Air Temperature MA: Mixed Air **LAT:** Leaving Air Temperature **SD:** Supply Diffuser **EWT:** Entering Water Temperature **CD:** Ceiling Diffuser **LWT:** Leaving Water Temperature **SWD:** Sidewall Diffuser **ER:** Exhaust Register **MVD:** Manual Volume Damper **RG:** Return Grille **OBD:** Opposed Blade Damper **CFM:** Cubic Feet Per Minute NAC: No Access FPM: Feet Per Minute NG: Not Given NIC: Not in Contract **E:** Existing



Method of Balancing:

Supply, Return and Exhaust diffusers, grilles and registers were measured with an Alnor Balometer EBT-721, which includes the flow hood, velgrid, pitot tube and airfoil. Heating and Chilled water flow rates were measured with an Alnor Hydronic Manometer HM-680 by obtaining pressure measurements. RPM was measured with a Shimpo tachometer. Amperage and Voltage readings were taken with a Fluke 930 meter.

Instrumentation:

Digital Manometer
Flow hood
Digital Pressure Gage
Tachometer
Digital Volt-Amp Meter
Thermometer

Alnor Balometer EBT-721 Alnor Balometer EBT-721 Alnor Hydronic Manometer HM-680 Shimpo Fluke 930 Alnor Balometer EBT-721

Warranty Information:

This project was completed per TABB Procedural Standards.

The data presented in this report is a record of system measurements and final adjustments that have been obtained in accordance with the current edition of the TABB Procedural Standards for testing, adjusting, and balancing environmental systems. Any variances from design quantities, which exceed TABB tolerances, are noted in the Test-Adjust-Balance Report Project Summary. If a Test-Adjust-Balance Report Project Summary is not issued directly following this cover page, all measurements met the design requirements as specified by the design mechanical engineer.

This project has a one-year guarantee on all Testing, Adjusting & Balancing from the date listed on this cover page.

Greg Barnes Owner/TABB Supervisor <u>greg@certtab.com</u> 720-201-6274



Project Summary

1. Individual Notes, Explanations, and Deficiencies, if exist, are shown underneath the associated equipment.





Table Of Contents

PROJECT: LOCATION: PROJECT #:

STEAMBOAT SPRINGS MIDDLE SCHOOL STEAMBOAT SPRINGS, CO 3501 DATE: 12/1/2020 CONTACT: Brandon Wilson

Table Of Contents

1 Roof Top Unit	1
1.1 (E)RTU-01	1
1.2 (E)RTU-01/VAV-01	1
1.3 (E)RTU-01/VAV-02	2
1.4 (E)RTU-01/VAV-03	
1.5 (E)RTU-01/VAV-04	4
2 Fan Unit	5
2.1 KEF-1	5
2.2 KEF-2	5
3 Hydronic Pump	6
4 3501 STEAMBOAT SPRINGS MIDDLE SCHOOL REPORT DWGpdf	7



PROJECT: STEAM LOCATION: STEAM PROJECT #: 3501

STEAMBOAT SPRINGS MIDDLE SCHOOL STEAMBOAT SPRINGS, CO 3501 DATE: 12/1/2020 CONTACT: Brandon Wilson

Tested By: Brandon Wilson Date: 11/20/2020

SYSTEM/UNIT: (E)RTU-01

Test DataDesign Outside Airflow6000 CFMActual Outside Airflow6090 CFM

SYSTEM/UNIT: (E)RTU-01/VAV-01

Tested By: Brandon Wilson Date: 11/5/2020

	Unit Data	
VAV Address	37	
Box Inlet Size	14 in	
K Factor	4644.00	
K Factor	4644.00	

Term Box Test Data						
Design Max Airflow	2000 CFM					
Actual Max Airflow	2165 CFM					
Design Min Airflow	700 CFM					
Actual Min Airflow	715 CFM					
Design Reheat Airflow (No fan)	700 CFM					
Actual Reheat Airflow (No fan)	715 CFM					

Log: (E)RTU-01/VAV-01 11/5/2020 Brandon Wilson VAV CALIBRATED @ INLET, OUTLETS PROPORTIONED USING VELOCITY.

(E)RTU-01/VAV-01 Supply Outlet Summary

System/Unit	Outlet Type	Size LxW / D	AK Factor	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.
Outlet-01	SR			400	380	95	415	104
Outlet-02	SR			0	110	∞	95	∞
Outlet-03	SR			400	455	114	420	105
Outlet-04	SR			400	510	128	405	101
Outlet-05	SR			400	605	151	410	103
Outlet-06	SR			400	550	138	420	105
Totals:	-	-	-	2000	2610	131	2165	108



PROJECT:STEAMBOAT SPRINGS MIDDLE SCHOOLLOCATION:STEAMBOAT SPRINGS, COPROJECT #:3501

DATE: 12/1/2020 CONTACT: Brandon Wilson

SYSTEM/UNIT: (E)RTU-01/VAV-02

Tested By: Brandon Wilson Date: 11/12/2020

		Jnit Data		Term E	lox Test Data	
- [VAV Address	38		Design Max Airflow	3500 CFM	
	Box Inlet Size	16 in		Actual Max Airflow	3565 CFM	
	K Factor	8543.00		Design Min Airflow	1000 CFM	
				Actual Min Airflow	1025 CFM	
	Log: (E)RTU-01/VAV-02	11/19/2020	Brandon Wilson	DAMPER 100%	CLOSED ON OUTLETS 9/12 V	VAS
	3.			CAUSING SIGN	JIFICANT VELOCITY NOISE	

I OU.		11/10/2020		DAMI EN 100% DECCED ON COTLETO 3/12 WAG	
Log.				CAUSING SIGNIFICANT VELOCITY NOISE	
				THROUGH REMAINING OUTLETS. LEFT 100%	
				OPEN BRANCH SET FOR TOTAL.	
	(E)RTU-01/VAV-02	11/19/2020	Brandon Wilson	DAMPERS WILL NOT STAY 100% CLOSED ON	
				OUTLETS 1 & 4.	
	(E)RTU-01/VAV-02	11/15/2020	Brandon Wilson	EACH BRANCH SET FOR TOTAL.	
	· /				

(E)RTU-01/VAV-02 Supply Outlet Summary

System/Unit	Outlet Type	Size LxW / D	AK Factor	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.
Outlet-01	SR		1	0				
Outlet-02	SR		1	500				
Outlet-03	SR		1	500				
Outlet-04	SR		1	0				
Outlet-05	SR		1	500				
Outlet-06	SR		1	500				
Outlet-07	SR		1	250				
Outlet-08	SR		1	250				
Outlet-09	SR		1	0				
Outlet-10	SR		1	250				
Outlet-11	SR		1	250				
Outlet-12	SR		1	0				
Outlet-13	SR		1	250				
Outlet-14	SR		1	250				
Totals:	-	-	-	3500	0	0	0	0



PROJECT:STEAMBOAT SPRINGS MIDDLE SCHOOL**LOCATION:**STEAMBOAT SPRINGS, CO**PROJECT #:**3501

DATE: 12/1/2020 CONTACT: Brandon Wilson

SYSTEM/UNIT: (E)RTU-01/VAV-03

Tested By: Brandon Wilson Date: 11/5/2020

Ur	nit Data		Term Box Te	est Data
Box Inlet Size	24X16 in		Design Max Airflow	4620 CFM
K Factor	8912.00		Actual Max Airflow	4605 CFM
•			Design Min Airflow	1400 CFM
			Actual Min Airflow	1430 CFM
			Design Reheat Airflow (No fan)	1400 CFM
			Actual Reheat Airflow (No fan)	1430 CFM
		•		
Log: (E)RTU-01/VAV-03	11/19/2020	Brandon Wilso	on OUTLETS BALANCE	D USING OBD DAMPER
3.			INSIDE FACE OF OU	JTLET.

(E)RTU-01/VAV-03 Supply Outlet Summary

System/Unit	Outlet Type	Size LxW / D	AK Factor	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.
Outlet-01	CD	24X24	1	330	250	76	320	97
Outlet-02	CD	24X24	1	330	325	98	330	100
Outlet-03	CD	24X24	1	330	260	79	335	102
Outlet-04	CD	24X24	1	330	275	83	320	97
Outlet-05	CD	24X24	1	330	230	70	320	97
Outlet-06	CD	24X24	1	330	335	102	335	102
Outlet-07	CD	24X24	1	330	255	77	330	100
Outlet-08	CD	24X24	1	330	25	8	330	100
Outlet-09	CD	24X24	1	330	275	83	340	103
Outlet-10	CD	24X24	1	330	280	85	320	97
Outlet-11	CD	24X24	1	330	175	53	325	98
Outlet-12	CD	24X24	1	330	250	76	330	100
Outlet-13	CD	24X24	1	330	335	102	330	100
Outlet-14	CD	24X24	1	330	25	8	340	103
Totals:	-	-	-	4620	3295	71	4605	100



PROJECT:STEAMBOAT SPRINGS MIDDLE SCHOOL**LOCATION:**STEAMBOAT SPRINGS, CO**PROJECT #:**3501

DATE: 12/1/2020 CONTACT: Brandon Wilson

SYSTEM/UNIT: (E)RTU-01/VAV-04

Unit Data				
VAV Address	35			
Box Inlet Size	8 in			
K Factor	1120.00			

Tested By: Brandon Wilson Date: 11/5/2020

Term Box Test Data						
Design Max Airflow	600 CFM					
Actual Max Airflow	585 CFM					
Design Min Airflow	150 CFM					
Actual Min Airflow	155 CFM					
Design Reheat Airflow (No fan)	150 CFM					
Actual Reheat Airflow (No fan)	155 CFM					

(E)RTU-01/VAV-04 Supply Outlet Summary

System/Unit	Outlet Type	Size LxW / D	AK Factor	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.
Outlet-01	CD	24X24	1	300	410	137	295	98
Outlet-02	CD	24X24	1	300	355	118	290	97
Totals:	-	-	-	600	765	128	585	98



Fan Unit

PROJECT:STEAMBOAT SPRINGS MIDDLE SCHOOL**LOCATION:**STEAMBOAT SPRINGS, CO**PROJECT #:**3501

SYSTEM/UNIT: KEF-1

Fan Manufacturer	Acme Engineering & MFG
Fan Model Number	PNU120RF
Fan Serial Number	20G1854-6
Те	est Data
Design Airflow	600 CFM
Actual Airflow	670 CFM
Actual RPM	1267
Motor Volts T1-T2	NO ACCESS Volts
Motor Amps T1	NO ACCESS Amps
Fan SP In	NO ACCESS in. wc
Fan SP Out	NO ACCESS in. wc

DATE: 12/1/2020 CONTACT: Brandon Wilson

Tested By: Brandon Wilson Date: 11/19/2020

Moto	or Data	
Rated Design Airflow	675 CFM	
Motor Manufacturer	Marathon	
Motor Frame	48Z	
Motor HP	1/4 HP	
Motor RPM	1725 RPM	
Motor Rated Volts	115/230 Volts	
Motor Phase	1	
Motor Hertz	60 Hz	
Shear	ve Data	
Motor Sheave Model	MVL34B	
Motor Sheave Bore	1/2 in.	
Fan Sheave Model	AK41	
Fan Sheave Bore	5/8 in.	
Number of Belts	1	
Belt Size	A26 OR 4L280	

Log: KEF-1

11/19/2020 Brandon Wilson

1231 FPM/ 0.545 SQ FT/ 671 CFM.

SYSTEM/UNIT: KEF-2

Fan Manufacturer	Acme Engineering & MFG
Fan Model Number	PNU150RF
Fan Serial Number	20G1651-4
T	est Data
Design Airflow	1500 CFM
Actual Airflow	1510 CFM
Motor Volts T1-T2	NO ACCESS Volts
Motor Amps T1	NO ACCESS Amps
Fan SP In	NO ACCESS in. wc
Fan SP Out	NO ACCESS in. wc

Tested By: Brandon Wilson Date: 11/19/2020

	Motor Data
Rated Design Airflow	1500 CFM
Motor Manufacturer	Marathon
Motor Frame	48Z
Motor HP	1/4 HP
Motor RPM	1725 RPM
Motor Rated Volts	115/230 Volts
Motor Phase	1
Motor Hertz	60 Hz
Motor FL Amps	6.2/3.1 Amps
Motor Service Factor	1.35
	Sheave Data
Motor Sheave Model	MVL44B
Motor Sheave Bore	1/2 in.
Fan Sheave Model	AK64
Fan Sheave Bore	5/8 in.
Number of Belts	1
Belt Size	A31 OR 4L330

Log: KEF-2

11/19/2020

Brandon Wilson

1921 FPM/ 0.785 SQ FT/ 1507 CFM.



Hydronic Pump

PROJECT:STEAMBOAT SPRINGS MIDDLE SCHOOL**LOCATION:**STEAMBOAT SPRINGS, CO**PROJECT #:**3501

DATE: 12/1/2020 CONTACT: Brandon Wilson

(E) HWP-01 Balance Valve Summary

System/Unit	Manufacturer	Model Number	Valve Size	d.GPM	Design D.P.	p.GPM	a.GPM	Final D.P.	%D Des/Final	Valve Position
VAV-01	Griswold	AUTOFLO W		4.8	2-32		5	11.2		
VAV-02	Griswold	AUTOFLO W		6.7	2-32		6.7	11.9		
VAV-03	Griswold	AUTOFLO W		10	2-32		10	7.3		
VAV-04	Griswold	AUTOFLO W		2	2-32		2	10.1		
Totals:	-	-	-	23.5	-	-	23.7	-	-	-

