APPLICATION FOR HCAI SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0075

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Nortek Air Solutions, LLC

Manufacturer's Technical Representative: Preston Harris

Mailing Address: 19855 SW 124th Ave., Tualatin, OR 97062

Telephone: (503) 403-4431 Email: Preston.Harris@nortek.com

Product Information

Product Name: Huntair Custom Air Conditioning Units

Product Model Number(s): Huntair Custom Air Conditioning Units

Product Category: Air Conditioning Units

Product Sub-Category: Air Conditioning Units - Custom

General Description: Custom air conditioners, sheet metal construction.

Mounting Description: Base Mounted Rigid

Tested Seismic Enhancements: Seismic enhancements made to the test units and/or modifications required to address anomalies during the tests shall be incorporated into the production units.

Applicant Information

Applicant Company Name: Pre Compliance

Contact Person: Katie Braman

Mailing Address: 324 NW Hill Street, Bend, OR 97703

Telephone: (541) 241-2310 Email: katie@go-pre.com

Title: Principal & Program Manager

California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)

Company Name: PRE COMPLIANCE

Name: Andrew Coughlin California License Number: S6082

Mailing Address: 324 NW Hill St, Bend, OR 97703

Telephone: (415) 635-8461 Email: Andy@go-pre.com

Certification Method

☐ GR-63-Core ☒ ICC-ES AC156 ☐ IEEE 344 ☐ IEEE 693 ☐ NEBS 3

☐ Other (Please Specify):

Testing Laboratory

Company Name: U.S. ARMY ENGINEER RESEARCH AND DEVELOPMENT CENTER, CONSTRUCTION ENGINEERING RESEARCH LABORATORY (CERL)

Contact Person: Jim Wilcoski

Mailing Address: 2902 Newmark Dr., Champaign IL 61822-1076

Telephone: (217) 373-4565 Email: James.Wilcoski@usace.army.mil

Company Name: CLARK TESTING LABORATORY, INC.

Contact Person: Devin Lohr

Mailing Address: 1801 Route 51, Jefferson Hills PA 15025

Telephone: (412) 387-1027 Email: dlohr@clarktesting.com

Company Name: ENVIRONMENTAL TESTING LABORATORIES, INC. (ETL)

Contact Person: Jeremy Lange

Mailing Address: 11034 Indian Trail, Dallas TX 75229-3513

Telephone: (972) 247-9657 Email: jeremy@etldallas.com

Company Name: UNIVERSITY OF CALIFORNIA, BERKELEY (PEER)

Contact Person: Amarnath Kasalanati

Mailing Address: 325 Davis Hall, Berkeley CA 94720-1729

Telephone: (510) 642-3437 Email: amarnath1@berkeley.edu

Company Name: QUALTECH/CURTISS WRIGHT/TRENTEC

Contact Person: Jerry Newberry

Mailing Address: 4600 East Tech Drive, Cincinnati OH 45245

Telephone: (513) 528-7900 Email: jnewberry@curtisswright.com

Seismic Parameters

Certified Response Spectral Acceleration Factors:(F_p/W_p)

Horizontal	(A Flx-H), g=	3.20	(A Rig-H), g=	2.15
Vertical	(A Flx-V), g=	1.34	(A Rig-V), g=	0.54

S_{DS} (Design spectral response acceleration at short period, g) = 2.00

Hf (Force amplification height factor) = 1@z/h=0; 3.5@ z/h =1

Ru (Structure ductility redution factor) = 1@z/h=0; 1.3@z/h=1

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 0 and 1

HCAI Approval (For Office Use Only) - Approval Expires on 08/28/2031

Date: 8/28/2025

Name: Timothy Piland Title: Senior Structural Engineer

Condition of Approval (if applicable):

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Huntair Custom Air Handling Units

Seismic Parameters			Building Codes
S_{DS} = 2.0g for	R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.0g for	R_μ=1.0, H_f=1.0		

TABLE 1

Mounting Configuration: Base Mounted - Rigid

Construction Summary

Galvanized carbon steel, stainless steel, or aluminum. See Table 2 and line drawings for certified product construction. Cross bracing as indicated in certified drawings.

Options Summary

See Tables 2 through 12 for certified options

Model Line	Model	Max. Dimensions (in) D	W	H	Wt. (lbs.)	UUT psf	Notes	UUT
Huntair CSU Series Custom Air Handling Units up to 240"W x 158"H and Aspect Ratio[1] (H/W) ≤ 1.1	CSU - 4 Walls	No Limit	24	24	-		Lower Range	Extrap.
		...	...	...	...			Extrap.
		96	240	144	11600	73	Aluminum	3a
		130	204	135	14762	80	Galv. Carbon Stl	8
		108	144	144	9050	84	Galv. Carbon Stl	2a
		138	244	160	24400	104	Galv. Carbon Stl	4
		96	96	96	7450	116	Galv. Carbon Stl	1a
		96	96	96	7450	116	Galv. Carbon Stl	1b
		...	...	...	...			Extrap.
		No Limit	244	160	-	< 116	Upper Range	Extrap.
	CSU - 3 Walls (Inlet, Outlet, or Sidewall Removed	No Limit	24	24	-		Lower Range	Extrap.
		...	...	...	...			Extrap.
		139	134	146	8150	64	Galv. Carbon Stl	5
		108	144	144	9050	84	Galv. Carbon Stl	2b
		...	...	...	...			Extrap.
		No Limit	240	146	-	<84	Upper Range	Extrap.
Huntair CSU Series Custom Air Handling Units up to 240"W x 158"H and Aspect Ratio[1] (H/W) ≤ 1.1	CSU - 2 Walls (Inlet and Outlet Wall Removed)	no Limit	24	24	-		Lower Range	Extrap.
		...	...	...	...			Extrap.
		108	144	144	9050	84	Galv. Carbon Stl	2c
		108	144	144	9050	84	Galv. Carbon Stl	2d
		...	...	...	...			Extrap.
		No Limit	240	144	-	<84	Upper Range	Extrap.

Additional Notes:
[1]For bracing requirements, see OSHPD Brace Detail sheet in line drawings at end of OSP.

SPECIAL SEISMIC CERTIFICATION
CERTIFIED COMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Huntair Custom Air Handling Units

Seismic Parameters			Building Codes
S_{DS} = 2.0g for	R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.0g for	R_μ=1.0, H_f=1.0		

TABLE 1

Mounting Configuration: Base Mounted - Rigid

Construction Summary

Galvanized carbon steel, stainless steel, or aluminum. See Table 2 and line drawings for certified product construction. Cross bracing as indicated in certified drawings.

Options Summary

See Tables 2 through 12 for certified options

Model Line	Model	Max. Dimensions (in)			Wt. (lbs.)	UUT psf	Notes	UUT
		D	W	H				
Huntair CSU Series Custom Air Handling Units up to 76"W x 152"H and Aspect Ratio[1] 1.1 < (H/W) ≤ 2.0	CSU - 4 Walls	No Limit	24	48	-		Lower Range	Extrap.
		...	...	...	...			Extrap.
		144	76	152	1880	25	Galv. Carbon Stl	6b
		144	76	152	2350	31	Galv. Carbon Stl	6a
		...	...	...	...			Extrap.
		No Limit	76	152	-	31	Upper Range	Extrap.

Additional Notes:
[1]For bracing requirements, see OSHPD Brace Detail sheet in line drawings at end of OSP.

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Huntair Custom Air Handling Units

Seismic Parameters			Building Codes
S_{DS} = 2.0g for	R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.0g for	R_μ=1.0, H_f=1.0		

TABLE 2

Table Description: Unit Construction

Component (Manufacturer)	Model	Description	Notes	UUT
Walls/Roof (Nortek Air Solutions, LLC)	2" Thickness	Carbon Steel	16ga. Skin	1[1], 6[1]
	3" Thickness		16ga. Skin	Interp.
	4" Thickness		16ga. Skin	2[1],4,5
	2" Thickness	Stainless Steel	16ga. Skin	Interp.
	3" Thickness		16ga. Skin	Interp.
	4" Thickness		16ga. Skin	4
	2" Thickness	Aluminum	16ga. Skin	Interp.
	3" Thickness		16ga. Skin	Interp.
	4" Thickness		16ga. Skin	3a
Liner (Nortek Air Solutions, LLC)	Solid	Carbon Steel	16ga.	Extrap.
			20ga.	1[1],2[1],4,5,6[1]
		Stainless Steel	16ga.	Interp.
			20ga.	4
		Aluminum	0.063"	3a
	Perforated	Carbon Steel	20ga.	Extrap.
		Stainless Steel	22ga.	4
		Aluminum	0.040"	4
Blankoff (Nortek Air Solutions, LLC)	Solid	Carbon Steel	16ga.	1[1],2[1],4,5,6[1]
		Stainless Steel	16ga.	Interp.
		Aluminum	0.080"	3a
Weather Hood (Nortek Air Solutions, LLC)	Weather Hood	Carbon Steel	16ga. 62" (W) x 32" (H) x 26" (D)	6[1]
Base (Nortek Air Solutions, LLC)	6" Height	Carbon Steel	Channel	1[1],2[1]
	4" Height		Structural Tubing, Lower Range	Extrap.
	6" Height		Structural Tubing	5,6[1]
	8" Height		Structural Tubing	8
	12" Height		Structural Tubing, Upper Range	Interp.

Notes:
[1]Subcomponent was tested in all UUT configurations as seen in the UUT Summaries.

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Huntair Custom Air Handling Units

Seismic Parameters			Building Codes
S_{DS} = 2.0g for	R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.0g for	R_μ=1.0, H_f=1.0		

TABLE 2

Table Description: Unit Construction

Component (Manufacturer)	Model	Description	Notes	UUT
Base (Nortek Air Solutions, LLC)	4" Height	Stainless Steel	Structural Tubing, Lower Range	Interp.
	12" Height		Structural Tubing, Upper Range	4
	4" Height	Aluminum	Structural Tubing, Lower Range	Interp.
	6" Height		Structural Tubing, Upper Range	3a
Base Skin (Nortek Air Solutions, LLC)	Galv. Carbon Steel Skin, Treadplate or Hot Rolled Pickled and Oiled	Galvanized Carbon Steel	0.25" thick	Extrap.
			0.188" thick	Extrap.
			12ga.	4
			16ga., UUT: Hot Rolled Pickled and Oiled	1[1],2[1],6[1]
	Stainless Steel Skin, Treadplate	Stainless Steel	12ga.	Interp.
			14ga.	Interp.
			16ga.	5
	Aluminum Skin, Treadplate	Aluminum	0.25" thick	Interp.
			0.188" thick	Interp.
			0.125" thick	3a
Subfloor ((Nortek Air Solutions, LLC)	Galvanized Subfloor	Galvanized Carbon Steel	16ga.	4
			20ga.	1[1],2[1],5,6[1]
	Stainless Steel Subfloor	Stainless Steel	16ga.	Interp.
			20ga.	Interp.
	Aluminum Subfloor	Aluminum	0.063" thick	3a

Notes:
[1]Subcomponent was tested in all UUT configurations as seen in the UUT Summaries.

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Huntair Custom Air Handling Units

Seismic Parameters			Building Codes
S_{DS} = 2.0g for	R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.0g for	R_μ=1.0, H_f=1.0		

TABLE 3

Table Description: Dampers and Louvers

Component (Manufacturer)	Model	Dimensions (in)			Wt. (lb)	Material	Notes	UUT
		D	W	H				
Damper: HD6 (Huntair)	HD6	8	8	6	2	Galv. Carbon Steel or Aluminum Frame, Aluminum Blades		Extrap.
		...	...	...	...			Extrap.
		8	48	30	120	Glav. Carbon Steel Frame Aluminum Blades	Actuator: Belimo AS-120-S	1[1]
		...	...	...	...			Interp.
		8	100	120	1000	Aluminum Frame Blades	Actuator: Belimo 24V Mo. AF24-MFT	3a
Damper: CD (Ruskin)	CD 50	5	8	6	2	Aluminum Frame Blades		Extrap.
		...	...	...	...			Extrap.
		5	60	36	105		Actuator: Belimo AS-120-S	2[1]
		...	...	...	...			Interp.
		5	60	120	350		Actuator: Belimo AFBUP-S	8
		...	...	...	...			Interp.
		8	100	120	585		(2) Actuator: Siemens 24V Mo. GCA131.1P & 120V Mo. GCA226.1U	3a
Damper: SD (Ruskin)	SD 50	5	8	5	2	Aluminum Frame Blades		Extrap.
		...	...	...	...			Extrap.
		5	33	57	78		Actuator: Honeywell MS4120	4
		...	...	...	...			Interp.
		5	120	96	480		Actuator: Honeywell MS4120	4

Notes:
[1]Subcomponent was tested in all UUT configurations as seen in the UUT Summaries.

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Huntair Custom Air Handling Units

Seismic Parameters			Building Codes
S_{DS} = 2.0g for	R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.0g for	R_μ=1.0, H_f=1.0		

TABLE 3

Table Description: Dampers and Louvers

Component (Manufacturer)	Model	Dimensions (in)			Wt. (lb)	Material	Notes	UUT
		D	W	H				
Damper: AMS (Ruskin)	AMS 050	15	6	6	3	Galv. Carbon Steel & Aluminum Blades		Extrap.
		...	...	...	...			Extrap.
		15	24	36	60		Actuator: Belimo AF120	4
		...	...	...	...			Interp.
		15	48	96	320		Actuator: Belimo AF120	4
Samper: Tamco 1000 (Tamco)	Tamco 1000	4	8	6	2	Aluminum Frame and Blades		Extrap.
		...	...	...	...			Extrap.
		4	60	30	60		Actuator: Belimo AMB24	6[1]
		...	...	...	...			Interp.
		4	36	120	150		Actuator: Belimo AMB24	6[1]
Louver: HL (Huntair)	HL	6	26	60	35	Galv. Carbon Steel & Blades		1[1]
		...	...	...	...			Interp.
		4	60	120	290			8
Louver: ELF (Ruskin)	ELF	6	40	36	60	Aluminum Frame and Blades		2[1]
		...	...	...	...			Interp.
		6	60	120	200			8
Louver: AML (Ruskin)	AML	3	12	20	8	Aluminum Frame and Blades		Extrap.
		...	...	...	...			Extrap.
		6	36	60	180			4
		...	...	...	...			Interp.
		3	100	120	1000			4
Louver: EME (Ruskin)	EME	3	12	20	8	Aluminum Frame and Blades		Extrap.
		...	...	...	...			Extrap.
		6	36	60	150		UUT: Tested as AML	4
		...	...	...	...			Interp.
		3	100	120	850		UUT: Tested as AML	4

Notes:
[1]Subcomponent was tested in all UUT configurations as seen in the UUT Summaries.

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Huntair Custom Air Handling Units

Seismic Parameters			Building Codes
S_{DS} = 2.0g for	R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.0g for	R_μ=1.0, H_f=1.0		

TABLE 4

Table Description: Fanwall

Component (Manufacturer)	Model	Dimensions (in) D	W	H	Wt. (lb)	Material	Notes	UUT
Fanwall: Welded or Riveted (Huntair)	10" Fan Wheel	24	20	20	133	Carbon steel frame, aluminum fan wheels, vertical or horizontal flow, stacked up to 131" high		Extrap.
		...	...	...	...			Extrap.
		32	24	20	173		UUT2: welded construction, vertical flow; UUT3a: riveted, multi. Stack and adjacent cell, horiz. flow	2[1],3a
		...	...	...	...			Interp.
		44	36	44	356			Interp.
	12" Fan Wheel	24	20	20	140			Interp.
		...	...	...	...			Interp.
		44	36	44	364			Interp.
	14" Fan Wheel	24	24	20	140			Interp.
		...	...	...	...			Interp.
		44	36	44	365			Interp.
	16"Fan Wheel	32	28	20	204			Interp.
		...	...	...	...			Interp.
		48	44	44	367			Interp.
	18" Fan Wheel	...	...	...	...			Interp.
		32	28	20	207			Interp.
		...	...	...	...			Interp.
		48	44	44	367			Interp.
	20" Fan Wheel	...	...	...	...			Interp.
		32	28	20	210			Interp.
		...	...	...	...			Interp.
		48	44	44	367			Interp.
	22" Fan Wheel	32	36	20	244			Interp.
		...	...	...	...			Interp.
		48	44	44	367		UUT2: welded construction, vertical flow' UUT3a: riveted, multi. Stack and adjacent cell, horiz. flow	2[1],3a

Notes:
[1]Subcomponent was tested in all UUT configurations as seen in the UUT Summaries.

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Huntair Custom Air Handling Units

Seismic Parameters			Building Codes
S_{DS} = 2.0g for	R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.0g for	R_μ=1.0, H_f=1.0		

TABLE 4

Table Description: Fanwall

Component (Manufacturer)	Model	Dimensions (in)			Wt. (lb)	Material	Notes	UUT
		D	W	H				
Fanwall Gen II (Huntair)	10" Fan Wheel	16	22	24	54	Bolted aluminum extrusion frame, aluminum and polymer fan wheels, stacked up to 144" high, horizontal flow, with or without extended coplanar		Interp.
		...	...	...	...			Interp.
		24	22	27	82		2 wide x 5 high Gen II multi stack without extended coplanar	7
		...	...	...	...			Interp.
		42	30	30	157			Interp.
	12" Fan Wheel	16	25	24	57			Interp.
		...	...	...	...			Interp.
		23	32	32	125		2 wide x 4 high Gen II multi stack and adjacent cell	4
		...	...	...	...			Interp.
		42	32	32	166			Interp.
	14" Fan Wheel	17	25	24	57			Interp.
		...	...	...	...			Interp.
		42	34	34	173			Interp.
	16" Fan Wheel	18	28	28	66			Interp.
		...	...	...	...			Interp.
		48	38	38	195			Interp.
	18" Fan Wheel	21	31	28	74			Interp.
		...	...	...	...			Interp.
		48	40	40	199			Interp.
	20" Fan Wheel	21	31	28	74			Interp.
		...	...	...	...			Interp.
		50	42	42	199			Interp.
	22" Fan Wheel	22	34	34	83			Interp.
		...	...	...	...			Interp.
		38	40	44	165		2 wide x 4 high Gen II multi stack and adjacent cell	4
		...	...	...	...			Interp.
		33	44	44	175		2 wide x 4 high Gen II multi stack and adjacent cell	4
		...	...	...	...			Interp.
		51	34	34	199		2 wide x 4 high Gen II multi stack without extended coplanar	7

SPECIAL SEISMIC CERTIFICATION
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Product Type: Air Handling Units – Custom
Model Line: Huntair Custom Air Handling Units

Seismic Parameters			Building Codes
S_{DS} = 2.0g for	R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.0g for	R_μ=1.0, H_f=1.0		

TABLE 5

Table Description: Heat Transfer Coils

Component (Manufacturer)	Model	Dimensions (in) D	W	H	Wt. (lb)	Material	Notes	UUT
Water Coils (Nortek Air Solutions)	5WC 1 - 2 Row	4	24	24	57	Copper or aluminum fins; copper tubes	0.625" Ø tube, 1 row, 0.006" (Cu) or 0.008" (Al) fins, 6 FPI	Extrap.
		...	...	...	...			Extrap.
		4	40	85.5	230	Copper or aluminum (UUT) fins; copper tubes	0.625" Ø tube, 1 row, 0.006" (Cu) or 0.008" (Al, UUT) fins, 7 FPI, stacked 2 high	1a
		...	...	...	...			Interp.
		7	127	40.5	540	Copper or aluminum (UUT) fins; copper tubes	0.625" Ø tube, 2 rows, 0.006" (Cu) or 0.008" (Al, UUT) fins, 14 FPI, stacked 3 high	2[2]
	5WC 3 - 12 Row	6.5	24	24	143	Copper or aluminum fins; copper tubes	0.625" Ø tube, 3 row, 0.006" (Cu) or 0.008" (Al) fins, 14 FPI	Interp.
		...	...	...	...			Interp.
		17.5	83	40.5	1435	Copper (UUT) or aluminum fins; copper tubes	0.625" Ø tube, 12 rows, 0.006" (Cu, UUT) or 0.008" (Al) fins, 6 FPI, stacked 2 high	1a
	5WC[1] 3 - 10 Row	...	...	...	...			Interp.
		15	184	63	3594	Copper or aluminum (UUT) fins; copper tubes	0.625" Ø tube, 10 rows, 0.006" (Cu) or 0.008" (Al, UUT) fins, 12 FPI, stacked 2 high	8
		...	...	...	...			Interp.
		15	184	48	5624	Copper (UUT) or aluminum fins; copper tubes	0.625" Ø tube, 10 rows, 0.006" (Cu, UUT) or 0.008" (Al) fins, 12 FPI, stacked 2 high	8

Notes:
[1]Upgrade coil support per description in UUT8

SPECIAL SEISMIC CERTIFICATION
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Model Line: Huntair Custom Air Handling Units

Seismic Parameters			Building Codes
S_{DS} = 2.0g for	R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.0g for	R_μ=1.0, H_f=1.0		

TABLE 5

Table Description: Heat Transfer Coils

Component (Manufacturer)	Model	Dimensions (in)			Wt. (lb)	Material	Notes	UUT
		D	W	H				
DX Coils (Nortek Air Solutions)	DX Evaporator Coil	5	24	24	33	0.025" copper tube, 0.006" aluminum fin, 16ga. galv. carbon steel casing	0.50" Ø tube, 8 fins per inch, 1 row	Extrap.
		...	...	...	...			Extrap.
		8.5	56	45	521	0.025" copper tube, 0.006" aluminum fin, 16ga. galv. carbon steel casing	0.50" Ø tube, 14 fins per inch, 6 row	4
		...	...	...	...			Interp.
		8.5	150	45	1308	0.025" copper tube, 0.006" aluminum fin, 16ga. galv. carbon steel casing	0.50" Ø tube, 14 fins per inch, 6 row	4
DX Coils (Heatcraft/Modine)	DX Evaporator Coil	5	24	24	33	0.025" copper tube, 0.006" aluminum fin, 16ga. galv. carbon steel casing	0.50" Ø tube, 8 fins per inch, 1 row	Extrap.
		...	...	...	...			Extrap.
		8.5	56	45	521	0.025" copper tube, 0.006" aluminum fin, 16ga. galv. carbon steel casing	0.50" Ø tube, 14 fins per inch, 6 row	4
		...	...	...	...			Interp.
		8.5	150	45	1308	0.025" copper tube, 0.006" aluminum fin, 16ga. galv. carbon steel casing	0.50" Ø tube, 14 fins per inch, 6 row	4

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Huntair Custom Air Handling Units

Seismic Parameters			Building Codes
S_{DS} = 2.0g for	R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.0g for	R_μ=1.0, H_f=1.0		

TABLE 6

Table Description: Sound Trap

Component (Manufacturer)	Model	Dimensions (in)			Wt. (lb)	Material	Notes	UUT
		D	W	H				
Sound Trap (Huntair)	Sound Trap	24	4.3	24	12	Aluminum Construction, Fiberglass or Melamine Insulation		Extrap.
		...	...	...	...			Extrap.
		24	50	136	419		Standard	5
		...	...	...	...			Interp.
		72	86	136	1025		Low Frequency	5

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Huntair Custom Air Handling Units

Seismic Parameters			Building Codes
S_{DS} = 2.0g for	R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.0g for	R_μ=1.0, H_f=1.0		

TABLE 7

Table Description: Enclosure

Component (Manufacturer)	Model	Dimensions (in) D	W	H	Wt. (lb)	Material	Notes	UUT
Control & VFD Enclosure (Huntair)	Control & VFD Enclosures	12	20	24	30	Carbon Steel	NEMA1/12/3R/4X[1]	Extrap.
		...	...	...	...			Extrap.
		16	28	42	176		NEMA1/12/3R/4X[1], (UUT: NEMA 12)	2a
		...	...	...	...			Interp.
		10	28	40	143		NEMA1/12/3R/4X[1], (UUT: NEMA 1)	4
		...	...	...	...			Interp.
		12	36	48	216		NEMA1/12/3R/4X[1], (UUT: NEMA 3R)	1b
		...	...	...	...			Interp.
		20	56	72	470		NEMA1/12/3R/4X[1], (UUT: NEMA 1)	1a
		...	...	...	...			Interp.
		16	56	90	530		NEMA1/12/3R/4X[1], (UUT: NEMA 1)	4
Power Distribution & MSP Enclosures (Huntair)	Power Distribution & MSP Enclosures	6	6	8	30	Carbon Steel	NEMA1/12/3R/4X[1]	Extrap.
		...	...	...	...			Extrap.
		10	16	16	30		NEMA1/12/3R/4X1, (UUT: NEMA 4X)	2b
		...	...	...	...			Interp.
		12	22	34	105		NEMA1/12/3R/4X1, (UUT: NEMA 1)	8
Power Distribution & MSP Enclosures (Hoffman)	Power Distribution & MSP Enclosures	6	24	24	50	Aluminum	UUT: NEMA 3R	3a
Power Distribution & MSP Enclosures (Saginaw)	Electrical Control Cabinet	16	30	48	190	Carbon Steel	UUT: NEMA 1	8

Notes:
1No physical difference between NEMA 1, NEMA12, and NEMA 3R. NEMA 4X is powder coated.

