



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP – 0326

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: United Metal Products, Inc

Manufacturer's Technical Representative: Jeremiah Graaff

Mailing Address: 1920 E. Encanto Drive, Tempe, AZ 85281

Telephone: 480-968-9550

Email: j.graaff@unitedmetal.com

Product Information

Product Name: Custom Air Conditioning Units

Product Type: Custom Air Conditioning Unit

Product Model Number: Various (See Attachment)

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

General Description: Custom air conditioning unit with internal and external components as shown in the attachment.

Mounting Description: Rigid base mounted.

Applicant Information

Applicant Company Name: TRU Compliance, by Structural Integrity Associates, Inc

Contact Person: Galen Reid

Mailing Address: 233 SW Wilson Ave, Suite 101, Bend, OR 97702

Telephone: 844-TRU-0200

Email: greid@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.

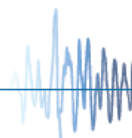
Signature of Applicant: 

Date: 4/2/2019

Title: Senior Engineer

Company Name: TRU Compliance, by Structural Integrity Associates, Inc

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





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

Company Name: TRU Compliance, by Structural Integrity Associates, Inc

Name: Andy Coughlin, SE California License Number: S6082

Mailing Address: 233 SW Wilson Ave, Suite 101, Bend, OR 97702

Telephone: 844-TRU-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): _____

BY: Mohammad Aliaari

DATE: 10/22/2020

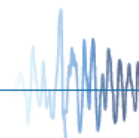
Testing Laboratory

Company Name: Environmental Testing laboratory, Inc

Contact Name: Jeremy Lange

Mailing Address: 11034 Indian Trail Dallas, TX 75229

Telephone: 972-247-9657 Email: jeremy@etldallas.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) = 1.88

S_{DS} (Design spectral response acceleration at short period, g) = 2.50

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) = 2.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component Natural Frequencies (Hz) = See Attachments

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

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) = 1.5

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 Matrices

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

Signature: M. Aliari

Date: October 22, 2020

Print Name: Mohammad Aliari

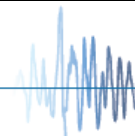
Title: Senior Structural Engineer

Special Seismic Certification Valid Up to : S_{DS} (g) = 2.50

z/h = 1.0

Condition of Approval (if applicable): _____

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



SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

1801527-CR-001 R1



United Metal
Products®



Manufacturer: United Metal Products, Inc

Model Line: Custom Air Handling Units

TABLE 1

Certified Product Construction Summary:

Units shall be constructed in accordance with United Metal typical seismic details. 2" cabinet thickness with aluminum, carbon steel, or stainless steel construction according to Table 2. Cross bracing as indicated in certified drawings.

Certified Options Summary:

Indoor or outdoor.

Units within dimensions listed below certified for interior section, end section, or enclosed section.

See Tables 2 through 17 for a full list of 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:

$S_{DS} = 2.5 g$ $z/h = 1.0$

$I_p = 1.5$

$S_{DS} = 2.5 g$ $z/h = 0.0$

Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Custom Air Handling Units	Enclosure Sections - 4 Walls ⁴ (no walls removed)	18	24	18	-	Lower Limit, 50psf max	Extrap.
		...	...	...	...		Extrap.
		188	112	86	7,300	UUT: Carbon steel, 50 psf	3
		...	...	...	...		Interp.
		280	112	113	14,543	UUT: Carbon steel, 67 psf	4
		...	...	...	...		Interp.
	Enclosure Sections - 3 Walls ² (inlet or outlet wall removed)	112 ⁴	244 ⁴	113	-	Upper Limit; 67 psf max.	Interp.
		18	24	18	-	Lower Limit, 79 psf max.	Extrap.
		...	...	...	...		Extrap.
		112	244	140	15,050	UUT: Stainless steel, 79 psf	2 ³
		...	...	...	...		Interp.
		112 ¹	244	140	-	Upper Limit; 79 psf max.	Interp.
	Enclosure Sections - 2 Walls ² (inlet and outlet walls removed)	18	24	18	-	Lower Limit, 80 psf max.	Extrap.
		...	...	...	...		Extrap.
		112	244	140	15,181	UUT: Aluminum, 80 psf	1 ³
		...	...	...	...		Extrap.
		112 ¹	244	140	-	Upper Limit; 80 psf max.	Extrap.

1. Max section depth is 280" if width $\leq$ 112" and height $\leq$ 113".

2. See representative unit drawings for bracing requirements and overall size limits for multi-section AHU's.

3. Transverse bracing tested in place of removed end wall(s).

4. For 4-wall units, see drawing #009. Max allowed width $\leq$ 280", if depth $\leq$ 112" and height $\leq$ 113". Max allowed depth $\leq$ 280", if width $\leq$ 112" and height $\leq$ 113".

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SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1801527-CR-001 R1



United Metal
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Manufacturer: United Metal Products, Inc		Table Description: AHU Construction			TABLE 2
Model Line: Custom Air Handling Units					
Building Code: CBC 2019		Seismic Certification Limits: $S_{DS} = 2.5 g \quad z/h = 1.0$ $S_{DS} = 2.5 g \quad z/h = 0.0$			$I_p = 1.5$
Component Type	Manufacturer	Model	Description	Notes	UUT
Base Frame	United Metal Products	6" Height	11ga Structural Tube or 12ga Fabricated Tube; Carbon Steel or Stainless Steel	UUT: stainless steel, fabricated tube	2
		...		UUT: galv. carbon steel, structural tube	1, 3
		8" Height			Interp.
				UUT: galv. carbon steel, structural tube	4
Decking	United Metal Products	16 ga	Aluminum, Carbon Steel or Stainless Steel Decking with 18-20ga Bottom Liners;		Extrap.
		...			Extrap.
		14 ga		UUT: Stainless steel	2
				UUT: Galv. carbon steel	3, 4
		...			Interp.
		12 ga		UUT: Aluminum (.080")	1
Wall/Roof Framing	United Metal Products	2" Enclosure Thickness	1"x2"x0.063" Tube Frame; Carbon Steel or Stainless Steel	UUT: Stainless steel	2
				UUT: Galv. carbon steel	1, 3, 4
Walls and Roof	United Metal Products	2" Typical Panel (Exterior and Interior Panels)	22-16ga Aluminum, Carbon Steel or Stainless Steel	UUT: 0.04"Aluminum panels with foam insulation	1
		2" Composite Panel (Exterior Panel with or without Interior liner)		UUT: 0.04"Aluminum panel with perf liners. Foam and fiberglass insulation	1
				UUT: 18ga SS panel with and without 20ga SS internal liners and fiberglass insulation	2
				UUT: 22ga galv. carbon steel panels and liners with foam insulation	3
				UUT: 16ga galv. carbon steel panels with 20ga liners. Foam insulation	4

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SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

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Manufacturer: United Metal Products, Inc		Table Description: Fans - Individual / Array					TABLE 3			
Model Line: Custom Air Handling Units										
Building Code: CBC 2019		Seismic Certification Limits:					$S_{DS} = 2.5\text{ g} \quad z/h = 1.0$ $S_{DS} = 2.5\text{ g} \quad z/h = 0.0$		$I_P = 1.5$	
Model Line (Manufacturer)	Model	Dimension (in)			Weight (lb)	Material	Notes	UUT		
		Depth	Width	Height						
MPQN/MPQS Housed Plenum Array - Direct Drive (Twin City)	122	23	20	23	290	Carbon Steel Housing	UUT: AL wheel tested, 2Wx3H array	2		
	150	25.4	21	25.4	350			Interp.		
	165	28.1	23.6	28.1	485			Interp.		
	182	31.8	27.4	31.8	675			Interp.		
	200	34.5	30	34.5	765			Interp.		
	222	39.8	33.4	39.8	855			Interp.		
	245	43.3	36.8	43.3	1,170			Interp.		
	270	46.9	40.5	46.9	1,400			UUT: AL wheel tested, 1Wx2H array	1	
EPF/EPQ - Belt Drive (Twin City)	122	20	13.8	20	295	Carbon Steel Housing	UUT: AL wheel tested, single fan	3		
	150	22	15.8	22	375			Interp.		
	165	24	17	24	465			Interp.		
	182	26	19	26	605			Interp.		
	200	29	21.4	29	650			Interp.		
	222	32	23	32	765			Interp.		
	245	34	25.3	34	975			Interp.		
	270	38	27.3	38	1,210			Interp.		
	300	42	30.5	42	1,500			Interp.		
	330	46	33.8	46	1,735			Interp.		
	365	51	36.6	51	2,110			Interp.		
	402	56	39.5	56	2,355			Interp.		
	445	62	43.6	62	2,845			Interp.		
	490	68	47.1	68	3,090			UUT: AL wheel tested, single fan	4	
Note: Dimensions and weights represent individual fan cells. Fan arrays may not exceed tested C.G. or weight.										