NOTES:																
A. HEATING CO	OIL CAPACITY S	IZED AT A MININ	UM FOR MORNING	G WARMUP	. COIL TO TAP	E HEATIN	G CFM FF	ROM 70 TC	90 °F.							
B. SEE HEAT V	VHEEL SCHEDU	ILE FOR INFORM	IATION ON INTEGR	AL HEAT W	/HEEL.											
								ç	SUPPLY FAN						F	RELIE
MARK	SER	VICE	TYPE		MIN. OUTSIDE AIR (CFM)	CFM	MIN. CFM	ESP @ SL (IN WC)	ESP @ ALT (IN WC)	RPM	BHP	HP	CFM	MIN. CFM	ESP @ SL (IN WC)	ES AL V
(E) RTU-1		CAFTORIUM/ RAGE	ROOFTOP W/ INTEG	RAL ERV	6000	10500	5700	1.92	1.60	1750	9.39	10	10500	5700	0.90	(
ENER		OVERY	WHEEL S		•				RTU-1)]						
					WHEEL DES				() ^ -	_						
								SUPPLY		_						
MARK	SERVICE	DB/WB (°F) (SUM)	DB/WB (°F) (WINT)	DB/WB (SUN	()	NB (°F) VINT)	DB/WE (SU	· · ·	DB/WB (°F) (WINT)							
(E) RTU-1	CAFETERIA/ CAFTORIUM/ STORAGE	91/55	19	80/51		49	78/5	53	57/49							