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Huntair Custom Air Handling Units

Seismic Parameters			Building Codes
S_{DS} = 2.0g for	R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.0g for	R_μ=1.0, H_f=1.0		

TABLE 8

Table Description: Actuator, Fan Motors

Component (Manufacturer)	Model	Description	Notes	UUT
Actuator (Belimo)	AMB24			6[1]
	AS-120-S			1[1],2[1]
	AF24-MFT	24V		3a
	AF120	120V		4
	AFBUP-S	120V		8
Actuator (Honeywell)	MS4120F	2 position, 120V		4
Actuator (Siemens)	GCA156.1U			Extrap.
	GCA131.1P	24V		3a
	GCA226.IU	120V		3a
Fan Motor (Siemens)	1 HP	230/460 Volts	UUT: 55 lbs.	2[1],3a,7
	...			Interp.
	10 HP	460 Volts	UUT: 144 lbs.	7
	...			Interp.
	15 HP	230/460 Volts	UUT: 218 lbs.	2[1]
	...			Interp.
	20 HP	230/460 Volts	UUT: 291 lbs.	3a
Fan Motor (Baldor)	1 HP	230/460 Volts	UUT: 45 lbs	7
	...			Interp.
	12 HP	230/460 Volts	UUT: 169 lbs	7
Fan Motor (Toshiba)	1 HP	230/460 Volts	UUT: 63 lbs	4,7
	...			Interp.
	12 HP	230/460 Volts	UUT: 202 lbs	7
	...			Interp.
	15 HP	230/460 Volts	UUT: 320 lbs	4
Fan Motor (Novatorque Motor)	2 HP	460 Volts, permanent magnet motor	UUT: 72 lbs	7
	...			Interp.
	6 HP	230/460 Volts, permanent magnet motor	UUT: 74 lbs	7
Fan Motor (Nortek Air Solutions)	2.5-3640-380-480V3Ph	460V, 3 Phase, 60Hz	UUT: 2.5kW	4
	...			Interp.
	6.0-1860-380-480V3Ph	460V, 3 Phase, 60Hz	UUT: 6kW	4

Notes:
[1]Subcomponents was tested in all UUT configurations as seen in the UUT Summaries.

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Huntair Custom Air Handling Units

Seismic Parameters			Building Codes
S_{DS} = 2.0g for	R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.0g for	R_μ=1.0, H_f=1.0		

TABLE 8

Table Description: Actuator, Fan Motors

Component (Manufacturer)	Model	Description	Notes	UUT
Fan Whell/Motor Combo (Nortek Air Solutions)	HPF-P200-ECMi Size 12	Polymer, Aluminum		4
	...			Interp.
	HPF-P200-ECMi Size 22			4

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Huntair Custom Air Handling Units

Seismic Parameters			Building Codes
S_{DS} = 2.0g for	R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.0g for	R_μ=1.0, H_f=1.0		

TABLE 9

Table Description: Filters

Component (Manufacturer)	Model	Description	Notes	UUT
Final Filter (AAF)	VariCel DH and SH	12" depth	Efficiency: MERV 11	5
Final Filter (Camfil)	Durafil, RIGA-FLO, S-FLO	12" depth and 22" depth	Efficiency: MERV 11	1b,3a
Pre Filter (AAF)	PerfectPleat Ultra	2" depth and 4" depth	Efficiency: MERV 8	5
Pre Filter (Camfil)	30-30, Aeropleat	2" depth and 4" depth	Efficiency: MERV 8	1b,3a
HEPA Filter (Camfiler)	Absolute XH, Filtra 2000	12" depth		2[1]
HEPA Filter (AAF)	AstroCel, Varisorb	12" depth		2[1],3a

Notes:
[1]Subcomponent was tested in all UUT configurations as seen in the UUT Summaries.

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Huntair Custom Air Handling Units

Seismic Parameters			Building Codes
S_{DS} = 2.0g for	R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.0g for	R_μ=1.0, H_f=1.0		

TABLE 10

Table Description: Filter Frames & Racks

Component (Manufacturer)	Model	Dimensions (in)			Wt. (lb)	Material	Notes	UUT
		D	W	H				
Filter Frames & Racks (Camfil, AAF, Huntair, Farr)	Rack - Type 8	2.69	12	12	2	Galvanized Carbon Steel		Extrap.
		...	....	...	...			Extrap.
		2.69	84	84	50			1b
		...	....	...	...			Interp.
		2.69	60.25	132	55			6a
		...	....	...	...			Interp.
		2.69	108	108	80			5
		...	....	...	...			Interp.
		2.69	228	120	175			3a
	Frame - HEPA	3.75	132	120	150			2[1]

Notes:
[1]Subcomponent was tested in all UUT configurations as seen in the UUT Summaries.

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Huntair Custom Air Handling Units

Seismic Parameters			Building Codes
S_{DS} = 2.0g for	R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.0g for	R_μ=1.0, H_f=1.0		

TABLE 11

Table Description: Humidifier Grid

Component (Manufacturer)	Model	Dimensions (in)			Wt. (lb)	Material	Notes	UUT
		D	W	H				
Ultra-Sorb (DriSteem)	LV	5	12	12	23	Header/Tube: Stainless, Enclosure: Stainless Steel		Extrap.
		...	...	...	...			Extrap.
		5	43	49	122			6a[2]
		...	...	...	...			Interp.
		5	123	129	534			5[2]
Vapac	Vapasorb	5	24	24	50	Header/Tube: Stainless		1[1]

Notes:
[1]Subcomponent was tested in all UUT configurations as seen in the UUT Summaries.
[2]Humidifier Systems require independent structural support or adjacent upstream cable brace, see UUT-5 & 6a Summaries.

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Huntair Custom Air Handling Units

Seismic Parameters			Building Codes
S_{DS} = 2.0g for	R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.0g for	R_μ=1.0, H_f=1.0		

TABLE 12

Table Description : Electrical Components

Component (Manufacturer)	Model	Description	Notes	UUT
Disconnect Switch & Circuit Breaker (Siemens)	CFS361J5	30A	Eaton R4H3030FJ	Extrap.
	CFS362J	60A	Eaton R9J3060FJ	3a
	CFS363J	100A	Eaton R9K3100FJ	Interp.
	CFS364J	200A	Eaton R9L3200FJ	1b, 2a
	CFS365J	400A	Eaton R9M3400FJ	1a
Fuse Holder & Fuse (Bussmann)	LPJ-1SP	1A		Extrap.
	LPJ-5SP	5A	Bussmann Fuse type LPJ, full range	Extrap.
	LPJ-10SP	10A	Bussmann Fuse type DFJ, full range	Extrap.
	LP-CC-15	15A	Bussmann Fuse type LP-CC, full range	Extrap.
	CCP-3-30CC, J60030-3CR	30A	Bussmann Fuse type KTK, full range	1b
	J60060-3CR, CCP-360CF	60A	Bussmann Fuse type FNQ, full range	Interp.
	LPJ-100SP	100A	Bussmann Fuse type FNM, full range	Interp.
	LPJ-200-SP	200A	Bussmann Fuse type GMA, full range	Interp.
	J60400-3CR	400A		1a
Distribution Block (Marathon)	132580	175A	Bussmann PDBFS220, PDB321-3	1b
	1403404	310A	Bussmann PDBFS303, PDB323-3	Interp.
	1453579	380A	Bussmann PDBFS330	Interp.
	1453587	665A	Bussmann PDBFS500	1a
Contactor (Siemens)	3RT10151AK61	7A	Eaton XTCE007B10A	1a
	3RT10231AK60	9A	Eaton XTCE009B10A	Interp.
	3RT10241AK60	12A	Eaton XTCE012B10A	Interp.
	3RT10251AK60	17A	Eaton XTCE018B10A-18A	Interp.

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Huntair Custom Air Handling Units

Seismic Parameters			Building Codes
S_{DS} = 2.0g for	R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.0g for	R_μ=1.0, H_f=1.0		

TABLE 12

Table Description : Electrical Components

Component (Manufacturer)	Model	Description	Notes	UUT
Contactor (Siemens)	3RT10361AK60	50A	Eaton XTCE050D00A	Interp.
	3RT10451AK60	80A	Eaton XTCE080F00A	1a
	3RT10461AK60	95A	Eaton XTCE095F00	Interp.
	3RT10546AF36	115A	Eaton XTCE115G00A	Interp.
	3RT10556AF36	150A	Eaton XTCE150G00A	1a
	3RT10646AF36	225A	Eaton XTCE185H22A-185A	Extrap.
	3RT10656AF36	265A	Eaton XTCE250L22A-250A	Extrap.
MSP (Siemens)	3RV10210JA10	0.7 to 1.0A	Eaton XTPR001BC1 - 0.63 to 1.0A	1a
	3RV10211AA10	1.1 to 1.6A	Eaton XTPR1P6BC1 - 1.0 to 1.6A	Interp.
	3RV10211CA10	1.8 to 2.5A	Eaton XTPR2P5BC1 - 1.6 to 2.5A	Interp.
	3RV10211FA10	3.5 to 5.0A	Eaton XTPR004BC1 - 2.5 to 4.0A	Interp.
	3RV10211HA10	5.5 to 8.0A	Eaton XTPR010BC1 - 6.3 to 10A	2a
	3RV10211KA10	9.0 to 12.5A	Eaton XTPR012BC1 - 8 to 12.5A Eaton	1a
	3RV10214AA10	11 to 16A	Eaton XTPR016BC1 - 10 to 16A Eaton	1a, 3a
	3RV10314BA10	14 to 20A	Eaton XTPR025DC1 - 16 to 25A Eaton	Interp.
	3RV10314EA10	22 to 32A	Eaton XTPR032DC1 - 25 to 32A	Interp.
	3RV10314HA10	36 to 45A	Eaton XTPR050DC1 - 40 to 50A	Interp.
	3RV10414JA10	45 to 50A	Eaton XTPR063DC1 - 55 to 65A	1a
Power Supply (Siemens)	6EP1332-1SH42	2.5A	Eaton PSG60E	Extrap.
	6EP1332-1SH51	4A	Eaton PSG120E	1b, 18
	6EP1334-3BA00	10A	Eaton PSG 240E	4

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Huntair Custom Air Handling Units

Seismic Parameters			Building Codes
S_{DS} = 2.0g for	R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.0g for	R_μ=1.0, H_f=1.0		

TABLE 12

Table Description : Electrical Components

Component (Manufacturer)	Model	Description	Notes	UUT
Power Supply (IDEC)	PS5R-VE24	0.5 lbs, 3.75A		8
Tranformer (Micron)	B075LP7JK	75VA Pri 120x240 vac Sec: 24 vac	Eaton C0075E1B	Extrap.
	B050LP7RB	50VA Pri 120x240 vac Sec: 24 vac	Eaton C0050E1BFB	Extrap.
	B150LP7JKF	150VA Pri 120x240 vac Sec: 24 vac	Eaton C0150E1B	2a
	B250BTZ13RBF	250VA Pri 480x240 vac Sec: 120 vac	Eaton C0250E2AFB	Interp.
	B500BTZ13ARBF	500VA Pri 480x240 vac Sec: 120 vac	Eaton C0500E2AFB	1b
	B750BTZ13RBF	750VA Pri 480x240 vac Sec: 120 vac	Eaton C0750E2AFB	1a
	B1K0-0500-3F	1000VA Pri 480x240 vac Sec: 120 vac	Eaton C1000E2AFB	Interp.
	B2K0-0502-3H	2000VA Pri 480x240 vac Sec: 120 vac	Eaton C2000K2AFB	Interp.
	B3K0-0503-3H	3000VA Pri 480x240 vac Sec: 120 vac	Eaton C3000K2A	1a
Reactor (TCI)	KDRA3H	7.6A		4
	KDRA4H	11A		Interp.
	KDRA5H	14A		Interp.
	KDRB2H	21A		Interp.
	KDRC3H	27A		Interp.
	KDRF4H	52A		Interp.
	KDRF2H	77A		Interp.
	KDRI2H	125A		Interp.
	KDRG3H	156A		1b
Terminal Block (Pheonix)	Typ QTC 2.5	15A	Also Typ QTX 2.5-PE grounding term	Extrap.
	Typ ST 4	30A		2b
	Typ ST 4-PE	30A- Grounding Terminals		4
VFD (ABB)	ACH550 Series	208V/230V/460V, 1 HP, 18 lbs	UUT: 1 HP, 18 lbs	1a
		208V/230V/460V, 3 HP, 18 lbs		Interp.
		208V/230V/460V, 5 HP, 18 lbs		Interp.
		208V/230V/460V, 7.5 HP, 18 lbs		Interp.
		208V/230V/460V, 10 HP, 25 lbs		Interp.
		208V/230V/460V, 15 HP, 25 lbs		Interp.
		208V/230V/460V, 20 HP, 41 lbs		Interp.
		208V/230V/460V, 25 HP, 41 lbs		Interp.
		208V/230V/460V, 30 HP, 41 lbs		Interp.
		208V/230V/460V, 35 HP, 58 lbs		Interp.

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Huntair Custom Air Handling Units

Seismic Parameters			Building Codes
S_{DS} = 2.0g for	R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.0g for	R_μ=1.0, H_f=1.0		

TABLE 12

Table Description : Electrical Components

Component (Manufacturer)	Model	Description	Notes	UUT
VFD (ABB)	ACH550 Series	208V/230V/460V, 40 HP, 58 lbs		Interp.
		208V/230V/460V, 50 HP, 58 lbs		Interp.
		208V/230V/460V, 60 HP, 58 lbs		Interp.
		208V/230V/460V, 75 HP, 58 lbs		Interp.
		208V/230V/460V, 100 HP, 190 lbs		Interp.
		208V/230V/460V, 125 HP, 190 lbs		Interp.
		208V/230V/460V, 150 HP, 190 lbs	UUT: 150 HP, 190 lbs	1a
VFD (ABB)	ACS320 Series	208V/230V/460V	UUT: 1 HP, 3.5 lbs	1b
		208V/230V/460V, 3 HP, 3.5 lbs		Interp.
		208V/230V/460V, 5 HP, 3.5 lbs		Interp.
		208V/230V/460V, 7.5 HP, 7 lbs		Interp.
		208V/230V/460V, 10 HP, 7 lbs		Interp.
		208V/230V/460V, 15 HP, 7 lbs		Interp.
		208V/230V/460V	UUT: 20 Hp, 11 lbs	1b
		208V/230V/460V, 25 HP, 11 lbs		Interp.
		208V/230V/460V, 30 HP, 11 lbs		Interp.
VFD (ABB)	ACS355 Series	480V, 0.5 HP, 2.6 lbs		Extrap.
		480V, 0.75 HP, 2.6 lbs		Extrap.
		480V, 1 HP, 3.0 lbs		Extrap.
		480V, 1.5 HP, 3.0 lbs		Extrap.
		480V	UUT: 2 HP, 3.0 lbs	7
		480V, 3 HP, 3.0 lbs		Interp.
		480V, 4 HP, 3.0 lbs		Interp.
		480V, 5 HP, 3.0 lbs		Interp.
		480V, 7.5 HP, 6.9 lbs		Interp.
		480V, 10 HP, 6.9 lbs		Interp.
		480V	UUT: 15 HP, 11.5 lbs	7
VFD (Danfoss)	FC101 Series	208V/230V/460V	UUT: 1 HP	4
		208V/230V/460V	UUT: 15 HP	4
	VLT Series	208V/230V/460V	UUT: 5 HP	4
		208V/230V/460V	UUT: 15 HP	4
		208V/230V/460V	UUT: 100 HP, 212 lbs	2[1]

Notes:
[1]Subcomponent was tested in all UUT configurations as seen in the UUT Summaries.

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Huntair Custom Air Handling Units

Seismic Parameters			Building Codes
S_{DS} = 2.0g for	R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.0g for	R_μ=1.0, H_f=1.0		

TABLE 12

Table Description : Electrical Components

Component (Manufacturer)	Model	Description	Notes	UUT
VFD (Yaskawa)	E7 Series	208V/230V/460V, 3 HP, 9 lbs		Interp.
		208V/230V/460V, 5 HP, 9 lbs		Interp.
		208V/230V/460V, 7.5 HP, 9 lbs		Interp.
		208V/230V/460V, 10 HP, 13 lbs		Interp.
		208V/230V/460V, 15 HP, 13 lbs		Interp.
		208V/230V/460V, 20 HP, 13 lbs		Interp.
		208V/230V/460V, 25 HP, 22 lbs		Interp.
		208V/230V/460V, 30 HP, 22 lbs		Interp.
		208V/230V/460V, 40 HP, 53 lbs		Interp.
		208V/230V/460V, 50 HP, 53 lbs		Interp.
		208V/230V/460V, 60 HP, 88 lbs		Interp.
		208V/230V/460V, 75 HP, 88 lbs		Interp.
		208V/230V/460V, 100 HP, 88 lbs		Interp.
		208V/230V/460V, 125 HP, 194 lbs		Interp.
		208V/230V/460V	UUT: 150 HP, 196 lbs	1a
	V1000 Series	208V/230V/460V	UUT: 1 HP, 3 lbs	1b
		208V/230V/460V, 3 HP, 4.2 lbs		Interp.
		208V/230V/460V, 5 HP, 4.2 lbs		Interp.
		208V/230V/460V, 7.5 HP, 5.7 lbs		Interp.
		208V/230V/460V	UUT: 10 HP, 9 lbs	1b
		208V/230V/460V, 15 HP, 9 lbs		Interp.
		208V/230V/460V	UUT: 20 HP, 12 lbs	1b
		208V/230V/460V, 25 HP, 12 lbs		Interp.
	Z1000 Series	480V	UUT: 3 HP, 11.9 lbs	7
		480V, 5 HP, 12.6 lbs		Interp.
		480V, 7.5 HP, 13.4 lbs		Interp.
		480V, 10 HP, 16.1 lbs		Interp.
		480V, 15 HP, 16.8 lbs		Interp.
		480V	UUT: 20 HP, 18.5 lbs	7
		480V	UUT: 25 HP, 28.7 lbs	7
VFD (Nortek Air Solutions)	HD4005XX	480V, XX denotes 10" or 25" pressure setting (firmware only)	0.5 HP, 9.5 lbs	Extrap.
	HD4010XX		UUT: 1 HP, 9.5 lbs, 10" Model	7
	HD4015XX		1.5 HP, 9.5 lbs	Interp.

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Huntair Custom Air Handling Units

Seismic Parameters			Building Codes
S_{DS} = 2.0g for	R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.0g for	R_μ=1.0, H_f=1.0		

TABLE 12

Table Description : Electrical Components

Component (Manufacturer)	Model	Description	Notes	UUT
VFD (Nortek Air Solutions)	HD4020XX	480V, XX denotes 10" or 25" pressure setting (firmware only)	2 HP, 9.5 lbs	Interp.
	HD4025XX		2.5 HP, 9.5 lbs	Interp.
	HD4030XX		3 HP, 9.5 lbs	Interp.
	HD4035XX		3.5 HP, 9.5 lbs	Interp.
	HD4040XX		4 HP, 9.5 lbs	Interp.
	HD4045XX		4.5 HP, 9.5 lbs	Interp.
	HD4050XX		5 HP, 9.5 lbs	Interp.
	HD4055XX		5.5 HP, 9.5 lbs	Interp.
	HD4060XX		6 HP, 9.5 lbs	Interp.
	HD4065XX		6.5 HP, 9.5 lbs	Interp.
	HD4070XX		7 HP, 9.5 lbs	Interp.
	HD4075XX		7.5 HP, 9.5 lbs	Interp.
	HD4080XX		8 HP, 9.5 lbs	Interp.
	HD4085XX		8.5 HP, 9.5 lbs	Interp.
	HD4090XX		9 HP, 9.5 lbs	Interp.
	HD4095XX		9.5 HP, 9.5 lbs	Interp.
	HD4100XX		10 HP, 9.5 lbs	7
PLC Controls (Siemens	Circuit Breaker			1b
	Power Supply			1b
	Controller			1b
	Touch Screen	4" min to 19" max		1b
	Expansion Module			4
	Communication Module			4
Thermostat (Pfennenberg)	ETR201	Thermostat, 120-240V	SKT011419N0	2[1], 3a, 4, 7
Transducer/ Display (Dwyer)	MS2-W103-LCD-BC	XDCR, DP, Adjustable 0-10", 15"	No Eaton equivalent	1b
Cool Fan - 4" to 6" (Rittal)	120 to 240V			4

Notes:
[1]Subcomponent was tested in all UUT configurations as seen in the UUT Summaries.