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Manufacturer: United Metal Products, Inc		Table Description: Fans - Individual / Array					TABLE 3			
Model Line: Custom Air Handling Units										
Building Code: CBC 2019		Seismic Certification Limits:					$S_{DS} = 2.5 g \quad z/h = 1.0$ $S_{DS} = 2.5 g \quad z/h = 0.0$		$I_p = 1.5$	
Model Line (Manufacturer)	Model	Dimension (in)			Weight (lb)	Material	Notes	UUT		
		Depth	Width	Height						
EPFN/EPQN - Direct Drive (Twin City)	122	20	24.1	20	235	Carbon Steel Housing	UUT: AL wheel tested, single fan	3		
	150	22	25.8	22	290			Interp.		
	165	24	27.7	24	370			Interp.		
	182	26	32.1	26	490			Interp.		
	200	29	33.9	29	515			Interp.		
	222	32	40.4	32	580			Interp.		
	245	34	42.3	34	745			Interp.		
	270	38	45.7	38	945			Interp.		
	300	42	48.4	42	1,205			Interp.		
	330	46	52.6	46	1,435			Interp.		
	365	51	57.3	51	1,775			Interp.		
	402	56	59.8	56	1,990			Interp.		
	445	62	64.6	62	2,470			Interp.		
	490	68	67.8	68	2,735		UUT: AL wheel tested, single fan	4		
BAE DWDI - Belt Drive (Twin City)	122	28.6	19.8	23.2	380	Carbon Steel Housing	UUT: AL wheel tested, single fan	3		
	135	30.6	21.9	25.5	460			Interp.		
	150	33.1	24.3	28.1	505			Interp.		
	165	35.6	26.8	30.9	615			Interp.		
	182	38.5	29.7	34.1	885			Interp.		
	200	42.1	32.6	37.4	1,065			Interp.		
	222	46.9	36.3	41.5	1,295			Interp.		
	245	50.8	40	45.9	1,525			Interp.		

Note: Dimensions and weights represent individual fan cells. Fan arrays may not exceed tested C.G. or weight.

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Manufacturer: United Metal Products, Inc		Table Description: Fans - Individual / Array					TABLE 3			
Model Line: Custom Air Handling Units										
Building Code: CBC 2019		Seismic Certification Limits:					$S_{DS} = 2.5\text{ g} \quad z/h = 1.0$ $S_{DS} = 2.5\text{ g} \quad z/h = 0.0$		$I_P = 1.5$	
Model Line (Manufacturer)	Model	Dimension (in)			Weight (lb)	Material	Notes	UUT		
		Depth	Width	Height						
BAE DWDI - Belt Drive (Twin City)	270	54.8	44.1	50.6	1,925	Carbon Steel Housing		Interp.		
	300	59.1	49.1	57.8	2,525			Interp.		
	330	63.1	54.1	63.6	2770			Interp.		
	365	68.9	60	69.6	3395			Interp.		
	402	74.8	66.2	77.1	4015			Interp.		
	445	80.4	73.1	84.1	4835			Interp.		
	490	90.6	80.7	92.9	5225		UUT: AL wheel tested, single fan	4		
HPA Housed Plenum Array - Direct Drive (Greenheck)	15	29	29	31	400	Carbon Steel Housing	UUT: AL wheel tested, 2Wx3H array	2		
	16	31.5	31.5	35.9	440			Interp.		
	18	34.4	34.4	37.1	570			Interp.		
	20	37.3	37.3	38.5	620			Interp.		
	22	41	41	41.1	695			Interp.		
	24	44.8	44.8	42.6	905			Interp.		
	27	48.9	48.9	46.5	1150		UUT: AL wheel tested, 1Wx2H array	1		
Compact Plenum Fan - Direct Drive (United Metal Products)	18	20	25	25	115	Carbon Steel Housing		Extrap.		
	20	20	27	27	120		UUT: AL wheel tested, single fan	3		
	22	22	29	29	155			Interp.		
	24	24	32	32	225			Interp.		
	27	25	34	34	280		UUT: AL wheel tested, single fan	3		
Prop Fans - Direct Drive (United Metal Products)	18	26	22	22	160	Carbon Steel Housing		Extrap.		
	20	26	24	24	160		UUT: composite wheel tested, single fan	3		
	22	26	26	26	230			Interp.		

Note: Dimensions and weights represent individual fan cells. Fan arrays may not exceed tested C.G. or weight.

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SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1801527-CR-001 R1



United Metal
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Manufacturer: United Metal Products, Inc		Table Description: Fans - Individual / Array					TABLE 3			
Model Line: Custom Air Handling Units										
Building Code: CBC 2019		Seismic Certification Limits:					$S_{DS} = 2.5 g \quad z/h = 1.0$ $S_{DS} = 2.5 g \quad z/h = 0.0$		$I_p = 1.5$	
Model Line (Manufacturer)	Model	Dimension (in)			Weight (lb)	Material	Notes	UUT		
		Depth	Width	Height						
Prop Fans - Direct Drive (United Metal Products)	24	26	28	28	230	Carbon Steel Housing		Interp.		
	27	27	31	31	250			Interp.		
	30	27	34	34	255			Interp.		
	33	27	37	37	260			Interp.		
	36	28	40	40	370			Interp.		
	40	28	44	44	370			Interp.		
	44	28	46	46	375			Interp.		
	48	28	52	52	395		UUT: composite wheel tested, single fan	3		
Prop Fans - Belt Drive (United Metal Products)	18	28	22	22	165	Carbon Steel Housing		Extrap.		
	20	28	24	24	165			Extrap.		
	22	28	26	26	235			Extrap.		
	24	28	28	28	235			Extrap.		
	27	29	31	31	260			Extrap.		
	30	29	34	34	260		UUT: composite wheel tested, single fan	3		
	33	29	37	37	265			Interp.		
	36	30	40	40	375			Interp.		
	40	30	44	44	375			Interp.		
	44	30	46	46	380			Interp.		
	48	30	52	52	400		UUT: composite wheel tested, single fan	3		
Note: Dimensions and weights represent individual fan cells. Fan arrays may not exceed tested C.G. or weight.										

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

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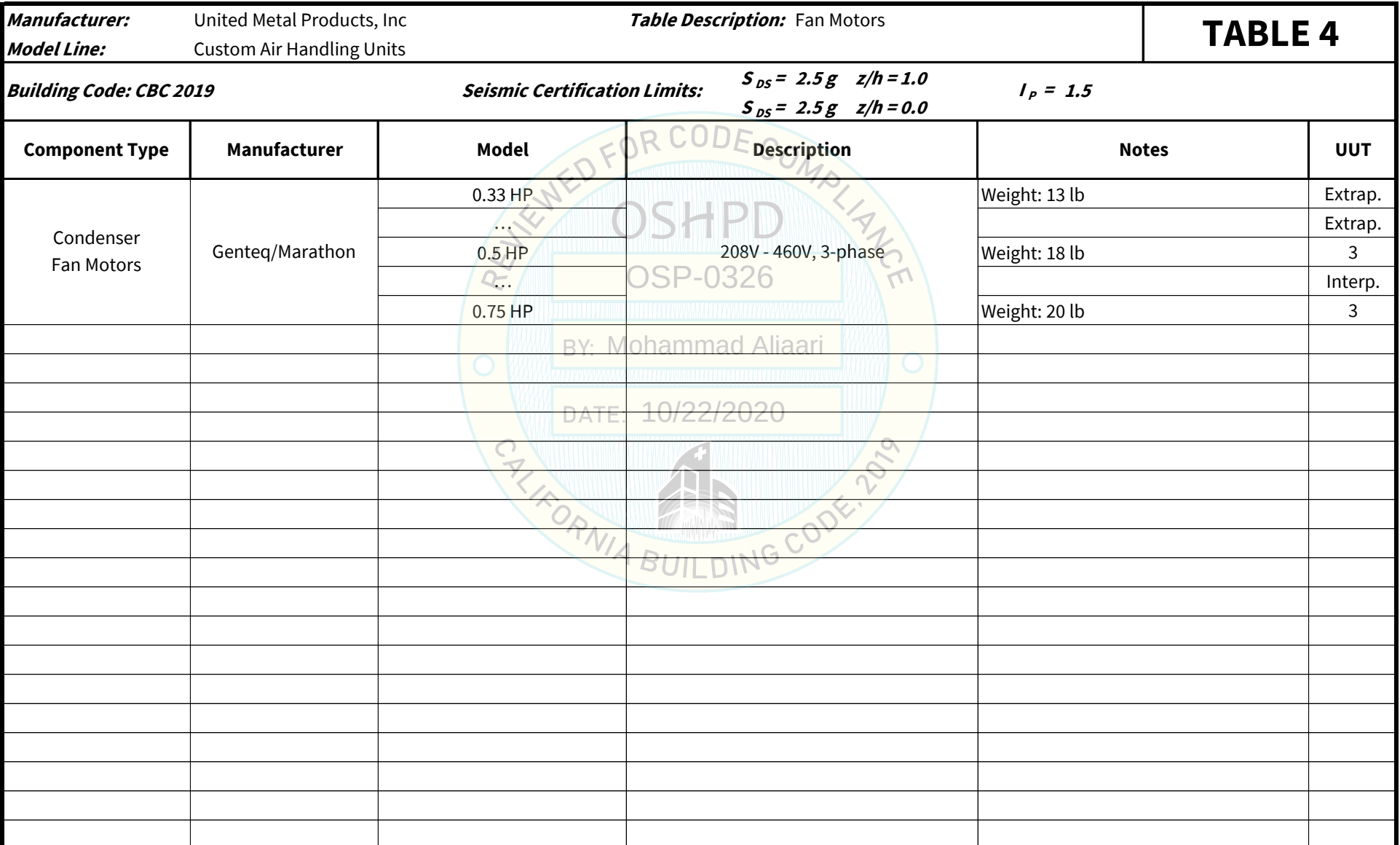


