APPLICATION FOR HCAI SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0567

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Nortek Air Solutions, LLC

Manufacturer's Technical Representative: Terry Leatham

Mailing Address: 4841 North Sewell, Oklahoma City, OK 73118

Telephone: (405) 763-5517 Email: Terry.Leatham@nortek.com

Product Information

Product Name: Temtrol/Governair ITF Custom Air Conditioning Units

Product Model Number(s): Custom Air Handling Units

Product Category: Air Conditioning Units

Product Sub-Category: Air Conditioning Units - Custom

General Description: Custom air conditioning units, 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

HCAI OSP-0567 BY: Timothy J. Piland

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
- [x] 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) 387-1001 Email: dlohr@clarktesting.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

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Seismic Parameters

Certified Response Spectral Acceleration Factors:(F_p/W_p)

Horizontal	(A Flx-H), g=	3.08	(A Rig-H), g=	2.07
Vertical	(A Flx-V), g=	1.29	(A Rig-V), g=	0.52

S_{DS} (Design spectral response acceleration at short period, g) = 1.93

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):

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SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units

Seismic Parameters		Building Codes
S_{DS} = 1.93g for R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 1.93g for R_μ=1.0, H_f=1.0		

TABLE 1

Mounting Configuration: Base Mounted - Rigid

Construction Summary

Painted or galvanized carbon steel, stainless steel, or aluminum. See Table 2 for certified product construction.

Options Summary

See Tables 2 through 16 for certified options

Model Line	Model	Dimensions			Weight (lb.)	UUT psf	Notes	UUT
		Depth	Width	Height				
Temtrol/Governair ITF Custom Air Handling Units	ITF - 4 Wall (No walls removed)	No Limit	24	24	-		Lower Range	Extrap.
		...	...	...	...			Extrap.
		96	96	96	3,975	62	Galv. Carbon Steel	4
		158	136	128	10,500	70	Painted Carbon Steel	8
		130	206	131	13,118	71	Galv. Carbon Steel	12
		144	144	144	7,435	52	Galv. Carbon Steel	6
		96	144	144	6,015	63	Galv. Carbon Steel	5
		288	144	144	18,092	63	Galv. Carbon Steel	13
		288	144	144	14,800	51	Galv. Carbon Steel	10
		...	...	...	...		Galv. Carbon Steel	Interp.
		No Limit	300	144	-	83	Upper Range	Interp.
	ITF - 3 walls (Inlet or outlet wall removed)	No Limit	24	24	-		Lower Range	Extrap.
		...	...	...	...			Extrap.
		98	131	98	6,000	67	Aluminum	3
		96	129	105	6,050	70	Galv. Carbon Steel	2
		96	129	103	7,100	83	Galv. Carbon Steel	1
		158	136	114	9,900	66	Aluminum, Connected to UUT8	7a
		138	300	138	12,436	43	Galv. Carbon Steel/Stainless Steel	9[1]
		...	...	...	...			Interp.
		No Limit	300	144	-	83	Upper Range	Interp.

Note: 1. Weight of failed subcomponent was removed from reported weight.

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TABLE 1

Mounting Configuration: Base Mounted - Rigid

Construction Summary

Painted or galvanized carbon steel, stainless steel, or aluminum. See Table 2 for certified product construction.

Options Summary

See Tables 2 through 16 for certified options

Model Line	Model	Dimensions			Weight (lb.)	UUT psf	Notes	UUT
		Depth	Width	Height				
Temtrol/Governair ITF Custom Air Handling Units	ITF - 2 walls (Inlet and outlet wall removed)	No Limit	24	24	-		Lower Range	Extrap.
		...	...	...	...			Extrap.
		158	136	114	9,900	66	Aluminum	7b
		138	300	138	10,942	38	Galv. Carbon Steel	11[1]
		...	...	...	...			Interp.
		No Limit	300	144	-	83	Upper Range	Interp.
	ITF - 1 wall (Inlet, outlet, and side wall removed)	158	136	114	9,900	66	Three walls removed, Aluminum	7c

Note: 1. Weight of failed subcomponent was removed from reported weight.

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TABLE 2

Table Description: Unit Construction

Component (Manufacturer)	Model	Description	Notes	UUT
Walls / Roof (Nortek Air Solutions, LLC)	Standard	Galvanized Carbon Steel	16ga. Exterior Casing 20ga. Interior Liner	1, 2, 4, 5, 6, 8, 9, 10, 11,12, 13
		Stainless Steel	16ga. Exterior Casing 20ga. Interior Liner	9
		Aluminum	16ga. Exterior Casing 18ga. Interior Liner	7
	Perforated Liner	Galvanized Carbon Steel	16ga. Exterior Casing 20ga. Interior Liner	3
		Stainless Steel	16ga. Exterior Casing 20ga. Interior Liner	Interp.
		Aluminum	14ga. Exterior Casing 18ga. Interior Liner	3
Base (Nortek Air Solutions, LLC)	4" Height	ASTM A500 Grade B Carbon Steel	HSS 4X2X1/4	Extrap.
	...		...	Extrap.
	7" Height		UUT: HSS 6X2X1/4	1, 2, 3, 4, 5, 6, 7, 8, 13
	...		...	Interp.
	9" Height		UUT: HSS 8X2X3/16	10, 12
	...		...	Interp.
	12" Height		UUT: HSS 10X2X3/16	9, 11
Subfloor (Nortek Air Solutions, LLC)	Galvanized Subfloor	G90 Galvanized Carbon Steel	20ga.	9, 10, 11, 12, 13
	Stainless Steel Subfloor	304 Stainless Steel	20ga.	Interp.
	Aluminum Subfloor	5052 Aluminum	18ga.	7

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TABLE 2

Table Description: Unit Construction

Component (Manufacturer)	Model	Description	Notes	UUT
Floor (Nortek Air Solutions, LLC)	Galvanized Floor	G90 Galvanized Carbon Steel	16ga.	10,13
			14ga.	9, 11, 12
	Stainless Steel Floor	304 Stainless Steel	14ga.	Interp.
Floor (Nortek Air Solutions, LLC)	Aluminum Floor	5052 Aluminum	7 ga.	7
Bellmouth Opening (Temtrol)	Oval Long Radius	Galvanized Carbon Steel	18" x 48"	9
			...	Interp.
			44" x 96"	9

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Seismic Parameters		Building Codes
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TABLE 3

Table Description: Dampers and Louvers

Component (Manufacturer)	Model	Material	Dimensions (in)			Wt. (lb)	Notes	UUT
			D	W	H			
Damper (Ruskin)	CD36	Galvanized Carbon Steel Casing and Blades	5	5	5	5		Extrap.
			...	...	...	...		Extrap.
			5	22	22	20		13
			...	...	...	...		Interp.
			5	96	120	418		13
	CD50	Aluminum Casing and Blades	5	6	5	5		Extrap.
			...	...	...	...		Extrap.
			5	24	24	19		13
			...	...	...	...		Interp.
			5	96	120	368		13
	CD60	Galvanized Carbon Steel Casing w/ Aluminum Blades	5	8	8	8		Extrap.
			...	...	...	...		Extrap.
			5	12	24	12		7
			...	...	...	...		Interp.
			5	120	48	185		7
Louver (Ruskin)	EME	Aluminum	3	12	24	40	Fixed Blade Vertical Louver (Tested as AML3)	7
			...	...	...	...		Interp.
			3	48	96	330	Fixed Blade Vertical Louver	7
	AML	Aluminum	3	12	24	40	Fixed Blade Vert. Louver w/Air Monitor	7
			...	...	...	...		Interp.
			3	48	96	330	Fixed Blade Vert. Louver (Tested as EME)	7
Damper (Temtrol and Governair)	TD6	Galvanized Carbon Steel Casing w/ Aluminum Blades	8	6	6	5		Extrap.
			...	...	...	...		Extrap.
			8	18	18	15		4
			...	...	...	...		Interp.
			8	24	12	45		7

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Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units

Seismic Parameters		Building Codes
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S_{DS} = 1.93g for R_μ=1.0, H_f=1.0		

TABLE 3

Table Description: Dampers and Louvers

Component (Manufacturer)	Model	Material	Dimensions (in)			Wt. (lb)	Notes	UUT
			D	W	H			
Damper (Temtrol and Governair)	TD6	Galvanized Carbon Steel Casing w/ Aluminum Blades	...	...	...	...		Interp.
			8	120	36	150		1
			...	...	...	...		Interp.
			8	126	48	210		3
	1000	Aluminum Casing and Blades	5	24	24	96		Extrap.
			...	...	...	...		Extrap.
			5	60	30	180		13
			...	...	...	...		Interp.
			5	36	120	225		13

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Seismic Parameters		Building Codes
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TABLE 4

Table Description: Fanwall

Component (Manufacturer)	Model	Material	Dimensions (in) D	Dimensions (in) W	Dimensions (in) H	Wt. (lb)	Notes	UUT
Fanwall (Temtrol and Governair)	FWT (12"-22" Ø fan wheels)	Carbon steel fan cubes with aluminum or composite fan wheels. Certified motors listed in Table 6 with or without aluminum backdraft dampers.	26	22	26	175	UUT: 1 hp AC motor, 12" fan wheel, 1(W) x 1(H) array	5
			...	...	...	...		Interp.
			21	38	30	425	UUT: 5 hp AC motor, 16" fan wheel, 3(W) x 3(H) array	1
			...	...	...	...		Interp.
			24	40	40	325	UUT: 5 hp AC motor, 22" fan wheel, 3(W) x 3(H) array, aluminum backdraft dampers.	10
			...	...	...	...		Interp.
			38	40	40	435	UUT: 3(W) x 3(H) mixed array, (3) 3.4kW ECMI motors, (1) 6kW ECMI motor, (4) 1hp Toshiba motors, (1) 15hp Toshiba motor, (6) 12" P200 fan wheels, (3) 22" P200 fan wheels, (9) aluminum backdraft dampers.	13

Additional Notes:
Individual fan cube dimensions listed. Max certified fan array height: 120".

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TABLE 5

Table Description: Fans

Component (Manufacturer)	Model	Material	Notes	UUT
Housed Fan - Belt Drive (Temtrol & Governair)	10"	Carbon Steel	UUT: 92 lbs.	4
	...			Interp.
	49"		UUT: 2356 lbs.	2
Plenum Fan - Belt Drive (Temtrol & Governair)	10"	Aluminum or Carbon Steel	UUT: Aluminum, 72 lbs.	Interp.
	...			Interp.
	12"		UUT: Aluminum, 87 lbs.	4
	...			Interp.
	22"		UUT: Aluminum, 195 lbs.	Interp.
	...	Carbon Steel		Interp.
	44"		UUT: Carbon Steel, 195 lbs.	3
Plenum Fan - Direct Drive (Temtrol & Governair)	10"	Aluminum or Carbon Steel	UUT: Aluminum, 72 lbs.	5
	...			Interp.
	22"		UUT: Aluminum, 195 lbs.	6
	...	Carbon Steel		Interp.
	44"		UUT: Carbon Steel, 960 lbs.	Interp.
PF9 Plenum Fan - Direct Drive (Temtrol & Governair)	12"	Aluminum wheels, Carbon Steel Housing	UUT: 100 lbs.	11
	...			Interp.
	22"		UUT: 180 lbs.	11
Condenser Fans - Direct Drive (Governair)	24"	Plastic	UUT: 130 lbs.	6
	...			Interp.

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S_{DS} = 1.93g for R_μ=1.0, H_f=1.0		

TABLE 5

Table Description: Fans

Component (Manufacturer)	Model	Material	Notes	UUT
Condenser Fans - Direct Drive (Governair)	30"		UUT: 145 lbs.	5
	...			Interp.
	36"		UUT: 420 lbs. (mounted from the ceiling)	8

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Seismic Parameters		Building Codes
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TABLE 6

Table Description: Fan Motors

Component (Manufacturer)	Model	Material	Notes	UUT
Fan Motor Non-Fanwall (Baldor)	1 hp	208V, 230V, 460V; ODF or TEFC	UUT: 43 lbs., ODP	4, 5
	..			Interp.
	5 hp		UUT: 55 lbs., ODP	1, 4
	...			Interp.
	10 hp		UUT: 172 lbs., TEFC	6
	...			Interp.
	15 hp		UUT: 262 lbs., ODP	11
	...			Interp.
	50 hp		UUT: 662 lbs., TEFC	3
Fan Motor Fanwall (Baldor)	1 hp	208V, 230V, 460V; ODF or TEFC	UUT: 43 lbs.	5
	..			Interp.
	1.5 hp		UUT: 58 lbs.	11
	...			Interp.
	5 hp		UUT: 55 lbs.	1, 4
	...			Interp.
	10 hp		UUT: 172 lbs.	6
	...			Interp.
	12 hp		UUT: 170 lbs.	6
	...			Interp.
	15 hp		UUT: 262 lbs.	11
Dual Voltage Fan Motor Non-Fanwall (Baldor)	1 hp	Dual Voltage: 208/230V & 460V; ODP or TEFC	UUT: 43 lbs.	Extrap.
	..			Extrap.
	5 hp		UUT: 55 lbs., TEFC	5
	...			Interp.
	10 hp		UUT: 172 lbs.	Interp.
	...			Interp.
	50 hp		UUT: 662 lbs., TEFC	2
Fan Motor Ceiling Mounted Non-Fanwall (Toshiba)	5 hp	208V, 230V, 460V; TEFC	UTT: 170 lbs (mounted from ceiling)	8

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Seismic Parameters		Building Codes
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TABLE 6

Table Description: Fan Motors

Component (Manufacturer)	Model	Material	Notes	UUT
	1 hp	208V, 230V, 460V; TEAO	UUT: 58 lbs	13
	...			Interp.
	15 hp		UUT: 262 lbs	13
Fan Motor Fanwall (Nortek Air Solutions)	3.4 kw	208V, 230V, 460V; Integrated Permanent Magnet ECMI Motor/Drive	UUT: 11 lbs	13
	...			Interp.
	6 kw		UUT: 53 lbs	13

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TABLE 7

Table Description: Coils

Component (Manufacturer)	Model	Material	Dimensions (in)[1] D	W	H	Wt. (lb)	Notes	UUT
Water Coil (Temtrol)	4WC, 5WC (0.5"-0.625" Ø tube, 0.017"-0.02" tube wall, 7-12 fpi, 0.006"-0.008" fin, 2-4 rows, stacked 1-2 high up to 90")	Copper tube, 0.006" copper fins or 0.008" aluminum fins, carbon or stainless steel casing	6.5	12	12	26		Extrap.
			...	...	...	...		Extrap.
			7.5	120	45	1860	UUT: 0.02" tube wall, 0.625" Ø tube, 0.008" Al fins, 7 fpi, 4 row, stacked 2 high	3
	4WC (0.5" Ø tube, 0.017" tube wall, 7-12 fpi, 0.006"-0.008" fin, 2-10 rows, stacked 1-4 high up to 108")	Copper tube, 0.006" copper fins or 0.008" aluminum fins, carbon or stainless steel casing	6.5	12	12	26		Extrap.
			...	...	...	...		Interp.
			13	75	27	1248	UUT: 0.017" tube wall, 0.5" Ø tube, 0.008" Al fins, 12 fpi, 10 row, stacked4 high	9
	4WC, 5WC (0.5"-0.625" Ø tube, 0.017"-0.025" tube wall, 7-12 fpi, 0.006"-0.008" fin, 2-10 rows, stacked 1-2 high up to 106")[2]	Copper tube, 0.006" copper fins or 0.008" aluminum fins, carbon or stainless steel casing	6.5	76	12	165		Extrap.
			...	...	...	...		Interp.
			15	187	56	2259	UUT: 0.625" Ø tube, 12fpi, 10 row, 0.008" Al fins, 0.020" tube wall, bottom coil in 2 high stacked	12
			15	187	50	3568	UUT: 0.625" Ø tube, 12fpi, 10 row, 0.006" Cu fins, 0.025" tube wall, top coil in 2 high stacked	12

Additional Notes:
[1]Listed sizes are individual coils. Dimensions include casing.
[2]Large coils require upgraded construction equivalent to UUT12: double top brackets at seams, fasteners changed to 5/16" grade 8 bolts, added vertical supports with bottom brackets welded to deck, 14ga. deck, 14ga. hat channels under coil welded to deck, 10ga. c-channel added under coil and welded to hat channels, add 3/8" cross brace cables, intermediate drain pans and 14ga. upstream connecting plates secured to top and bottom coils. See UUT12 summary for more information.

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S_{DS} = 1.93g for R_μ=1.3, H_f=3.5 S_{DS} = 1.93g for R_μ=1.0, H_f=1.0	I_p=1.5	CBC 2025

TABLE 7

Table Description: Coils

Component (Manufacturer)	Model	Material	Dimensions (in)[1]			Wt. (lb)	Notes	UUT
			D	W	H			
Hot Water Coil VIFB (LJ Wing)	VA-2W (11fpi, 2 rows, no stacking)	Cu tube, Al fins, Carbon Steel Casing	22	25.4	44	283	UUT: 11fpi, 2 row, AL fins, Cu tubes	9
	...		...	...	...	...		Interp.
	VD-10W (11fpi, 2 rows, no stacking)		22	111.2	80	1338	UUT: 11fpi, 2 row, AL fins, Cu tubes	9
Steam Heating Coil (Temtrol)	5SS (0.625" Ø tube, 0.025" tube wall, 4 fpi, 0.008" fins, 1-2 rows, stacked 1-3 high up to 112")	Cu tube, Al fins, Carbon Steel Casing	5	21	32	30	UUT: 0.025" tube wall, 0.625" Ø tube, 4fpi, 2 rows, stacked 3 high	9
			...	...	...	...		Interp.
			5	108	56	534	UUT: 0.025" tube wall, 0.625" Ø tube, 4fpi, 2 rows, stacked 3 high	9
DX Coils (Heatcraft)	DX Evaporator Coil (0.375-0.5" Ø tube, 0.016" tube wall, 6 fpi, 0.0075" fins, 3 rows, no stacking)	Cu tube, Cu fins, Carbon Steel Casing	5.5	24	25	53	UUT: 0.016" tube wall, 0.5" Ø tube, 0.0075" fin, 6fpi, 3 rows	7
			...	...	...	...		Interp.
			7	96	36	132	UUT: 0.016" tube wall, 0.5" Ø tube, 0.0075" fin, 6fpi, 3 rows	7
DX Coils (Temtrol/Governair)	1/2-4DX (0.5" Ø tube, 0.02" tube wall, 8 fpi, 0.008" fins, 4 rows, no stacking)	Cu tube, Al fins, Stainless Steel Casing	8	24	18	40	UUT: 0.02" tube wall, 0.5" Ø tube, 0.008" fin, 8fpi, 4 rows	5

Additional Notes:
[1]Listed sizes are individual coils. Dimensions include casing.

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SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units

Seismic Parameters		Building Codes
S_{DS} = 1.93g for R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 1.93g for R_μ=1.0, H_f=1.0		

TABLE 7

Table Description: Coils

Component (Manufacturer)	Model	Material	Dimensions (in)[1]			Wt. (lb)	Notes	UUT
			D	W	H			
Condenser Coil (Governair/ Mammoth)	Finless Tube Bundle (0.025" tube wall, 0.5"Ø tube, no stacking)	Stainless steel casing, brazed coil construction	36	92	6	250	UUT: 0.025" tube wall, 0.5" Ø tube	Extrap.
			...	...	...	...		Extrap.
			48	129	25	700	UUT: 0.025" tube wall, 0.5" Ø tube	8
			...	...	...	...		Interp.
			48	129	36	800	UUT: 0.025" tube wall, 0.5" Ø tube	8
Heatpipe (Innergy Tech)	IFA (6 rows, 11fpi, 25 tubes, no stacking)	Al fin, stainless steel coil casing	13.4	125.5	57.1	1630	UUT: 6 rows, 11fpi, 25 tubes	7

Additional Notes:
[1]Listed sizes are individual coils. Dimensions include casing.

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Product Type: Air Handling Units – Custom
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units

Seismic Parameters		Building Codes
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TABLE 8

Table Description: Electrical Enclosures

Component (Manufacturer)	Material	Dimensions (in)			Wt. (lb)	Notes	UUT
		D	W	H			
Electrical Control Panel (Temtrol/Governair)	Galvanized Carbon Steel	6	22	24	60	NEMA 1/3R	5
		...	...	...	...		Interp.
		10	24	36	90		7
		...	...	...	...		Interp.
		12	30	36	120		13
		...	...	...	...		Interp.
		12	16	42	150		7
		...	...	...	...		Interp.
		12	64	80	300		3
Starter Panel (Wiegmann)	Carbon Steel	10	10	22.5	14	NEMA 3R/12	4
		...	...	...	...		Interp.
		10	20	38	42		2
		...	...	...	...		Interp.
		10	24	56	47		2
Motor Overload Panel (Wiegmann)	Carbon Steel	8	12	12	12	NEMA 4	Extrap.
		...	...	...	...		Extrap.
		8	12	16	10		5
		...	...	...	...		Interp.
		10	24	24	27		1
		...	...	...	...		Interp.
		12	30	30	39		8,13
Electrical Control Cabinet (Saginwa)	Stainless Steel, Carbon Steel	8	12	16	21	NEMA 1/3R S/4; UUT10: Stainless Steel; UUT19/13: Carbon Steel	10
		...	...	...	...		Interp.
		16	30	48	134		9
		16	30	48	190		13
		...	...	...	...		Interp.
		16	36	72	236		9

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Product Type: Air Handling Units – Custom
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units

Seismic Parameters		Building Codes
S_{DS} = 1.93g for R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 1.93g for R_μ=1.0, H_f=1.0		

TABLE 9

Table Description: Heatwheel

Component (Manufacturer)	Model	Material	Dimensions (in)			Wt. (lb)	Notes	UUT
			D	W	H			
Heatwheel (Innergy Tech)	48"	Polymer Desiccant Material & Carbon Steel Tube Frame	16	58	58	720		8
	54"		16	64	64	790		Interp.
	62"		16	72	72	910		Interp.
	70"		16	80	80	1080		Interp.
	78"		16	87	87	1230		Interp.
	88"		17	95	95	1400		Interp.
	96"		17	103	103	1560		7

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Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units

Seismic Parameters		Building Codes
S_{DS} = 1.93g for R_μ=1.3, H_f=3.5 S_{DS} = 1.93g for R_μ=1.0, H_f=1.0	I_p=1.5	CBC 2025

TABLE 10

Table Description: Heat Exchanger

Component (Manufacturer)	Model	Material	Dimensions (in)			Wt. (lb.)	Notes	UUT
			D	W	H			
Heat Exchanger COAX (Packless)	2201-J	Carbon Steel Shell	13	10.6	4	15	2 tons	Extrap.
	2251-J		12.5	10	5.1	18	2.5 tons	Extrap.
	2301-J		14	12.3	5	20	3 tons	8
	2351-J		14.3	12.4	6.1	24	3.5 tons	Interp.
	2401-J		16.3	14.1	5	30	4 tons	Interp.
	2501-J		17	15.4	6	40	5 tons	Interp.
	2601-J		17.8	15.25	7.25	50	6 tons	Interp.
	2751-J		18	17.5	7.5	65	7.5 tons	Interp.
Heat Exchanger COCX (Packless)	2201-J	Carbon Steel Shell	13	10.6	4	15	2 tons	Interp.
	2251-J		12.5	10	5.1	18	2.5 tons	Interp.
	2301-J		14	12.3	5	20	3 tons	Interp.
	2351-J		14.3	12.4	6.1	24	3.5 tons	Interp.
	2401-J		16.3	14.1	5	30	4 tons	Interp.
	2501-J		17	15.4	6	40	5 tons	Interp.
	2601-J		17.8	15.25	7.25	50	6 tons	Interp.
	2751-J		18	17.5	7.5	65	7.5 tons	8
Heat Exchanger (SWEP)	Flat Plate	Cu Plates, SS End Plates	11	9.5	21	100		8

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Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units

Seismic Parameters		Building Codes
S_{DS} = 1.93g for R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 1.93g for R_μ=1.0, H_f=1.0		

TABLE 11

Table Description: Compressor and Condenser

Component (Manufacturer)	Model	Material	Dimensions (in)			Wt. (lb)	Notes	UUT
			D	W	H			
Scroll Compressor ZP (Emerson/Copeland)	ZP54K3E	Outer Shell: Carbon Steel, Inside: Cu Windings, Steel and Cu	18	18	32	84	208V, 230V,460V; 5 tons	4
	ZPT470KCE-TWD-251		41.4	22	41.4	350	208V, 230V,460V; 40 tons	8
	...		...	...	...	...		Interp.
	ZP385KCE		26	32	36	390	208V, 230V,460V; 30 tons	6
Evap. Condenser Module (Governair/ Mammoth)	SCE-ECM1-11-110-4-S-N-E	Outer Casing: Galv. Carbon Steel, Liner: 304 SS, Evap. Walls: 304 SS, Bundle: Cu Tubes & SS Side Casing	136	158	128	10500	110 tons	8

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Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units

Seismic Parameters		Building Codes
S_{DS} = 1.93g for R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 1.93g for R_μ=1.0, H_f=1.0		

TABLE 12

Table Description: Heating Elements

Component (Manufacturer)	Model	Description	Wt. (lb)	Notes	UUT
Gas Heat - Indirect (Heatco)	HMA	400 MBH	237		4
Gas Heater (Heatco)	HDB	500 MBH	650		9
		...	...		Interp.
		1500 MBH	1538		9
Electric Heater (Markel)	5100	5.0 kW to 3.3kW, 15" x 17.8" x 6.5"	25	UUT: 208/230V, 460V	7

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Seismic Parameters		Building Codes
S_{DS} = 1.93g for R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 1.93g for R_μ=1.0, H_f=1.0		

TABLE 13

Table Description: Electrical Components

Component (Manufacturer)	Model	Description	Wt. (lb.)	Notes	UUT
VFD (ABB)	ACH550	208V/230V/460V	135		6
	ACS320	208V/230V/460V	37		5,13
VFD (Yaskawa)	V1000	208V/230V/460V	17		4
	E7N	Large	142		2
	E7B	Medium	75		3
		Large	375		1
DDC Sensor (Siemens)	Air Probe Switch	24V	<2		7
	Air Probe	24V	<2		7
DDC Sensor (Johnson Controls)	Low Limit Thermistor	With Reset, 24V	<2		7
	Remote Bulb Thermistor	30V to 120V	<2		7
DDC Sensor (Mamac System)	Thermistor Type 2-10K Avg.		<2		7
	Thermistor Type 2-10K Duct		<2		7
DDC Sensor (Dwyer)	Differential Pressure Switch	With Reset, 24V	<2		7
	Differential Pressure Switch	No Switch	<2		7
DDC Sensor (Dwyer/Siemens)	Differential Pressure Transmitter	24V	<2		7
DDC Sensor (Kele)	Smoke Detector	Ionization, 24V/120V	5		7
	Smoke Detector	With Sampling Tube, 24V/120V	5		7
DDC Sensor (Dwyer/Siemens)	Duct Temp. Sensor		<2		7
	Outside Temp. and Humidity	24V	<2		7
UV Lights (Lumalier)	PRU	120V	-	UUT: 27"x5"x32"	5
UV Lights (UV Resources)	RLM	120V	-	UUT: 24"x24"x5"	7