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Huntair Custom Air Handling Units

Seismic Parameters			Building Codes
S_{DS} = 2.0g for	R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 2.0g for	R_μ=1.0, H_f=1.0		

TABLE 12

Table Description : Electrical Components

Component (Manufacturer)	Model	Description	Notes	UUT
Cool Fan - 4" to 6" (U.S. Toyo)	120 to 240V			1[1], 2[1],3a
Plasma BAR (Plasma Air)	PB-018	1.1 lbs		8
	...			Interp.
	PB-096	6.0 lbs		8
	PB-CP	Control Panel, 4.0 lbs		8
UV Lights (UV Resources)	RLM Xtream-33			4
	...			Interp.
	RLM Xtream-61			4
	DEF-220			4
	...			Interp.
	DEF-340			4
Pressure Gauge (Dwyer)	Photohelic A3000 Series	Gage Photohelic, 0-0.1wc, 4 lbs		8
	Magnehelic 2000 Series	Gage Magnahelic 0-1.0wc, 1 lbs		6a, 6b
	Magnesense MS2 Series	Magnesense MS2 Seriesq		4
HMI Screen (Niagara)	Horyzon-C10	4.4 lbs		8
Expander (Niagara)	IO-R-16	0.625 lbs		8
	IO-R-34	1.25 lbs		8
Controller (Niagara)	JACE-8000	1.25 lbs		8
Air Flow Measurement System (Paragon Controls Incorporated)	OAFE-1550			6[1]
Contact Switch (Phoenix)	FL SWITCH SFN 5TX-24VAC	1 lbs		8

Notes:
[1]Subcomponent was tested in all UUT configurations as seen in the UUT Summaries.

SPECIAL SEISMIC CERTIFICATION TESTING SUMMARY

UUT	Model	Test Report	Test Laboratory	S_{DS}	R_μ	H_f	I_p
1a	Air Handling Cabinet: CSU-10K	HuntAir9293	Clark Testing	2.0	1.3 1.0	3.5 1.0	1.5
1b	Air Handling Cabinet: CSU-10K	HuntAir9293	Clark Testing	2.0	1.3 1.0	3.5 1.0	1.5
2a	Air Handling Cabinet: CSU-20K	HuntAir9293	Clark Testing	2.0	1.3 1.0	3.5 1.0	1.5
2b	Air Handling Cabinet: CSU-20K (Inlet Wall Removed w/ Cable Bracing)	HuntAir9293	Clark Testing	2.0	1.3 1.0	3.5 1.0	1.5
2c	Air Handling Cabinet: CSU-20K (Inlet & Outlet Wall Removed w/ Cable Bracing)	HuntAir9293	Clark Testing	2.0	1.3 1.0	3.5 1.0	1.5
2d	Air Handling Cabinet: CSU-20K (Inlet & Outlet Wall Removed w/o Cable Bracing)	HuntAir9293	Clark Testing	2.0	1.3 1.0	3.5 1.0	1.5
3a	Air Handling Cabinet: CSU-40K	HuntAir9293	Clark Testing	2.0	1.3 1.0	3.5 1.0	1.5
4	Air Handling Cabinet: CSU-20K	1700754-TR-001 R2	CERL	2.0 2.5	1.3 1.0	3.5 1.0	1.5
5	Air Handling Cabinet: CSU-15K (Side Wall Removed)	1700754-TR-001 R2	CERL	2.0 2.5	1.3 1.0	3.5 1.0	1.5
6a	Air Handling Cabinet: CSU-15K	1700754-TR-001 R2	CERL	2.0 2.5	1.3 1.0	3.5 1.0	1.5
6b	Air Handling Cabinet: CSU-15K (Filter Rack & Humidifier Removed w/ Cable Bracing)	1700754-TR-001 R2	CERL	2.0 2.5	1.3 1.0	3.5 1.0	1.5
7	FWT	13379 Rev.1	Environmental Testing Laboratory, Inc.	2.0 3.2	1.3 1.0	3.5 1.0	1.5
8	Air Handling Cabinet: CSU-20K	1801166-TR-001 R0	Pacific Earthquake Engineering Research Center (PEER)	2.0 2.5	1.3 1.0	3.5 1.0	1.5

Notes:

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 1a

Test Report# HuntAir9293

Manufacturer: Nortek Air Solutions, LLC
Model Line: Huntair Custom Air Handling Units
Model Number: CSU-10K
Serial Number: 2097-01

Highest Passed Test Level

S_{DS}	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.00	1.3	3.5	1.5	3.2	2.15	1.34	0.54
2.00	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
96.25	96	96	7,450

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
15.2	10.7	20.5

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Standard 2" Panels, 16 ga. galv. carbon steel exterior with 20 ga. galv. carbon steel liner; Base: Carbon steel channel base, 16 ga. galv. carbon steel skin with 20 ga. galv. carbon steel liner and 20 ga. carbon steel subfloor; Door: (2) 2" thick, 18.5(W) x 61.5(H) with thermal break window, 12.5(W) x 61.5(H) no window.

UUT Mounting Details:

Test mounting details: (4) Walls in place with 2-heat transfer coils

All test units contain an integrated structural base frame. This unit was mounted directly to the seismic table using twelve (12) 1/2"-13 Grade 5 hex head bolts (3 bolts per side) with flat washers and lock washers.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

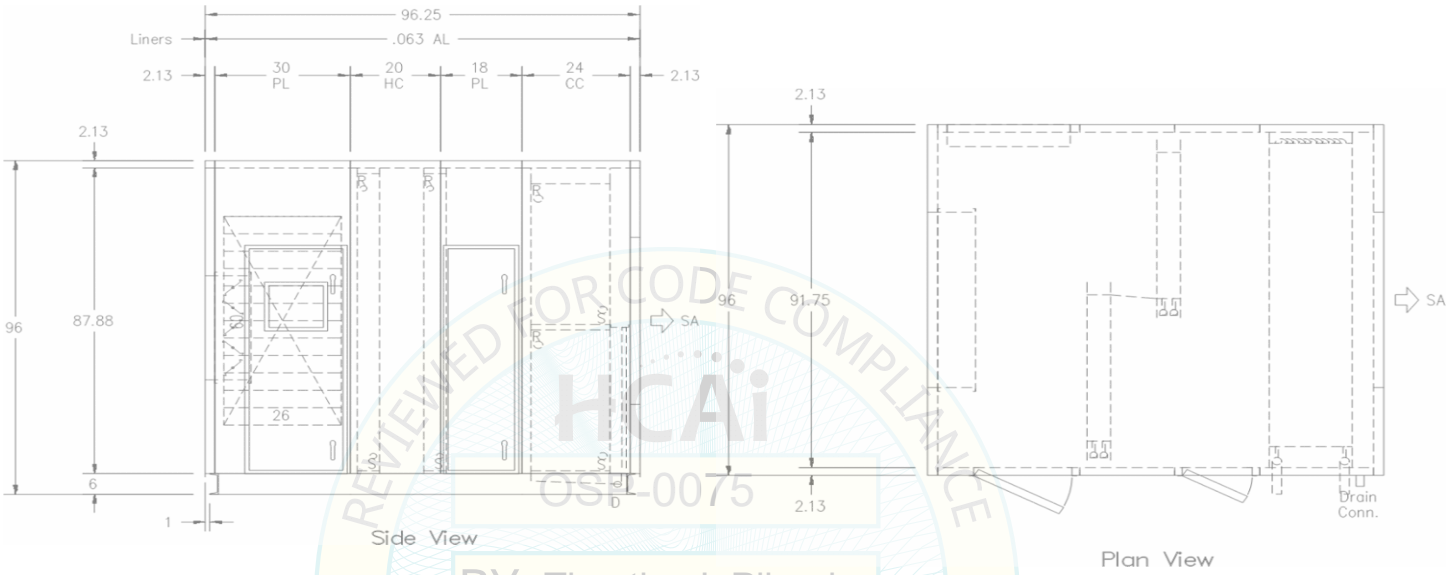
Heat Transfer Coil: Heat Transfer Coil (HT1): Huntair, 7 FPI, 1 row, aluminum, staggered mounting - qty. 2 (40"x8"x85.5"); Heat Transfer Coil (HT2): Huntair, 6 FPI, 12 rows, copper, stacked mounting - qty. 2 (83"x17.5"x40.5"); Humidifier: Mfg. Vapac (8"x24"x24"); Electrical Control Panel: NEMA1 (20"x56"x78"), ABB ACH550 150 HP VFD, Yaskawa E7 150 HP VFD; Damper: Huntair HD6 (8"x48"x30"); Louver: Huntair HL (6"x26"x60"); Actuator: Belimo AS-120-S; Cool Fan: U.S. Toyo 120V-240V; Disconnect Switch & Circuit Breaker; Fuse Holder & Fuse; Distribution Block; Contactor; MSP; Transformer; VFD

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 1a

Test Report# HuntAir9293

Unit Drawing



Coil Support Details

1.) (7) 0.188" Rivets at bottom of each coil, (6) 0.188 Rivets at top of each coil, 2.) 2-16ga. C-channel stiffeners each side of coil (8- total), 3.) #14x1" screws at 7-5/8" o.c. max spacing along each c-channel stiffener

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 1b

Test Report# HuntAir9293

Manufacturer: Nortek Air Solutions, LLC
Model Line: Huntair Custom Air Handling Units
Model Number: CSU-10K
Serial Number: 2097-01

Highest Passed Test Level

S_{DS}	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.00	1.3	3.5	1.5	3.2	2.15	1.34	0.54
2.00	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
96.25	96	96	7,450

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
15.2	10.7	20.5

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Standard 2" Panels, 16 ga. galv. carbon steel exterior with 20 ga. galv. carbon steel liner; Base: Carbon steel channel base, 16 ga. galv. carbon steel skin with 20 ga. galv. carbon steel liner and 20 ga. carbon steel subfloor; Door: (2) 2" thick, 18.5(W) x 61.5(H) with thermal break window, 12.5(W) x 61.5(H) no window.

UUT Mounting Details:

(4) walls in place, coils removed and replaced with filter rack

All test units contain an integrated structural base frame. This unit was mounted directly to the seismic table using twelve (12) 1/2"-13 Grade 5 hex head bolts (3 bolts per side) with flat washers and lock washers.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

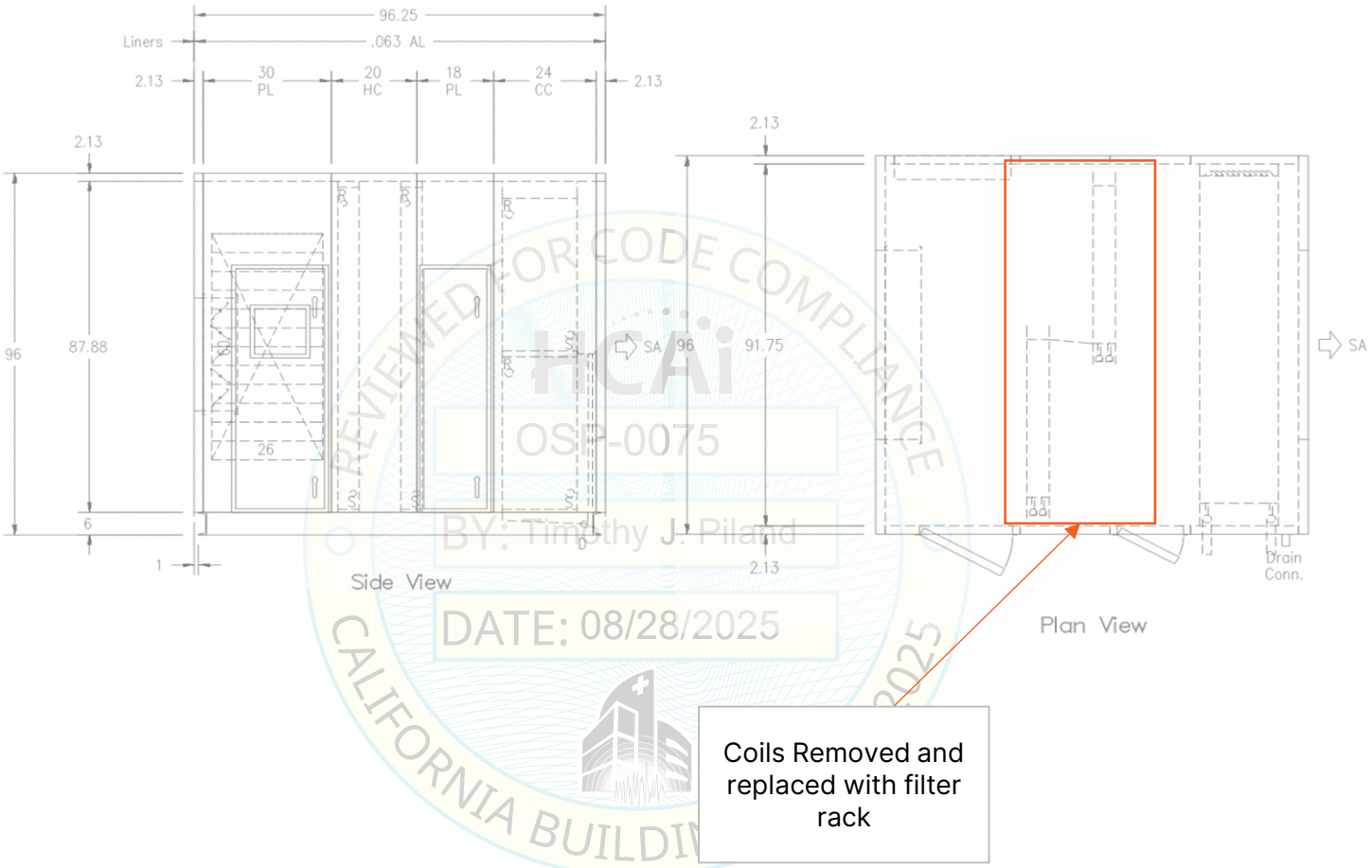
Filter Rack: Type 8, 4" pre-filter, 12" final filter (12"x92"x88"); Humidifier: Mfg. Vapac (8"x24"x24"); Electrical Control Panel:NEMA3R (12"x36"x48"), PLC, ABB ACH320 1,20 HP VFD's, Yaskawa V1000 1,10,20 HP VFD's; Damper: Huntair HD6 (8"x48"x30");Louver: Huntair HL (6"x26"x60"); Actuator: Belimo AS-120-S; Cool Fan: U.S. Toyo 120V-240V; Disconnect Switch & Circuit Breaker; Fuse Holder & Fuse; Distribution Block; Power Supply; Transformer; Reactor; Transducer/Display; PLC Controls

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 1b

Test Report# HuntAir9293

Unit Drawing



SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 2a

Test Report# HuntAir9293

Manufacturer: Nortek Air Solutions, LLC
Model Line: Huntair Custom Air Handling Units
Model Number: CSU-20K
Serial Number: 2097-02

Highest Passed Test Level

S_{DS}	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.00	1.3	3.5	1.5	3.2	2.15	1.34	0.54
2.00	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
108	144	144.25	9,050

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
4.0	6.6	20.6

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Wall/Roof: Standard 4" Panels, 16 ga. galv. carbon steel exterior with 20 ga. galv. carbon steel liner and 16 ga. galv. carbon steel blankoff with sloped roof; Base: Carbon steel channel base, 16 ga. galv. carbon steel skin with 20 ga. galv. carbon steel liner and 20 ga. carbon steel subfloor; Door: (2) 2" thick, 18.5(W) x 61.5(H) with thermal break window, 30.5(W) x 24.5(H) no window.

UUT Mounting Details:

(4) Walls in place

All test units contain an integrated structural base frame. This unit was mounted directly to the table using fourteen (14) 1/2" - 13 grade 5 hex head bolts (7 bolts on both exterior sides) with flat washer and lock washers.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

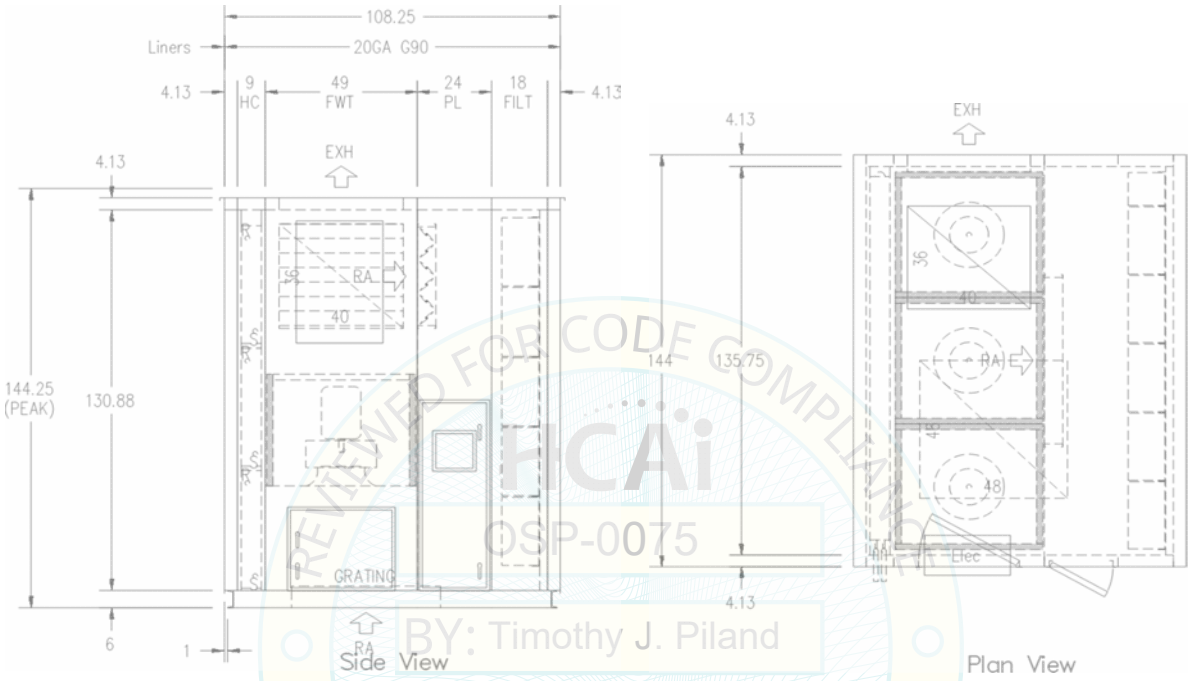
Fanwall: 3 fans, vertical upflow (2 up, 1 down), 10" and 22" wheels, welded cells, 1 HP and 15 HP Siemens motors (38.5"x131"x136"); Heat Transfer Coil: Heat Transfer Coil (HT3): Huntair, 14 FPI, 2 row, aluminum, stacked mounting - qty. 3 (127"x7"x40.5"); Filter Rack: HEPA filter and filter rack (12"x140"x140"); Electrical Control Panel: NEMA12 (16"x28"x42"); VFD: Danfoss VLT 100 HP, recessed panel construction; Damper: Ruskin CD50 (5"x60"x36"); Louver: Ruskin ELF (6"x40"x36"); Actuator: Belimo AS-120-S; Cool Fan: U.S. Toyo 120V-240V; HEPA Filter; Disconnect Switch & Circuit Breaker; MSP; Transformer

SPECIAL SEISMIC CERTIFICATION
UUT SUMMARY

UUT 2a

Test Report# HuntAir9293

Unit Drawing



SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 2b

Test Report# HuntAir9293

Manufacturer: Nortek Air Solutions, LLC
Model Line: Huntair Custom Air Handling Units
Model Number: CSU-20K
Serial Number: 2097-02

Highest Passed Test Level

S_{DS}	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.00	1.3	3.5	1.5	3.2	2.15	1.34	0.54
2.00	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
108	144	144.25	9,050

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
4.0	6.6	20.6

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Wall/Roof: Standard 4" Panels, 16 ga. galv. carbon steel exterior with 20 ga. galv. carbon steel liner and 16 ga. galv. carbon steel blankoff with sloped roof; Base: Carbon steel channel base, 16 ga. galv. carbon steel skin with 20 ga. galv. carbon steel liner and 20 ga. carbon steel subfloor; Door: (2) 2" thick, 18.5(W) x 61.5(H) with thermal break window, 30.5(W) x 24.5(H) no window; Cable Bracing: 3/8" galvanized steel cables with 1/4" A36 brackets.

UUT Mounting Details:

Inlet wall removed; cable bracing at coil



All test units contain an integrated structural base frame. This unit was mounted directly to the table using fourteen (14) 1/2" - 13 grade 5 hex head bolts (7 bolts on both exterior sides) with flat washer and lock washers.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

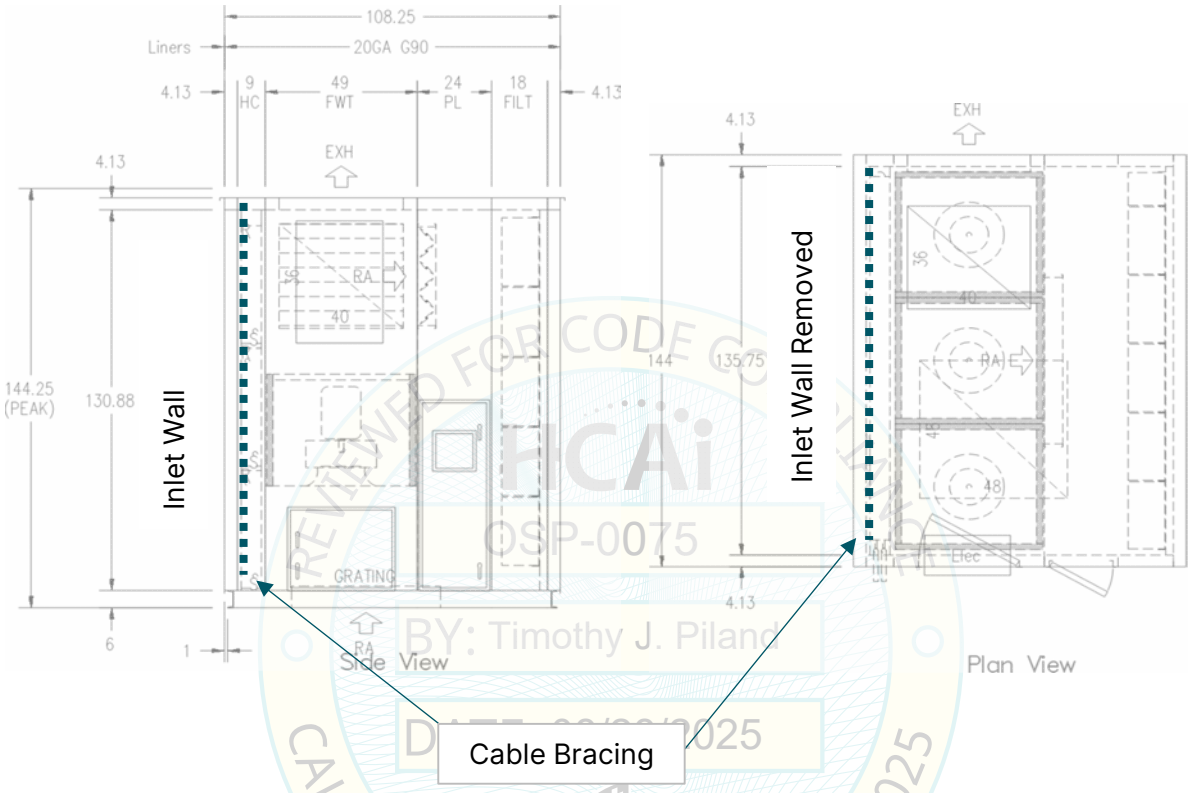
Fanwall: 3 fans, vertical upflow (2 up, 1 down), 10" and 22" wheels, welded cells, 1 HP and 15 HP Siemens motors (38.5"x131"x136"); Heat Transfer Coil: Heat Transfer Coil (HT3): Huntair, 14 FPI, 2 row, aluminum, stacked mounting - qty. 3 (127"x7"x40.5"); Filter Rack: HEPA filter and filter rack (12"x140"x140"); MSP Enclosure: NEMA4X (10"x16"x16"); VFD: Danfoss VLT 100 HP, recessed panel construction; Damper: Ruskin CD50 (5"x60"x36"); Louver: Ruskin ELF (6"x40"x36"); Actuator: Belimo AS-120-S; Cool Fan: U.S. Toyo 120V-240V; HEPA Filter; Terminal Block

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 2b

Test Report# HuntAir9293

Unit Drawing



SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 2c

Test Report# HuntAir9293

Manufacturer: Nortek Air Solutions, LLC
Model Line: Huntair Custom Air Handling Units
Model Number: CSU-20K
Serial Number: 2097-02

Highest Passed Test Level

S_{DS}	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.00	1.3	3.5	1.5	3.2	2.15	1.34	0.54
2.00	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
108	144	144.25	9,050

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
4.0	6.6	20.6

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Wall/Roof: Standard 4" Panels, 16 ga. galv. carbon steel exterior with 20 ga. galv. carbon steel liner and 16 ga. galv. carbon steel blankoff with sloped roof; Base: Carbon steel channel base, 16 ga. galv. carbon steel skin with 20 ga. galv. carbon steel liner and 20 ga. carbon steel subfloor; Door: (2) 2" thick, 18.5(W) x 61.5(H) with thermal break window, 30.5(W) x 24.5(H) no window; Cable Bracing: 3/8" galvanized steel cables with 1/4" A36 brackets.