Manufacturer: United Metal Products, Inc		Table Description: Fan Motors			TABLE 4
Model Line: Custom Air Handling Units					
Building Code: CBC 2019		Seismic Certification Limits:		$S_{DS} = 2.5 g \quad z/h = 1.0$ $S_{DS} = 2.5 g \quad z/h = 0.0$ $I_p = 1.5$	
Component Type	Manufacturer	Model	Description	Notes	UUT
Fan Motors (TEFC or ODP)	Baldor/Reliance	0.5 HP	208V - 460V, 3-phase (TEFC or ODP)	Weight: 41 lb	Extrap.
		...			Extrap.
		0.75 HP		Weight: 53 lb; ODP	3
		1 HP		Weight: 64 lb; TEFC/ODP	2
		1.5 HP		Weight: 100 lb; ODP	3
		3 HP		Weight: 175 lb; ODP	3
		...			Interp.
		5 HP		Weight: 193 lb; TEFC/ODP	1,3,2
		...			Interp.
		10 HP		Weight: 282 lb; ODP	1
		...			Interp.
		50 HP		Weight: 858 lb; ODP	4
	TECO/ Westinghouse	0.5 HP	208V - 460V, 3-phase (TEFC or ODP)	Weight: 45 lb	Extrap.
		...			Extrap.
		1 HP		Weight: 70 lb; TEFC/ODP	2
		1.5 HP		Weight: 80 lb; TEFC/ODP	2
		3 HP		Weight: 198 lb; ODP	3
		...			Interp.
		5 HP		Weight: 215 lb; TEFC	1
		...			Interp.
		10 HP		Weight: 312 lb; ODP	1
		...			Interp.
		50 HP		Weight: 948 lb; TEFC	4

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1801527-CR-001 R1



SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1801527-CR-001 R1



United Metal
Products®



Manufacturer:	United Metal Products, Inc	Table Description:	Coils	TABLE 5
Model Line:	Custom Air Handling Units			

Building Code: CBC 2019	Seismic Certification Limits:	$S_{DS} = 2.5g$ $z/h = 1.0$ $S_{DS} = 2.5g$ $z/h = 0.0$	$I_p = 1.5$
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Model Line (Manufacturer)	Model	Dimension (in)			Weight (lb)	Material	Notes	UUT
		Depth	Width	Height				
Coils (RAE Corp)	Water Coils (Cold/Hot; Stacked 2-high max)	1 Row	12	12	17	Copper Tubing and Header. Aluminum or Copper Fins		Extrap.
		...						Extrap.
		2 Row	16	13.5	35		UUT: AL fins	3
		...				Copper Tubing and Header. Aluminum Fins		Interp.
		8 Row	226	45	1871		UUT: Copper fins (stacked - top)	1
		...						Interp.
	Evaporator Coils (Stacked 3-high max)	8 Row	226	78	2200	Copper Tubing and Header. Aluminum Fins	UUT: AL fins (stacked - bottom)	1
		1 Row	12	12	18			Extrap.
		...						Extrap.
		2 Row	16	13.5	38	Copper Tubing and Header. Aluminum or Copper Fins	UUT: Copper fins	3
		...						Interp.
		8 Row	226	24	1056		UUT: Copper fins (stacked - top)	2
		...				Copper Tubing and Header. Aluminum Fins		Interp.
		8 Row	226	36	1358		UUT: AL fins (stacked - middle)	2
		...						Interp.
		8 Row	226	60	1746		UUT: AL fins (stacked - bottom)	2

Note: Single, double or triple stacked coil configurations. Uncoated or corrosion resistant coating. Coils may use hot water, cold water or refrigerant as the heat transfer medium. Coil cases installed with UMP bulkhead wall, either as a single coil or with multiple coils stacked.

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SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

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United Metal
Products®



Manufacturer: United Metal Products, Inc		Table Description: Damper, Louver, and Damper Actuator					TABLE 6			
Model Line: Custom Air Handling Units										
Building Code: CBC 2019		Seismic Certification Limits:					$S_{DS} = 2.5 g \quad z/h = 1.0$ $S_{DS} = 2.5 g \quad z/h = 0.0$		$I_p = 1.5$	
Model Line (Manufacturer)	Model	Dimension (in)			Weight (lb)	Material	Notes	UUT		
		Depth	Width	Height						
Backdraft Dampers (Greenheck)	EM32	3.125	6	6	8	Aluminum		Extrap.		
		...					Extrap.			
		3.125	29	29	95		UUT: parallel blades	2		
		...					Interp.			
		3.125	47	47	140		UUT: parallel blades	1		
Backdraft Dampers (Ruskin)	BD6	2.25	6	6	8	Aluminum		Extrap.		
		...					Extrap.			
		2.25	23	23	80		UUT: parallel blades	3		
		...					Interp.			
		2.25	47	47	140		UUT: opposed blades	3		
Dampers (Ruskin)	CD 50	5	5	5	5	Aluminum		Extrap.		
		...					Extrap.			
		5	12	12	5		UUT: opposed blades	3		
		...					Interp.			
		5	60	72	120		UUT: opposed blades	2		
	CD 60	5	5	5	5	Carbon Steel		Extrap.		
		...					Extrap.			
		5	12	12	30		UUT: parallel blades	3		
		...					Interp.			
		5	60	72	210		UUT: parallel blades	4		

*Multiple damper and/or louvers and/or actuators may be conjoined to achieve larger sizes.

*Multiple damper and/or louvers and/or actuators may be conjoined to achieve larger sizes.

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SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1801527-CR-001 R1



United Metal
Products®



Manufacturer: United Metal Products, Inc		Table Description: Damper, Louver, and Damper Actuator					TABLE 6	
Model Line: Custom Air Handling Units								
Building Code: CBC 2019		Seismic Certification Limits:		$S_{DS} = 2.5 g \quad z/h = 1.0$ $S_{DS} = 2.5 g \quad z/h = 0.0$		$I_p = 1.5$		
Model Line (Manufacturer)	Model	Dimension (in)			Weight (lb)	Material	Notes	UUT
		Depth	Width	Height				
Louvers (Ruskin)	ELF811DD	5	5	5	5	Aluminum		Extrap.
		...						Extrap.
		5	60	72	120			2
	L375D	5	5	5	5	Carbon Steel		Extrap.
		...						Extrap.
		5	60	72	210			4
Actuators - Spring Return 24V/120V (Siemens)	GMA					Power or spring return made of die cast aluminum alloy housing.	UUT: 62 lb-in tested GMA161.1P	3
	GCA						UUT: 142 lb-in tested GCA121.1P	2
Actuators - Non-Spring Return 24V/120V (Siemens)	GDE					Power or spring return made of die cast aluminum alloy housing.	UUT: 44 lb-in tested GDE131.1P	3
	GLB						88 lb-in	Interp.
	GEB						132 lb-in	Interp.
	GBB						177 lb-in	Interp.
	GIB						UUT: 310 lb-in tested GIB 161.1P	4

*Multiple damper and/or louvers and/or actuators may be conjoined to achieve larger sizes.

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SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

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United Metal
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Manufacturer:	United Metal Products, Inc	Table Description:	Filters	TABLE 7
Model Line:	Custom Air Handling Units			

Building Code: CBC 2019	Seismic Certification Limits:	$S_{DS} = 2.5g$ $z/h = 1.0$ $S_{DS} = 2.5g$ $z/h = 0.0$	$I_p = 1.5$
--------------------------------	--------------------------------------	--	-------------

Model Line (Manufacturer)	Model	Dimension (in)			Weight (lb)	Material	Notes	UUT
		Depth	Width	Height				
Front Withdrawal Filter Frame (Camfil Farr)	Flat or Magna-Frame	3	12	12		Frame: Carbon Steel or Stainless Steel		Extrap.
		...						Extrap.
		3	12	24			UUT: Carbon Steel & Stainless Frames	2
		...						Interp.
		3	24	24			UUT: Carbon Steel & Stainless Frames	2
	V-Bank	3	12	12		Frame: Carbon Steel or Stainless Steel		Extrap.
		...						Extrap.
		3	12	24			UUT: Carbon Steel & Stainless Frames	2
		...						Interp.
		3	24	24			UUT: Carbon Steel & Stainless Frames	2
Front and/or Side withdrawal filter frame (United Metal Products)	Flat	1	12	12		Frame: Carbon Steel		Extrap.
		...						Extrap.
		1	12	24			UUT: Carbon Steel	2
		...						Interp.
		1	24	24			UUT: Carbon Steel	2
		...						Interp.
		4	12	24			UUT: Carbon Steel	2

¹ Filter media: metal, glass fiber or synthetic with filtration efficiencies equivalent to MERV 2 through MERV 15.

² Bag and Rigid Filters. 2" and 4" panel type. HEPA Filters 95%-99.999% Efficiency.

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Manufacturer:	United Metal Products, Inc	Table Description:	Filters	TABLE 7
Model Line:	Custom Air Handling Units			

Building Code: CBC 2019	Seismic Certification Limits:	$S_{DS} = 2.5g$ $z/h = 1.0$ $S_{DS} = 2.5g$ $z/h = 0.0$	$I_p = 1.5$
--------------------------------	--------------------------------------	--	-------------

Model Line (Manufacturer)	Model	Dimension (in)			Weight (lb)	Material	Notes	UUT
		Depth	Width	Height				
Front and/or Side withdrawal filter frame (United Metal Products)	Flat	...				Frame: Carbon Steel		Interp.
		4	24	24			UUT: Galvanized Steel tested	2
	V-Bank	2	12	12		Frame: Aluminum, Carbon Steel, or Stainless Steel		Extrap.
		...						Extrap.
		2	12	24			UUT: Aluminum & Stainless Frames	2
		...						Interp.
		2	24	24			UUT: Aluminum & Stainless Frames	2
		...						Interp.
		4	12	24			UUT: Carbon Steel	2
		...						Interp.
		4	24	24			UUT: Carbon Steel	2

¹ Filter media: metal, glass fiber or synthetic with filtration efficiencies equivalent to MERV 2 through MERV 15.
² Bag and Rigid Filters. 2" and 4" panel type. HEPA Filters 95%-99.999% Efficiency.