	IC VAV A																		
										CONTROL DIAGRAI	IS FOR ADDITI	ONAL INFOR							
AN 2 N RPM BHF 1750 1.46	P HP DB/	EAT DB/WB WB (°F) (°F) 77.0 55.0	SENSIBLE MBH 171	COOLING TOTAL MBH 171	EWT LWT (°F) (°F) 45 55		HEÀD)	AT DB LAT D (°F) (°F) 35 90	HEATING B SENSIBLE MBH EWT (°F) LWT (° 365 150 120	°F) GPM HE			TAGE PHASE F	ELA MCA MO		MANUFACTI MODEL AAON R	_ # NOTES A	REMAR A,B; UPSIZIN DR FROM 7.5 EXISTING I	G SUPPLY FAN TO 10HP ON
								TE	RMINAL BOX WITH	I REHEAT	SCHED	DULE						EXISTING	KTU.
							TIC PRESSURE		PER ARI STANDARD 885-98.										
		PRESSURE DROP	REHEAT COILS	S SHALL NOT EX	CEED 5 FT. PRO	VIDE REHEAT	1		S IF REQUIRED TO MEET WATER PR HEATING COIL (HYDRONIC)									
	MARK VAV-01 VAV-02	SERVICE CAFETORIUM CAFETORIUM/	INLET DIA. (IN.) 14 16	COOLING CFM 2000 3000		S.P. @ S.L. (IN. W.C.) <u>1.0</u> 1.0	EAT DB (°F) 55 55	LAT DB SI (°F) 80 80			R MAX. All P.D. (IN. W 0.40		NUFACTURER & MODEL # TITUS DESV TITUS DESV	CONTROL TYPE DDC DDC	ACCESSO THERMOSTAT AND THERMOSTAT AND	CO2 SENSOR	R	EMARKS	
	VAV-02 VAV-03 VAV-04	CAFETERIA CAFETERIA KITCHEN	24X16 8	4600 900	1400 150	1.0 1.0	55 55 55	85 85	110 120 120 119 140 115 1	0.0 3.00 2.0 3.00	0.40		TITUS DESV TITUS DESV	DDC	THERMOSTAT AND THERMOSTAT AND	CO2 SENSOR		-	
						[EXHA	JST FA	N SCHEDU	JLE					
						-			NS WITH FAN SPEED CONTROL. ELECTED ABOVE 90% OF MOTOR N/	AMEPLATE RATINO									
							C: PROVIDE RC	OF CURB WITH		FAN	SP		MOTOR						
							MARK EF-1	SERVICE SPED BATHROOM	TYPECFMSONECEILING803.8	,	@ ALT (IN WC) 0.15	MHP 13 W	VOLT 120	PHASE 1	MANUFACTURE GREENHEC		# ACCESS	ACKDRAFT	REMARKS
						-	KEF-1 KEF-2	TYPE II DISH HOOD TYPE II KITCHEN HOOD	UPBLAST 1500 10 UPBLAST 600 8.1	0.60	0.40	1/4	120 120	1	GREENHECK		INTEGRAL BA DAMP INTEGRAL BA DAMP	ACKDRAFT PER ACKDRAFT	-
									· · · · ·	PLU	MBING	FIXTU	RE SCHED	ULE				·	
						MA		TYPE LOOR SINK	ADA FINISH	ANUFACTURER* MODEL # ZURN Z1902		T TRIM MFR 10DEL # -	* &	ACC	ESSORIES -			REMARI -	KS
						P		COOF DRAIN	CAST IRON N/A DURA-COATED CAST IRON N/A RESIN; RE:	ZURN Z125	СНІСА	- AGO #930-VPH	PROVIDE VACU	JUM BREAKER, UNDE	CK CLAMP	CTION, QUARTEI	R TURN INSTAL	- L PER MANU	FACTUERR'S
							25 DOW	ISPOUT NO ZZLE	ARCH N/A RE: ARCH N/A RE: ARCH N/A FL	ZURN Z199 ORESTONE #92 36X3	T&SBR	ASS #B-0665 BS		SUPPLIES AND ACID RIEM UNDER COUNT	ER ACID NEUTRALIZ	ATION TANK, MO			
						P	P7 WATEF V	AL FLUSH VALVE ONLY R CLOSET FLUSH /ALVE ONLY		-	SLOAN G	2 8111-1.6 3250 2 8111-1.6 3250	400 EXISTING	ING URINAL TO REM	REMAIN. REPLACE FI	USH VALVE ON		-	
							29 PRE MOD	ATORY FAUCET ONLY EFABRICATED ULAR SHOWER	EXISTING CHROME YES CHROME	-		A 2529LF-HDF ADLEY 1PA	PROVIDE WITH	SINK BASIN AND DRA STANDARD S15 SHC ITOFF VALVE, SUPPL	WERHEAD, THERMC	STATIC MIXING		-	
						P	10 CO ^V 11 WALL N	SYSTEM VERALL WALL SHOWER MOUNTED WATEF	YES CHROME A	- MERICAN STANDARE		DLEY WS-WCA 2 8111-1.6 3250	400 PROVIDE FLUSH	I STANDARD S15 SHC ITOFF VALVE, SUPPL VALVE WITH MANUA	Y STOPS, LOCKABLE L OVERRIDE. PROVIE	BALL JOINT	ALOPEN	-	
									N/A STAINLESS	2856.111.020 ZURN Z415S		-		WITH HEAVY DUTY S CONCEALED ROVIDE WITH SURE-S	ARM WALL CARRIER	•		-	
						\bigcirc													
											M		USE PATTE		MANUFAC	FURER* &	ACCESSORIES		EMARKS
												(E) A LA	VARIES - Y-IN CEILING 4-WA SUPPLY	- Y WHITE	- TITUS T		-	EXISTIN	NG DIFFUSER TO REMAIN -
												В	SIDEWALL STATIO	NARY RE: ARCH	I TITUS 3	350RL	-		-
											MUL	.TI ZON	IE VENTILA	TION SCI	HEDULE				
									VENTILATION EQUATION VARIABLE BREATHING ZONE OUTDOOR AIRF ZONE FLOOR AREA, AZ ZONE POPULATION, PZ							Vbz = Rp * Pz Voz = Vbz / Ez	<u>I EQUATIONS:</u> + Ra * Az (EQUATI z (EQUATION 4-2)		
																	7 (FOUATION 4-5)		
									AREA OUTDOOR AIR RATE, Ra PEOPLE OUTDOOR AIR RATE, Rp ZONE AIR DISTRIBUTION EFFECTIV ZONE OUTDOOR AIRELOW, Voz	VENESS, Ez						Vou = ∑ (Vbz)	z (EQUATION 4-5))3.3.1.1.2.3.2) , ASSUMING D=1 (I /STEM Ev) (EQUAT	EQUATION	4-6)
									PEOPLE OUTDOOR AIR RATE, Rp ZONE AIR DISTRIBUTION EFFECTIN ZONE OUTDOOR AIRFLOW, Voz SYSTEM OUTDOOR AIR INTAKE FL ZONE PRIMARY OUTDOOR AIR FRA ZONE PRIMARY AIRFLOW, Vpz	OW RATE, Vot ACTION, Zp						Vou = ∑ (Vbz))3.3.1.1.2.3.2) , ASSUMING D=1 (I	EQUATION	4-6)
									PEOPLE OUTDOOR AIR RATE, Rp ZONE AIR DISTRIBUTION EFFECTIV ZONE OUTDOOR AIRFLOW, Voz SYSTEM OUTDOOR AIR INTAKE FL ZONE PRIMARY OUTDOOR AIR FR/	OW RATE, Vot ACTION, Zp Y, SYSTEM Ev						Vou = ∑ (Vbz))3.3.1.1.2.3.2) , ASSUMING D=1 (I	EQUATION	4-6)
									PEOPLE OUTDOOR AIR RATE, Rp ZONE AIR DISTRIBUTION EFFECTIV ZONE OUTDOOR AIRFLOW, Voz SYSTEM OUTDOOR AIR INTAKE FL ZONE PRIMARY OUTDOOR AIR FR/ ZONE PRIMARY AIRFLOW, Vpz SYSTEM VENTILATION EFFICIENCY, ZO	OW RATE, Vot ACTION, Zp Y, SYSTEM Ev DNE Ev			VAV-01 SU	1		Vou = ∑ (Vbz) Vot = Vou /(S))3.3.1.1.2.3.2) , ASSUMING D=1 (I /STEM Ev) (EQUAT	(EQUATION TION 4-8)	
									PEOPLE OUTDOOR AIR RATE, Rp ZONE AIR DISTRIBUTION EFFECTIV ZONE OUTDOOR AIRFLOW, Voz SYSTEM OUTDOOR AIR INTAKE FL ZONE PRIMARY OUTDOOR AIR FR/ ZONE PRIMARY AIRFLOW, Vpz SYSTEM VENTILATION EFFICIENCY, ZO ZONE VENITALION EFFICIENCY, ZO	OW RATE, Vot ACTION, Zp Y, SYSTEM Ev DNE Ev SPACE TYPE EDUCATION -		Rp [CFM/ PERSON]	Ra PE [CMF/SQ.FT.] [#/100	OPLE NSITY Pz [PEOP 0SQ.F		Vou = ∑ (Vbz)	03.3.1.1.2.3.2) , ASSUMING D=1 (I /STEM Ev) (EQUAT	(EQUATION TION 4-8) Vpz [CFM]	ZONE Zp
									PEOPLE OUTDOOR AIR RATE, Rp ZONE AIR DISTRIBUTION EFFECTIV ZONE OUTDOOR AIRFLOW, Voz SYSTEM OUTDOOR AIR INTAKE FL ZONE PRIMARY OUTDOOR AIR FR/ ZONE PRIMARY AIRFLOW, Vpz SYSTEM VENTILATION EFFICIENCY, ZO	OW RATE, Vot ACTION, Zp Y, SYSTEM Ev DNE Ev SPACE TYPE	Az [SQ.FT.] 1400	Rp [CFM/ PERSON] 7.5	Ra PE0 [CMF/SQ.FT.] [#/100 0.06 1	OPLE NSITY OSQ.F 00 124	LE] Vbz [CFM] 1014	Vou = ∑ (Vbz) Vot = Vou /(S))3.3.1.1.2.3.2) , ASSUMING D=1 (I /STEM Ev) (EQUAT	(EQUATION TION 4-8)	
									PEOPLE OUTDOOR AIR RATE, Rp ZONE AIR DISTRIBUTION EFFECTIV ZONE OUTDOOR AIRFLOW, Voz SYSTEM OUTDOOR AIR INTAKE FL ZONE PRIMARY OUTDOOR AIR FR/ ZONE PRIMARY AIRFLOW, Vpz SYSTEM VENTILATION EFFICIENCY, ZO ZONE VENITALION EFFICIENCY, ZO	OW RATE, Vot ACTION, Zp Y, SYSTEM Ev DNE Ev SPACE TYPE EDUCATION - MULTIUSE ASSEMBLY	1400	Rp [CFM/ PERSON] 7.5	Ra [CMF/SQ.FT.] [#/100 0.06 1 VAV-02 SUI	DPLE NSITY OSQ.F 00 124	1014	Vou = ∑ (Vbz) Vot = Vou /(S)	03.3.1.1.2.3.2) , ASSUMING D=1 (I /STEM Ev) (EQUAT	(EQUATION TION 4-8) Vpz [CFM] 2000	ZONE Zp
									PEOPLE OUTDOOR AIR RATE, Rp ZONE AIR DISTRIBUTION EFFECTIV ZONE OUTDOOR AIRFLOW, Voz SYSTEM OUTDOOR AIR INTAKE FL ZONE PRIMARY OUTDOOR AIR FR/ ZONE PRIMARY AIRFLOW, Vpz SYSTEM VENTILATION EFFICIENCY, ZO ONE VENITALION EFFICIENCY, ZO SPACE NAME	OW RATE, Vot ACTION, Zp Y, SYSTEM Ev DNE Ev SPACE TYPE EDUCATION - MULTIUSE ASSEMBLY SPACE TYPE EDUCATION -	1400	Rp [CFM/ PERSON] 7.5	Ra PE0 [CMF/SQ.FT.] [#/100 0.06 1 VAV-02 SUI Ra PE0 [CMF/SQ.FT.] PE0 [CMF/SQ.FT.] PE0 [#/100 DE1	DPLE NSITY OSQ.F 00 124	1014	Vou = Σ (Vbz) Vot = Vou /(S) Ez 1	03.3.1.1.2.3.2) , ASSUMING D=1 (I /STEM Ev) (EQUAT	(EQUATION TION 4-8) Vpz [CFM]	ZONE Zp 51%
									PEOPLE OUTDOOR AIR RATE, Rp ZONE AIR DISTRIBUTION EFFECTIV ZONE OUTDOOR AIRFLOW, Voz SYSTEM OUTDOOR AIR INTAKE FL ZONE PRIMARY OUTDOOR AIR FR/ ZONE PRIMARY AIRFLOW, Vpz SYSTEM VENTILATION EFFICIENCY ZONE VENITALION EFFICIENCY, ZO SPACE NAME CAFETORIUM	OW RATE, Vot ACTION, Zp Y, SYSTEM Ev DNE Ev SPACE TYPE EDUCATION - MULTIUSE ASSEMBLY SPACE TYPE	1400 Az [SQ.FT.]	Rp [CFM/ PERSON] 7.5 Rp [CFM/ PERSON] 7.5	Ra PE0 [CMF/SQ.FT.] [#/100 0.06 1 VAV-02 SUI Ra PE0 [CMF/SQ.FT.] PE0 [CMF/SQ.FT.] PE0 [#/100 DE1	DPLE NSITY 0SQ.F 00 124 MMARY DPLE NSITY 0SQ.F 00 186	LE] Vbz [CFM]	Vou = Σ (Vbz) Vot = Vou /(S) Ez 1	Voz [CFM]	(EQUATION TION 4-8) Vpz [CFM] 2000 Vpz [CFM]	ZONE Zp 51% ZONE Zp
									PEOPLE OUTDOOR AIR RATE, Rp ZONE AIR DISTRIBUTION EFFECTIV ZONE OUTDOOR AIRFLOW, Voz SYSTEM OUTDOOR AIR INTAKE FL ZONE PRIMARY OUTDOOR AIR FR/ ZONE PRIMARY AIRFLOW, Vpz SYSTEM VENTILATION EFFICIENCY ZONE VENITALION EFFICIENCY, ZO SPACE NAME CAFETORIUM	OW RATE, Vot ACTION, Zp Y, SYSTEM Ev DNE Ev SPACE TYPE EDUCATION - MULTIUSE ASSEMBLY SPACE TYPE EDUCATION -	1400 Az [SQ.FT.] 2470	Rp [CFM/ PERSON] 7.5 Rp [CFM/ PERSON] 7.5	Ra [CMF/SQ.FT.] PEI DEI [#/100 0.06 1 VAV-02 SUI DEI [#/100 Ra [CMF/SQ.FT.] PEI DEI [#/100 0.06 1 VAV-03 SUI 1	DPLE NSITY 000 Pz [PEOP 124 MMARY DPLE NSITY 05Q.F 00 Pz [PEOP 186 MMARY	1014 LE] Vbz [CFM] 1544	Vou = Σ (Vbz) Vot = Vou /(S) Ez 1	33.3.1.1.2.3.2) ASSUMING D=1 (I STEM EV) (EQUAT Voz [CFM] 1014 Voz [CFM] Voz [CFM] 1014 1014 1014 1544	(EQUATION TION 4-8) Vpz [CFM] 2000 Vpz [CFM]	ZONE Zp 51% ZONE Zp
									PEOPLE OUTDOOR AIR RATE, Rp ZONE AIR DISTRIBUTION EFFECTIV ZONE OUTDOOR AIRFLOW, Voz SYSTEM OUTDOOR AIR INTAKE FL ZONE PRIMARY OUTDOOR AIR FR/ ZONE PRIMARY AIRFLOW, Vpz SYSTEM VENTILATION EFFICIENCY, ZO SONE VENITALION EFFICIENCY, ZO SPACE NAME CAFETORIUM SPACE NAME CAFETORIUM AND STAGE	OW RATE, Vot ACTION, Zp Y, SYSTEM Ev DNE Ev SPACE TYPE EDUCATION - MULTIUSE ASSEMBLY EDUCATION - MULTIUSE	1400 Az [SQ.FT.] 2470	Rp [CFM/ PERSON] 7.5 Rp [CFM/ PERSON] 7.5	Ra PEI [CMF/SQ.FT.] [#/100 0.06 1 VAV-02 SUI PEI [CMF/SQ.FT.] PEI [CMF/SQ.FT.] PEI 0.06 1 0.06 1 0.06 1 VAV-03 SUI PEI VAV-03 SUI PEI [CMF/SQ.FT.] PEI [#/100 1	DPLE NSITY 000 Pz [PEOP 124 MMARY DPLE NSITY 05Q.F 00 Pz [PEOP 186 MMARY	1014 LE] Vbz [CFM] 1544	Vou = $\sum_{i=1}^{i} (Vbz)$ Vot = Vou /(S) Ez 1 Ez	33.3.1.1.2.3.2) ASSUMING D=1 (I STEM EV) (EQUAT Voz [CFM] 1014 Voz [CFM] Voz [CFM] 1014 1014 1014 1544	(EQUATION TION 4-8) Vpz [CFM] 2000 Vpz [CFM] 3000	ZONE Zp 51% ZONE Zp 51%
									PEOPLE OUTDOOR AIR RATE, Rp ZONE AIR DISTRIBUTION EFFECTIV ZONE OUTDOOR AIRFLOW, Voz SYSTEM OUTDOOR AIR INTAKE FL ZONE PRIMARY OUTDOOR AIR FR/ ZONE PRIMARY AIRFLOW, Vpz SYSTEM VENTILATION EFFICIENCY ZONE VENITALION EFFICIENCY, ZO CONE VENITALION EFFICIENCY, ZO SPACE NAME CAFETORIUM SPACE NAME CAFETORIUM AND STAGE SPACE NAME	OW RATE, Vot ACTION, Zp Y, SYSTEM Ev DNE Ev SPACE TYPE EDUCATION - MULTIUSE ASSEMBLY EDUCATION - MULTIUSE SPACE TYPE EDUCATION - MULTIUSE	1400 Az [SQ.FT.] 2470 Az [SQ.FT.] 3400	Rp [CFM/ PERSON] 7.5 Rp [CFM/ PERSON] 7.5 Rp [CFM/ PERSON] 7.5	Ra PEI [CMF/SQ.FT.] [#/100 0.06 1 VAV-02 SUI [DPLE NSITY OSQ.FPz [PEOP00124VIMARYDPLE NSITY OSQ.FPz [PEOP00186VIMARYDPLE NSITY OSQ.FPz [PEOP00220VIMARY	LE] Vbz [CFM] LE] Vbz [CFM] 1544 LE] Vbz [CFM] 2262	Vou = $\sum_{i=1}^{i} (Vbz)$ Vot = Vou /(S) Ez 1 Ez	33.3.1.1.2.3.2) ASSUMING D=1 (I STEM EV) (EQUAT Voz [CFM] Voz [CFM] Voz [CFM] Voz [CFM] Voz [CFM] Voz [CFM] Voz [CFM]	(EQUATION TION 4-8) Vpz [CFM] 2000 Vpz [CFM] 3000 Vpz [CFM] 3600	ZONE Zp 51% ZONE Zp 51%
									PEOPLE OUTDOOR AIR RATE, Rp ZONE AIR DISTRIBUTION EFFECTIV ZONE OUTDOOR AIRFLOW, Voz SYSTEM OUTDOOR AIR INTAKE FL ZONE PRIMARY OUTDOOR AIR FR/ ZONE PRIMARY AIRFLOW, Vpz SYSTEM VENTILATION EFFICIENCY, ZO ONE VENITALION EFFICIENCY, ZO SPACE NAME CAFETORIUM SPACE NAME CAFETORIUM AND STAGE SPACE NAME CAFETERIA SPACE NAME	OW RATE, Vot ACTION, Zp Y, SYSTEM Ev DNE Ev SPACE TYPE EDUCATION - MULTIUSE ASSEMBLY EDUCATION - MULTIUSE EDUCATION - MULTIUSE SPACE TYPE F&B - CAFETERIA, SPACE TYPE	1400 Az [SQ.FT.] 2470 Az [SQ.FT.] 3400 Az [SQ.FT.]	Rp [CFM/ PERSON] 7.5 Rp [CFM/ PERSON] 7.5 Rp [CFM/ PERSON] 7.5	Ra PEI [CMF/SQ.FT.] [#/100 0.06 1 VAV-02 SUI [[CMF/SQ.FT.] PEI [CMF/SQ.FT.] [#/100 0.06 1 VAV-03 SUI 1 VAV-03 SUI 0.18 VAV-04 SUI 1	DPLE NSITY OSQ.FPz [PEOP00124VIMARYDPLE NSITY OSQ.FPz [PEOP00186VIMARYDPLE NSITY OSQ.FPz [PEOP00220	LE] Vbz [CFM] LE] Vbz [CFM] 1544 LE] Vbz [CFM] 2262	Vou = Σ (Vbz) Vot = Vou /(S) Ez 1 Ez 1 Ez 1 Ez	33.3.1.1.2.3.2) ASSUMING D=1 (I STEM EV) (EQUAT Voz [CFM] Voz [CFM] Voz [CFM] Voz [CFM] Voz [CFM] Voz [CFM] Voz [CFM]	(EQUATION TION 4-8) Vpz [CFM] 2000 Vpz [CFM] 3000 Vpz [CFM] 3600	ZONE Zp 51% ZONE Zp 51% ZONE Zp 63% ZONE Zp
									PEOPLE OUTDOOR AIR RATE, Rp ZONE AIR DISTRIBUTION EFFECTIV ZONE OUTDOOR AIRFLOW, Voz SYSTEM OUTDOOR AIR INTAKE FL ZONE PRIMARY OUTDOOR AIR FR/ ZONE PRIMARY AIRFLOW, Vpz SYSTEM VENTILATION EFFICIENCY, ZO ONE VENITALION EFFICIENCY, ZO CAFETORIUM SPACE NAME CAFETORIUM AND STAGE SPACE NAME CAFETORIUM AND STAGE SPACE NAME	OW RATE, Vot ACTION, Zp Y, SYSTEM Ev DNE Ev SPACE TYPE EDUCATION - MULTIUSE ASSEMBLY EDUCATION - MULTIUSE SPACE TYPE SPACE TYPE SPACE TYPE	1400 Az [SQ.FT.] 2470 Az [SQ.FT.] 3400	Rp [CFM/ PERSON] 7.5 Rp [CFM/ PERSON] 7.5 Rp [CFM/ PERSON] 7.5 Rp [CFM/ PERSON] Rp [CFM/ PERSON] 7.5 Rp [CFM/ PERSON]	Ra PEI [CMF/SQ.FT.] [#/100 0.06 1 VAV-02 SUI [[CMF/SQ.FT.] PEI [CMF/SQ.FT.] [#/100 0.06 1 VAV-03 SUI 1 VAV-04 SUI 1 VAV-04 SUI 1 Ra PEI ICMF/SQ.FT.] PEI DEI 1 0.18 1 VAV-04 SUI 1 ICMF/SQ.FT.] PEI ICMF/SQ.FT.] 1	DPLE NSITY OSQ.FPz [PEOP00124VIMARYDPLE NSITY OSQ.FPz [PEOP00186VIMARYDPLE NSITY OSQ.FPz [PEOP00220VIMARYDPLE SITY OSQ.FPz [PEOP00220VIMARYDPLE SITYPz [PEOP00220	LE] Vbz [CFM] LE] Vbz [CFM] LE] Vbz [CFM] LE] Vbz [CFM]	Vou = $\sum_{i=1}^{i} (Vbz)$ Vot = Vou /(S) Ez 1 Ez 1	33.3.1.1.2.3.2) ASSUMING D=1 (I STEM EV) (EQUAT Voz [CFM] Voz [CFM] Voz [CFM] Voz [CFM] Voz [CFM] Voz [CFM] Voz [CFM]	(EQUATION TION 4-8) Vpz [CFM] 2000 Vpz [CFM] 3000 Vpz [CFM] 3600	ZONE Zp 51% ZONE Zp 51% ZONE Zp 63%
									PEOPLE OUTDOOR AIR RATE, Rp ZONE AIR DISTRIBUTION EFFECTIV ZONE OUTDOOR AIRFLOW, Voz SYSTEM OUTDOOR AIR INTAKE FL ZONE PRIMARY OUTDOOR AIR FR/ ZONE PRIMARY AIRFLOW, Vpz SYSTEM VENTILATION EFFICIENCY, ZO ONE VENITALION EFFICIENCY, ZO SPACE NAME CAFETORIUM SPACE NAME CAFETORIUM AND STAGE SPACE NAME CAFETERIA SPACE NAME	OW RATE, Vot ACTION, Zp Y, SYSTEM Ev DNE Ev SPACE TYPE EDUCATION - MULTIUSE ASSEMBLY EDUCATION - MULTIUSE EDUCATION - MULTIUSE SPACE TYPE F&B - CAFETERIA, SPACE TYPE	1400 Az [SQ.FT.] 2470 Az [SQ.FT.] 3400 Az [SQ.FT.]	Rp [CFM/ PERSON] 7.5 Rp [CFM/ PERSON] 7.5 Rp [CFM/ PERSON] 7.5 Rp [CFM/ PERSON] Rp [CFM/ PERSON] 7.5 Rp [CFM/ PERSON]	Ra PEI [CMF/SQ.FT.] #/100 0.06 1 VAV-02 SUI PEI [CMF/SQ.FT.] PEI [CMF/SQ.FT.] PEI 0.06 1 0.06 1 VAV-02 SUI DEI [CMF/SQ.FT.] PEI [CMF/SQ.FT.] PEI 0.18 1 VAV-04 SUI PEI VAV-04 SUI PEI [CMF/SQ.FT.] PEI DEI 1 0.18 1	DPLE NSITY OSQ.FPz [PEOP00124VIMARYDPLE NSITY OSQ.FPz [PEOP00186VIMARYDPLE NSITY OSQ.FPz [PEOP00220VIMARYDPLE SITY OSQ.FPz [PEOP00220VIMARYDPLE SITYPz [PEOP00220	LE] Vbz [CFM] LE] Vbz [CFM] LE] Vbz [CFM] LE] Vbz [CFM]	Vou = Σ (Vbz) Vot = Vou /(S) Ez 1 Ez 1 Ez 1 Ez	33.3.1.1.2.3.2) ASSUMING D=1 (I STEM EV) (EQUAT Voz [CFM] Voz [CFM] Voz [CFM] Voz [CFM] Voz [CFM] Voz [CFM] Voz [CFM]	(EQUATION TION 4-8) Vpz [CFM] 2000 Vpz [CFM] 3000 Vpz [CFM] 3600	ZONE Zp 51% ZONE Zp 51% ZONE Zp 63% ZONE Zp
									PEOPLE OUTDOOR AIR RATE, Rp ZONE AIR DISTRIBUTION EFFECTIN ZONE OUTDOOR AIRFLOW, Voz SYSTEM OUTDOOR AIR INTAKE FL ZONE PRIMARY OUTDOOR AIR FR/ ZONE PRIMARY AIRFLOW, Vpz SYSTEM VENTILATION EFFICIENCY, ZO ONE VENITALION EFFICIENCY, ZO SPACE NAME CAFETORIUM SPACE NAME CAFETORIUM AND STAGE SPACE NAME CAFETERIA SPACE NAME	OW RATE, Vot ACTION, Zp Y, SYSTEM Ev DNE Ev SPACE TYPE EDUCATION - MULTIUSE ASSEMBLY EDUCATION - MULTIUSE EDUCATION - MULTIUSE SPACE TYPE F&B - CAFETERIA, SPACE TYPE	1400 Az [SQ.FT.] 2470 Az [SQ.FT.] 3400 Az [SQ.FT.]	Rp [CFM/ PERSON] 7.5 Rp [CFM/ PERSON] 7.5 Rp [CFM/ PERSON] 7.5 Rp [CFM/ PERSON] Rp [CFM/ PERSON] 7.5 Rp [CFM/ PERSON]	Ra PEI DEI 0.06 1 VAV-02 SUI (CMF/SQ.FT.) PEI [CMF/SQ.FT.] PEI [CMF/SQ.FT.] PEI (CMF/SQ.FT.] PEI	DPLE NSITY OSQ.FPz [PEOP00124VIMARYDPLE NSITY OSQ.FPz [PEOP00186VIMARYDPLE NSITY OSQ.FPz [PEOP00220VIMARYDPLE SITY OSQ.FPz [PEOP00220VIMARYDPLE SITYPz [PEOP00220	LE] Vbz [CFM] LE] Vbz [CFM] LE] Vbz [CFM] LE] Vbz [CFM]	Vou = Σ (Vbz) Vot = Vou /(S) Ez 1 Ez 1 Ez 1 Ez	33.3.1.1.2.3.2) ASSUMING D=1 (I STEM EV) (EQUAT Voz [CFM] Voz [CFM] Voz [CFM] Voz [CFM] Voz [CFM] Voz [CFM] Voz [CFM]	(EQUATION TION 4-8) Vpz [CFM] 2000 Vpz [CFM] 3000 Vpz [CFM] 3600	ZONE Zp 51% ZONE Zp 51% ZONE Zp 63% ZONE Zp 0%
									PEOPLE OUTDOOR AIR RATE, Rp ZONE AIR DISTRIBUTION EFFECTIN ZONE OUTDOOR AIRFLOW, Voz SYSTEM OUTDOOR AIR INTAKE FL ZONE PRIMARY OUTDOOR AIR FR/ ZONE PRIMARY AIRFLOW, Vpz SYSTEM VENTILATION EFFICIENCY, ZO ONE VENITALION EFFICIENCY, ZO SPACE NAME CAFETORIUM SPACE NAME CAFETORIUM AND STAGE SPACE NAME CAFETERIA SPACE NAME	OW RATE, Vot ACTION, Zp Y, SYSTEM Ev DNE Ev SPACE TYPE EDUCATION - MULTIUSE ASSEMBLY EDUCATION - MULTIUSE EDUCATION - MULTIUSE SPACE TYPE F&B - CAFETERIA, SPACE TYPE	1400 Az [SQ.FT.] 2470 Az [SQ.FT.] 3400 Az [SQ.FT.]	Rp [CFM/ PERSON] 7.5 Rp [CFM/ PERSON] 7.5 Rp [CFM/ PERSON] 7.5 Rp [CFM/ PERSON] Rp [CFM/ PERSON] 7.5 Rp [CFM/ PERSON]	Ra [CMF/SQ.FT.] PEI DEI (#/100 0.06 1 VAV-02 SUI PEI DEI (#/100 (CMF/SQ.FT.] PEI (#/100 0.06 1 VAV-03 SUI 1 VAV-04 SUI 1 SYSTEM EV 1	DPLE NSITY OSQ.FPz [PEOP00124VIMARYDPLE NSITY OSQ.FPz [PEOP00186VIMARYDPLE NSITY OSQ.FPz [PEOP00220VIMARYDPLE SITY OSQ.FPz [PEOP00220VIMARYDPLE SITYPz [PEOP00220	LE] Vbz [CFM] LE] Vbz [CFM] LE] Vbz [CFM] LE] Vbz [CFM]	Vou = Σ (Vbz) Vot = Vou /(S) Ez 1 Ez 1 Ez 1 Ez	33.3.1.1.2.3.2) ASSUMING D=1 (I STEM EV) (EQUAT Voz [CFM] Voz [CFM] Voz [CFM] Voz [CFM] Voz [CFM] Voz [CFM] Voz [CFM]	(EQUATION TION 4-8) Vpz [CFM] 2000 Vpz [CFM] 3000 Vpz [CFM] 3600	ZONE Zp 51% ZONE Zp 51% ZONE Zp 63% ZONE Zp 0%

