

AIR BALANCING SPECIALTY INC.

WEST POWELLHURST ELEMENTARY SCHOOL PORTLAND, OREGON

PROJECT NO: 21-4253-DW

AIR BALANCING SPECIALTY INC. 3532 S.E. MILWAUKIE AVENUE PORTLAND, OREGON 97202-2751
IN BUSINESS SINCE 1964 CERTIFIED NEBB FIRM - CERTIFICATION NO. 2984
PHONE (503) 230-2332 FAX (503) 230-2820

PROJECT NAME: **WEST POWELLHURST ELEMENTARY SCHOOL - PORTLAND, OREGON**

OWNER: DAVID DOUGLAS SCHOOL DISTRICT DATE STARTED: 03/23/21 DATE FINISHED: 04/14/21

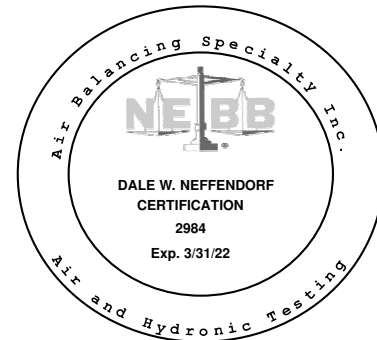
MECHANICAL ENGINEER: WORK PERFORMED BY: DALE NEFFENDORF
WILLIAM NEFFENDORF

GENERAL CONTRACTOR: CERTIFIED BY: _____

MECHANICAL CONTRACTOR: DATE: _____

SHEET METAL CONTRACTOR:

CONTROL CONTRACTOR:



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CERTIFIED TEST AND BALANCE REPORT

PROJECT NO.: 21-42253-DW

INSTRUMENT AIR	MODEL NO.	SERIAL NO.	RANGE	CALIBRATION DATE
(D) Shortridge Airdata Multimeter ADM Accessories	ADM860	M98375	0.0001 to 60.00" WC.	1/12/2021
(DH) Datameter Flow Hood	8400		25 - 2500 CFM	
(DP) Datameter Pitot Tube	12", 18", 24", 36", 48" & 60"		50 - 30000 FPM	
(DA) Datameter Airfoil	AFP18		50 - 5000 FPM	
(DG) Datameter Velgrid	VLG84		50 - 2500 FPM	
(R) Rotating Vane Anemometer	A4/-4"	83072B	200 - 10000 FPM	1/14/2021
Amprobe Ammeter	Fluke 335	99330394	0 - 750 Volts / 0 - 300 Amps	1/8/2021
Shimpo Tachometer	DT-207L	D26B0033	6 - 30,000 RPM	1/12/2021
WATER				
Hydrodata Meter	HDM-250	W01025	DP -10 to +300 PSI	1/12/2021

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EQUIPMENT USED IN BALANCING

PROJECT: WEST POWELLHURST ELEMENTARY SCHOOL - PORTLAND, OREGON

PROJECT NO.: 21-4253-DW

PAGE ABBREVIATION KEY

AK - GRILLE AREA OR RESTRICTION VALUE

VEL - VELOCITY

CFM - CUBIC FEET PER MINUTE

FPM - FEET PER MINUTE

ACH - AIR CHANGES PER HOUR

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PROJECT: WEST POWELLHURST ELEMENTARY SCHOOL - PORTLAND, OREGON

PROJECT NO.: 21-4253-DW

Ref	Ins	AREA SERVED			OUTLET			DESIGN		CUBIC FEET	TEST #1				TEST #2			
		Rm.#	No.	Size	Blow	AK	Vel	CFM	FPM		CFM	ACH	PRESSURE	FPM	CFM	ACH	PRESSURE	
	DH	Classroom	7					1.00		8838		615	4.18					
	DH	Classroom	8					1.00		8838		765	5.19					
	DH	Classroom	9					1.00		8838		720	4.89					
	DH	Classroom	10					1.00		8838		625	4.24					
	DH	Classroom	11					1.00		8838		665	4.51					
	DH	Classroom	12					1.00		8838		445	3.02					
	DH	Classroom	13					1.00		8838		920	6.25					
	DH	Classroom	14					1.00		8838		530	3.60					
	DH	Classroom	15					1.00		8838		500	3.39					
	DH	Classroom	16					1.00		8838		730	4.96					
	DH	Classroom	17					1.00		8838		875	5.94					
	DH	Classroom	18					1.00		8838		590	4.01					
	DH	Classroom	19					1.00		8838		0	0.00					
	DH	Classroom	20					1.00		8838		520	3.53					
	DH	Classroom	21					1.00		8838		890	6.04					
	DH	Classroom	22					1.00		8838		250	1.70					
	DH	Classroom	23					1.00		8838		850	5.77					
	DH	Classroom	24					1.00		8838		780	5.30					
	DH	Classroom	25					1.00		8838		530	3.60					