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1801527-CR-001 R1



United Metal
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Manufacturer: United Metal Products, Inc		Table Description: Pumps			TABLE 8	
Model Line: Custom Air Handling Units						
Building Code: CBC 2019		Seismic Certification Limits: $S_{DS} = 2.5g \quad z/h = 1.0$ $S_{DS} = 2.5g \quad z/h = 0.0$			$I_p = 1.5$	
Component Type	Manufacturer	Model	Description		Notes	UUT
Pumps	BJM (R Series)	R100	0.15	13	Stainless motor housing and cast iron pump. 115v & 460v	Extrap.
		R250	0.33	32		1
		R400	0.5	33		Interp.
		R400D	0.5	33		Interp.
		R750	1	68		Interp.
		R08	1	66		Interp.
		R15	2	68		1
	Ebara 3U/CDU Series	CDU70/1	0.75	41	Stainless casing, impeller and shaft. 115v & 460v	3
		CDU70/3	1.5	50		Interp.
		CDU70/5	2	58		Interp.
		CDU120/1	1	46		Interp.
		CDU120/3	1.5	50		Interp.
		CDU120/5	3	66		Interp.
		CDU200/1	0.5	50		Interp.
		CDU200/3	3	65		Interp.
		CDU200/5	3	65		Interp.
		3U-32-125	3	100		Interp.
		3U-32-160A	5	110		3
	Goulds LSP Series	LSP0311F	0.33	11	Stainless motor casing and shaft. 115v & 460v	1
		LSP0711F	0.75	15		1

* Manual and actuated valves per Table 8. Submersible or end suction type.

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Manufacturer: United Metal Products, Inc		Table Description: Pumps			TABLE 8	
Model Line: Custom Air Handling Units						
Building Code: CBC 2019		Seismic Certification Limits: $S_{DS} = 2.5\text{ g}$ $z/h = 1.0$ $S_{DS} = 2.5\text{ g}$ $z/h = 0.0$			$I_p = 1.5$	
Component Type	Manufacturer	Model	Description		Notes	UUT
Pumps	Goulds	1 MC/MS 1	0.5	40	Cast iron housing with Stainless impeller. 115v & 460v	3
		2 MC/MS 1	0.5	41		Interp.
		3 MC/MS 1	0.5	43		Interp.
		1 MC/MS 1	0.75	43		Interp.
		2 MC/MS 1	0.75	44		Interp.
		3 MC/MS 1	0.75	46		Interp.
		1 MC/MS 1	1	47		Interp.
		2 MC/MS 1	1	48		Interp.
		3 MC/MS 1	1	50		Interp.
		1 MC/MS 1	1.5	50		Interp.
		2 MC/MS 1	1.5	51		Interp.
		3 MC/MS 1	1.5	53		Interp.
		1 MC/MS 1	2	52		Interp.
		2 MC/MS 1	2	53		Interp.
		3 MC/MS 1	2	55		Interp.
		1 MC/MS 1	3	58		Interp.
		2 MC/MS 1	3	59		Interp.
		3 MC/MS 1	3	61		3

*Manual and actuated valves per Table 8. Submersible or end suction type.

*Manual and actuated valves per Table 8. Submersible or end suction type.

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Manufacturer: United Metal Products, Inc		Table Description: Valves and Valve Actuators			TABLE 9
Model Line: Custom Air Handling Units					
Building Code: CBC 2019		Seismic Certification Limits: $S_{DS} = 2.5 g \quad z/h = 1.0$ $S_{DS} = 2.5 g \quad z/h = 0.0$			$I_p = 1.5$
Component Type	Manufacturer	Model	Description	Notes	UUT
Valves	BRAY	ST 05-2-...	2-way ST model ball valves. Manual and actuated valves.	UUT: ST 05-2-004	1
		ST 75-2-...			Interp.
		ST 1-2-...			Interp.
		ST 125-2-...			Interp.
		ST 150-2-...			Interp.
		ST 2-2-...			Interp.
		ST 250-2-...	3-way ST model ball valves. Manual and actuated valves.		Interp.
		ST 3-2-...			Interp.
		ST 05-3-...			Interp.
		ST 75-3-...			Interp.
		ST 1-3-...			Interp.
		ST 125-3-...			Interp.
		ST 150-3-...			Interp.
		ST 2-3-...			Interp.
		ST 250-3-...		UUT: ST 250-3-100	1
Actuators	BRAY	DM24-35	DM/DCMS		1
		...			Interp.
		DM24-70			1

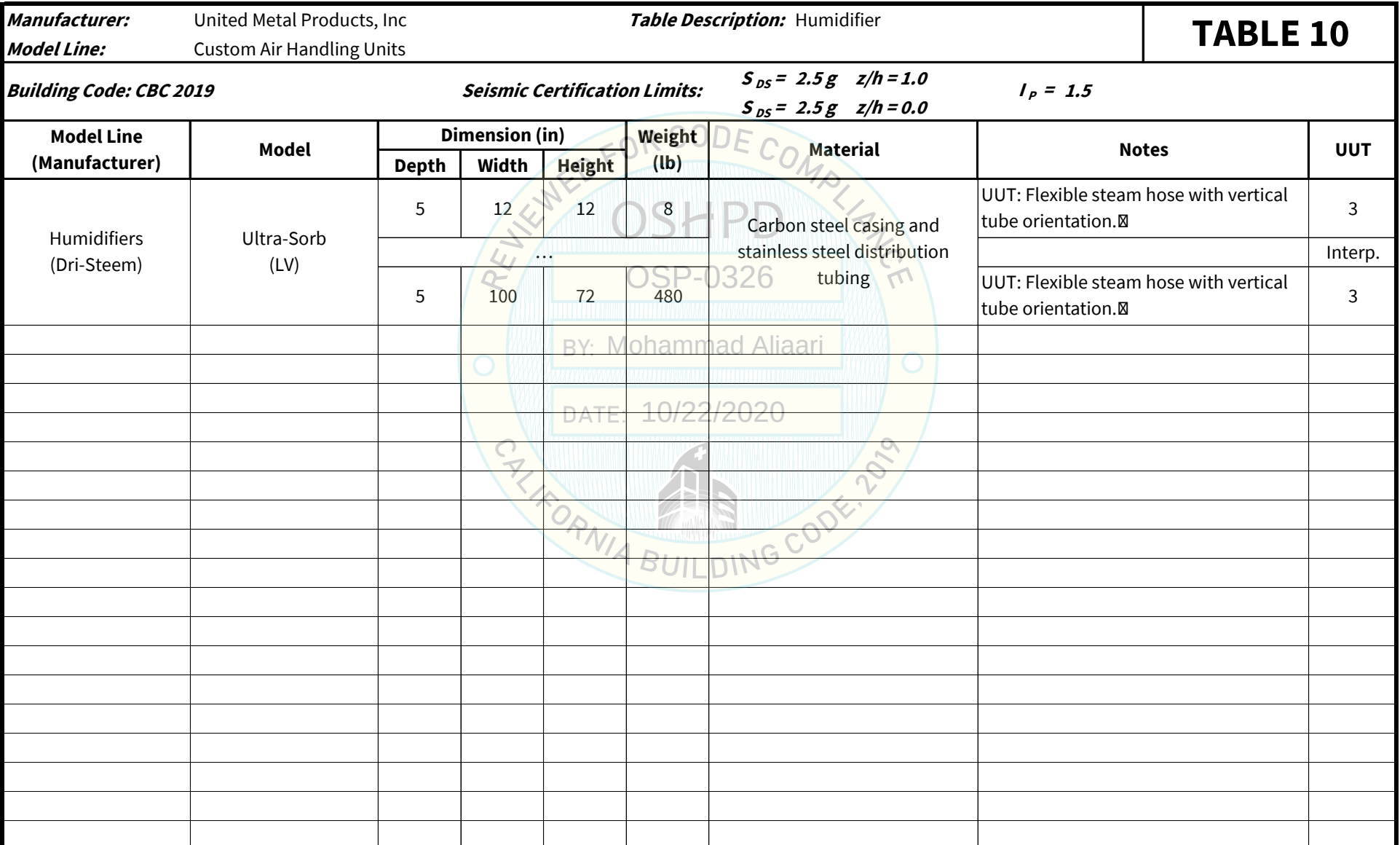
* Brass construction. PVC, CPVC, copper and stainless steel piping (see UUT #1 for more information).

* Brass construction. PVC, CPVC, copper and stainless steel piping (see UUT #1 for more information).