			RGY RE			G. REFEF	R TO CONTROL I	DIAGRAM	IS FOR ADDITI	ONAL INFOR	MATION.							
COOLIN	IG					HEATING		_			-	LECTRICAL						
TOTAL MBH 171	EWT LV (°F) (°I 45 5		MAX WTR PD (FT HEAD) 12.50	EAT DB LAT (°F) (°F 35 90) MBH		WT (°F) GPM 120 26	PD	ÀD) FIL		LTAGE PHA 480 3		MCA MOC 22.0 30.0	P (LBS)	IANUFACT MODE AAON F	L #	REMAR ES A,B; UPSIZIN OTOR FROM 7.5 EXISTING	IG SUPPLY FAN TO 10HP ON
				Т	ERMINA	L BOX W	ITH REH	EAT	SCHEE	DULE								
	EXCEED NC 35 A SHALL NOT EXCI		TATIC PRESSUF	RE WHEN TESTE	D PER ARI STAN	IDARD 885-98.												
SHALL NOT		PROVIDE REHE MIN. INLE S.P. @ S.I	Т	1	HEATIN	D TO MEET WATE IG COIL (HYDRO EWT	ONIC)		QUIREMENTS.	<u>з</u> ма	NUFACTUREI		NTROL					
CFM 2000 3000	CFM 700 1000	(IN. W.C.)) (°F) 55 55	(°F) 80 80		(°F) LWT (°F 140 120 140 120		D. (FT.) 3.00 3.00			MODEL # TITUS DESV TITUS DESV	Т	YPE DDC TH	ACCESSOR IERMOSTAT AND CO	2 SENSOR		REMARKS	
4600 900	1400 150	1.0 1.0	55 55	85 85	119 19	140 115 140 115	10.0 2.0	3.00 3.00	0.40		TITUS DESV TITUS DESV		DDC TH	IERMOSTAT AND CO	02 SENSOR		-	
									EXHA	JST FA	N SCH	EDULE						
						SPEED CONTROL		RATING										
				ROOF CURB WI			FAN		SP		MOTO	DR						
			MARK	SERVICE			SONES V	SL (IN VC)	@ ALT (IN WC)	MHP	VOL		ASE M	ANUFACTURER			SSORIES	REMARKS
			EF-1 KEF-1	SPED BATHROOM TYPE II DISH HOOD	UPBLAST	80 1500).17).60	0.15	13 W	120		1	GREENHECK		D/ INTEGRA	L BACKDRAFT AMPER L BACKDRAFT AMPER	-
		_	KEF-2	TYPE II KITCHE HOOD	EN UPBLAST	600	8.1 0	0.60	0.30	1/8	120		1	GREENHECK CI	JE-095-D		L BACKDRAFT AMPER	-
		\vdash	MARK	TYPE	ADA	FINISH	MANUFACT	URER* &		FIXTU		IEDULE		SORIES			REMAR	ĸc
			P1 P2	FLOOR SINK	N/A	ACID RESISTANT CAST IRON DURA-COATED		1902	N	- -				- CLAMP			REMAR - -	K5
			P3 SCI	ENCE CLASSROO	M N/A	CAST IRON RESIN; RE: ARCH			CHIC	\GO #930-VPH	ANGLE	STOPS, SUPPLI	ES AND ACID WA	COUNTER PROTECT ASTE TAIL PIECE. PF ACID NEUTRALIZAT	ROVIDE AND I	NSTALL	TALL PER MANU REQUIREM	
			P5	WINSPOUT NOZZL MOP BASIN INAL FLUSH VALVI		RE: ARCH TERRAZO CHROME	FLORESTORE -	#92 36X36		ASS #B-0665 B 2 8111-1.6 3250				REPLACE FLUSH V		$\frown \frown \frown$		$\bigvee \frown$
				ONLY TER CLOSET FLUS VALVE ONLY AVATORY FAUCET	H EXISTING EXISTING	CHROME	-			2 8111-1.6 3250 A 2529LF-HDF				MAIN. REPLACE FLU			-	
				ONLY PREFABRICATED ODULAR SHOWER SYSTEM	YES	CHROME	-		BR	ADLEY 1PA	PROVI			ERHEAD, THERMOS TOPS, LOCKABLE B		VALVE,	-	
				COVERALL WALL SHOWER LL MOUNTED WATE CLOSET	YES ER YES	CHROME	- AMERICAN S ⁻ 2856.111			DLEY WS-WCA 2 8111-1.6 3250	400 PROVIDE	SHUTOFF V	ALVE, SUPPLY S WITH MANUAL O	ERHEAD, THERMOS TOPS, LOCKABLE B VERRIDE. PROVIDE INLESS STEEL CHEC	ALL JOINT ANTIMICROB	IAL OPEN	-	
			P12	FLOOR DRAIN	N/A	STAINLESS	ZURN Z4			-			CONCEALED ARI	M WALL CARRIER.			-	
														FUSER &	JRER* &			
										(E)	VARIES Y-IN CEILING	- 4-WAY	- WHITE	TITUS TDC		-	EXISTI	NG DIFFUSER T REMAIN -
										В	SUPPLY SIDEWALL RETURN	STATIONARY	RE: ARCH	TITUS 350	DRL	-		-
									MUL	.TI ZOI		FILATIC	N SCH	EDULE				
						N EQUATION VAR ZONE OUTDOOR		<u>ONS:</u>						V	/bz = Rp * Pz	<u>N EQUATIONS:</u> : + Ra * Az (EQL z (EQUATION 4		
					ZONE POPU AREA OUTD PEOPLE OU	LATION, Pz OOR AIR RATE, R TDOOR AIR RATE	, Rp							Z E V	Zp = Voz / Vp Ev = (Table 4 /ou = Σ (Vbz)	z (EQUATION 4 03.3.1.1.2.3.2)), ASSUMING D:	-5) =1 (EQUATION	4-6)
					ZONE OUTD SYSTEM OU ZONE PRIMA	STRIBUTION EFF OOR AIRFLOW, V TDOOR AIR INTAI ARY OUTDOOR AI	oz KE FLOW RATE, R FRACTION, Zp	Vot						V	/ot = Vou /(S	YSTEM Ev) (EQ	UATION 4-8)	
					SYSTEM VEI	NRY AIRFLOW, Vp NTILATION EFFIC ALION EFFICIENC	IENCY, SYSTEM	Ev										
											VAV-01	SUMMA	ARY					
						SPACE NAME	SPACI	E TYPE	Az [SQ.FT.]	Rp [CFM/ PERSON]	Ra [CMF/SQ.FT.]	PEOPLE DENSITY [#/1000SQ.F	Pz [PEOPLE]] Vbz [CFM]	Ez	Voz [CFM]	Vpz [CFM]	ZONE Zp
						CAFETORIUM	MUL	ATION - TIUSE EMBLY	1400	7.5	0.06	100	124	1014	1	1014	2000	51%
											VAV-02	SUMMA	ARY					
						SPACE NAME	SPACI	E TYPE	Az [SQ.FT.]	Rp [CFM/ PERSON]	Ra [CMF/SQ.FT.]	PEOPLE DENSITY [#/1000SQ.F	Pz [PEOPLE]] Vbz [CFM]	Ez	Voz [CFM]	Vpz [CFM]	ZONE Zp
					CAFET	ORIUM AND STA	GE EDUC/ MULT	ATION - IUSE	2470	7.5	0.06	100	186	1544	1	1544	3000	51%
							I				VAV-03	SUMMA	ARY				ı	
						SPACE NAME	SPACI	E TYPE	Az [SQ.FT.]	Rp [CFM/ PERSON]	Ra [CMF/SQ.FT.]	PEOPLE DENSITY [#/1000SQ.F	Pz [PEOPLE]] Vbz [CFM]	Ez	Voz [CFM]	Vpz [CFM]	ZONE Zp
						CAFETERIA	F8 CAFET	kB - ERIA,	3400	7.5	0.18	100	220	2262	1	2262	3600	63%
								1			VAV-04	I	ARY					
						SPACE NAME	SPACI F8		Az [SQ.FT.]	Rp [CFM/ PERSON]	Ra [CMF/SQ.FT.]	PEOPLE DENSITY	Pz [PEOPLE]] Vbz [CFM]	Ez	Voz [CFM]	Vpz [CFM]	ZONE Zp
					KITCI	HEN AND SERVIN	G KITC	kB - CHEN OKING)	700		-	-	-	-	0.8	0	600	0%
										TOT			MMAR	(
											SYSTEM E							52%
					GENERAL NO	TES:					SYSTEM V	ot						6000
					-													
						A: B:	-											