UUT Mounting Details:

Inlet and outlet walls removed; cable bracing at coil

All test units contain an integrated structural base frame. This unit was mounted directly to the table using fourteen (14) 1/2" - 13 grade 5 hex head bolts (7 bolts on both exterior sides) with flat washer and lock washers.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

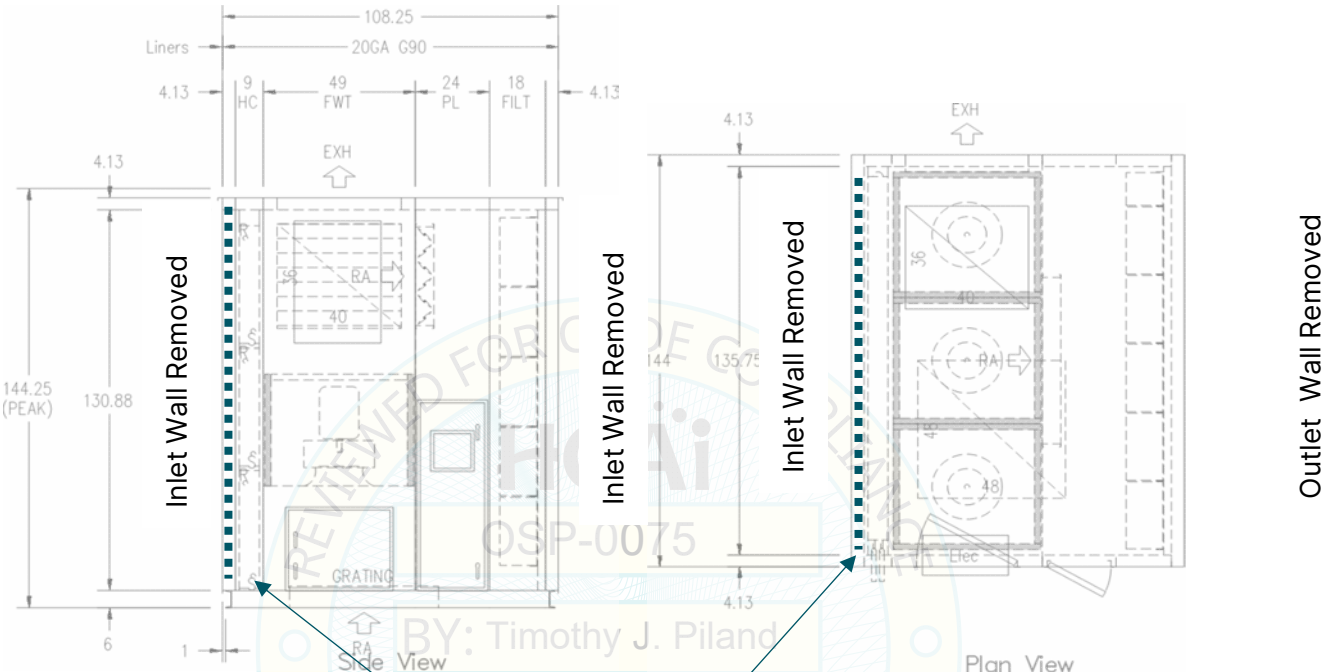
Fanwall: 3 fans, vertical upflow (2 up, 1 down), 10" and 22" wheels, welded cells, 1 HP and 15 HP Siemens motors (38.5"x131"x136"); Heat Transfer Coil: Heat Transfer Coil (HT3): Huntair, 14 FPI, 2 row, aluminum, stacked mounting - qty. 3 (127"x7"x40.5"); Filter Rack: HEPA filter and filter rack (12"x140"x140"); VFD: Danfoss VLT 100 HP, recessed panel construction; Damper: Ruskin CD50 (5"x60"x36"); Louver: Ruskin ELF (6"x40"x36"); Actuator: Belimo AS-120-S; Cool Fan: U.S. Toyo 120V- 240V; HEPA Filter

SPECIAL SEISMIC CERTIFICATION
UUT SUMMARY

UUT 2c

Test Report# HuntAir9293

Unit Drawing



SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 2d

Test Report# HuntAir9293

Manufacturer: Nortek Air Solutions, LLC
Model Line: Huntair Custom Air Handling Units
Model Number: CSU-20K
Serial Number: 2097-02

Highest Passed Test Level

S_{DS}	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.00	1.3	3.5	1.5	3.2	2.15	1.34	0.54
2.00	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
108	144	144.25	9,050

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
4.0	6.6	20.6

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Wall/Roof: Standard 4" Panels, 16 ga. galv. carbon steel exterior with 20 ga. galv. carbon steel liner and 16 ga. galv. carbon steel blankoff with sloped roof; Base: Carbon steel channel base, 16 ga. galv. carbon steel skin with 20 ga. galv. carbon steel liner and 20 ga. carbon steel subfloor; Door: (2) 2" thick, 18.5(W) x 61.5(H) with thermal break window, 30.5(W) x 24.5(H) no window.

UUT Mounting Details:

Inlet and outlet walls removed; no cable bracing

All test units contain an integrated structural base frame. This unit was mounted directly to the table using fourteen (14) 1/2" - 13 grade 5 hex head bolts (7 bolts on both exterior sides) with flat washer and lock washers.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

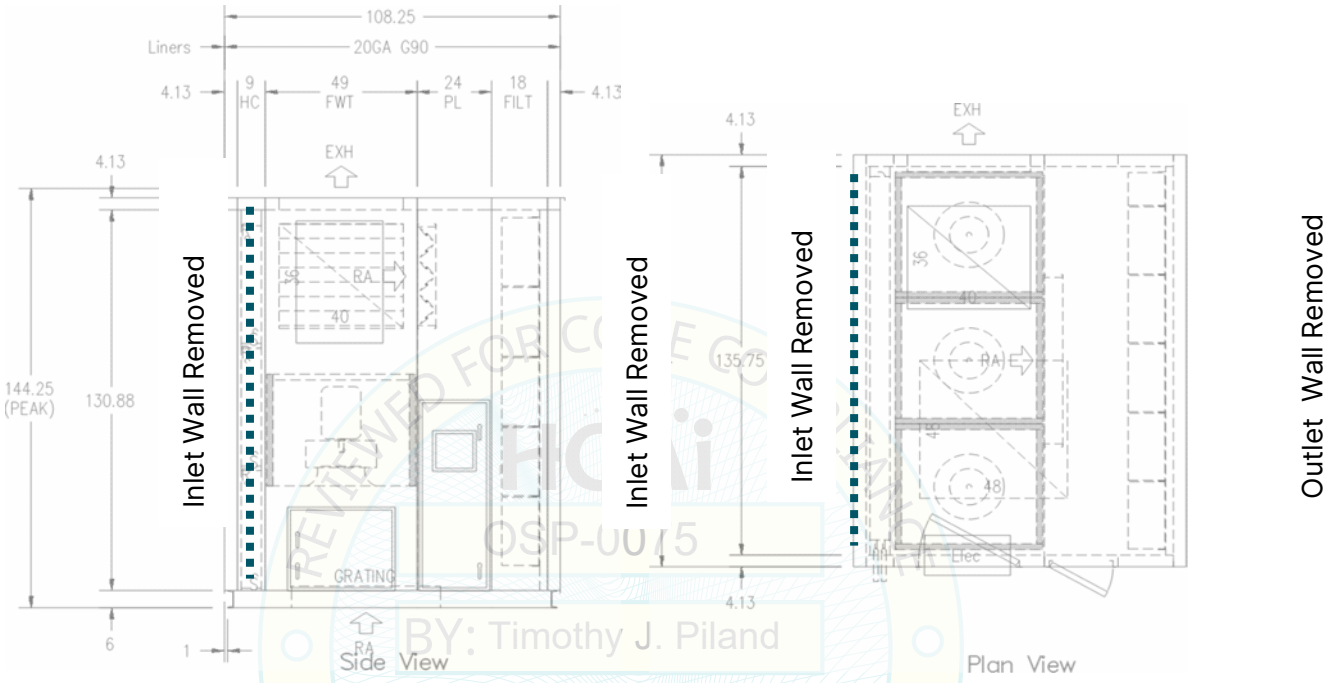
Fanwall: 3 fans, vertical upflow (2 up, 1 down), 10" and 22" wheels, welded cells, 1 HP and 15 HP Siemens motors (38.5"x131"x136"); Heat Transfer Coil: Heat Transfer Coil (HT3): Huntair, 14 FPI, 2 row, aluminum, stacked mounting - qty. 3 (127"x7"x40.5"); Filter Rack: HEPA filter and filter rack (12"x140"x140"); VFD: Danfoss VLT 100 HP, recessed panel construction; Damper: Ruskin CD50 (5"x60"x36"); Louver: Ruskin ELF (6"x40"x36"); Actuator: Belimo AS-120-S; Cool Fan: U.S. Toyo 120V- 240V; HEPA Filter

SPECIAL SEISMIC CERTIFICATION
UUT SUMMARY

UUT 2d

Test Report# HuntAir9293

Unit Drawing



SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 3a

Test Report# HuntAir9293

Manufacturer: Nortek Air Solutions, LLC
Model Line: Huntair Custom Air Handling Units
Model Number: CSU-40K
Serial Number: 2097-03

Highest Passed Test Level

S_{DS}	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.00	1.3	3.5	1.5	3.2	2.15	1.34	0.54
2.00	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
96	240	144	11,600

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
4.7	3.9	14.1

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Wall/Roof: Standard 4" Panels, 0.080" aluminum exterior with 0.063" solid aluminum liner, 0.080" solid aluminum blankoff; Base: 6" Aluminum structural tubing, 0.125" aluminum floor liner with 0.063" aluminum base liner; Door: 2" thick, 12.5(W) x 61.5(H) no window.

UUT Mounting Details:

(4) walls in place

All test units contain an integrated structural base frame. This unit was mounted directly to the seismic table using sixteen (16) 1/2" - 13 grade 5 hex head bolts (8 bolts per both exterior sides) with flat washers and lock washers.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

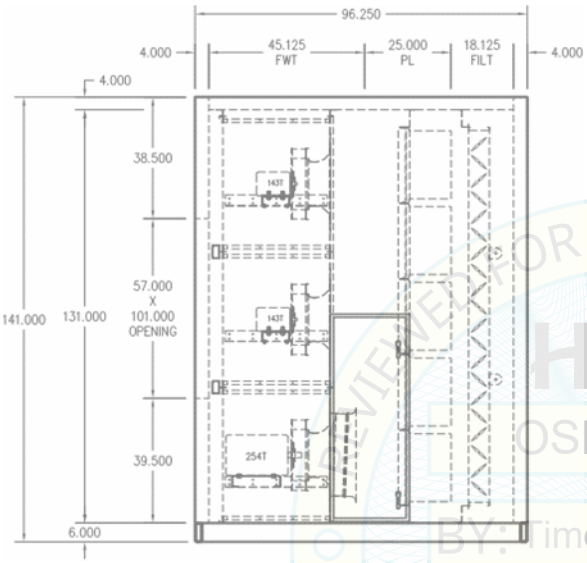
1 HP and 20 HP Siemens motors (34"x212"x131"); Filter Rack: 4" pre-filter, 12" final filter, type 8 (12"x236"x140"); Enclosure: NEMA3R (6"x24"x24") Terminal blocks; Damper: Ruskin CD50 (8"x100"x120 "), Huntair HD6 (8"x100"x120"); Actuator: Belimo AF24-MFT, Siemens GCA131.1P, Siemens GCA226.1U; Cool Fan: U.S. Toyo 120V-240V; HEPA Filter; Disconnect Switch & Circuit Breaker; MSP

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

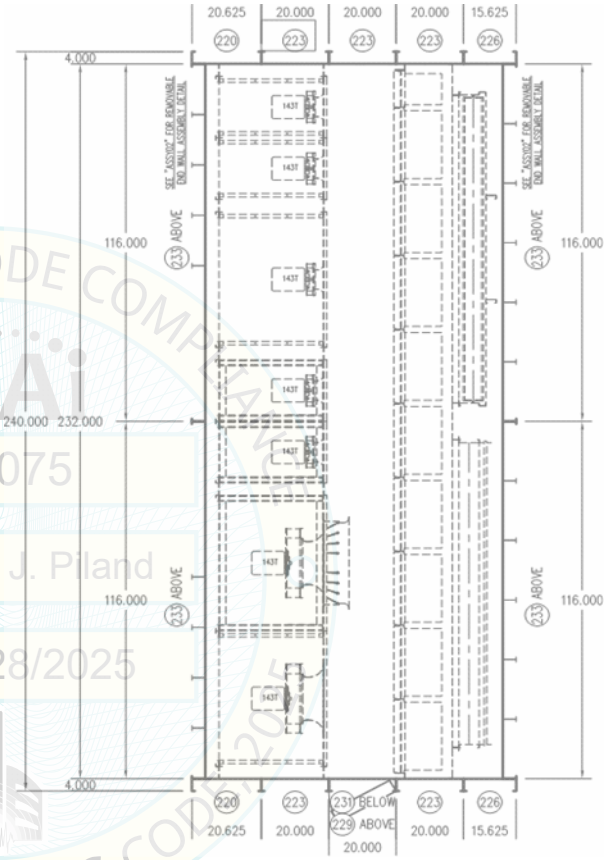
UUT 3a

Test Report# HuntAir9293

Unit Drawing



Elevation View



Plan View

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 4

Test Report# 1700754-TR-001 R2

Manufacturer: Nortek Air Solutions, LLC
Model Line: Huntair Custom Air Handling Units
Model Number: CSU-20K STM/DX
Serial Number: 0120-01

Highest Passed Test Level

S_{DS}	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.00	1.3	3.5	1.5	3.2	2.15	1.67	0.67
2.50	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
138	244	160	24,400

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
7.3	6.0	13.1

Building Codes

CBC 2025

Test Criteria

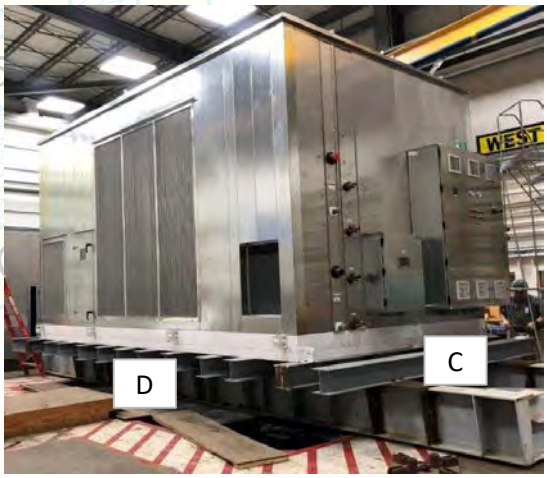
ICC-ES AC156

Construction/Option Summary

Wall: 4" Panels 4 Variations - (A) 16 ga. stainless steel wall with 0.040" aluminum perforated liner, (B) 16 ga. galv carbon steel wall with 20 ga. galv. carbon steel solid liner, (C) 16 ga. stainless steel wall with 20 ga. stainless steel solid liner, (D) 16 ga. galv. carbon steel wall with 22 ga. stainless steel perforated liner, Roof: inner - 16 ga. stainless steel, outer - 16 ga. galv. carbon steel, sloped roof. Base: 12" tall stainless structural tubing, 12 ga. galv. carbon steel skin with 16 ga. galv. carbon steel liner and 16 ga. carbon steel subfloor.

UUT Mounting Details:

(4) walls in place



All test units contain an integrated structural base frame. This unit was mounted to a I beam fixture using twelve (12) 5/8" SAE grade 8 hex head bolts with flat washers.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

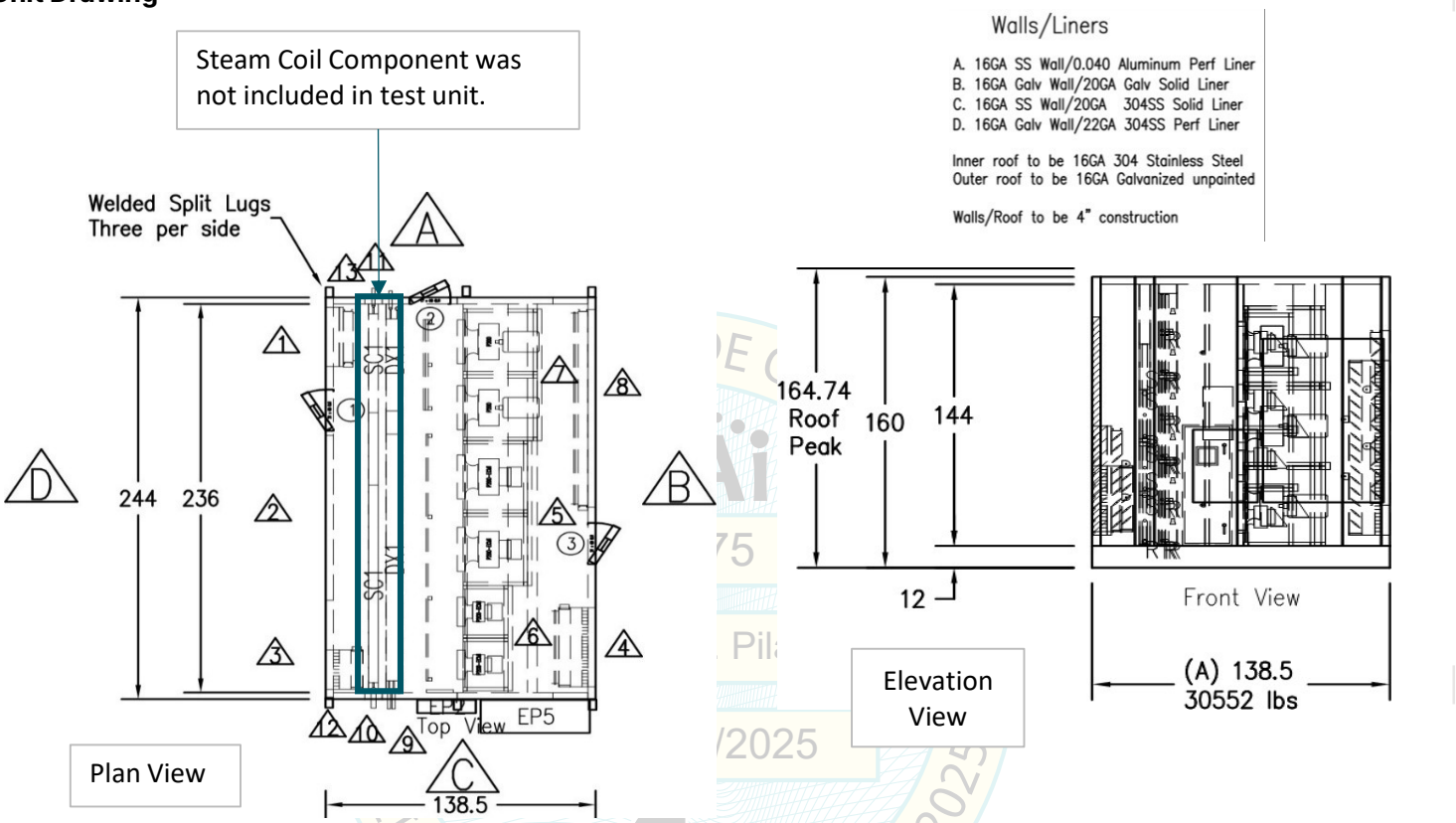
List of Included Subcomponents

1 HP and 20 HP Siemens motors (34"x212"x131"); Filter Rack: 4" pre-filter, 12" final filter, type 8 (12"x236"x140"); Enclosure: NEMA3R (6"x24"x24") Terminal blocks; Damper: Ruskin CD50 (8"x100"x120 "), Huntair HD6 (8"x100"x120"); Actuator: Belimo AF24-MFT, Siemens GCA131.1P, Siemens GCA226.1U; Cool Fan: U.S. Toyo 120V-240V; HEPA Filter; Disconnect Switch & Circuit Breaker; MSP

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 4 Test Report# 1700754-TR-001 R2

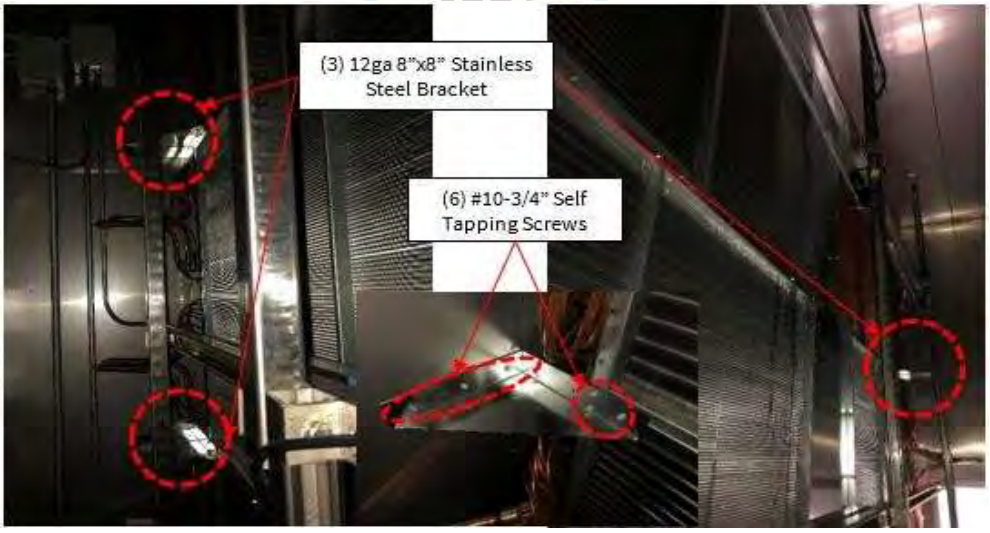
Unit Drawing



Note: Steam coil not certified.