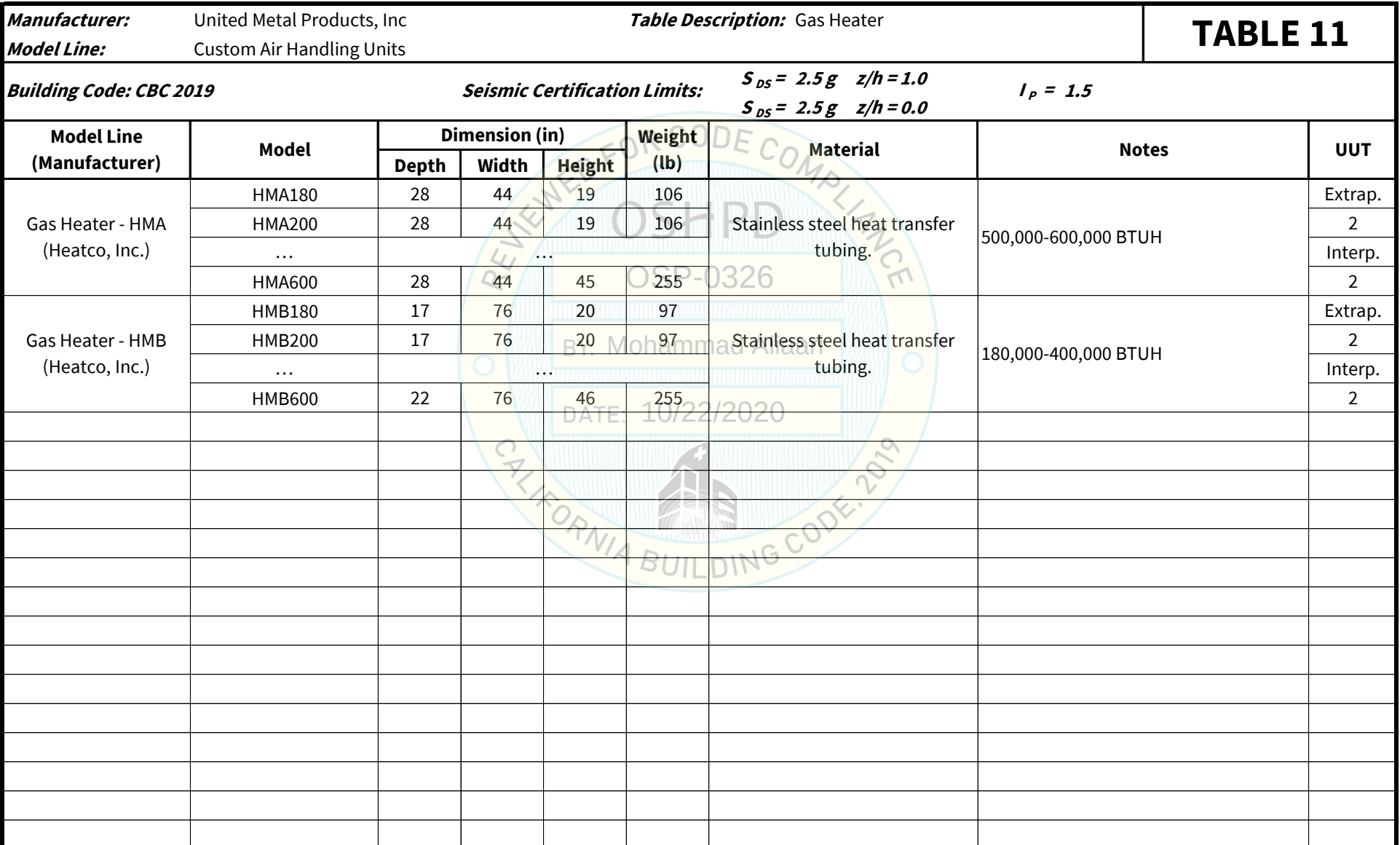
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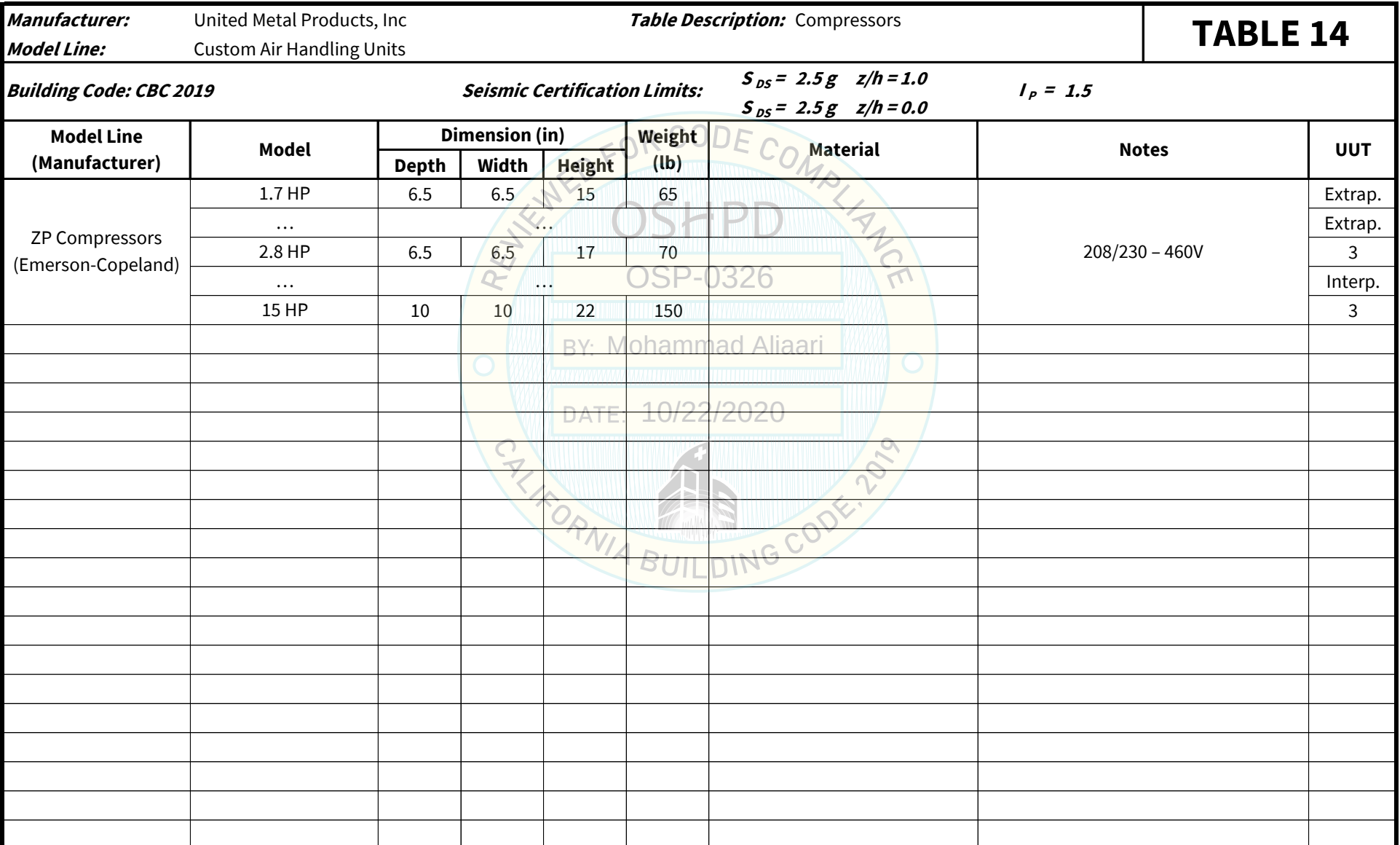
Manufacturer: United Metal Products, Inc		Table Description: VFD					TABLE 13			
Model Line: Custom Air Handling Units										
Building Code: CBC 2019		Seismic Certification Limits:					$S_{DS} = 2.5\text{ g} \quad z/h = 1.0$ $S_{DS} = 2.5\text{ g} \quad z/h = 0.0$		$I_p = 1.5$	
Model Line (Manufacturer)	Model	Dimension (in)			Weight (lb)	Material	Notes	UUT		
		Depth	Width	Height						
ACH-550 VFD (ABB)	1.5 HP	8.3	4.9	14.5	14.3		UUT: (1) ACH-550-PCR-03A3-4 and (1) ACH-550-VCR-03A3-4	3		
	2 HP	8.3	4.9	14.5	14.3			Interp.		
	3 HP	8.3	4.9	14.5	14.3			Interp.		
	5 HP	8.3	4.9	14.5	14.3			Interp.		
	7.5 HP	8.3	4.9	14.5	14.3			Interp.		
	10 HP	8.7	4.9	18.5	19.8			Interp.		
	15 HP	8.7	4.9	18.5	19.8			Interp.		
	20 HP	9.1	8	23	35			Interp.		
	25 HP	9.1	8	23	35			Interp.		
	30 HP	9.1	8	23	35			Interp.		
	40 HP	10.3	8	27.1	53			Interp.		
	50 HP	10.3	8	27.1	53		UUT: (1) ACH-550-PCR-072A-4 and (1) ACH-550-VCR-072A-4	4		
	60 HP	10.3	8	27.1	53			*Interp.		

