



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP – 0567

OSHPD 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: ITF Models Custom Air Conditioning Units

Product Type: Custom Air Conditioning Units

Product Model Number: Custom Air Conditioning Units

(List all unique product identification numbers and/or part numbers)

General Description: Custom air conditioners, sheet metal construction. Seismic enhancements made to the test units & modifications required to address the anomalies observed during testing shall be incorporated into the production units

Mounting Description: Base mounted rigid.

Applicant Information

Applicant Company Name: Structural Integrity Associates, Inc. dba TRU Compliance

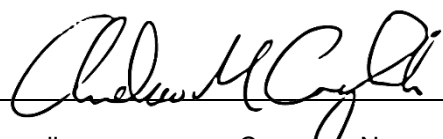
Contact Person: Andrew Coughlin, SE

Mailing Address: 5215 Hellyer Ave, Suite 210, San Jose, CA 94608

Telephone: (844) 878-0200

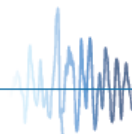
Email: acoughlin@structint.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant:  Date: 9/5/2019

Title: Director, TRU Compliance Company Name: Structural Integrity Associates, Inc.

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"





**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
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California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)

Company Name: Structural Integrity Associates, Inc. dba TRU Compliance

Name: Andrew Coughlin, SE California License Number: S6082

Mailing Address: 5215 Hellyer Ave, Suite 210, San Jose, CA 94608

Telephone: (844) 878-0200 Email: acoughlin@structint.com

Supports and Attachments Preapproval

- ☐ Supports and attachments are preapproved under OPM-
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)
- ☒ Supports and attachments are not preapproved

Certification Method

- ☒ Testing in accordance with: ☒ ICC-ES AC156
- ☐ Other (Please Specify): _____

Testing Laboratory

Company Name: U.S. Army Engineer Research and Development Center, Construction Engineering Research Laboratory (ERDC-CERL)

Contact Name: Jim Wilcoski

Mailing Address: 2902 Newmark Dr. Champaign, IL 61822

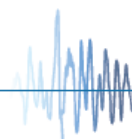
Telephone: (217) 373-6763 Email: James.Wilcoski@usace.army.mil

Company Name: Pacific Earthquake Engineering Research Center (PEER)

Contact Name: Amarnath Kasalanati, PhD

Mailing Address: 1301 South 46th Street, Building 420, Richmond, CA 94804

Telephone: (510) 642-6475 Email: amarnath1@berkeley.edu





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Company Name: Qual Tech NP by Curtiss-Wright

Contact Name: Jerry Newberry

Mailing Address: 4600 East Tech Drive, Cincinnati, OH 45245

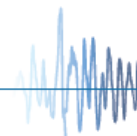
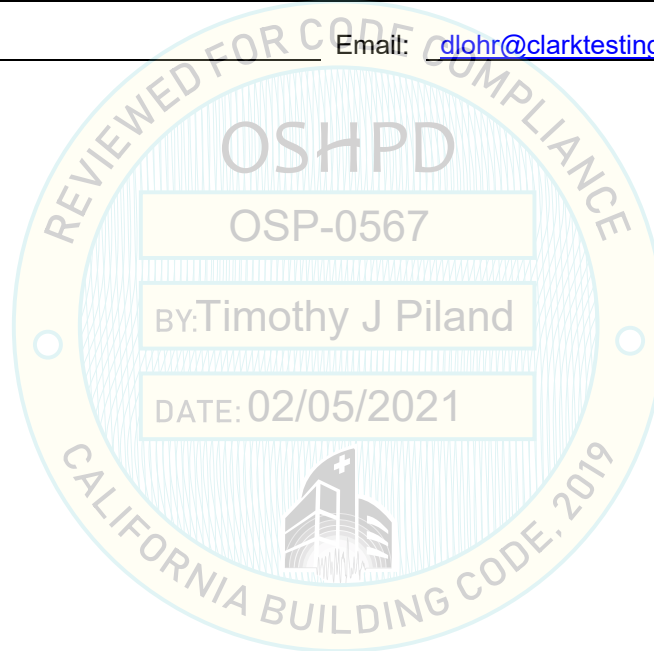
Telephone: (513) 528-7900 Email: jnewberry@curtisswright.com

Company Name: Clark Dynamics Test Laboratory

Contact Name: Devon Lohr

Mailing Address: 1801 Route 51, Jefferson Hills, PA 15025

Telephone: (412) 387-1026 Email: dlohr@clarktesting.com





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Seismic Parameters

Design in accordance with ASCE 7-10 Chapter 13: ☒ Yes ☐ No

Design Basis of Equipment or Components (F_p/W_p) = 1.45 (z/h = 1), 0.87 (z/h = 0)

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

a_p (In-structure equipment or component amplification factor) = 2.5

R_p (Equipment or component response modification factor) = 6.0

Ω_0 (System overstrength factor) = 2

I_p (Importance factor) = 1.5

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

Equipment or Component Natural Frequencies (Hz) = See Attachment

Overall dimensions and weight (or range thereof) = See Attachment

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: ☐ Yes ☒ No

Design Basis of Equipment or Components (V/W) = _____

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

S_{D1} (Design spectral response acceleration at 1 second period, g) = _____

R (Response modification coefficient) = _____

Ω_0 (System overstrength factor) = _____

C_d (Deflection amplification factor) = _____

I_p (Importance factor) = _____

Height to Center of Gravity above base = _____

Equipment or Component Natural Frequencies (Hz) = _____

Overall dimensions and weight (or range thereof) = _____

Tank(s) designed in accordance with ASME BPVC, 2015: ☐ Yes ☒ No

List of Attachments Supporting Special Seismic Certification

☒ Test Report(s) ☐ Drawings ☐ Calculations ☒ Manufacturer's Catalog

☒ Other(s) (Please Specify): Product and Subcomponent Matrices, UUT Summaries

OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2025

Signature: _____

Date: February 5, 2021

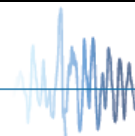
Print Name: Timothy J. Piland

Title: SSE

Special Seismic Certification Valid Up to: S_{DS} (g) = 1.93

z/h = 1 and 0

Condition of Approval (if applicable): _____



SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX



1800930-CR-001-R2

Manufacturer: Nortek Air Solutions, LLC						TABLE 1	
Model Line: Temtrol/Governair ITF Custom Air Handling Units							
Certified Product Construction Summary: Painted or galvanized carbon steel, stainless steel, or aluminum. See Table 2 for certified product construction.							
Certified Options Summary: See Tables 2 through 16 for certified options							
Mounting Configuration: Base mounted - rigid Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.							
Building Code:		CBC 2019		Seismic Certification Limits:		$S_{DS} = 1.93 g \quad z/h = 1.0$ $S_{DS} = 1.93 g \quad z/h = 0.0$ $I_p = 1.5$	
Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Temtrol/Governair ITF Custom Air Handling Units	ITF - 4 walls (No walls removed)	No Limit	24	24	-	Lower Range	Extrap.
		...	...	...	...		Extrap.
		96	96	96	3,975	UUT: 62 psf, Galv. Carbon Steel	4
		158	136	128	10,500	UUT: 70 psf, Painted Carbon Steel	8
		130	206	131	13,118	UUT: 71 psf, Galv. Carbon Steel	12
		144	144	144	7,435	UUT: 52 psf, Galv. Carbon Steel	6
		96	144	144	6,015	UUT: 63 psf, Galv. Carbon Steel	5
		288	144	144	18,092	UUT: 63 psf , Galv. Carbon Steel	13
		288	144	144	14,800	UUT: 51 psf , Galv. Carbon Steel	10
		...	...	...	...		Interp.
		No Limit	300	144	-	Upper Range, 83 psf max.	Interp.
	ITF - 3 walls (Inlet or outlet wall removed)	No Limit	24	24	-	Lower Range	Extrap.
		...	...	...	...		Extrap.
		98	131	98	6,000	UUT: 67 psf, Aluminum	3
		96	129	105	6,050	UUT: 70 psf, Galv. Carbon Steel	2

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SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX



1800930-CR-001-R2

Manufacturer: Nortek Air Solutions, LLC					TABLE 1		
Model Line: Temtrol/Governair ITF Custom Air Handling Units							
Certified Product Construction Summary: Painted or galvanized carbon steel, stainless steel, or aluminum. See Table 2 for certified product construction.							
Certified Options Summary: See Tables 2 through 16 for certified options							
Mounting Configuration: Base mounted - rigid Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.							
Building Code: CBC 2019		Seismic Certification Limits:		$S_{DS} = 1.93 g \quad z/h = 1.0$ $S_{DS} = 1.93 g \quad z/h = 0.0$		$I_P = 1.5$	
Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Temtrol/Governair ITF Custom Air Handling Units	ITF - 3 walls (Inlet or outlet wall removed)	96	129	103	7,100	UUT: 83 psf, Galv. Carbon Steel	1
		158	136	114	9,900	UUT: Connected to UUT8, 66 psf, Aluminum	7a
		138	300	138	12,436	UUT: 43 psf, Galv. Carbon Steel/Stainless Steel	9 ¹
		...	...	...	...		Interp.
		No Limit	300	144	-	Upper Range, 83 psf max.	Interp.
	ITF - 2 walls (Inlet and outlet wall removed)	No Limit	24	24	-	Lower Range	Extrap.
		...	...	...	...		Extrap.
		158	136	114	9,900	UUT: 66 psf, Aluminum	7b
		138	300	138	10,942	UUT: 38 psf, Galv. Carbon Steel	11 ¹
		...	...	...	...		Interp.
		No Limit	300	144	-	Upper Range, 83 psf max.	Interp.
	ITF - 1 wall (Inlet, outlet, and side wall removed)	158	136	114	9,900	UUT: Three walls removed, 66 psf, Aluminum	7c
Additional Notes: 1. Weight of failed subcomponent was removed from reported weight.							

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1800930-CR-001-R2



Manufacturer: Nortek Air Solutions, LLC		Table Description: Unit Construction			TABLE 2
Model Line: Temtrol/Governair ITF Custom Air Handling Units					
Building Code: CBC 2019		Seismic Certification Limits: $S_{DS} = 1.93\text{ g}$ $z/h = 1.0$ $S_{DS} = 1.93\text{ g}$ $z/h = 0.0$			$I_p = 1.5$
Component Type	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	14ga. 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	20 ga.	9,10,11, 12,13
		Stainless Steel Subfloor	304 Stainless Steel	20 ga.	Interp
		Aluminum Subfloor	5052 Aluminum	18 ga.	7

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SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

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Manufacturer:		Nortek Air Solutions, LLC				Table Description: Dampers and Louvers		TABLE 3	
Model Line:		Temtrol/Governair ITF Custom Air Handling Units							
Building Code:		CBC 2019		Seismic Certification Limits:		$S_{DS} = 1.93 g \quad z/h = 1.0$ $S_{DS} = 1.93 g \quad z/h = 0.0$		$I_p = 1.5$	
Model Line (Manufacturer)	Model	Dimension (in)			Weight (lb)	Material	Notes	UUT	
		Depth	Width	Height					
Damper (Ruskin)	CD36	5	5	5	5	Galvanized Carbon Steel Casing and Blades		Extrap.	
		...	...	...	...			Extrap.	
		5	22	22	20			13	
		...	...	...	...			Interp.	
		5	96	120	418			13	
	CD50	5	6	5	5	Aluminum Casing and Blades		Extrap.	
		...	...	...	...			Extrap.	
		5	24	24	19			13	
		...	...	...	...			Interp.	
		5	96	120	368			13	
	CD60	5	8	8	8	Galvanized Carbon Steel Casing w/ Aluminum Blades		Extrap.	
		...	...	...	...			Extrap.	
		5	12	24	12			7	
		...	...	...	...			Interp.	
		5	120	48	185		Tested as SD60	7	
Louver (Ruskin)	EME	3	12	24	40	Aluminum	Fixed Blade Vertical Louver (Tested as AML3)	7	
		...	...	...	...			Interp.	
		3	48	96	330		Fixed Blade Vertical Louver	7	
	AML	3	12	24	40	Aluminum	Fixed Blade Vert. Louver w/ Air Monitor	7	
		...	...	...	...			Interp.	
		3	48	96	330		Fixed Blade Vert. Louver (Tested as EME)	7	

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SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1800930-CR-001-R2



Manufacturer: Nortek Air Solutions, LLC		Table Description: Fans			TABLE 5
Model Line: Temtrol/Governair ITF Custom Air Handling Units					
Building Code: CBC 2019		Seismic Certification Limits: $S_{DS} = 1.93 g$ $z/h = 1.0$ $S_{DS} = 1.93 g$ $z/h = 0.0$			$I_p = 1.5$
Component Type	Manufacturer	Model	Description	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.
		...			Interp.
		44"		UUT: Carbon Steel, 960 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
		...			Interp.
		44"		UUT: Carbon Steel, 960 lbs	Interp.
PF9 Plenum Fan (Direct Drive)	Temtrol / Governair	12"	Aluminum weels, Carbon steel housing	UUT: 100 lbs	11
		...			Interp.
		22"		UUT: 180 lbs	11
Condensor Fans (Direct Drive)	Governair	24"	Plastic	UUT: 130 lbs	6
		...			Interp.
		30"		UUT: 145 lbs	5
		...			Interp.
		36"		UUT: 420 lbs (mounted from ceiling)	8

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1800930-CR-001-R2



Manufacturer: Nortek Air Solutions, LLC		Table Description: Fan Motors			TABLE 6
Model Line: Temtrol/Governair ITF Custom Air Handling Units					
Building Code: CBC 2019		Seismic Certification Limits: $S_{DS} = 1.93 g$ $z/h = 1.0$ $S_{DS} = 1.93 g$ $z/h = 0.0$			$I_p = 1.5$
Component Type	Manufacturer	Model	Description	Notes	UUT
Fan Motor (Non-Fanwall)	Baldor	1 hp	208V, 230V, 460V; ODP 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; TEAO	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

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1800930-CR-001-R2



Manufacturer: Nortek Air Solutions, LLC		Table Description: Fan Motors			TABLE 6
Model Line: Temtrol/Governair ITF Custom Air Handling Units					
Building Code: CBC 2019		Seismic Certification Limits: $S_{DS} = 1.93 g$ $z/h = 1.0$ $S_{DS} = 1.93 g$ $z/h = 0.0$			$I_p = 1.5$
Component Type	Manufacturer	Model	Description	Notes	UUT
Dual Voltage Fan Motor (Non-Fanwall)	Baldor	1 hp	Dual Voltage: 208/230V & 460V; ODP or TEFC	43 lbs	Extrap.
		...			Extrap.
		5 hp		UUT: 55 lbs, TEFC	5
		...			Interp.
		10 hp		172 lbs	Interp.
		...			Interp.
		50 hp		UUT: 662 lbs, ODP	2
Fan Motor (Ceiling mounted/ Non-Fanwall)	Toshiba	5 hp	208V, 230V, 460V; TEFC	UUT: 170 lbs (mounted from ceiling)	8
Fan Motor (Fanwall)	Toshiba	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

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1800930-CR-001-R2



Manufacturer:	Nortek Air Solutions, LLC	Table Description:	Coils	TABLE 7
Model Line:	Temtrol/Governair ITF Custom Air Handling Units			

Building Code:		CBC 2019		Seismic Certification Limits:		$S_{DS} = 1.93\text{ g}$ $z/h = 1.0$ $S_{DS} = 1.93\text{ g}$ $z/h = 0.0$		$I_p = 1.5$	
Model Line (Manufacturer)	Model	Dimension (in) ¹			Weight (lb)	Material	Notes	UUT	
		Depth	Width	Height					
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")	6.5	12	12	26	Copper tube, 0.006" copper fins or 0.008" aluminum fins, carbon or stainless steel casing		Extrap.	
		...	...	...	...			Extrap.	
		7.5	120	45	1860		UUT: 0.02" tube wall, 0.625" Ø tube, 0.008" aluminum 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")	6.5	12	12	26	Copper tube, 0.006" copper fins or 0.008" aluminum fins, carbon or stainless steel casing		Extrap.	
		...	...	...	...			Interp.	
		13	75	27	1248		UUT: 0.017" tube wall, 0.5" Ø tube, 0.008" aluminum fins, 12 fpi, 10 row, stacked 4 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	6.5	76	12	165	Copper tube, 0.006" copper fins or 0.008" aluminum fins, carbon or stainless steel casing		Extrap.	
		...	...	...	...			Interp.	
		15	187	56	2259		UUT: 0.625" Ø tube, 12 fpi, 10 row, 0.008" aluminum fins, 0.020" tube wall, bottom coil in 2 high stack	12	
		15	187	50	3568		UUT: 0.625" Ø tube, 12 fpi, 10 row, 0.006" copper fins, 0.025" tube wall, top coil in 2 high stack	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.

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1800930-CR-001-R2



Manufacturer: Nortek Air Solutions, LLC		Table Description: Coils					TABLE 7	
Model Line: Temtrol/Governair ITF Custom Air Handling Units								
Building Code: CBC 2019		Seismic Certification Limits:			$S_{DS} = 1.93 g \quad z/h = 1.0$ $S_{DS} = 1.93 g \quad z/h = 0.0$		$I_P = 1.5$	
Model Line (Manufacturer)	Model	Dimension (in) ¹			Weight (lb)	Material	Notes	UUT
		Depth	Width	Height				
Hot Water Coil VIFB (LJ Wing)	VA-2W (11 fpi, 2 rows, no stacking)	22	25.4	44	283	Copper tube, aluminum fins, carbon steel casing	UUT: 11 fpi, 2 row, aluminum fins, copper tubes	9
	...	...	...	...	Interp.			
	VD-10W (11 fpi, 2 rows, no stacking)	22	111.2	80	1338		UUT: 11 fpi, 2 row, aluminum fins, copper 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")	5	21	32	30	Copper tube, aluminum fins, carbon steel casing	UUT: 0.025" tube wall, 0.625" Ø tube, 0.008" fin, 4 fpi, 2 row, stacked 3 high	9
	...	...	...	...	Interp.			
	...	5	108	56	534		UUT: 0.025" tube wall, 0.625" Ø tube, 0.008" fin, 4 fpi, 1 row, stacked 2 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)	5.5	24	25	53	Copper tube, copper fins, carbon steel casing	UUT: 0.016" tube wall, 0.5" Ø tube, 0.0075" fin, 6 fpi, 3 row	7
	...	...	...	...	Interp.			
	...	7	96	36	132		UUT: 0.016" tube wall, 0.375" Ø tube, 0.0075" fin, 6 fpi, 2 row	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)	8	24	18	40	Copper tube, aluminum fin, stainless steel casing	UUT: 0.02" tube wall, 0.5" Ø tube, 0.008" fin, 8 fpi, 4 row	5
Additional Notes: 1. Listed sizes are individual coils. Dimensions include casing.								