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Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units

Seismic Parameters		Building Codes
S_{DS} = 1.93g for R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 1.93g for R_μ=1.0, H_f=1.0		

TABLE 13

Table Description: Electrical Components

Component (Manufacturer)	Model	Description	Wt. (lb.)	Notes	UUT
Motor Disconnect (Temtrol)	MCP	208V/460V	-		2
Air Monitor Station (Ruskin)	OAFE/FE	24V	22	UUT: Galv. Carbon Steel, Copper	7
Air Monitor Station (Paragon Controls)	FAATS-1000	24V	18	UUT:Aluminum	13
Air Monitor Station (Ebtron)	GTx	24V	10	UUT: Aluminum	7
Hot Gas Bypass Valve & Controller IB-6 (Sporlan)	CDS/IB-6	24V	3	UUT: Brass, Copper/Plastic	7,8
Type 4X "Hand-Off Autp" Switch (Idec)	HW153TF20		-		2
Aux Contact (Telemecanique)	GVAE11		-		10
Aux Contact (Eaton)	XTPAXFA11		-		10
N.O & N.C Aux Contacts (ABB)	HKF-11		-		2
Dual Element Fuse (Bussmann)	LPJ-10DA		-		2
	LPJ-15SP	600VAC, 15A	-		9
	...		-		Interp.
	LPJ-400SP	600VAC, 400A	-		9
Fused - In - Panel Disconnect (Bussmann)	RDF30J-3/KIT	30A	-		9,13
	...		-		Interp.
	RDF400J-3/KIT	400A	-		9

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Seismic Parameters		Building Codes
S_{DS} = 1.93g for R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 1.93g for R_μ=1.0, H_f=1.0		

TABLE 13

Table Description: Electrical Components

Component (Manufacturer)	Model	Description	Wt. (lb.)	Notes	UUT
Secondary Fusing (Bussmann)	GAB1 thru GAB30		-		2
Transformer (Kele)	694-M3A	120/24VAC, 180VA	-		9
Circuit Breaker (Eaton)	FD3015L	15A, 3-pole	-		9
	...		-		Interp.
	LGE3300FAG	300A, 3-pole	-		9
Circuit Breaker (Schneider Electric)	HGL36015	15A, 3-pole	-		9
	...		-		Interp.
	LGL36400U31X	300A, 3-pole	-		9
Motor Circuit Breaker (Telemecanique)	GV2PO4	3-pole, 0.4A, Thermal Magnetic	-		10
	...		-		Interp.
	GV2PO32	3-pole, 32A, Thermal Magnectic	-		10
Manual Motor Protector (Eaton)	XTP6P3BC1	0.4-0.63A, 3-pole	-		10
	...		-		Interp.
	XTP032BC1	25-32A, 3-pole	-		10
Power Distribution Block (Bussmann)	16371-3	310A	-		9
Power Distribution Block (Square D)	9080LBA361104	90A	-		9,10
Expander Module (Niagara)	IO-R-16		-		9,13
	...		-		Interp.
	IO-R-34		-		9,13
Gateway Module (Dell)	Gateway 3001		-		9
Microprocessor (Niagara)	JACE-8000		-		9
Power Supply (Kele)	DCP-1.5-W-15VDC	15VDC	-		9

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S_{DS} = 1.93g for R_μ=1.0, H_f=1.0		

TABLE 13

Table Description: Electrical Components

Component (Manufacturer)	Model	Description	Wt. (lb.)	Notes	UUT
Power Supply (IDEC)	PSR-VE24		-		13
5 Port Splitter (Phoenix Contact)	5TX-24VAC		-		9
Aluminum Ground Bar (NSI)	4-14(937)		-		9
7' CAT5 Cable (Synergy Datacom)	318983	NEMA 1	-		9
Pilot Light (IDEC)	HWP1FQDA24V	NEMA 4, 24VAC	-		9
Red Push Button (IDEC)	HW1BM1F11R	SPDT Flush Head	-		9
120 Volt Control Transformer (Schneider Electric)	9070T500D1		-		2
Control Terminal Strip (Entreclec)	M4/6		-		2
Ground Lugs (NSI)	ADR-2		-	UUT: Aluminum	2
Stranded Copper, THHN Wiring (Encore)	THHN/MTW/THWN-2		-	UUT: Copper/Plastic	2
Controller Display (Distech Controls)	L-Horyzon-c10, 2019w06	Color HMI	4		13
Control Panel (Plasma Air International)	CP	Control Panel for Ionization Plasma Bars PB-018 - PB-096	-		11
Controller (Niagara)	JACE-834		-		13
	JACE-8000		-		13

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TABLE 14

Table Description: Humidifier Grid

Component (Manufacturer)	Model	Material	Dimensions (in)			Wt. (lb.)	Notes	UUT
			D	W	H			
Ultra Sorb (DriSteem)	LV	Header/Tube: Stainless Steel Enclosure: Stainless Steel Installed per DriSteem Seismic IOM Manual	5	12	12	23		Extrap.
			...	...	...	...		Extrap.
			5	27	39	90		7
			...	...	...	...		Interp.
			5	107	102	433		10
	LH		5	12	12	30		Interp.
			...	...	...	...		Interp.
			7	129	123	680		13
	MP		7	12	12	30		13
			...	...	...	...		Interp.
			7	119	117	590		13
	XV		7	12	12	28		Interp.
			...	...	...	...		Interp.
			7	119	120	566		13
Short Absorption Manifold (Nortex)	SAM-e	Stainless Steel	9.8	22	28	80		7
VS (Vapac)	VS	Stainless Steel	8	24	24	38		5

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S_{DS} = 1.93g for R_μ=1.0, H_f=1.0		

TABLE 15

Table Description: Sound Attenuator

Component (Manufacturer)	Model	Material	Dimensions (in)			Wt. (lb.)	Notes	UUT
			D	W	H			
Sound Attenuator (Temtrol/Governair)	CES-St	Galvanized Steel and Fiberglass	36	112	84	2680		1
Sound Attenuator (Vibro Acoustics)	RD-ULV	Galvanized Steel and Fiberglass	36	24	24	96		Extrap.
			...	...	...	...		Extrap.
			36	24	36	121		11
			...	...	...	...		Interp.
			36	96	120	1608		11
	RFL-LV	Galvanized Steel and Fiberglass	60	24	24	96		Extrap.
			...	...	...	...		Extrap.
			60	24	36	192		11
			...	...	...	...		Interp.
			60	96	120	2560		11

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Product Type: Air Handling Units – Custom
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units

Seismic Parameters		Building Codes
S_{DS} = 1.93g for R_μ=1.3, H_f=3.5 S_{DS} = 1.93g for R_μ=1.0, H_f=1.0	I_p=1.5	CBC 2025

TABLE 16

Table Description: Miscellaneous

Component (Manufacturer)	Model	Description	Notes	UUT
Air to Air Exchanger (Innergy Tech)	IPE5/PHE	Aluminum and Plastic	UUT: 24"x24"x24"	6
Filter Rack - Type 8 (Temtrol/ Governair)	FR-8	Galv. Carbon Steel & Stainless Steel	UUT: 124"W x 96"H	2
Filter Frame (Temtrol/ Governair)	B1	Galv. Carbon Steel & Stainless Steel		5
Filter Rack (Temtrol/ Governair)	Type 8	Galv. Carbon Steel & Stainless Steel	UUT: 108" x 108", 2" Pre Filter Bank	10
Filter Frame (Temtrol/ Governair)	Type 8	Galv. Carbon Steel & Stainless Steel	UUT: 24"x 2"x12"	10
Filter Frame (Temtrol/ Governair)	Type 8	Galv. Carbon Steel & Stainless Steel	UUT: 24"x 2"x24"	10
Filter Frame (Temtrol/ Governair)	Type 8	Galv. Carbon Steel & Stainless Steel	UUT: 24"x 2"x24"	6
Receiver (Refrigeration Research)	Type 4 3233	Carbon Steel	UUT: 35"x 7"x7.125" 30 lbs.	8
Condenser Pump (ITT Bell & Gosset)	3 hp	Cast Carbon Steel	UUT: 125 lbs.	8
Fixed Blade Blenders (Blender Products)	IV	Aluminum	UUT: 24"x 6"x24" 75 lbs.	6
Spray Tree (Governair)	ST1	PVC Pipe Construction	UUT: 98"x39"x7"	8

REVIEWED FOR CODE COMPLIANCE
HCAi
OSP-0567
BY: Timothy J. Piland
DATE: 08/28/2025
CALIFORNIA BUILDING CODE, 2025

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Nortek Air Solutions, LLC
Product Type: Air Handling Units – Custom
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units

Seismic Parameters		Building Codes
S_{DS} = 1.93g for R_μ=1.3, H_f=3.5	I_p=1.5	CBC 2025
S_{DS} = 1.93g for R_μ=1.0, H_f=1.0		

TABLE 16

Table Description: Miscellaneous

Component (Manufacturer)	Model	Description	Notes	UUT
Ionization Plasma Bar (Plasma Air International)	PB	18ga. Galv. Carbon Steel housing with 3-16 ionizers depending on length. 4.625"x4.625"x3.5" control panel.	UUT: PB-018 (18" bar)	11
			...	Interp.
			UUT: PB-096 (96" bar)	11
Outdoor Airflow Measurement System (Paragon Controls)	OAFE-1550	Installed on Tampco 1000 dampers with Galv. Carbon Steel, Stainless Steel, or Aluminum mounting collar. Weights include damper and mounting collar.	UUT:5"Dx24"Wx24"H 96lbs.	Extrap.
			...	Extrap.
			UUT:5"Dx60"Wx30"H 180lbs.	13
			...	Interp.
			UUT:5"Dx36"Wx120"H 225lbs	13

REVIEWED FOR CODE COMPLIANCE
HCAi
OSP-0567
BY: Timothy Lawlor
DATE: 08/28/2025
CALIFORNIA BUILDING CODE 2025

SPECIAL SEISMIC CERTIFICATION TESTING SUMMARY

UUT	Model	Test Report	Test Laboratory	S_{DS}	R_μ	H_f	I_p
1	Air Handling Unit (Inlet Wall Removed)	EL: 8959	Clark Testing	1.93 1.93	1.3 1.0	3.5 1.0	1.5
2	Air Handling Unit (Inlet Wall Removed)	EL: 8961	Clark Testing	1.93 1.93	1.3 1.0	3.5 1.0	1.5
3	Air Handling Unit (Outlet Wall Removed)	EL: 8962	Clark Testing	1.93 1.93	1.3 1.0	3.5 1.0	1.5
4	Air Handling Unit	Q0033.0	Trentec, Inc. (Qual Tech NP by Curtiss-Wright)	1.93 1.93	1.3 1.0	3.5 1.0	1.5
5	Air Handling Unit	Q0033.0	Trentec, Inc. (Qual Tech NP by Curtiss-Wright)	1.93 1.93	1.3 1.0	3.5 1.0	1.5
6	Air Handling Unit	Q0033.0	Trentec, Inc. (Qual Tech NP by Curtiss-Wright)	1.93 1.93	1.3 1.0	3.5 1.0	1.5
7a	Air Handling Unit (Inlet Wall Removed, attached to UUT8a)	PEER-STI/2012-02	Pacific Earthquake Engineering Research Center (PEER)	1.93 1.93	1.3 1.0	3.5 1.0	1.5
7b	Air Handling Unit (Inlet and Outlet Wall Removed)	PEER-STI/2012-02	Pacific Earthquake Engineering Research Center (PEER)	1.93 1.93	1.3 1.0	3.5 1.0	1.5
7c	Air Handling Unit (Inlet , Outlet, Side Wall Removed)	PEER-STI/2012-02	Pacific Earthquake Engineering Research Center (PEER)	1.93 1.93	1.3 1.0	3.5 1.0	1.5
8a	Air Handling Unit (Connected to UUT7a)	PEER-STI/2012-02	Pacific Earthquake Engineering Research Center (PEER)	1.93 1.93	1.3 1.0	3.5 1.0	1.5
8b	Air Handling Unit	PEER-STI/2012-02	Pacific Earthquake Engineering Research Center (PEER)	1.93 1.93	1.3 1.0	3.5 1.0	1.5
9	Air Handing Unit (Inlet Wall Removed)	1700754-TR-001 R0	ERDC-CERL	2.00 2.50	1.3 1.0	3.5 1.0	1.5

Notes:

REVIEWED FOR CODE COMPLIANCE
HCAi
OSP-0567
BY: Timothy J. Piland
DATE: 08/28/2025
CALIFORNIA BUILDING CODE 2022

SPECIAL SEISMIC CERTIFICATION TESTING SUMMARY

UUT	Model	Test Report	Test Laboratory	S_{DS}	R_μ	H_f	I_p
10	Air Handling Unit	1700754-TR-001 R0	ERDC-CERL	2.00 2.50	1.3 1.0	3.5 1.0	1.5
11	Air Handing Unit (Inlet and Outlet Wall Removed)	1800930-TR-001 R0	ERDC-CERL	2.00 2.50	1.3 1.0	3.5 1.0	1.5
12	Air Handling Unit	1800930-TR-002 R0	Pacific Earthquake Engineering Research Center (PEER)	2.00 2.50	1.3 1.0	3.5 1.0	1.5
13	Air Handling Unit	1801166-TR-001 R0	Pacific Earthquake Engineering Research Center (PEER)	2.00 2.50	1.3 1.0	3.5 1.0	1.5

Notes:

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HCAi
OSP-0567
BY: Timothy J. Piland
DATE: 08/28/2025
CALIFORNIA BUILDING CODE, 2025

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 1 Test Report# EL:8959

Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units
Model Number: ITF
Serial Number: N/A

Highest Passed Test Level

S_{DS}	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
1.93	1.3	3.5	1.5	3.08	2.07	1.29	0.52
1.93	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
96	129	103	7,100

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
12.5	23.7	24.5

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Cabinet: 16 ga. galvanized carbon steel exterior, 20 ga. galvanized carbon steel liner, Standard, galvanized carbon steel frame, carbon steel 7" base; Wall Configuration: Inlet wall removed

UUT Mounting Details:

Twenty (20) angle brackets welded to UUT using 1/4" x 4" fillet welds (see spacing details on next page). Angle brackets bolted to VMC P6000S Rigid Seismic 14" Roof Curb using twenty (20) 1/2" SAE grade 5 bolts. Curb bolted to table using twenty (20) 5/8" SAE grade 5 bolts.

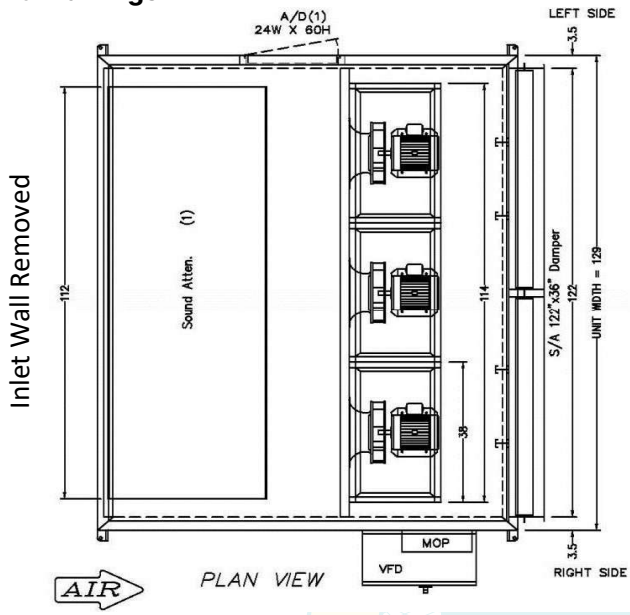
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

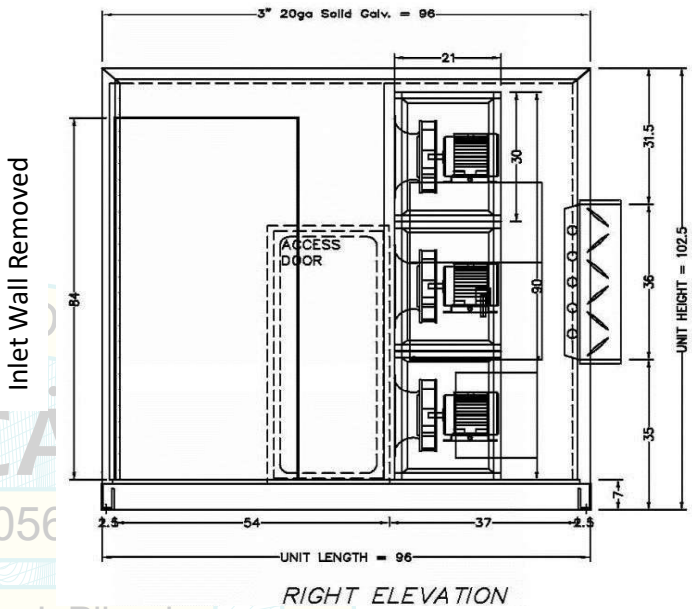
List of Included Subcomponents

Sound Attenuator(36"x112"x84"); Movable blade damper/actuator(122"x16"x36"); Wiegmann Motor overload panel(24"x10"x24"); Fanwall - 3x3 array with 16" fan wheels (all 21"x38"x30" fan cubes); 5hp Baldor fan motors; Yaskawa VFD - E7B (Large)

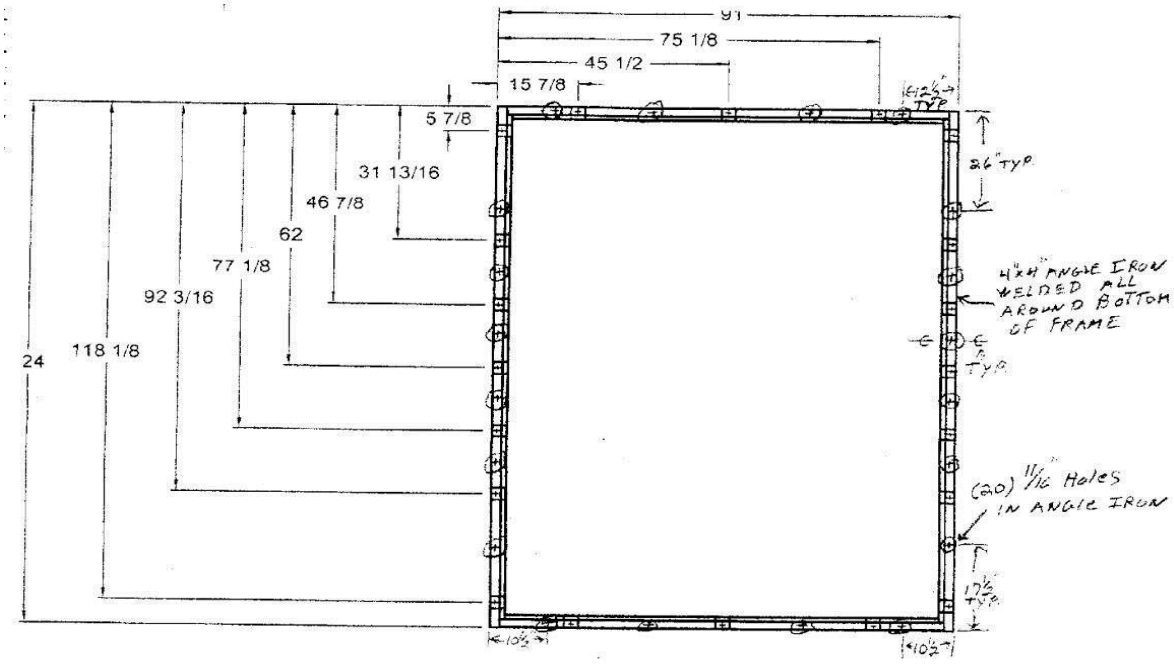
UUT 1 Test Report# EL:8959

Unit Drawings





BY: Timothy J. Piland



Angle Bracket Spacing

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 2

Test Report# EL:8961

Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units
Model Number: ITF
Serial Number: N/A

Highest Passed Test Level

S_{DS}	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
1.93	1.3	3.5	1.5	3.08	2.07	1.29	0.52
1.93	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
96	129	105	6,050

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
>33.3	9.1	>33.3

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Cabinet: 16 ga. galvanized carbon steel exterior, 20 ga. galvanized carbon steel liner, Standard, galvanized carbon steel frame, carbon steel 7" base; Wall Configuration: Inlet wall removed

REVIEWED FOR CODE COMPLIANCE
HCAI
OSP-0567
BY: Timothy L. Piland
2025

UUT Mounting Details:

Twenty (20) angle brackets welded to UUT using 1/4" x 4" fillet welds (see spacing details on next page). Angle brackets bolted to VMC P6000S Rigid Seismic 14" Roof Curb using twenty (20) 1/2" SAE grade 5 bolts. Curb bolted to table using twenty (20) 5/8" SAE grade 5 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.

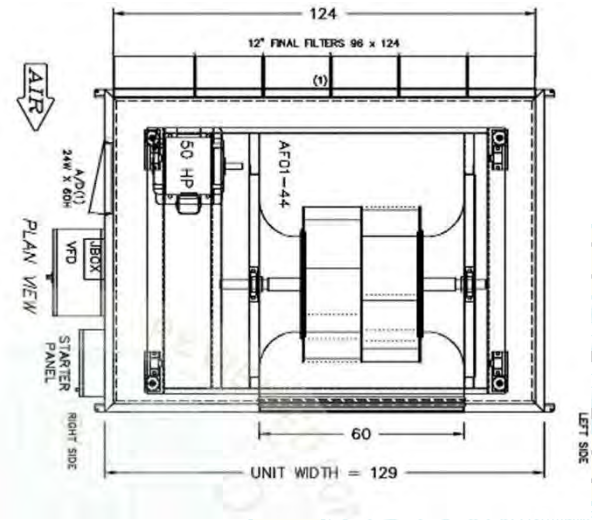
List of Included Subcomponents

Filter Rack - 124"Wx96"H (flat filters); Wiegmann starter panel(10"x20"x38"); Wiegmann starter panel(10"x24"x56"); J-Box; Housed Fan - AF01-49" 50 HP; Yaskawa E7N large VFD; electrical components (see table 13 for complete list).

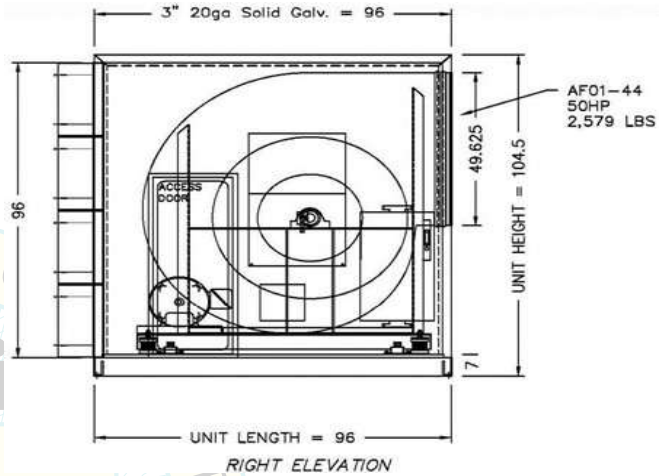
UUT 2 Test Report# EL:8961

Unit Drawings

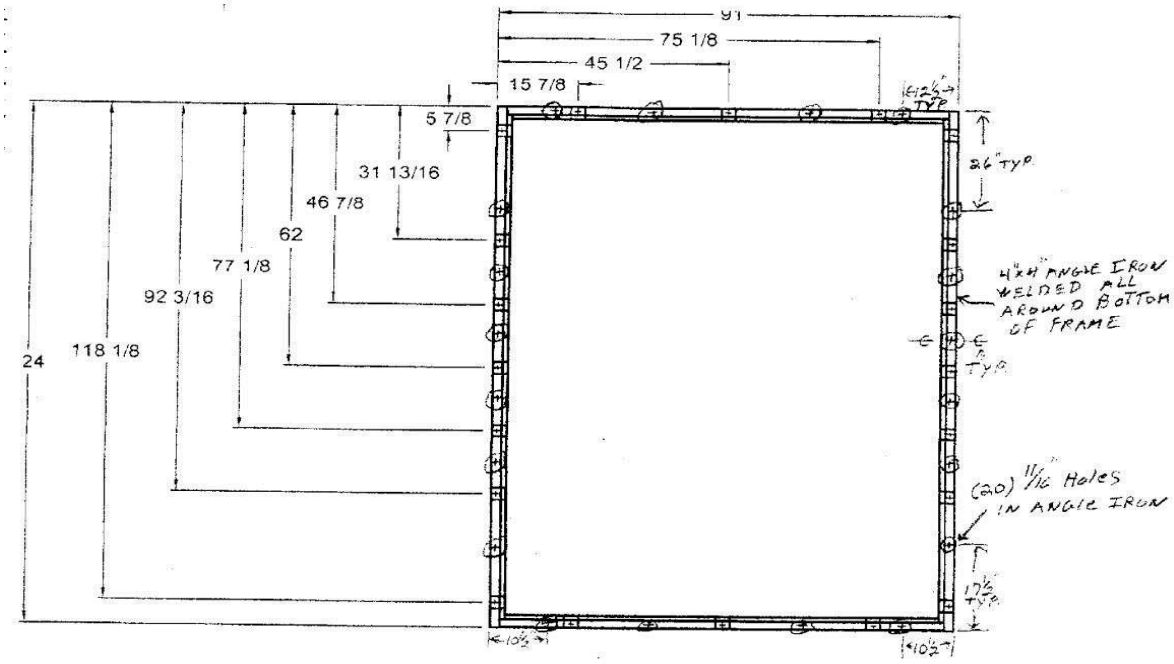
Inlet Wall Removed



Inlet Wall Removed



BY: Timothy J. Piland



Angle Bracket Spacing

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 3

Test Report# EL:8962

Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units
Model Number: WF-BH60
Serial Number: N/A

Highest Passed Test Level

S_{DS}	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
1.93	1.3	3.5	1.5	3.08	2.07	1.29	0.52
1.93	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
98	131	98	6,000

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
11.4	8.0	33.2

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Cabinet: 14 ga. aluminum and 16 ga. galvanized carbon steel exterior, 18 ga. aluminum and 20ga. galvanized carbon steel perforated liner, Standard, stainless steel frame, 7" carbon steel base; Wall Configuration: Outlet wall removed. Note: welded frame construction (not used for verification of unit construction).

REVIEWED FOR CODE COMPLIANCE
HCAI
OSP-0567
BY: Timothy J. Piland
2025

UUT Mounting Details:

Twenty (20) angle brackets welded to UUT using 1/4" x 4" fillet welds (see spacing details on next page). Angle brackets bolted to VMC P6000S Rigid Seismic 14" Roof Curb using twenty (20) 1/2" SAE grade 5 bolts. Curb bolted to table using twenty (20) 5/8" SAE grade 5 bolts.