* Software change only

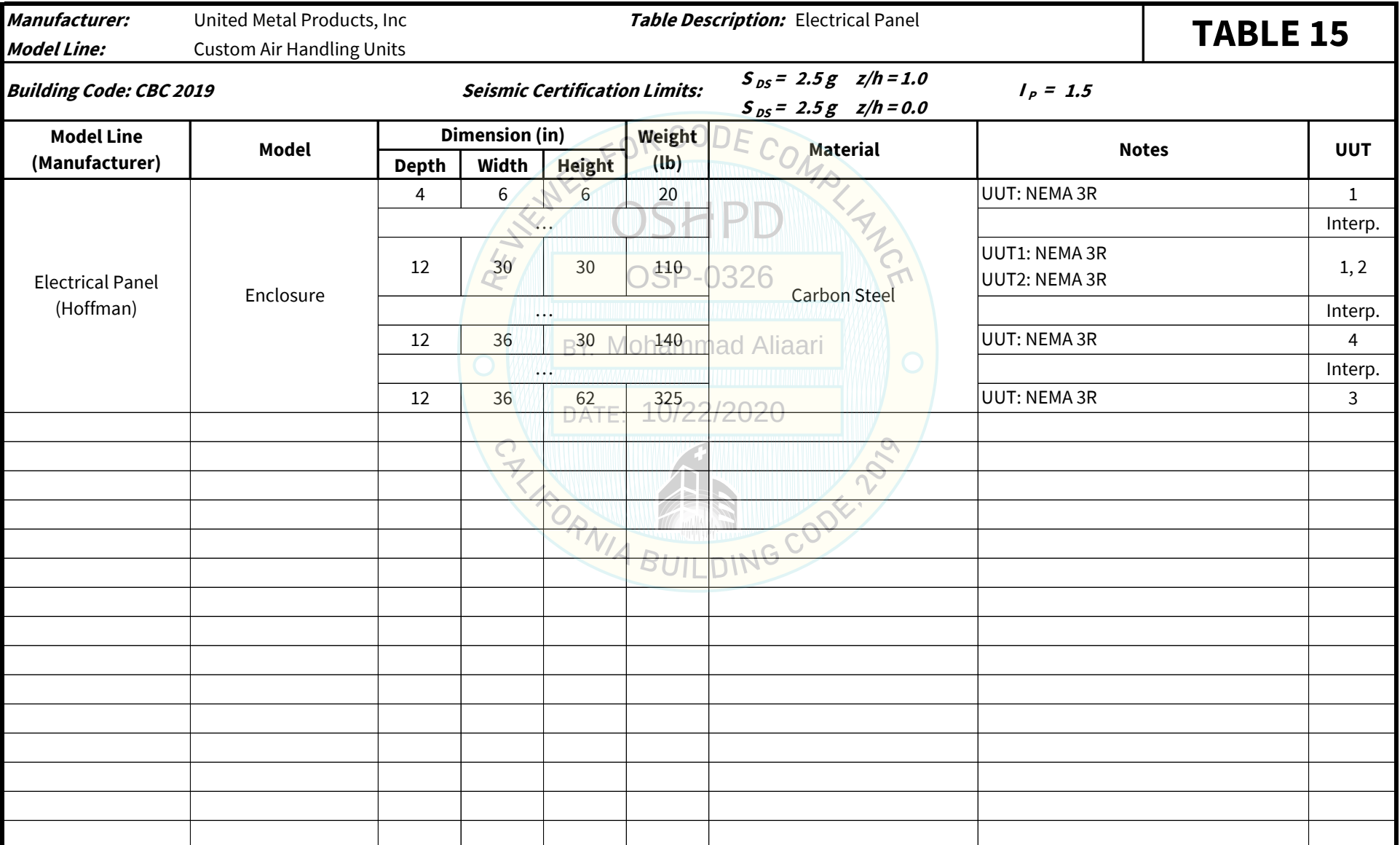
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United Metal
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Manufacturer: United Metal Products, Inc		Table Description: Electric Panel Contents			TABLE 16
Model Line: Custom Air Handling Units					
Building Code: CBC 2019		Seismic Certification Limits:		$S_{DS} = 2.5g \quad z/h = 1.0$ $S_{DS} = 2.5g \quad z/h = 0.0$	$I_p = 1.5$
Component Type	Manufacturer	Model	Description	Notes	UUT
Axial Fan	Dayton	6KD75	12VDC – 240VAC		4
Axial Fan Filter/Guard	Dayton	4YD86	Fan/Filter Guard		4
Circuit Breakers	ABB	T1N015TL	15A – 225A		3
	WIED	QL113DMKM01	1A – 20A		2,4
Contactors	ABB	DP30C1P-F	1-Pole		1
		...	...		Interp.
		DP30C4P-F	4-Pole		4
	Siemens	3RT1015-2AB01	7A		3
		...	...		Interp.
		3RT1045-3AC20	120A		4
Current Sensor	Veris Hawk	H808	3/4A – 75A		1
D-Block	Burndy	BDB-212-500-3	0A – 860A		3
Digital Display	Johnson Controls	D350AA-1C	Digital Display		4
Disconnects	ABB	OETL-NF200ASW	35A – 60A		1
		OETL-NF600ASW	16A – 600A		1,4
	Bussmann	16220-3	175A		1
Fuses	Bussmann	FNM-1/4	1/4A		1
		...	...		Interp.
		LPJ-400SP	400A		1
Fuse Mount	Bussmann	CHM1DU	1/4A		1
		...	...		Interp.
		JM60400-1CR	400A		1
Indicator Light	IDEC	HW1P-1FQD	24V – 120V		1,3

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United Metal
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Manufacturer: United Metal Products, Inc		Table Description: Electric Panel Contents			TABLE 16
Model Line: Custom Air Handling Units					
Building Code: CBC 2019		Seismic Certification Limits:		$S_{DS} = 2.5\text{ g}$ $z/h = 1.0$	$I_p = 1.5$
				$S_{DS} = 2.5\text{ g}$ $z/h = 0.0$	
Component Type	Manufacturer	Model	Description	Notes	UUT
Indicator Light	Siemens	52PE4D2	24V		4
Light	Siemens	52BL4D2XB	24V – 120V		1,2
Motor Circ. Protector	Siemens	3RV10424MB10	1A – 100A		3,4
PLC	Automated Logic – OEM Ctrl	812 – 6126	PLC		1
PLC Display		Backview 6	PLC Display		1
PLC Expander		48 – 8160	PLC Expander		1
Prop. Controller	Johnson Controls	A350PS-1C	Prop. Controller		4
Relay	Allen Bradley	700-HLT1U1	24V – 120V		4
	IDEC	RH1B-U - RH4B-U	24V – 120V, AC120V		1,4
Relay Base	IDEC	SR2P-06	300V		4
		...	...		Interp.
		SR3P-06	300V		4
		SH1B05	1-Pole		1
		...	...		Interp.
		SH4B05	4-Poles		4
Signaling Switch	Siemens	52SA2AABJ1	Signaling Switch		4
Staging Switch	Johnson Controls	S350CC-1C	24V – 240V		4
Switch	Siemens	52SA2HAB	1 - 4 Position		1,4
Switch W/Light	Siemens	52PA24D2	24V		4
		52PA4H2	240V		4
TDS Control	Pulsafeeder	MTC1XTX-XXX	TDS Control		4
		MVS1XX-XXX	TDS Control		4
Temperature Switch	Johnson Controls	A19ABA-40C	Temperature Switch		4

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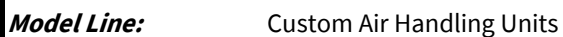


Manufacturer: United Metal Products, Inc		Table Description: Miscellaneous					TABLE 17			
Model Line: Custom Air Handling Units										
Building Code: CBC 2019		Seismic Certification Limits:					$S_{DS} = 2.5 g \quad z/h = 1.0$ $S_{DS} = 2.5 g \quad z/h = 0.0$		$I_p = 1.5$	
Model Line (Manufacturer)	Model	Dimension (in)			Weight (lb)	Material	Notes	UUT		
		Depth	Width	Height						
Evaporative Humidifier (UMP)	Standard	12	120	117	546	Stainless steel holding frame	UUT: Munters CELdek Media; Dimensions do not include holding frame; media dimensions only.	1		
UV Lights (Steril-Aire)	DE	2.8	18	1.8	3			3		
		...						Interp.		
		2.8	42	1.8	5.4			3		
Rainhoods (UMP)	Rainhoods	21	12	10	27	Aluminum or Carbon steel		Extrap.		
		...						Extrap.		
		21	96	18	20		UUT: Aluminum	3		
		21	96	18	60		UUT: Carbon Steel	3		
Sound Attenuators (Vibro Acoustics)	RD	36	36	108	446	Carbon Steel	3 high stack	1		
Cross Flow Heat Exchangers (Innergytech/Hoval)	Model 100	51	39	39	210	Aluminum plates		3		
Doors (UMP)	Doors	2	9	16	16			Extrap.		
		...						Extrap.		
		2	28	72	52			3,4		
		2	28	72	100		With combustion hoods - SS	2		
		2	32	72	58		With Window	4		
		2	34	78	68		With combustion hoods - CS	2		
		...						Interp.		
		2	32	122	88			1		

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Notes:

UNIT UNDER TEST (UUT) SUMMARY SHEET

1801527-CR-001 R1



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COMPLIANCE

Manufacturer: United Metal Products, Inc

Model Line: Custom Air Handling Units

Model Number: Middle demount section with side walls

Serial Number: N/A

UUT 1

Product Construction Summary:

Panel: Typical and composite panels tested. Typical panel is 2" thick with exterior and interior panel made of 0.04" aluminum with urethane foam insulation. Composite panel is 2" thick with exterior panel made of 0.04" aluminum and perforated liners made of 0.04" aluminum with urethane foam insulation and fiberglass insulation. Decking: made of 0.08" aluminum with fiberglass insulation and 0.05" aluminum bottom liners. Wall Framing: 1"x2"x0.063" tubular galvanized steel. Base Frame: 6" deep structural tube made of 11ga galvanized steel. Door: (1) 32Wx122H.