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SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1800930-CR-001-R2



Manufacturer: Nortek Air Solutions, LLC		Table Description: Electrical Enclosures					TABLE 8	
Model Line: Temtrol/Governair ITF Custom Air Handling Units								
Building Code: CBC 2019		Seismic Certification Limits:		$S_{DS} = 1.93 g \quad z/h = 1.0$ $S_{DS} = 1.93 g \quad z/h = 0.0$		$I_p = 1.5$		
Model Line (Manufacturer)	Model	Dimension (in)			Weight (lb)	Material	Notes	UUT
		Depth	Width	Height				
Temtrol / Governair	Electrical Control Panel	6	22	24	60	Galvanized Carbon Steel	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
Wiegmann	Starter Panel	10	10	22.5	14	Carbon Steel	NEMA 3R/12	4
		...	...	...	...			Interp.
		10	20	38	42			2
		...	...	...	...			Interp.
		10	24	56	47			2
Wiegmann	Motor Overload Panel	8	12	12	7	Carbon Steel	NEMA 4	Extrap.
		...	...	...	...			Extrap.
		8	12	16	10			5
		...	...	...	...			Interp.
		10	24	24	27			1
		...	...	...	...			Interp.
		12	30	30	39			8, 13

1800930-CR-001-R2



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SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1800930-CR-001-R2



Manufacturer:		Nortek Air Solutions, LLC				Table Description: Heat Exchanger		TABLE 10	
Model Line:		Temptrol/Governair ITF Custom Air Handling Units							
Building Code:		CBC 2019		Seismic Certification Limits:		$S_{DS} = 1.93 g \quad z/h = 1.0$ $S_{DS} = 1.93 g \quad z/h = 0.0$		$I_p = 1.5$	
Model Line (Manufacturer)	Model	Dimension (in)			Weight (lb)	Material	Notes	UUT	
		Depth	Width	Height					
Heat Exchanger: COAX (Packless)	2201-J	13	10.6	4	15	Carbon Steel Shell	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	13	10.6	4	15	Carbon Steel Shell	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	11	9.5	21	100	Copper Plates, Stainless Steel End Plates		8	

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SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1800930-CR-001-R2



Manufacturer: Nortek Air Solutions, LLC		Table Description: Electrical Components			TABLE 13
Model Line: Temtrol/Governair ITF Custom Air Handling Units					
Building Code: CBC 2019		Seismic Certification Limits: $S_{DS} = 1.93 g$ $z/h = 1.0$ $S_{DS} = 1.93 g$ $z/h = 0.0$			$I_p = 1.5$
Component Type	Manufacturer	Model	Description	Notes	UUT
VFD	ABB	ACH550	208V/230V/460V	UUT: 135 lbs	6
		ACS320	208V/230V/460V	UUT: 37 lbs	5, 13
	Yaskawa	V1000	208V/230V/460V	UUT: 17 lbs	4
		E7N	Large	UUT: 142lbs	2
		E7B	Medium	UUT: 75lbs	3
			Large	UUT: 375lbs	1
DDC Sensor	Siemens	Air probe switch	24V	UUT: Less than 2lb	7
		Air probe	24V	UUT: Less than 2lb	7
	Johnson Controls	Low limit thermistor	with reset, 24V	UUT: Less than 2lb	7
		Remote bulb thermistor	30V to 120V	UUT: Less than 2lb	7
	Mamac System	Thermistor type 2-10K avg.		UUT: Less than 2lb	7
		Thermistor type 2-10K Duct		UUT: Less than 2lb	7
	Dwyer	Differential pressure switch	with reset, 24V	UUT: Less than 2lb	7
		Differential pressure switch	no switch	UUT: Less than 2lb	7
	Dwyer/Siemens	Differential pressure transmitter	24V	UUT: Less than 2lb	7
	Kele	Smoke detector	Ionization, 24V/120V	UUT: 5lbs	7
		Smoke detector	with sampling tube, 24V/120V	UUT: 5lbs	7
	Dwyer/Siemens	Duct temp. sensor		UUT: Less than 2lb	7
		Outside temp. and humidity	24V	UUT: Less than 2lb	7
UV Lights	Lumalier	PRU	120V	UUT: 27"x5"x32"	5
	UV Resources	RLM	120V	UUT: 24"x24"x5"	7

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1800930-CR-001-R2



Manufacturer: Nortek Air Solutions, LLC		Table Description: Electrical Components			TABLE 13
Model Line: Temtrol/Governair ITF Custom Air Handling Units					
Building Code: CBC 2019		Seismic Certification Limits: $S_{DS} = 1.93 g$ $z/h = 1.0$ $S_{DS} = 1.93 g$ $z/h = 0.0$		$I_p = 1.5$	
Component Type	Manufacturer	Model	Description	Notes	UUT
Motor Disconnect	Temtrol	MCP	208V/460V		2
Air Monitor Station	Ruskin	EAMS	24V	UUT: Galv. Carbon Steel, Copper, 22lbs	7
	Paragon Controls	OAFE/FE	24V	UUT: Aluminum, 18lbs	7
		FAATS-1000	24V	UUT: Carbon Steel, 18lbs	13
	Ebtron	GTx	24V	UUT: Aluminum, 10lbs	7
Hot Gas Bypass Valve and Controller IB-6	Sporlan	CDS/IB-6	24V	UUT: Brass, Copper/Plastic 3lbs	7,8
Type 4X "Hand-Off Autp" Switch	Idec	HW153TF20			2
Aux Contact	Telemecanique	GVAE11			10
	Eaton	XTPAXFA11			10
N.O and 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
Secondary Fusing	Bussmann	GAB1 thru GAB30			2
Transformer	Kele	694-M3A	120/24VAC, 180VA		9

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1800930-CR-001-R2



Manufacturer: Nortek Air Solutions, LLC		Table Description: Electrical Components			TABLE 13
Model Line: Temtrol/Governair ITF Custom Air Handling Units					
Building Code: CBC 2019		Seismic Certification Limits: $S_{DS} = 1.93 g$ $z/h = 1.0$ $S_{DS} = 1.93 g$ $z/h = 0.0$		$I_p = 1.5$	
Component Type	Manufacturer	Model	Description	Notes	UUT
Circuit Breaker	Eaton	FD3015L	15A, 3-pole		9
		...			Interp.
		LGE3300FAG	300A, 3-pole		9
	Schneider Electric	HGL36015	15A, 3-pole		9
		...			Interp.
		LGL36400U31X	300A, 3-pole		9
Motor Circuit Breaker	Telemecanique	GV2PO4	3-pole, 0.4 amps, Thermal Magnetic		10
		...			Interp.
		GV2P032	3-pole, 32 amps, Thermal Magnetic		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
	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
	IDEC	PS5R-VE24			13
5 Port Splitter	Phoenix Contact	5TX-24VAC			9
Aluminum Ground Bar	NSI	4-14(937)			9

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SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1800930-CR-001-R2



Manufacturer: Nortek Air Solutions, LLC		Table Description: Humidifier Grid					TABLE 14	
Model Line: Temtrol/Governair ITF Custom Air Handling Units								
Building Code: CBC 2019		Seismic Certification Limits:				$S_{DS} = 1.93 g \quad z/h = 1.0$ $S_{DS} = 1.93 g \quad z/h = 0.0 \quad I_p = 1.5$		
Model Line (Manufacturer)	Model	Dimension (in)			Weight (lb)	Material	Notes	UUT
		Depth	Width	Height				
Ultra-Sorb (DriSteem)	LV	5	12	12	23	Header/Tube: Stainless Steel Enclosure: Stainless Steel Installed per DriSteem Seismic IOM Manual		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 (Nortec)	SAM-e	9.8	22	28	80	Stainless Steel		7
VS (Vapac)	VS	8	24	24	38	Stainless Steel		5

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SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1800930-CR-001-R2



Manufacturer: Nortek Air Solutions, LLC		Table Description: Miscellaneous			TABLE 16
Model Line: Temtrol/Governair ITF Custom Air Handling Units					
Building Code: CBC 2019		Seismic Certification Limits: $S_{DS} = 1.93 g$ $z/h = 1.0$ $S_{DS} = 1.93 g$ $z/h = 0.0$		$I_p = 1.5$	
Component Type	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 and Stainless Steel	UTT: 124"W x 96"H	2
Filter Frame - HEPA	Temtrol/ Governair	B1	Galv. Carbon Steel and Stainless Steel		5
Filter Rack	Temtrol/ Governair	Type 8	Galv. Carbon Steel and Stainless Steel	UTT: 108"x108", 2" Pre Filter Bank	10
Filter Frame	Temtrol/ Governair	Type 8	Galv. Carbon Steel and Stainless Steel	UUT: 24"x2"x12"	10
Filter Frame	Temtrol/ Governair	Type 8	Galv. Carbon Steel and Stainless Steel	UUT: 24"x2"x24"	10
Filter Frame	Temtrol/ Governair	Type 8	Galv. Carbon Steel and Stainless Steel	UTT: 24"x2"x24"	6
Receiver	Refrigeration Research	Type 4 3233	Carbon Steel	UTT: 35"x7"7.125", 30 lbs	8
Condenser Pump	ITT Bell & Gosset	3 hp	Cast Carbon Steel	UTT: 125 lbs	8
Fixed Blade Blenders	Blender Products	IV	Aluminum	UTT: 24" x 6" x 24", 75 lbs	6
Spray Tree	Governair	ST1	PVC Pipe Construction	UUT: 98"x39"x7"	8
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 incude damper and mounting collar.	5"Dx24"Wx24"H, 96lbs.	Extrap.
				...	Extrap.
				UUT: 5"Dx60"Wx30"H, 180lbs.	13
				...	Interp.
				UUT: 5"Dx36"Wx120"H, 225lbs.	13

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UNIT UNDER TEST (UUT) SUMMARY SHEET



1800930-CR-001-R2

Manufacturer: Nortek Air Solutions, LLC						
Model Line: Temtrol/Governair ITF Custom Air Handling Units						
UUT	Unit Description	Report Number	Testing Laboratory	S _{DS}	z/h	I _p
1	Air Handling Unit (Inlet Wall Removed)	EL: 8959	Clark Testing	1.93	1.0	1.5
				1.93	0.0	
2	Air Handling Unit (Inlet Wall Removed)	EL: 8961	Clark Testing	1.93	1.0	1.5
				1.93	0.0	
3	Air Handling Unit (Outlet Wall Removed)	EL: 8962	Clark Testing	1.93	1.0	1.5
				1.93	0.0	
4	Air Handling Unit	Q0033.0	Trentec, Inc. (Qual Tech NP by Curtiss-Wright)	1.93	1.0	1.5
				1.93	0.0	
5	Air Handling Unit	Q0033.0	Trentec, Inc. (Qual Tech NP by Curtiss-Wright)	1.93	1.0	1.5
				1.93	0.0	
6	Air Handling Unit	Q0033.0	Trentec, Inc. (Qual Tech NP by Curtiss-Wright)	1.93	1.0	1.5
				1.93	0.0	
7a	Air Handling Unit (Inlet Wall Removed, attached to UUT8a)	PEER-STI/2012-02	Pacific Earthquake Engineering Research Center (PEER)	1.93	1.0	1.5
				1.93	0.0	
7b	Air Handling Unit (Inlet and Outlet Wall Removed)	PEER-STI/2012-02	Pacific Earthquake Engineering Research Center (PEER)	1.93	1.0	1.5
				1.93	0.0	
7c	Air Handling Unit (Inlet, Outlet, Side Wall Removed)	PEER-STI/2012-02	Pacific Earthquake Engineering Research Center (PEER)	1.93	1.0	1.5
				1.93	0.0	
8a	Air Handling Unit (Connected to UUT7a)	PEER-STI/2012-02	Pacific Earthquake Engineering Research Center (PEER)	1.93	1.0	1.5
				1.93	0.0	
8b	Air Handling Unit	PEER-STI/2012-02	Pacific Earthquake Engineering Research Center (PEER)	1.93	1.0	1.5
				1.93	0.0	
9	Air Handling Unit (Inlet Wall Removed)	1700754-TR-001 R0	ERDC-CERL	2.00	1.0	1.5
				2.50	0.0	
10	Air Handling Unit	1700754-TR-001 R0	ERDC-CERL	2.00	1.0	1.5
				2.50	0.0	
11	Air Handling Unit (Inlet and Outlet Wall Removed)	1800930-TR-001 R0	ERDC-CERL	2.00	1.0	1.5
				2.50	0.0	
12	Air Handling Unit	1800930-TR-002 R0	Pacific Earthquake Engineering Research Center (PEER)	2.00	1.0	1.5
				2.50	0.0	
13	Air Handling Unit	1801166-TR-001 R0	Pacific Earthquake Engineering Research Center (PEER)	2.00	1.0	1.5
				2.50	0.0	
Notes:						

UNIT UNDER TEST (UUT) SUMMARY SHEET



1800930-CR-001-R2

Manufacturer:	Nortek Air Solutions, LLC	UUT 1
Model Line:	Temtrol/Governair ITF Custom Air Handling Units	
Model Number:	ITF	
Serial Number:		

Product Construction 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

Options/Subcomponent Summary:

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 Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
7100	96	129	103	12.5	23.7	24.5

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _P	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2019	ICC-ES AC156 (2015)	1.93	1.0	1.5	3.09	2.32	1.29	0.51
		1.93	0.0	1.5				

Test 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 functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

1800930-CR-001-R2

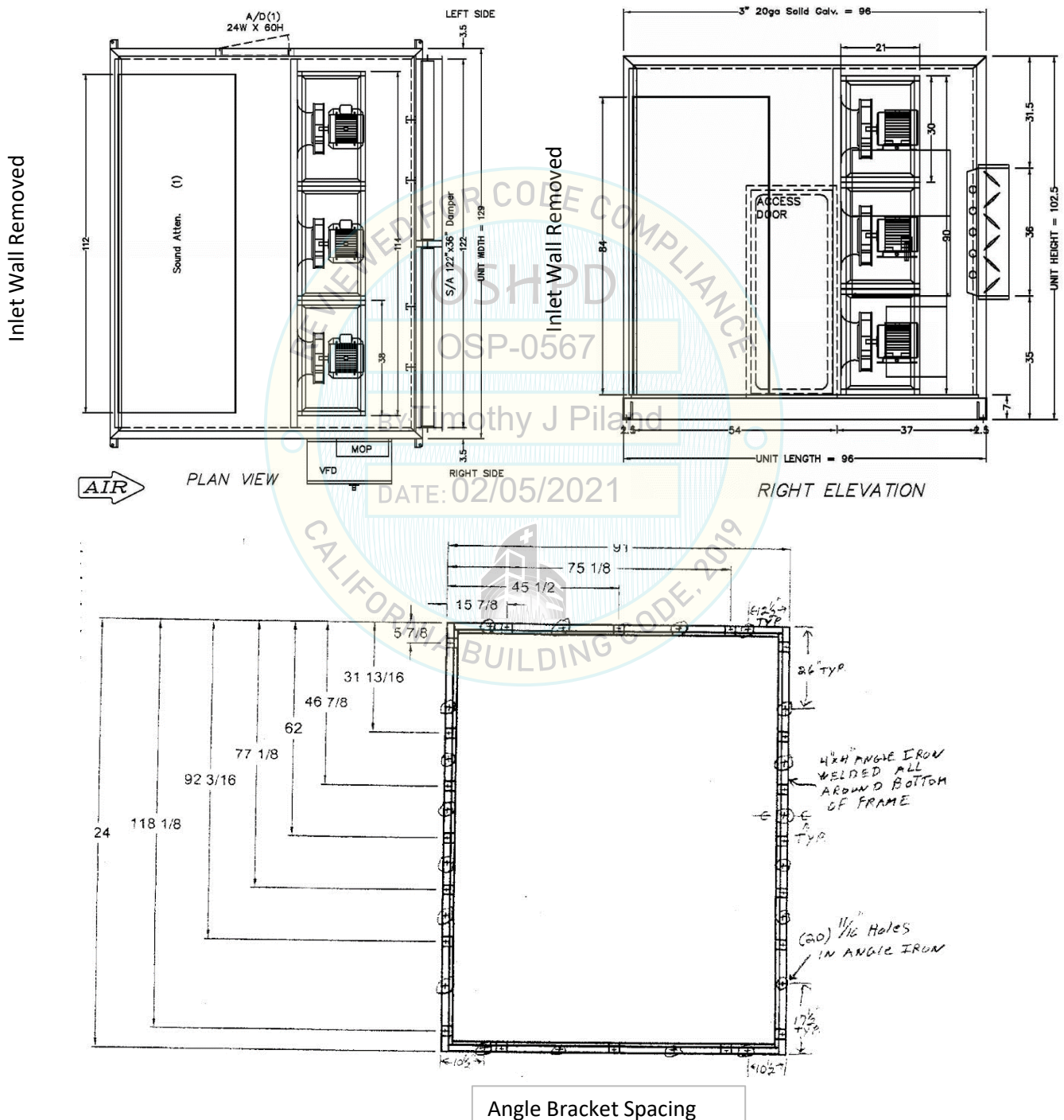


Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/Governair ITF Custom Air Handling Units
Model Number: ITF

Serial Number:

UUT 1

Unit Drawings



UNIT UNDER TEST (UUT) SUMMARY SHEET



1800930-CR-001-R2

Manufacturer:	Nortek Air Solutions, LLC	UUT 2
Model Line:	Temtrol/Governair ITF Custom Air Handling Units	
Model Number:	ITF	
Serial Number:		

Product Construction 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

Options/Subcomponent Summary:
 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 Properties									
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)					
	Depth	Width	Height	Front-Back	Side-Side	Vertical			
6050	96	129	105	>33.3	9.1	>33.3			
UUT Highest Passed Seismic Run Information									
Building Code		Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2019		ICC-ES AC156 (2015)	1.93	1.0	1.5	3.09	2.32	1.29	0.51
			1.93	0.0	1.5				

Test 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 functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

1800930-CR-001-R2

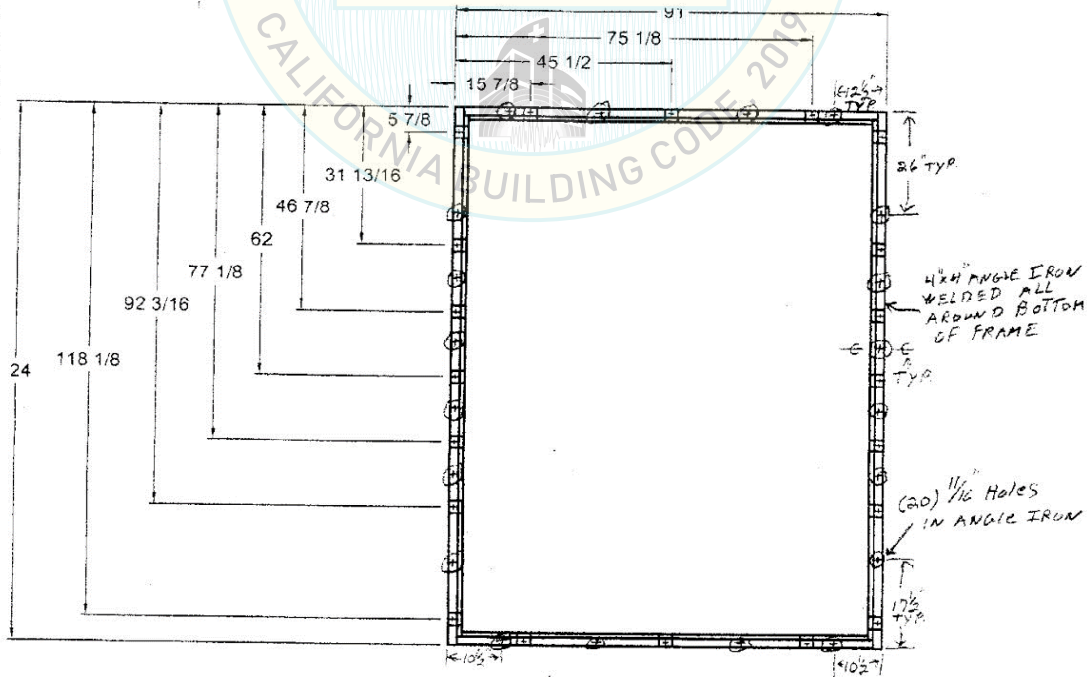
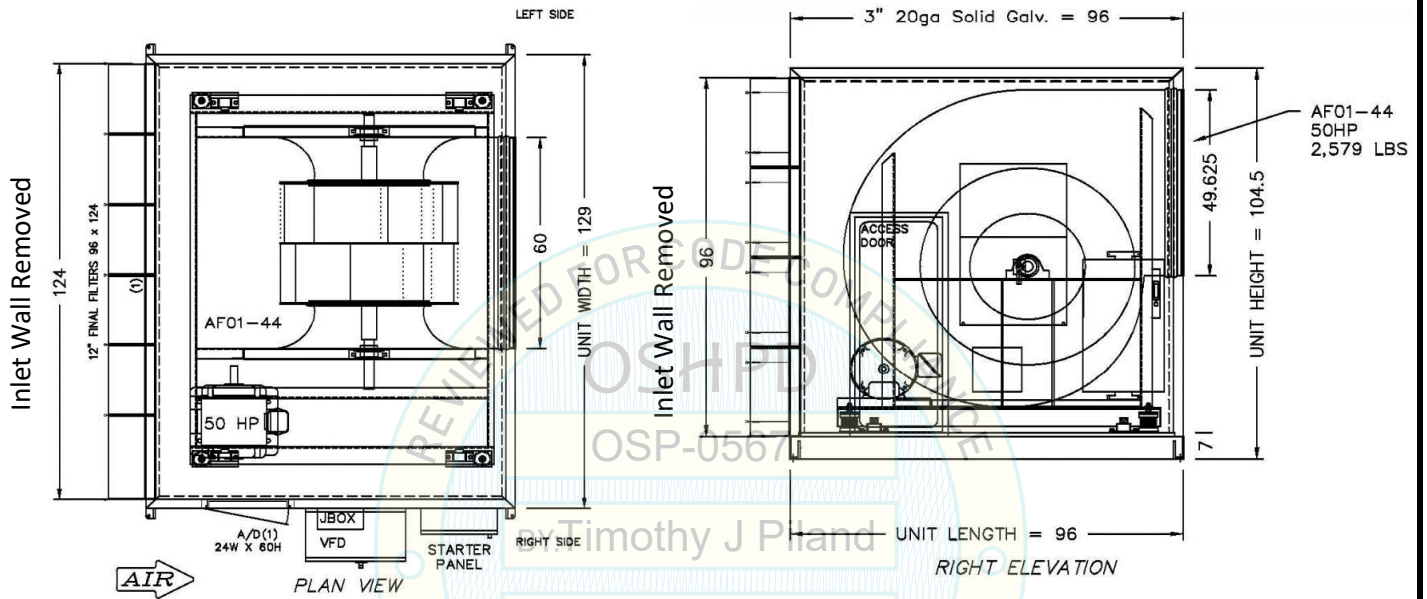


Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/Governair ITF Custom Air Handling Units
Model Number: ITF

Serial Number:

UUT 2

Unit Drawings



Angle Bracket Spacing

UNIT UNDER TEST (UUT) SUMMARY SHEET



1800930-CR-001-R2

Manufacturer:	Nortek Air Solutions, LLC	UUT 3
Model Line:	Temtrol/Governair ITF Custom Air Handling Units	
Model Number:	WF-BH60	

Product Construction 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).

