

# **AIR BALANCING SPECIALTY INC.**

**ALICE OTT MIDDLE 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: **ALICE OTT MIDDLE SCHOOL - PORTLAND, OREGON**

OWNER: DAVID DOUGLAS SCHOOL DISTRICT      DATE STARTED: 04/08/21      DATE FINISHED: 04/08/21

MECHANICAL ENGINEER:      WORK PERFORMED BY: DALE NEFFENDORF  
WILLIAM NEFFENDORF

GENERAL CONTRACTOR:      CERTIFIED BY: \_\_\_\_\_

MECHANICAL CONTRACTOR:      DATE: \_\_\_\_\_

SHEET METAL CONTRACTOR:

CONTROL CONTRACTOR:



IN BUSINESS SINCE 1964

## AIR BALANCING SPECIALTY INC.

CERTIFIED NEBB No. 2984

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**CERTIFIED TEST AND BALANCE REPORT**

**PROJECT NO.: 21-42253-DW**

<b>INSTRUMENT AIR</b>	<b>MODEL NO.</b>	<b>SERIAL NO.</b>	<b>RANGE</b>	<b>CALIBRATION DATE</b>
(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
<b>WATER</b>				
Hydrodata Meter	HDM-250	W01025	DP -10 to +300 PSI	1/12/2021

IN BUSINESS SINCE 1964

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### EQUIPMENT USED IN BALANCING

PROJECT: ALICE OTT MIDDLE 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

IN BUSINESS SINCE 1964

**AIR BALANCING SPECIALTY INC.**

CERTIFIED NEBB No. 2984

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**PROJECT: ALICE OTT MIDDLE 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	1			CEIL	1.00				6672		381	3.43					
	DH	Classroom	2			CEIL	1.00				6707		245	2.19					
	DH	Classroom	3			CEIL	1.00				7265		365	3.01					
	DH	Classroom	4			CEIL	1.00				6842		370	3.24					
	DH	Classroom	5			CEIL	1.00				6806		415	3.66					
	DH	Classroom	6			CEIL	1.00				6808		415	3.66					
	DH	Classroom	7			CEIL	1.00				6775		335	2.97					
	DH	Classroom	8			CEIL	1.00				7430		340	2.75					
	DH	Classroom	9			UV	1.00				7260		1010	8.35					
	DH	Classroom	10			UV	1.00				7179		985	8.23					
	DH	Classroom	11			UV	1.00				8476		1025	7.26					
	DH	Classroom	11A			SW	1.00				7488		485	3.89					
	DH	Classroom	12			UV	1.00				9962		975	5.87					
	R	Computer Lab	13		14x10x4	SW	0.68				10835		2652	14.69					
	R	Computer Lab	14			SW	0.68				11024		2468	13.43					
	DH	Classroom	15			UV	1.00				10161		1055	6.23					
	DH	Classroom	16			UV	1.00				9999		915	5.49					
	DH	Classroom	17			UV	1.00				10018		950	5.69					
	DH	Classroom	18			UV	1.00				9989		1015	6.10					

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CONSTANT VOLUME - FPM

AIR BALANCE DATA SHEET

PROJECT NO.: 21-4253-DW

PROJECT: ALICE OTT MIDDLE SCHOOL - PORTLAND, OREGON

DATE START: 04/08/21

FINISH: 04/08/21

SYSTEM: Classrooms 1-12, Computer Lab, Classroom 15-18

SECTION:

BY: DN / WN

PAGE: 1 OF 5

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	19		UV	1.00				10280		1070	6.25					
	DH	Classroom	20		CEIL	1.00				6749		340	3.02					
	DH	Classroom	21		CEIL	1.00				6618		380	3.45					
	DH	Classroom	22		CEIL	1.00				5537		360	3.90					
	DH	Classroom	23		CEIL	1.00				6747		345	3.07					
	DH	Classroom	24		CEIL	1.00				6793		370	3.27					
	DH	Classroom	25		CEIL	1.00				18097		1305	4.33					
	DH	Classroom	26		CEIL	1.00				18212		1540	5.07					
	DH	Classroom	27		CEIL	1.00				10828		1435	7.95					
	DH	Classroom	28		CEIL	1.00				10030		1480	8.85					
	DH	Classroom	29		CEIL	1.00				10767		1565	8.72					
	R	Classroom	30		20x8x3 CEIL	0.83				24072	1200	996	2.48					
1, 2		Classroom	31			1.00				4403			0.00					
2	R	Classroom	32		26x10 SUV	1.35				4087	780	1053	15.46					
2	DH	Classroom	32A		SUV	0.68				7004		865	7.41					

Ref. Note: (1) Fan not running. (2) Non filtered fan.