Options/Subcomponent Summary:

Electrical Panel: (1) NEMA 3R-12Dx30Wx30H, (1) NEMA 3R-4Dx6Wx6H. Sound Attenuator: (3) Stacked 1Wx3H RD-Series 36Dx36Wx36H. Evaporative Media: Munters CELdek 12Dx120Wx117H. Pumps: (1) BJM R250-0.33HP-115v w/2-Way BRAY Valve ST05-2-004, BRAY Actuator DM24-35, and 3/4" Cu piping (1) BJM R15-2HP-460v with 2" PVC piping and manual ball valve, (1) Goulds LSP 0311F-1/3HP-115v with 3/4" SS piping and manual valve, (1) Goulds LSP 0711F-3/4HP-115v w/3-Way BRAY Valve ST250-3-100, BRAY Actuator DM24-70 and 2 2/1" PVC piping. Fans: Steel Frame, (2) Stacked 1Wx2H Twin City aluminum wheel model 270 direct drive with (1) TECO 5HP-460v and (1) TECO 10HP-460v; (2) Stacked 1Wx2H Greenheck aluminum wheel model HPA 27 direct drive with (1) Baldor 5HP-460v and (1) Baldor 10HP-460v. Backdraft Damper: Greenheck EM-32 47Wx47H with aluminum blades. Water Coils: 8 row 226Wx45H copper coil with copper fins 4 fpi; 8 row 226Wx78H copper coil with aluminum fins 8 fpi.

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
15,181	112	244	140	13.45	13.14	14.15

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 (2018)	2.5	1.0	1.50	4.00	3.00	1.67	0.67
		2.5	0.0					

Test Mounting Details: 2 walls in place, Inlet and Outlet walls removed, bracing at removed walls



The unit is mounted to the seismic table using eight 7/8" Grade 8 bolts (installed on base sides only).
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

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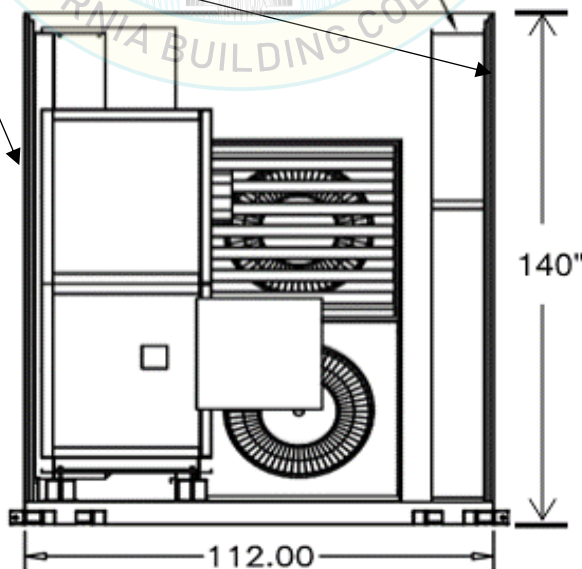
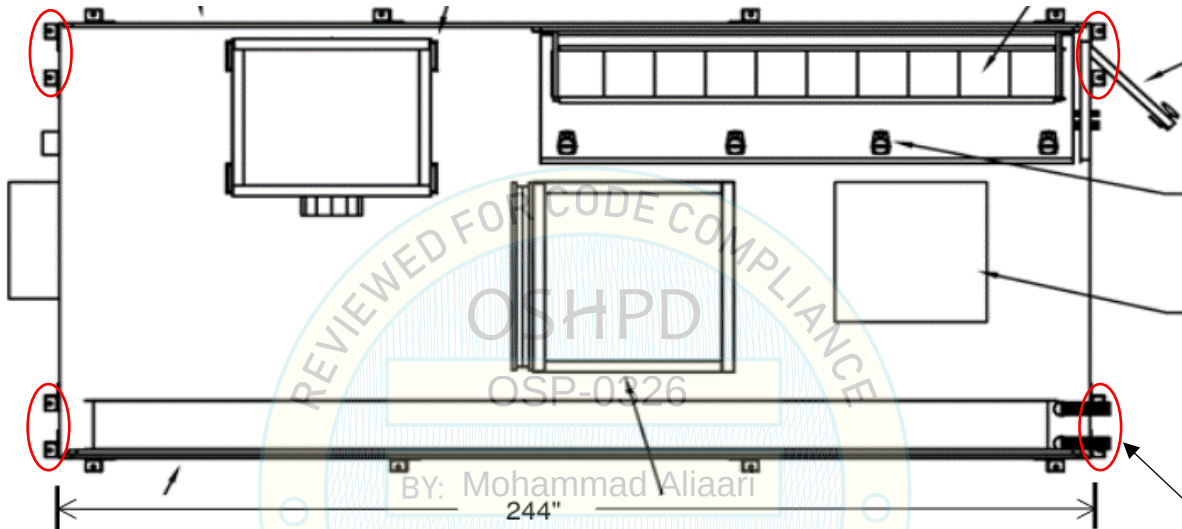
TRU
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Manufacturer: United Metal Products, Inc
Model Line: Custom Air Handling Units
Model Number: Middle demount section with side walls

Serial Number: N/A

UUT 1

Test Unit Drawings:



UNIT UNDER TEST (UUT) SUMMARY SHEET

1801527-CR-001 R1



Manufacturer:	United Metal Products, Inc	UUT 2
Model Line:	Custom Air Handling Units	
Model Number:	End demount section with side walls & 1 end wall	
Serial Number:	N/A	

Product Construction Summary:
Panel 2" thick with external panels made of 18ga 304SS, with and without liners made of 20ga 304SS with fiberglass insulation. Decking: made of 14ga 304SS with fiberglass insulation, and 20ga 304SS bottom liners. Wall Framing: 1"x2"x0.063" tubular stainless steel. Base Frame: 6" deep fabricated tube made of 12ga 304SS. Doors: (1) 28Wx72H, (1) 28Wx72H with hood - SS, (1) 31Wx64H, (1) 34Wx78H with hood - GS, and (1) 17Wx60H.

Options/Subcomponent Summary:
Electric Panel: (1) NEMA 3R - 12Dx30Wx30H. Louver: (1) Ruskin aluminum blades and frame 5Dx60Wx72H. Damper: (1) Ruskin 60Wx72H-CD50-Oplosed blades with Siemens Actuator GCA-142 lbs-in. Backdraft Damper: (1) Greenheck EM-32 29Wx29H with aluminum blades. Evaporator Coils: Refrigerant heat transfer coil - 8 row 226Wx24H copper coil with copper fins 4 fpi; 8 row 226Wx36H copper coil w/ Al fins 8 fpi; 8 row 226Wx60H copper coil with aluminum fins 8 fpi. Fans: Steel Frame, (6) Stacked 2Wx3H Twin City aluminum wheel model 122 direct drive with (2) TECO 1HP-460v, (2) TECO 1HP-460v, (1) TECO 1.5HP-460v, and (1) TECO 1.5HP-460v. (6) Stacked 2Wx3H Greenheck aluminum wheel model HPA 15 direct drive with (2) Baldor 1HP-460v, (2) Baldor 1HP-460v, (1) Baldor 5HP-460v, and (1) Baldor 5HP-460v. Filter Frames: V bank and flat bank using frames: Farr Type 8, Farr Magnaframe II and UMP (galvanized, aluminum, and SS.) Filters: Farr Aeroplete III, Farr 30-30, Farr Optipac, Farr Riga-Flo/PH, and Farr HEPA. Gas Heater: Heatco, Inc. (1) HMA200, (1) HMA600, (1) HMB200, and (1) HMB600.

UUT Properties						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
15,050	112	244	140	3.17	2.93	3.32

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 (2018)	2.5	1.0	1.50	4.00	3.00	1.67	0.67
		2.5	0.0					

Test Mounting Details: 3 walls in place, Outlet wall removed, bracing at removed wall



The unit is mounted to the seismic table using eight 7/8" Grade 8 bolts (installed on base sides only).
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