				G. REFER TO	CONTROL DIAGRAMS	S FOR ADDITIONAL	. INFORMATIC	DN.					
LAT	OOLING	MAX WTR		HEATING	MAX W			ELECTRIC	CAL	OPER.			
/WB (°F) (°F) MBH M	DTALEWTLWT//BH(°F)(°F)1714555	PD (FT GPM HEAD) 36 12.50	EAT DB LAT D (°F) (°F) 35 90		、 ,	D) FILTER		E PHASE FLA 3 19.0		(LBS) MC		REMARI S A,B; UPSIZING TOR FROM 7.5 1 EXISTING R	G SUPPLY FAN TO 10HP ON
			TE	ERMINAL BOX WIT	H REHEAT	SCHEDUI	E						
AND DISCHARGE SOUND LEVELS SHALL PRESSURE DROP OF TAB AND REHEAT			JRE WHEN TESTED) PER ARI STANDARD 885-98.									
RESSURE DROP OF REHEAT COILS SHAL	MIN	E REHEAT COILS SEP. N. INLET P. @ S.L. EAT DB		ES IF REQUIRED TO MEET WATER F HEATING COIL (HYDRONI ENSIBLE EWT				CTURER &	CONTROL				
SERVICE(IN.)CCAFETORIUM1424CAFETORIUM/1634		Image: Wideling of the second secon	(°F) 80 80		GPM P.D. (FT.) 4.8 3.00 6.7 3.00	P.D. (IN. WC) 0.40 0.40	<u>МО</u> тіти	S DESV S DESV	TYPE DDC THERM	ACCESSORIES MOSTAT AND CO2 SENSO MOSTAT AND CO2 SENSO	DR	REMARKS - -	
	600 1400 900 150	1.0 55 1.0 55	85 85	119 140 115 19 140 115	10.0 3.00 2.0 3.00	0.40		S DESV S DESV		IOSTAT AND CO2 SENSO IOSTAT AND CO2 SENSO		-	
						EXHAUS	TFAN	SCHEDUL	.E				
				NS WITH FAN SPEED CONTROL. SELECTED ABOVE 90% OF MOTOR	NAMEPLATE RATING.								
		C: PROVIDE	E ROOF CURB WITH		FAN	P		MOTOR					
		MARK EF-1	SERVICE	TYPE CFM SON CEILING 80 3.	NES WC)	@ ALT (IN WC) 0.15	MHP 13 W	VOLT 120	PHASE MANU	JFACTURER & MOE GREENHECK SP-A90		SORIES BACKDRAFT	REMARKS
		KEF-1 KEF-2	BATHROOM TYPE II DISH HOOD TYPE II KITCHEN		0 0.60	0.40	1/4	120		GREENHECK CUBE-141 GREENHECK CUE-095-D	INTEGRAL DAM	MPER BACKDRAFT MPER BACKDRAFT	
			HOOD	δ. 22.01 000 δ.								MPER	_
		MARK	TYPE	ADA FINISH	MANUFACTURER* & MODEL #	- 1	M MFR* &	SCHEDU	ACCESSO	RIES		REMARK	 <s< td=""></s<>
		P1 P2	FLOOR SINK ROOF DRAIN	N/A ACID RESISTANT CAST IRON N/A DURA-COATED CAST IRON	ZURN Z1902 ZURN Z125	-			- DECK CLA	MP		-	
			CIENCE CLASSROOM	N/A RESIN; RE: ARCH	ZURN Z199	CHICAGO #	930-VPH	ANGLE STOPS, SL	A BREAKER, UNDER COUN JPPLIES AND ACID WASTE EM UNDER COUNTER ACI	E TAIL PIECE. PROVIDE A	ND INSTALL	ALL PER MANUF REQUIREME	
	<u>/2</u>	P5 P6 U	IRINAL FLUSH VALVE ONLY	EXISTING CHROME	FLORESTOME #92 36X36 -	T & S BRASS #E SLOAN G2 8111	-1.6 3250400	EXISTING	R MOUNT 36"X36" DROP G URINAL TO REMAIN. REI	PLACE FLUSH VALVE ON	LY.	-	$\gamma \sim \gamma$
	(P8	ATER CLOSET FLUSH VALVE ONLY LAVATORY FAUCET ONLY	EXISTING CHROME	-	SLOAN G2 8111 DELTA 2529	9LF-HDF	EXISTING SIN	ATER CLOSET TO REMAIN	EMAIN. REPLACE FAUCE	T ONLY.	-	
		8	PREFABRICATED MODULAR SHOWER SYSTEM COVERALL WALL	YES CHROME YES CHROME	-	BRADLE		SHUTC PROVIDE WITH ST	FANDARD S15 SHOWERHE OFF VALVE, SUPPLY STOP FANDARD S15 SHOWERHE	S, LOCKABLE BALL JOIN	T KING VALVE,	-	
		P11 W/	SHOWER ALL MOUNTED WATER CLOSET	R YES CHROME	AMERICAN STANDARD 2856.111.020	SLOAN G2 8111	-1.6 3250400	PROVIDE FLUSH VA	DFF VALVE, SUPPLY STOP LVE WITH MANUAL OVER TH HEAVY DUTY STAINLE CONCEALED ARM W	RIDE. PROVIDE ANTIMIC SS STEEL CHECK HINGE	ROBIAL OPEN	-	
				N/A STAINLESS	ZURN Z415S		\sim		/IDE WITH SURE-SEAL TR	AP GUARD AND P-TRAP			
							GRILI	_E, REGIS	STER, DIFFL	JSER & LOU	JVER SCH	EDULE	
						MARK (E)	US VARI			MANUFACTURER* & MODEL# -	ACCESSORII	EXISTIN	EMARKS
						A	LAY-IN C SUPF SIDEW	2LY	WHITE RY RE: ARCH	TITUS TDC-AA	-		REMAIN - -
				·			RETU	RN					
				VENTILATION EQUATION VARIAB		MULTI	ZONE	VENTILAT	TON SCHEE		TION EQUATIONS:		
				BREATHING ZONE OUTDOOR AIF ZONE FLOOR AREA, Az ZONE POPULATION, Pz						Vbz = Rp Voz = Vb Zp = Voz	* Pz + Ra * Az (EQUA z / Ez (EQUATION 4-2 / Vpz (EQUATION 4-5	2)	
				AREA OUTDOOR AIR RATE, Ra PEOPLE OUTDOOR AIR RATE, Rp ZONE AIR DISTRIBUTION EFFECT ZONE OUTDOOR AIRFLOW, Voz	ΓIVENESS, Ez					Vou = ∑ (ble 403.3.1.1.2.3.2) Vbz), ASSUMING D=1 I /(SYSTEM Ev) (EQU	1 (EQUATION 4 ATION 4-8)	4-6)
				SYSTEM OUTDOOR AIR INTAKE F									
				ZONE PRIMARY OUTDOOR AIR FI ZONE PRIMARY AIRFLOW, Vpz									
				ZONE PRIMARY OUTDOOR AIR FI	CY, SYSTEM Ev								
				ZONE PRIMARY OUTDOOR AIR FI ZONE PRIMARY AIRFLOW, Vpz SYSTEM VENTILATION EFFICIENC ZONE VENITALION EFFICIENCY, 2	CY, SYSTEM Ev ZONE Ev	Az ISO ET I		V-01 SUM					
				ZONE PRIMARY OUTDOOR AIR FI ZONE PRIMARY AIRFLOW, Vpz SYSTEM VENTILATION EFFICIENC ZONE VENITALION EFFICIENCY, 2 SPACE NAME	CY, SYSTEM EV ZONE EV SPACE TYPE		[CFM/ RSON] [CM	Ra PEOP DENSI F/SQ.FT.] [#/1000S	LE ITY Q.F Pz [PEOPLE]	Vbz [CFM] Ez	Voz [CFM]	Vpz [CFM]	ZONE Zp
				ZONE PRIMARY OUTDOOR AIR FI ZONE PRIMARY AIRFLOW, Vpz SYSTEM VENTILATION EFFICIENC ZONE VENITALION EFFICIENCY, 2	CY, SYSTEM Ev ZONE Ev SPACE TYPE		[CFM/ RSON] [CM 7.5	Ra PEOP F/SQ.FT.] [#/1000S 0.06 100	LE ITY Q.F Pz [PEOPLE] 124	Vbz [CFM] Ez 1014 1	Voz [CFM] 1014	Vpz [CFM] 2000	ZONE Zp 51%
				ZONE PRIMARY OUTDOOR AIR FI ZONE PRIMARY AIRFLOW, Vpz SYSTEM VENTILATION EFFICIENCY, 2 ZONE VENITALION EFFICIENCY, 2 SPACE NAME CAFETORIUM	CY, SYSTEM Ev ZONE Ev SPACE TYPE EDUCATION - MULTIUSE ASSEMBLY	1400	[CFM/ RSON] [CM 7.5 VA ¹	Ra F/SQ.FT.] PEOP DENSI [#/1000S 0.06 100 V-02 SUM PEOP PEOP	LE Q.F Pz [PEOPLE] 124 MARY LE	1014 1	1014	2000	51%
				ZONE PRIMARY OUTDOOR AIR FI ZONE PRIMARY AIRFLOW, Vpz SYSTEM VENTILATION EFFICIENCY, 2 ONE VENITALION EFFICIENCY, 2 SPACE NAME CAFETORIUM	CY, SYSTEM Ev ZONE Ev SPACE TYPE EDUCATION - MULTIUSE ASSEMBLY SPACE TYPE EDUCATION -	1400 Az [SQ.FT.] Rp PEI	[CFM/ RSON] [CM 7.5 VA VA [CFM/ RSON] [CM	Ra F/SQ.FT.] PEOP DENSI [#/1000S 0.06 100 V-02 SUM Ra F/SQ.FT.] PEOP DENSI [#/1000S	LE ITY Q.F Pz [PEOPLE] 124 MARY LE ITY Q.F Pz [PEOPLE]	1014 1 Vbz [CFM] Ez	1014 Voz [CFM]	2000 Vpz [CFM]	51% ZONE Zp
				ZONE PRIMARY OUTDOOR AIR FI ZONE PRIMARY AIRFLOW, Vpz SYSTEM VENTILATION EFFICIENCY, 2 ZONE VENITALION EFFICIENCY, 2 SPACE NAME CAFETORIUM	CY, SYSTEM Ev ZONE Ev SPACE TYPE EDUCATION - MULTIUSE ASSEMBLY SPACE TYPE	1400 Az [SQ.FT.] Rp PEI	[CFM/ RSON] [CM 7.5 VA [CFM/ RSON] [CM 7.5	Ra PEOP F/SQ.FT.] [#/1000S 0.06 100 V-02 SUM PEOP PEOP	LE Q.F Pz [PEOPLE] 124 MARY MARY LE ITY Q.F Pz [PEOPLE] 186	1014 1	1014	2000	51%
				ZONE PRIMARY OUTDOOR AIR FI ZONE PRIMARY AIRFLOW, Vpz SYSTEM VENTILATION EFFICIENCY, 2 ONE VENITALION EFFICIENCY, 2 SPACE NAME CAFETORIUM	CY, SYSTEM Ev ZONE Ev SPACE TYPE EDUCATION - MULTIUSE ASSEMBLY SPACE TYPE EDUCATION -	1400 Az [SQ.FT.] Rp PEI 2470	[CFM/ RSON] [CM 7.5 VA [CFM/ RSON] [CM 7.5 VA	Ra PEOP F/SQ.FT.] [#/1000S 0.06 100 V-02 SUM Ra PEOP F/SQ.FT.] PEOP [#/1000S 0.06 0.06 100 V-02 SUM 0.06 100 V-03 SUM PEOP PEOP DENSI [#/1000S 0.06 100 V-03 SUM	LE ITY Q.FPz [PEOPLE]124MARYLE ITY Q.FPz [PEOPLE]186MARYLE LE	1014 1 Vbz [CFM] Ez	1014 Voz [CFM]	2000 Vpz [CFM]	51% ZONE Zp
				ZONE PRIMARY OUTDOOR AIR FI ZONE PRIMARY AIRFLOW, Vpz SYSTEM VENTILATION EFFICIENCY, 2 ONE VENITALION EFFICIENCY, 2 SPACE NAME CAFETORIUM SPACE NAME CAFETORIUM AND STAGE	CY, SYSTEM Ev ZONE Ev SPACE TYPE EDUCATION - MULTIUSE ASSEMBLY EDUCATION - MULTIUSE	1400 Az [SQ.FT.] Rp PEI 2470 Az [SQ.FT.] Rp PEI	[CFM/ RSON] [CM 7.5 VAY [CFM/ RSON] [CM 7.5 VAY	Ra F/SQ.FT.] PEOP DENSI [#/1000S 0.06 100 V-02 SUM Ra F/SQ.FT.] PEOP DENSI [#/1000S 0.06 100 V-03 SUM	LE Pz [PEOPLE] Q.F 124 MARY LE Q.F Pz [PEOPLE] 186 MARY LE 186 MARY	1014 1 Vbz [CFM] Ez 1544 1	1014 Voz [CFM] 1544	2000 Vpz [CFM] 3000	51% ZONE Zp 51%
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				ZONE PRIMARY OUTDOOR AIR FI ZONE PRIMARY AIRFLOW, Vpz SYSTEM VENTILATION EFFICIENCY, 2 SPACE NAME CAFETORIUM SPACE NAME CAFETORIUM AND STAGE SPACE NAME CAFETERIA SPACE NAME	CY, SYSTEM EV ZONE EV SPACE TYPE A EDUCATION - MULTIUSE ASSEMBLY EDUCATION - MULTIUSE A EDUCATION - MULTIUSE A SPACE TYPE A SPACE TYPE A SPACE TYPE A SPACE TYPE A SPACE TYPE A SPACE TYPE A	1400 Az [SQ.FT.] Rp PEI 2470 Az [SQ.FT.] Rp PEI 3400 Az [SQ.FT.] Rp PEI 700	[CFM/ RSON] [CM 7.5 VA'	Ra F/SQ.FT.] PEOP DENSI (#/1000S 0.06 100 V-O2 SUM Ra F/SQ.FT.] PEOP DENSI (#/1000S 0.06 100 V-O3 SUM Ra F/SQ.FT.] PEOP DENSI (#/1000S 0.06 100 V-O3 SUM Ra F/SQ.FT.] PEOP DENSI (#/1000S 0.18 100 V-O4 SUM Ra F/SQ.FT.] PEOP DENSI (#/1000S 0.18 100 V-O4 SUM PEOP DENSI JENSI 100	LE TY Q.FPz [PEOPLE]124MARYMARYLE Y Q.FPz [PEOPLE]186MARYLE TY Q.FPz [PEOPLE]LE TY Q.FPz [PEOPLE]LE TY Q.FPz [PEOPLE]LE TY Q.FPz [PEOPLE]LE TY Q.FPz [PEOPLE]LE TYPz [PEOPLE]	1014 1 Vbz [CFM] Ez 1544 1 Vbz [CFM] Ez 2262 1 Vbz [CFM] Ez 2262 1 Vbz [CFM] Ez	1014 Voz [CFM] 1544 Voz [CFM] 2262	2000 Vpz [CFM] 3000 Vpz [CFM] 3600	51% ZONE Zp 51% ZONE Zp 63% ZONE Zp
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			ER TO CONT	ROL DIAGRAN	IS FOR ADDITI									
MAX WTR PD (FT EAT DB LAT D	DB SENSIBLE	HEATING			WTR (FT		ELE	CTRICAL		OPER. WEIGHT	MANUFACTUR			
PD (FT EAT DB LAT L HEAD) (°F) (°F) 12.50 35 90		= EWT (°F) 150	LWT (°F) 120	GPM HE	ÀD) FIL	TER VOLTA EATED 480		FLA MC 19.0 22.		(LBS) 5,295	MODEL # AAON RN	NO	REMA TES A,B; UPSIZ IOTOR FROM 7 EXISTING	ING SUPPLY F. .5 TO 10HP ON
TE	ERMINAL	BOX W	/ITH R	EHEAT	SCHEE	DULE								
C PRESSURE WHEN TESTE	D PER ARI STANI	DARD 885-98.												
COILS SEPARATE FROM BOX	HEATING	G COIL (HYDF		1	T									
(°F) (°F) 55 80	MBH (WT °F) LWT (° 140 120	4.8	MAX. WATE P.D. (FT.) 3.00	P.D. (IN. V 0.40	VC) M	FACTURER & IODEL # TUS DESV		E THE	ACCESSO	CO2 SENSOR		REMARKS -	8
55 80 55 85 55 85	119	140 120 140 115 140 115	6.7 10.0 2.0	3.00 3.00 3.00	0.40	TI"	TUS DESV TUS DESV TUS DESV	DDC DDC DDC	C THE	RMOSTAT AND (RMOSTAT AND (RMOSTAT AND (CO2 SENSOR		-	
						JST FAN								
NOTES: A: PROVIDE DIRECT DRIVE FA	ANS WITH FAN SI	PEED CONTRO)L.											
B: NO EQUIPMENT SHALL BE C: PROVIDE ROOF CURB WIT				PLATE RATING			MOTOR							
			_	E @ SL (IN	SP @ ALT (IN									
MARK SERVICE EF-1 SPED BATHROOM KEF-1 TYPE II DISH	CEILING UPBLAST	CFM 80 1500	3.8 10	0.17	0.15	MHP 13 W 1/4	120	PHASE	E MA	NUFACTURE GREENHECK		INTEGR/	ESSORIES AL BACKDRAFT AMPER AL BACKDRAFT	REMARK
KEF-2 TYPE II KITCHEI HOOD		600	8.1	0.60	0.40	1/4	120	1		GREENHECK		INTEGR/	AL BACKDRAFT AMPER AL BACKDRAFT AMPER	-
				PLU	MBING	FIXTURI	E SCHE	DULE						
ARK TYPE P1 FLOOR SINK	ADA N/A	FINISH ACID RESISTAN	N NT Z	FACTURER* MODEL # URN Z1902		T TRIM MFR* & 10DEL # -			ACCESS	ORIES			REMA	RKS
P2 ROOF DRAIN P3 SCIENCE CLASSROOM	N/A	CAST IRON DURA-COATEI CAST IRON	D Z	2URN Z125		-							- STALL PER MAN	
P4 DOWNSPOUTHOZZLE		RESIN; RE: ARCH		HRN Z199		AGO #930-VPH	ANGLE ST	OPS, SUPPLIES A	AND ACID WAS	TE TAIL PIECE. I CID NEUTRALIZ	TION, QUARTER T PROVIDE AND INS ATION TANK, MODI	TALL		
P5 Y MOP BASIN Y P6 URINAL FLUSH VALVE ONLY P7 WATER CLOSET FLUSH		CHROME	FLORES	STOME #92 36X3 - -	SLOAN G	ASS #B-0663 BSTP 2 8111-1.6 3250400 2 8111-1.6 3250400		XISTING URINAL	TO REMAIN. F				· · ·	
VALVE ONLY P8 LAVATORY FAUCET ONLY	EXISTING	CHROME			DELT	A 2529LF-HDF	EXISTI	NG SINK BASIN A	AND DRAIN TO	REMAIN. REPLA	CE FAUCET ONLY		-	
P9 PREFABRICATED MODULAR SHOWER SYSTEM P10 COVERALL WALL	YES	CHROME		-		ADLEY 1PA		SHUTOFF VALVE	E, SUPPLY STO	DPS, LOCKABLE	STATIC MIXING VA BALL JOINT STATIC MIXING VA		-	
P11 WALL MOUNTED WATE CLOSET	R YES	CHROME		CAN STANDARD 356.111.020	SLOAN G	2 8111-1.6 3250400	PROVIDE FL	EAT WITH HEAV	H MANUAL OVE Y DUTY STAIN	ERRIDE. PROVID	BALL JOINT E ANTIMICROBIAL ECK HINGE. PROVI		-	
FLOOR DRAIN	N/A		Z Z	URN Z415S		-		PROVIDE WITH	H SURE-SEAL	FRAP GUARD AN	ID P-TRAP		-	
						ARK U			R, DIFF	USER & MANUFACT MODE			RIES	REMARKS
						ARK U (E) VA A LAY-IN SU B SIDE	JSE PA RIES I CEILING PPLY	ATTERN - 4-WAY	FINISH	MANUFACT	URER* & EL# /		RIES	REMARKS
	BREATHING Z ZONE FLOOR ZONE POPUL AREA OUTDO PEOPLE OUTI ZONE AIR DIS ZONE OUTDO SYSTEM OUT ZONE PRIMAF ZONE PRIMAF SYSTEM VEN		R AIRFLOW Ra E, Rp FECTIVENE Voz AKE FLOW I AIR FRACTIO /pz CIENCY, SY	, Vbz SS, Ez RATE, Vot DN, Zp STEM Ev		ARK U (E) VA A LAY-IN SU B SIDE	ISE PA RIES I CEILING IPPLY EWALL STA TURN	ATTERN - 4-WAY ATIONARY	FINISH - WHITE RE: ARCH	MANUFACT MODE - TITUS TE TITUS 3	URER* & EL# /	QUATIONS: Ra * Az (EQ QUATION 4 QUATION 4 QUATION 4 QUATION 4 3.1.1.2.3.2) SSUMING E	RIES EXIST JATION 4-1) I-2) I-5) I=1 (EQUATIO	REMARKS FING DIFFUSEF REMAIN - -
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P9 P10		PREFABRICATED MODULAR SHOWER SYSTEM COVERALL WALL SHOWER	YES	CHROME			ADLEY 1PA	SH PROVIDE WIT	UTOFF VALVE,	SUPPLY STO	OPS, LOCKABLE	STATIC MIXING VA		-	
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			\mathcal{M}		ZURN Z415S		IARK (E) V A LAY-I	JSE PAT ARIES		SURE-SEAL		LOUVE	ER SCH		EMARKS NG DIFFUSER TO REMAIN
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NOTES:

RS FOR MECHANICAL EQUIPMENT JRNISHED UNDER THIS CONTRACT PLACE AND WIRED BY EC. VFD'S DED AS PART OF THE EQUIPMENT CKAGE SHALL BE FURNISHED BY D SET IN PLACE AND WIRED BY

UIPMENT REQUIRED UNDER THIS IS NECESSARILY SPECIFIED ON ULE SHEETS. PLAN & DIAGRAM AND PROJECT MANUAL CONTAIN SPECIFICATIONS AS WELL.

.1-2004 & 2007) L EQUIPMENT THAT IS NOT Y THE U.S. NATIONAL APPLIANCE INSERVATION ACT (NAECA) OF CARRY A PERMANENT LABEL BY THE MANUFACTURER STATING QUIPMENT COMPLIES WITH THE INTS OF STANDARD 90.1.

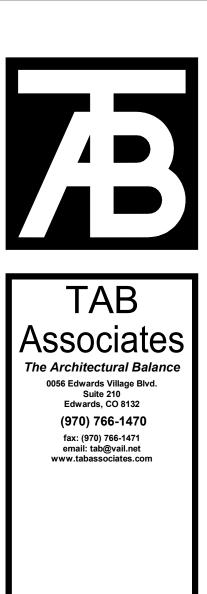
.1) /ING EQUIPMENT SUBJECT TO THE ASHRAE 62.1 AND SHALL COMPLY TRUCTION REQ'MTS THEREIN.

APACITIES, CHARACTERISTICS, AND TION FEATURES REQUIRED ARE ILY INDICATED IN THE EQUIPMENT S. RE: PLANS AND SPECIFICATIONS NAL REQ'MTS.