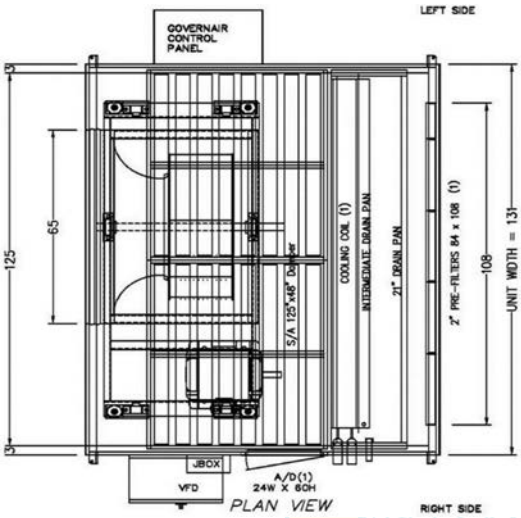
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

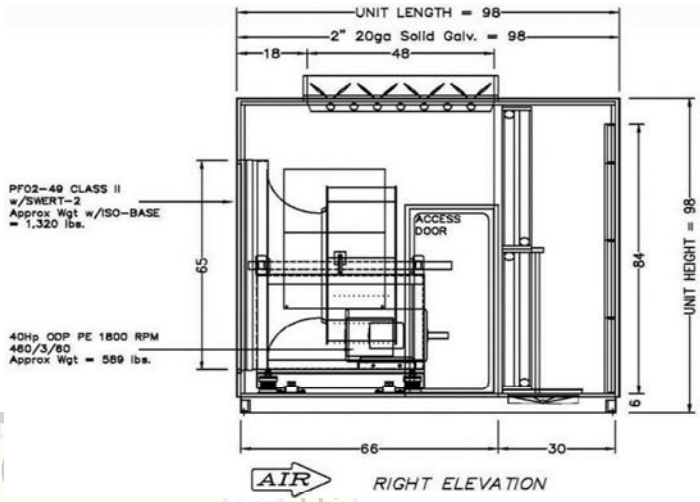
Water Coils (w/center supports) - 12"x120"x45" stacked 2 high; Movable Blade Damper/Actuator - 126x48; Plenum fan - PF02-44" 50hp; 50 hp Baldor fan motor; Filter Rack - 84"x108"; Yaskawa VFD-E7B (Medium); Control Panel (12"x64"x80").

UUT 3 Test Report# EL:8962

Unit Drawings

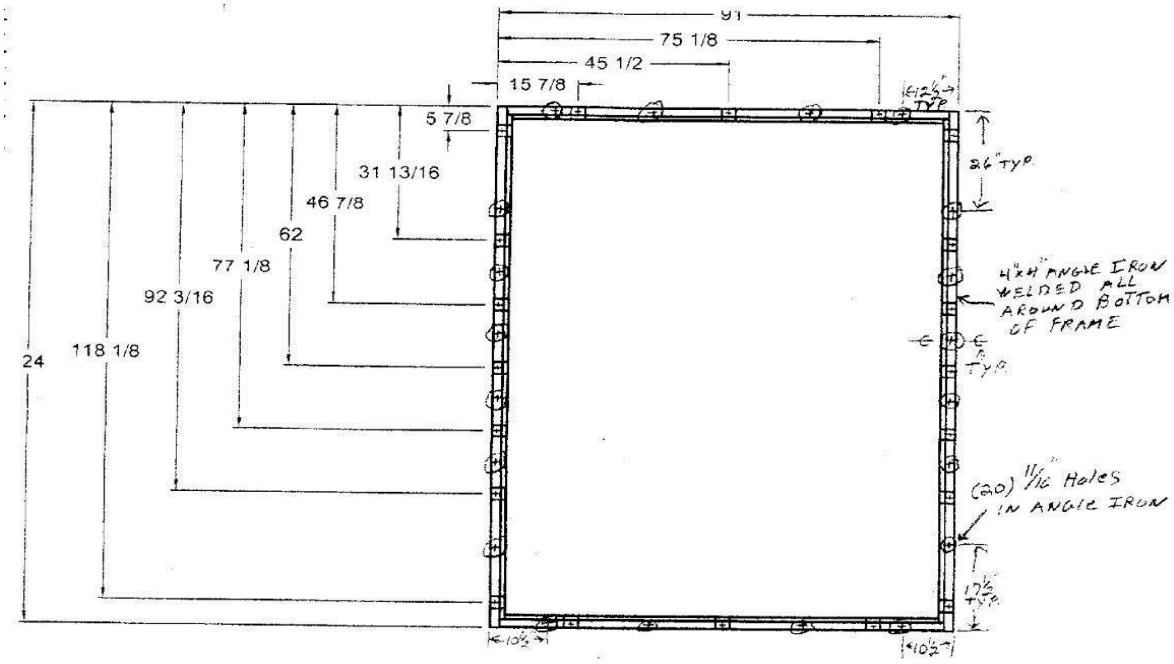


Outlet Wall Removed



Outlet Wall Removed

BY: Timothy J. Piland



Angle Bracket Spacing

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 4 Test Report# Q0033.0

Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units
Model Number: ITF
Serial Number: N/A

Highest Passed Test Level

S_{DS}	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
1.93	1.3	3.5	1.5	3.08	2.07	1.29	0.52
1.93	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
96	96	96	3,975

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
12.0	17.8	>33.3

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Cabinet: 16 ga. galvanized carbon steel exterior, 20 ga. galvanized carbon steel liner, Standard, galvanized carbon steel frame, carbon steel 7" base; Wall Configuration: no wall removed

REVIEWED FOR CODE COMPLIANCE HCAI OSP-0567 BY: Timothy L. Piland 2025

UUT Mounting Details:

This unit was mounted to an I-beam test frame using six (6) mounting angles and twelve (12) 5/8" grade 5 bolts with flat washers and lock washers. Two bolts per mounting angle, angles spaced at 42" OC along the length (see layout on next page). Mounting angles consist of 3"X3"X1/2" carbon steel angles, 6" long, with two (2) 5/8" holes spaced 4" OC.

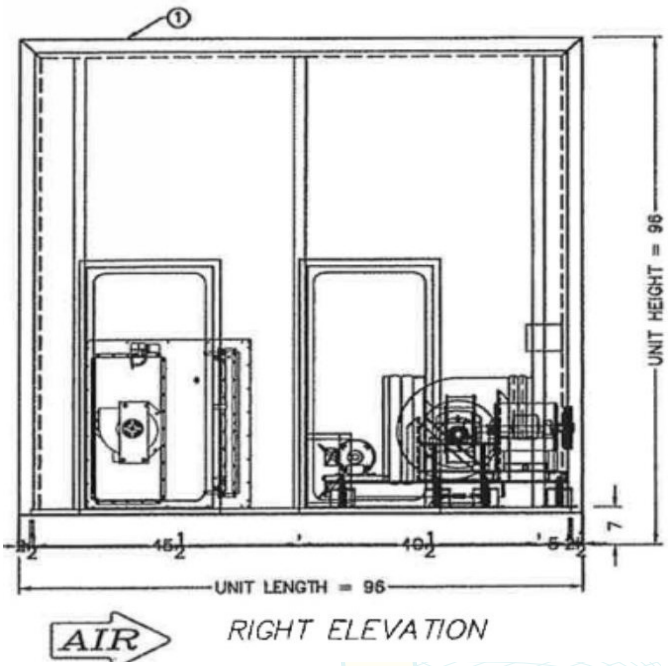
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating

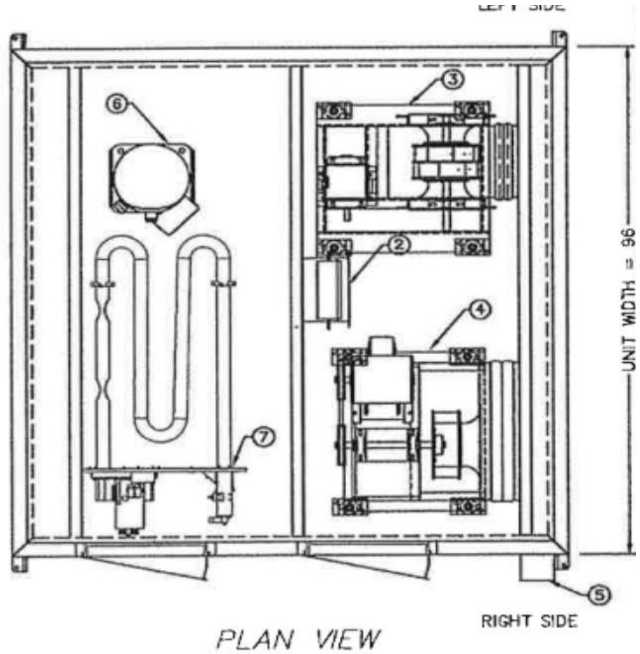
List of Included Subcomponents

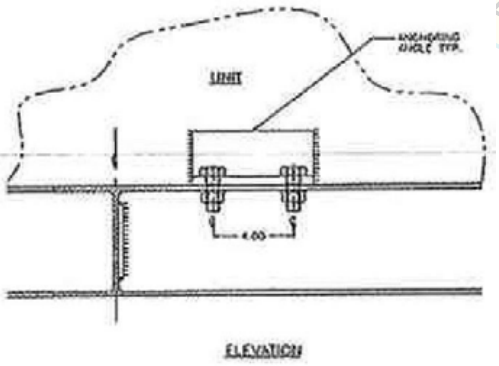
Movable blade damper/actuator (18"x18"x8"); housed fan-AF-10" 1 hp; 1 hp Baldor fan motor; Plenum fan-PF-12" 5 hp; 5 hp baldor fan motor; Yaskawa V1000 large VFD; Emerson/Copeland scroll compressor(ZP54K3E); Heatco gas heater; Wiegmann starter panel (10"x10"x22.5").

UUT 4 Test Report# Q0033.0

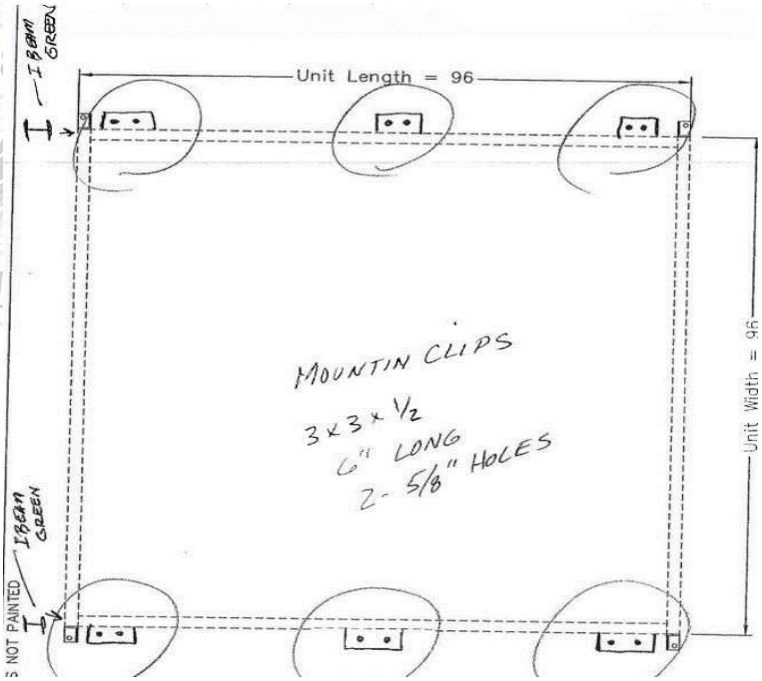
Unit Drawings







Mounting Angle Detail



Plan View - Mounting Angle Layout

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 5

Test Report# Q0033.0

Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units
Model Number: ITF
Serial Number: N/A

Highest Passed Test Level

S_{DS}	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
1.93	1.3	3.5	1.5	3.08	2.07	1.29	0.52
1.93	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
96	144	144	6,015

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
4.3	9.3	27.5

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Cabinet: Standard, carbon steel mechanical frame, 16ga galv carbon steel panels, 20ga galv carbon steel and stainless steel liners, 7" base floor; Wall Configuration: No walls removed

REVIEWED FOR CODE COMPLIANCE HCAI OSP-0567 BY: Timothy L. Piland 2025

UUT Mounting Details:

This unit was mounted to an I-beam test frame using ten (10) mounting angles and twenty (20) 5/8" grade 5 bolts with flat washers and lock washers. Two bolts per mounting angle, angles spaced at 32" OC along the length (see layout on next page). Mounting angles consist of 3"X3"X1/2" carbon steel angles, 6" long, with two (2) 5/8" holes spaced 4" OC. Mounting angles welded to unit with two (2) 1/4"X3" vertical filet welds.

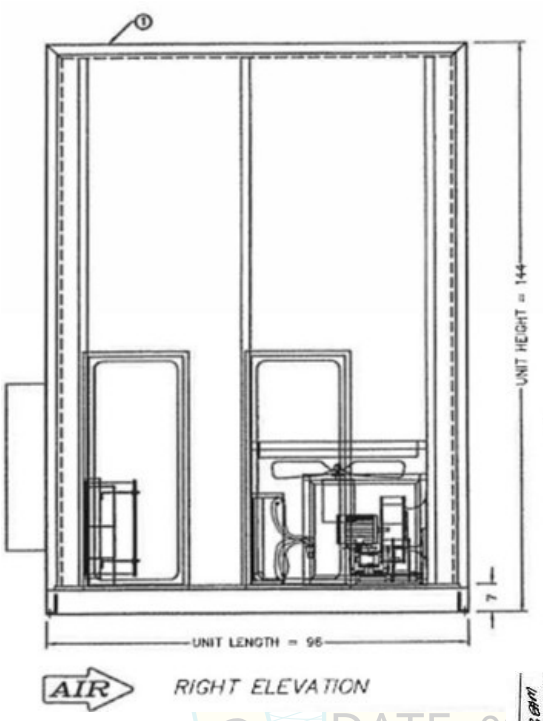
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

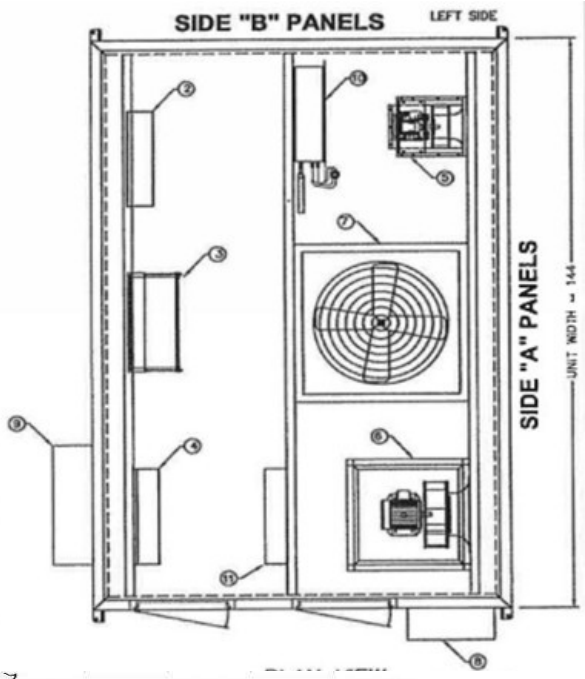
List of Included Subcomponents

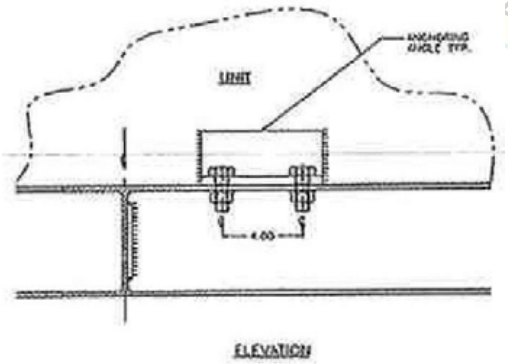
Vapac VS Humidifier (8"x24"x24"), HEPA filter frame (26"x10"x26"), fixed blade louver - horiz. (24"x24"x8"), plenum fan-PF-10" 1 HP, 1HP Baldor fan motor, 26"x22"x26" fanwall fan cube with 12" wheel (unit/retrofit), 1HP Baldor fan motor, condenser fan - large, 5HP Baldor fan motor(dual voltage), ABB ACH550 VFD, Temtrol control panel (24"x6"x22"), Wiegmann motor overload panel(12x16x8), DX heat transfer coil-small-no intermediate support (24"x8"x18"), Lumalier PRU UV Light (27"x5"x32"), ABBACS320 VFD.

UUT 5 Test Report# Q0033.0

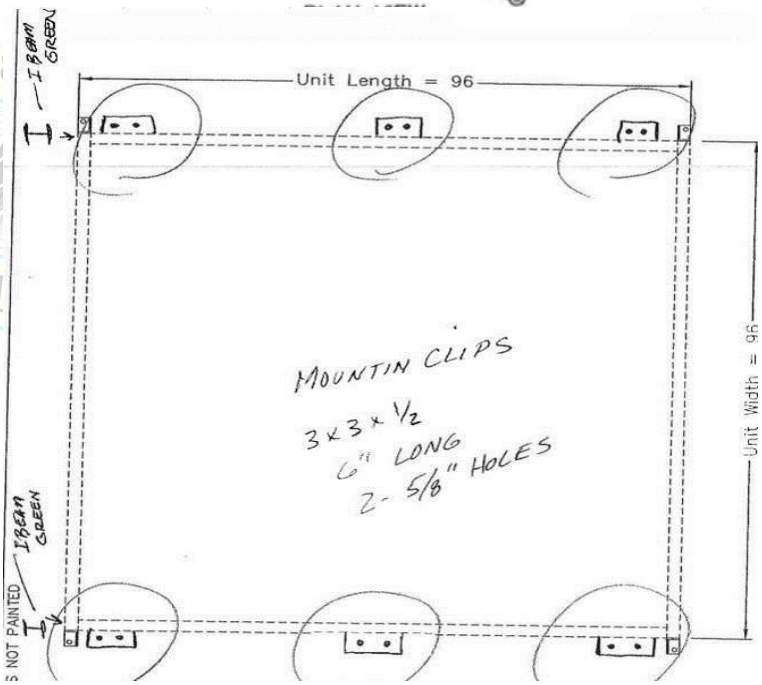
Unit Drawings







Mounting Angle Detail



Plan View - Mounting Angle Layout

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 6

Test Report# Q0033.0

Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units
Model Number: ITF
Serial Number: N/A

Highest Passed Test Level

S_{DS}	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
1.93	1.3	3.5	1.5	3.08	2.07	1.29	0.52
1.93	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
144	144	144	7,435

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
5.0	6.8	16.6

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Cabinet: Standard, carbon steel mechanical frame, 16 ga galv carbon steel panel, 20 ga galv carbon steel and stainless steel liners, 7" base floor; Wall Configuration: No walls removed

REVIEWED FOR CODE COMPLIANCE
HCAI
OSP-0567
BY: Timothy L. Piland
2025

UUT Mounting Details:

This unit was mounted to an I-beam test frame using ten (10) mounting angles and twenty (20) 5/8" grade 5 bolts with flat washers and lock washers. Two bolts per mounting angle, angles spaced at 32" OC along the length (see layout on next page). Mounting angles consist of 3"X3"X1/2" carbon steel angles, 6" long, with two (2) 5/8" holes spaced 4" OC. Mounting angles welded to unit with two (2) 1/4"X3" vertical filet welds.

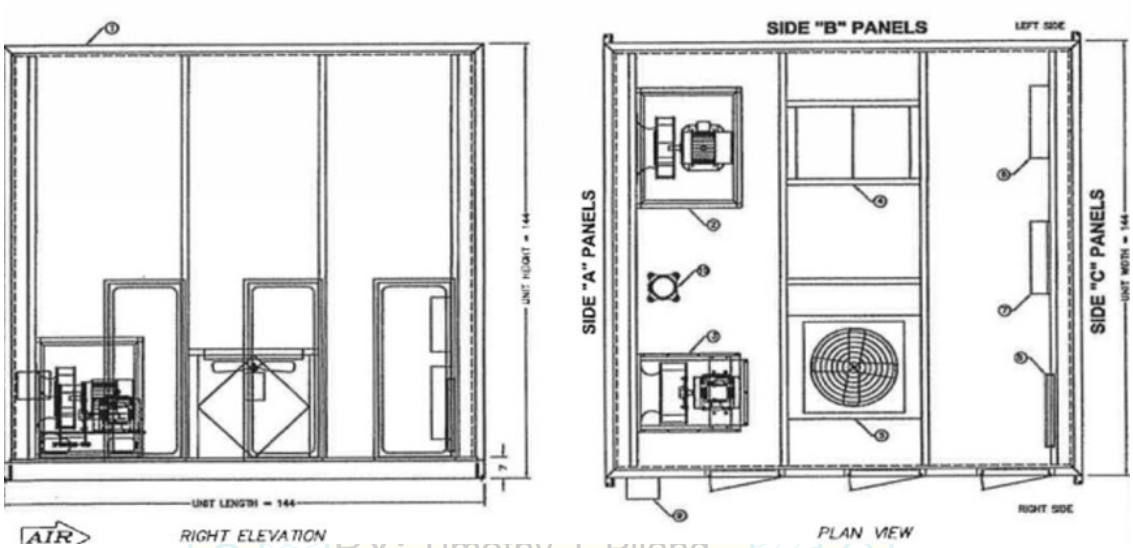
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

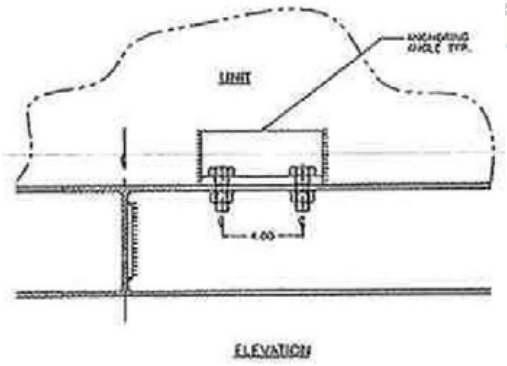
Fan wall fan - 22" 12 HP (unit/retrofit), 12HP Baldor fan motor, Plenum fan-PF-22" 10 HP, 10HP Baldor fan motor, Innergytech IPE5/PHE Air to Air exchanger (24"x24"x24"), condenser fan- 24", 10 HP Baldor fan motor, Blender Products fixed blade blender(24"x6"x24"), fixed blade louver-vert. (24"x8"x24"), filter rack (24"x2"x24" filter frames), ABB ACH550 VFD, Emerson/Copeland scroll compressor(ZP385KCE), control panel (24"x6"x22").

UUT 6 Test Report# Q0033.0

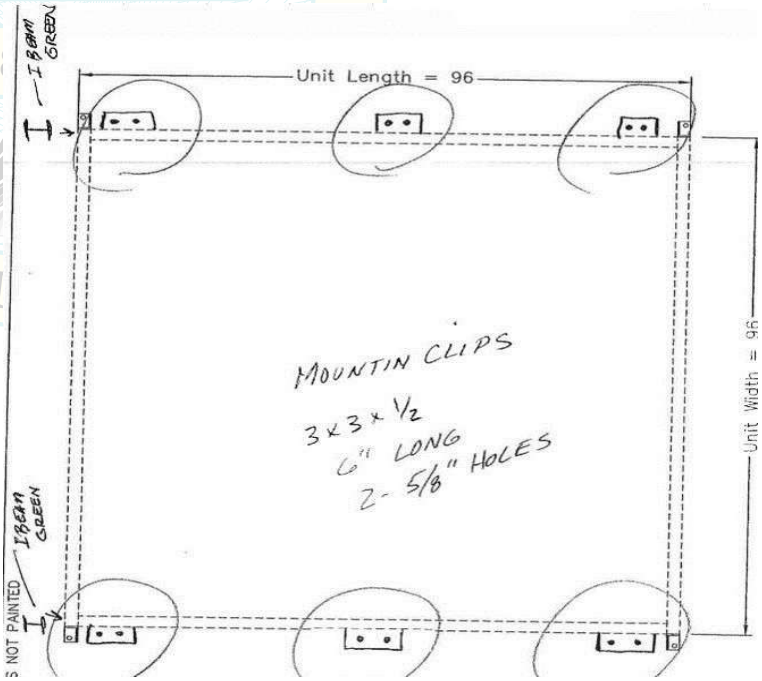
Unit Drawings



BY: Timothy J. Pilland
DATE: 0
CALIFORNIA BUI



Mounting Angle Detail



Plan View - Mounting Angle Layout

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 7a

Test Report# PEER-STI/2012-02

Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units
Model Number: ITF
Serial Number: N/A

Highest Passed Test Level

S_{DS}	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
1.93	1.3	3.5	1.5	3.08	2.07	1.29	0.52
1.93	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
158	136	114	9,900

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
6.7	6.6	8.2

Building Codes

CBC 2025

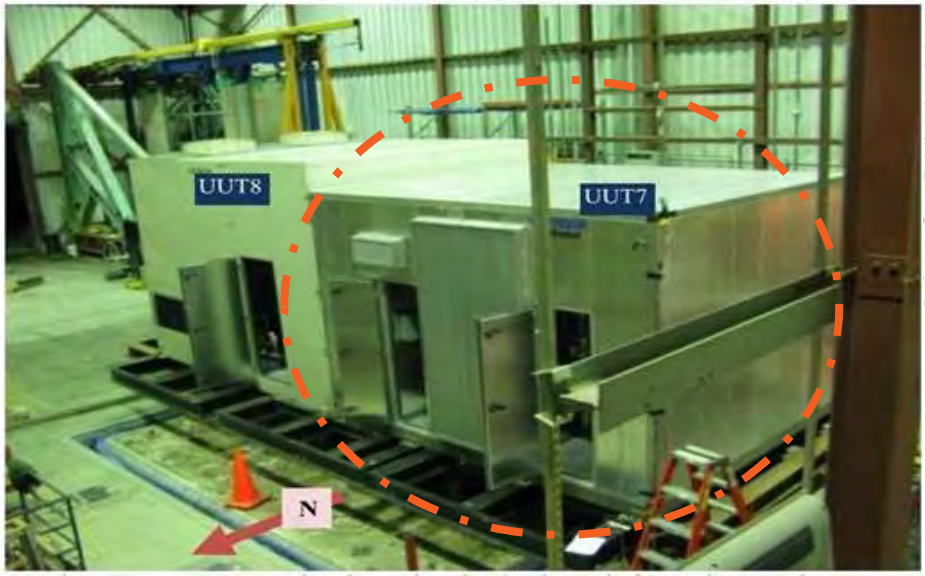
Test Criteria

ICC-ES AC156

Construction/Option Summary

Cabinet: 14 ga. aluminum exterior, 18 ga. aluminum liner,Standard, stainless steel frame, 7" base floor; Wall Configuration:one wall removed and connected to UUT8

UUT Mounting Details:



This unit was mounted to a test frame using four (4) L3"X3"X1/2" double bolt mounting angles (6" long), four (4) L3"X3"X1/2"single bolt mounting angles (3" long), using twelve (12) 5/8" grade 8 bolts with flat washers (see layout/spacing on next page). Mounting angles welded to unit with two (2) 1/4"X3" vertical filet welds each.