Options/Subcomponent Summary:

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 Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
6000	98	131	98	11.4	8.0	33.2

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2019	ICC-ES AC156 (2015)	1.93	1.0	1.5	3.09	2.32	1.29	0.51
		1.93	0.0	1.5				

Test 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 functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET



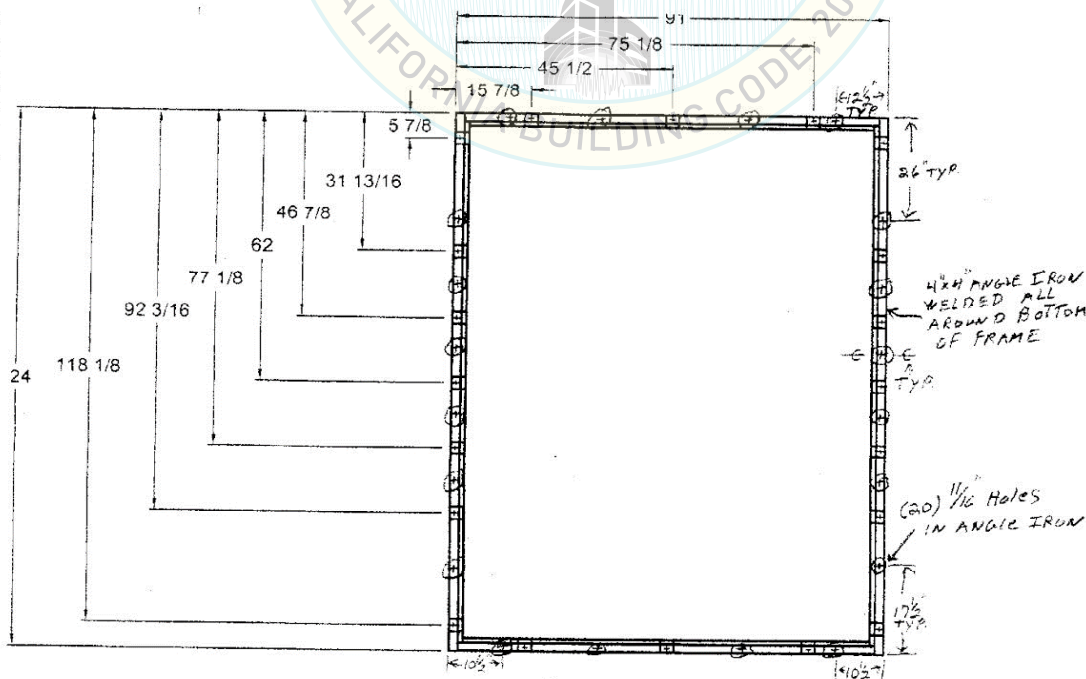
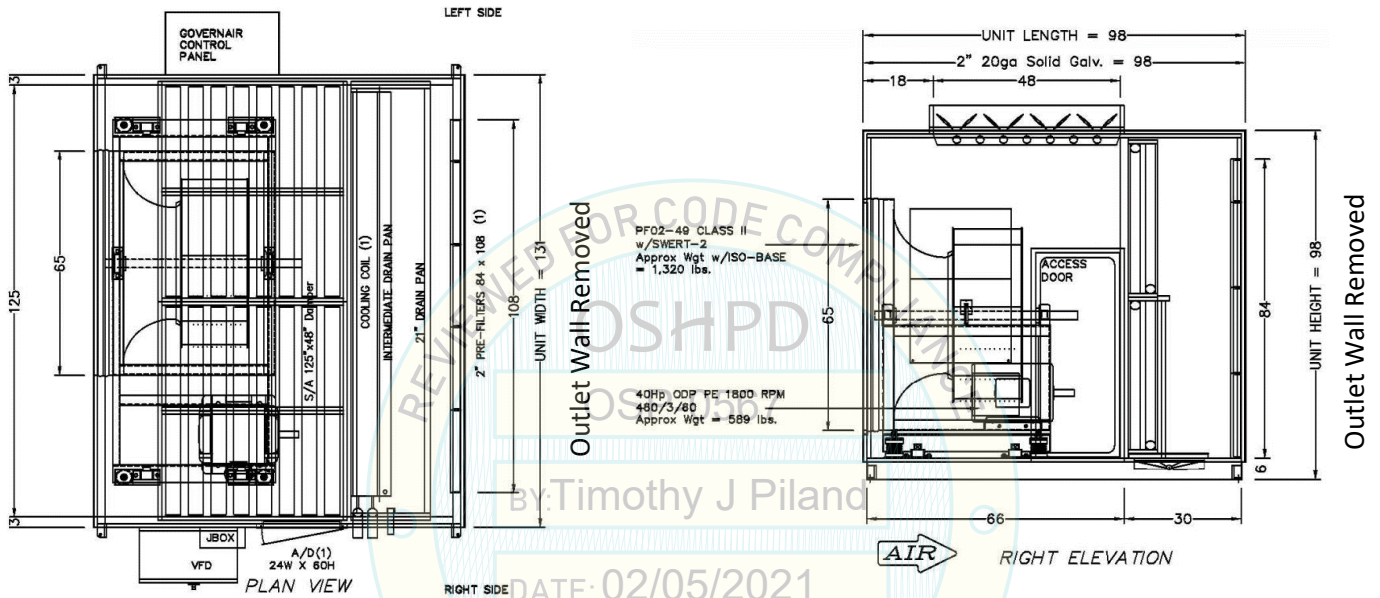
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Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/Governair ITF Custom Air Handling Units
Model Number: WF-BH60

Serial Number:

UUT 3

Unit Drawings



Angle Bracket Spacing

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UNIT UNDER TEST (UUT) SUMMARY SHEET



1800930-CR-001-R2

Manufacturer:	Nortek Air Solutions, LLC	UUT 4
Model Line:	Temtrol/Governair ITF Custom Air Handling Units	
Model Number:	ITF	
Serial Number:		

Product Construction 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

Options/Subcomponent Summary:
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 Properties									
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)					
	Depth	Width	Height	Front-Back		Side-Side		Vertical	
3975	96	96	96	12.0		17.8		>33.3	
UUT Highest Passed Seismic Run Information									
Building Code		Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2019		ICC-ES AC156 (2015)	1.93	1.0	1.5	3.09	2.32	1.29	0.51
			1.93	0.0	1.5				

Test 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. Mounting angles welded to unit with two (2) 1/4"x3" vertical fillet welds. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

1800930-CR-001-R2

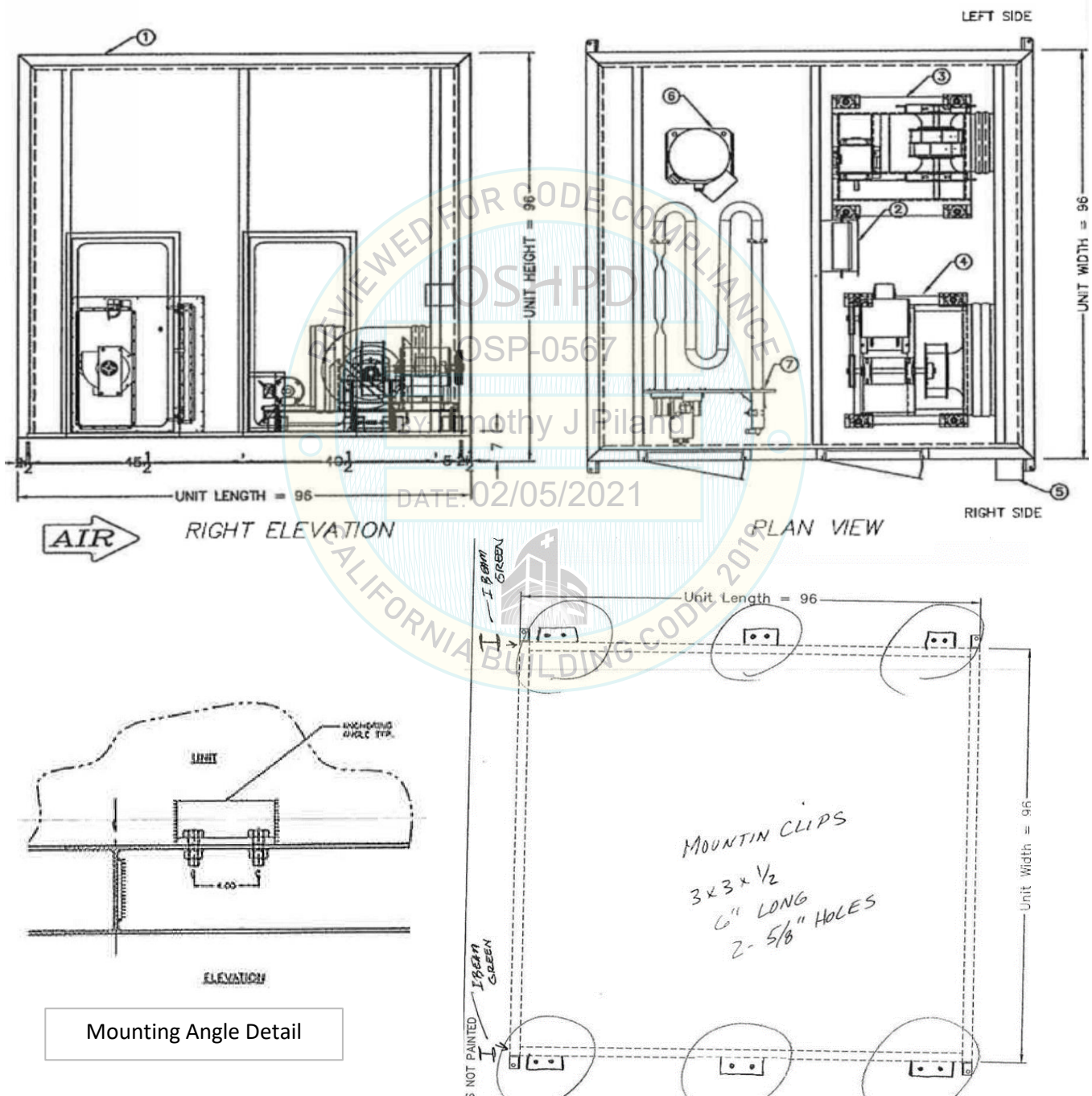


Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/Governair ITF Custom Air Handling Units
Model Number: ITF

Serial Number:

UUT 4

Unit Drawings



Mounting Angle Detail

Plan View - Mounting Angle Layout

UNIT UNDER TEST (UUT) SUMMARY SHEET



1800930-CR-001-R2

Manufacturer:	Nortek Air Solutions, LLC	UUT 5
Model Line:	Temtrol/Governair ITF Custom Air Handling Units	
Model Number:	ITF	
Serial Number:		

Product Construction 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

Options/Subcomponent Summary:

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"), Lualier PRU UV Light (27"x5"x32"), ABB ACS320 VFD.

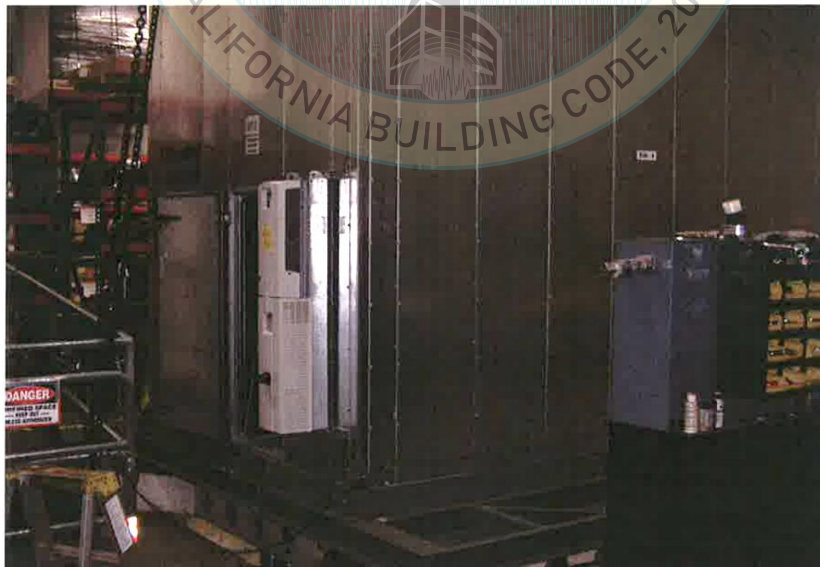
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
6015	96	144	144	4.3	9.3	27.5

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2019	ICC-ES AC156 (2015)	1.93	1.0	1.5	3.09	2.32	1.29	0.51
		1.93	0.0	1.5				

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

UNIT UNDER TEST (UUT) SUMMARY SHEET



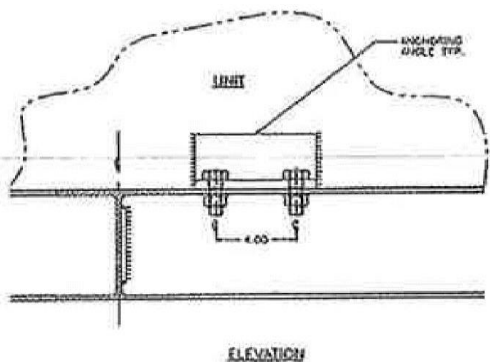
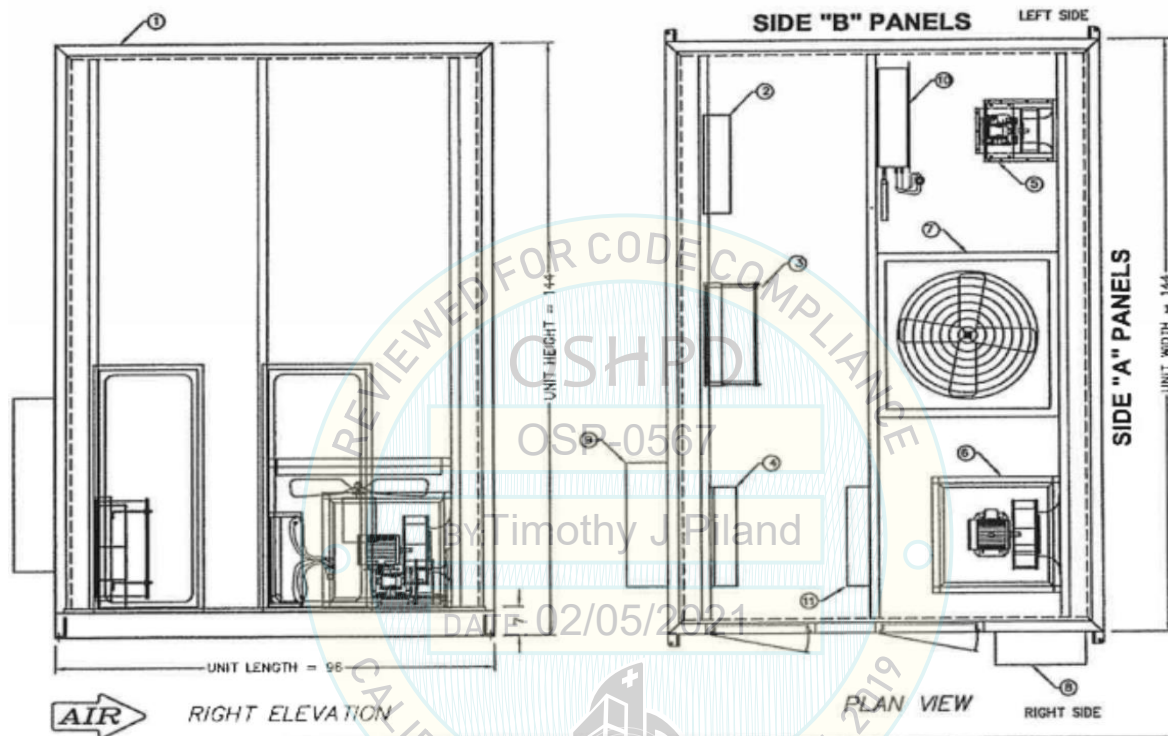
1800930-CR-001-R2

Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/Governair ITF Custom Air Handling Units
Model Number: ITF

Serial Number:

UUT 5

Unit Drawings



Mounting Angle Detail



Plan View - Mounting Angle Layout

UNIT UNDER TEST (UUT) SUMMARY SHEET



1800930-CR-001-R2

Manufacturer:	Nortek Air Solutions, LLC	UUT 6
Model Line:	Temtrol/Governair ITF Custom Air Handling Units	
Model Number:	ITF	
Serial Number:		

Product Construction Summary:

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

Options/Subcomponent Summary:

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 Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
7435	144	144	144	5.0	6.8	16.6

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2019	ICC-ES AC156 (2015)	1.93	1.0	1.5	3.09	2.32	1.29	0.51
		1.93	0.0	1.5				

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

UNIT UNDER TEST (UUT) SUMMARY SHEET



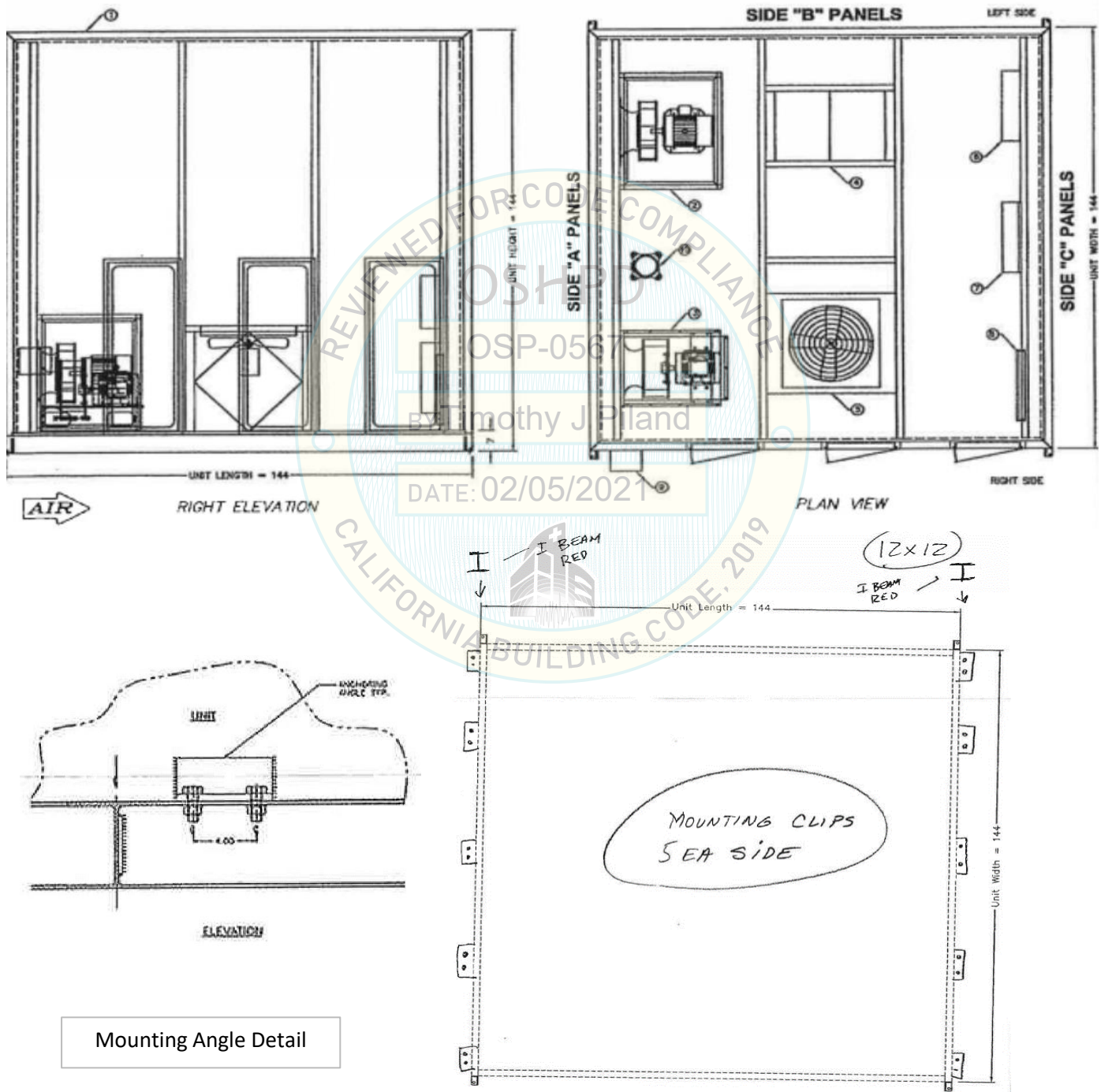
1800930-CR-001-R2

Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/Governair ITF Custom Air Handling Units
Model Number: ITF

