

# **AIR BALANCING SPECIALTY INC.**

## **GILBERT HEIGHTS 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: **GILBERT HEIGHT ELEMENTARY SCHOOL - PORTLAND, OREGON**

OWNER: DAVID DOUGLAS SCHOOL DISTRICT      DATE STARTED: 03/16/21      DATE FINISHED: 03/16/21

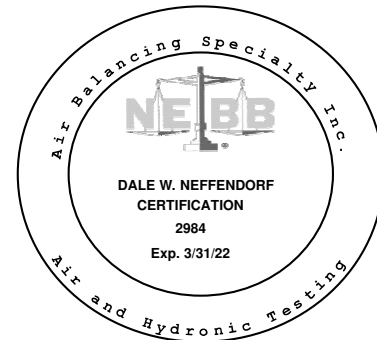
MECHANICAL ENGINEER:      WORK PERFORMED BY: DALE NEFFENDORF  
WILLIAM NEFFENDORF

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

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

SHEET METAL CONTRACTOR:

CONTROL CONTRACTOR:



IN BUSINESS SINCE 1964

## AIR BALANCING SPECIALTY INC.

CERTIFIED NEBB No. 2984

3532 SE Milwaukie Avenue Portland, Oregon 97202-2751 Phone (503) 230-2332 Fax (503) 230-2820

**CERTIFIED TEST AND BALANCE REPORT**

**PROJECT NO.: 21-4253-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: GILBERT HEIGHTS 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

IN BUSINESS SINCE 1964

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**PROJECT: GILBERT HEIGHTS ELEMENTARY SCHOOL - PORTLAND, OREGON**

**PROJECT NO.: 21-4253-DW**

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	
<b>1st Floor</b>																		
	R	Classroom	1				1.00			7433		770	6.22					
	R	Classroom	2				1.00			7533		665	5.30					
	R	Classroom	3				1.00			7507		610	4.88					
	R	Classroom	4				1.00			7495		670	5.36					
	R	Classroom	5				1.00			7478		675	5.42					
	R	Classroom	6				1.00			8009		790	5.92					
	DH	Classroom	7				1.00			7995		305	2.29					
	DH	Conference	8				1.00			7945		455	3.44					
	DH	Classroom	9				1.00			7924		640	4.85					
	DH	Staff					1.00			1804		-310						
<b>2nd Floor</b>																		
	DH	Counselor					1.00			1445		0	0.00					
	DH	Classroom	11				1.00			7656		620	4.86					
	R	Classroom	12				1.00			7615		725	5.71					
	R	Classroom	13				1.00			7542		675	5.37					
	R	Classroom	14				1.00			7530		700	5.58					
	R	Classroom	15				1.00			7562		710	5.63					
	R	Classroom	16				1.00			8051		705	5.25					
	R	Classroom	17				1.00			8121		730	5.39					
	R	Classroom	18				1.00			8124		705	5.21					

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CONSTANT VOLUME - FPM

**AIR BALANCE DATA SHEET**

PROJECT NO.: 21-4253-DW

PROJECT: GILBERT HEIGHTS ELEMENTARY SCHOOL - PORTLAND, OREGON

DATE START: 03/16/21

FINISH: 03/16/21

SYSTEM: Classrooms 1 - 18, Staff & Counselor

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		
<b>2nd Floor</b>																			
	DH	Classroom	19					1.00			7997		710	5.33					
	DH	Library						1.00			13490		990	4.40					
	DH	Storage						1.00			940		150	9.57					
	DH	Office						1.00			729		75	6.17					
	DH	Staff Lounge						1.00			915		75	4.92					
	DH	Classroom	20					1.00			7677		1370	10.71					
	DH	Classroom	21					1.00			8121		670	4.95					
	DH	Classroom	22					1.40			8066		695	5.17					
	DH	Classroom	23					1.40			8164		650	4.78					
	DH	Music	24					1.40			8253		610	4.43					
	DG	Cafeteria				36x60		15.00			90140	144	2160	1.44					
	DH	Health Room					SW	1.00			2482		345	8.34					
	DH	Office Supply					SW	1.00			2114		235	6.67					
	R	Principal				16x6	SW	0.47			2202	1040	489	13.32					
	R	Office				20x8	SW	0.78			2470	590	460	11.18					
	R	Office				12x6	SW	0.35			2260	520	182	4.83					