, CHARACTERISTICS, AND FION FEATURES OF THE DEQUIPMENT ARE HEREBY STED INTO THE PROJECT STTS. EQUIVALENT PRODUCTS NCE AND CONSTRUCTION SHALL MEET OR EXCEED THAT OF IED EQUIPMENT WHETHER D OR NOT.

UIPMENT AVAILABLE FROM LISTED IT" MANUFACTURERS LISTED IS LY EQUIVALENT TO THE BASIS OF JIPMENT SPECIFIED. CONTRACTOR OLELY RESPONSIBLE FOR ANY SULTANT CHANGES TO OTHER AND SPATIAL REQ'MTS FOR OTHER THAN SCHEDULED.

ACTURERS REPRESENTATIVES O AND UNDERSTAND THE CONTROL AND COORDINATE WITH TCC TO FULLY FUNCTIONING SYSTEM AS IN THE CONTROL DIAGRAMS.



0 0 ch Steamboat Springs Middle S 39610 Amethyst Drive Steamboat Springs, CO 80487

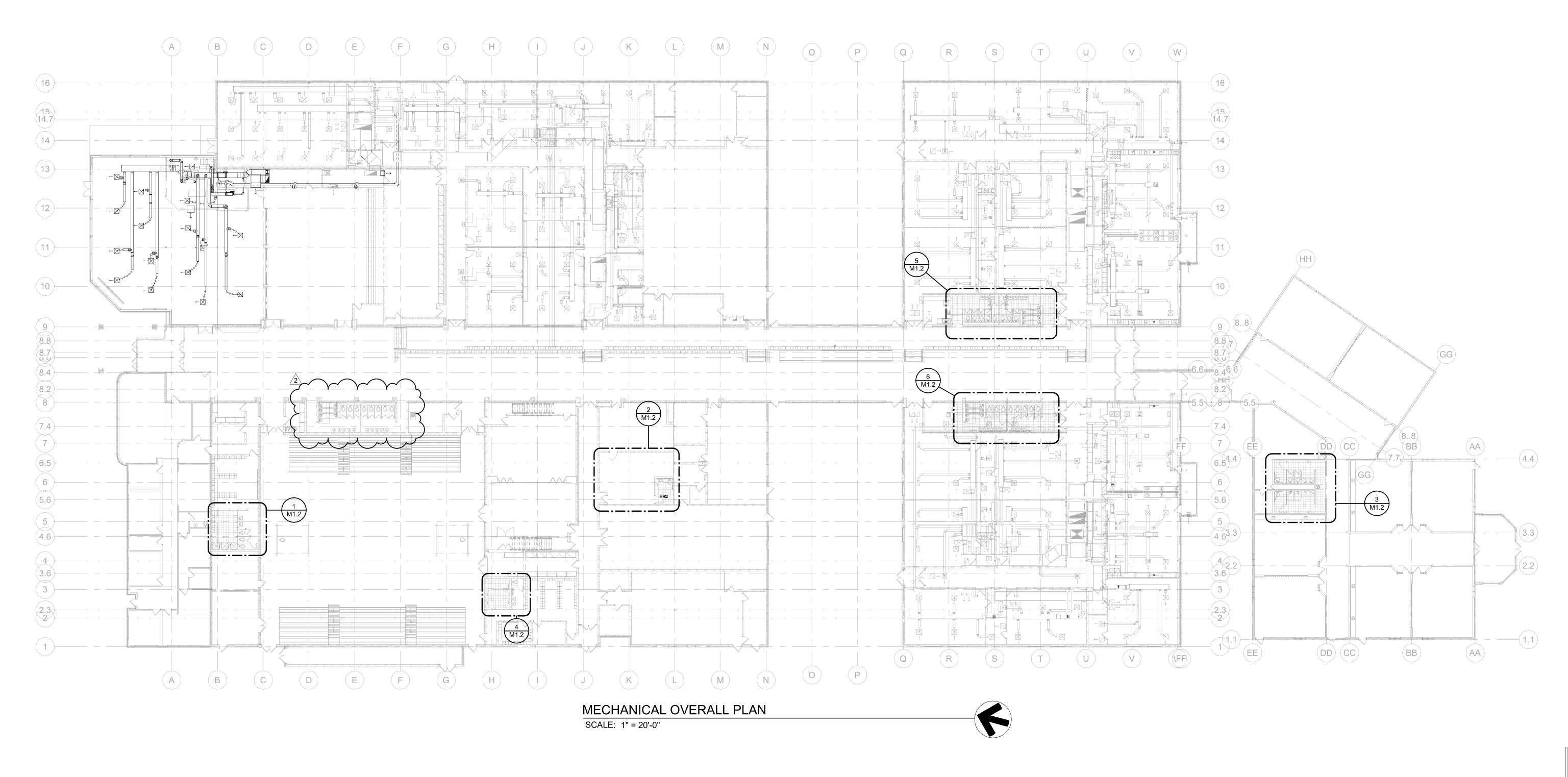
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Issue Dates: 04.06.2020 PERMIT SET Sheet Title: MECHANICAL SCHEDULES

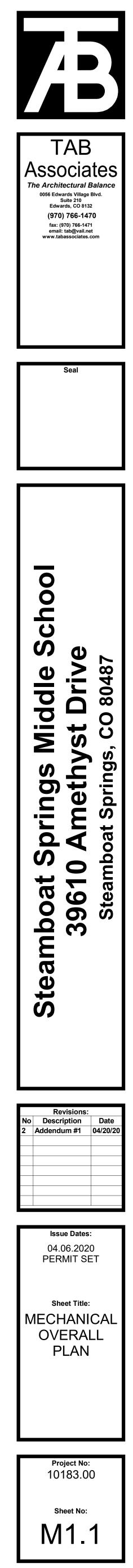
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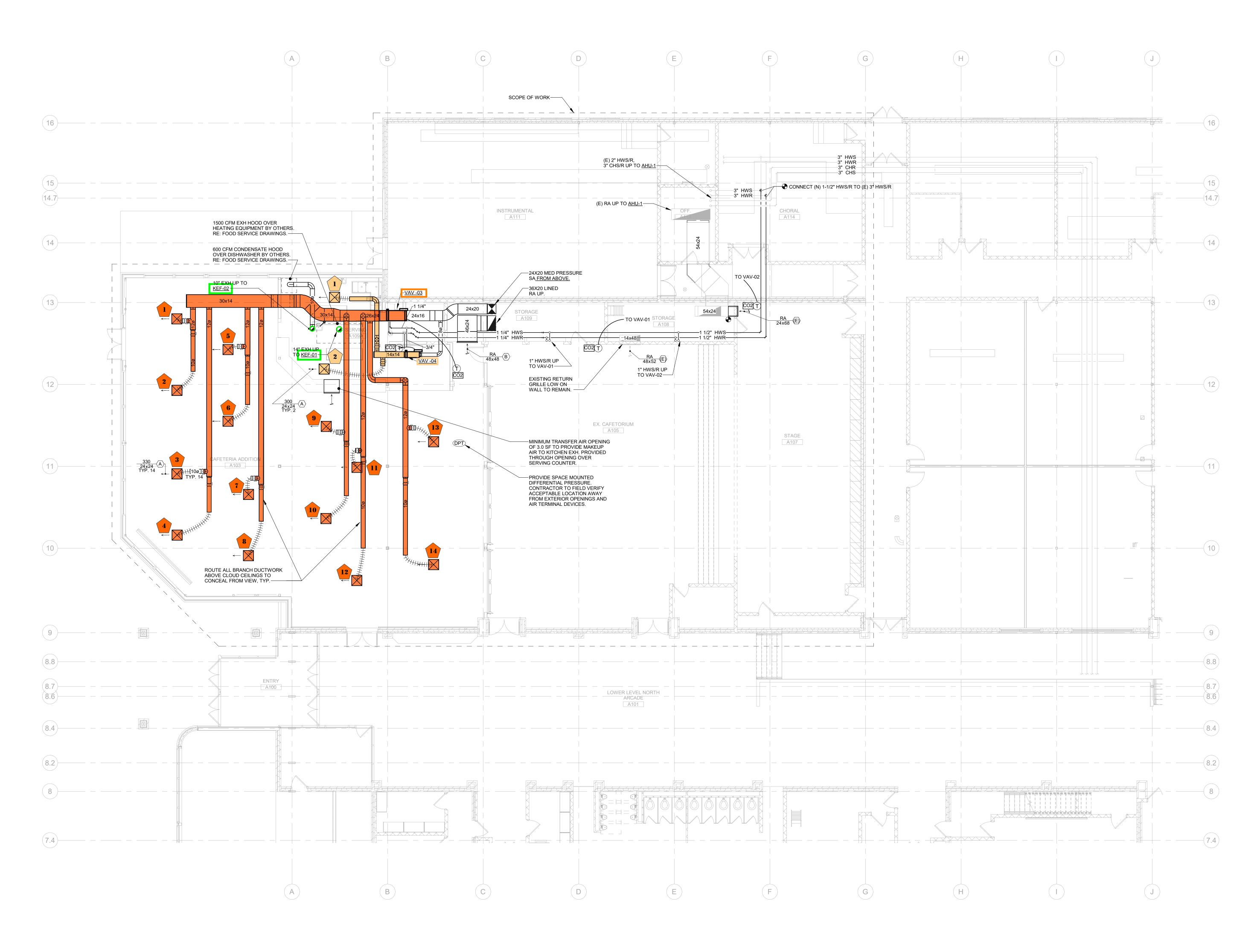
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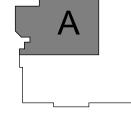
1 FIRST LEVEL AREA A MECHANICAL PLAN SCALE: 1/8" = 1'-0"





 DO NOT ROUTE DUCTWORK OVER ELECTRICAL ROOMS OR ELECTRICAL PANELS; 4. PROVIDE FLEXIBLE DUCT AND PIPE CONNECTIONS TO ALL MOTORIZED EQUIPMENT.

ELECTRICAL. 6. MAINTAIN MIN. 3 FT BETWEEN





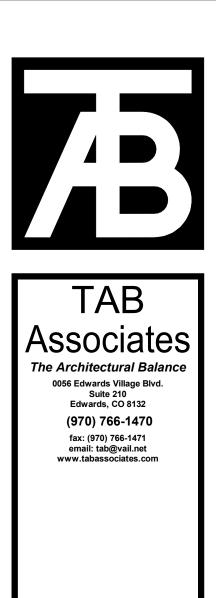
NOTES:

1. RE: M3.0 SERIES FOR MECHANICAL DIAGRAMS. 2. CEILING COORDINATION OF ALL MEP SYSTEMS (LIGHTING, DUCTWORK, DIFFUSERS, ELECTRICAL, FIRE PROTECTION, ETC.) MUST BE COMPLETED BY THE CONTRACTOR PRIOR TO THE START OF ANY INSTALLATIONS.

MAINTAIN N.E.C. CLEARANCES. COORDINATE ROUTINGS WITH DIV. 16 CONTRACTOR.

ALL DUCTWORK SHALL BE ROUTED AS HIGH AS POSSIBLE IN THE CEILING SPACE. UTILIZE JOIST SPACE WHEN POSSIBLE, ESPECIALLY WHERE CROSSING OTHER DUCTS, PIPES, AND ELECTION.

ENVIRONMENTAL EXH TERMINATIONS AND OPENINGS INTO BUILDING.