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

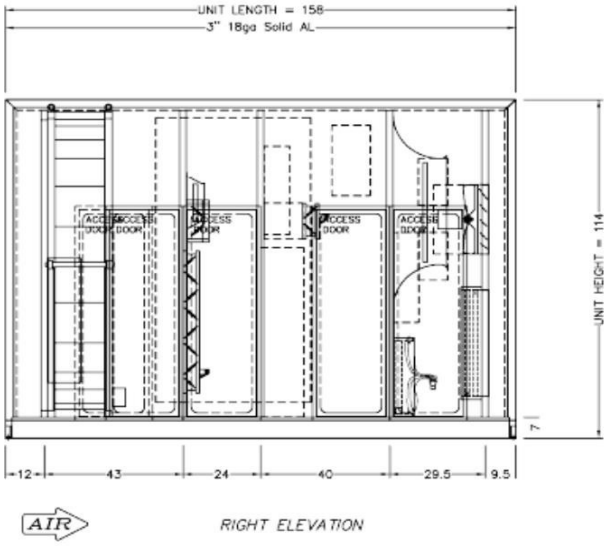
Temtrol Control Damper with actuator (8"x24"x12"), SD-60 smoke damper with actuator (5"x120"x48"), CD-60 control damper with actuator (5"x24"x12"), Ruskin EAMS (12"x24"x12"/discontinued), Ruskin AML louver (3"x12"x24"), Ruskin EME louver (3"x48"x96"), Innergy Tech refrigerant heatpipe (13.4"x125.5"x57.1"), Innergy Tech 96"Ø heat wheel (17"x103"x103"), small Heatcraft refrigerant coil (5.5"x24"x25"), large Heatcraft refrigerant coil (7"x96"x36"), Markel electric heater(6.5"x15"x17.75"), DriSteem humidifer (6.5"x27"x39"), Dayton ventilation fan 20", Temtrol control panel (12"x16"x42"), Temtrol control panel (10"x24"x36"), Paragon airflow station-small (4"x4"x15"), Paragon airflow station-large (4"x4"x34.5"), electrical components (see table 13 for complete list).

UUT 7a

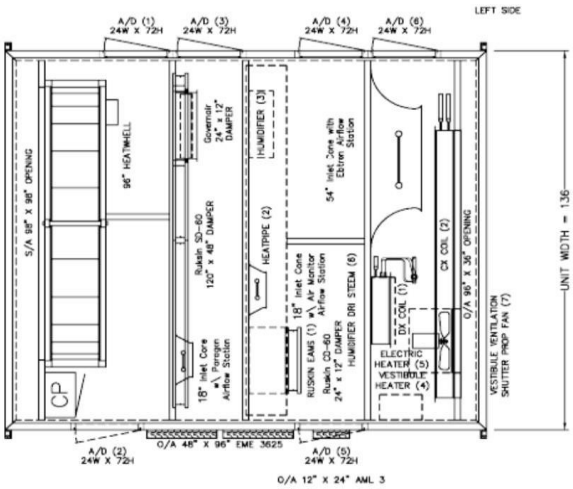
Test Report# PEER-STI/2012-02

Unit Drawings

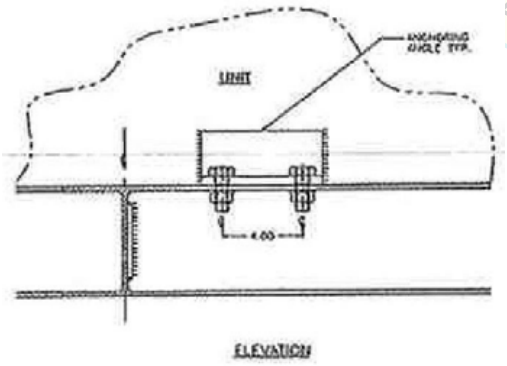
Inlet Wall Removed



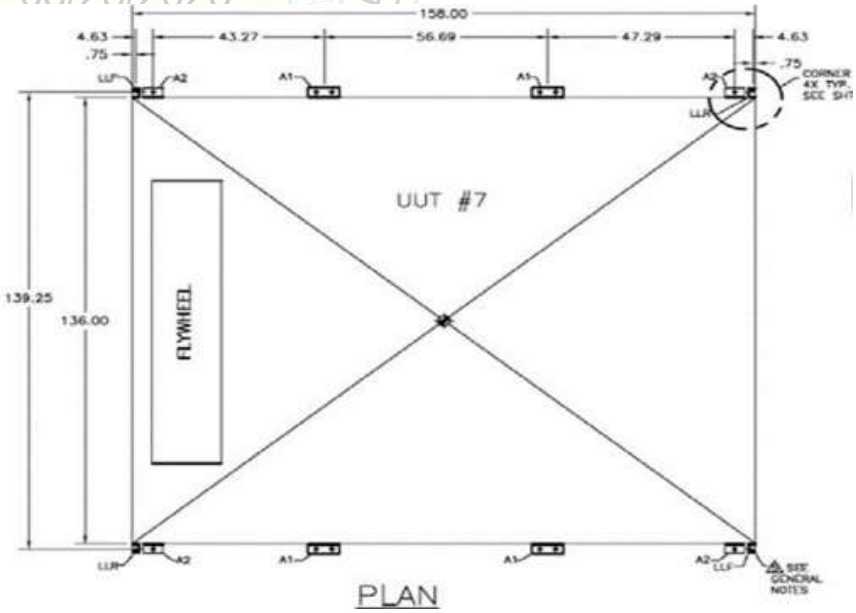
Inlet Wall Removed



BY: Timothy J. Piland
DATE: 08/28/2025



Mounting Angle Detail



Mounting Angle Layout

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 7b

Test Report# PEER-STI/2012-02

Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units
Model Number: ITF
Serial Number: N/A

Highest Passed Test Level

S_{DS}	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
1.93	1.3	3.5	1.5	3.08	2.07	1.29	0.52
1.93	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
158	136	114	9,900

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
6.7	7.8	8.1

Building Codes

CBC 2025

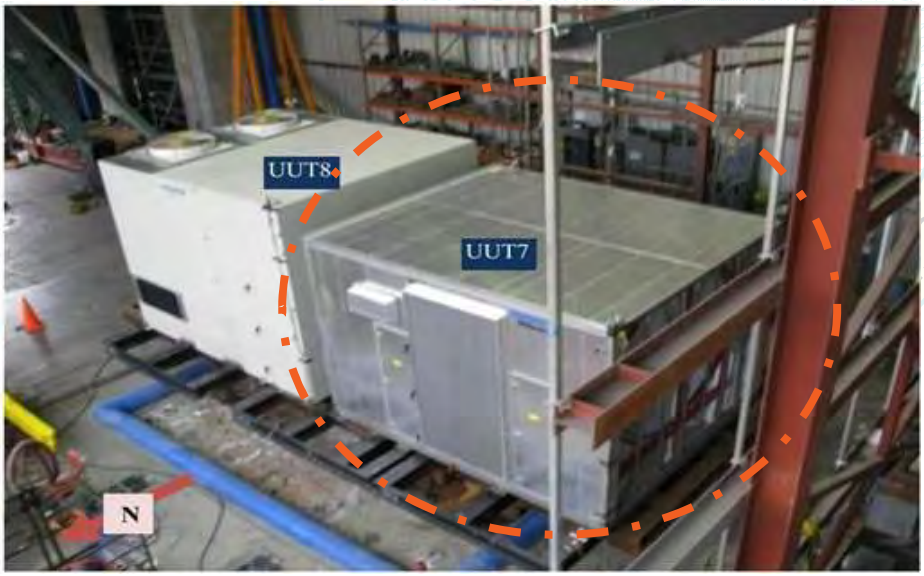
Test Criteria

ICC-ES AC156

Construction/Option Summary

Cabinet: 14 ga. aluminum exterior, 18 ga. aluminum liner,Standard, stainless steel frame, 7" base floor; Wall Configuration:one wall removed and connected to UUT8

UUT Mounting Details:



This unit was mounted to a test frame using four (4) L3"X3"X1/2" double bolt mounting angles (6" long), four (4) L3"X3"X1/2"single bolt mounting angles (3" long), using twelve (12) 5/8" grade 8 bolts with flat washers (see layout/spacing on next page). Mounting angles welded to unit with two (2) 1/4"X3" vertical filet welds each.

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

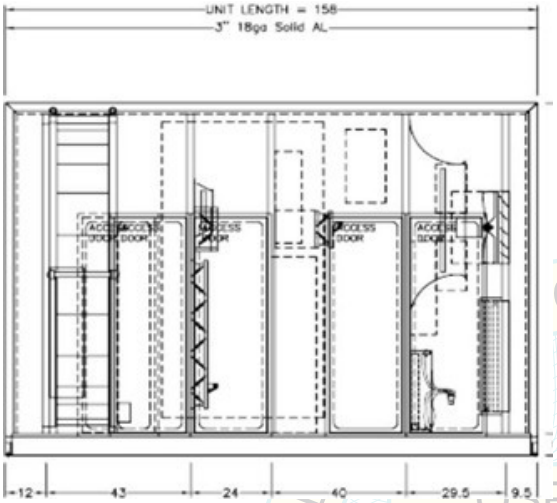
Temtrol Control Damper with actuator (8"x24"x12"), SD-60 smoke damper with actuator (5"x120"x48"), CD-60 control damper with actuator (5"x24"x12"), Ruskin EAMS (12"x24"x12"/discontinued), Ruskin AML louver (3"x12"x24"), Ruskin EME louver (3"x48"x96"), Innergy Tech refrigerant heatpipe (13.4"x125.5"x57.1"), Innergy Tech 96"Ø heat wheel (17"x103"x103"), small Heatcraft refrigerant coil (5.5"x24"x25"), large Heatcraft refrigerant coil (7"x96"x36"), Markel electric heater(6.5"x15"x17.75"), DriSteem humidifer (6.5"x27"x39"), Dayton ventilation fan 20", Temtrol control panel (12"x16"x42"), Temtrol control panel (10"x24"x36"), Paragon airflow station-small (4"x4"x15"), Paragon airflow station-large (4"x4"x34.5"), electrical components (see table 13 for complete list).

UUT 7b

Test Report# PEER-STI/2012-02

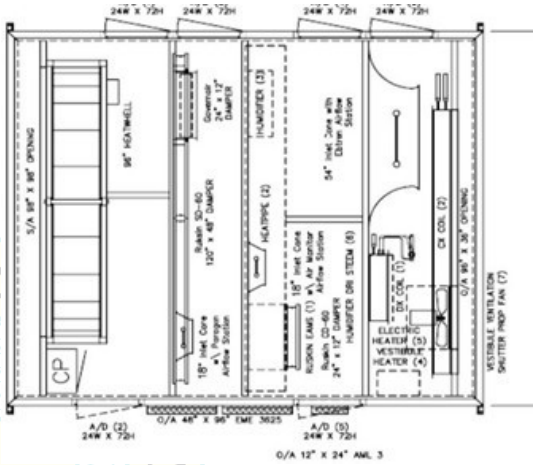
Unit Drawings

Inlet Wall Removed



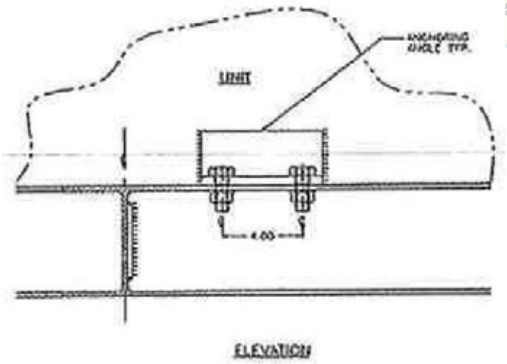
Outlet Wall Removed

Inlet Wall Removed

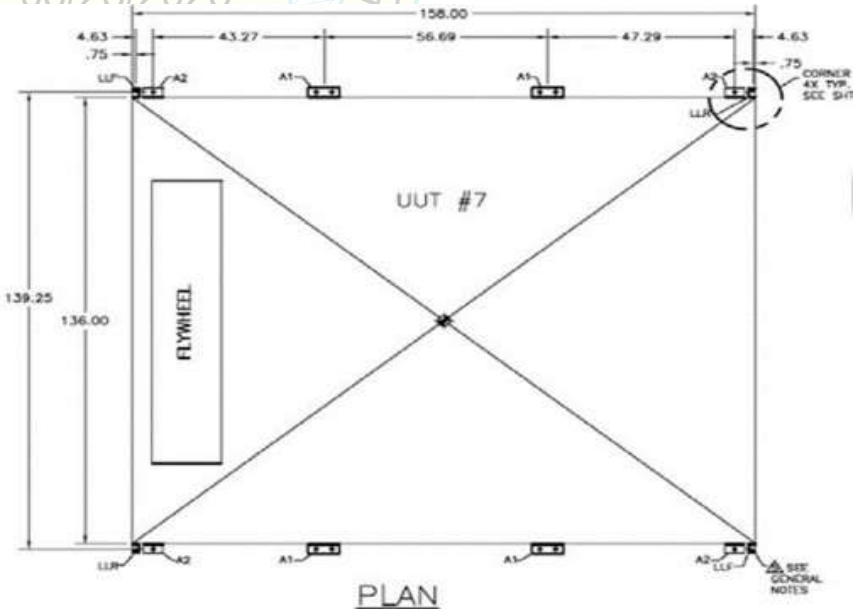


Outlet Wall Removed

CAI
OSP-0567
BY: Timothy J. Piland
DATE: 08/28/2025



Mounting Angle Detail



Mounting Angle Layout

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 7c

Test Report# PEER-STI/2012-02

Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units
Model Number: ITF
Serial Number: N/A

Highest Passed Test Level

S_{DS}	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
1.93	1.3	3.5	1.5	3.08	2.07	1.29	0.52
1.93	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
158	136	114	9,900

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
5.4	6.8	8.1

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Cabinet: 14 ga. aluminum exterior, 18 ga. aluminum liner, Standard, stainless steel frame, 7" base floor; Wall Configuration:three walls removed and stand alone. 6" panels added to support corners (see details on next page).

UUT Mounting Details:

This unit was mounted to a test frame using four (4) L3"X3"X1/2" double bolt mounting angles (6" long), four (4) L3"X3"X1/2"single bolt mounting angles (3" long), using twelve (12) 5/8" grade 8 bolts with flat washers (see layout/spacing above). Mounting angles welded to unit with two (2) 1/4"X3" vertical filet welds each.

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

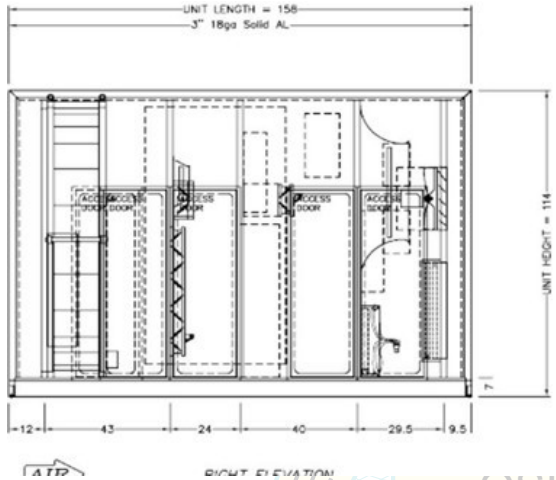
Temtrol Control Damper with actuator (8"x24"x12"), SD-60 smoke damper with actuator (5"x120"x48"), CD-60 control damper with actuator (5"x24"x12"), Ruskin EAMS (12"x24"x12"/discontinued), Ruskin AML louver (3"x12"x24"), Ruskin EME louver (3"x48"x96"), Innergy Tech refrigerant heatpipe (13.4"x125.5"x57.1"), Innergy Tech 96"Ø heat wheel (17"x103"x103"), small Heatcraft refrigerant coil (5.5"x24"x25"), large Heatcraft refrigerant coil (7"x96"x36"), Markel electric heater(6.5"x15"x17.75"), DriSteem humidifer (6.5"x27"x39"), Dayton ventilation fan 20", Temtrol control panel (12"x16"x42"), Temtrol control panel (10"x24"x36"), Paragon airflow station-small(4"x4"x15"), Paragon airflow station-large (4"x4"x34.5"), electrical components (see table 13 for complete list).

UUT 7c

Test Report# PEER-STI/2012-02

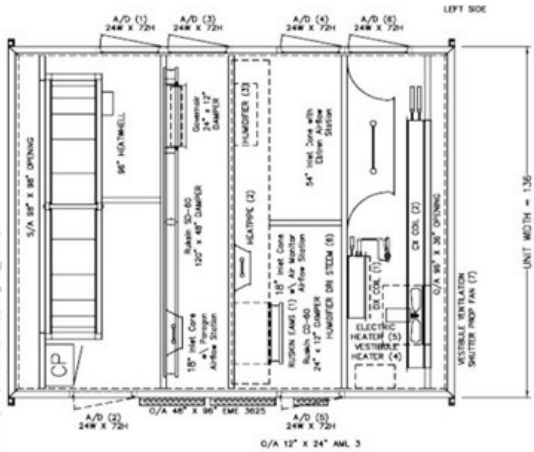
Unit Drawings

Inlet Wall Removed

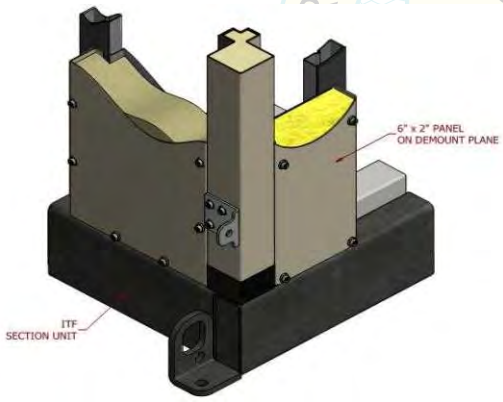


Outlet Wall Removed

Inlet Wall Removed

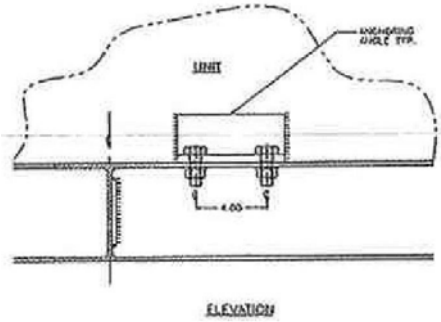


Outlet Wall Removed

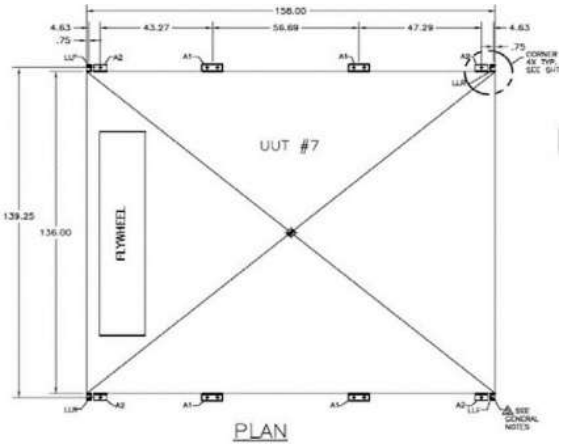


6" Panel Detail

6" Panels - Highlighted Red



Mounting Angle Detail



Mounting Angle Layout

CAi
OSP-0567
Timothy J.
E: 08/28/2
BUILDING

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 8a

Test Report# PEER-STI/2012-02

Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units
Model Number: ITF
Serial Number: N/A

Highest Passed Test Level

S_{DS}	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
1.93	1.3	3.5	1.5	3.08	2.07	1.29	0.52
1.93	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
158	136	128	10,500

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
6.7	7.9	8.2

Building Codes

CBC 2025

Test Criteria

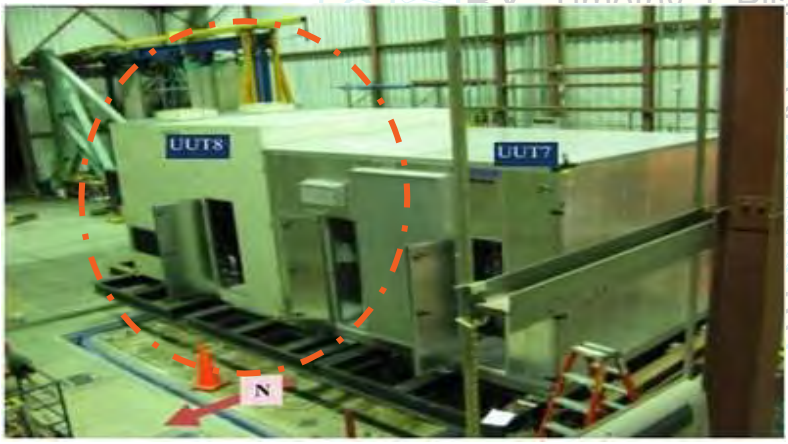
ICC-ES AC156

Construction/Option Summary

Cabinet: Standard, carbon steel mechanical frame; 16 ga. carbon steel/ 20 ga. carbon steel exterior; 20 ga. galv. steel cabinet liner, 20 ga. 304 stainless steel condenser interior liner; 7" base floor; Wall Configuration: No walls removed and connected to UUT7

REVIEWED FOR CODE COMPLIANCE HCA OSP-0567 BY: Timothy J. Piland

UUT Mounting Details:

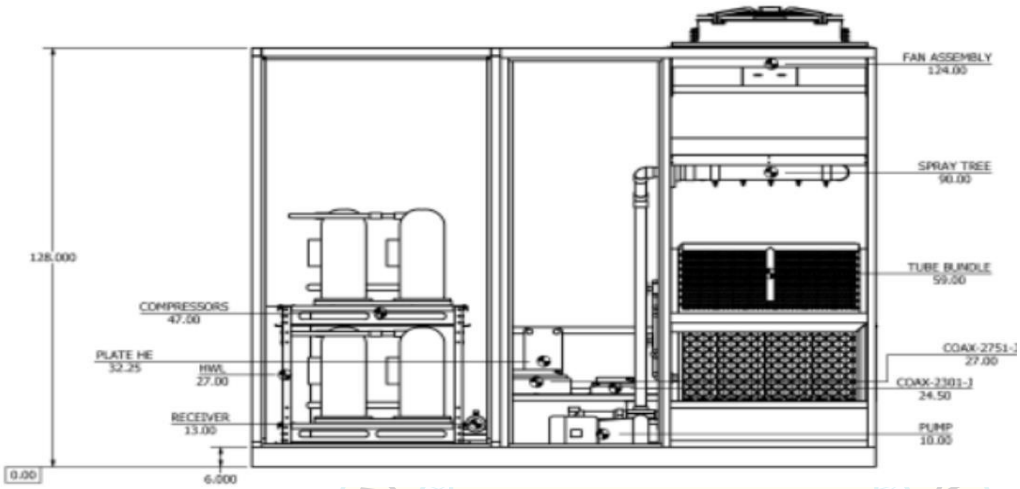


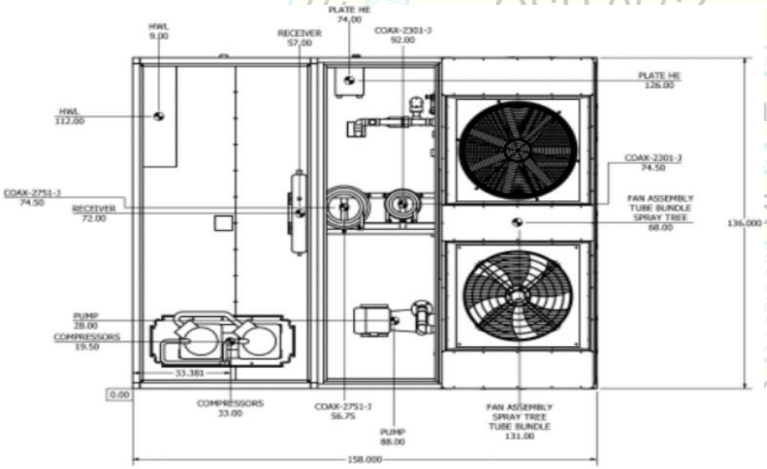
This unit was mounted to a test frame using four (4) L3"X3"X1/2" double bolt mounting angles (6" long), four (4) L3"X3"X1/2"single bolt mounting angles (3" long), using twelve (12) 5/8" grade 8 bolts with flat washers (see layout/spacing on next page). Mounting angles welded to unit with two (2) 1/4"X3" vertical filet welds each.
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test.
All contents were included in the unit per operating conditions.

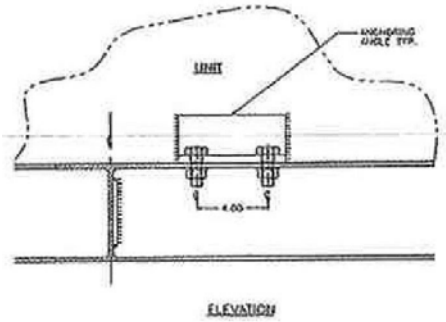
List of Included Subcomponents

Governair 36" condenser fan, 5 hp Toshiba severe duty motor (208V,230V,460V), Emerson/Copeland scroll compressor (ZPT470KCE-TWD-251), Governair condenser coil (48"x129"x25), Governair condenser coil (48"x129"x36), ITT B&G 3 hp condense pump, SWEP plate heat exchanger (11"x9.5"x21"), Innergy Tech 48"Ø heat wheel (16"X58"X58"), Refrigeration Research liquid reciever (35"x7"x7") , Packless small COAX heat exchanger helix 3ton , Packless larger COAX heat exchanger helix 7.5ton, Governair ST1 spray tree (98"x39"x7"), Sporlan IB6 valve and controller, Wiegmann motor overload panel(12"x30"x30").

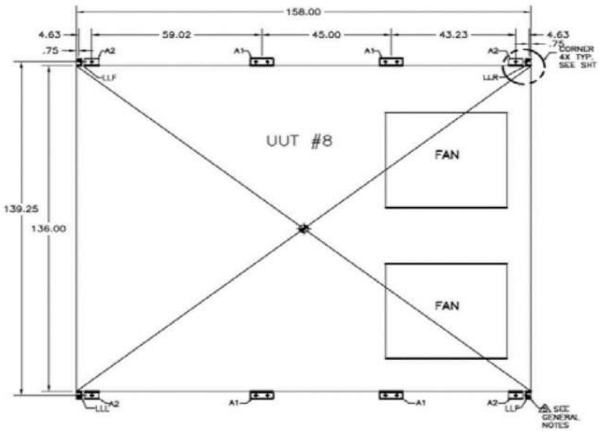
Unit Drawings







Mounting Angle Detail



Mounting Angle Layout

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 8b

Test Report# PEER-STI/2012-02

Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units
Model Number: ITF
Serial Number: N/A

Highest Passed Test Level

S_{DS}	R_μ	H_f	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
1.93	1.3	3.5	1.5	3.08	2.07	1.29	0.52
1.93	1.0	1.0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
158	136	128	10,500

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
6.7	6.4	8.3

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Cabinet: Standard, carbon steel mechanical frame; 16 ga. carbon steel/ 20 ga. carbon steel exterior; 20 ga. galv. steel cabinet iner, 20 ga. 304 stainless steel condenser interior liner; 7" base floor; Wall Configuration: No walls removed and stand alone.