Serial Number:

UUT 6

Unit Drawings



Mounting Angle Detail

Plan View - Mounting Angle Layout

UNIT UNDER TEST (UUT) SUMMARY SHEET



1800930-CR-001-R2

Manufacturer:	Nortek Air Solutions, LLC	UUT 7a
Model Line:	Temtrol/Governair ITF Custom Air Handling Units	
Model Number:	ITF	
Serial Number:		

Product Construction 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

Options/Subcomponent Summary:
 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 humidifier (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 Properties										
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)						
	Depth	Width	Height	Front-Back	Side-Side	Vertical				
9900	158	136	114	6.7	6.6	8.2				
UUT Highest Passed Seismic Run Information										
Building Code		Test Criteria		S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2019		ICC-ES AC156 (2015)		1.93	1.0	1.5	3.09	2.32	1.29	0.51
				1.93	0.0	1.5				

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

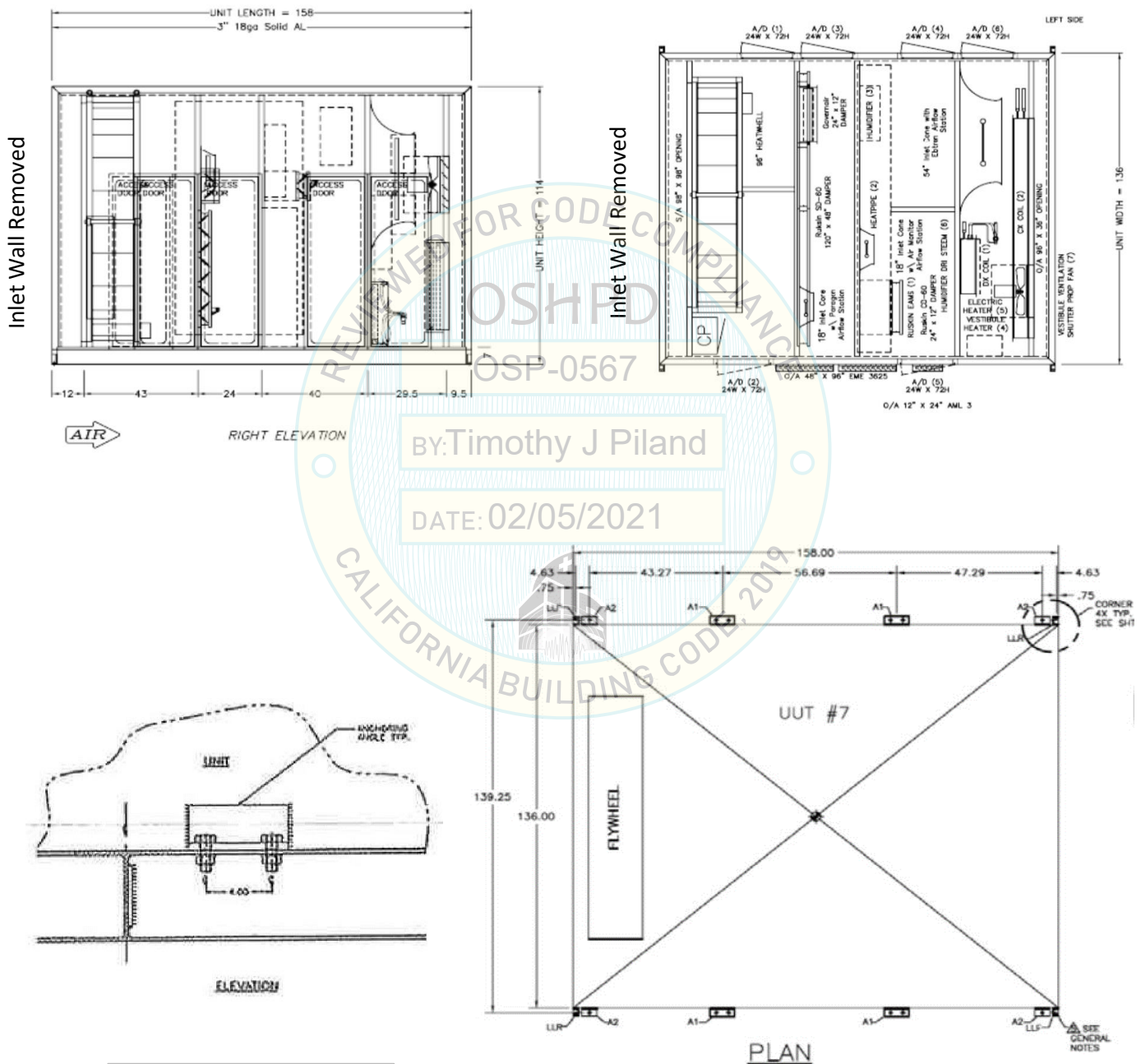
1800930-CR-001-R2



UUT 7a

Serial Number:

Unit Drawings



Mounting Angle Detail

Mounting Angle Layout

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UNIT UNDER TEST (UUT) SUMMARY SHEET



1800930-CR-001-R2

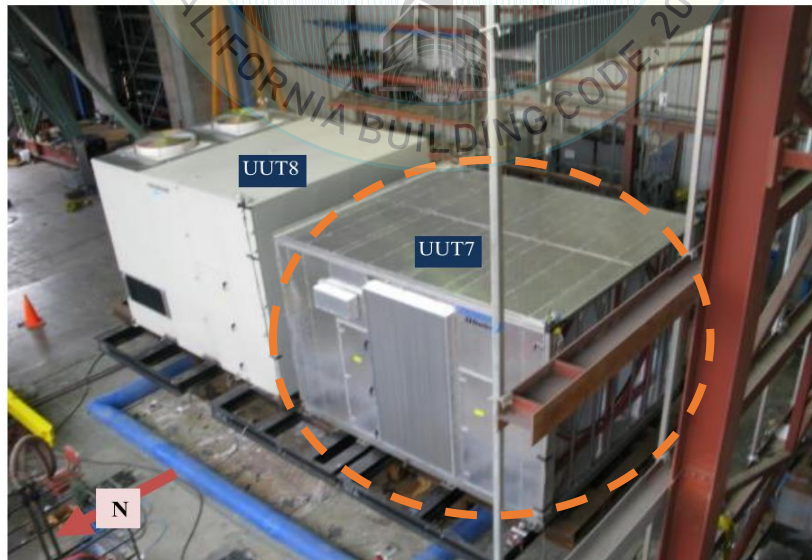
Manufacturer:	Nortek Air Solutions, LLC	UUT 7b
Model Line:	Temtrol/Governair ITF Custom Air Handling Units	
Model Number:	ITF	
Serial Number:		

Product Construction Summary:
Cabinet: 14 ga. aluminum exterior, 18 ga. aluminum liner, Standard, stainless steel frame, 7" base floor; **Wall Configuration:** inlet and outlet walls removed

Options/Subcomponent Summary:
 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 humidifier (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 Properties									
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)					
	Depth	Width	Height	Front-Back	Side-Side	Vertical			
9900	158	136	114	6.7	7.8	8.1			
UUT Highest Passed Seismic Run Information									
Building Code	Test Criteria	S _{DS} (g)	z/h	I _P	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)	
CBC 2019	ICC-ES AC156 (2015)	1.93	1.0	1.5	3.09	2.32	1.29	0.51	
		1.93	0.0	1.5					

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

UNIT UNDER TEST (UUT) SUMMARY SHEET

1800930-CR-001-R2

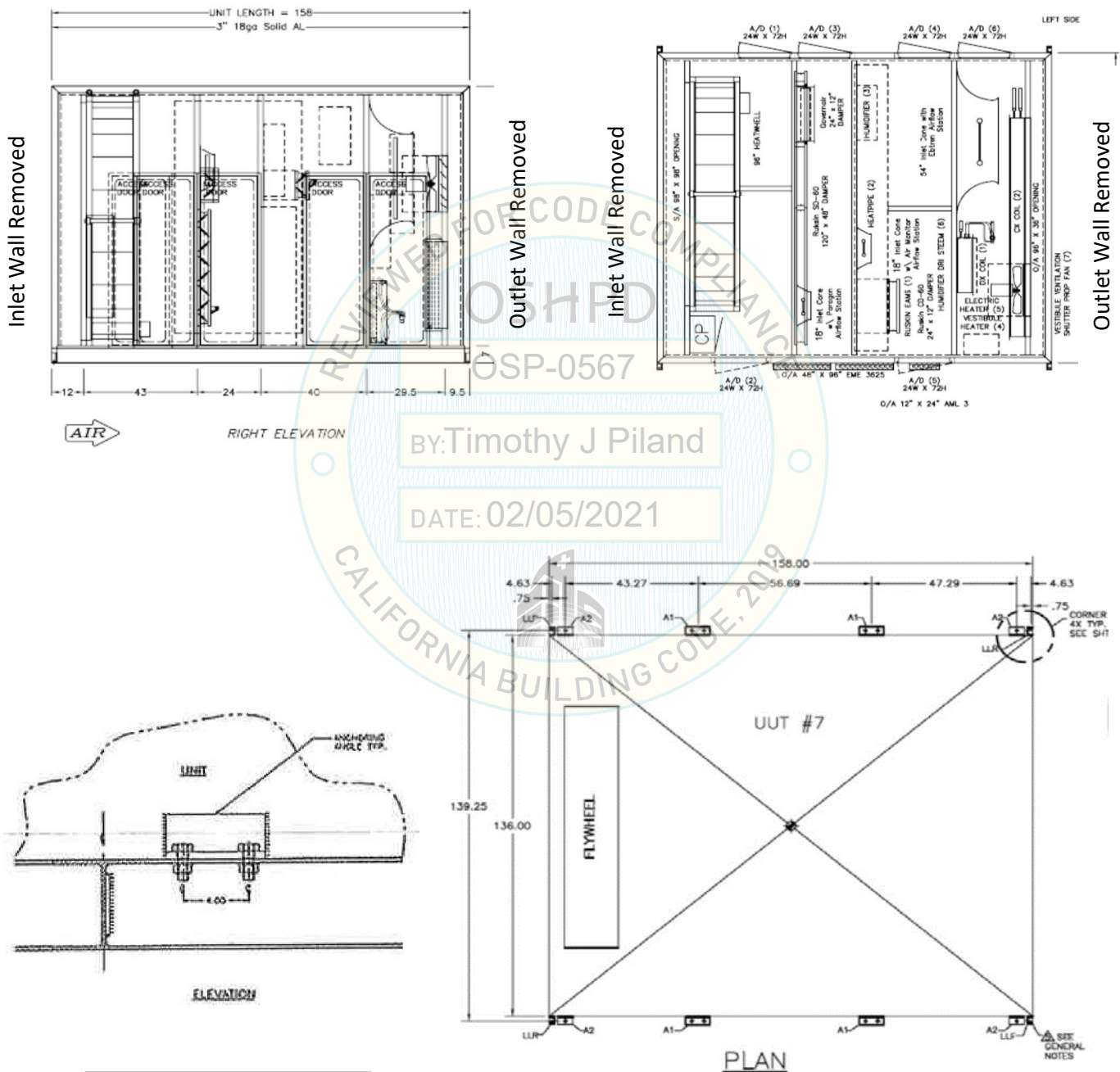


Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/Governair ITF Custom Air Handling Units
Model Number: ITF

Serial Number:

UUT 7b

Unit Drawings



Mounting Angle Detail

Mounting Angle Layout

UNIT UNDER TEST (UUT) SUMMARY SHEET



1800930-CR-001-R2

Manufacturer:	Nortek Air Solutions, LLC	UUT 7c
Model Line:	Temtrol/Governair ITF Custom Air Handling Units	
Model Number:	ITF	
Serial Number:		

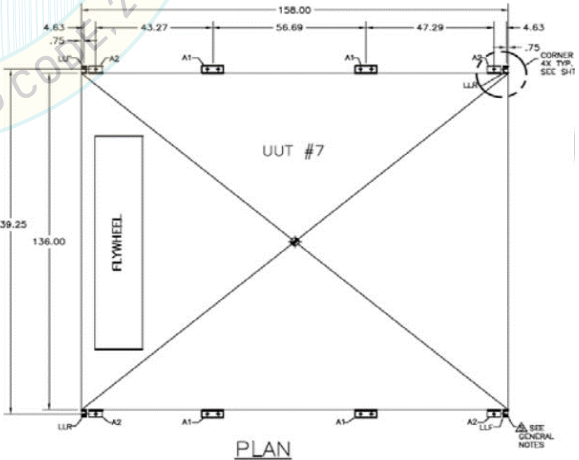
Product Construction Summary:
Cabinet: 14 ga. aluminum exterior, 18 ga. aluminum liner, Standard, stainless steel frame, 7" base floor; **Wall Configuration:** three walls removed and stand alone. 6" panels added to support corners (see details on next page).

Options/Subcomponent Summary:
 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 humidifier (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 Properties									
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)					
	Depth	Width	Height	Front-Back	Side-Side	Vertical			
9900	158	136	114	5.4	6.8	8.1			
UUT Highest Passed Seismic Run Information									
Building Code	Test Criteria	S _{DS} (g)	z/h	I _P	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)	
CBC 2019	ICC-ES AC156 (2015)	1.93	1.0	1.5	3.09	2.32	1.29	0.51	
		1.93	0.0	1.5					

Test Mounting Details:





PLAN

Mounting Angle Layout

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

1800930-CR-001-R2



UUT 7c

Serial Number:

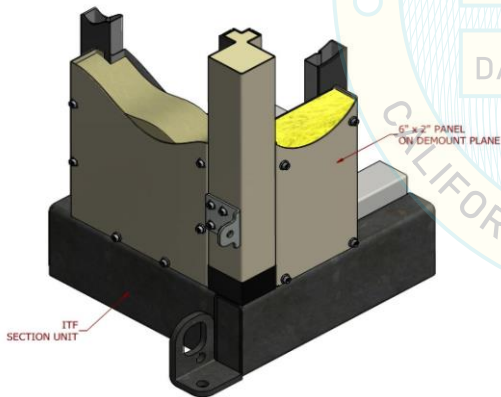
Unit Drawings



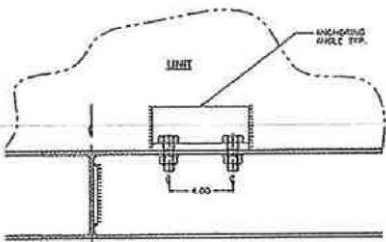
RIGHT ELEVATION

BY: Timothy J Piland

DATE: 02/05/202



6" Panel Detail



Mounting Angle Detail



6" Panels - Highlighted Red

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UNIT UNDER TEST (UUT) SUMMARY SHEET



1800930-CR-001-R2

Manufacturer:	Nortek Air Solutions, LLC	UUT 8a
Model Line:	Temtrol/Governair ITF Custom Air Handling Units	
Model Number:	ITF	
Serial Number:		

Product Construction 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

Options/Subcomponent Summary:

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 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").

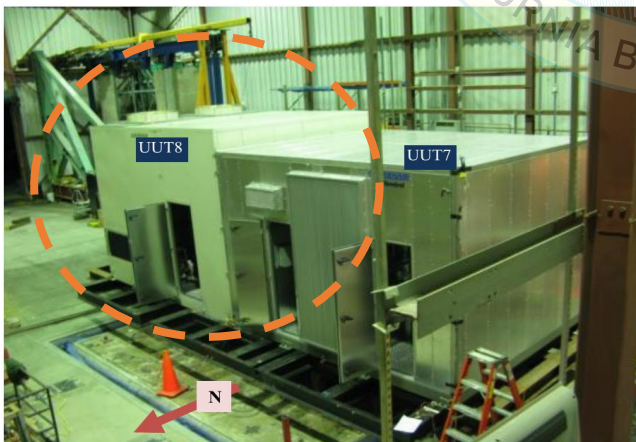
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
10500	158	136	128	6.7	7.9	8.2

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2019	ICC-ES AC156 (2015)	1.93	1.0	1.5	3.09	2.32	1.29	0.51
		1.93	0.0	1.5				

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

UNIT UNDER TEST (UUT) SUMMARY SHEET

NORTEK
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TRU
COMPLIANCE

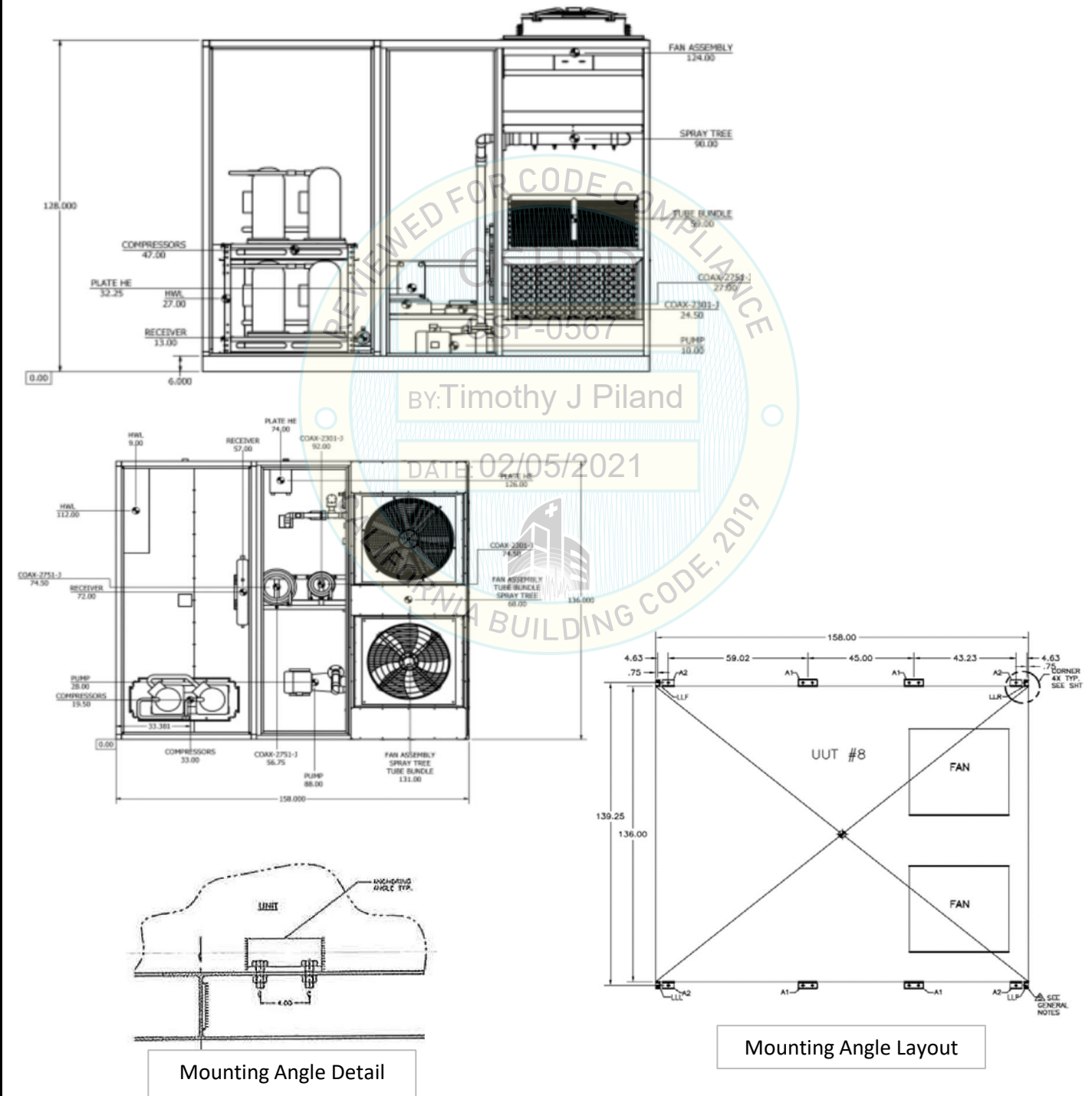
1800930-CR-001-R2

Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/Governair ITF Custom Air Handling Units
Model Number: ITF

Serial Number:

UUT 8a

Unit Drawings



UNIT UNDER TEST (UUT) SUMMARY SHEET



1800930-CR-001-R2

Manufacturer:	Nortek Air Solutions, LLC	UUT 8b
Model Line:	Temtrol/Governair ITF Custom Air Handling Units	
Model Number:	ITF	
Serial Number:		

Product Construction 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 stand alone

Options/Subcomponent Summary:

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 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").