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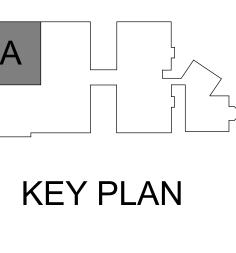
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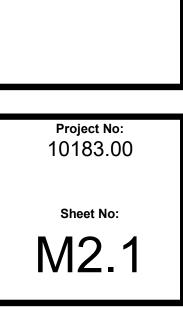
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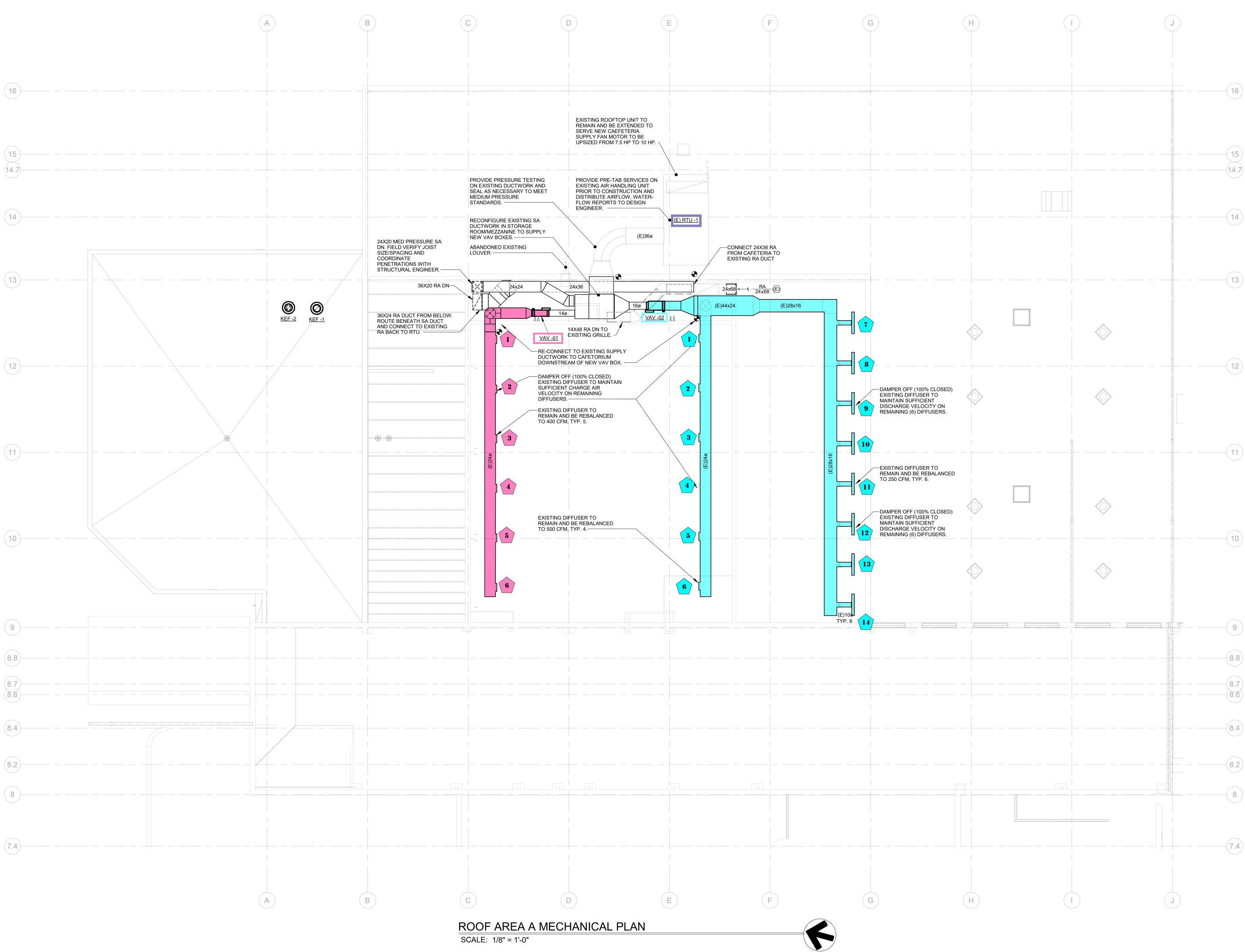
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Issue Dates: 04.06.2020 PERMIT SET Sheet Title: FIRST LEVEL AREA A MECH PLAN



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- TO THE START OF ANY INSTALLATIONS. 3. DO NOT ROUTE DUCTWORK OVER
- 4. PROVIDE FLEXIBLE DUCT AND PIPE CONNECTIONS TO ALL MOTORIZED EQUIPMENT.
- ALL DUCTWORK SHALL BE ROUTED AS HIGH AS POSSIBLE IN THE CEILING SPACE. UTILIZE JOIST SPACE WHEN POSSIBLE, ESPECIALLY
- ELECTRICAL. 6. MAINTAIN MIN. 3 FT BETWEEN



Sheet No:

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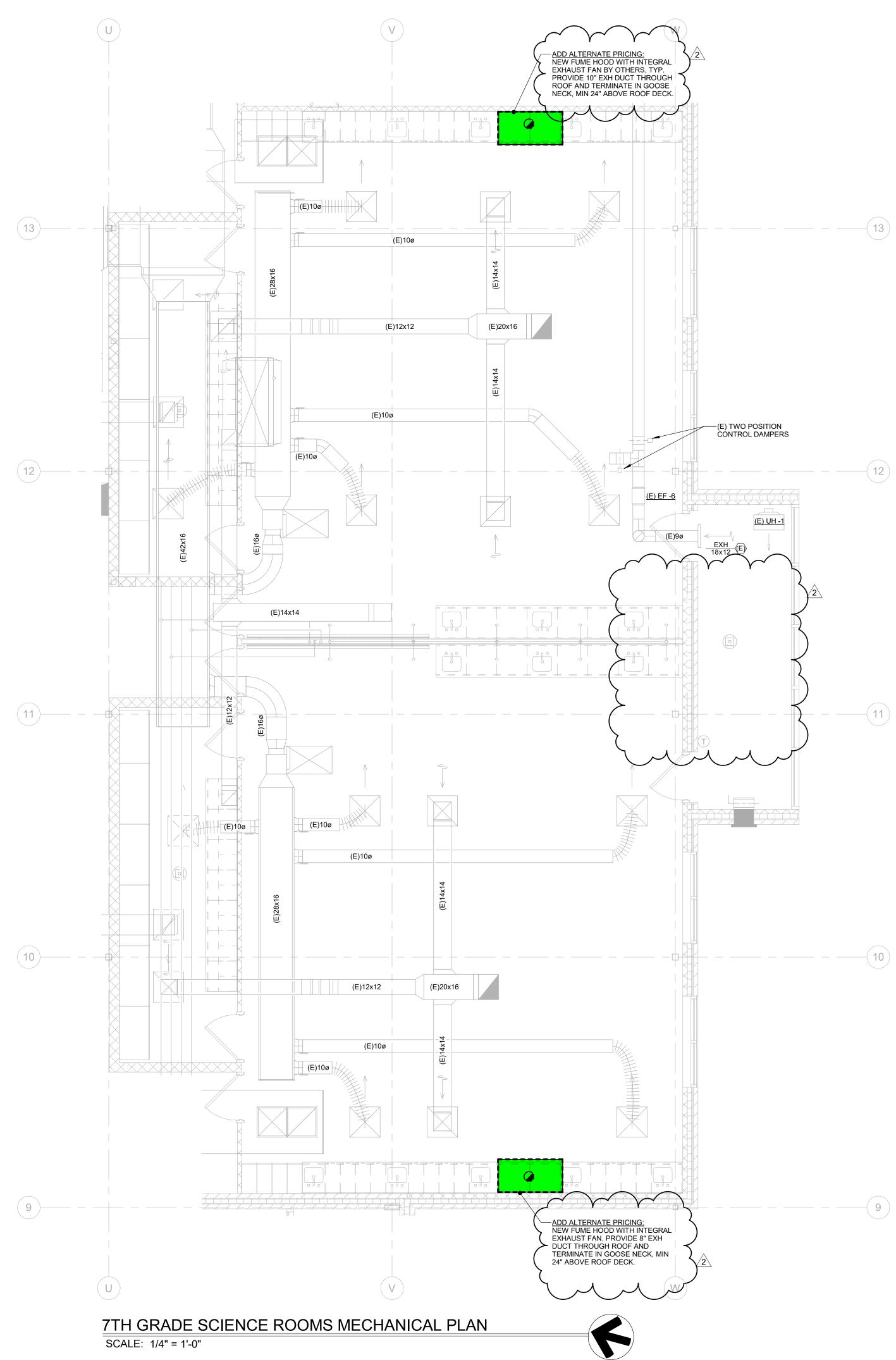
1. RE: M3.0 SERIES FOR MECHANICAL DIAGRAMS. 2. CEILING COORDINATION OF ALL MEP SYSTEMS (LIGHTING, DUCTWORK, DIFFUSERS, ELECTRICAL, FIRE PROTECTION, ETC.) MUST BE COMPLETED BY THE CONTRACTOR PRIOR

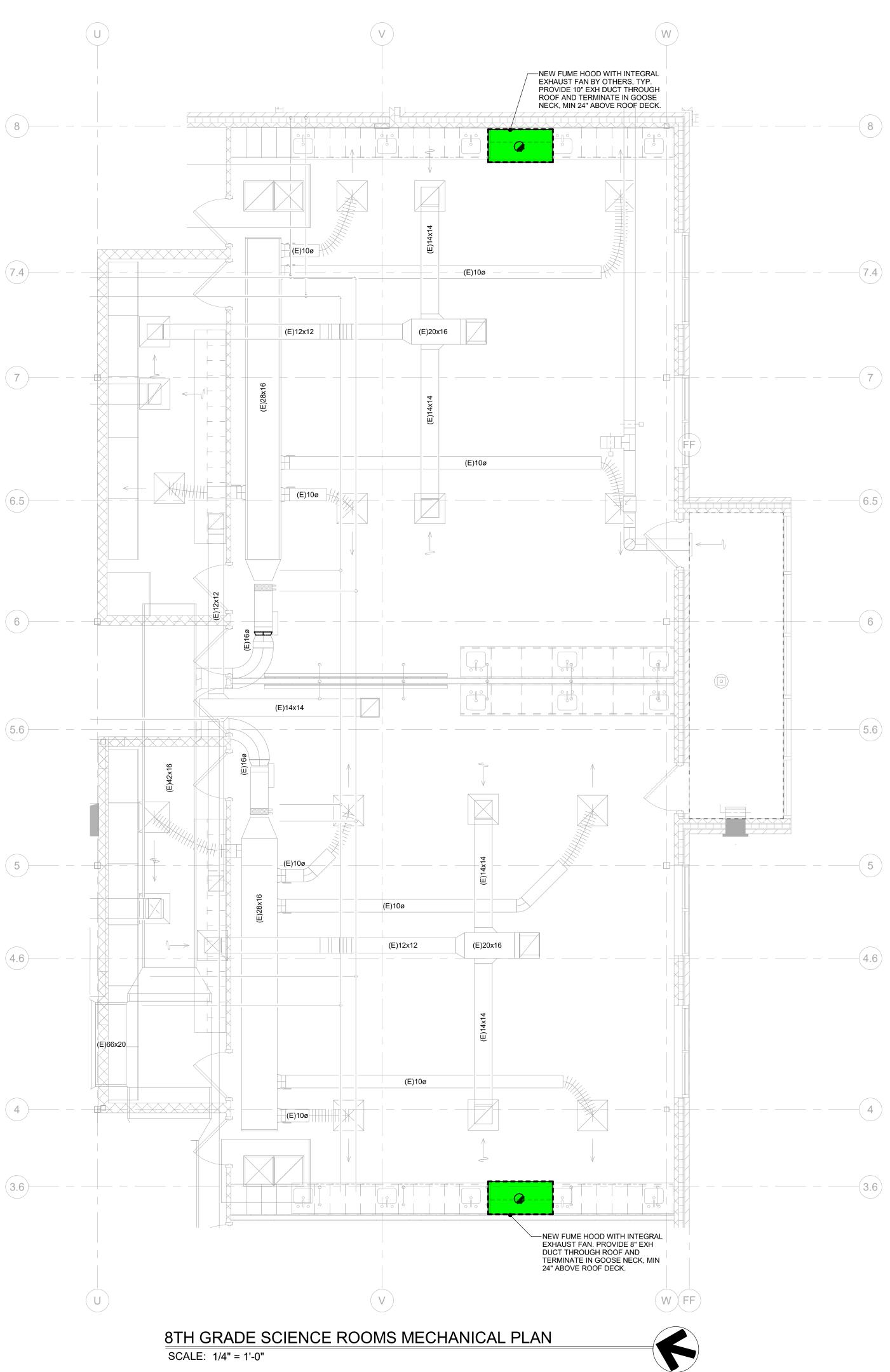
ELECTRICAL ROOMS OR ELECTRICAL PANELS; MAINTAIN N.E.C. CLEARANCES. COORDINATE ROUTINGS WITH DIV. 16 CONTRACTOR.

WHERE CROSSING OTHER DUCTS, PIPES, AND

ENVIRONMENTAL EXH TERMINATIONS AND OPENINGS INTO BUILDING.







SCALE: 1/4" = 1'-0"

TO THE START OF ANY INSTALLATIONS. 3. DO NOT ROUTE DUCTWORK OVER 4. PROVIDE FLEXIBLE DUCT AND PIPE CONNECTIONS TO ALL MOTORIZED EQUIPMENT. ELECTRICAL. 6. MAINTAIN MIN. 3 FT BETWEEN OPENINGS INTO BUILDING.



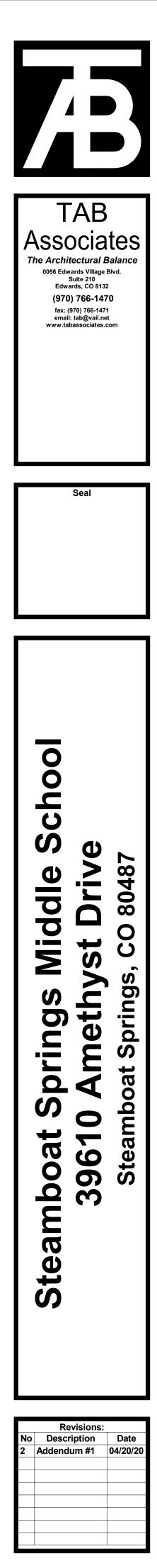
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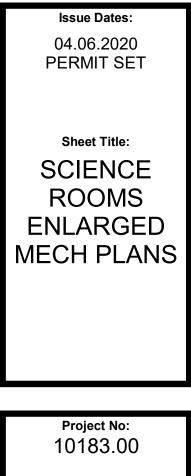
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5. ALL DUCTWORK SHALL BE ROUTED AS HIGH AS POSSIBLE IN THE CEILING SPACE. UTILIZE JOIST SPACE WHEN POSSIBLE, ESPECIALLY WHERE CROSSING OTHER DUCTS, PIPES, AND

ENVIRONMENTAL EXH TERMINATIONS AND





Sheet No:

M2.3