

AIR BALANCING SPECIALTY INC.

MILL PARK 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: **MILL PARK ELEMENTARY SCHOOL - PORTLAND, OREGON**

OWNER: DAVID DOUGLAS SCHOOL DISTRICT DATE STARTED: 03/17/21 DATE FINISHED: 03/17/21

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: MILL PARK 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: MILL PARK 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		
	DG	Classroom	1		30x12			1.88			9556	382	718	4.51					
	DG	Classroom	2		30x12			1.88			9556	355	667	4.19					
	DG	Classroom	3		30x12			1.88			9556	462	869	5.45					
	DG	Classroom	4		30x12			1.88			9556	416	782	4.91					
	DG	Classroom	5		30x12			1.88			9556	340	639	4.01					
	DG	Classroom	6		30x12			1.88			9556	371	697	4.38					
	DG	Classroom	7		30x12			1.88			9556	349	656	4.12					
	DG	Classroom	8		30x12			1.88			9556	376	707	4.44					
	DG	Classroom	9		30x12			1.88			9556	380	714	4.49					
	DG	Classroom	10		30x12			1.88			9556	409	769	4.83					
	DG	Classroom	11		30x12			1.88			9056	327	615	4.07					
	DG	Classroom	12		30x12			1.88			9301	281	528	3.41					
	DG	Classroom	13		30x12			1.88			9301	300	564	3.64					
	DG	Classroom	14		30x12			1.88			9301	305	573	3.70					
	DG	Classroom	15		30x12			1.88			9301	298	560	3.61					
	DG	Classroom	16		30x12			1.88			9301	285	536	3.46					
	DG	Classroom	17		30x12			1.88			9301	296	556	3.59					
	DG	Classroom	18		30x12			1.88			9301	301	566	3.65					
	DG	Classroom	19		30x12			1.88			9301	307	577	3.72					

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CONSTANT VOLUME - FPM

AIR BALANCE DATA SHEET

PROJECT NO.: 21-4253-DW

PROJECT: MILL PARK ELEMENTARY SCHOOL - PORTLAND, OREGON

DATE START: 03/17/21

FINISH: 03/17/21

SYSTEM: Classrooms 1 - 19

SECTION:

BY: DN / WN

PAGE: 1 OF 4

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	
	DG	Classroom	20		30x12		1.88			9301	312	587	3.78					
	DG	Classroom	21		30x12		1.88			9301	315	592	3.82					
	DG	Classroom	22		30x12		1.88			9301	300	564	3.64					
	DG	Classroom	23		30x12		1.88			9301	327	615	3.97					
	DG	Classroom	24		30x12		1.88			9301	248	466	3.01					
	DG	Classroom	25		30x12		1.88			9301	127	239	1.54					
	DA	Gym					5.56			16000	1097	6099	22.87					
	DH	Gym Office					1.00			1887		120	3.82					
	DG	Cafeteria			48x24x2		12.00			77676	464	5568	4.30					
	DH	Library	115				1.00			16701		540	1.94					
	DH	Staff Rm	111				1.00			3816		115	1.81					
	DH	Health	109				1.00			986		85	5.17					
	DH	Office Main					1.00			3953		180	2.73					
	DH	Office Main	103				1.00			1160		80	4.14					
	DH	Principal	110								NO OUTLET							
	DH	Counselor	116								NO OUTLET							

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CONSTANT VOLUME - FPM

AIR BALANCE DATA SHEET

PROJECT NO.: 21-4253-DW

PROJECT: MILL PARK ELEMENTARY SCHOOL - PORTLAND, OREGON

DATE START: 03/17/21

FINISH: 03/17/21

SYSTEM: Classrooms 20 - 25, Gym, Cafeteria, Counselor, Principal, Office, Library

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	Girl's Restroom Exhaust	11					1.00		180		30	10.00						
	DH	Boy's Restroom Exhaust	11					1.00		180		0	0.00						
	DH	Restroom Exhaust	12					1.00		180		25	8.33						
	DH	Restroom Exhaust	13					1.00		180		35	11.67						
	DH	Restroom Exhaust	14					1.00		180		25	8.33						
	DH	Restroom Exhaust	15	1				1.00		180		0	0.00						
	DH	Restroom Exhaust	15	2				1.00		180		35	11.67						
	DH	Restroom Exhaust	16					1.00		180		0	0.00						
	DH	Girl's Restroom Exhaust	17					1.00		180		40	13.33						
	DH	Boy's Restroom Exhaust	18					1.00		180		40	13.33						
	DH	Boy's Restroom Exhaust	19					1.00		180		80	26.67						
	DH	Girl's Restroom Exhaust	20					1.00		180		50	16.67						
	DH	Girl's Restroom Exhaust	21					1.00		180		55	18.33						
	DH	Boy's Restroom Exhaust	22					1.00		180		0	0.00						
	DH	Restroom Exhaust	23					1.00		180		95	31.67						
	DH	Boy's Restroom Exhaust	24	1				1.00		180		50	16.67						
	DH	Girl's Restroom Exhaust	24	2				1.00		180		75	25.00						
	DH	Staff Restroom	163					1.00		386		0	0.00						
	DH	Staff Restroom	164					1.00		386		40	6.22						

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PROJECT NO.: 21-4253-DW

PROJECT: MILL PARK ELEMENTARY SCHOOL - PORTLAND, OREGON

DATE START: 03/17/21

FINISH: 03/17/21

SYSTEM: Exhaust

SECTION:

BY: DN / WN

PAGE: 3 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	Gym Boy's RR Supply					1.00		1501		135	5.40						
	DH	Gym Boy's RR Exhaust					1.00		1501		100	4.00						
	DH	Gym Girl's RR Supply					1.00		1738		145	5.01						
	DH	Gym Girl's RR Exhaust					1.00		1738		90	3.11						
	DH	Kitchen RR Exhaust					1.00			GRAVITY VENT								
	DH	Boy's Supply	134				1.00		1560		245	9.42						
	DH	Boy's Exhaust	134				1.00		1560		865	33.27						
	DH	Girl's Supply	132				1.00		1966		0	0.00						
	DH	Girl's Exhaust	132				1.00		1966		0	0.00						
	DH	Boy's Exhaust	119				1.00		1521		45	1.78						
	DH	Girl's Exhaust	118				1.00		1726		45	1.56						
	DH	Restroom Supply	117				1.00		416	GRAVITY								
	DH	Restroom Exhaust	117				1.00		416		25	3.61						
	DH	Staff Restroom Supply	112				1.00		136	GRAVITY								
	DH	Staff Restroom Exhaust	112				1.00		136		55	24.26						
	DH	Office Restroom Supply	107				1.00		118	GRAVITY								
	DH	Office Restroom Exhaust	107				1.00		118		35	17.80						

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DATE START: 03/17/21

FINISH: 03/17/21

SYSTEM: Exhaust

SECTION:

BY: DN / WN

PAGE: 4 OF 4