UUT Mounting Details:

This unit was mounted to a test frame using four (4) L3"X3"X1/2" double bolt mounting angles (6" long), four (4) 3"X3"X1/2"single bolt mounting angles (3" long), using twelve (12) 5/8" grade 8 bolts with flat washers (seelayout/spacing onnext page). Mounting angles welded to unit with two (2) 1/4"X3" vertical filet welds each.
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test.
All contents were included in the unit per operating conditions.

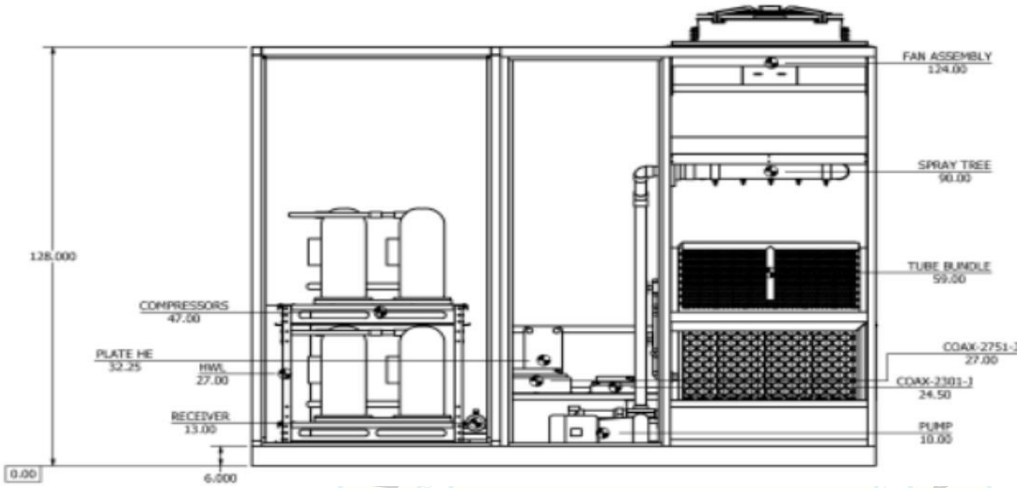
List of Included Subcomponents

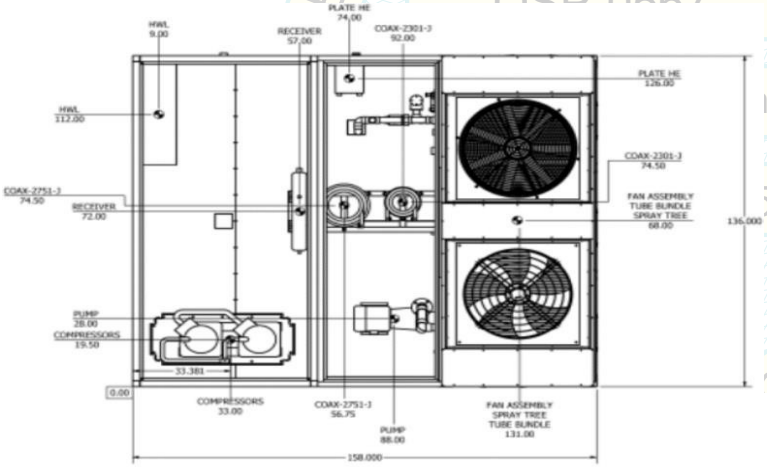
Governair 36" condenser fan, 5 hp Toshiba severe duty motor (208V,230V,460V), Emerson/Copeland scroll compressor ZPT470KCE-TWD-251), Governair condenser coil (48"x129"x25), Governair condenser coil (48"x129"x36), ITT B&G 3 hp condenser pump, SWEP plate heat exchanger (11"x9.5"x21"), Innergy Tech 48"Ø heat wheel (16"X58"X58"), Refrigeration Research liquid eciever (35"x7"x7") , Packless small COAX heat exchanger helix 3ton , Packless larger COAX heat exchanger helix 7.5ton, Governair ST1 spray tree (98"x39"x7"), Sporlan IB6 valve and controller, Wiegmann motor overload panel(12"x30"x30").

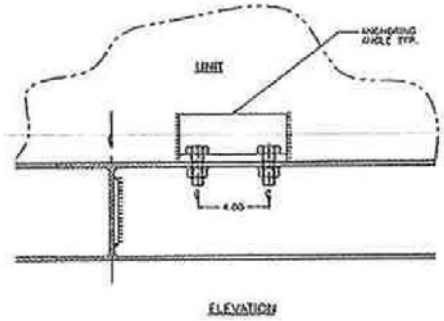
UUT 8b

Test Report# PEER-STI/2012-02

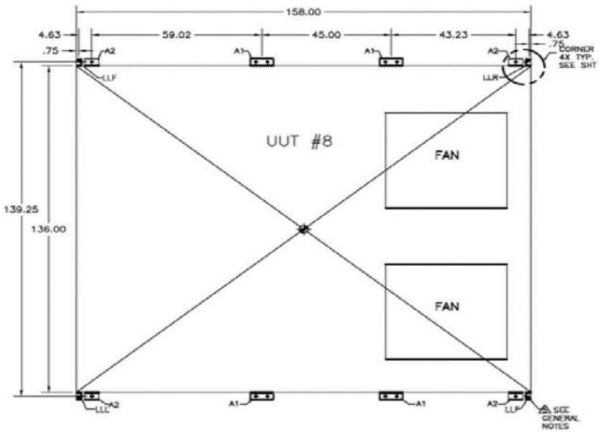
Unit Drawings







Mounting Angle Detail



Mounting Angle Layout

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 9

Test Report# 1700754-TR-001 R0

Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units
Model Number: ITF
Serial Number: N/A

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	300	138	12,436*

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
5.9	6.8	21.1

* Weight of large water coils (8,664 lbs) is not included due to attachment failure. Total unit weight: 21,100 lbs.

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Cabinet: 2" Wall Panel; Single wall constructed of 16 ga. 304 stainless steel casing. 16ga. 316 stainless steel casing, 20 ga. 304 stainless steel liner. Other walls constructed of 20ga. solid galv liner, 16ga. galv exterior casing. 14 ga. galv floor; 20ga. galv sub floor; 12" carbon steel base; Wall Configuration: Inlet wall removed.

REVIEWED FOR ICC-ES ACCEPTANCE CRITERIA
HCA
OSP-0567

UUT Mounting Details:

This unit was mounted to an I-beam test frame using fourteen (14) 3/4" SAE grade 8 bolts with flat washers and lock washers (spaced at 24" OC max along the long direction).
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test.
All contents were included in the unit per operating conditions.

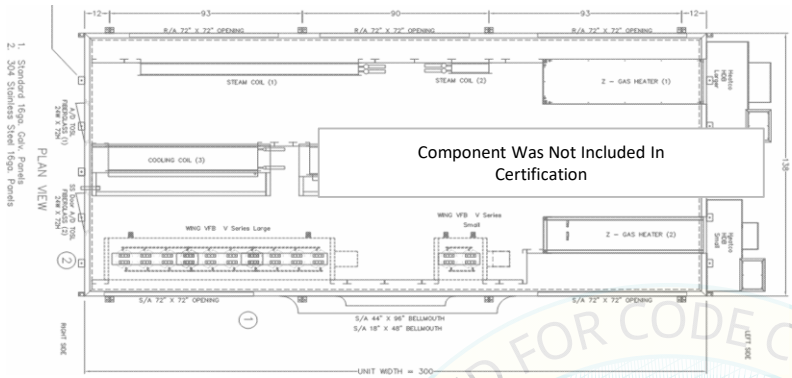
List of Included Subcomponents

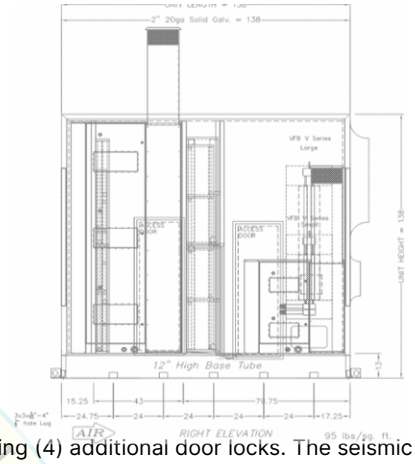
Temtrol steam heating coils (5"x108"x56"), Temtrol steam heating coils (5"x21"x32"), Temtrol water coils (13"x75"x27"), Heatco gas heater (1500MBH), Heatco gas heater (500MBH), LJ Wing water coil (22"x44"x25.4"), LJ Wing water coil (22"x111.2"x80"), Bellmouth openings (44"x96"), Bellmouth opening (18"x48"), electrical components (see table 13 for complete list). Saginwa control cabinet (16"x36"x72"), Saginwa control cabinet (16"x30"x48").

UUT 9

Test Report# 1700754-TR-001 R0

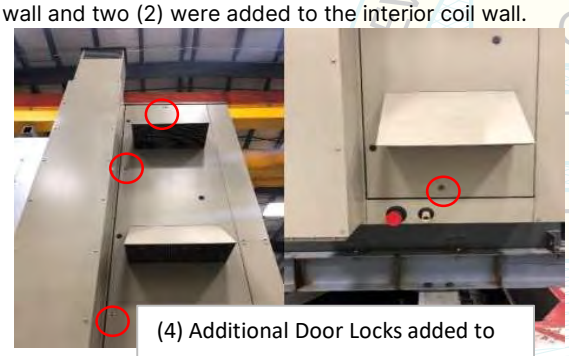
Unit Drawings





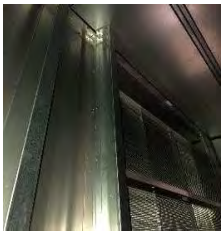
Seismic Upgrades Implemented:

The seismic upgrade for the Large Heatco gas heating cabinet for UUT9 consisted of installing (4) additional door locks. The seismic upgrade for the coil walls for UUT9 consisted of mounting (3) 16 ga. 2" x 4" stainless steel channels mounted to the unit using #12-3/4" self tapping screws at 12" OC along length of blankoff and (5) self tapping screws in base and ceiling panels. One(1) channel was added to the exterior coil wall and two (2) were added to the interior coil wall.



(4) Additional Door Locks added to

(2) 16 ga Stainless Steel 2"x4" Channels



#12-3/4" self tapping screws @ 12" OC along length of blankoff and (5) self tapping screws in base and ceiling panel (typical)

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 10

Test Report# 1700754-TR-001 R0

Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units
Model Number: ITF
Serial Number: N/A

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.)
288	144	144	14,800

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
10.1	10.0	25.2

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Cabinet: 3" Wall Panel; 20ga. solid galv liner, 16ga. galv exterior casing; 16 ga. galv floor; 20ga. galv sub floor; 8" carbon steel base; Wall Configuration: No walls removed and stand alone, Demounts installed at center of unit

REVIEWED FOR CODE COMPLIANCE
HCAI
OSP-0567
BY: Timothy J. Piland
2025

UUT Mounting Details:

This unit was mounted to an I-beam test frame using twelve (12) 3/4" SAE grade 8 bolts with flat washers and lock washers (spaced at 48" OC max along the long direction).

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

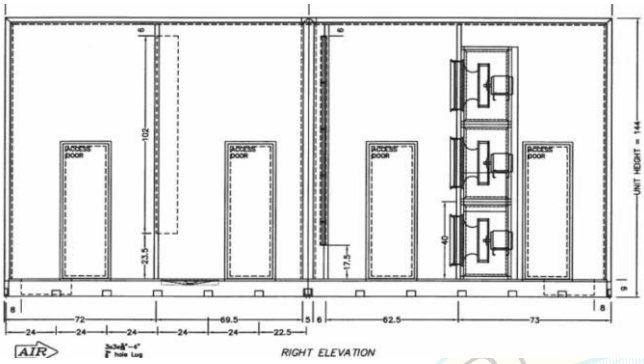
List of Included Subcomponents

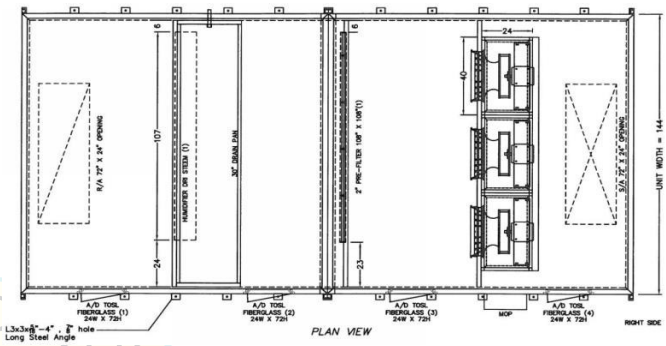
3x3 Fanwall array(all 24"x40"x40" fan cubes), 22" Fan wheels - FWT-22-55 A100, Galv. Carbon Steel Filter Rack 108"x108" with Galv. Carbon Steel Airseals (6" and 23" sides, 6" top, and 18" bottom), 2" Prefilter 12"x24", 2" Prefilter 24"x24", Dristeem Ultra-Sorb LV Humidifier 107"x102" with 304 Stainless Steel Airseals (6" and 24" sides, 6" top, and 24" bottom), Saginwa control cabinet(8"x12"x16"), electrical components (see table 13 for complete list).

UUT 10

Test Report# 1700754-TR-001 R0

Unit Drawings





HCAi
OSP-0567
BY: Timothy J. Piland

Seismic Upgrades Implemented:

The seismic upgrade for UUT10 consisted of mountiTngima 16ga 2”x4”stainless steel channel that was cut to length to bear against the edge of the drain pan and the bottom of the humidifier header tube. The channel was mounted to the blankoff using (2) #12-3/4” self tapping screws.

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 11

Test Report# 1800930-TR-001 R0

Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units
Model Number: ITF
Serial Number: N/A

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	300	138	10,942*

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
10.2	5.0	22.6

* Weight of water coils (9,408 lbs) is not included due to attachment failure. Total unit weight: 20,350 lbs.

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Cabinet: 2" Wall Panel; 20ga. solid galv liner, 16ga. galv exterior casing. 14 ga. galv floor; 20ga. galv sub floor; 12" carbon steel base; Wall Configuration: Inlet and outlet walls removed.

UUT Mounting Details:

This unit was mounted to an I-beam test frame using twelve (14) 3/4" SAE grade 8 bolts with flat washers and lock washers (spaced at 24" OC max along the short direction).

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

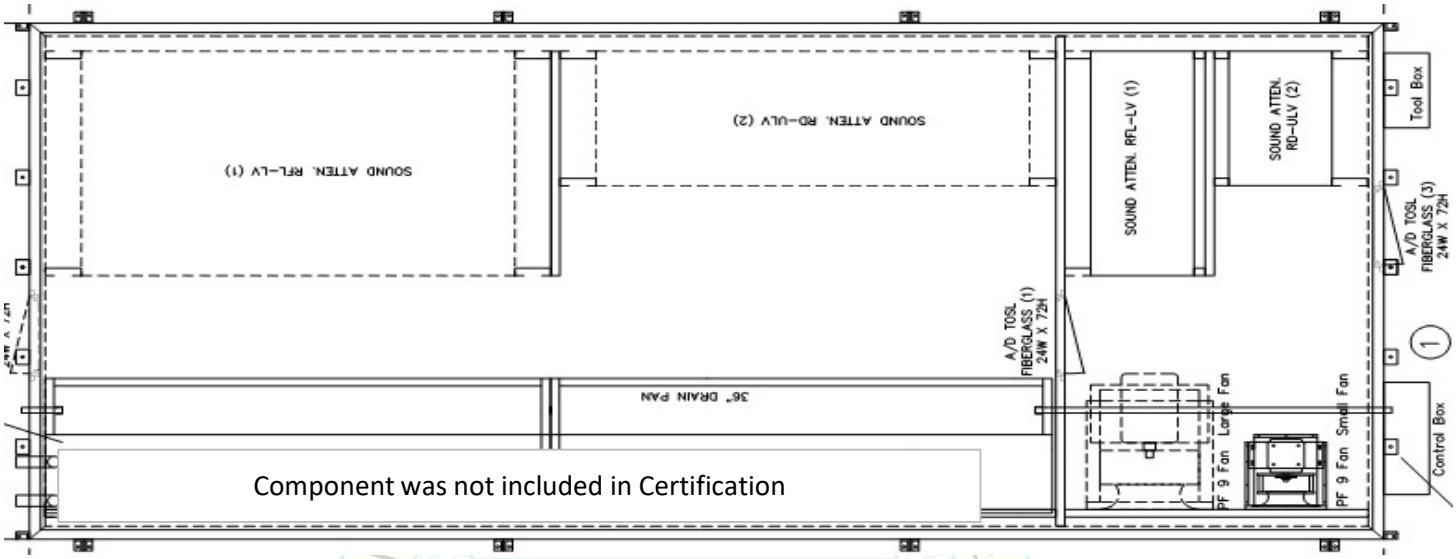
List of Included Subcomponents

Vibro Acoustics Sound Attenuator - RFL-LV (96"x120"x60"), Vibro Acoustics Sound Attenuator - RFL-LV (24"x36"x60"), Vibro Acoustics Sound Attenuator - RD-ULV (96"x120"x36"), Vibro Acoustics Sound Attenuator - RD-ULV (24"x36"x36"), Plenum Fan (22" diameter), Plenum fan (12" diameter), Baldor Fan Motor (15HP), Baldor Fan Motor (1.5HP), Plasma Air International 18" Ionization Plasma Bar (PB- 018), Plasma Air International 96" Ionization Plasma Bar (PB-096), Plasma Air International Control Panel (CP).

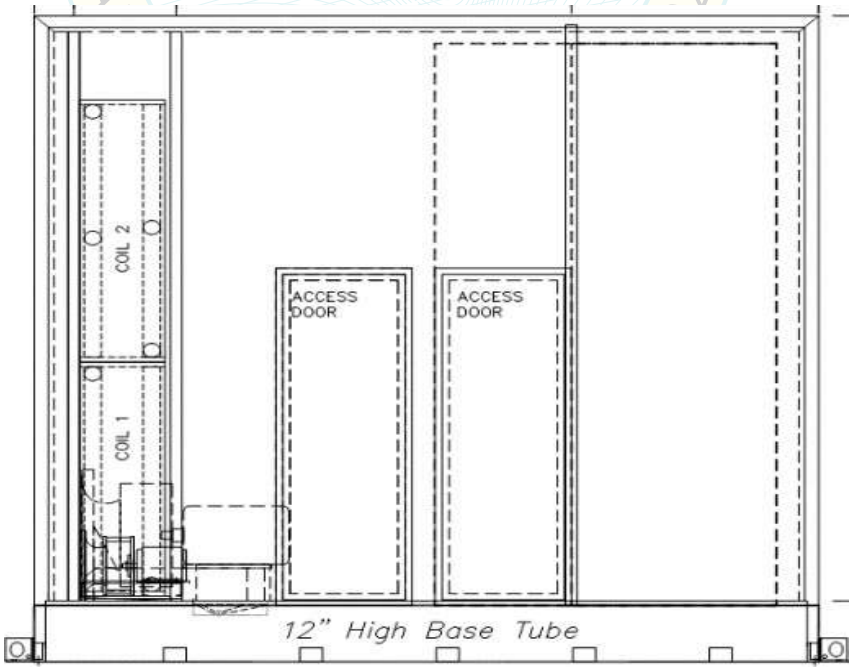
UUT 11

Test Report# 1800930-TR-001 R0

Unit Drawings



Plan View



Right Elevation View

BY: Timothy J. Piland
DATE: 08/28/2025

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 12

Test Report# 1800930-TR-002 R0

Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units
Model Number: ITF
Serial Number: N/A

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	206	131	13,118

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
10.5	7.1	13.2

Building Codes

CBC 2025

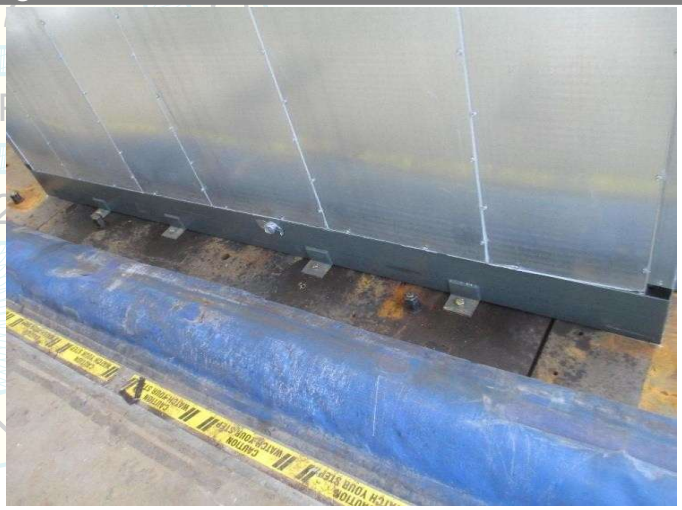
Test Criteria

ICC-ES AC156

Construction/Option Summary

Cabinet: 3" Wall Panel; 20ga. solid galv liner, 16ga. galv exterior casing. 14 ga. galv floor; 20ga. galv sub floor; 9" carbon steel base; Wall Configuration: no walls removed.

UUT Mounting Details:



This unit was mounted to the shake table using eight (8) 3/4" SAE grade 8 bolts with flat washers. (spaced at 34" OC max along he short direction).

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

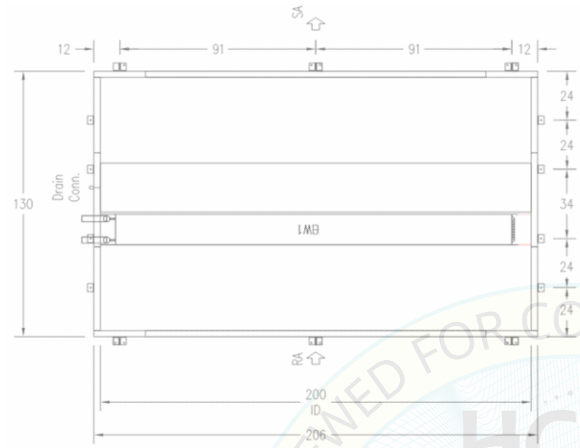
List of Included Subcomponents

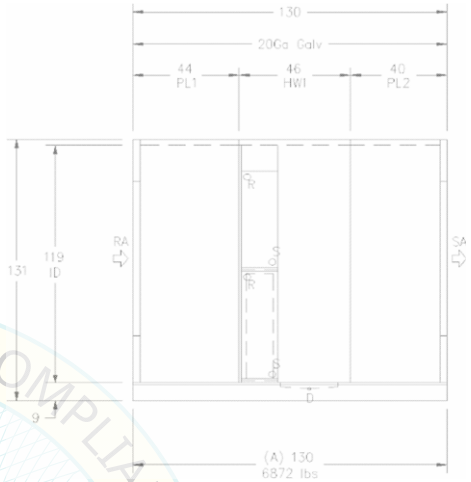
Temtrol Chilled Water Coil-Copper Fins (15"x187"x50"), Temtrol Chilled Water Coil-Aluminum Fins (15"x187"x56")

UUT 12

Test Report# 1800930-TR-002 R0

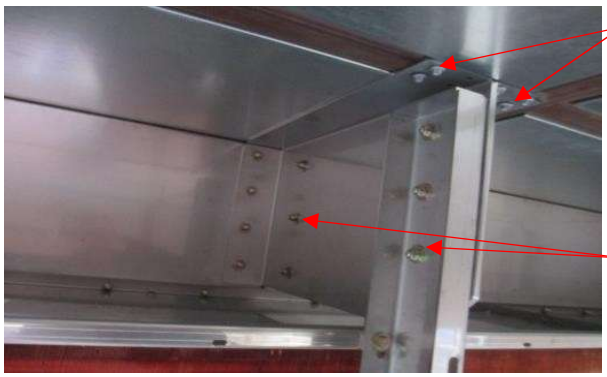
Unit Drawings

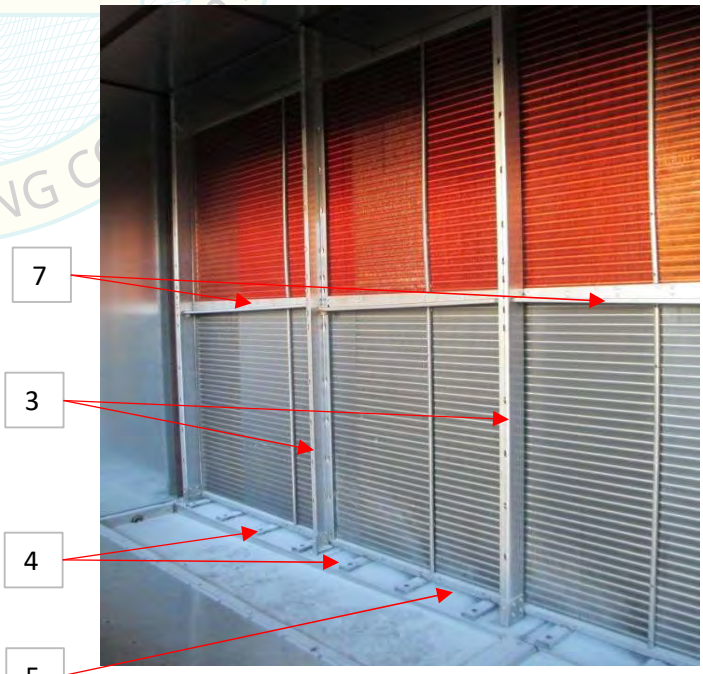




REVIEWED FOR CODE COMPLIANCE
HCAi
OSP-0567
BY: Timothy J. Piland
DATE: 08/28/2025
PACIFIC NW BUILDING CODES

Seismic Upgrades Implemented (required for large coils as defined in table 7):
(1) Double top brackets at seams, (2) fasteners changed to 5/16" grade8 bolts, (3) added vertical supports with bottom brackets welded to deck, 14ga. deck, (4) 14ga. hat channels under coil welded to deck, (5) 10ga. c-channel added under coil and welded to hat channels, (6) 3/8" cross brace cables, (7) intermediate drain pans and 14ga. upstream connecting plates secured to top and bottom coils.





SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 13

Test Report# 1801166-TR-001 R0

Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/ Governair ITF Custom Air Conditioning Units
Model Number: ITF
Serial Number: N/A

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.)
288	144	144	18,092

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
15.4	29.3	21.7

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Cabinet: 3" Wall Panel; 20ga. solid galv liner, 16ga. galv exterior casing. 16 ga. galv floor; 20ga. galv sub floor; 6" carbon steel base; Wall Configuration: no walls removed.

REVIEWED FOR CODE COMPLIANCE HCAI OSP-0567 2025

UUT Mounting Details:

This unit was mounted to an I-beam test frame using twenty-four (24) 3/4" SAE grade 8 bolts with flat washers (spaced at 24" OC max along the long direction).

Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
Contents were included in testing per operating conditions.