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
10500	158	136	128	6.7	6.4	8.3

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2019	ICC-ES AC156 (2015)	1.93	1.0	1.5	3.09	2.32	1.29	0.51
		1.93	0.0	1.5				

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

UNIT UNDER TEST (UUT) SUMMARY SHEET



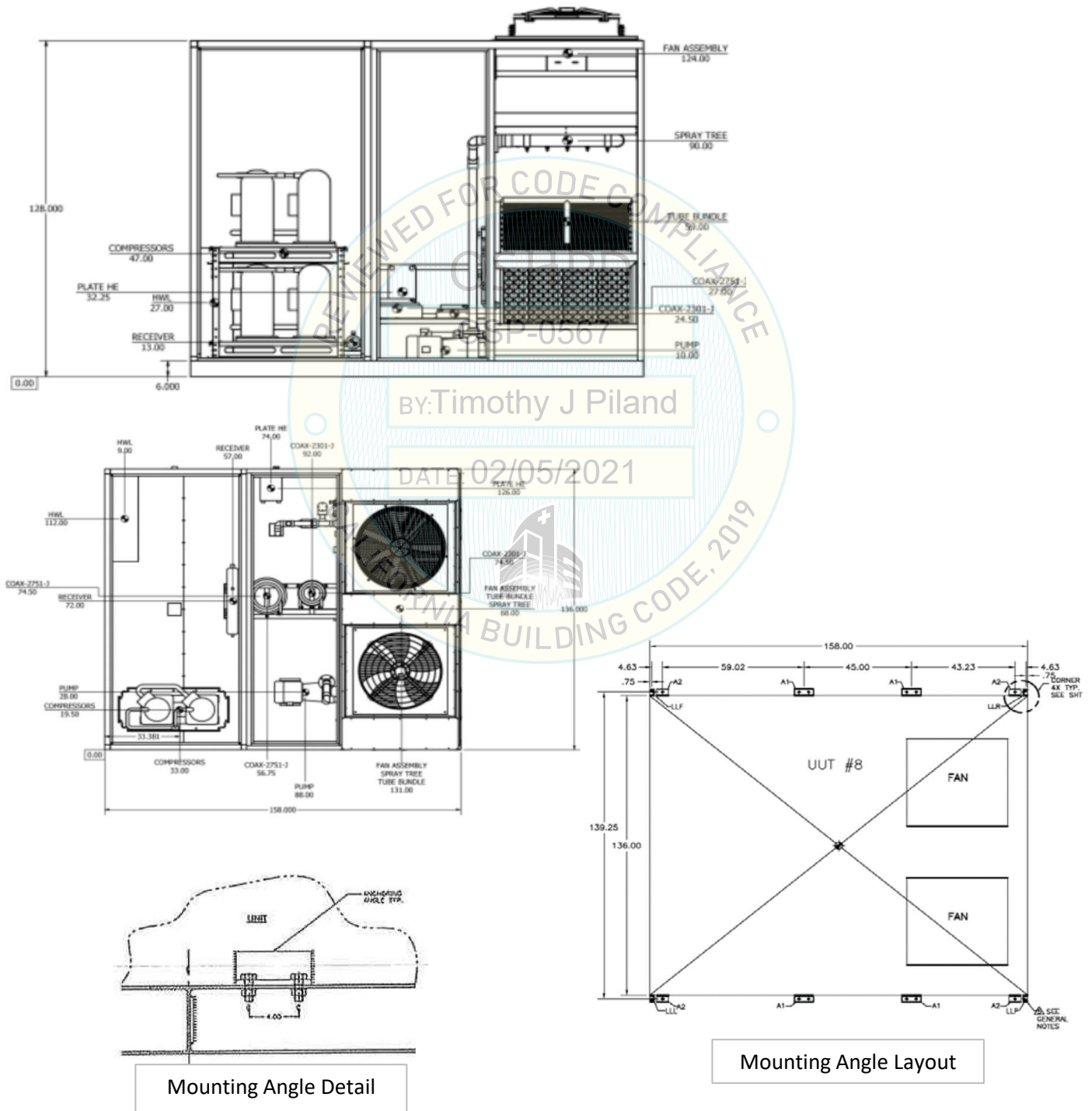
1800930-CR-001-R2

Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/Governair ITF Custom Air Handling Units
Model Number: ITF

Serial Number:

UUT 8b

Unit Drawings



UNIT UNDER TEST (UUT) SUMMARY SHEET



1800930-CR-001-R2

Manufacturer:	Nortek Air Solutions, LLC	UUT 9
Model Line:	Temtrol/Governair ITF Custom Air Handling Units	
Model Number:	ITF	
Serial Number:		

Product Construction 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.

Options/Subcomponent Summary:

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 Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
12,436 *	138	300	138	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.

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _P	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2019	ICC-ES AC156 (2015)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test 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 functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

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UNIT UNDER TEST (UUT) SUMMARY SHEET

1800930-CR-001-R2

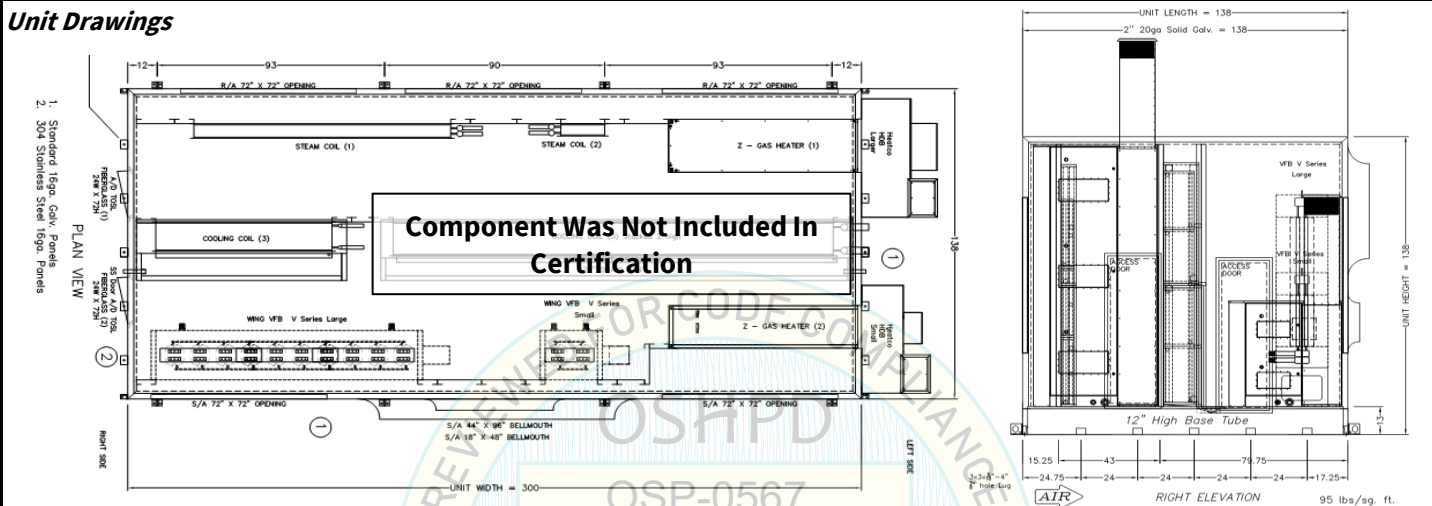


Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/Governair ITF Custom Air Handling Units
Model Number: ITF

Serial Number:

UUT 9

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) 16ga. 2"x4" 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 panel. (1) channel was added to the exterior coil wall, and (2) were added to the interior coil wall.



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UNIT UNDER TEST (UUT) SUMMARY SHEET



1800930-CR-001-R2

Manufacturer:	Nortek Air Solutions, LLC	UUT 10
Model Line:	Temtrol/Governair ITF Custom Air Handling Units	
Model Number:	ITF	
Serial Number:		

Product Construction 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

Options/Subcomponent Summary:
 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 Properties									
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)					
	Depth	Width	Height	Front-Back	Side-Side	Vertical			
14,800	288	144	144	10.1	10.0	25.2			
UUT Highest Passed Seismic Run Information									
Building Code		Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2019		ICC-ES AC156 (2015)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
			2.5	0.0	1.5				

Test 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 functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET



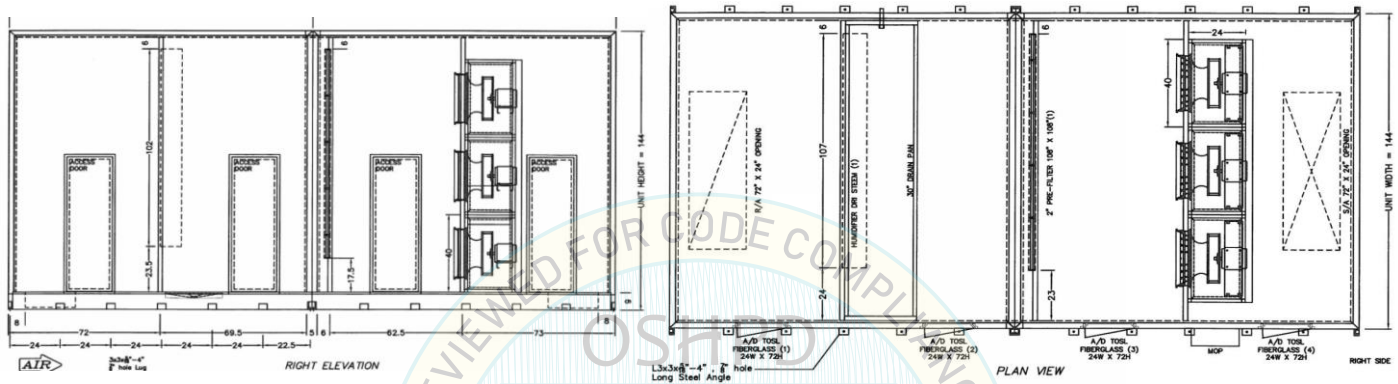
1800930-CR-001-R2

Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/Governair ITF Custom Air Handling Units
Model Number: ITF

Serial Number:

UUT 10

Unit Drawings



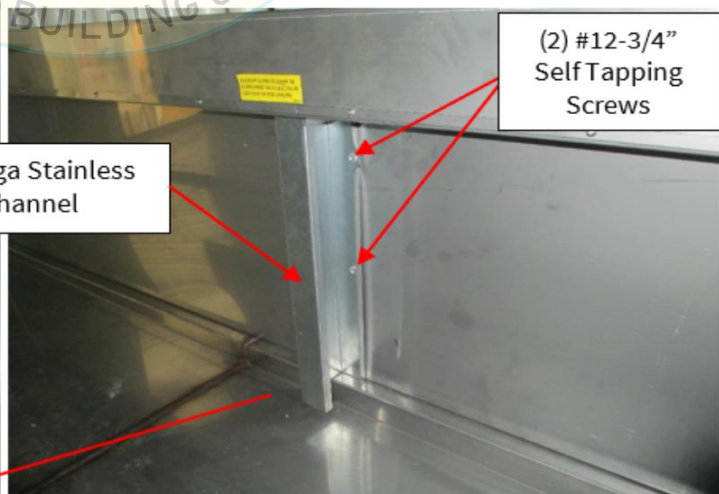
Seismic Upgrades Implemented:

The seismic upgrade for UUT10 consisted of mounting a 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.

DATE: 02/05/2021



(1) 2"x4" 16ga Stainless Steel Channel



(2) #12-3/4" Self Tapping Screws

UNIT UNDER TEST (UUT) SUMMARY SHEET



1800930-CR-001-R2

Manufacturer:	Nortek Air Solutions, LLC	UUT 11
Model Line:	Temtrol/Governair ITF Custom Air Handling Units	
Model Number:	ITF	
Serial Number:		

Product Construction 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.

Options/Subcomponent Summary:

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 Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
10,942*	138	300	138	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.

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2019	ICC-ES AC156 (2015)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

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

UNIT UNDER TEST (UUT) SUMMARY SHEET



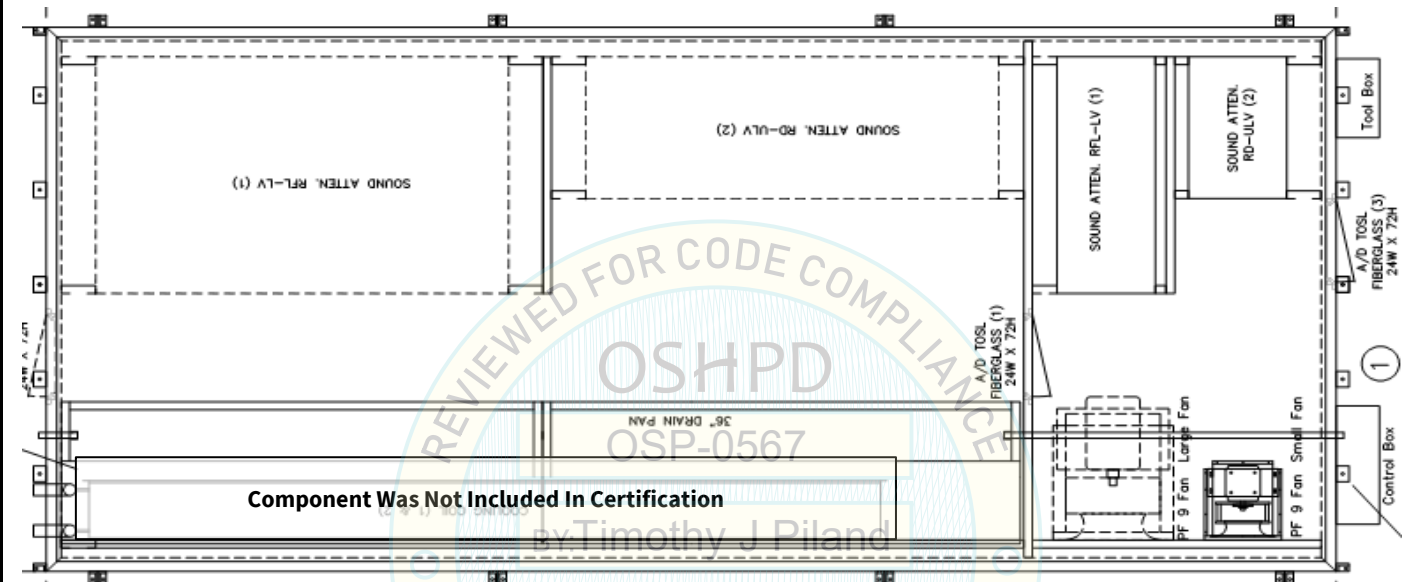
1800930-CR-001-R2

Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/Governair ITF Custom Air Handling Units
Model Number: ITF

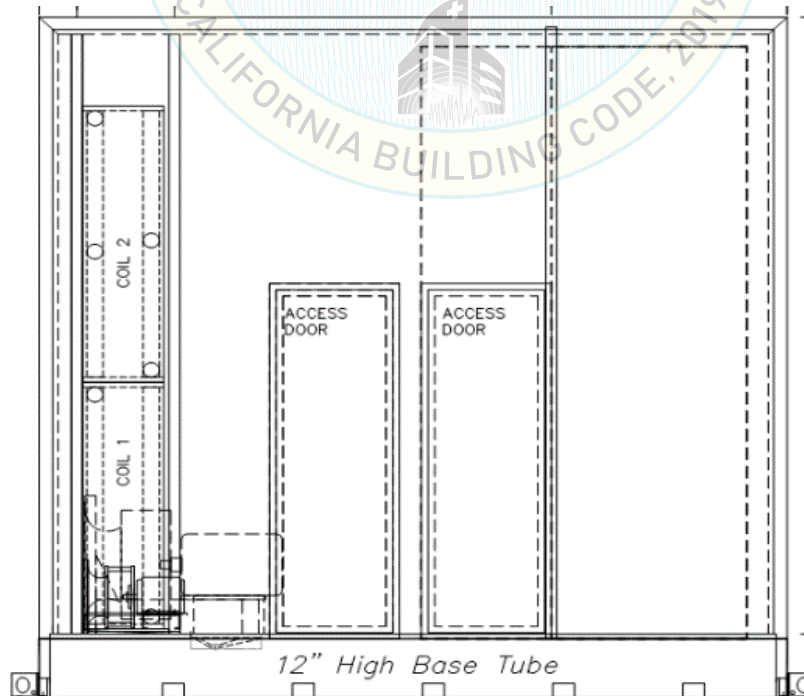
Serial Number:

UUT 11

Unit Drawings



DATE: 03/05/2021



Right Elevation View

UNIT UNDER TEST (UUT) SUMMARY SHEET



1800930-CR-001-R2

Manufacturer:	Nortek Air Solutions, LLC	UUT 12
Model Line:	Temtrol/Governair ITF Custom Air Handling Units	
Model Number:	ITF	
Serial Number:		

Product Construction 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.

Options/Subcomponent Summary:
 Temtrol Chilled Water Coil-Copper Fins (15"x187"x50"), Temtrol Chilled Water Coil-Aluminum Fins (15"x187"x56")

UUT Properties										
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)						
	Depth	Width	Height	Front-Back	Side-Side	Vertical				
13,118	130	206	131	10.5	7.1	13.2				
UUT Highest Passed Seismic Run Information										
Building Code		Test Criteria		S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2019		ICC-ES AC156 (2015)		2.0	1.0	1.5	3.20	2.40	1.67	0.67
				2.5	0.0	1.5				



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

UNIT UNDER TEST (UUT) SUMMARY SHEET



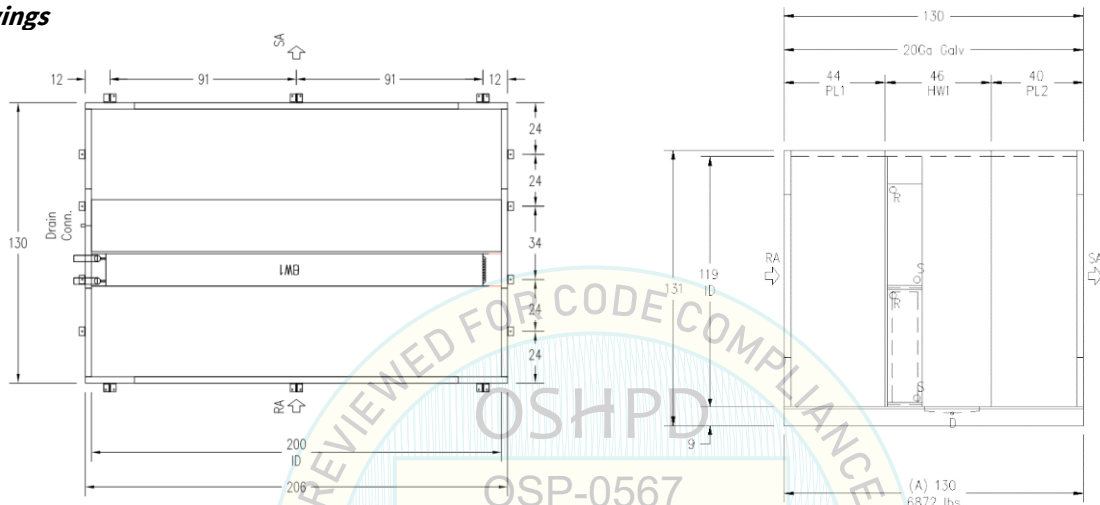
1800930-CR-001-R2

Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/Governair ITF Custom Air Handling Units
Model Number: ITF

UUT 12

Serial Number:

Unit Drawings



Seismic Upgrades Implemented (required for large coils as defined in table 7):

(1) Double top brackets at seams, (2) fasteners changed to 5/16" grade 8 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.



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UNIT UNDER TEST (UUT) SUMMARY SHEET



1800930-CR-001-R2

Manufacturer:	Nortek Air Solutions, LLC	UUT 13
Model Line:	Temtrol/Governair ITF Custom Air Handling Units	
Model Number:	ITF	
Serial Number:		

Product Construction 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.

Options/Subcomponent Summary:

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 ECMI 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), Saginwa enclosure (30"Wx48"Hx16"D, NEMA 4), Wiegmann MOP(12"Dx30"Wx30"H, NEMA 4), electrical components (see table 13 for complete list).

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
18,092	288	144	144	15.4	29.3	21.7

UUT Highest Passed Seismic Run Information

CBC 2019	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2019	ICC-ES AC156 (2015)	2.0	1.0	1.5	3.20	2.40	1.67	0.67
		2.5	0.0	1.5				

Test 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.