Seismic Upgrades Implemented:

The seismic upgrade for UUT4 consisted of mounting (3) 12 ga. 8"x8" stainless steel brackets to the wall and coil rack using (6) #10-3/4" self tapping screws. (2) were mounted to the rear of the unit, and (1) mounted to the front of the unit above the door.



SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 5

Test Report# 1700754-TR-001 R2

Manufacturer: Nortek Air Solutions, LLC
Model Line: Huntair Custom Air Handling Units
Model Number: CSU-15K
Serial Number: 0120-02

Highest Passed Test Level

S_{DS}	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.00	1.3	3.5	1.5	3.2	2.15	1.67	0.67
2.50	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
139	134	146	8,150

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
6.4	7.7	22.1

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Wall/Roof: Standard 4" Panels, 16 ga. galv. carbon steel exterior with 20 ga. galv carbon liner; Base: carbon steel structural tubing, 16 ga. stainless steel base skin with 20 ga. galv. carbon steel liner and 20 ga. carbon steel subfloor; Door: (2) 4" thick, 21"(W) x 64"(H) no window, 2" thick, 20"(W) x 134.5"(H); Cable Bracing: 3/8" stainless steel cable with 12 GA stainless steel gusset.

UUT Mounting Details:

(3) walls with inlet/outlet wall removed, open wall braced with cable

All test units contain an integrated structural base frame. This unit was mounted to a I beam fixture using six (6) 5/8" SAE grade 8 hex head bolts with flat washers and lock washers.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

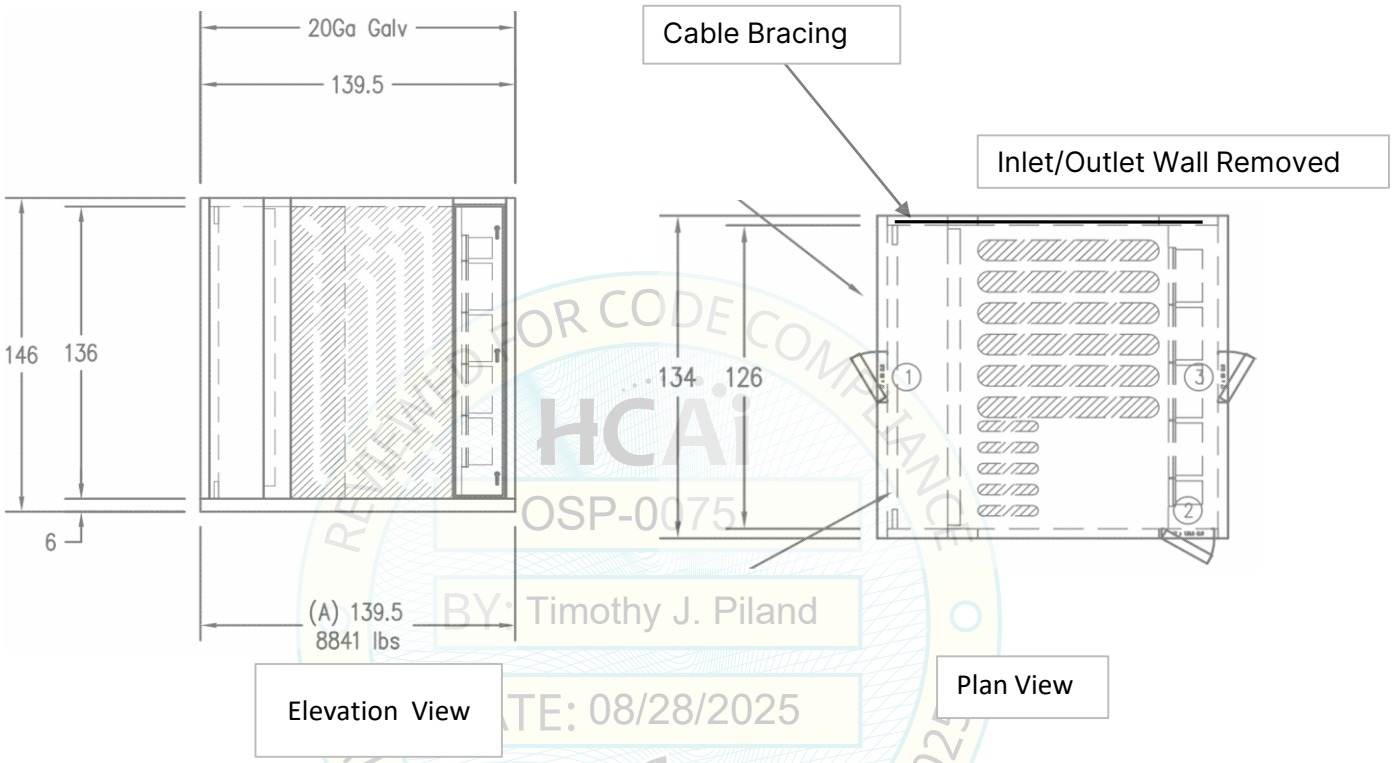
Sound Trap: 24"x50"x136", 72"x86"x136"; Filter Frame: Type 8; Pre Filter: PerfectPleat Ultra AAF; Final Filter: VariCel DH & SH AAF; Humidifier Grid: DriSteem Ultra Sorb LV (120"x120")

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 5

Test Report# 1700754-TR-001 R2

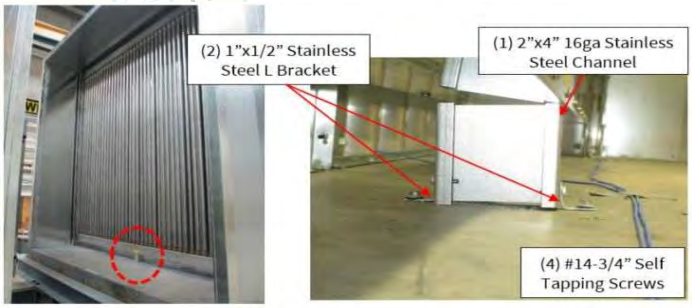
Unit Drawing



Seismic Upgrades Implemented:

Attachment of the humidifier grid: 1-5/8" 12ga Unistrut member was attached to the ceiling with #12-3/4" self tapping screws at 8" O.C. The Unistrut member was attached to the vertical humidifier supports via 3/8"f stainless steel thru bolts. (2) 3"x3" L-shaped blankoffs were added to the vertical Unistrut supports and wall panels. Blankoffs were attached to the vertical Unistrut via 3/8"f stainless steel thru bolts at 24" O.C., and to the wall panel with #12-3/4" self tapping screws at 6" O.C.

Bearing Support of Humidifier Grid: (1) 16 ga. stainless steel 2"x4" channel that was cut to length to bear against the base structure and the bottom of the humidifier header tube. The channel was mounted to the floor using (4) #14-3/4" self tapping screws and (2) 1"x1/2" 12 ga. stainless steel L - brackets.



Additional Lateral Bracing: (2) 3/8" stainless steel braces fastened with (16) #12-3/4" self tapping screws per 12 ga. stainless steel mounting bracket.

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 6a

Test Report# 1700754-TR-001 R2

Manufacturer: Nortek Air Solutions, LLC
Model Line: Huntair Custom Air Handling Units
Model Number: CSU-15K
Serial Number: 0120-03

Highest Passed Test Level

S_{DS}	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.00	1.3	3.5	1.5	3.2	2.15	1.67	0.67
2.50	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
144	76	152	2,350

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
11.0	6.4	28.7

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

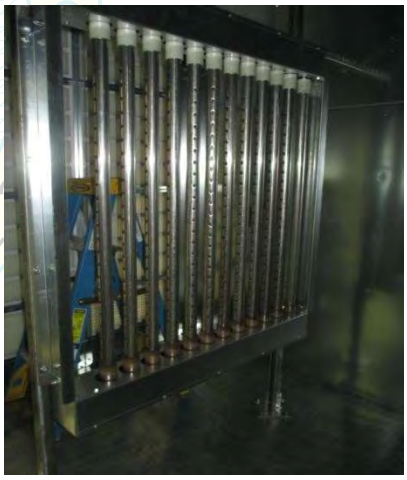
Construction/Option Summary

Wall/Roof: Standard 2" Panels, 16 ga. galv. carbon steel exterior with 20 ga. galv. carbon steel liner; Base: carbon steel structural tubing, 16 ga. galv. carbon steel base skin with 20 ga. galv. carbon steel liner and 20 ga. carbon steel subfloor; Door:
(2) 2" thick, 21"(W) x 64"(H) no window, Weatherhood: 62"(W) x 32"(H) x 26"(D) 16 ga. galv. carbon steel construction

UUT Mounting Details:

(4) Walls in place, no internal bracing





All test units contain an integrated structural base frame. This unit was mounted to a I beam fixture using six (6) 5/8" SAE grade 8 hex head bolts with flat washers and lock washers.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

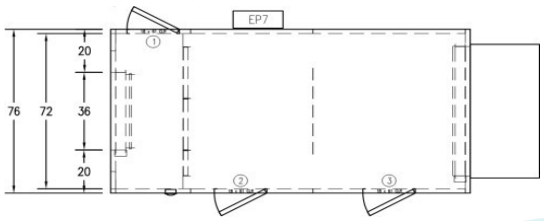
Filter Frame: Type 8 (60.25"x132"), Pre filter ; Pressure Gage: Dwyer Magnehelic 2000 Series; Damper: Tamco 1000 (4"x36"x120"), Tamco 1000 Damper (4"x60"x30"); Humidifier Grid: DriSteem LV Ultra-Sorb (40"x40"); Air Flow Measurement System: Paragon Controls Incorporated OAFE-1550; Actuator: Belimo AMB24

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

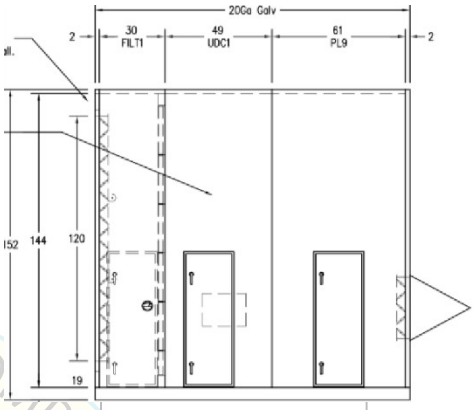
UUT 6a

Test Report# 1700754-TR-001 R2

Unit Drawing



Plan View

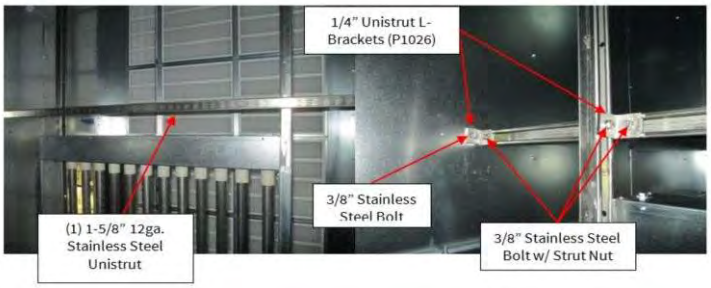


Elevation View

Modifications made Due to Damage During Shipping:
UUT 6 was damaged during shipping. It was discovered that during the fabrication of this unit, the fasteners did not extend into the cabinet structure.

Implemented repair: #12-3" self tapping screws @ 12" OC were fastened from the outside of the unit, attaching the flange of the structural channel along the entire perimeter of the OAFE-1550 casing. The original fasteners were then removed. Modification is already a part of the fabrication process.

Seismic Upgrades Implemented:
The seismic upgrade for UUT6A consisted of mounting a 1-5/8" stainless steel 12 ga. Unistrut (P1000) cut to the width of the unit and mounted to the wall and vertical Unistrut support of the humidifier. The wall and Unistrut interface connection consisted of a 3/8" stainless steel bolt and 1/4" stainless steel Unistrut L-bracket (P1026), while the Unistrut to Unistrut connection consisted of a 3/8" stainless steel bolt, strut nut, and 1/4" Unistrut L-bracket (P1026).



SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 6b

Test Report# 1700754-TR-001 R2

Manufacturer: Nortek Air Solutions, LLC
Model Line: Huntair Custom Air Handling Units
Model Number: CSU-15K
Serial Number: 0120-03

Highest Passed Test Level

S_{DS}	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.00	1.3	3.5	1.5	3.2	2.15	1.67	0.67
2.50	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
144	76	152	1,880

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
11.4	5.5	30.3

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Wall/Roof: Standard 2" Panels, 16 ga. galv. carbon steel exterior with 20 ga. galv. carbon steel liner; Base: carbon steel structural tubing, 16 ga. galv. carbon steel base skin with 20 ga. galv. carbon steel liner and 20 ga. carbon steel subfloor; Door: (2) 2" thick, 21"(W) x 64"(H) no window; Weatherhood: 62"(W) x 32"(H) x 26"(D) 16 ga. galv. carbon steel construction; Cable Bracing: Center of unit braced with 1/4" galvanized steel cables attached with 12 GA stainless steel brackets. Brackets welded with 1/8" fillet weld.

UUT Mounting Details:

Humidifier removed, filter wall removed, cable bracing added



All test units contain an integrated structural base frame. This unit was mounted to a I beam fixture using six (6) 5/8" SAE grade 8 hex head bolts with flat washers and lock washers.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

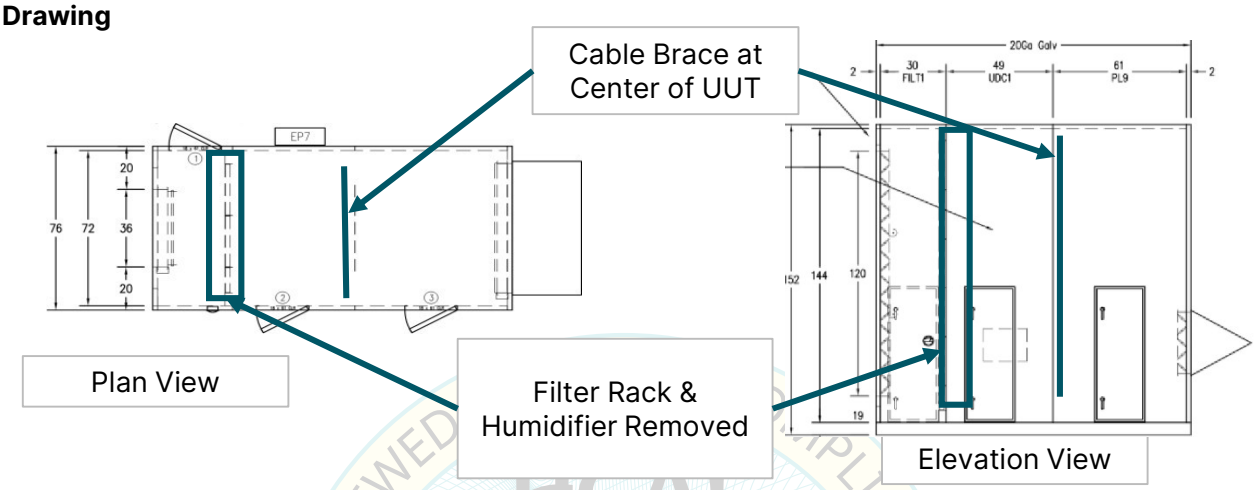
Pressure Gage: Dwyer Magnehelic 2000 Series; Damper: Tamco 1000 (4"x36"x120"), Tamco 1000 (4"x60"x30"); Air Flow Measurement System: Paragon Controls Incorporated OAFE-1550; Actuator: Belimo AMB24

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 6b

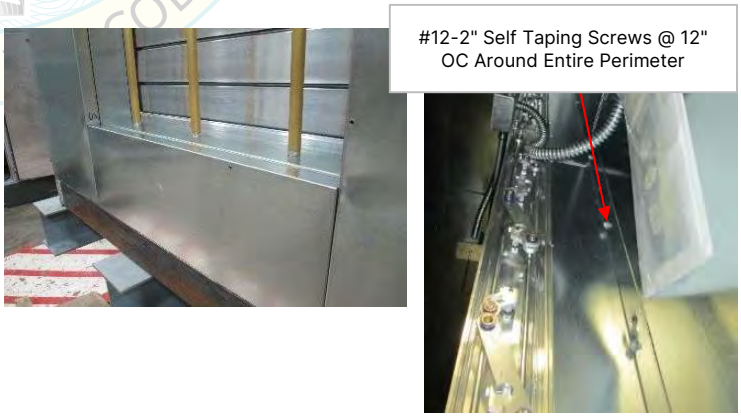
Test Report# 1700754-TR-001 R2

Unit Drawing



Modifications made Due to Damage During Shipping:
To match the factory construction, the orientation of the fasteners were reversed from the previous modification. (Previous modification shown on the right.)

Modified repair: #12-2" self tapping screws were drilled from the inside of the unit around the entire perimeter of the OAFE-1550 casing at 12" OC. The previous fasteners were removed.



SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 7 Test Report# 13379 Rev.1

Manufacturer: Nortek Air Solutions, LLC
Model Line: Huntair Custom Air Handling Units
Model Number: FWT
Serial Number: 2101-005

Highest Passed Test Level

S_{DS}	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.00	1.3	3.5	1.5	3.2	2.15	2.14	0.86
2.50	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
60	130	150	7,155

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
3.6	3.9	22.9

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Fan cells are constructed of 2x2 aluminum extruded members. Wheels are constructed of aluminum. (10) 28Dx22Wx27H fan cells with 10" wheel (2W x 5H configuration) without extended coplanar. (4) 34Dx34Wx34H fan cells with 22" wheel without extended coplanar and (4) 51Dx34Wx34H fan cells with 22" wheel with extended coplanar (overall 2W x 4H configuration). Coplanar and extended coplanar panel construction: 0.040" aluminum and 22 ga. stainless steel sheet – solid and perforated. Cable Bracing: 3/8" galvanized steel cables with 1/4" A36 brackets.

UUT Mounting Details:

Single Cross Bracing, no inlet or outlet wall.

FANWALL sections mounted within air handling section constructed of 2" galvanized steel panels with 6" tube sections. FANWALL sections mounted at base using floor rigid CES Group standard mounting details with gage metal blank off panels to air handling walls. Air handling section mounted to shake table with (4) 5/8" diameter grade 8 bolts.
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

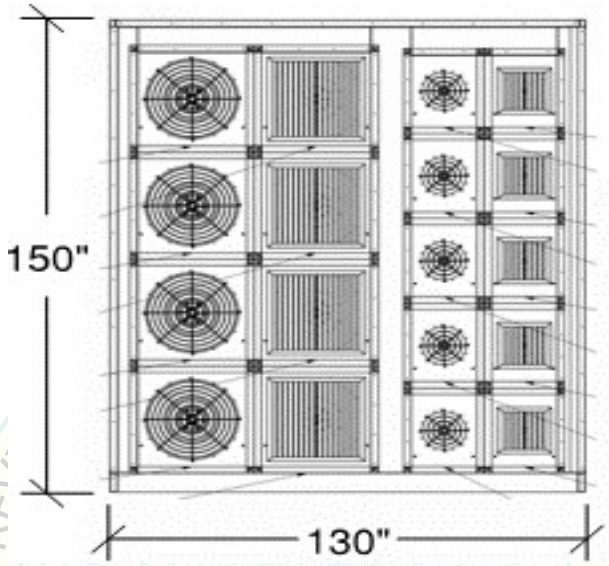
List of Included Subcomponents

Motor 480V: (2) Novatorque 2HP, (2) Novatorque 6HP, (2) Baldor 1HP, (2) Baldor 12HP, (4) Toshiba 1HP, (2)Toshiba 12 HP, (2) Siemens 1HP, (2) Siemens 10HP; VFD 460V: Nortek Air Solutions (4) HD4010xx-1.0HP, (2) HD4100xx-10HP. ABB, Inc. (2) ACS355- 03U-04A14/2.0HP, (2) ACS355-03U-23A1-4/15HP. Yaskawa, Inc. (2) CIMR-ZU4A0005FAA/3HP, (1) CIMRZU4A00027FAA/20HP, (1)CIMRZU4A00034FAA/25HP; Back draft damper

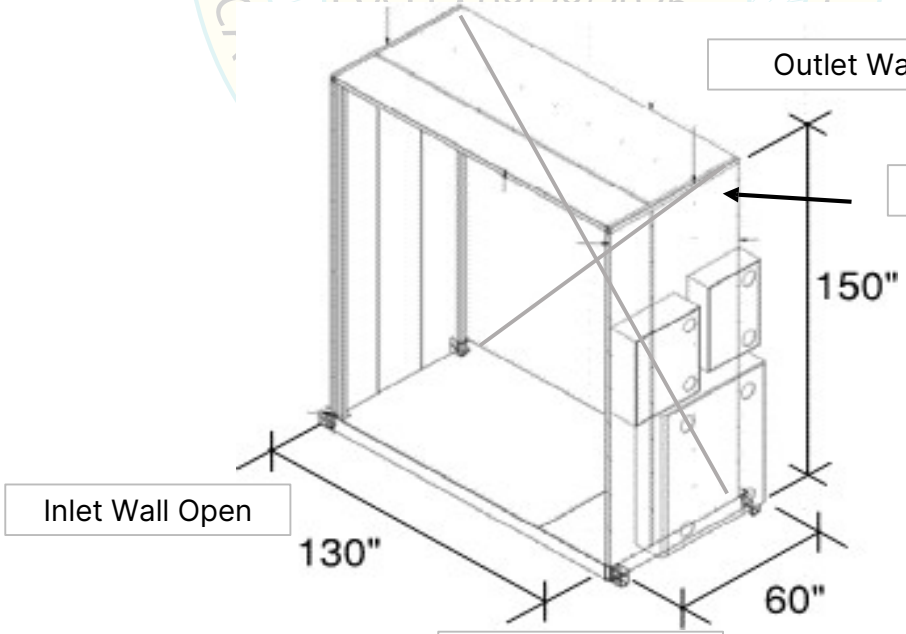
SPECIAL SEISMIC CERTIFICATION
UUT SUMMARY

UUT 7 Test Report# 13379 Rev.1

Unit Drawing



Elevation View



Isometric View

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 8

Test Report# 1801166-TR-001 R0

Manufacturer: Nortek Air Solutions, LLC
Model Line: Huntair Custom Air Handling Units
Model Number: CSU-20K CHW
Serial Number: 000139-006

Highest Passed Test Level

S_{DS}	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.00	1.3	3.5	1.5	3.2	2.15	1.67	0.67
2.50	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
130	204	135	14,762

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
7.46	9.75	10.97

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Wall/Roof: Standard 4" Panels, 16 ga. galv. carbon steel exterior with 20 ga. galv. carbon steel liner; Base: 8" carbon steel structural tubing, 16 ga. galv. carbon steel base skin with 20 ga. galv. carbon steel liner; Door: (1) 4" thick, 24"(W) x 64"(H) no window

UUT Mounting Details:

(4) Walls in place, no Internal Bracing

All test units contain an integrated structural base frame. This unit was mounted to a I beam fixture using fourteen (14) 5/8" SAE grade 8 hex head bolts with flat washers and lock washers.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