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CONSTANT VOLUME - FPM

AIR BALANCE DATA SHEET

PROJECT NO.: 21-4253-DW

PROJECT: GILBERT HEIGHTS ELEMENTARY SCHOOL - PORTLAND, OREGON

DATE START: 03/16/21

FINISH: 03/16/21

SYSTEM: Classrooms, Library, Cafeteria, Offices

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		
		<b>Gym Building</b>																	
	DH	Classroom	31				1.00			7451		750	6.04						
	DH	Classroom	32				1.00			7451		800	6.44						
	DH	Classroom	33				1.00			7467		770	6.19						
	DH	Classroom	34				1.00			7438		770	6.21						

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CONSTANT VOLUME - FPM

**AIR BALANCE DATA SHEET**

PROJECT NO.: 21-4253-DW

PROJECT: GILBERT HEIGHTS ELEMENTARY SCHOOL - PORTLAND, OREGON

DATE START: 03/16/21

FINISH: 03/16/21

SYSTEM: Classrooms 31 - 34

SECTION:

BY: DN / WN

PAGE: 3 OF 5

Ref	Ins	AREA SERVED	Rm.#	No.	OUTLET		AK	DESIGN		CUBIC FEET	TEST #1				TEST #2			
					Size	Blow		Vel	CFM		FPM	CFM	ACH	PRESSURE	FPM	CFM	ACH	PRESSURE
<b>1st Floor</b>																		
	DH	Boys Supply (By staff)					1.00			943		0	0.00					
	DH	Boys Exhaust (By staff)					1.00			943		170	10.82					
	DH	Girls Supply (By staff)					1.00			954		0	0.00					
	DH	Girls Exhaust (By staff)					1.00			954		135	8.49					
<b>2nd Floor</b>																		
	DH	Boys Supply					1.00			1418		0	0.00					
	DH	Boys Exhaust					1.00			1418		315	13.33					
	DH	Girls Supply					1.00			995		0	0.00					
	DH	Girls Exhaust					1.00			995		100	6.03					
	DH	Boys Supply (By CR 11))					1.00			2199		0	0.00					
	DH	Boys Exhaust (By CR 11)					1.00			2199		175	4.77					
	DH	Girls Supply (By CR 11)					1.00			2200		0	0.00					
	DH	Girls Exhaust (By CR 11)					1.00			2200		225	6.14					
<b>1st Floor</b>																		
	DH	Boys Supply (By CR 1)					1.00			1962		0	0.00					
	DH	Boys Exhaust (By CR 1)					1.00			1962		100	3.06					
	DH	Girls Supply (By CR 1)					1.00			1979		0	0.00					
	DH	Girls Exhaust (By CR 1)					1.00			1979		405	12.28					
	DH	Kitchen RR Supply					1.00			229		0	0.00					
	DH	Kitche RR Exhaust					1.00			229		175	45.85					
	DH	Boys RR Office Supply					1.00			237		0	0.00					
	DH	Boys RR Office Exhaust					1.00			237		370	93.67					
	DH	Girls RR Office Supply					1.00			229		0	0.00					
	DH	Girls RR Office Exhaust					1.00			229		345	90.39					

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CONSTANT VOLUME - FPM

AIR BALANCE DATA SHEET

PROJECT NO.: 21-4253-DW

PROJECT: GILBERT HEIGHTS ELEMENTARY SCHOOL - PORTLAND, OREGON

DATE START: 03/16/21

FINISH: 03/16/21

SYSTEM: 1st & 2nd Floor Exhaust

SECTION:

BY: DN / WN

PAGE: 4 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		
		<b>Gym Building</b>																	
	DH	Staff Toilet	Supply			1.00				288		0	0.00						
	DH	Staff Toilet	Exhaust			1.00				288		70	14.58						
	DH	Boys	Supply			1.00				2525		180	4.28						
	DH	Boys	Exhaust			1.00				2525		475	11.29						
	DH	Girls	Supply			1.00				2418		80	1.99						
	DH	Girls	Exhaust			1.00				2418		450	11.17						
	DH	Girls	Supply			1.00				995		0	0.00						
	DH	Girls	Exhaust			1.00				995		100	6.03						
	DG	Gym			54x45	Intake		16.88		176200		357	6026	2.05					
	DH	Gym	Office					1.00		902		0	0.00						
	DH	Office	Shower Supply					1.00		347		0	0.00						
	DH	Office	Shower Exhaust					1.00		347		65	11.24						

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PROJECT NO.: 21-4253-DW

PROJECT: GILBERT HEIGHTS ELEMENTARY SCHOOL - PORTLAND, OREGON

DATE START: 03/16/21

FINISH: 03/16/21

SYSTEM: Gym Building Exhaust, Gym

SECTION:

BY: DN / WN

PAGE: 5 OF 5