UNIT UNDER TEST (UUT) SUMMARY SHEET



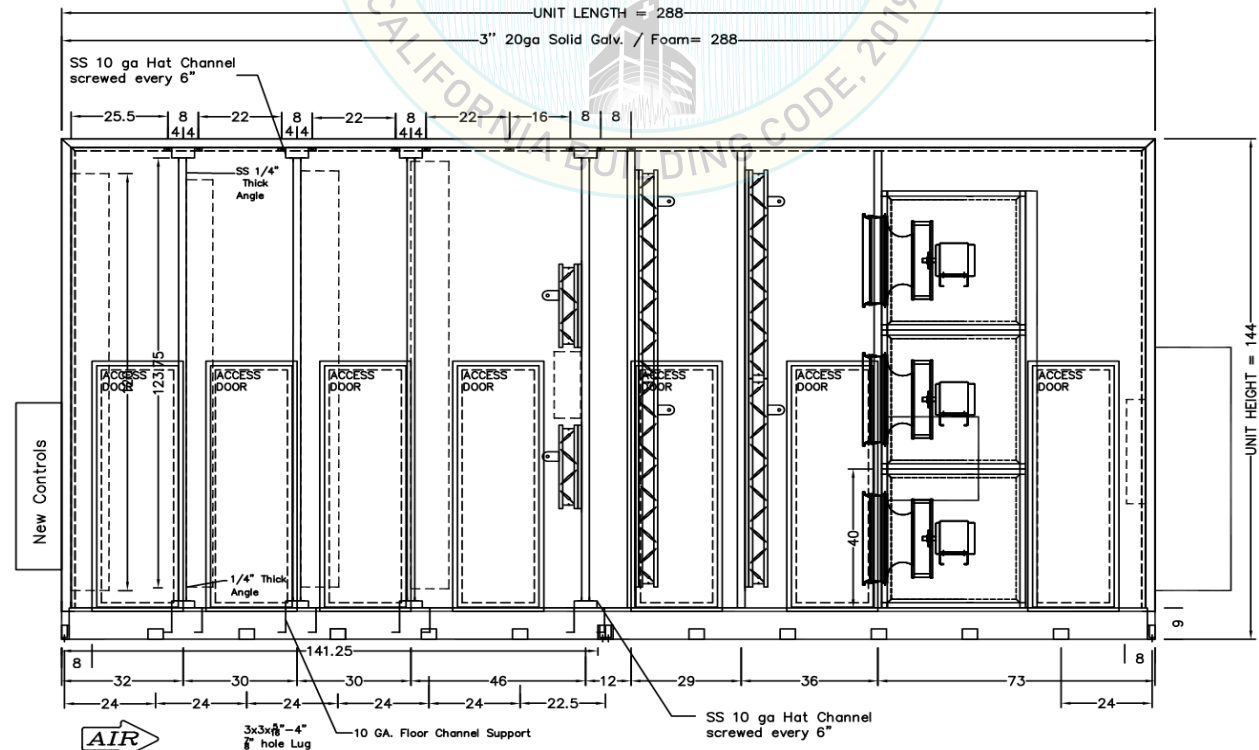
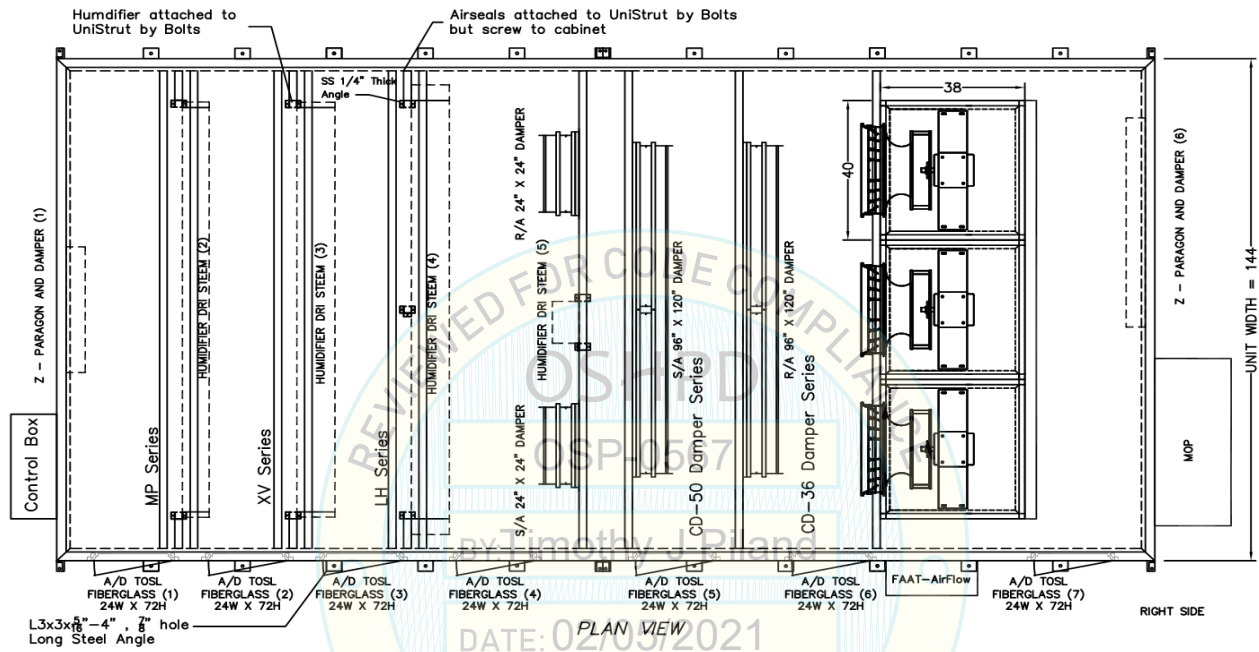
1800930-CR-001-R2

Manufacturer: Nortek Air Solutions, LLC
Model Line: Temtrol/Governair ITF Custom Air Handling Units
Model Number: ITF

Serial Number:

UUT 13

Unit Drawings



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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.



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

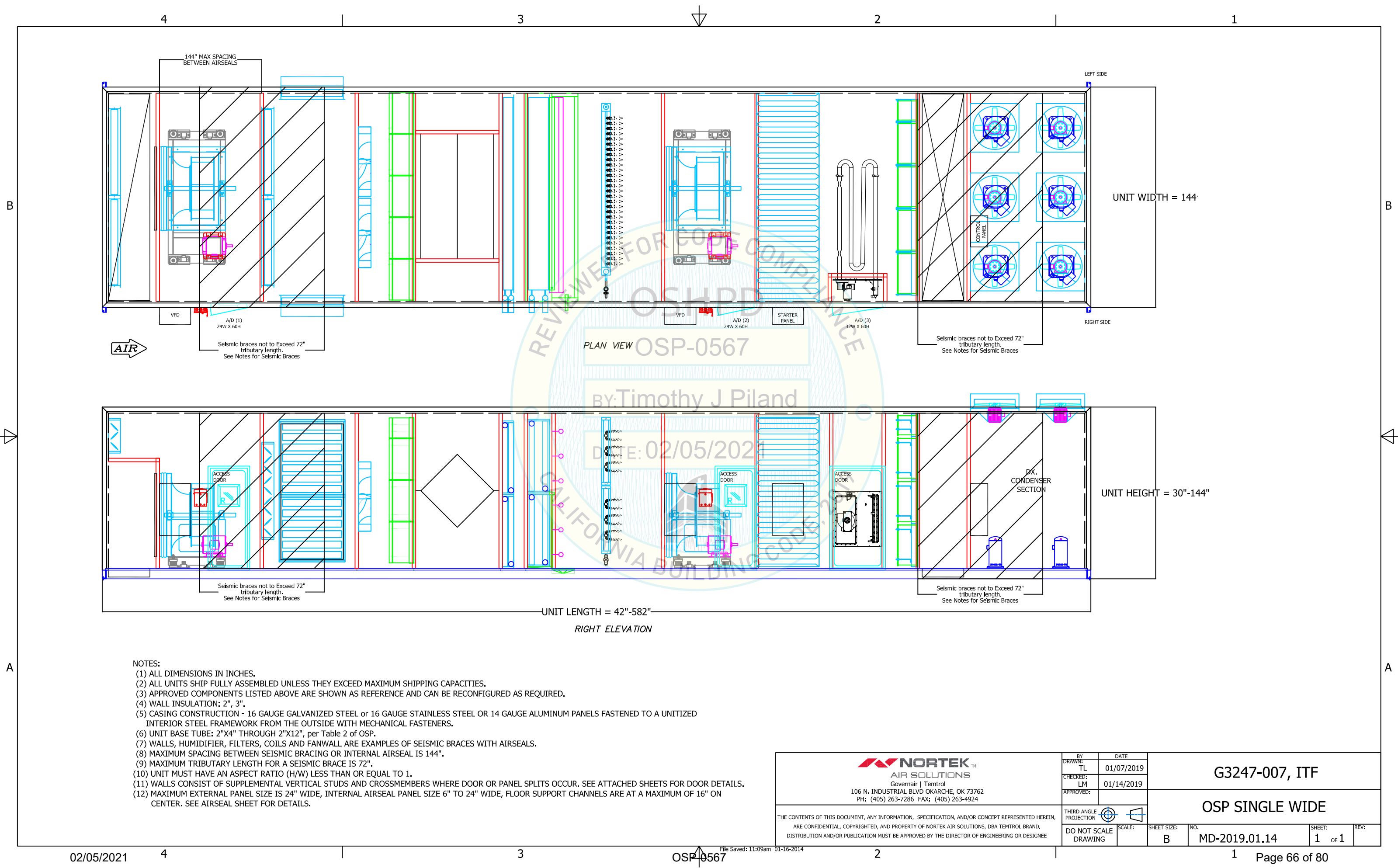
Optional Window

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

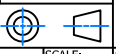
GOVERNNAIR®

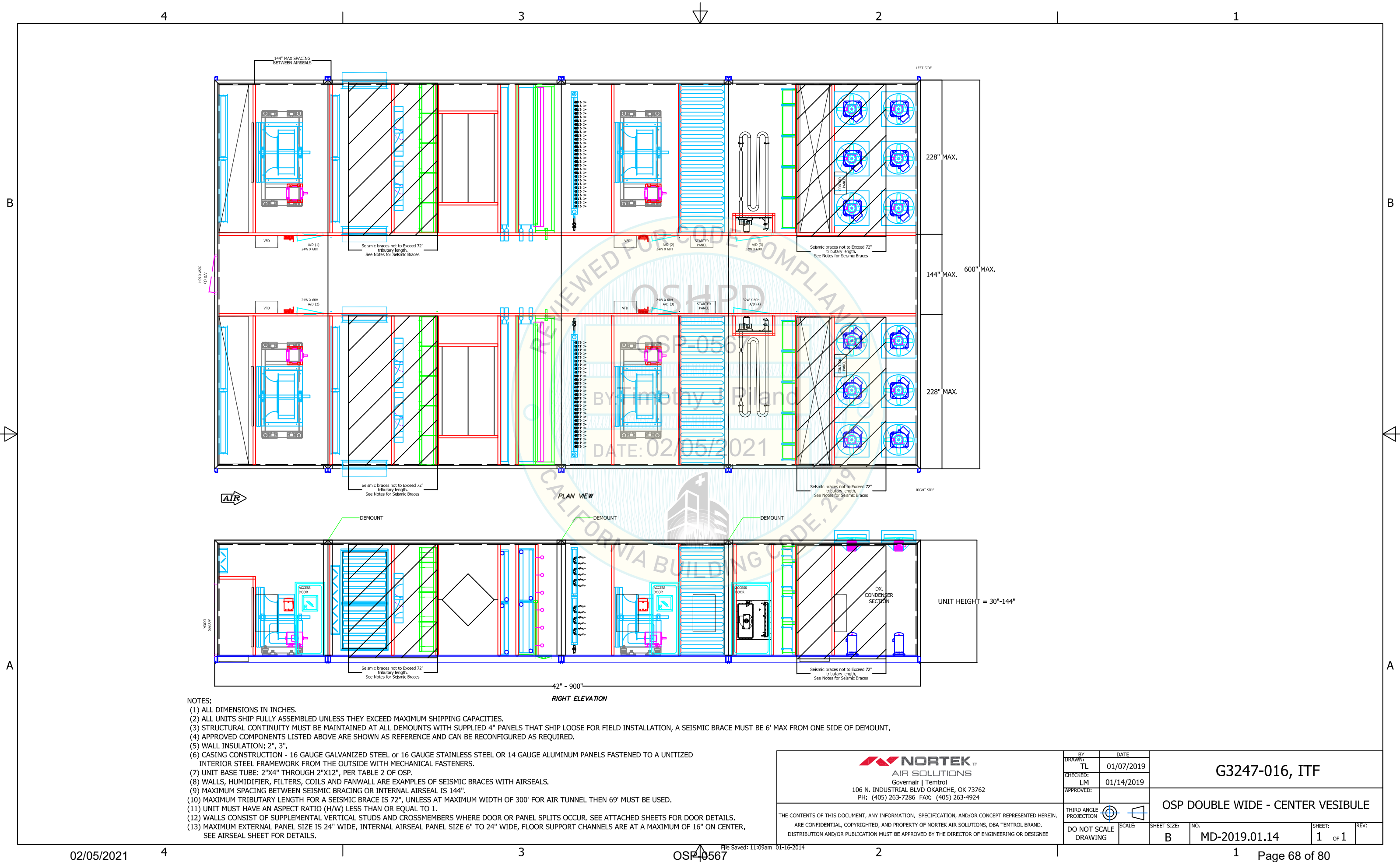
ITF DETAILS, INSWING DOOR

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



- 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.

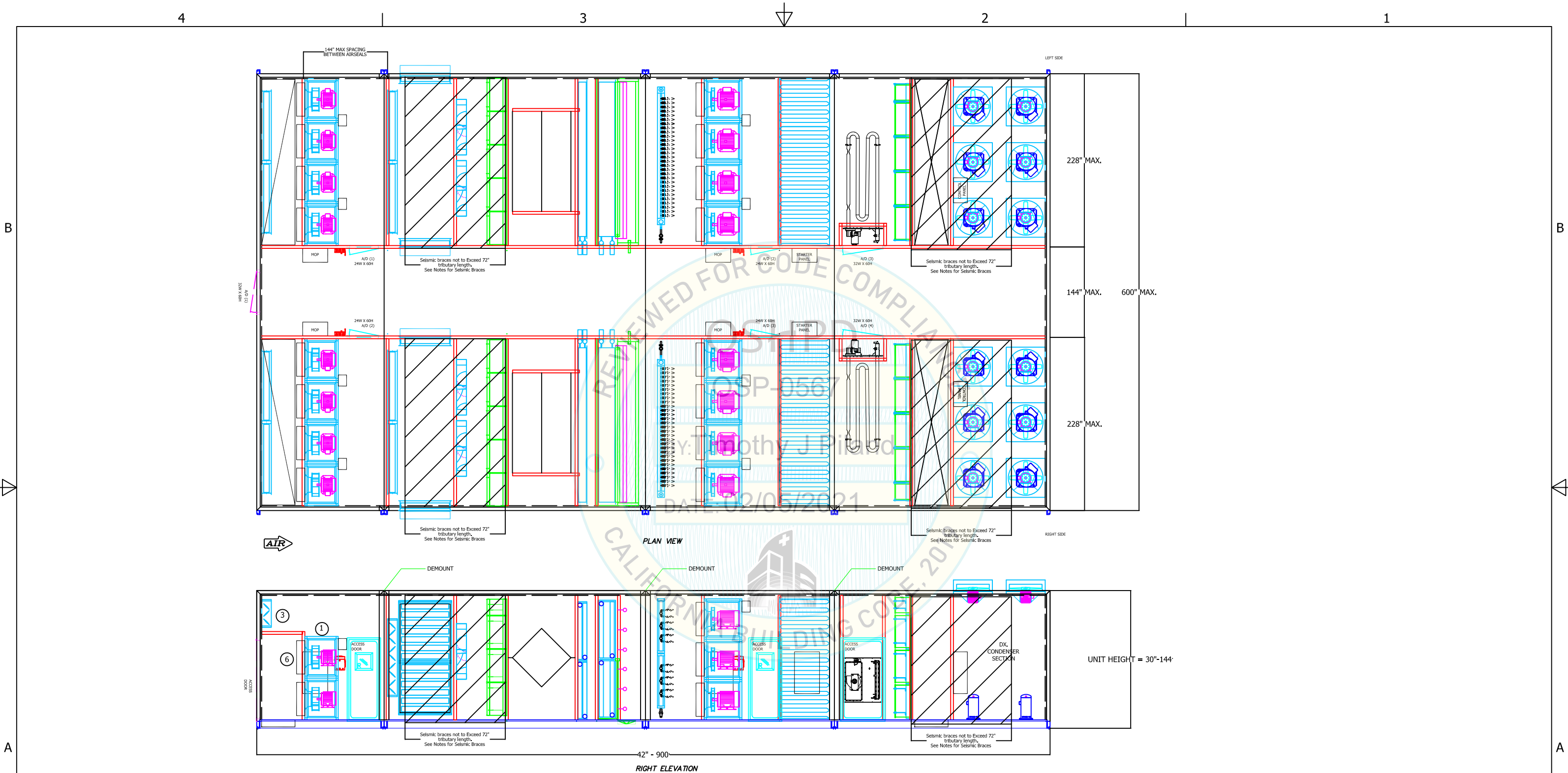
NORTEK™ AIR SOLUTIONS Governair Temtrol 106 N. INDUSTRIAL BLVD OKARCHIE, OK 73762 PH: (405) 263-7286 FAX: (405) 263-4924	BY DRAWN: TL	DATE 01/07/2019	G3247-007, ITF			
	CHECKED: LM	01/14/2019				
	APPROVED:		OSP SINGLE WIDE			
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						SHEET: 1 OF 1 REV:



NOTES:

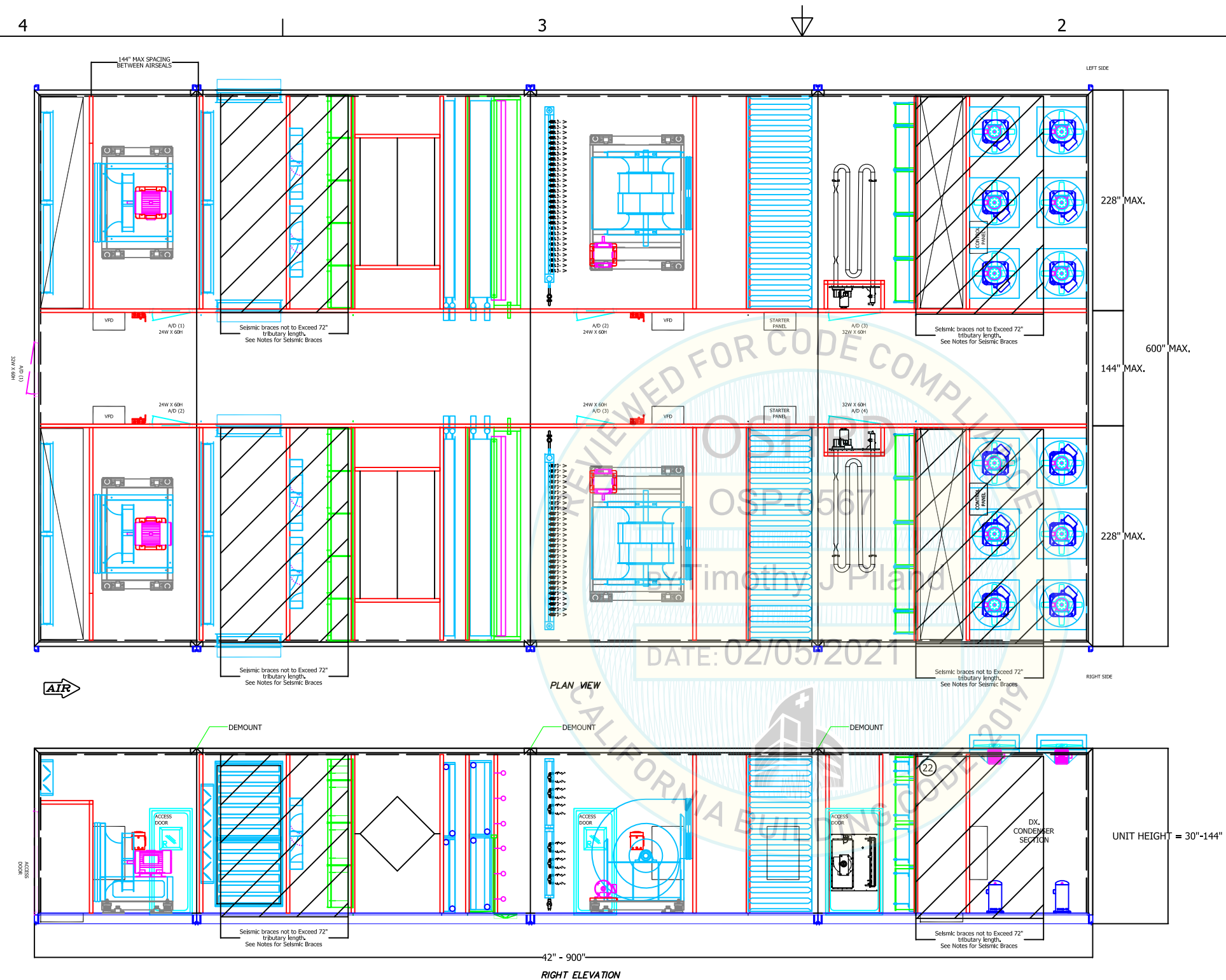
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- (3) STRUCTURAL CONTINUITY MUST BE MAINTAINED AT ALL DEMOUNTS WITH SUPPLIED 4" PANELS THAT SHIP LOOSE FOR FIELD INSTALLATION, A SEISMIC BRACE MUST BE 6' MAX FROM ONE SIDE OF DEMOUNT.
- (4) APPROVED COMPONENTS LISTED ABOVE ARE SHOWN AS REFERENCE AND CAN BE RECONFIGURED AS REQUIRED.
- (5) WALL INSULATION: 2", 3".
- (6) 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.
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- (9) MAXIMUM SPACING BETWEEN SEISMIC BRACING OR INTERNAL AIRSEAL IS 144".
- (10) MAXIMUM TRIBUTARY LENGTH FOR A SEISMIC BRACE IS 72", UNLESS AT MAXIMUM WIDTH OF 300' FOR AIR TUNNEL THEN 69' MUST BE USED.
- (11) UNIT MUST HAVE AN ASPECT RATIO (H/W) LESS THAN OR EQUAL TO 1.
- (12) WALLS CONSIST OF SUPPLEMENTAL VERTICAL STUDS AND CROSSMEMBERS WHERE DOOR OR PANEL SPLITS OCCUR. SEE ATTACHED SHEETS FOR DOOR DETAILS.
- (13) 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.