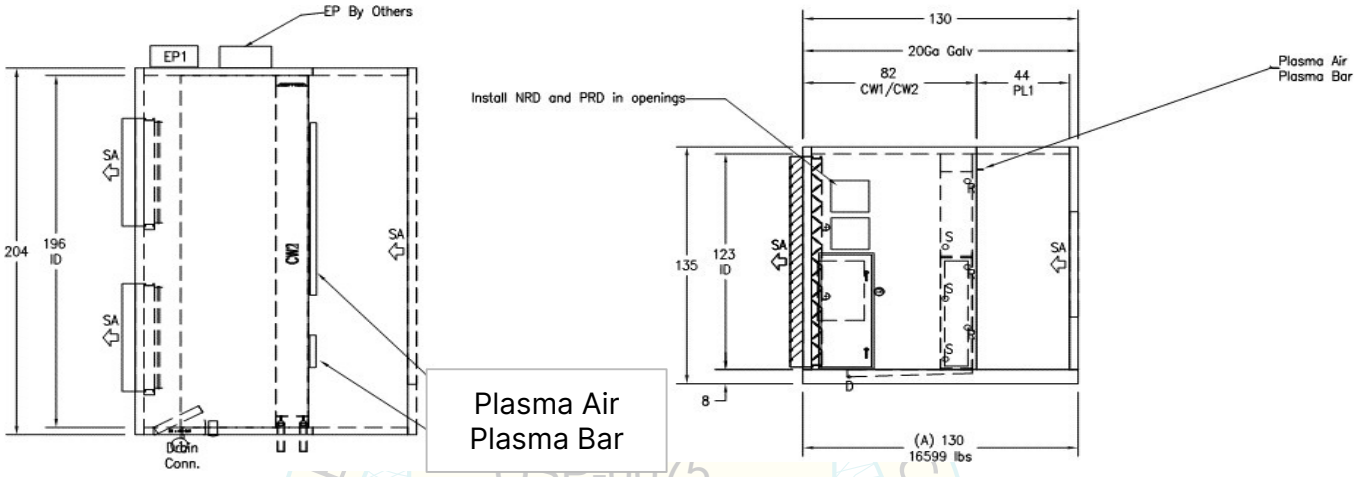
List of Included Subcomponents

Chilled Water Coil: 12 FPI, 10 row, copper, stacked mounting - qty. 1 (48"Hx184"Wx15"D); 12 FPI, 10 row, aluminum, stacked mounting - qty. 1 (63"Hx184"Wx15"D); Damper: Ruskin CD 50 (60"x120"); Louver: Huntair (60"Wx120"H), Ruskin ELF6375DX (60"Wx120"H); Pressure Gage: Dwyer Photohelic 3001; Electrical Panel: NEMA1; Actuator: AFBUP-S

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

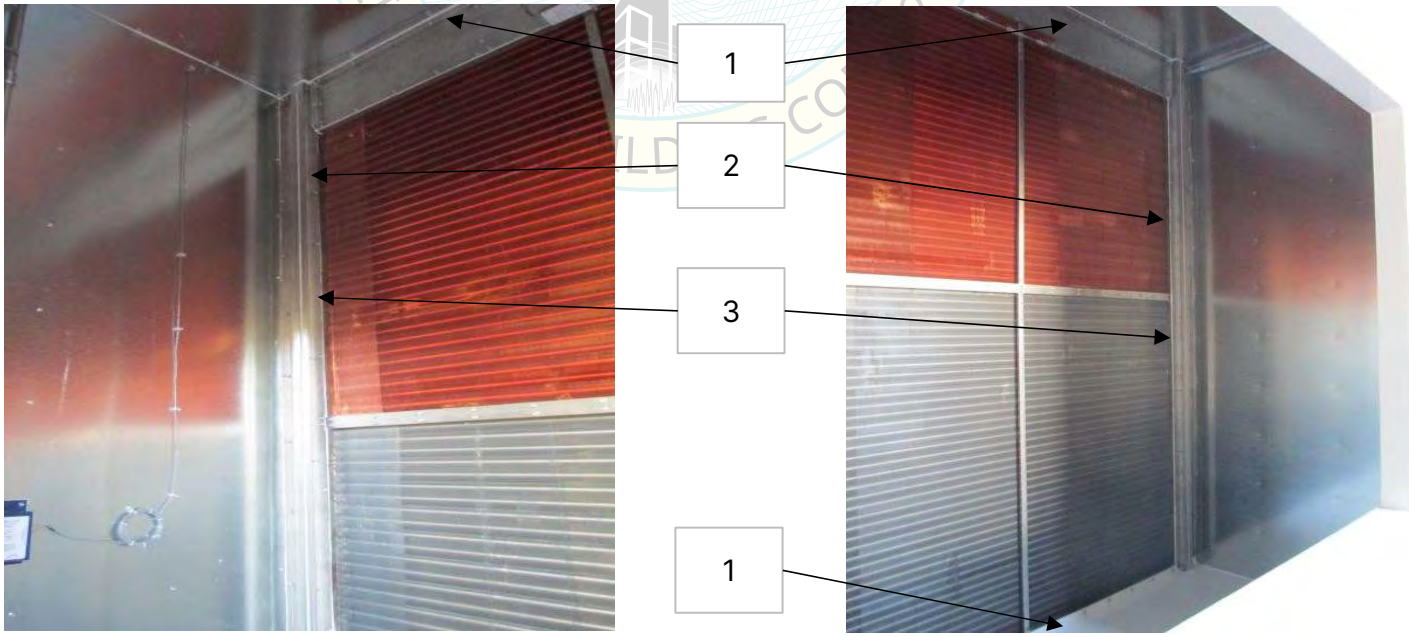
UUT 8 Test Report# 1801166-TR-001 R0

Unit Drawing



Seismic Upgrades Implemented (required for large coils as defined in Table 5):

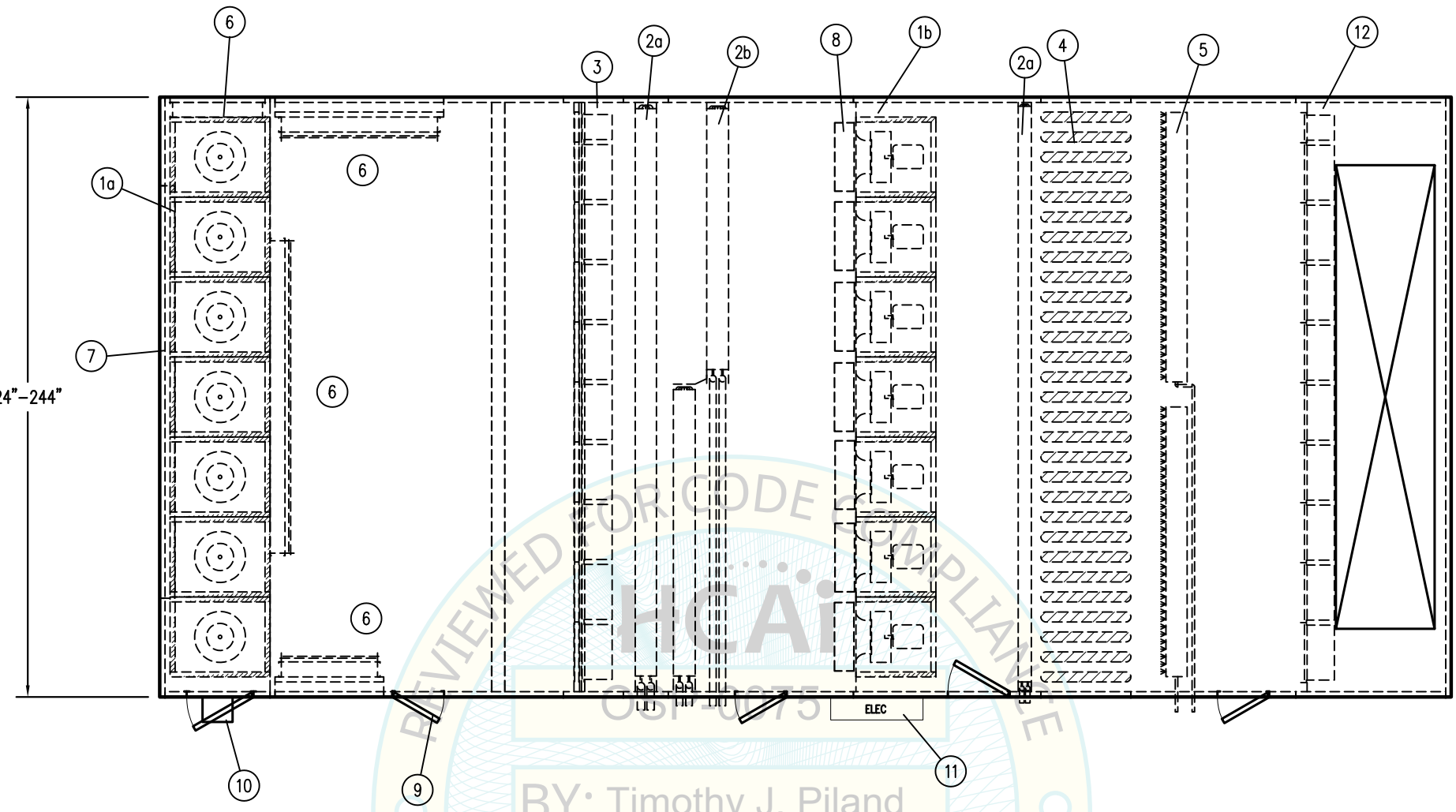
1.) 1/4"-14 screws top and bottom of coil at 10" o.c. max spacing 2.) 2-12ga. C-channel stiffeners[1] each side of coil, 3.) 1/4"-14 screws at 10" o.c. max spacing along each c-channel stiffener.



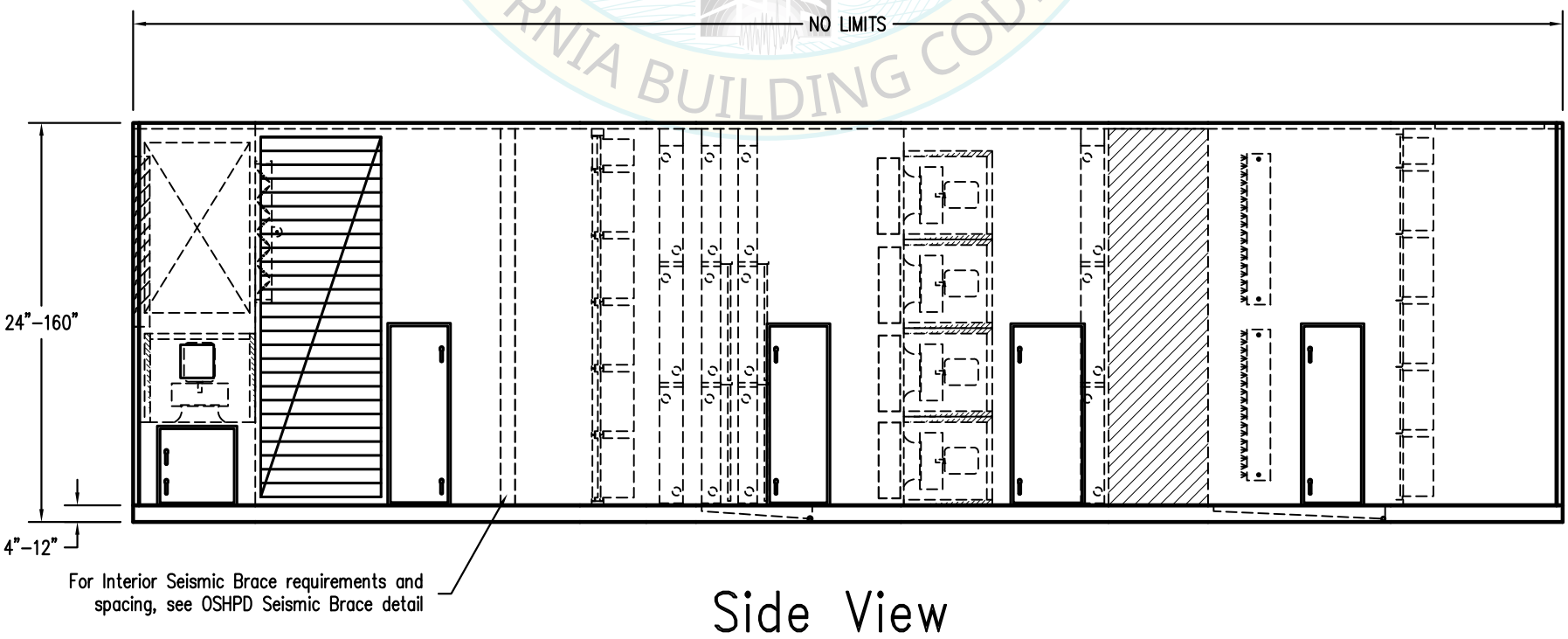
Notes:

[1]Stainless steel c-channels tested, stiffener channels may also be constructed of carbon steel.

(1a) FANWALL (Vertical)
(1b) FANWALL (Horizontal)
(2a) Heat Transfer Coils (Stacked)
(2b) Heat Transfer Coils (Staggered)
(3) Pre/Final Filters
(4) Sound Trap
(5) Humidifier
(6) Damper
(7) Louver
(8) Back-draft Damper
(9) Access Doors
(10) Electrical Panel (MSP)
(11) Control Panel (VFD/PLC)
(12) HEPA Filters



Plan View



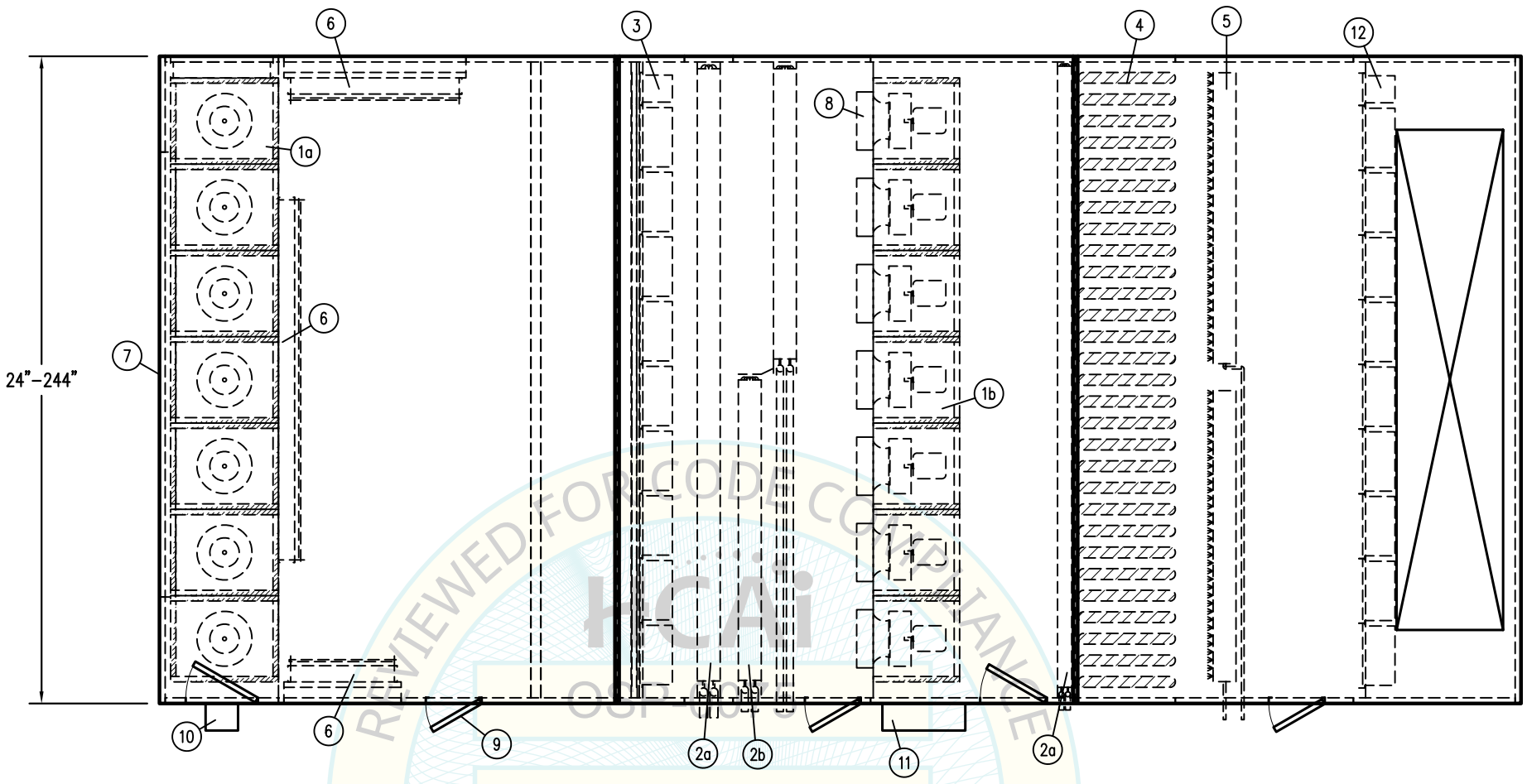
Side View

Construction Notes:

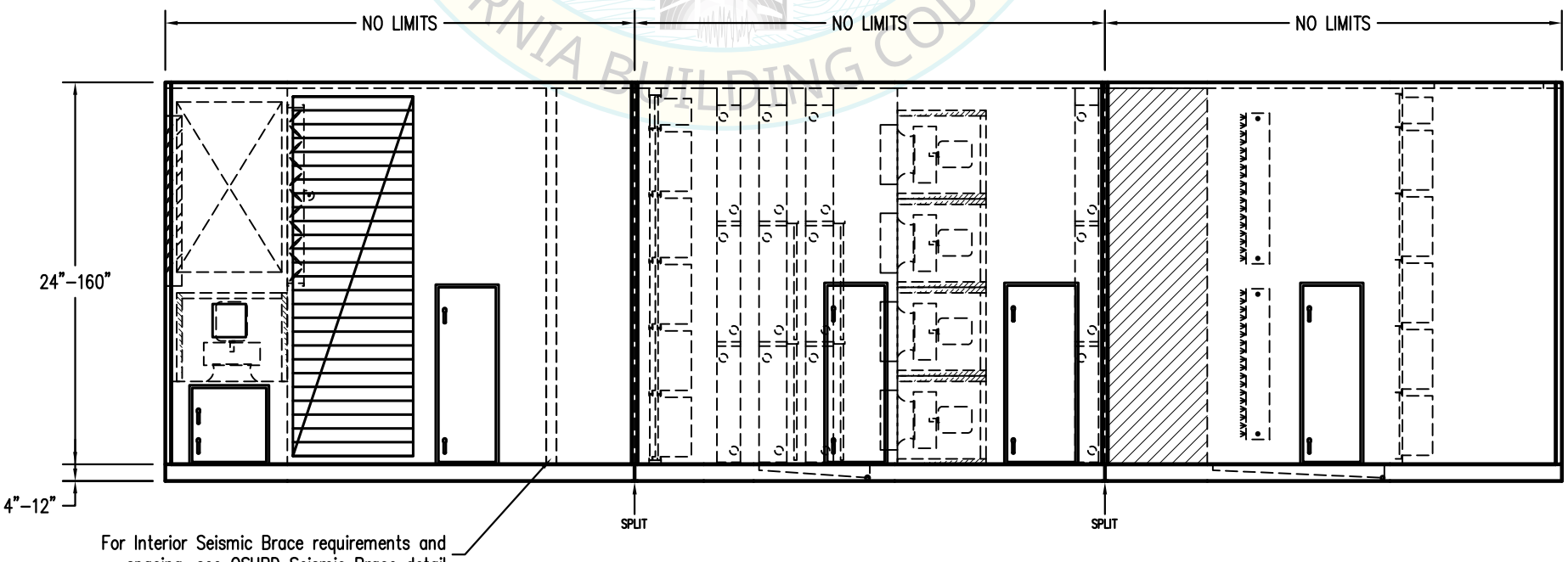
1. All dimensions inches unless stated otherwise
2. Insulation thickness/panel size: 2", 3", and 4"
3. Cabinet Material: Aluminum, Galvanized Steel, Stainless Steel
4. Base can be structural channel or tube (4" to 12" height)
5. Interior seismic bracing to be implemented per restrictions detailed on sheet "OSHPD BRACE DETAILS".
6. Base frame must be anchored around entire perimeter.
7. All splits shall maintain structural continuity between sections.
8. All transverse base members to be designed for tributary dead load & full capacity of seismic braced frame elements. OSP-0075

TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONS: ±1/32 0.0: ±0.1 0.00: ±0.03 0.000: ±0.010 ANGLES: ±0.5° OTHER: SEE DOC. OMS000.01A	OSHPD Single Tunnel Unit	HUNTAIR® a Nortek Air Solutions Brand 19855 SW 124th Ave. TUALATIN, OR 97062 (503) 639-0113 FAX (503) 692-0958	
DRAWN BY	DATE 3/31/20	LAYOUT	TIME STAMP / SCALE 1:80 / SHEET OF
	JOB NO	DWG NO	REV A

1a FANWALL (Vertical)
1b FANWALL (Horizontal)
2a Heat Transfer Coils (Stacked)
2b Heat Transfer Coils (Staggered)
3 Pre/Final Filters
4 Sound Trap
5 Humidifier
6 Damper
7 Louver
8 Back-draft Damper
9 Access Doors
10 Electrical Panel (MSP)
11 Control Panel (VFD/PLC)
12 HEPA Filters



Plan View



Side View

Construction Notes:

1. All dimensions inches unless stated otherwise
2. Insulation thickness/panel size: 2", 3", and 4"
3. Cabinet Material: Aluminum, Galvanized Steel
4. Base can be structural channel or tube (4" to 12" height)
5. Interior seismic bracing to be implemented per restrictions detailed on sheet "OSHPD BRACE DETAILS".
6. Base frame must be anchored around entire perimeter.
7. All splits shall maintain structural continuity between sections.
8. All transverse base members to be designed for tributary dead load & full capacity of seismic braced frame elements.