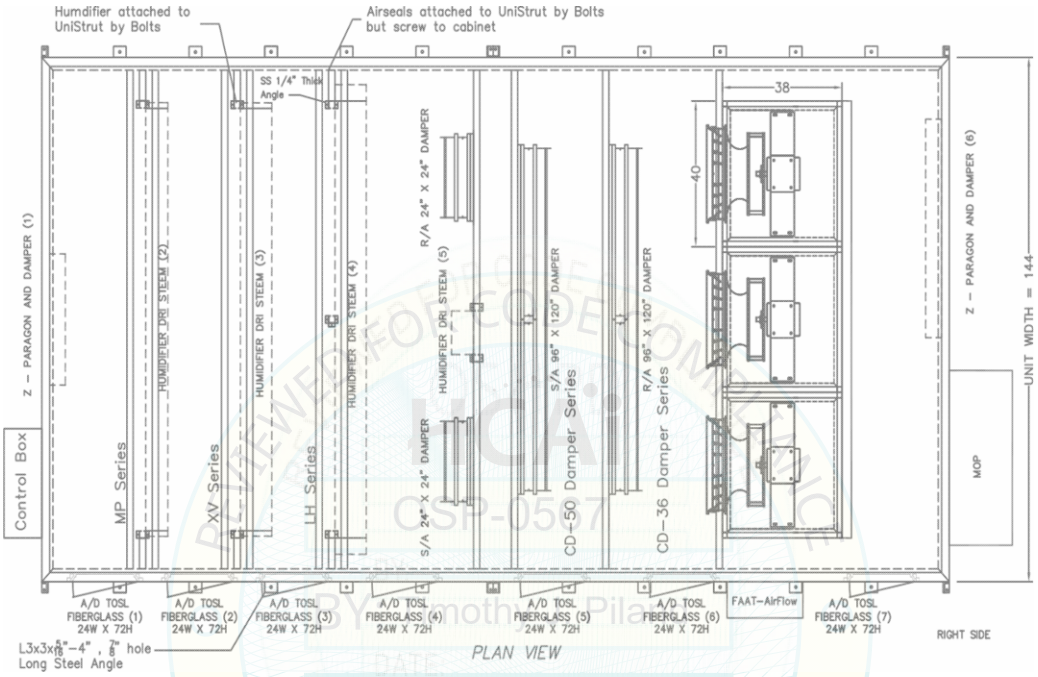
List of Included Subcomponents

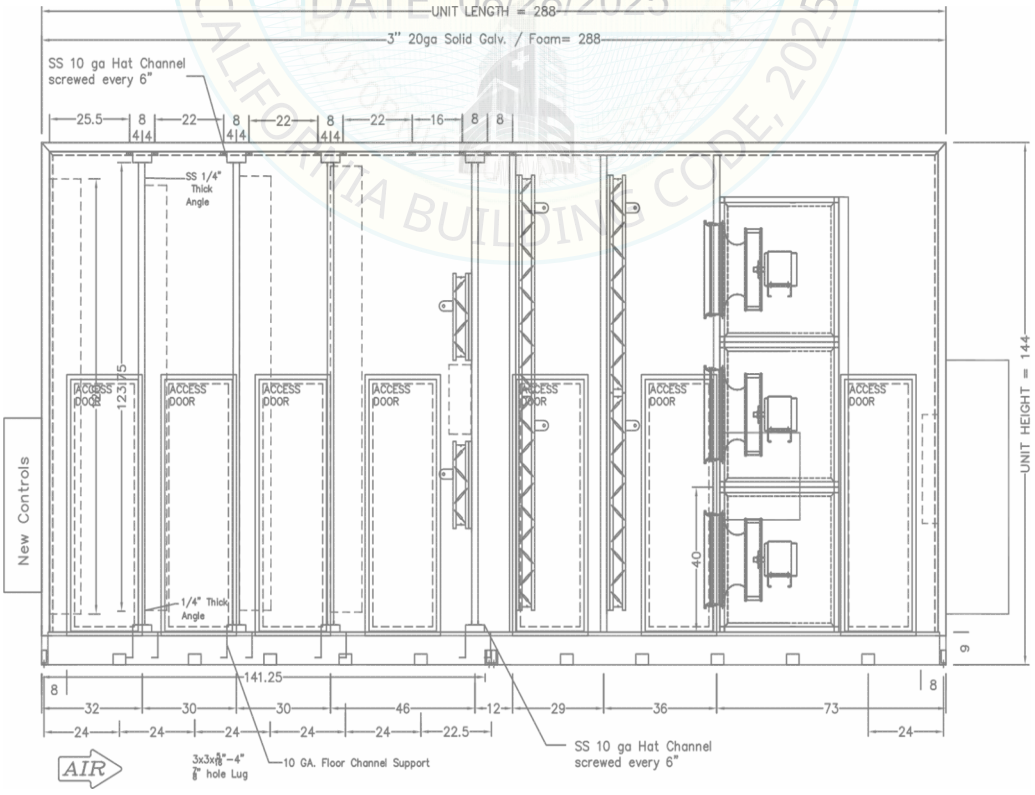
3x3 Fanwall Array(all 40"x40"x38" fan cubes with FBD8 back draft dampers), 12" P200 fan wheel(qty. 6), 22" P200 fan wheel(qty. 3), 3.4KW ECM motor(qty. 3), 6KW ECMI motor(qty. 3), 1HP Toshiba motor(qty. 2), 15HP Toshiba motor(qty. 1), Dristeem Humidifier-MP series(119"x117"), Dristeem Humidifier-XV series(119"x120"), Dristeem Humidifier-LH series(129"x123"), Dristeem Humidifier-MP series(15"x19"), Ruskin CD36 damper(22"x22"), Ruskin CD36 damper(96"x120"), Ruskin CD50 damper(24"x24"), Ruskin CD50 damper(96"x120"), Paragon airflow measurement system OAFE -150(36"Wx120"Hx5"L), Paragon airflow measurement system OAFE -150(60"Wx30"Hx5"L), Tamco 1000 damper (36"Wx120"Hx5"D), Tamco 1000 damper (60"Wx30"Hx5"D), Temtrol enclosure (30"Wx36"Hx12"D, NEMA 1), Saginaw enclosure (30"Wx48"Hx16"D, NEMA 4), Wiegmann MOP(12"Dx30"Wx30"H, NEMA 4), electrical components (see table 13 for complete list).

UUT 13

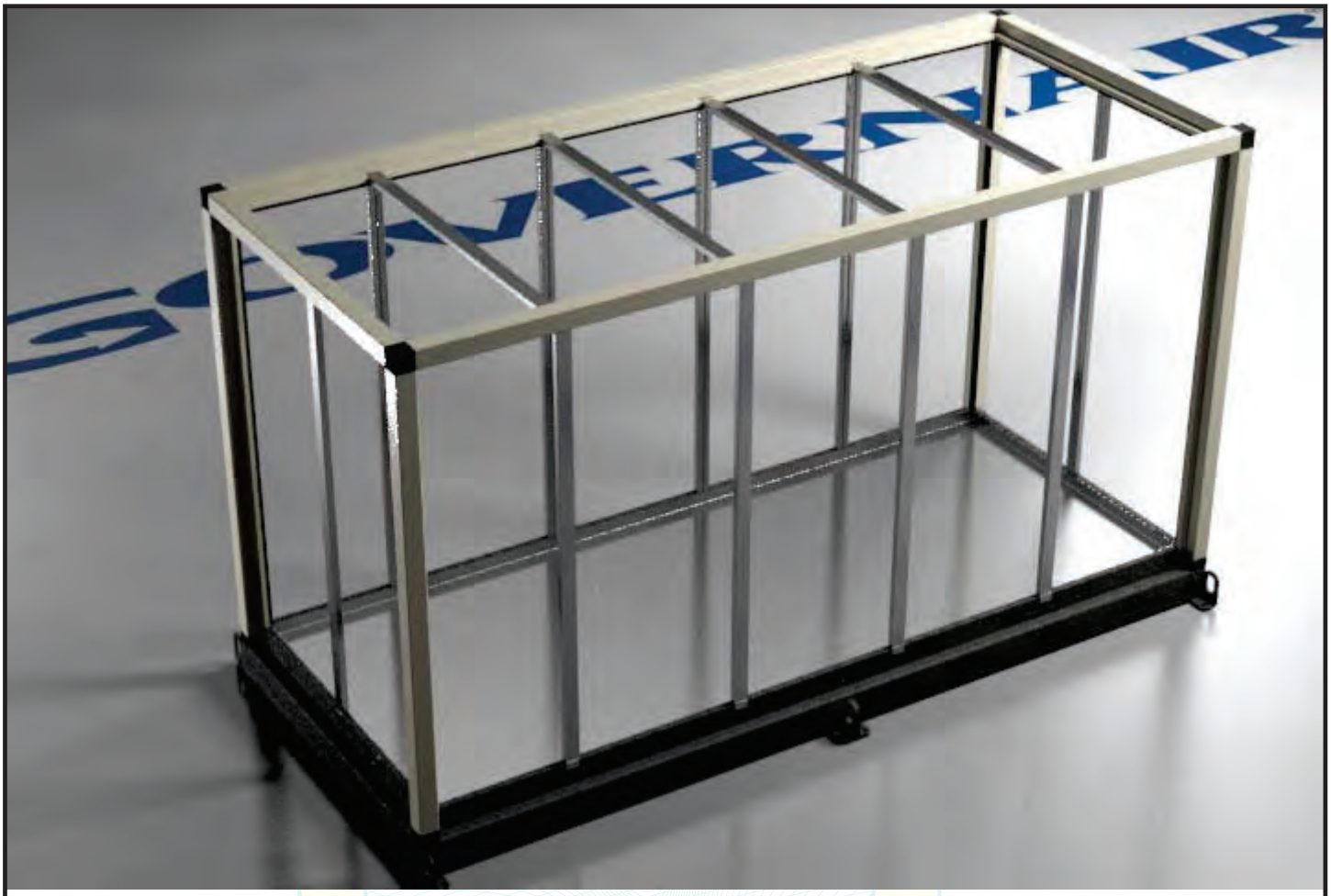
Test Report# 1801166-TR-001 R0

Unit Drawings





ICC-ES
OSP-0567
DATE: 08/28/2025
CALIFORNIA BUILDING CODE, 2025



DATE: 08/28/2025

A

Frame Construction

The Integrated Frame (ITF) series cabinet is designed to provide a rigid platform to attach panels, access doors, dampers and other unit components. Unit base rails feature fully welded structural tubular steel, phenolic coated for long term corrosion.

Double bottom floor construction is standard on every Governair unit. Material options include galvanized steel or aluminum tread plate, with or without upturned perimeter lips. Structural c-channels are welded to the perimeter base rail and sandwiched between the floor and subfloor. Spray in place foam completely seals and insulates the minimum 4 inch deep floor cavity. Thermal brake design coupled with foam insulation guarantee an airtight, watertight seal. Heavy gauge floor material, spray in place foam, and a completely welded base rail system eliminates oil canning and provides a stable and secure platform.

GOVERNAIR®

ITF DETAILS - GALV W/UPTURNED LIP FLOOR

Unit SN:	Unit Tag:	Job No.:
Job Name:		Engineer:

A

Door and Hinge

Door is constructed of 16ga ASTM A653 CS Type B galvanized steel continuously hot dip coated with durable protective G-90 zinc coating (optional, painted as unit) with internal liner (type is indicated on unit drawings). Doors insulated with dual density 1.56 pcf fiberglass insulation (.24 BTU•in/hr•sq.ft.•°F).

Hinge is constructed of stainless steel with 3-way adjustability. Hinge can be adjusted up and down, left and right and in and out for proper seating of the door in the door frame.

B

Gaskets and Frame

Door frames are made from 6063 aluminum extrusion with thermal break construction to prevent sweating on outside of frame.

Dual gaskets, flat type poron® gasket on door and neoprene bulb type on frame provide a double seal to prevent air leakage and water infiltration.

C

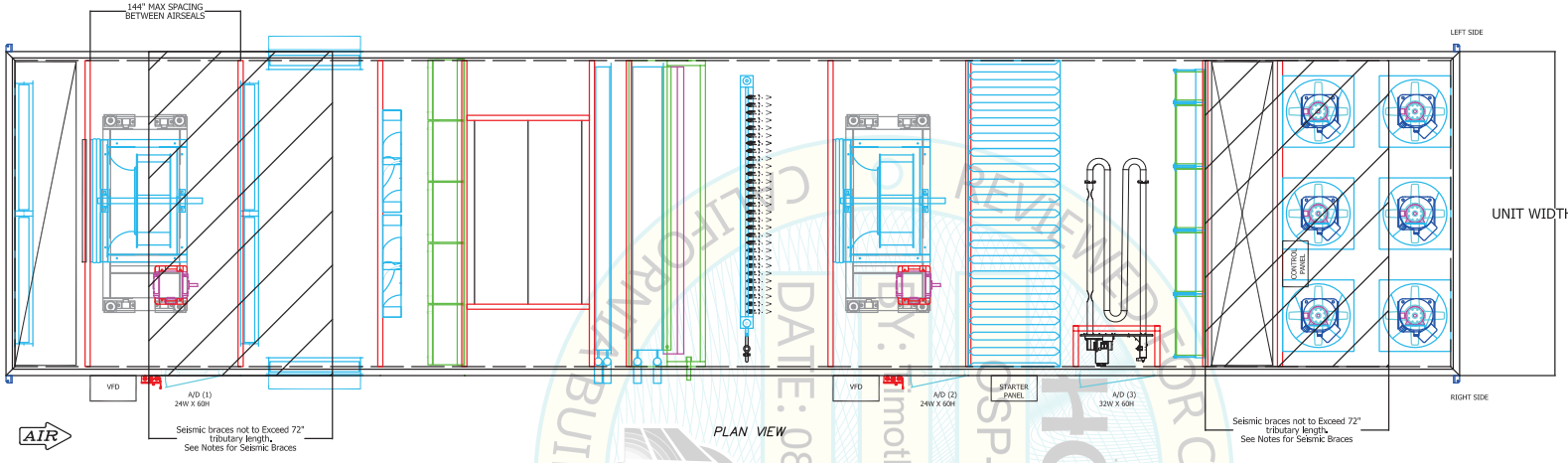
Optional Window

Optional, if specified on submittal drawing, 10” x 10” dual thermal pane, UV rated safety glass view port as shown on unit submittal drawing.

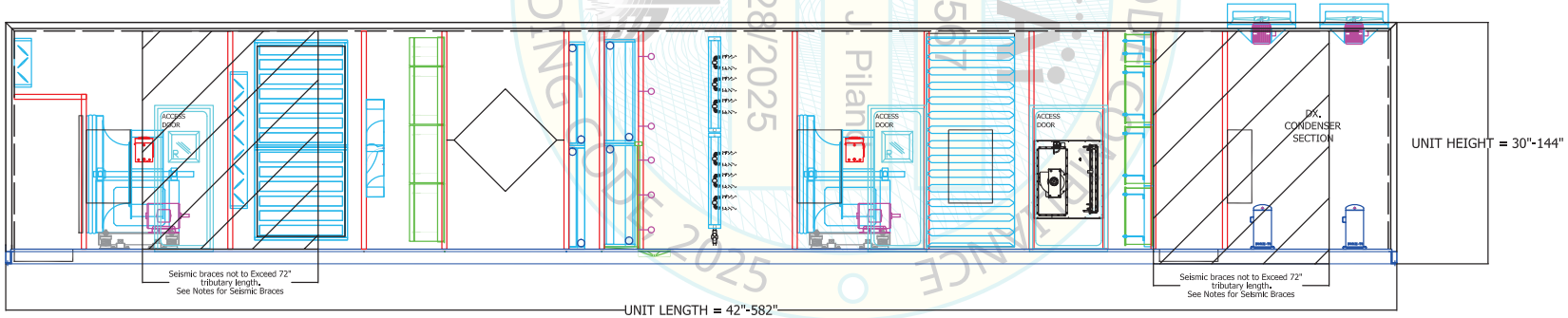
GOVERNAIR®

ITF DETAILS, INSWING DOOR

Unit SN:	Unit Tag:	Job No.:
Job Name:		Engineer:



PLAN VIEW



RIGHT ELEVATION

NOTES:
(1) ALL DIMENSIONS IN INCHES.
(2) ALL UNITS SHIP FULLY ASSEMBLED UNLESS THEY EXCEED MAXIMUM SHIPPING CAPACITIES.
(3) APPROVED COMPONENTS LISTED ABOVE ARE SHOWN AS REFERENCE AND CAN BE RECONFIGURED AS REQUIRED.
(4) WALL INSULATION: 2", 3".
(5) CASING CONSTRUCTION - 16 GAUGE GALVANIZED STEEL or 16 GAUGE STAINLESS STEEL OR 14 GAUGE ALUMINUM PANELS FASTENED TO A UNITIZED INTERIOR STEEL FRAMEWORK FROM THE OUTSIDE WITH MECHANICAL FASTENERS.
(6) UNIT BASE TUBE: 2"X4" THROUGH 2"X12", per Table 2 of OSP.
(7) WALLS, HUMIDIFIER, FILTERS, COILS AND FANWALL ARE EXAMPLES OF SEISMIC BRACES WITH AIRSEALS.
(8) MAXIMUM SPACING BETWEEN SEISMIC BRACING OR INTERNAL AIRSEAL IS 144".
(9) MAXIMUM TRIBUTARY LENGTH FOR A SEISMIC BRACE IS 72".
(10) UNIT MUST HAVE AN ASPECT RATIO (H/W) LESS THAN OR EQUAL TO 1.
(11) WALLS CONSIST OF SUPPLEMENTAL VERTICAL STUDS AND CROSSMEMBERS WHERE DOOR OR PANEL SPLITS OCCUR. SEE ATTACHED SHEETS FOR DOOR DETAILS.
(12) MAXIMUM EXTERNAL PANEL SIZE IS 24" WIDE, INTERNAL AIRSEAL PANEL SIZE 6" TO 24" WIDE, FLOOR SUPPORT CHANNELS ARE AT A MAXIMUM OF 16" ON CENTER. SEE AIRSEAL SHEET FOR DETAILS.

NORTEK AIR SOLUTIONS
Governalr | Temtrol
106 N. INDUSTRIAL BLVD OKARCHE, OK 73762
PH: (405) 263-7286 FAX: (405) 263-4924

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BY	DATE
DRAWN: TL	01/07/2019
CHECKED: LM	01/14/2019
APPROVED:	

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING — SCALE:

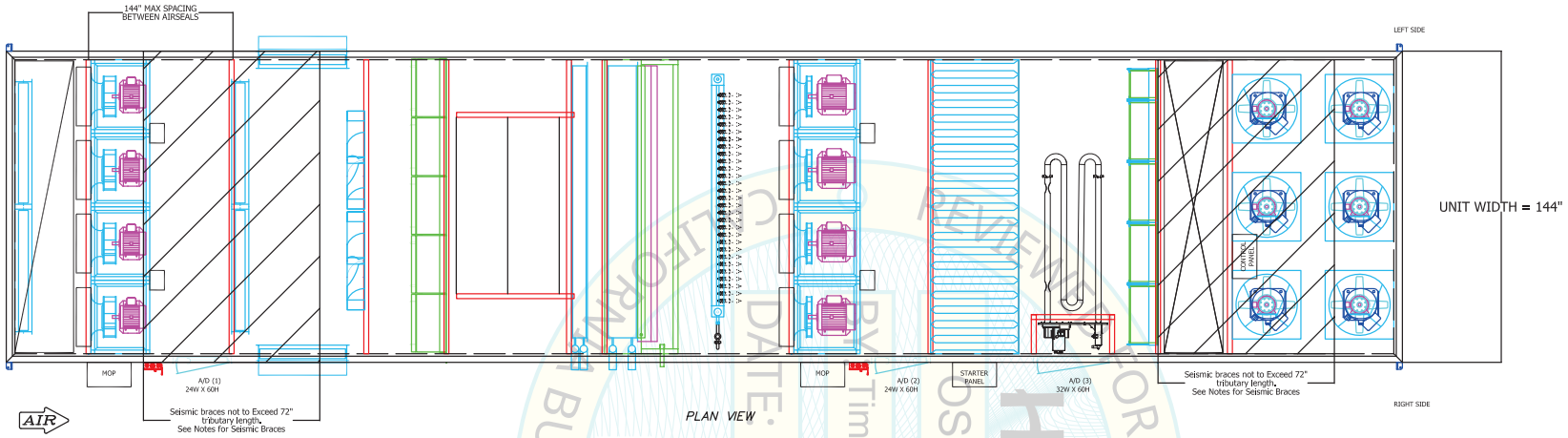
G3247-007, ITF

OSP SINGLE WIDE

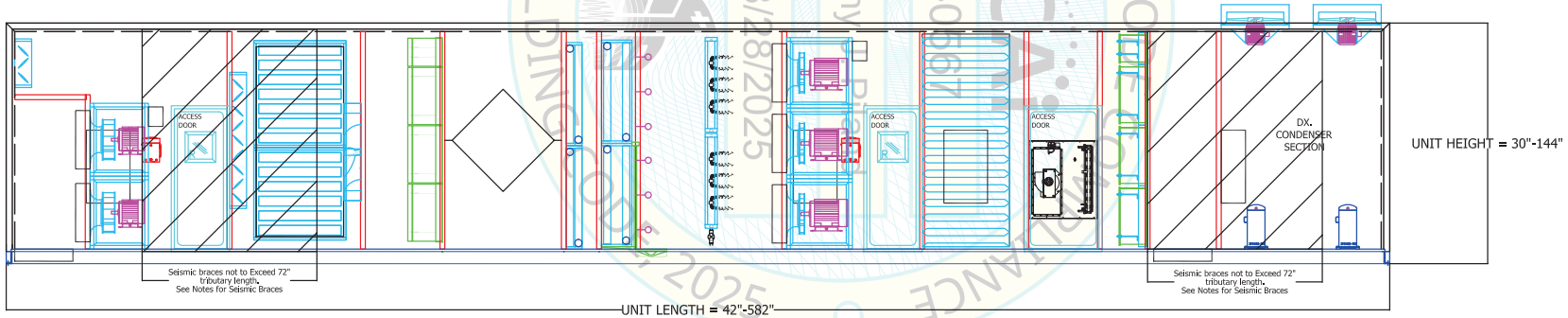
SHEET SIZE:	NO.	SHEET:	REV:
B	MD-2019.01.14	1 OF 1	

File Saved: 11:09am 01-16-2014

REVIEWED FOR CODE COMPLIANCE
HCAI
DATE: 08/28/2025
BY: Timothy J. Pilanto
OSP-0567
CALIFORNIA BUILDING CODE 2025



PLAN VIEW



RIGHT ELEVATION

REVIEWED FOR CODE COMPLIANCE BY Timothy D Pickel DATE: 08/28/2025 OSP-0567 HCAI CALIFORNIA BUILDING CODES 2025

NOTES:
(1) ALL DIMENSIONS IN INCHES.
(2) ALL UNITS SHIP FULLY ASSEMBLED UNLESS THEY EXCEED MAXIMUM SHIPPING CAPACITIES.
(3) APPROVED COMPONENTS LISTED ABOVE ARE SHOWN AS REFERENCE AND CAN BE RECONFIGURED AS REQUIRED.
(4) WALL INSULATION: 2", 3".
(5) CASING CONSTRUCTION - 16 GAUGE GALVANIZED STEEL or 16 GAUGE STAINLESS STEEL OR 14 GAUGE ALUMINUM PANELS FASTENED TO A UNITIZED INTERIOR STEEL FRAMEWORK FROM THE OUTSIDE WITH MECHANICAL FASTENERS.
(6) UNIT BASE TUBE: 2"X4" THROUGH 2"X12", per Table 2 of OSP.
(7) WALLS, HUMIDIFIER, FILTERS, COILS AND FANWALL ARE EXAMPLES OF SEISMIC BRACES WITH AIRSEALS.
(8) MAXIMUM SPACING BETWEEN SEISMIC BRACING OR INTERNAL AIRSEAL IS 144".
(9) MAXIMUM TRIBUTARY LENGTH FOR A SEISMIC BRACE IS 72".
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CHECKED: LM	01/14/2019	OSP SINGLE WIDE - FWT
APPROVED:		
THIRD ANGLE PROJECTION		
DO NOT SCALE DRAWING	SCALE:	SHEET SIZE: B · NO. MD-2019.01.14 · SHEET: 1 OF 1 · REV:

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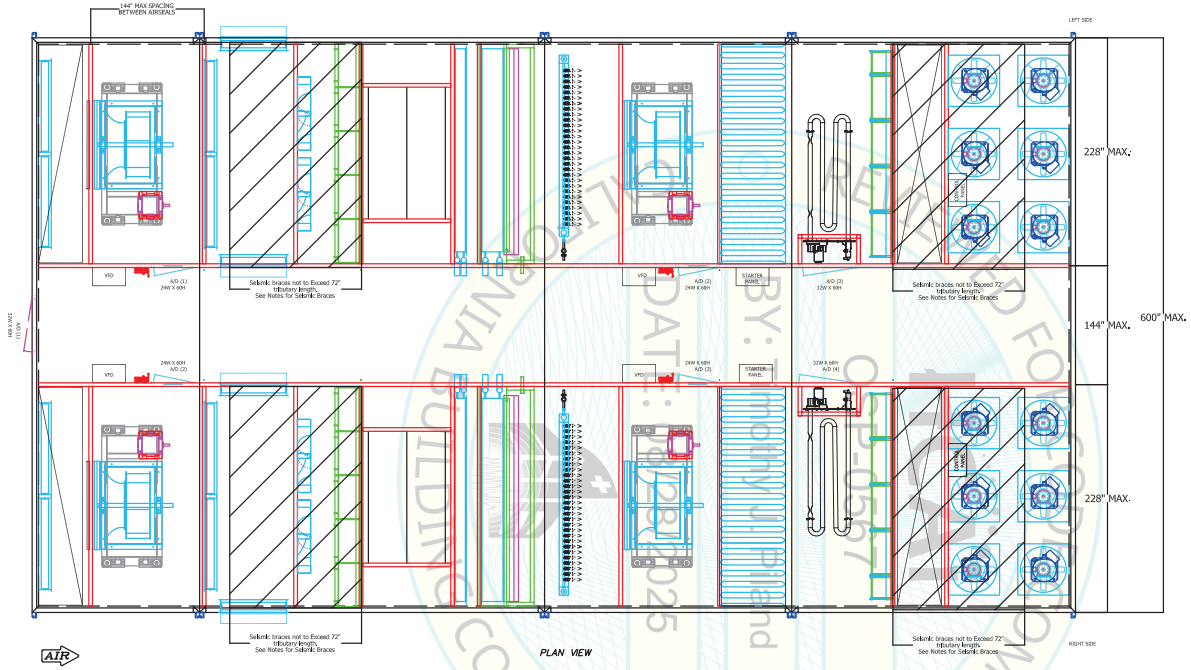
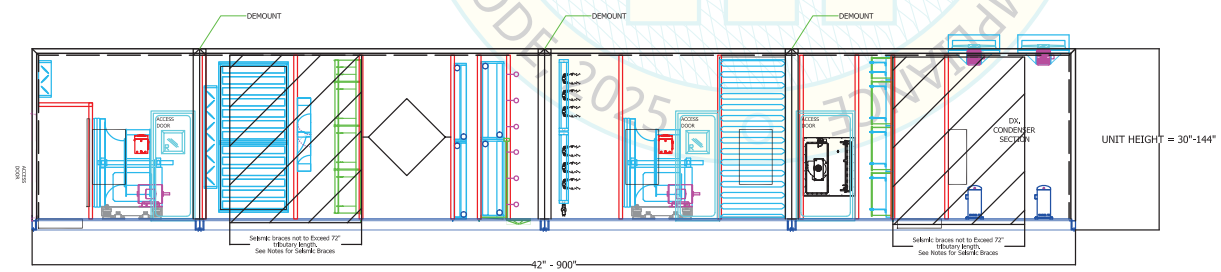


