

AIR BALANCING SPECIALTY INC.

HIGH SCHOOL SOUTH 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: **HIGH SCHOOL SOUTH - PORTLAND, OREGON**

OWNER: DAVID DOUGLAS SCHOOL DISTRICT DATE STARTED: 04/13/21 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: HIGH SCHOOL SOUTH - 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: HIGH SCHOOL SOUTH - 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	202			SW	1.00			7774		740	5.71						
	DH	Classroom	203			SW	1.00			7473		755	6.06						
	DH	Classroom	204			SW	1.00			7549		745	5.92						
	DH	Classroom	205			SW	1.00			7890		490	3.73						
	DH	Classroom	206			SW	1.00			7845		830	6.35						
	DH	Classroom	207			SW	1.00			7521		770	6.14						
	DH	Classroom	208			SW	1.00			10134		935	5.54						
	DH	Classroom	209			SW	1.00			7721		835	6.49						
	DH	Computer Lab	210/211			SW	1.00			9466		1055	6.69						
	DH	Classroom	212			SW	1.00			7604		635	5.01						
	DH	Classroom	213			SW	1.00			7442		440	3.55						
	DH	Classroom	214			SW	1.00			7454		450	3.62						
	DH	Classroom	215			SW	1.00			7462		725	5.83						
	DH	Classroom	216			SW	1.00			7917		835	6.33						
	DH	Classroom	217			SW	1.00			7562		830	6.59						
	DH	Classroom	218			SW	1.00			7437		775	6.25						
	DH	Classroom	219			SW	1.00			7400		895	7.26						
	DH	Classroom	220			SW	1.00			8028		820	6.13						
	DH	Classroom	221			SW	1.00			10571		1205	6.84						

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CONSTANT VOLUME - FPM

AIR BALANCE DATA SHEET

PROJECT NO.: 21-4253-DW

PROJECT: HIGH SCHOOL SOUTH - PORTLAND, OREGON

DATE START: 04/13/21

FINISH: 04/14/21

SYSTEM: Classrooms 202 - 221

SECTION:

BY: DN / WN

PAGE: 1 OF 5

Ref	Ins	AREA SERVED			OUTLET			DESIGN		CUBIC FEET	TEST #1				TEST #2				
					No.	Size	Blow	AK	Vel		CFM	FPM	CFM	ACH	PRESSURE	FPM	CFM	ACH	PRESSURE
	DH	Classroom	222			SW	1.00			11625		990	5.11						
	DH	Classroom	223			SW	1.00			11625		715	3.69						
	DH	Classroom	227			SW	1.00			10895		995	5.48						
	DH	Classroom	228			SW	1.00			10591		1045	5.92						
	DH	Classroom	229			SW	1.00			7954		445	3.36						
	DH	Classroom	230			SW	1.00			7490		445	3.56						
	DH	Classroom	231			CEIL	1.00			7154		560	4.70						
	DH	Classroom	232			SW	1.00			7515		620	4.95						
	DH	Classroom	233			SW	1.00			12104		1360	6.74						
	DH	Classroom	234			SW	1.00			10292		510	2.97						
	DH	Classroom	235			SW	1.00			8567		845	5.92						
	DH	Classroom	236			SW	1.00			8924		596	4.01						
	DH	Kitchen	237			SW	1.00												
	DH	Classroom	238			SW	1.00			7933		720	5.45						
	DH	Classroom	239			SW	1.00			8719		470	3.23						
	DH		233A			SW	1.00			7949		440	3.32						
	DH		233B			SW	1.00			10303		555	3.23						

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CONSTANT VOLUME - FPM

AIR BALANCE DATA SHEET

PROJECT NO.: 21-4253-DW

PROJECT: HIGH SCHOOL SOUTH - PORTLAND, OREGON

DATE START: 04/13/21

FINISH: 04/14/21

SYSTEM: Classrooms 222 - 239, 233A & 233B

SECTION:

BY: DN / WN

PAGE: 2 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	
1	DH	Classroom	240		SW	1.00			13009		1671	7.71						
1	DH	Classroom	241		SW	1.00			19698		2220	6.76						
	DH	Classroom	241A		CEIL	1.00			919		115	7.51						
	DH	Classroom	241B		CEIL	1.00			596		60	6.04						
	DH	Classroom	241C		CEIL	1.00			415		65	9.40						
	DH	Classroom	241D		CEIL	1.00			463		70	9.07						
	DH	Classroom	241E		CEIL	1.00			1641		125	4.57						
	DH	Classroom	242		SW	1.00			473		50	6.34						
		Total 241A-242									485							
	DG	Cl. Rms. 240-243 Fan Total			48X24	SW	8.00		37214	547	4376	7.06						

Ref. Note: (1) Estimated from fan total.

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PROJECT NO.: 21-4253-DW

PROJECT: HIGH SCHOOL SOUTH - PORTLAND, OREGON

DATE START: 04/13/21

FINISH: 04/14/21

SYSTEM: Classrooms 240 - 243

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	Faculty Men (by Rm 202)						1.00		1663		0	0.00							
	DH	Faculty Women (by Rm 202)						1.00		2091		1400	40.17							
		Women's (by Rm 220)						1.00			GRAVITY (LOCKED)									
		Men's (by Rm 220)						1.00			GRAVITY (LOCKED)									
		Faculty RR (by Rm 225)						1.00			NO EXHAUST									
	DH	Women's (by Rm 230)						1.00		2127		90	2.54							
	DH	Men's (by Rm 230)						1.00		2705		195	4.33							
	DH	Faculty Men (by Rm 232)						1.00		2476		110	2.67							
	DH	Faculty Women's (by Rm 232)						1.00		3006		400	7.98							
	DH	Women's (by Rm 242)						1.00		1856		190	6.14							
	DH	Men's (by Rm 232)						1.00		1556		190	7.33							

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CONSTANT VOLUME - FPM

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PROJECT NO.: 21-4253-DW

PROJECT: HIGH SCHOOL SOUTH - PORTLAND, OREGON

DATE START: 04/13/21

FINISH: 04/14/21

SYSTEM: Exhaust, Main Office, Boardroom, Faculty Lunch

SECTION:

BY: DN / WN

PAGE: 4 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	
	DG	Gym		1	48x36	SW	9.00				486	4374						
	DG	Gym		2	48x36	SW	9.00				490	4410						
		Total							217800		8784	2.42						
	DG	Wrestling Rm			36x12x4		12.00				189	2268		TRANSFER OUTLETS				
	DG	Wrestling Rm			14x6x7		3.06				440	1346						
		Total							75550		3614	2.87						
	DG	Cafeteria			80x30		16.67		78241		132	2200	1.69					
	DG	Boys Locker Rm Supply			30x8x2		2.50		13293		449	1123	5.07					
	DG	Boys Locker RR Exhaust			18x6		0.53		653		310	164	15.10					
	DG	Boys Shower Exhaust			26x8x2		1.88		4746		288	541	6.85					
	DG	Boys Office Supply			14x5		0.36		1129		677	244	12.95					
	DG	Girls Locker Rm Supply			30x8x2		2.50		9903		382	955	5.79					
	DG	Girls Locker RR Exhaust			18x6				1738			0	0.00					
	DG	Girls Shower Exhaust			24x8x2		2.00		3670		445	890	14.55					
	DG	Girls Office Supply			14x4		0.29		1212		156	45	2.24					
	DH	Main Office				SW	1.00		4508			385	5.12					
	DA	Board Room			28X15		2.92		40853		434	1267	1.86					
2	DH	Faculty Lunch				UV	1.00		11490			700	3.66					

Ref. Note: (2) One UV not running. (3) Has 2 cabinet fans, one running but inaccessible and one not running.

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PROJECT: HIGH SCHOOL SOUTH - PORTLAND, OREGON

DATE START: 04/13/21

FINISH: 04/14/21

SYSTEM: Gym, Wrestling Rm, Boys Locker & Shower, Girls Locker & Shower

SECTION:

BY: DN / WN

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