TOLERANCES UNLESS OTHERWISE SPECIFIED	OSHPD	HUNTAIR® a Nortek Air Solutions Brand	
FRACTIONS: ±1/32 0.0: ±0.1 0.00: ±0.03 0.000: ±0.010 ANGLES: ±0.5° OTHER: SEE DOC. OMS000.01A	Single Tunnel With Splits	19855 SW 124th Ave. TUALATIN, OR 97062 (503) 639-0113 FAX (503) 692-0958	
DRAWN BY	DATE 3/31/20	LAYOUT	TIME STAMP / SCALE 1:70 / SHEET OF
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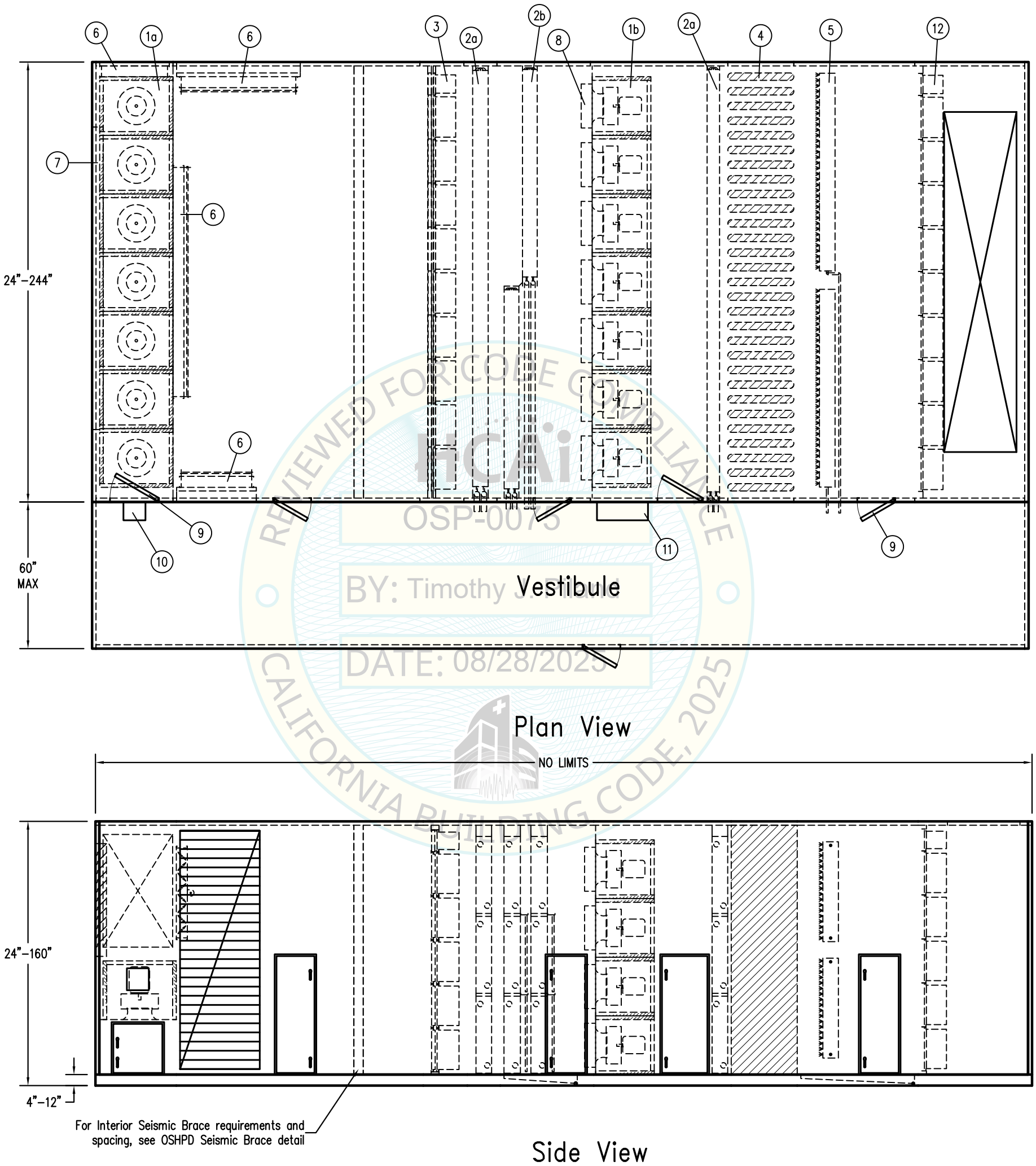
(1a) FANWALL (Vertical)
(1b) FANWALL (Horizontal)
(2a) Heat Transfer Coils (Stacked)
(2b) Heat Transfer Coils (Staggered)
(3) Pre/Final Filters
(4) Sound Trap
(5) Humidifier
(6) Damper
(7) Louver
(8) Back-draft Damper
(9) Access Door
(10) Electrical Panel (MSP)
(11) Control Panel (VFD/PLC)
(12) HEPA Filters



Vestibule

Plan View

Side View

Construction Notes:

1. All dimensions inches unless stated otherwise
2. Insulation thickness/panel size: 2", 3", and 4"
3. Cabinet Material: Aluminum, Galvanized Steel, Stainless Steel
4. Base can be structural channel or tube (4" to 12" height)
5. Interior seismic bracing to be implemented per restrictions detailed on sheet "OSHPD BRACE DETAILS".
6. Base frame must be anchored around entire perimeter.
7. All splits shall maintain structural continuity between sections.
8. All transverse base members to be designed for tributary dead load & full capacity of seismic braced frame elements.

TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONS: ±1/32
0.0: ±0.1
0.00: ±0.03
0.000: ±0.010
ANGLES: ±0.5°
OTHER: SEE DOC. OMS000.01A

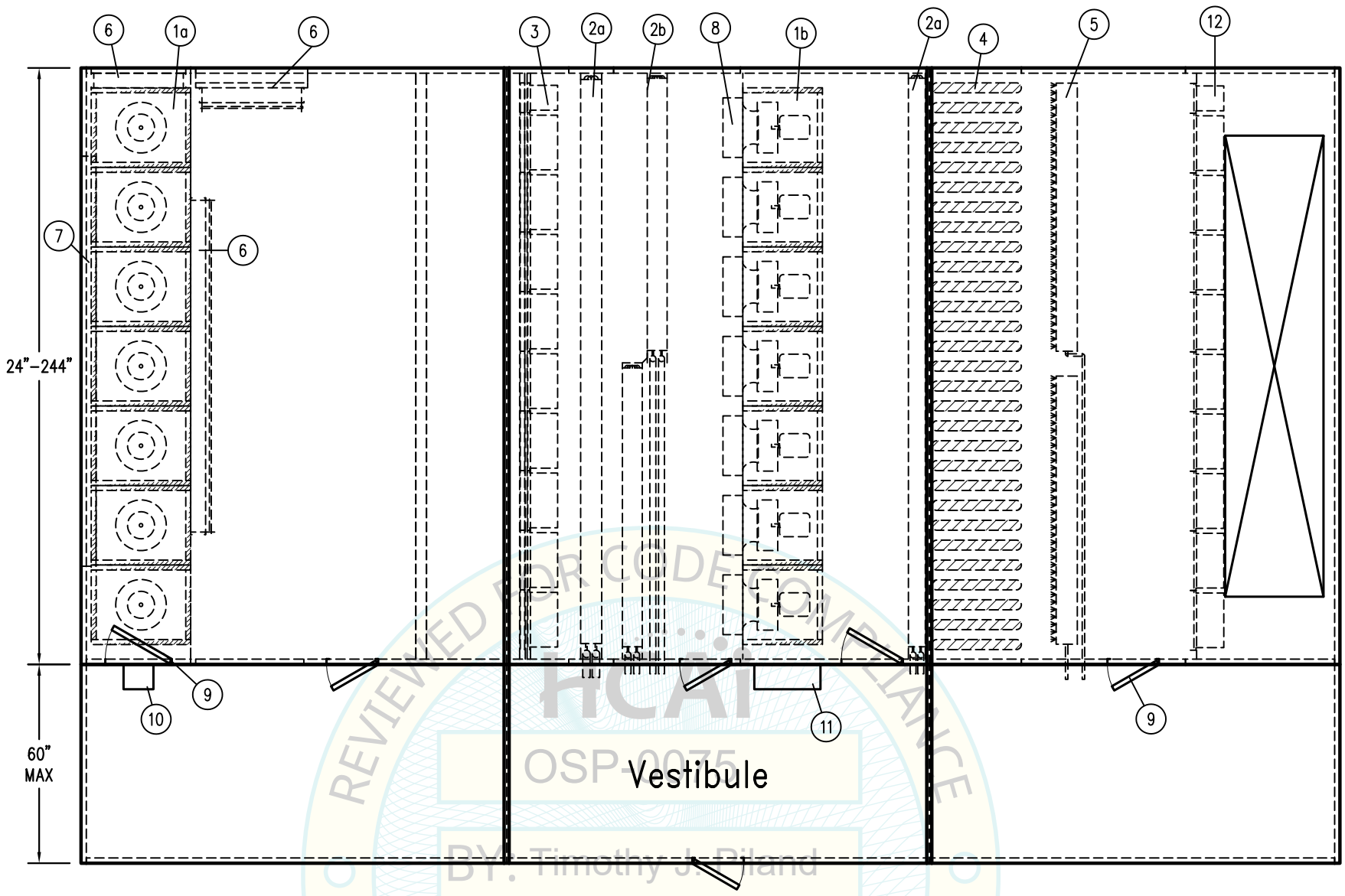
OSHPD
Single Tunnel with Vestibule

HUNTAIR®
a Nortek Air Solutions Brand
19855 SW 124th Ave. TUALATIN, OR 97062
(503) 639-0113 FAX (503) 692-0958

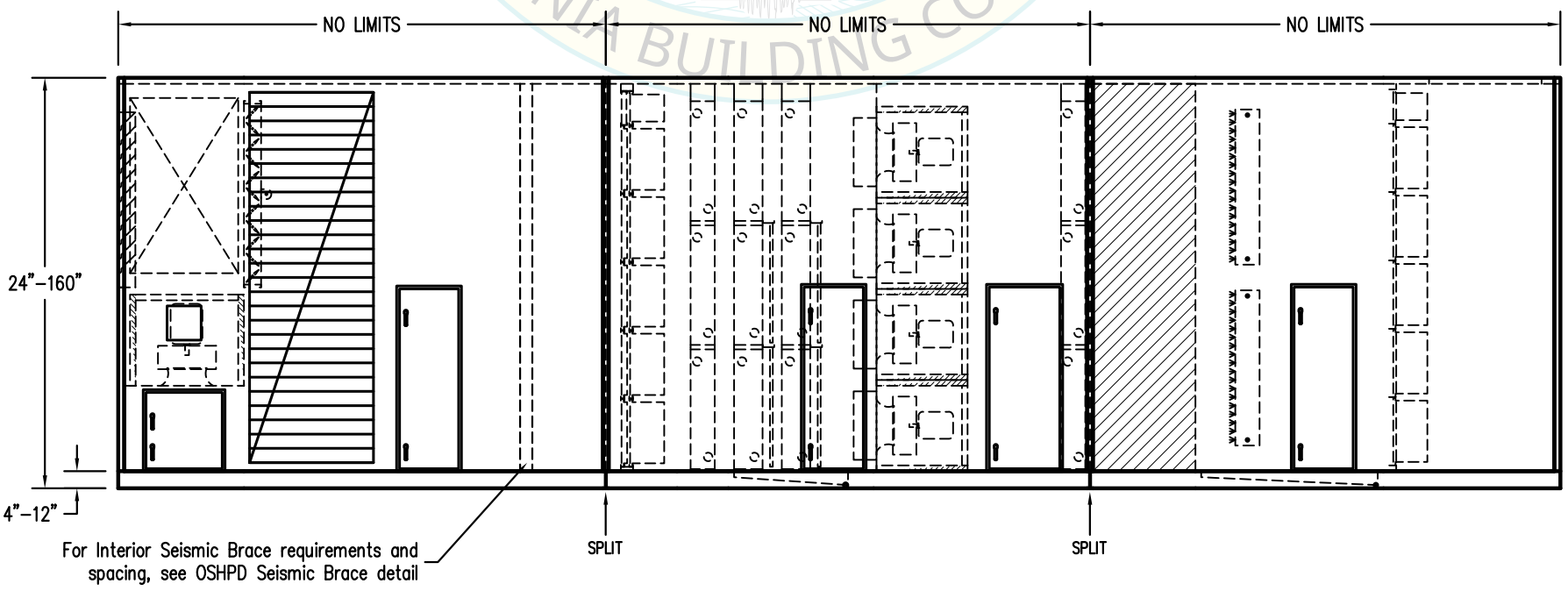
DRAWN BY	DATE	LAYOUT	TIME STAMP	SCALE	SHEET
	3/31/20			1:60	OF

JOB NO | DWG NO | REV A

(1a) FANWALL (Vertical)
(1b) FANWALL (Horizontal)
(2a) Heat Transfer Coils (Stacked)
(2b) Heat Transfer Coils (Staggered)
(3) Pre/Final Filters
(4) Sound Trap
(5) Humidifier
(6) Damper
(7) Louver
(8) Back-draft Damper
(9) Access Door
(10) Electrical Panel (MSP)
(11) Control Panel (VFD/PLC)
(12) HEPA Filters



Plan View



Side View

Construction Notes:

1. All dimensions inches unless stated otherwise
2. Insulation thickness/panel size: 2", 3", and 4"
3. Cabinet Material: Aluminum, Galvanized Steel, Stainless Steel.
4. Base can be structural channel or tube (4" to 12" height)
5. Interior seismic bracing to be implemented per restrictions detailed on sheet "OSHPD BRACE DETAILS".
6. Base frame must be anchored around entire perimeter.
7. All splits shall maintain structural continuity between sections.
8. All transverse base members to be designed for tributary dead load & full capacity of seismic braced frame elements.

08/26/2025 OSP-0075

TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONS: ±1/32 0.0: ±0.1 0.00: ±0.03 0.000: ±0.010 ANGLES: ±0.5° OTHER: SEE DOC. OMS000.01A	OSHPD Single Tunnel With Vestibule and Splits	HUNTAIR® a Nortek Air Solutions Brand 19855 SW 124th Ave. TUALATIN, OR 97062 (503) 639-0113 FAX (503) 692-0958	
DRAWN BY	DATE 3/31/20	LAYOUT	TIME STAMP / SCALE 1:60 / SHEET OF
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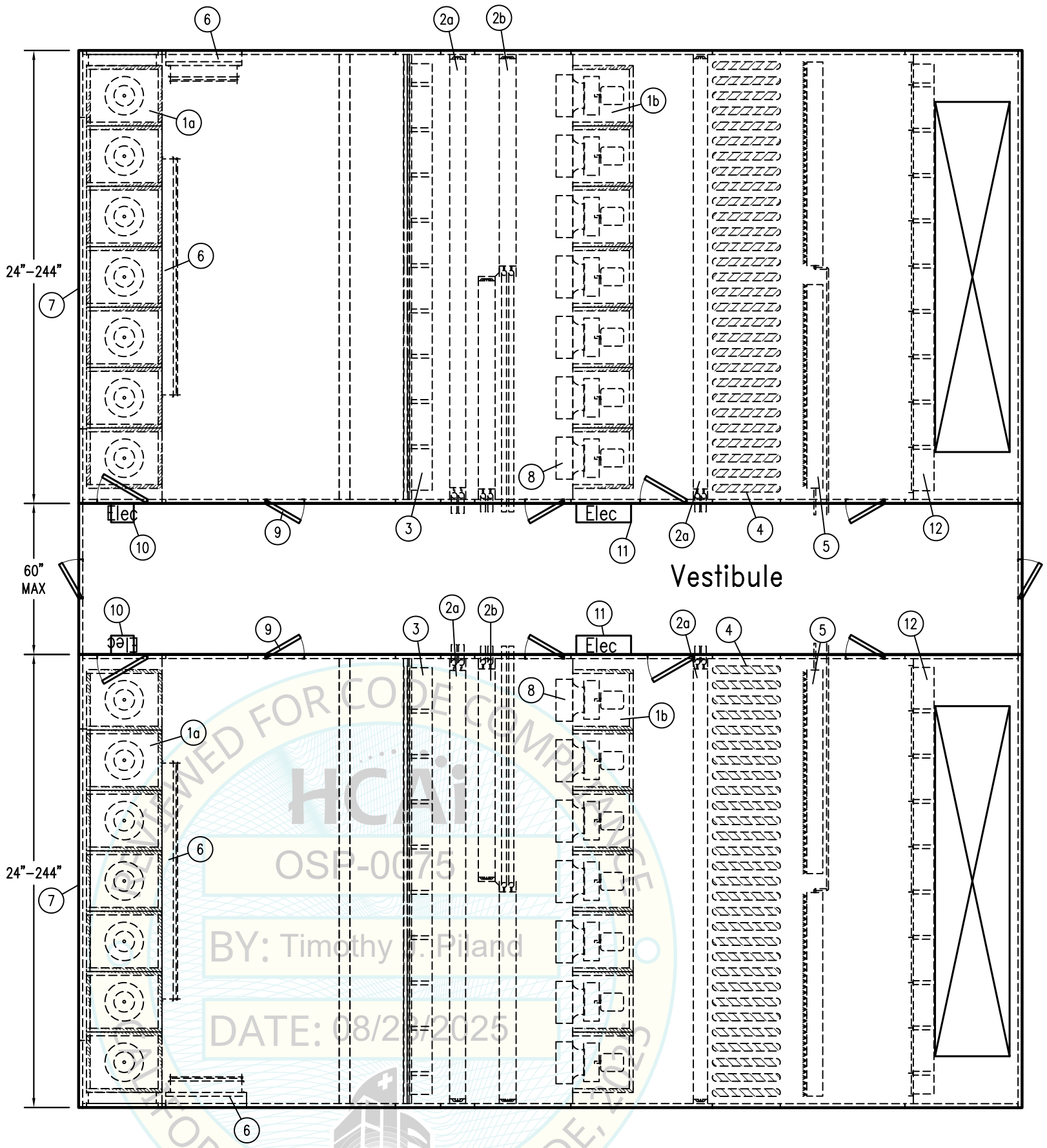
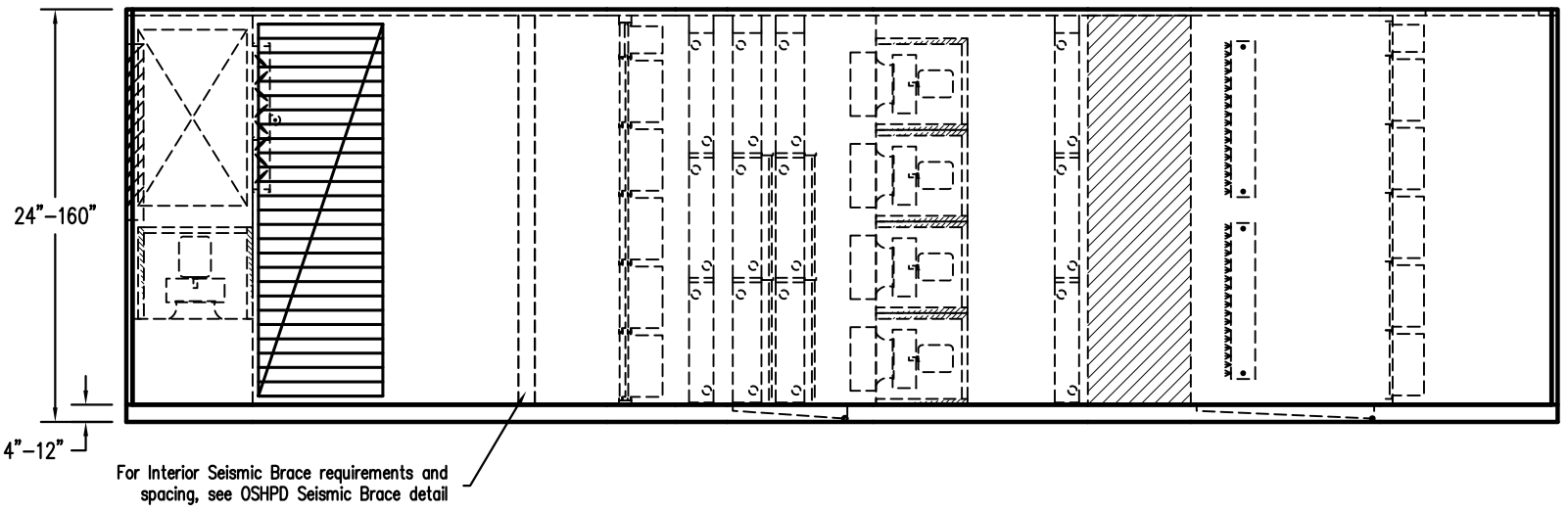
Plan View



Side View

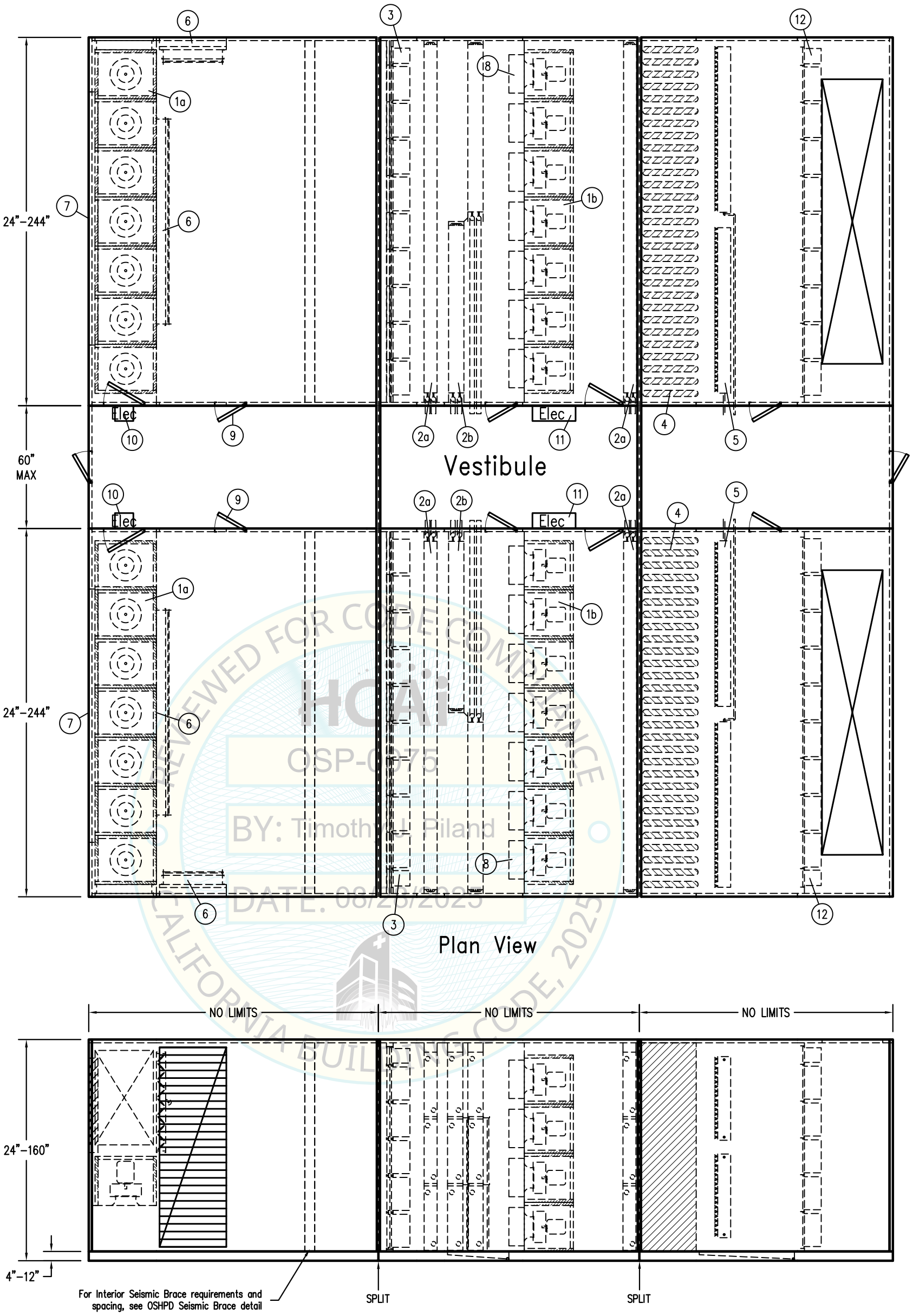


(1a) FANWALL (Vertical)
(1b) FANWALL (Horizontal)
(2a) Heat Transfer Coils (Stacked)
(2b) Heat Transfer Coils (Staggered)
(3) Pre/Final Filters
(4) Sound Trap
(5) Humidifier
(6) Damper
(7) Louver
(8) Back-draft Damper
(9) Access Doors
(10) Electrical Panel (MSP)
(11) Control Panel (VFD/PLC)
(12) HEPA Filters

Construction Notes:

1. All dimensions inches unless stated otherwise.
2. Insulation thickness/panel size: 2", 3", and 4".
3. Cabinet Material: Aluminum, Galvanized Steel, Stainless Steel.
4. Base can be structural channel or tube (4" to 12" height).
5. Interior seismic bracing to be implemented per restrictions detailed on sheet "OSHPD BRACE DETAILS".
6. Each base frame must be anchored around entire perimeter, including double wall location.
7. All splits shall maintain structural continuity between sections.
8. All transverse base members to be designed for tributary dead load & full capacity of seismic braced frame elements.