PLAN VIEW



RIGHT ELEVATION

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THIRD ANGLE PROJECTION

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G3247-016, ITF

OSP DOUBLE WIDE - CENTER VESIBULE

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B	MD-2019.01.14	1 OF 1	

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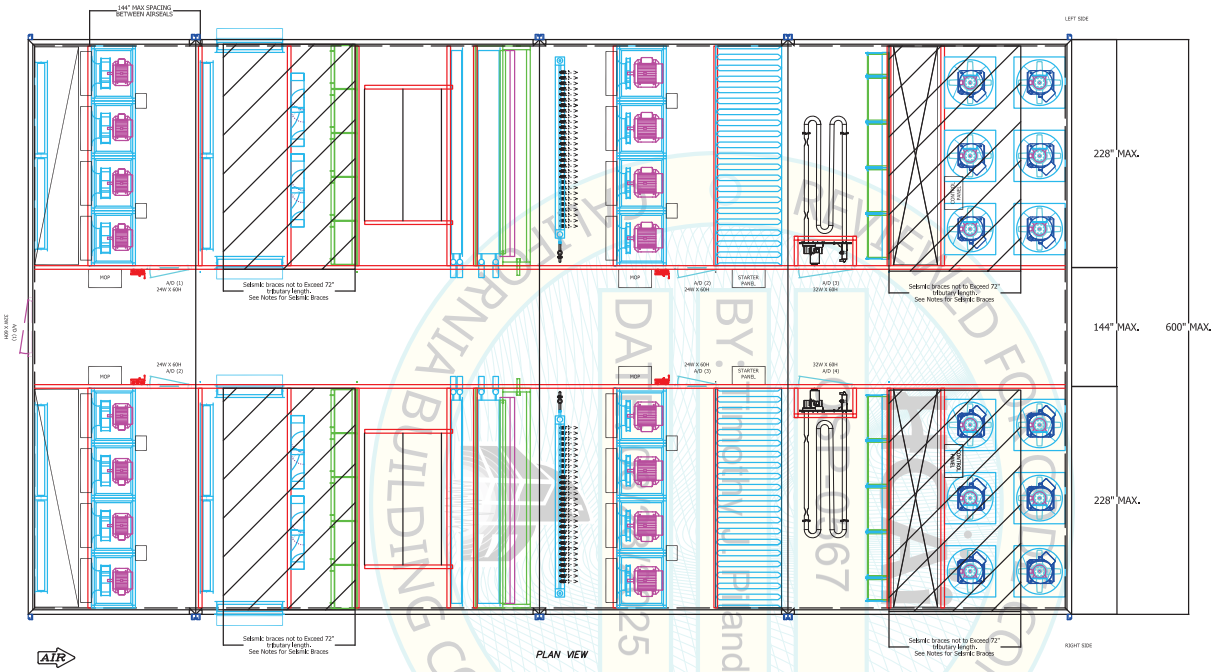

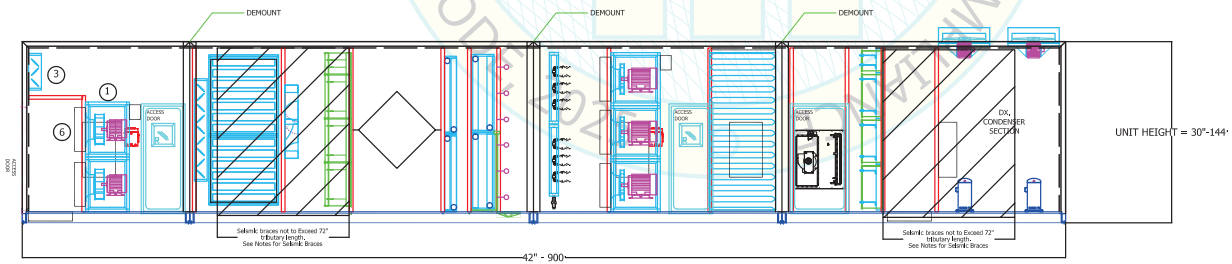

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CHECKED: LM	01/14/2019	OSP DOUBLE WIDE WITH FWT CENTER VESIBULE
APPROVED:		
THIRD ANGLE PROJECTION		
DO NOT SCALE DRAWING	SCALE:	SHEET SIZE: B · NO. MD-2019.01.14 · SHEET: 1 OF 1 · REV:

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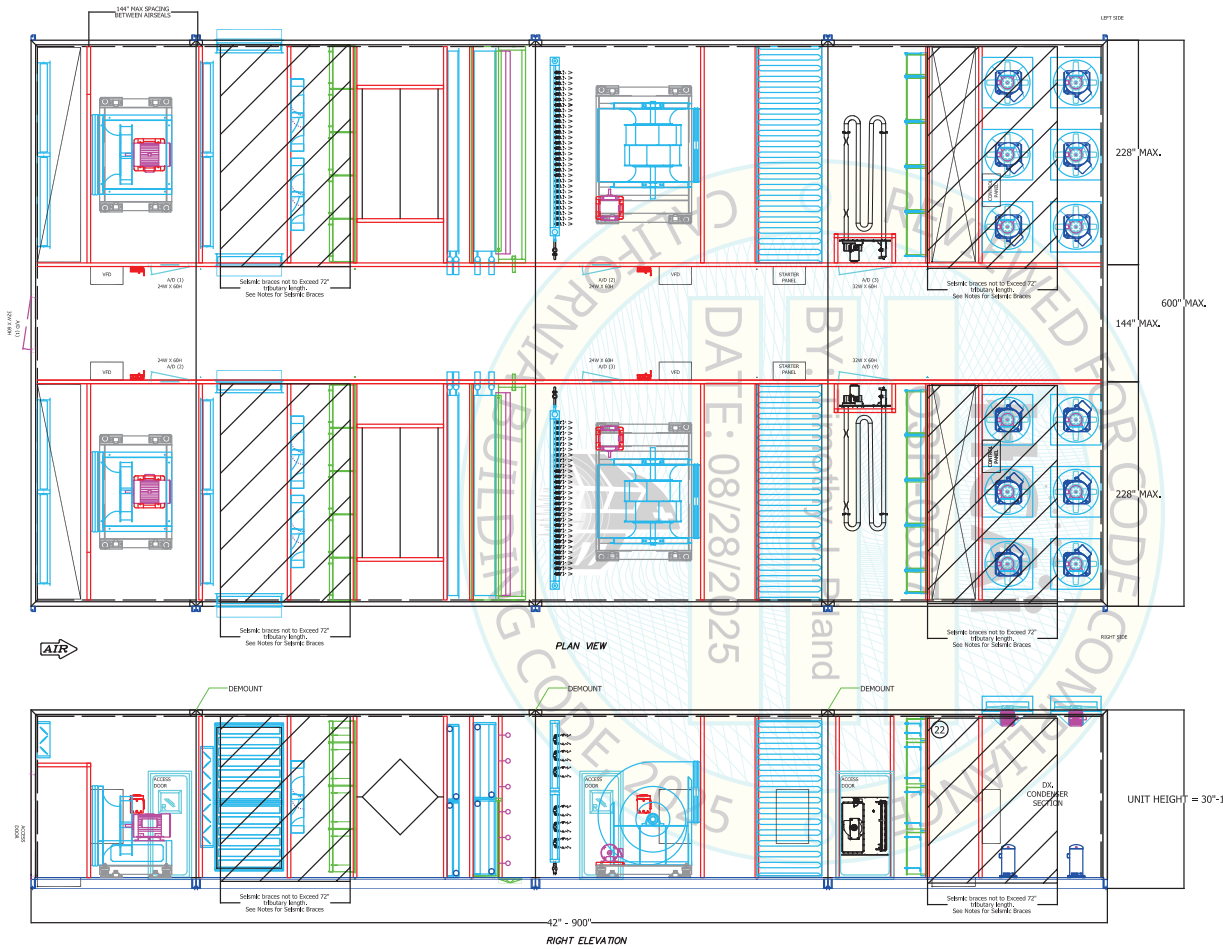

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DRAWING: TLM	01/207/2019	G3247-018, ITF
CHECKED: LM	01/14/2019	
APPROVED:		OSP DOUBLE WIDE - CENTER VESTIBULE
THIRD ANGLE PROJECTION		
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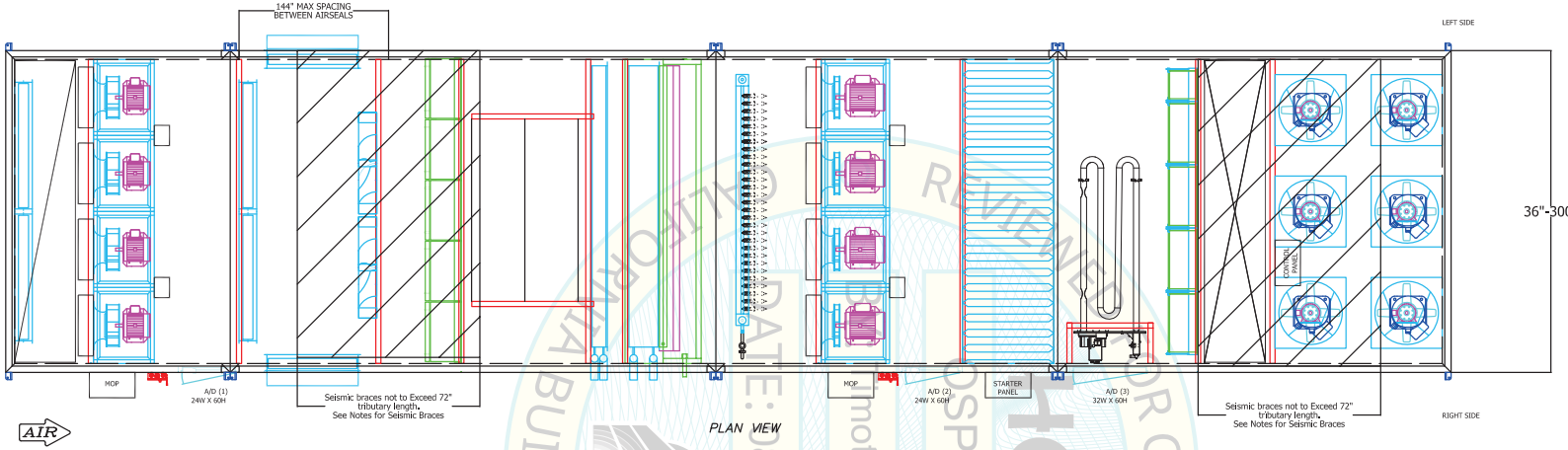
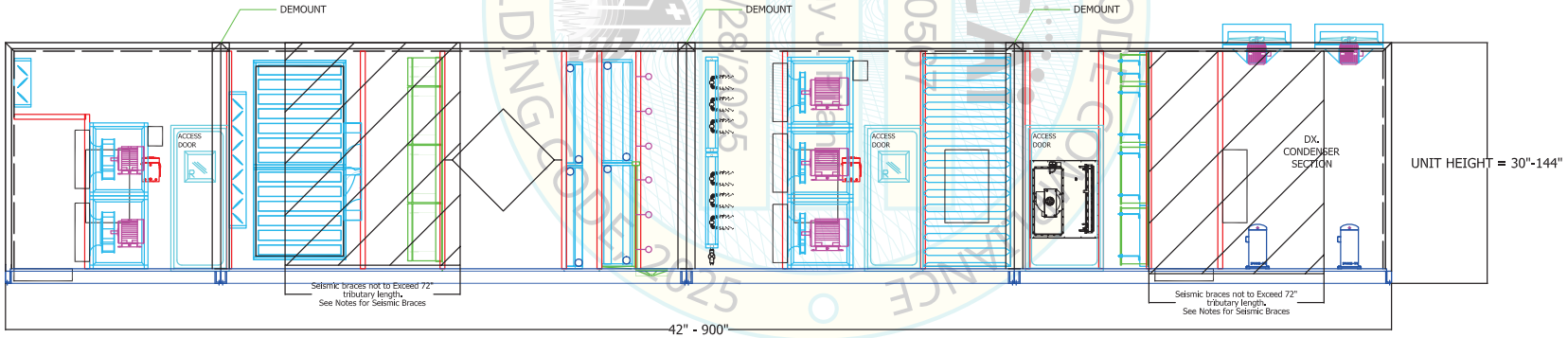
REVIEWED FOR CODE COMPLIANCE BY Richard Bland DATE: 08/28/2025 STATE OF OKLAHOMA BUILDING CODE 2025



PLAN VIEW



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THIRD ANGLE PROJECTION		
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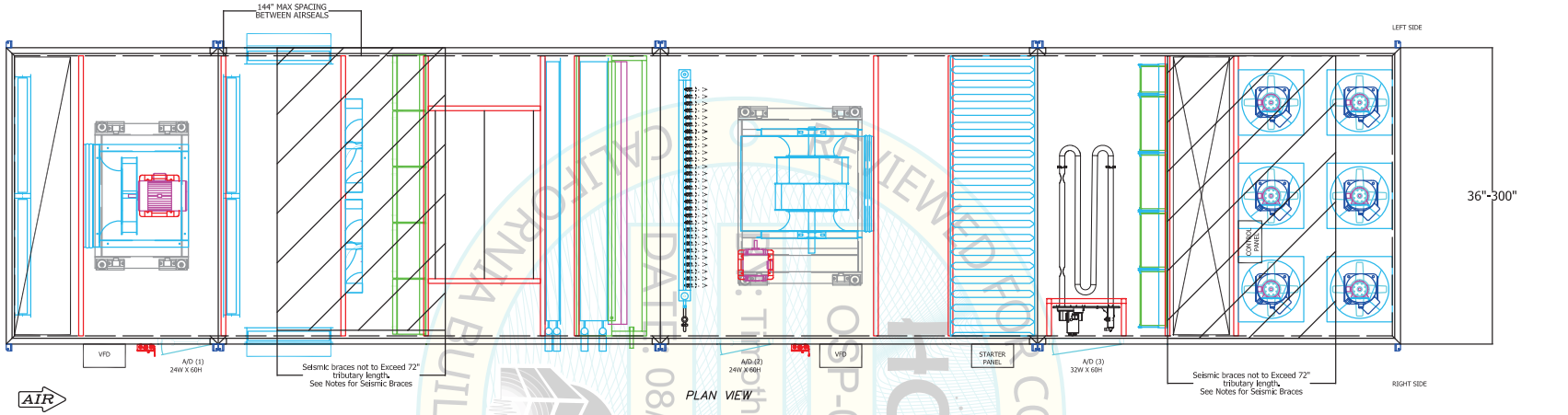
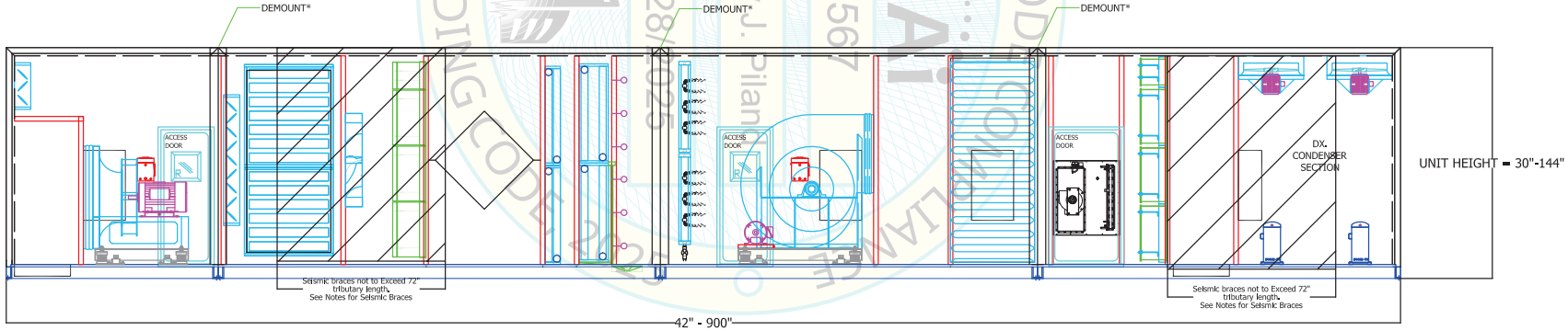


PLAN VIEW



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THIRD ANGLE PROJECTION

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G3247-021, ITF

OSP SINGLE WIDE, DEMOUNT

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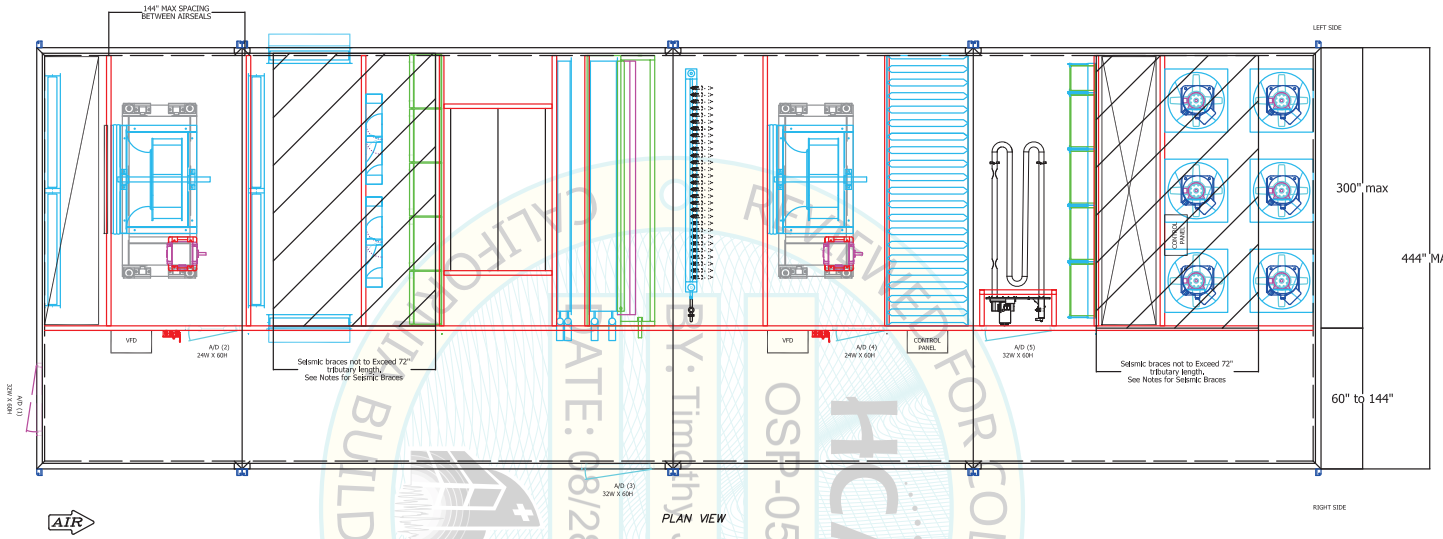

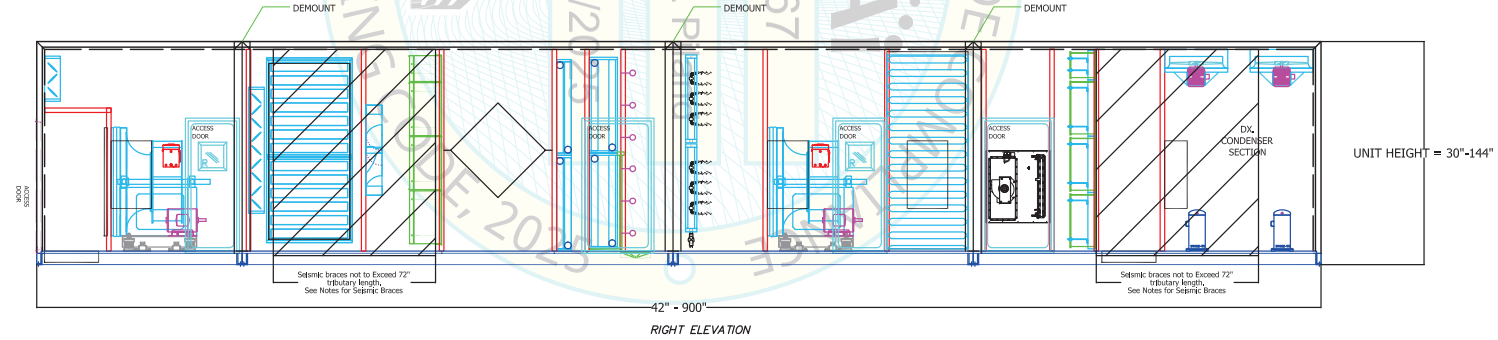

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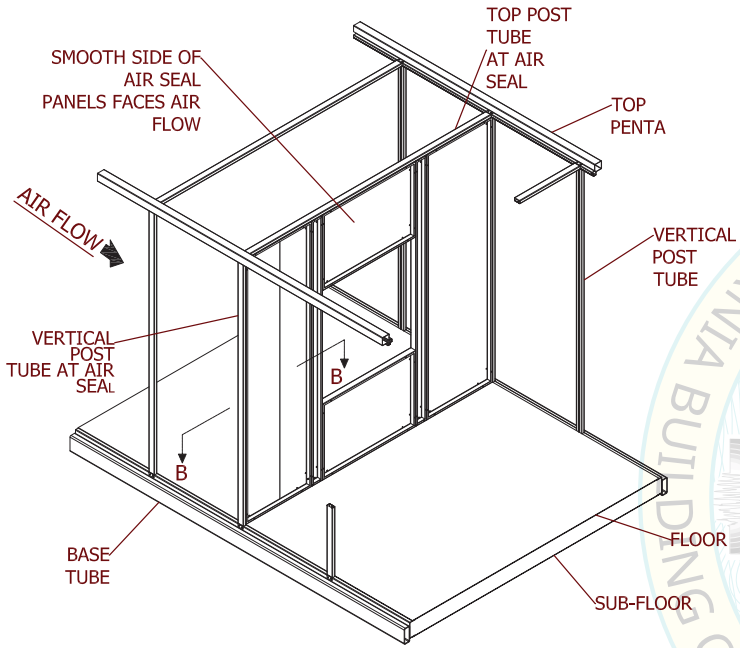
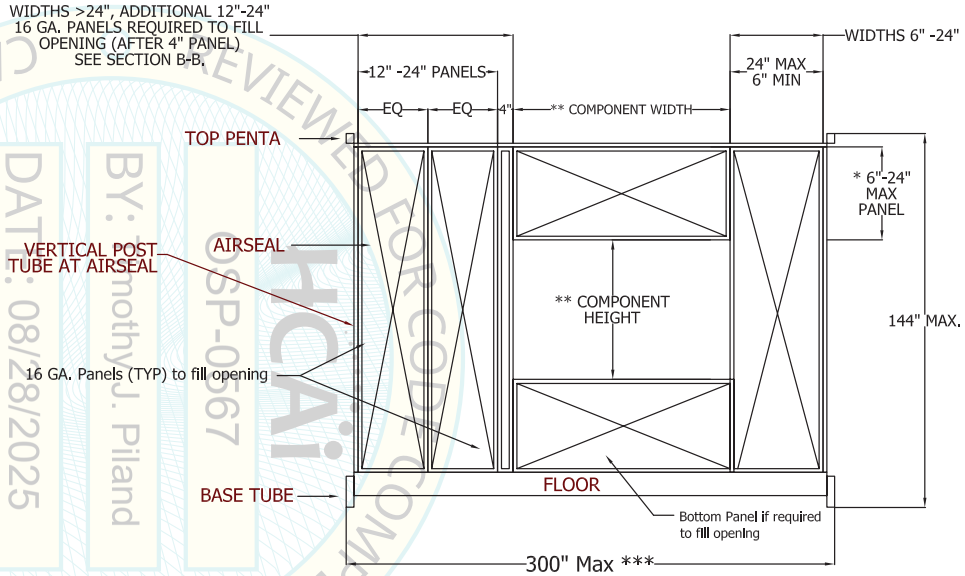
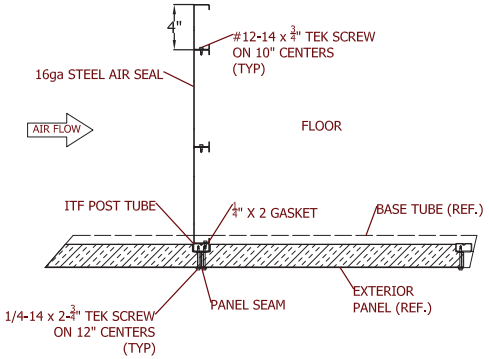
APPROVED:		OSP SINGLE WIDE -VESTIBULE -DEMOUNT
THIRD ANGLE PROJECTION		
DO NOT SCALE DRAWING	SCALE:	SHEET SIZE: B · NO. MD-2019.01.14 · SHEET: 1 OF 1 · REV:







ITF SECTION B-B

* MULTIPLE AIRSEALS ABOVE (BELOW) MAY BE USED, PANELS MUST EXTEND WIDTH OF OPENING

** SPACE MAY BE EMPTY IF AIRSEAL IS ONLY REQUIRED FOR RIGIDITY.

*** MIN 6" PANEL EACH SIDE AND TOP FOR WIDTH ≤ 144", MIN (3) 12" AND (2) 4" VERTICAL PANELS W/ 6" PANELS AT TOP FOR WIDTH > 144".