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CONSTANT VOLUME - FPM

AIR BALANCE DATA SHEET

PROJECT NO.: 21-4253-DW

PROJECT: WEST POWELLHURST ELEMENTARY SCHOOL - PORTLAND, OREGON

DATE START: 03/23/21

FINISH: 04/14/21

SYSTEM: Classrooms 7 - 25

SECTION:

BY: DN / WN

PAGE: 1 OF 4

Ref	Ins	AREA SERVED			OUTLET			DESIGN			CUBIC FEET	TEST #1				TEST #2			
		Rm.#	No.	Size	Blow	AK	Vel	CFM	FPM	CFM		ACH	PRESSURE	FPM	CFM	ACH	PRESSURE		
	DH	Computer Room						1.00			7933		2025	15.32					
	DH	Library						1.00			11785		1800	9.16					
	DH	Office / Storage						1.00			1260		160	7.62					
	DH	Office C SLP						1.00			1316		95	4.33					
	DG	Cafeteria				28x36		7.00			44918	460	3220	4.30					
	DH	Counselor						1.00			0		0						
	DH	Office						1.00			5653		305	3.24					
	DH	Health Office						1.00			1106		150	8.14					
	DA	Gym				34"O		6.30			159850	667	4202	1.58					
	DH	Room	1					1.00			5912		685	6.95					
	DH	Room	2					1.00			3736		500	8.03					
	DH	Music						1.00											

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CONSTANT VOLUME - FPM

AIR BALANCE DATA SHEET

PROJECT NO.: 21-4253-DW

PROJECT: WEST POWELLHURST ELEMENTARY SCHOOL - PORTLAND, OREGON

DATE START: 03/23/21

FINISH: 04/14/21

SYSTEM: Computer Rm, Library, Cafeteria, Health Office, Gym and Misc

SECTION:

BY: DN / WN

PAGE: 2 OF 4

Ref	Ins	AREA SERVED			OUTLET			DESIGN Vel	CFM	CUBIC FEET	TEST #1				TEST #2			
		Rm.#	No.	Size	Blow	AK	FPM				CFM	ACH	PRESSURE	FPM	CFM	ACH	PRESSURE	
	DH	Girls Exhaust (between 11-19)						1.00				130	GRAVITY					
	DH	Boys Exhaust (between 11-19)						1.00				120	GRAVITY					
	DH	Cafeteria RR Girls Exh						1.00				35	GRAVITY					
	DH	Cafeteria RR Boys Exh						1.00				45	GRAVITY					
	DH	Office RR Exh						1.00		630		30	2.86					
	DH	Office RR Staff Exh						1.00		590		100	10.17					
	DH	Break Rm Exh						1.00		2060		120	3.50					
	DH	RR Exh	20				1.00		104		105	60.58						
	DH	RR Exh	21				1.00		104		105	60.58						
	DH	RR Exh	22				1.00		104		95	54.81						
	DH	RR Exh	23				1.00		104		90	51.92						
	DH	RR Exh	24				1.00		104		110	63.46						
	DH	RR Exh	25				1.00		104		105	60.58						
1		Gym RR Women's Exh								969								
1		Gym RR Men's Exh								710								

Ref. Note: (1) Exhaust fan is not running, also belts are loose. 3/23/21

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PROJECT NO.: 21-4253-DW

PROJECT: WEST POWELLHURST ELEMENTARY SCHOOL - PORTLAND, OREGON

DATE START: 03/23/21

FINISH: 04/14/21

SYSTEM: Exhaust

SECTION:

BY: DN / WN

PAGE: 3 OF 4

Ref	Ins	AREA SERVED			OUTLET			DESIGN			CUBIC FEET	TEST #1				TEST #2			
					Rm.#	No.	Size	Blow	AK	Vel		CFM	FPM	CFM	ACH	PRESSURE	FPM	CFM	ACH
	DH	Music Mod Supply						1.00			11334		1415	7.49					
	DH	Music Mod Exhaust						1.00			11334		0	0.00					
	DH	Office Supply						1.00			1247		125	6.01					
	DH	Office Exhaust						1.00			1247		0	0.00					
	DH	RR Interior Supply						1.00			512		50	5.86					
	DH	RR Interior Exhaust						1.00			512		95	11.13					
	DH	RR Exterior Supply						1.00			512		65	7.62					
	DH	RR Exterior Exhaust						1.00			512		95	11.13					
	DH	Gym Boy's RR Exhaust						1.00			612		145	14.22					
	DH	Gym Girl's RR Exhaust						1.00			830		160	11.57					

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DATE START: 03/23/21

FINISH: 04/14/21

SYSTEM: Exhaust

SECTION:

BY: DN / WN

PAGE: 4 OF 4