TOLERANCES UNLESS OTHERWISE SPECIFIED		OSHPD	HUNTAIR® a Nortek Air Solutions Brand
FRACTIONS: ±1/32 0.0: ±0.1 0.00: ±0.03 0.000: ±0.010 ANGLES: ±0.5° OTHER: SEE DOC. OMS000.01A		Double Tunnel With Vestibule	19855 SW 124th Ave. TUALATIN, OR 97062 (503) 639-0113 FAX (503) 692-0958
DRAWN BY	DATE 3/31/20	LAYOUT	TIME STAMP / SCALE 1:60 / SHEET OF
THIS DRAWING, SPECIFICATIONS, AND CONCEPTS CONTAINED HEREIN ARE THE SOLE PROPERTY OF HUNTAIR, AND MAY NOT BE REPRODUCED OR USED IN ANY FASHION WITHOUT THE PRIOR WRITTEN PERMISSION OF HUNTAIR CORPORATION.		JOB NO	DWG NO / REV A



Plan View

Side View

(1a) FANWALL (Vertical)
(1b) FANWALL (Horizontal)
(2a) Heat Transfer Coils (Stacked)
(2b) Heat Transfer Coils (Staggered)
(3) Pre/Final Filters
(4) Sound Trap
(5) Humidifier
(6) Damper
(7) Louver
(8) Back–draft Damper
(9) Access Door
(10) Electrical Panel (MSP)
(11) Control Panel (VFD/PLC)
(12) HEPA Filters

Construction Notes:

1. All dimensions inches unless stated otherwise.
2. Insulation thickness/panel size: 2", 3", and 4".
3. Cabinet Material: Aluminum, Galvanized Steel, Stainless Steel.
4. Base can be structural channel or tube (4" to 12" height).
5. Interior seismic bracing to be implemented per restrictions detailed on sheet "OSHPD BRACE DETAILS".
6. Each base frame must be anchored around entire perimeter, including double wall location.
7. All splits shall maintain structural continuity between sections.
8. All transverse base members to be designed for tributary dead load & full capacity of seismic braced frame elements.

TOLERANCES UNLESS OTHERWISE SPECIFIED		OSHPD	HUNTAIR® a Nortek Air Solutions Brand
FRACTIONS: ±1/32		Double Tunnel With Vestibule and Splits	19855 SW 124th Ave. TUALATIN, OR 97062
0.0:	±0.1		(503) 639–0113 FAX (503) 692–0958
0.00:	±0.03	DRAWN BY	DATE 3/31/20
0.000:	±0.010	LAYOUT	TIME STAMP
ANGLES:	±0.5°	SCALE	1:55
OTHER: SEE DOC. OMS000.01A		SHEET	OF
		JOB NO	DWG NO
		REV	A

(1a) FANWALL (Vertical)
(1b) FANWALL (Horizontal)
(2a) Heat Transfer Coils (Stacked)
(2b) Heat Transfer Coils (Staggered)
(3) Pre/Final Filters
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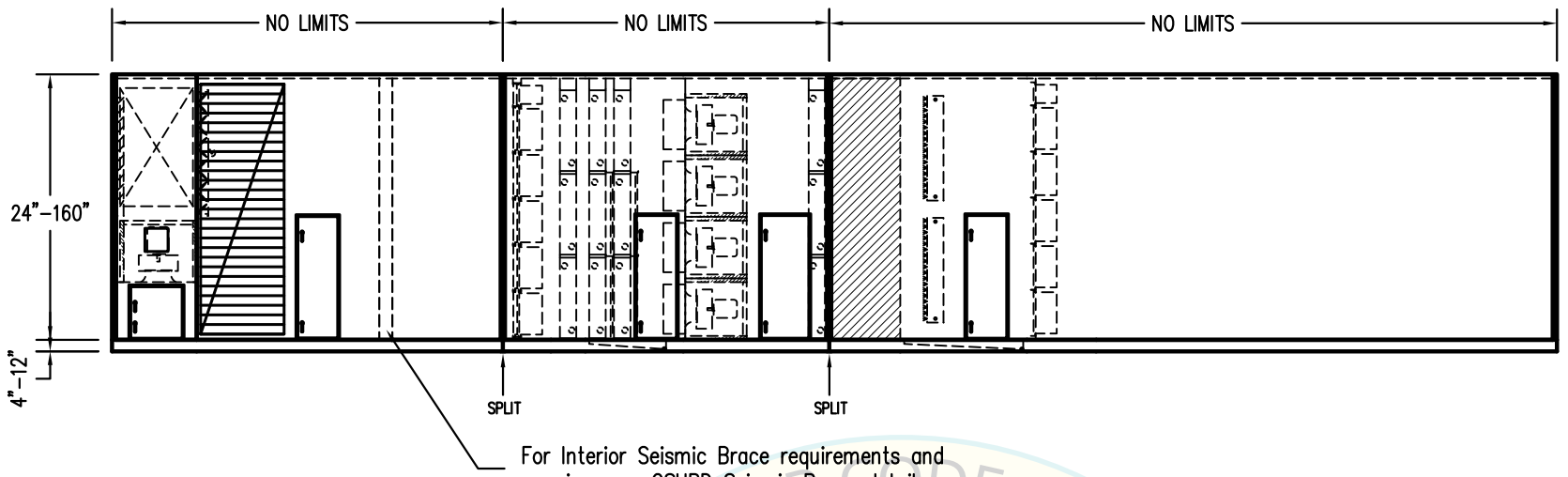
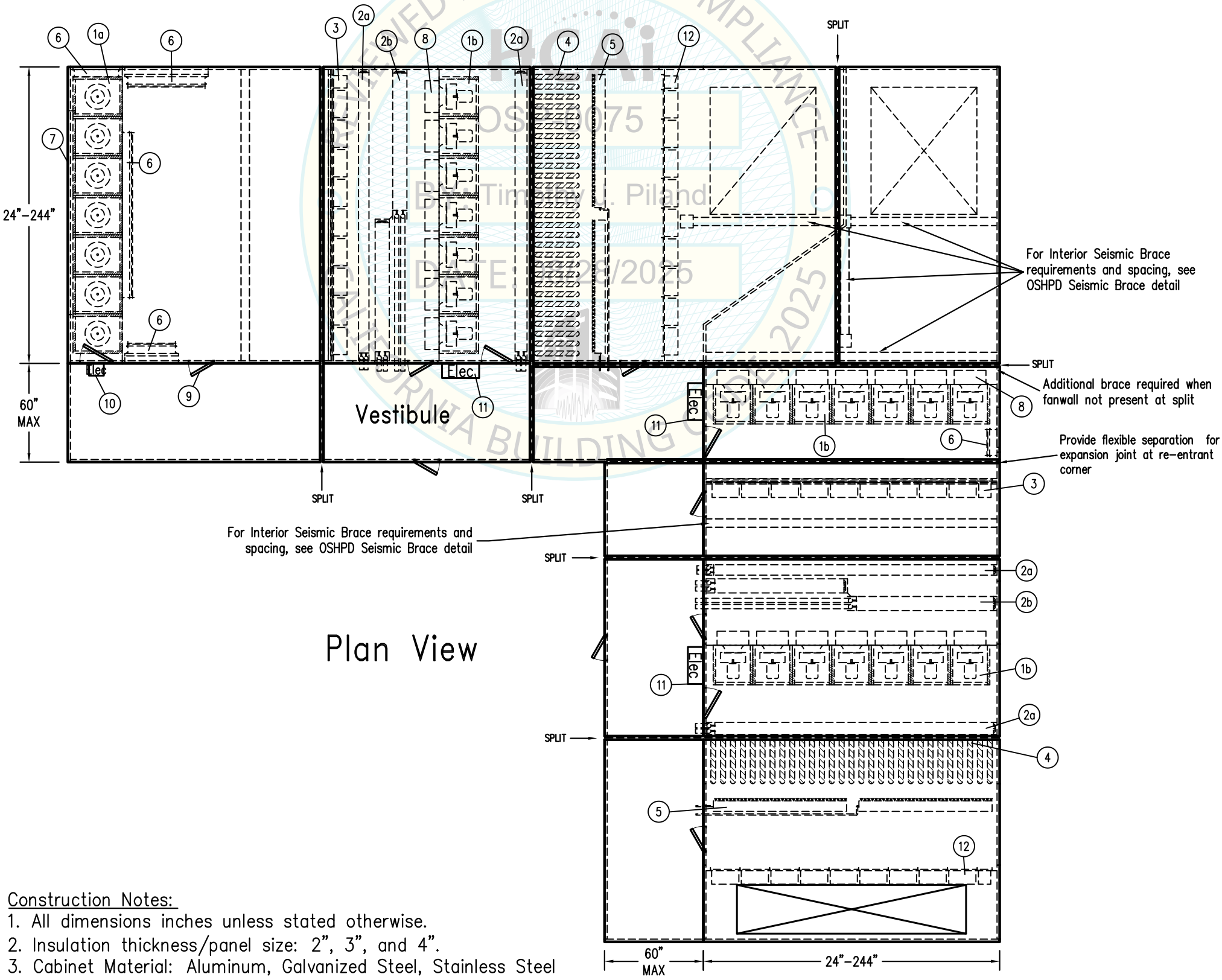
(7) Louver
(8) Back-draft Damper
(9) Access Door
(10) Electrical Panel (MSP)
(11) Control Panel (VFD/PLC)
(12) HEPA Filters

Side View



Plan View



Construction Notes:

1. All dimensions inches unless stated otherwise.
2. Insulation thickness/panel size: 2", 3", and 4".
3. Cabinet Material: Aluminum, Galvanized Steel, Stainless Steel
4. Base can be structural channel or tube (4" to 12" height).
5. Interior seismic bracing to be implemented per restrictions detailed on sheet "OSHPD BRACE DETAILS".
6. Each base frame must be anchored around entire perimeter, including double wall location.
7. All splits shall maintain structural continuity between sections.
8. All transverse base members to be designed for tributary dead load & full capacity of seismic braced frame elements.

TOLERANCES UNLESS OTHERWISE SPECIFIED	OSHPD	HUNTAIR® a Nortek Air Solutions Brand
FRACTIONS: ±1/32; 0.0: ±0.1; 0.00: ±0.03; 0.000: ±0.010; ANGLES: ±0.5°; OTHER: SEE DOC. OMS000.01A	L-Unit With Vestibule and Splits	19855 SW 124th Ave. TUALATIN, OR 97062 (503) 639-0113 FAX (503) 692-0958
	DRAWN BY: DATE 3/31/20; LAYOUT; TIME STAMP; SCALE 1:60; SHEET OF	
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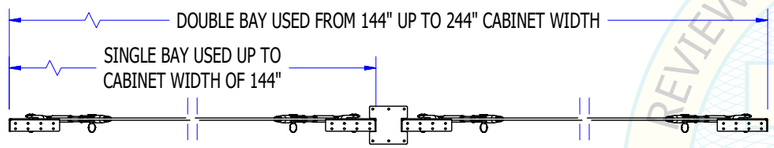
Transverse Bracing Requirements:

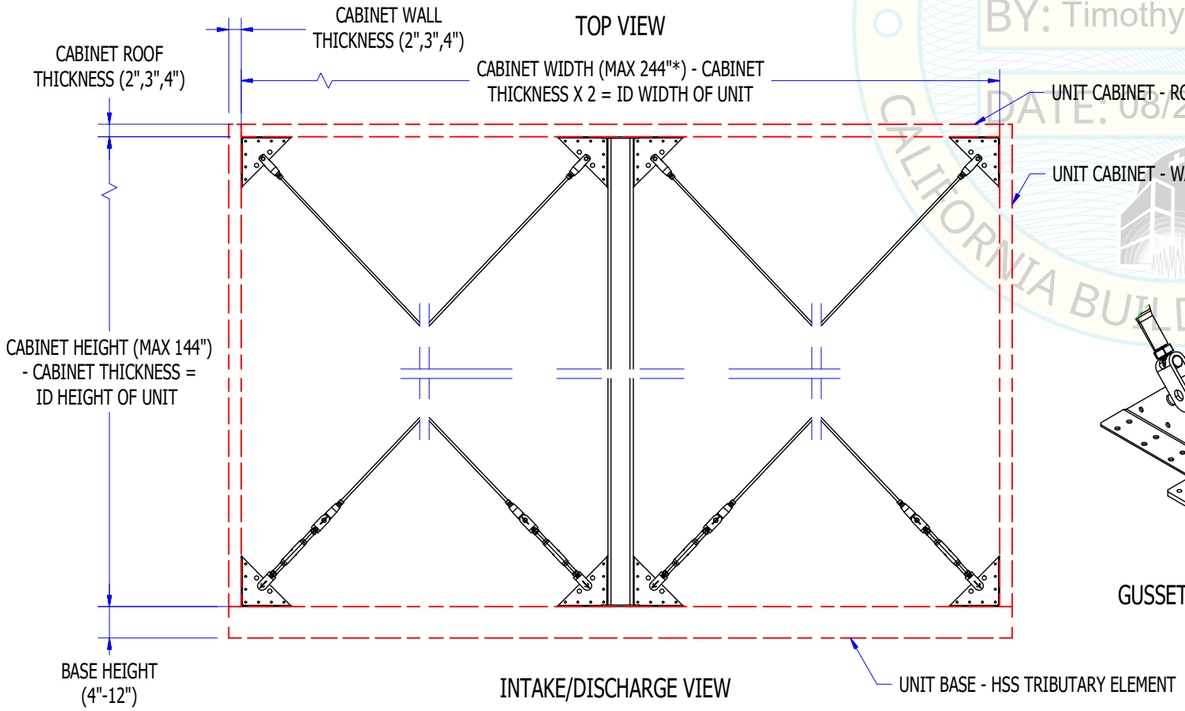
1. Average spacing is calculated as the sum of distances between braces on each side of brace divided by 2.
   a. Units with aluminum construction cabinets or bases shall have single bracing required at 4'-0" average spacing, or double bracing at 8'-0" average spacing.
2. For Aspect Ratios <= 1.1: Single bracing required at 5'-6" average spacing, or double bracing at 11'-0" average spacing. Bracing Elements for Aspect Ratio <= 1.1:
   a. Coil wall
   b. Fanwall
   c. Cable Brace
   d. Panel Wall meeting the requirements listed below
3. For Aspect Ratios > 1.1: Single bracing required at 5'-0" average spacing, or double bracing at 10'-0" average spacing. Bracing Elements for Aspect Ratio > 1.1:
   a. Cable Brace
   b. Panel Wall meeting the requirements listed below
4. Bracing elements 2.a. through 2.c. and 3.a. must run the full width and height of the cabinet enclosure (excluding vestibule sections).
5. Humidifier Systems require independent structural support or adjacent upstream cable brace (see UUT-2b, 5, and 6a)

Panel Wall Bracing Requirements:

6. If a panel wall is utilized as a bracing element, the following conditions must be met:
   a. The bracing wall must be of the construction detailed in the OSHPD approved drawing set.
   b. Height to width ratio of the bracing wall must not exceed 2.0.
   c. Openings in a bracing wall shall not exceed the lesser of one third of the height of the total bracing wall and one third the width of the total bracing wall.
   d. Exterior openings are defined to be at an exterior wall of the cabinet enclosure.
   e. Exterior bracing walls not meeting 6.c. criteria must have the total length of exterior wall be greater than or equal to the total length of the combined exterior openings on the exterior wall.
   f. Exterior walls running perpendicular to air flow not meeting 6.c. or 6.e. criteria must have a supplementary bracing element placed within 3'-0".
   g. Exterior walls running parallel to air flow not meeting 6.c. or 6.e. criteria are not allowed.

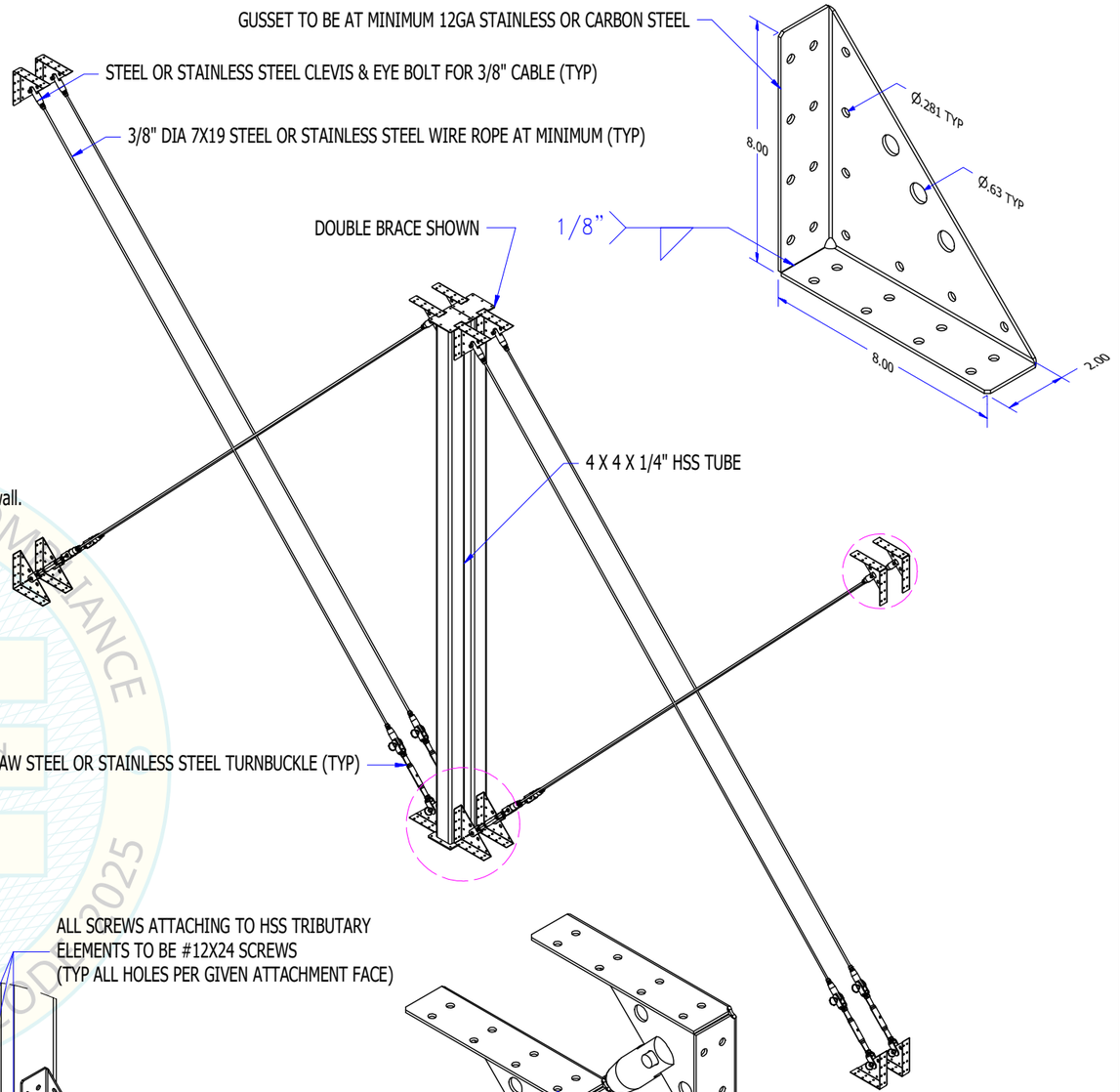


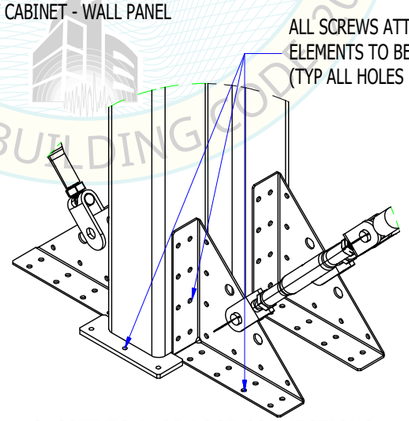
TOP VIEW



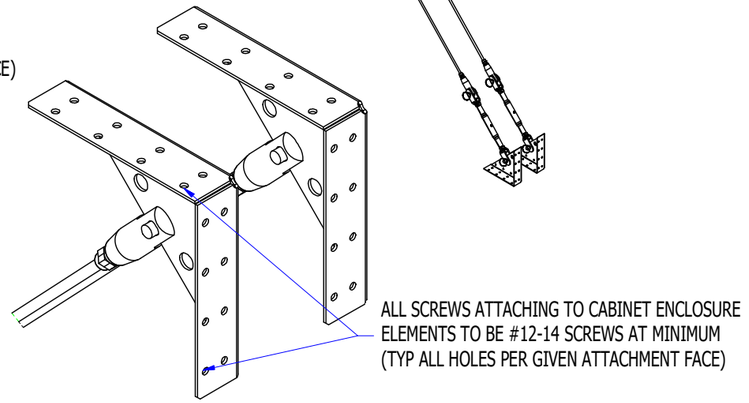
INTAKE/DISCHARGE VIEW

CABINET WIDTH IS DEFINED AS THE DIMENSION FROM EXTERNAL WALL TO OPPOSING EXTERNAL WALL IN THE DIRECTION PERPENDICULAR TO AIR FLOW.
*IN THE CASE OF DUAL TUNNEL UNITS, THE CABINET WIDTH IS DEFINED AS THE EXTERNAL WALL TO THE CENTER OF THE DOUBLE WALL OR VESTIBULE WALL.





GUSSET TO BASE/POST CONNECTIONS



GUSSET TO CABINET ENCLOSURE CONNECTIONS

TOLERANCES UNLESS OTHERWISE SPECIFIED	
FRACTIONS:	±1/32
0.0:	±0.1
0.00:	±0.03
0.000:	±0.010
ANGLES:	±0.5°
OTHER:	SEE DOC. OMS000.01A

DRAWN BY: PDEJARNATT
ISSUED ON: 9/21/2020
CHECKED BY:
PART NO.:

3rd ANGLE PROJECTION

JOB NO.:
FILE NAME:

HUNTAIR® a Nortek Air Solutions Brand
19855 S 124th
T T O 97062
Phone 503 639-0113
a 503 692-0958

OSHPD BRACE DETAILS
OSHPD CABLE BRACE
CABLE BRACE DETAILS

REV:
SHEET 1 OF 1