16 GA. Airseals Shown, 14 GA Available. Available in Galvanized Carbon Steel and Stainless Steel.

REVIEWED FOR CODE COMPLIANCE
CALIFORNIA BUILDING CODE, 2025
HCAi
BY: Timothy J. Piland
DATE: 08/28/2025
OSP-0567

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DRAWN: TL	3/29/2019
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THIRD ANGLE PROJECTION

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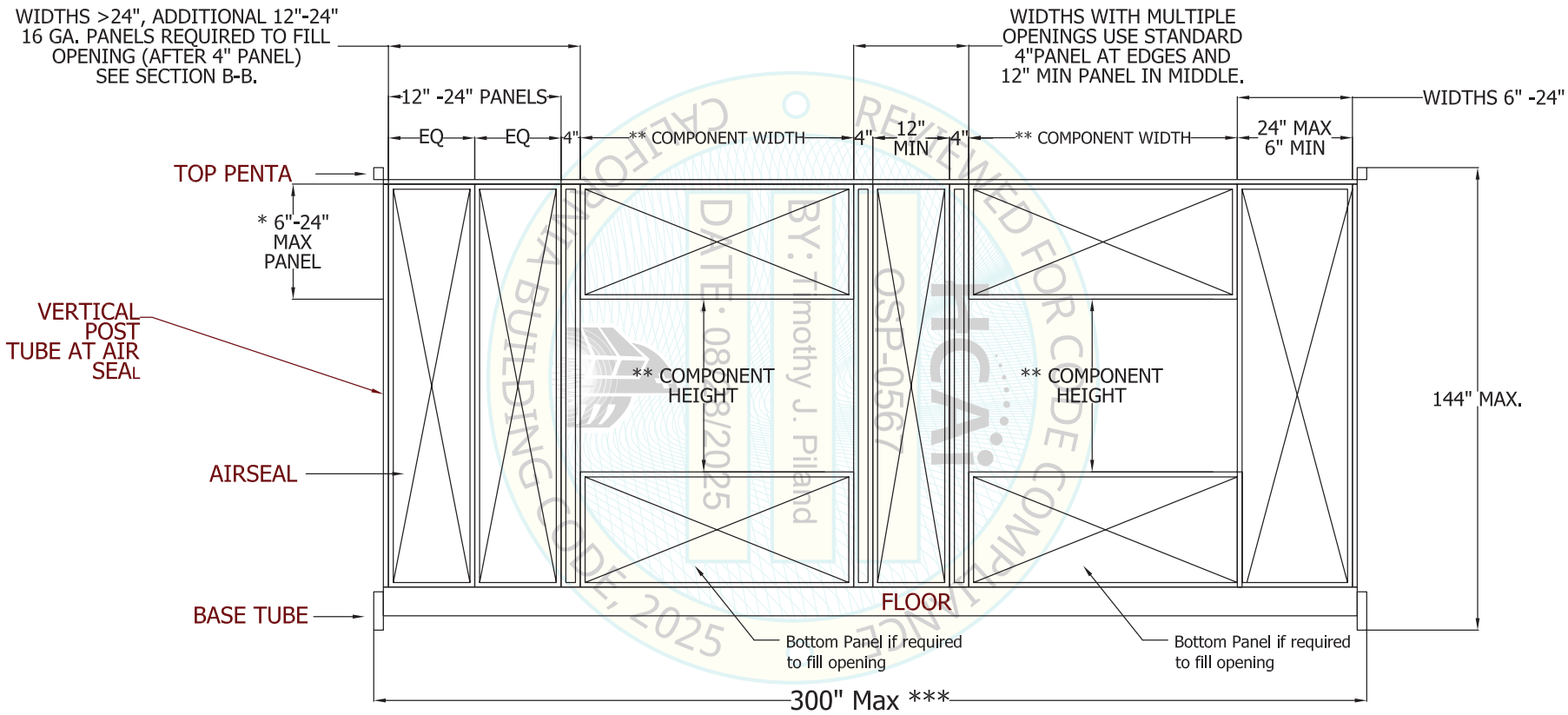
AIRSEAL BRACE, ITF

STANDARD PANELIZED AIRSEAL DESIGN

SHEET SIZE:	NO.	SHEET:	REV:
B	MD-2019.01.14	1 OF 1	2

File Saved: 2:09pm 04-12-2019



* MULTIPLE AIRSEALS ABOVE (BELOW) MAY BE USED, PANELS MUST EXTEND WIDTH OF OPENING

** SPACE MAY BE EMPTY IF AIRSEAL IS ONLY REQUIRED FOR RIGIDITY.

*** MIN 6" PANEL EACH SIDE AND TOP FOR WIDTH ≤ 144", MIN (3) 12" AND (2) 4" VERTICAL PANELS W/ 6" PANEL AT TOP FOR WIDTH > 144".

REVIEWED FOR CODE COMPLIANCE
CALIFORNIA BUILDING CODE, 2025
BY: Timothy J. Piland
DATE: 08/28/2025
OSP-0567
ICC

NORTEK AIR SOLUTIONS
Governair | Temtrol
106 N. INDUSTRIAL BLVD OKARCHE, OK 73762
PH: (405) 263-7286 FAX: (405) 263-4924

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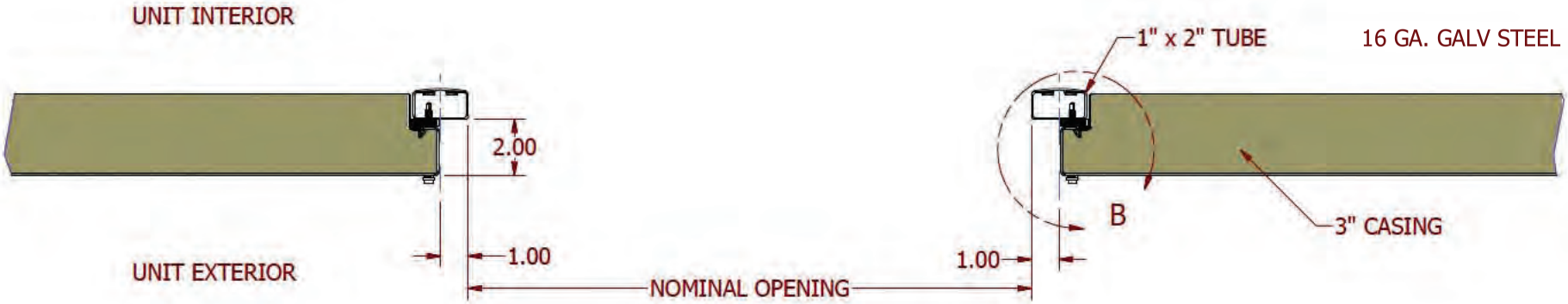
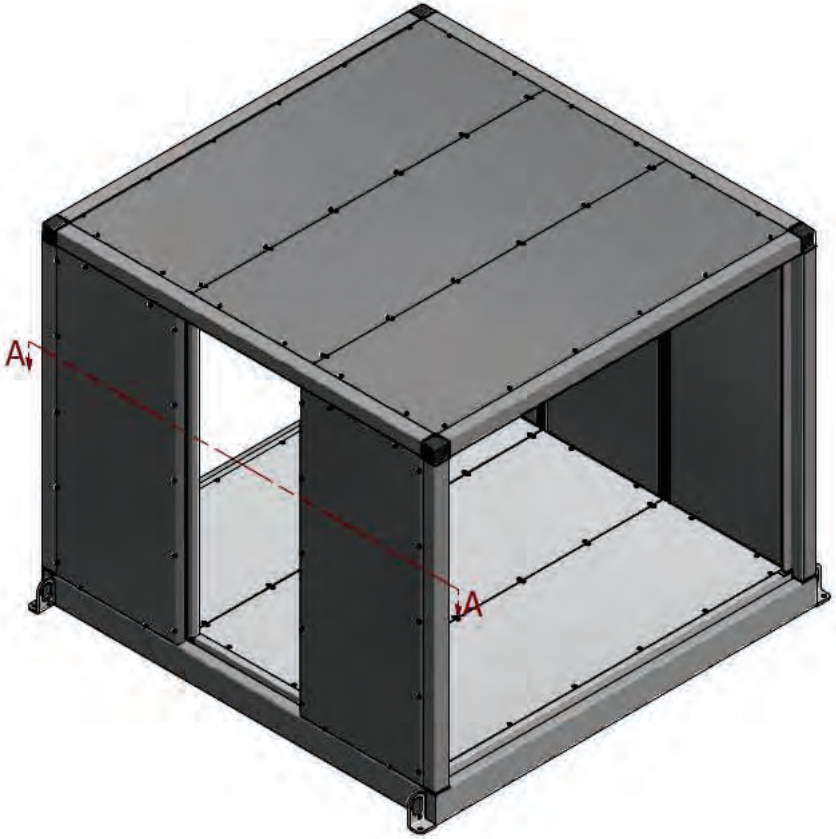
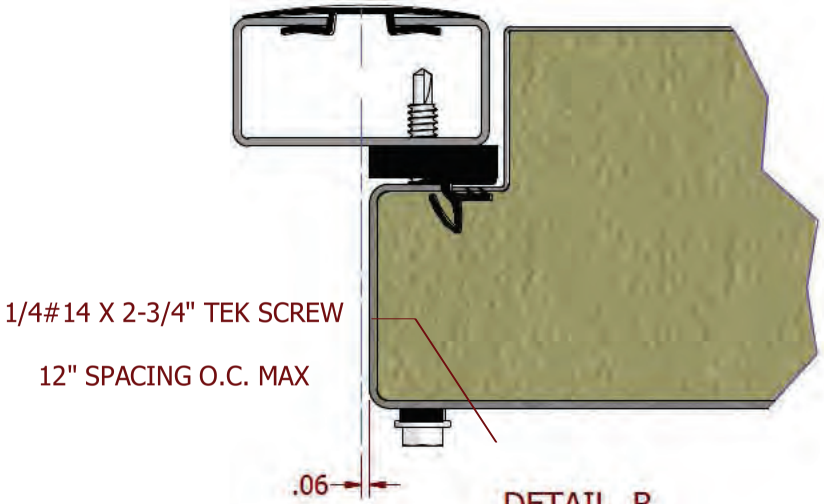
BY	DATE	
DRAWN: TL	3/29/2019	AIRSEAL BRACE WITH MULTIPLE OPENING, ITF
CHECKED: tl	4/16/2019	STANDARD PANELIZED AIRSEAL DESIGN
APPROVED:		
THIRD ANGLE PROJECTION		
DO NOT SCALE DRAWING	SCALE:	SHEET SIZE: B · NO. MD-2019.01.14 · SHEET: 1 OF 1 · REV: 2

File Saved: 2:09pm 04-12-2019



DETAIL A-A





DETAIL B

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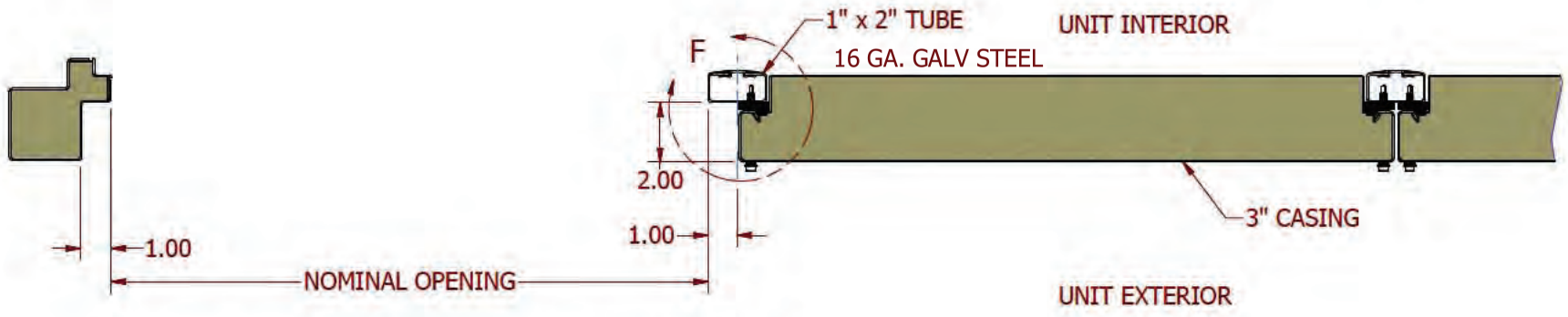
File Saved: 11:09am 01-16-2014

Title:

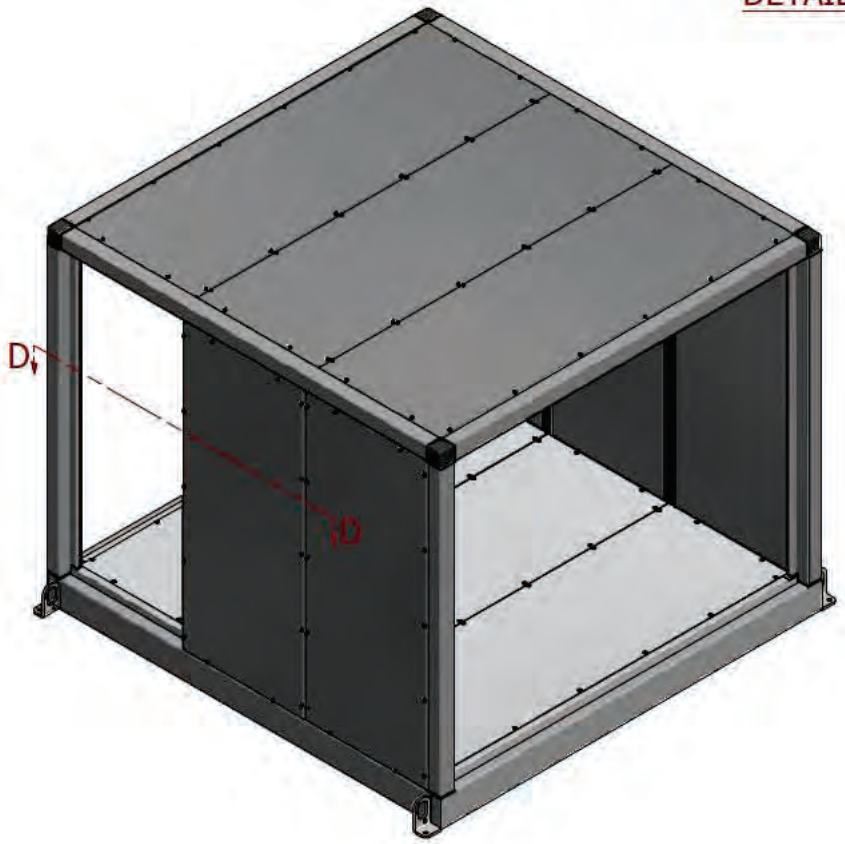
DETAIL, OPENING, CASING, ITF

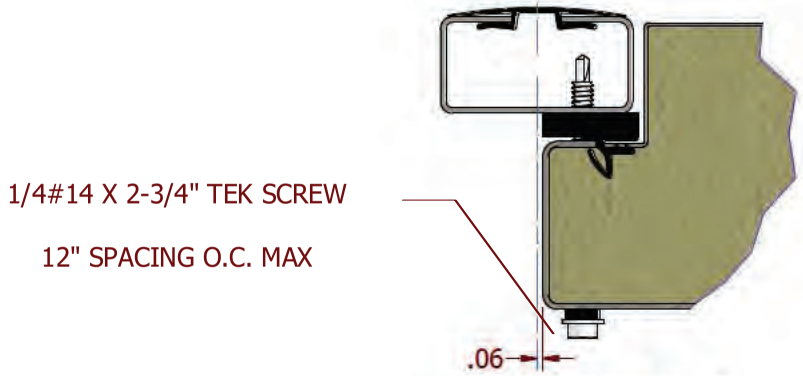
DRAWING NO.

221.00165



DETAIL D-D





DETAIL F

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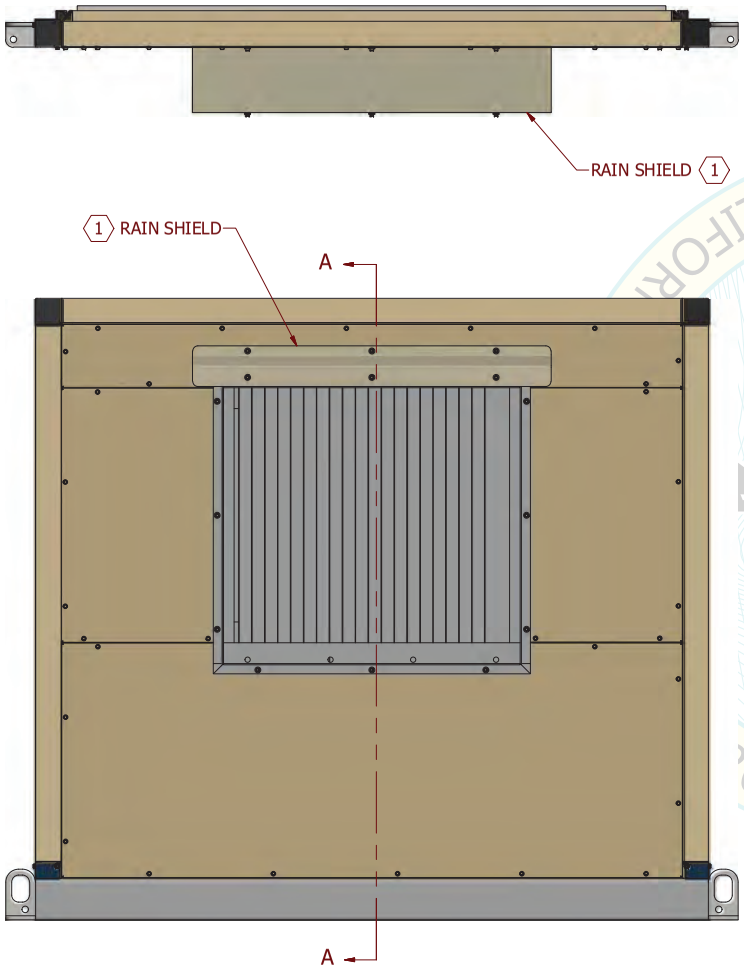
Title:

DETAIL, OPENING, CASING, ITF

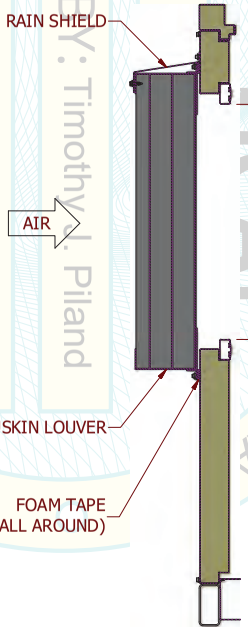
DRAWING NO. 221.00165

NOTE:

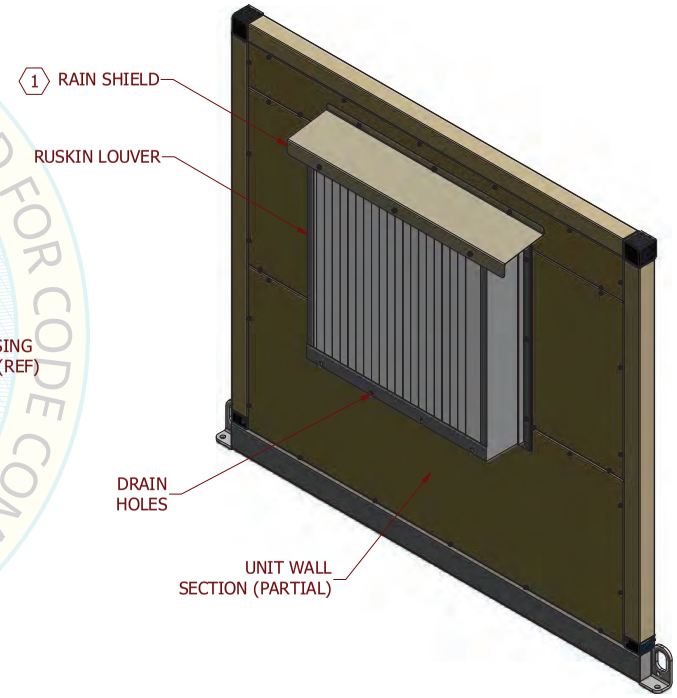
1. RAIN SHIELD (220.00410) MANUFACTURED AND INSTALLED BY TEMTROL.



UNIT WALL SECTION
(PARTIAL)



SECTION A-A



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CALIFORNIA
BY: Timothy J. Piland
DATE: 08/28/2025
2025

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OKARCHE, OK 73762
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TITLE:

DETAIL, RUSKIN LOUVER AND RAIN SHIELD

SHEET SIZE:	DRAWING NO.	SHEET:	REV:
B	45-000019981	1 OF 1	

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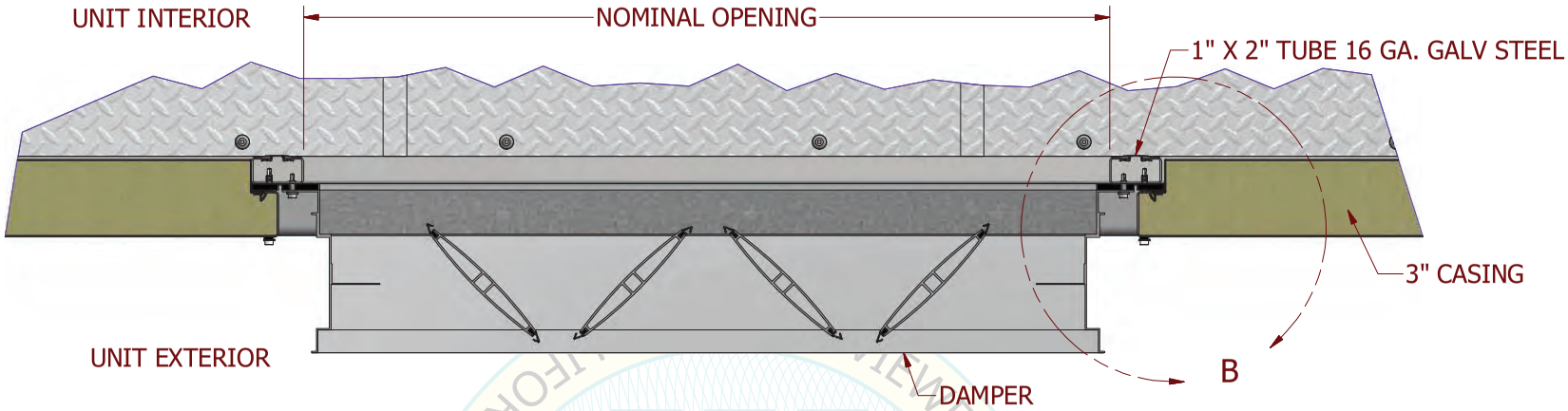

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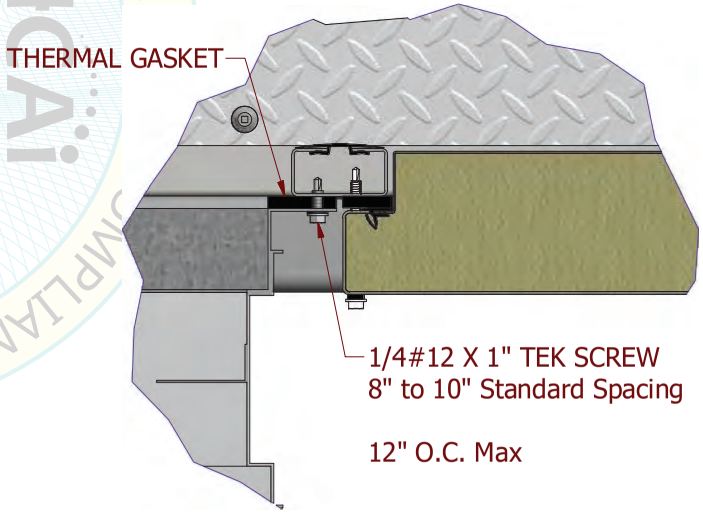

DETAIL B

HCAI
OSP-0567
DATE: 08/28/2025
BY: Timothy J. Piland
APPROVED FOR COMPLIANCE
CALIFORNIA BUI
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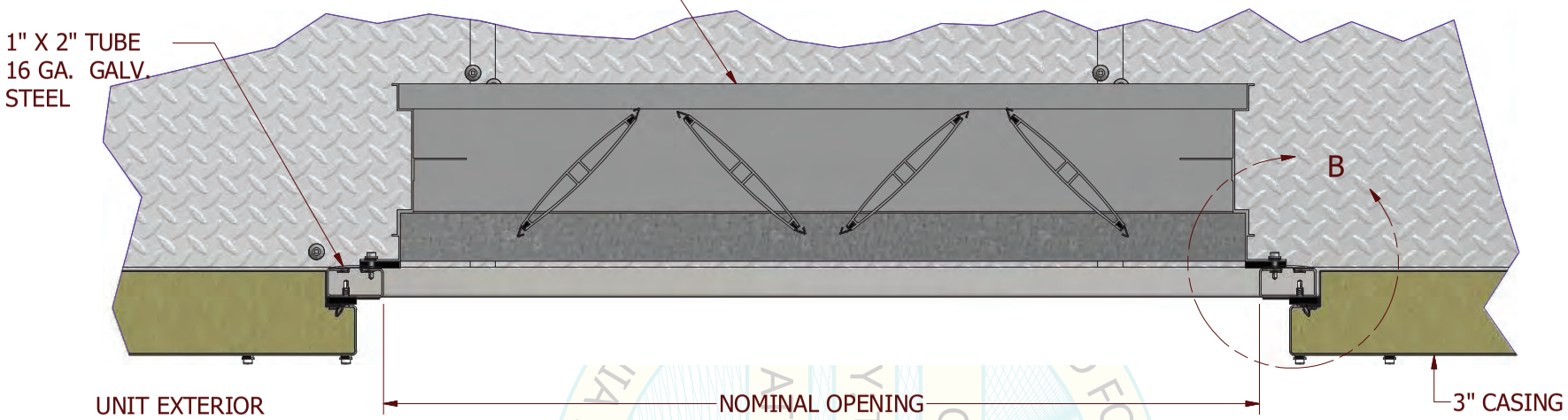
Title:

DETAIL, DAMPER, CASING MOUNTED, EXTERNAL, ITF

DRAWING NO. 221.00194

NOTES:

WHEN INTERNALLY MOUNTED, DAMPER MUST HAVE A PANEL ON ALL FOUR SIDES



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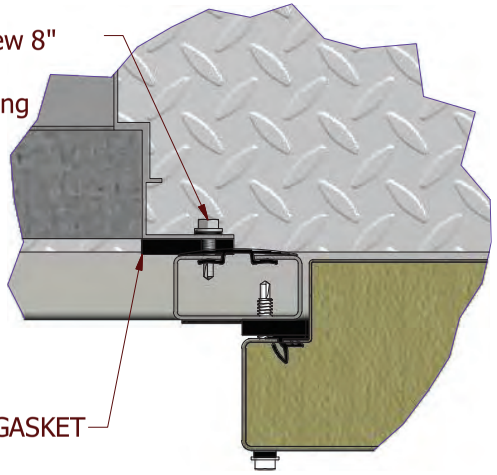

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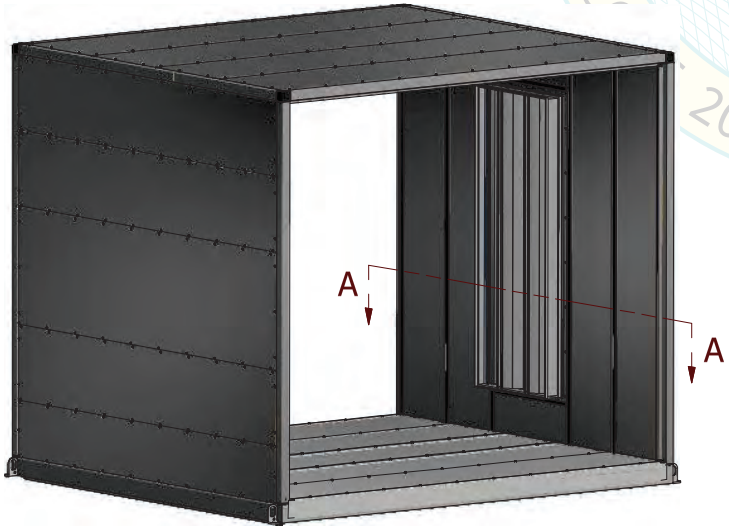

HEA BUILDING CODE COMPLIANCE
OSP-0567
Timothy J. Piland
Exp. 8/28/2025
2025

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Title:

DETAIL, DAMPER, CASING MOUNTED, INTERNAL, ITF

DRAWING NO. 221.00214