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CONSTANT VOLUME - FPM

AIR BALANCE DATA SHEET

PROJECT NO.: 21-4253-DW

PROJECT: ALICE OTT MIDDLE SCHOOL - PORTLAND, OREGON

DATE START: 04/08/21

FINISH: 04/08/21

SYSTEM: Classrooms 1-12, Computer Lab, Classroom 15-18

SECTION:

BY: DN / WN

PAGE: 2 OF 5

Ref	Ins	AREA SERVED			OUTLET		AK	DESIGN		CUBIC FEET	TEST #1				TEST #2			
		Rm.#	No.	Size	Blow	Vel		CFM	FPM		CFM	ACH	PRESSURE	FPM	CFM	ACH	PRESSURE	
3	DG	Auditorium		48X36X2						75974		0	0.00					
	DG	Weight Room Exhaust					1.00			34200		1400	2.46					
	DH	Cafeteria					1.00			75869		5365	4.24					
	DH	Library					1.00			29455		1615	3.29					
	DH	25-26 Office					1.00			795		80	6.04					
	DH	Women's Coach Office					1.00			1018		100	5.89					
	DH	Boys Coach Office					1.00			1032		105	6.10					
	DG	Gym Main		51X40.5			13.63			209681	683	9309	2.66					
	DG	Gym Upper		51X40.5			13.63			93415	313	4266	2.74					

Ref. Note: (3) Filters not changed and coils plugged.

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PROJECT NO.: 21-4253-DW

PROJECT: ALICE OTT MIDDLE SCHOOL - PORTLAND, OREGON

DATE START: 04/08/21

FINISH: 04/08/21

SYSTEM: Auditorium, Weight Room, Cafeteria, Library, Office, Coaches Offices, Gym

SECTION:

BY: DN / WN

PAGE: 3 OF 5

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	Women's Exhaust (by Rm 4)						1.00		4007		70	1.05						
	DH	Men's Exhaust (by Rm 9)						1.00		2900		250	5.17						
	DH	Women's Exhaust (by Rm 10)						1.00		2900		240	4.97						
	DH	Staff RR Exhaust						1.00		457		105	13.79						
	DH	Office RR Exhaust						1.00		363		120	19.83						
	DH	Boys Coach RR Supply						1.00		1572		145	5.53						
	DH	Boys Coach RR Exhaust						1.00		1572		30	1.15						
	DH	Women's Coach RR Supply						1.00		1512		175	6.94						
	DH	Women's Coach RR Exhaust						1.00		1512		35	1.39						
	DH	Women's Locker RR Supply						1.00		1118		130	6.98						
	DH	Women's Locker RR Exhaust						1.00		1118		25	1.34						
	DH	Men's Locker RR Supplu						1.00		1204		125	6.23						
	DH	Men's Locker RR Exhaust						1.00		1204		0	0.00						
	DH	Gym Boy's Staff Exhaust						1.00		270		0	0.00						
	DH	Gym Boys Supply						1.00		1860		155	5.00						
	DH	Gym Boys Exhaust						1.00		1860		0	0.00						
	DH	Gym Girls Supply						1.00		1649		120	4.37						
	DH	Gym Girls Exhaust						1.00		1649		0	0.00						
	DH	Gym Girls Staff Exhaust						1.00		270		0	0.00						
	DH	Girls Locker Supply						1.00		8991		1425	9.51						
	DH	Girls Locker Exhaust						1.00		8991		1485	9.91						
	DH	Boys Locker Supply						1.00		10732		1335	7.46						
	DH	Boys Locker Exhaust						1.00		10732		1355	7.58						

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PROJECT: ALICE OTT MIDDLE SCHOOL - PORTLAND, OREGON

DATE START: 04/08/21

FINISH: 04/08/21

SYSTEM: Exhaust

SECTION:

BY: DN / WN

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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	Women's Exhaust (by Rm 15D)							1.00			2239		0	0.00				
	DH	Men's Staff Exhaust (by Rm 15D)							1.00			2497		60	1.44				
	DH	Men's Exhaust (by Rm 24)							1.00			3026		140	2.78				
	DH	Kitchen RR Exhaust							1.00			558		150	16.13				

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PAGE: 5 OF 5