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		CHECKED: LM	01/14/2019				
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		DO NOT SCALE DRAWING					
		SCALE:	SHEET SIZE: B	NO. MD-2019.01.14	SHEET: 1 OF 1	REV:	



- NOTES:
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 - (3) STRUCTURAL CONTINUITY MUST BE MAINTAINED AT ALL DEMOUNTS WITH SUPPLIED 4" PANELS THAT SHIP LOOSE FOR FIELD INSTALLATION, A SEISMIC BRACE MUST BE 6" MAX FROM ONE SIDE OF DEMOUNT.
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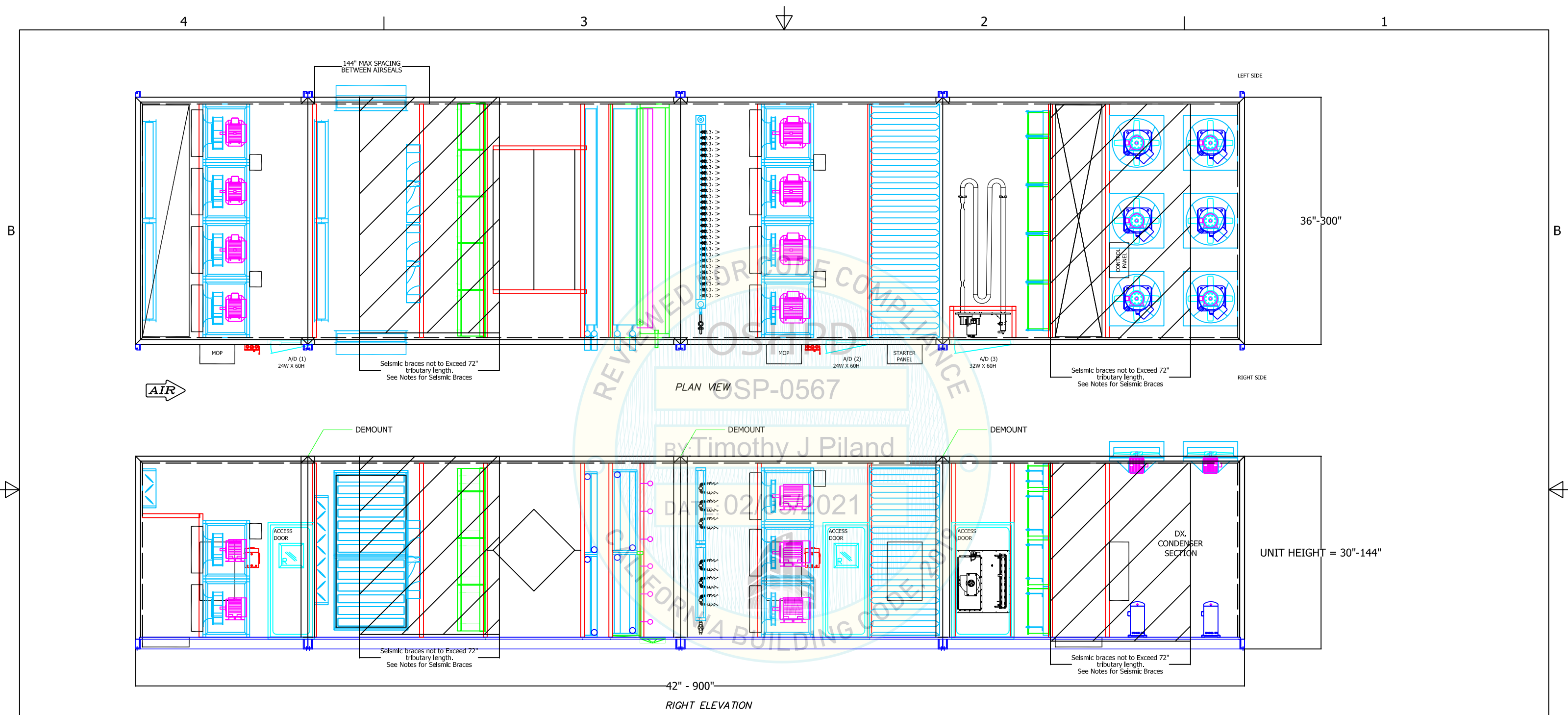
 NORTEK™ AIR SOLUTIONS Governair Temtrol 106 N. INDUSTRIAL BLVD OKARCHE, OK 73762 PH: (405) 263-7286 FAX: (405) 263-4924		BY DRAWN: TL	DATE 01/07/2019	G3247-017, ITF	
		CHECKED: LM	01/14/2019		
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		THIRD ANGLE PROJECTION			
		DO NOT SCALE DRAWING	SCALE:	SHEET SIZE: B	NO. MD-2019.01.14
				SHEET: 1 OF 1	REV:



- NOTES:

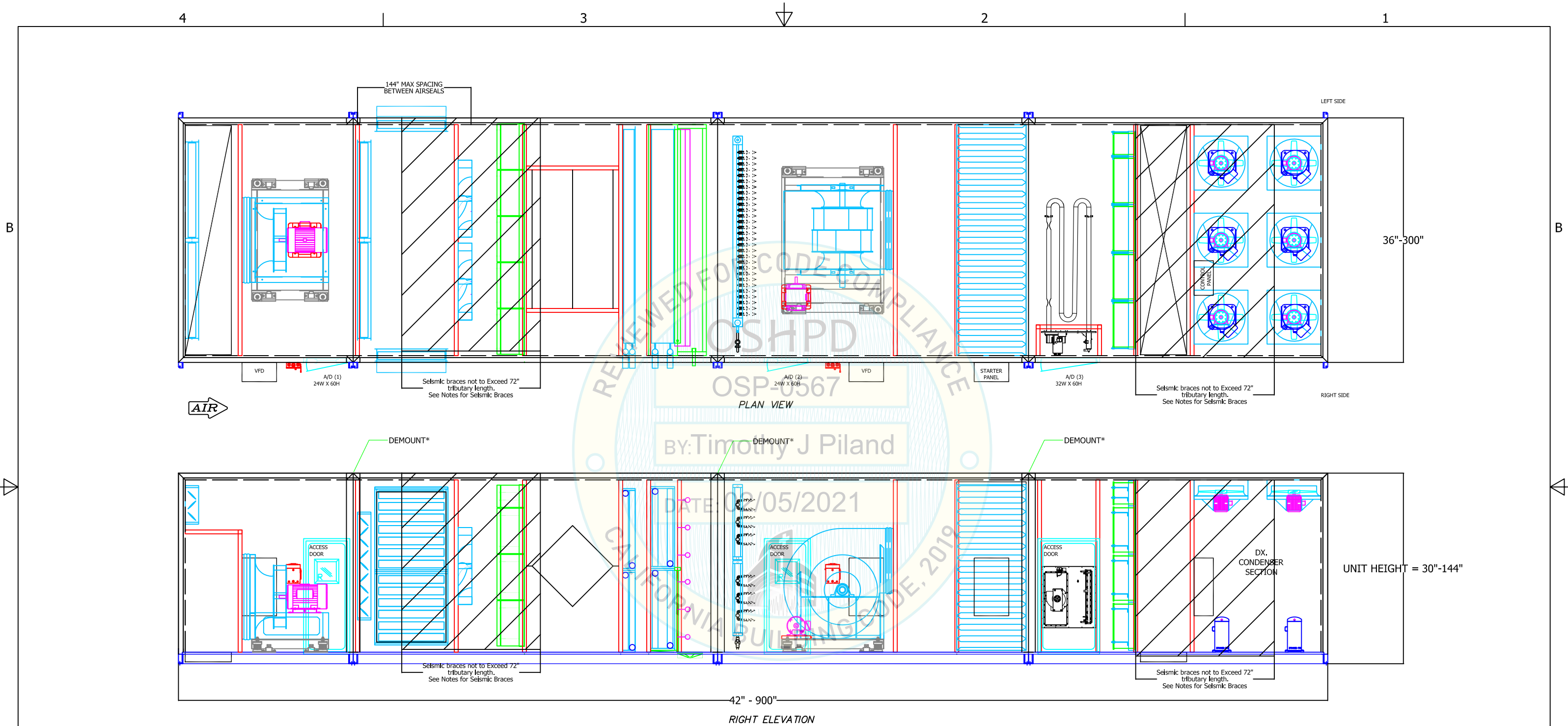
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 - (3) STRUCTURAL CONTINUITY MUST BE MAINTAINED AT ALL DEMOUNTS WITH SUPPLIED 4" PANELS THAT SHIP LOOSE FOR FIELD INSTALLATION, A SEISMIC BRACE MUST BE 6' MAX FROM ONE SIDE OF DEMOUNT.
 - (4) APPROVED COMPONENTS LISTED ABOVE ARE SHOWN AS REFERENCE AND CAN BE RECONFIGURED AS REQUIRED.
 - (5) WALL INSULATION: 2", 3".
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 - (11) UNIT MUST HAVE AN ASPECT RATIO (H/W) LESS THAN OR EQUAL TO 1.
 - (12) WALLS CONSIST OF SUPPLEMENTAL VERTICAL STUDS AND CROSSMEMBERS WHERE DOOR OR PANEL SPLITS OCCUR. SEE ATTACHED SHEETS FOR DOOR DETAILS.
 - (13) 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.

 NORTEKTM AIR SOLUTIONS Governair Temtrol 106 N. INDUSTRIAL BLVD OKARCHIE, OK 73762 PH: (405) 263-7286 FAX: (405) 263-4924	BY	DATE	G3247-018, ITF				
	DRAWN: TLM	01/207/2019					
	CHECKED: LM	01/14/2019					
	APPROVED:		OSP DOUBLE WIDE - CENTER VESTIBULE				
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	THIRD ANGLE PROJECTION						
DO NOT SCALE DRAWING	SCALE:	SHEET SIZE:	NO.	SHEET:	REV:		
		B	MD-2019.01.14	1 OF 1			



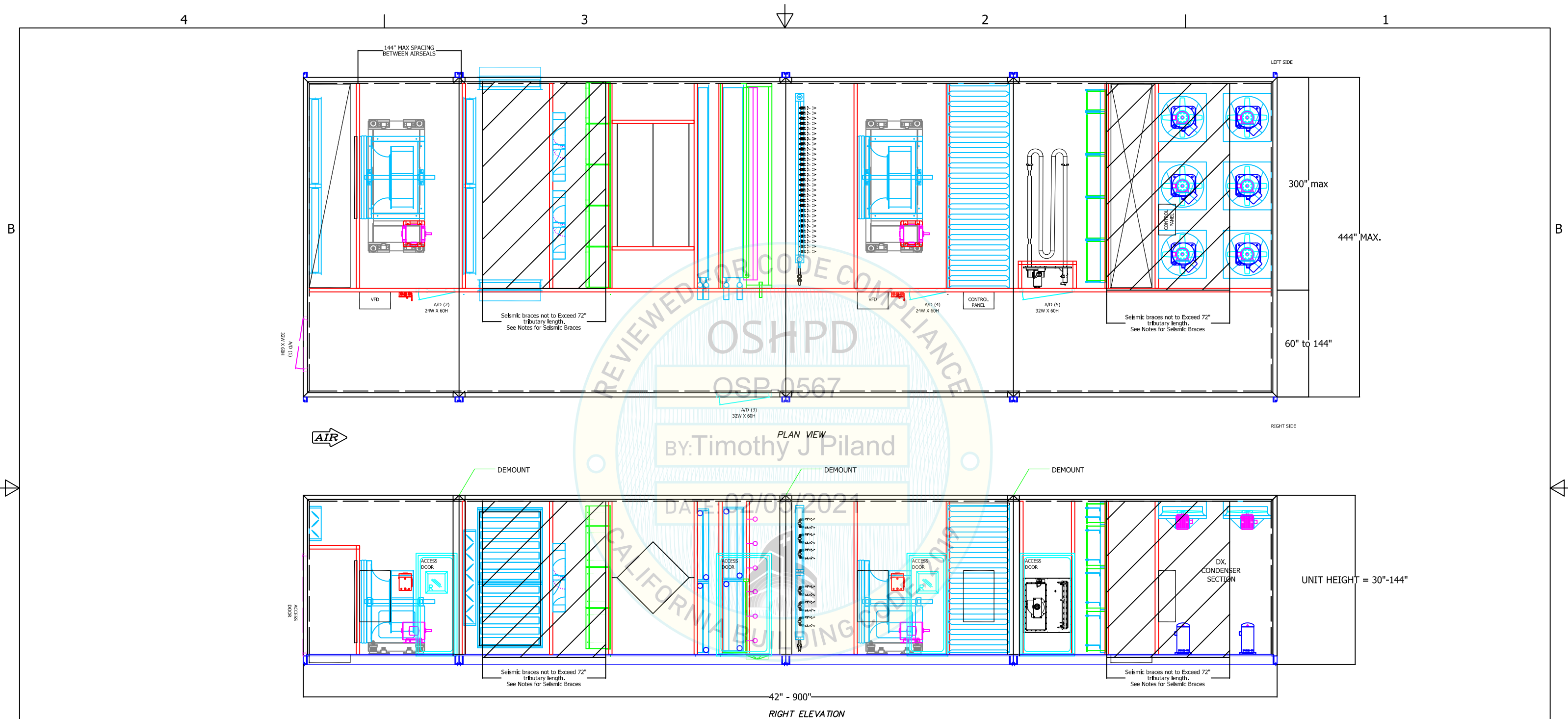
- NOTES:
- (1) ALL DIMENSIONS IN INCHES.
 - (2) ALL UNITS SHIP FULLY ASSEMBLED UNLESS THEY EXCEED MAXIMUM SHIPPING CAPACITIES.
 - (3) STRUCTURAL CONTINUITY MUST BE MAINTAINED AT ALL DEMOUNTS WITH SUPPLIED 4" PANELS THAT SHIP LOOSE FOR FIELD INSTALLATION, A SEISMIC BRACE MUST BE 6' MAX FROM ONE SIDE OF DEMOUNT.
 - (4) APPROVED COMPONENTS LISTED ABOVE ARE SHOWN AS REFERENCE AND CAN BE RECONFIGURED AS REQUIRED.
 - (5) WALL INSULATION: 2", 3".
 - (6) 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.
 - (7) UNIT BASE TUBE: 2"x4" THROUGH 2"x12", per Table 2 of OSP.
 - (8) WALLS, HUMIDIFIER, FILTERS, COILS AND FANWALL ARE EXAMPLES OF SEISMIC BRACES WITH AIRSEALS.
 - (9) MAXIMUM SPACING BETWEEN SEISMIC BRACING OR INTERNAL AIRSEAL IS 144".
 - (10) MAXIMUM TRIBUTARY LENGTH FOR A SEISMIC BRACE IS 72".
 - (11) UNIT MUST HAVE AN ASPECT RATIO (H/W) LESS THAN OR EQUAL TO 1.
 - (12) WALLS CONSIST OF SUPPLEMENTAL VERTICAL STUDS AND CROSSMEMBERS WHERE DOOR OR PANEL SPLITS OCCUR. SEE ATTACHED SHEETS FOR DOOR DETAILS.
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 NORTEK™ AIR SOLUTIONS Governair Temtrol 106 N. INDUSTRIAL BLVD OKARCHIE, OK 73762 PH: (405) 263-7286 FAX: (405) 263-4924		BY DRAWN: TL	DATE 01/07/2019	G3247-020, ITF	
		CHECKED: LM	01/14/2019		
		APPROVED:		OSP SINGLE WIDE - FWT	
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SHEET SIZE: B		NO. MD-2019.01.14	SHEET: 1 OF 1	REV:	



- NOTES:
- (1) ALL DIMENSIONS IN INCHES.
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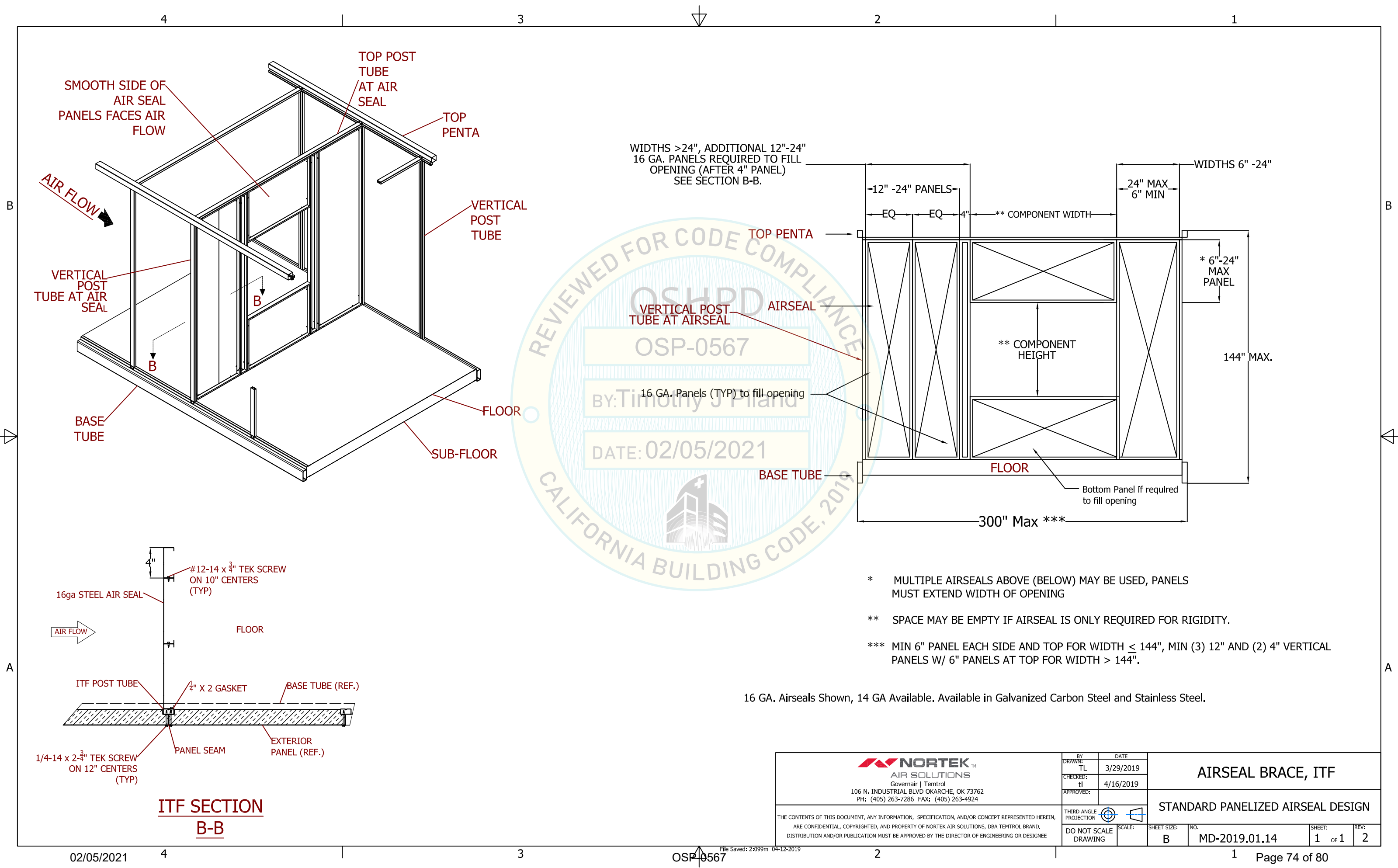
 Governair Temtrol 106 N. INDUSTRIAL BLVD OKARCHE, OK 73762 PH: (405) 263-7286 FAX: (405) 263-4924		BY DRAWN: TL	DATE 01/07/2019	G3247-021, ITF		
		CHECKED: LM	01/14/2019			
		APPROVED:		OSP SINGLE WIDE, DEMOUNT		
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NOTES:

- (1) ALL DIMENSIONS IN INCHES.
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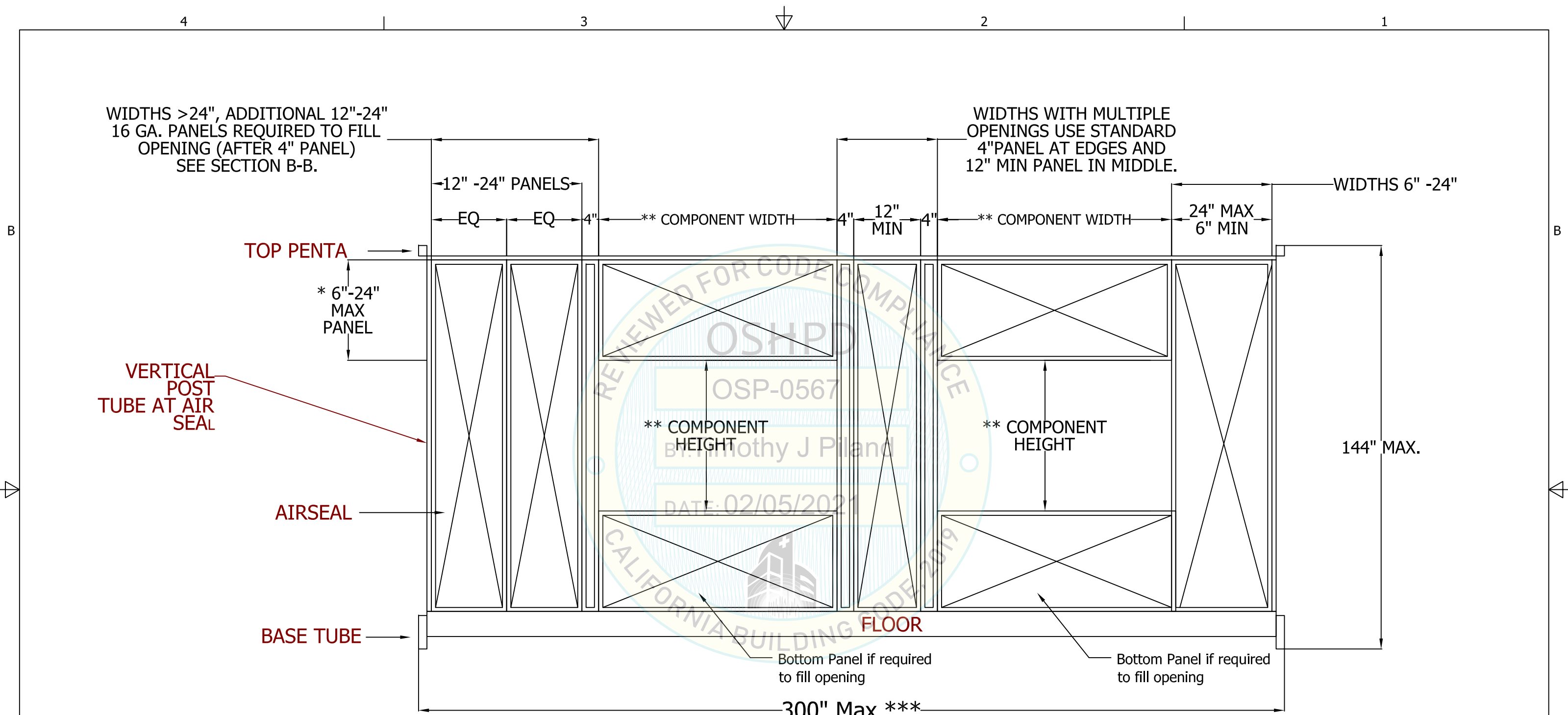
 NORTEK™ AIR SOLUTIONS Governair Temtrol 106 N. INDUSTRIAL BLVD OKARCHIE, OK 73762 PH: (405) 263-7286 FAX: (405) 263-4924	BY DRAWN: TL CHECKED: LM APPROVED:		DATE 01/07/2019 01/14/2019		G3247-022, ITF						
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					DO NOT SCALE DRAWING		SCALE:	SHEET SIZE: B	NO. MD-2019.01.14	SHEET: 1 OF 1	REV:



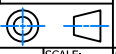
- * MULTIPLE AIRSEALS ABOVE (BELOW) MAY BE USED, PANELS MUST EXTEND WIDTH OF OPENING
- ** SPACE MAY BE EMPTY IF AIRSEAL IS ONLY REQUIRED FOR RIGIDITY.
- *** MIN 6" PANEL EACH SIDE AND TOP FOR WIDTH $\leq 144"$, MIN (3) 12" AND (2) 4" VERTICAL PANELS W/ 6" PANELS AT TOP FOR WIDTH $> 144"$.

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

 Governair Temtrol 106 N. INDUSTRIAL BLVD OKARCHE, OK 73762 PH: (405) 263-7286 FAX: (405) 263-4924		BY DRAWN: TL	DATE 3/29/2019	AIRSEAL BRACE, ITF			
		CHECKED: tl	4/16/2019	STANDARD PANELIZED AIRSEAL DESIGN			
		APPROVED:					
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- * 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 $\leq 144"$, MIN (3) 12" AND (2) 4" VERTICAL PANELS W/ 6" PANEL AT TOP FOR WIDTH $> 144"$.

 Governair Temtrol 106 N. INDUSTRIAL BLVD OKARCHE, OK 73762 PH: (405) 263-7286 FAX: (405) 263-4924		BY DRAWN: TL	DATE 3/29/2019	AIRSEAL BRACE WITH MULTIPLE OPENING, ITF	
		CHECKED: tl	4/16/2019		
		APPROVED:			
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		DO NOT SCALE DRAWING	SCALE:	SHEET SIZE: B	NO. MD-2019.01.14
				SHEET: 1 OF 1	REV: 2

2

1

UNIT INTERIOR

UNIT EXTERIOR

NOMINAL OPENING

DETAIL A-A

OSHPD

OSP-0567

BY: Timothy J Piland

DATE: 02/05/2021

1/4#14 X 2-3/4" TEK SCREW

12" SPACING O.C. MAX

1" x 2" TUBE 16 GA. GALV STEEL

3" CASING

DETAIL B

Title:

DETAIL, OPENING, CASING,
ITF

DRAWING NO.

221.00165

NORTEK™
AIR SOLUTIONS
Temtrol GOVERNAR Ventrol
106 N. INDUSTRIAL BLVD OKARCHIE, OK 73762
PH: (405) 263-7286 FAX: (405) 263-4924
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02/05/2021

2

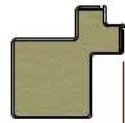
OSP-0567

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Page 76 of 80

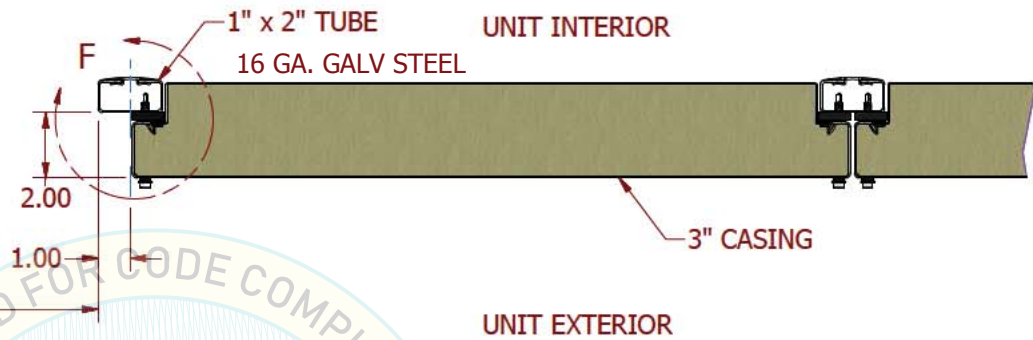
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1.00

NOMINAL OPENING

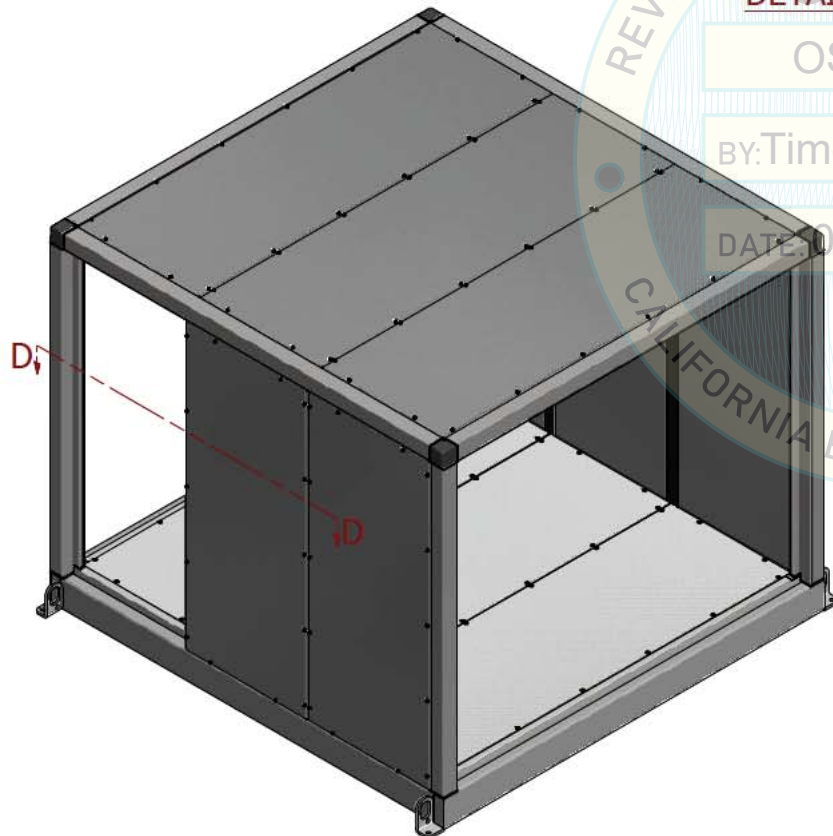


DETAIL D-D

OSP-0567

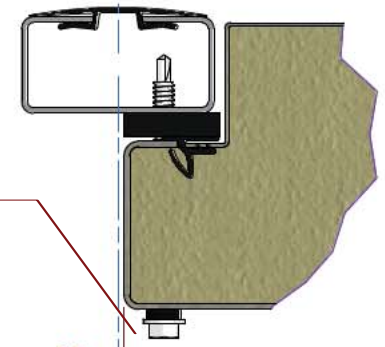
BY: Timothy J Piland

DATE: 02/05/2021



1/4#14 X 2-3/4" TEK SCREW

12" SPACING O.C. MAX



.06

DETAIL F

NORTEK™
AIR SOLUTIONS
Temtrol GOVERNOR Ventrol

106 N. INDUSTRIAL BLVD OKARCHE, OK 73762
 PH: (405) 263-7286 FAX: (405) 263-4924

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Title:

DETAIL, OPENING, CASING,
 ITF

DRAWING NO.

221.00165

02/05/2021

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OSP-0567

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Page 77 of 80

4

3

2

1

NOTE:

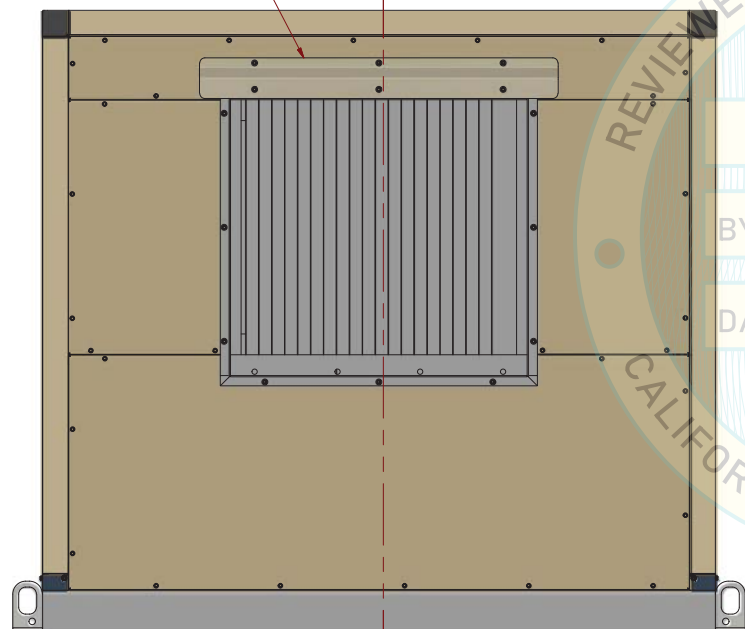
① RAIN SHIELD (220.00410) MANUFACTURED AND INSTALLED BY TEMTROL.



RAIN SHIELD ①

① RAIN SHIELD

A

UNIT WALL SECTION
(PARTIAL)

A

① RAIN SHIELD

AIR

UNIT CASING
OPENING (REF)

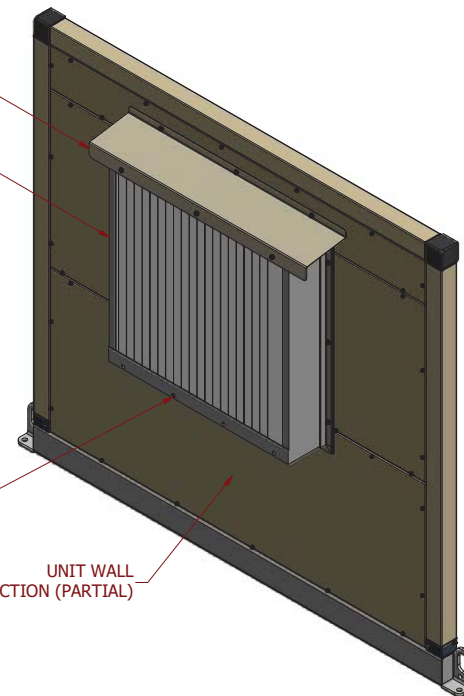
RUSKIN LOUVER

FOAM TAPE
(ALL AROUND)

SECTION A-A

① RAIN SHIELD

RUSKIN LOUVER

DRAIN
HOLESUNIT WALL
SECTION (PARTIAL)
NORTEK™
AIR SOLUTIONS
106 N. INDUSTRIAL BLVD.
OKARCHIE, OK 73162
PH: (405) 263-7286

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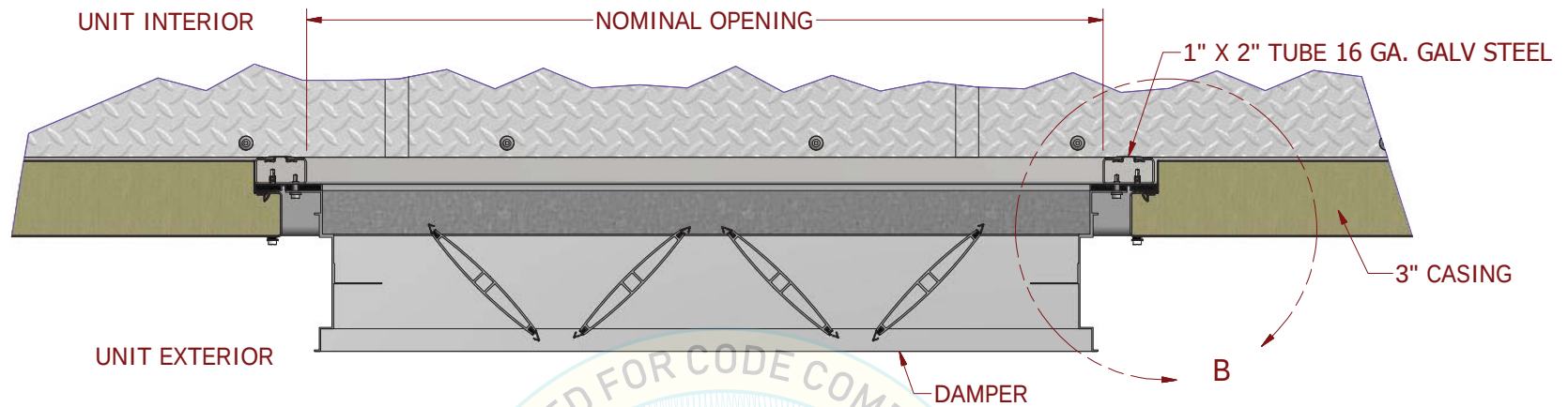
TITLE:

DETAIL, RUSKIN LOUVER
AND RAIN SHIELDSHEET SIZE:
BDRAWING NO.:
45-000019981SHEET:
1 OF 1

REV:

1

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SECTION A-A

OSHPD

OSP-0567

By: Timothy J Piland

DATE: 02/05/2021

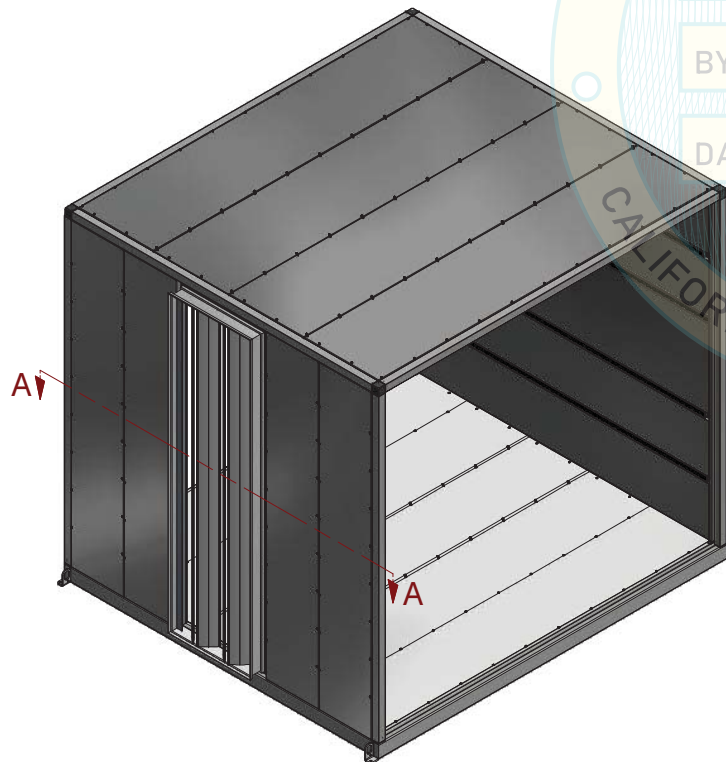


THERMAL GASKET

1/4#12 X 1" TEK SCREW
8" to 10" Standard Spacing

12" O.C. Max

DETAIL B



NORTEK™
AIR SOLUTIONS
Tentrol GOVERNOR Ventrol

106 N. INDUSTRIAL BLVD OKARCHE, OK 73762
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File Saved: 11:09am 01-16-2014

Title:	DETAIL, DAMPER, CASING MOUNTED, EXTERNAL, ITF
DRAWING NO.	221.00194

NOTES:

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

UNIT INTERIOR

DAMPER

1" X 2" TUBE
16 GA. GALV.
STEEL

B

UNIT EXTERIOR

NOMINAL OPENING

3" CASING

SECTION A-A

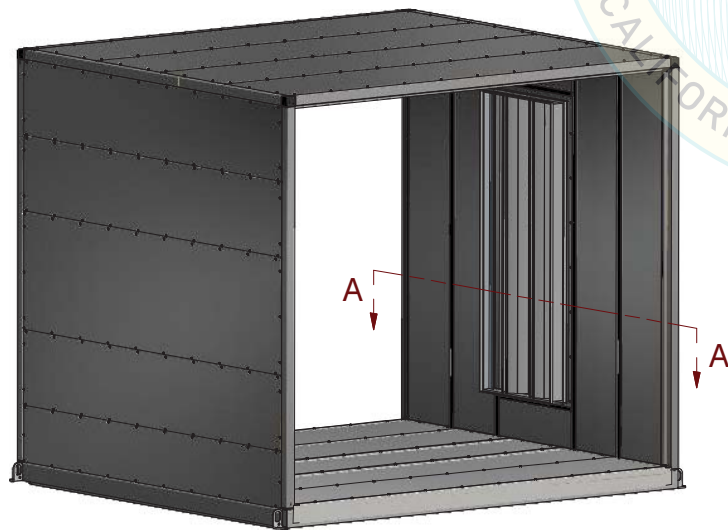
1/4#12 X 1" TEK Screw 8"

to 10" Standard Spacing

12" O.C. Max

THERMAL GASKET

DETAIL B



A

A

Title:

DETAIL, DAMPER, CASING
MOUNTED, INTERNAL, ITF

DRAWING NO.

221.00214