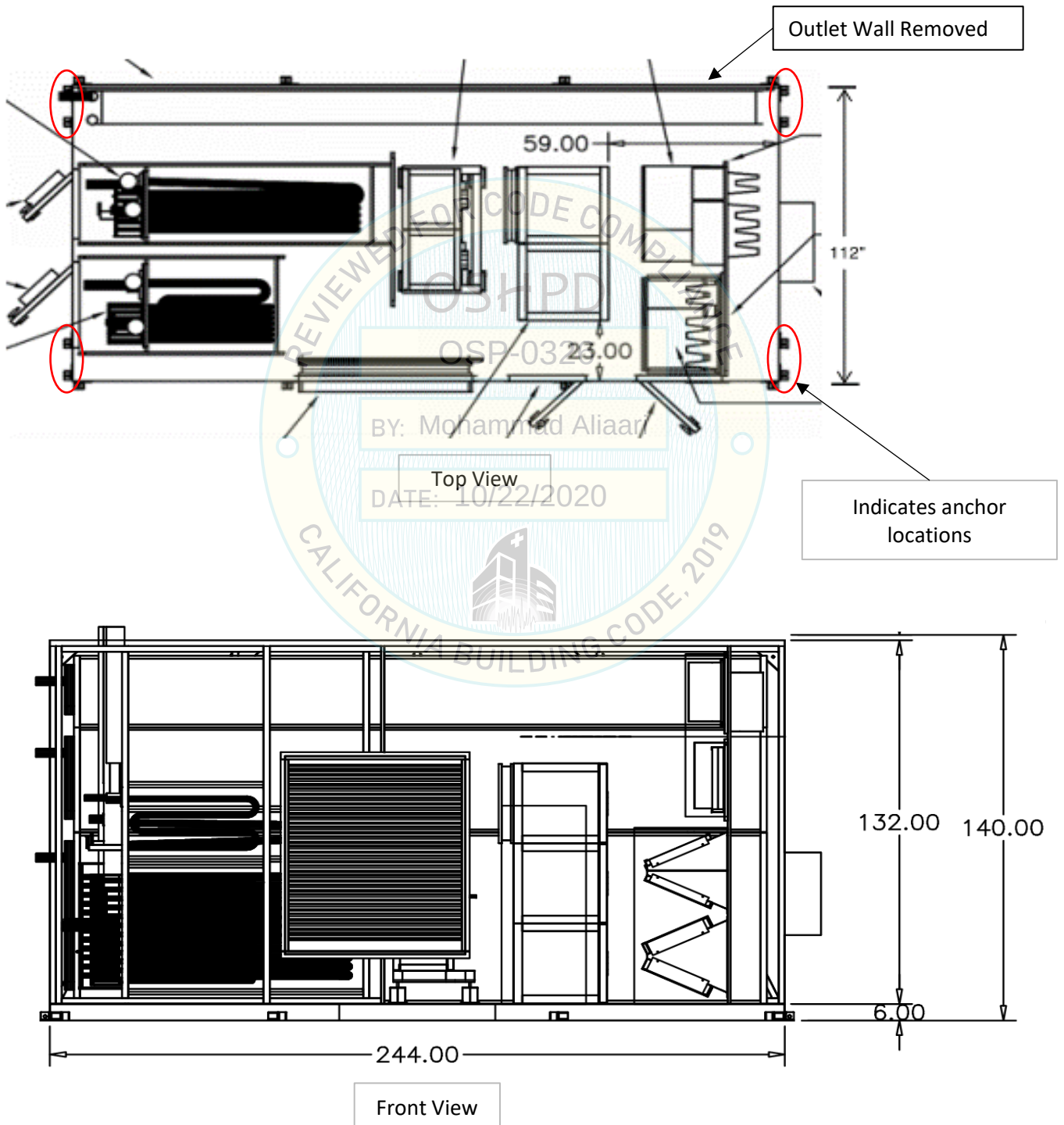
1801527-CR-001 R1



Manufacturer: United Metal Products, Inc
Model Line: Custom Air Handling Units
Model Number: End demount section with side walls & 1 end wall **Serial Number:** N/A

UUT 2

Test Unit Drawings:



UNIT UNDER TEST (UUT) SUMMARY SHEET

1801527-CR-001 R1



Manufacturer:	United Metal Products, Inc	UUT 3
Model Line:	Custom Air Handling Units	
Model Number:	Cabinet with walls on all sides	
		Serial Number: N/A

Product Construction Summary:

Panel 2" thick made of 22ga Galv. steel with 22ga Galv. steel liners and urethane foam insulation. Decking: made of 14ga Galv. steel with fiberglass insulation and 20ga Galv. steel bottom liner. Wall Framing: 1"x2"x0.063" tubular Galv. steel. Base Frame: 6" deep structural tube made of 11ga Galv. steel. Hoods: 98Wx36H total (98Wx18H each), (1) Aluminum and (1) Galv. steel. Doors: (2) 28Wx72H.

Options/Subcomponent Summary:

Electrical Panel: (1) NEMA 3R - 12Dx36Wx62H. Fans: (1) Twin City Al wheel model BAE-DW122 belt drive with (1) Baldor 3HP-460v; (1) Twin City Al wheel model 122 belt drive with (1) Baldor 3HP-460v; (1) Twin City Al wheel model 122 direct drive with (1) TECO 3HP-460v; (1) UMP Compact Direct Drive Al wheel model 20 direct drive with (1) Baldor 1.5HP-460v; (1) UMP Compact Direct Drive Al wheel model 27 direct drive with (1) Baldor 5HP-460v; (1) UMP Prop Fans Direct Drive composite wheel model 20 with (1) Genteq 0.5HP-460v; (1) UMP Prop Fans Direct Drive composite wheel model 20 with (1) Genteq 0.75HP-460v; (1) UMP Prop Fans Direct Drive composite wheel model 48 with (1) Baldor 1.5HP-460v; (1) UMP Prop Fans Belt Drive composite wheel model 30 with (1) Baldor 0.75HP-460v; (1) UMP Prop Fans Belt Drive composite wheel model 48 with (1) Baldor 3HP-460v. Water Pumps: (1) Goulds model 1MC1 - 1/2HP, (1) Goulds model 3MC1 - 3HP, (1) Ebara model CDU70/1 - 3/4HP, (1) Ebara model CDU200/5 - 3HP. Humidifier: Ultra-Sorb (1) 12Wx12H and (1) 100Wx72H. Electric Heater: Indeeco (1) model 5kW-480v/3 and (1) model 140kW-480v/3. VFD: (1) ABB-ACH550-VCR-03A3-4/1.5HP, (1) ABB-ACH550-PCR-03A3-4/1.5HP. Compressor: Emerson-Copeland (1) 2.8HP-460/3 and (1) 15HP-460v/3. Dampers: Ruskin (1) 12Wx12H-CD60-Parallel Blades with Siemens Actuator GMA-62 lbs-in, (1) 12Wx12H-CD50-Opposed Blades with Siemens Actuator GDE-44 lbs-in. Backdraft Dampers: (1) 23Wx23H-BD6-Parallel Blades, (1) 47Wx47H-BD6-Parallel Blades. Heat Exchanger: InnergyTech Model 100 51Dx39Wx39H diagonal mount. UV Lights: SterilAire DE Series (1) 18" and (1) 42". Water & Evaporator Coils: 2 row 16Wx13.5H copper coil with aluminum fins 14 fpi (water coil); Refrigerant heat transfer coil - 2 row 16Wx13.5H copper coil with copper fins 14 fpi.

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
7,300	188	112	86	6.01	7.19	6.71

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 (2018)	2.5	1.0	1.50	4.00	3.00	1.67	0.67
		2.5	0.0					

Test Mounting Details: All 4 walls in place



The unit is mounted to the seismic table using eight 7/8" Grade 8 bolts (installed on base sides only).
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
Contents were included in testing per operating conditions.

TRU Compliance, by Structural Integrity Associates, Inc.

844-TRU-0200 | info@trucompliance.com

UNIT UNDER TEST (UUT) SUMMARY SHEET

1801527-CR-001 R1

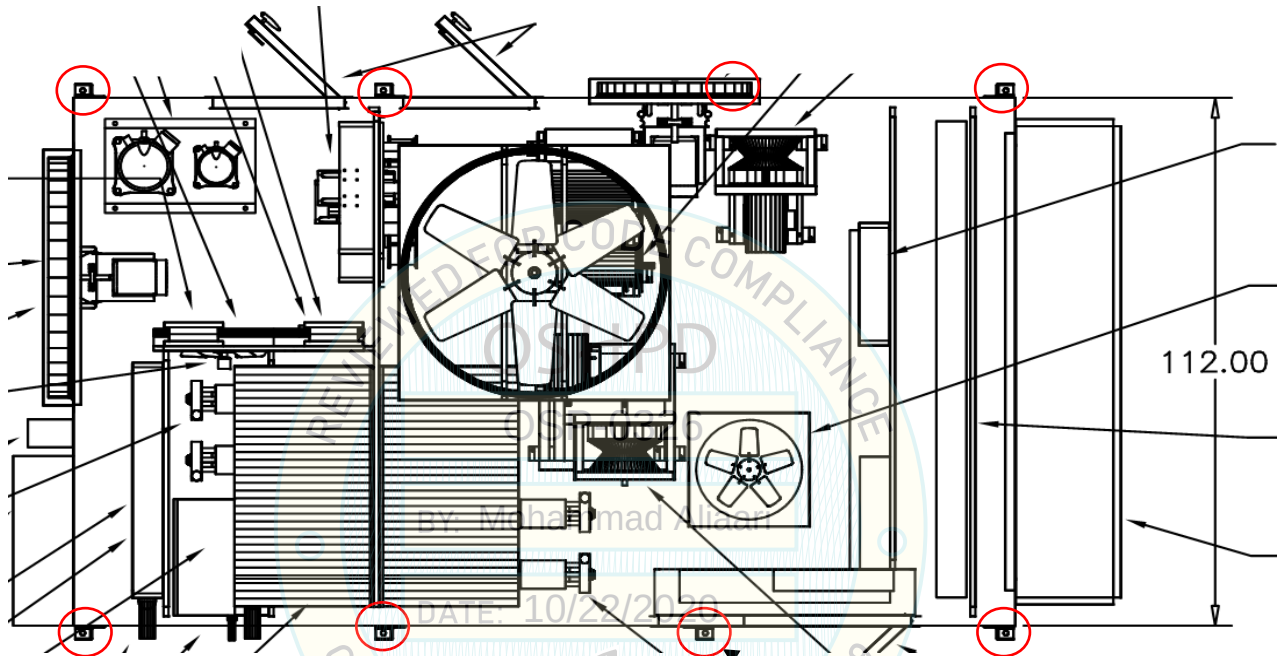


Manufacturer: United Metal Products, Inc
Model Line: Custom Air Handling Units
Model Number: Cabinet with walls on all sides

Serial Number: N/A

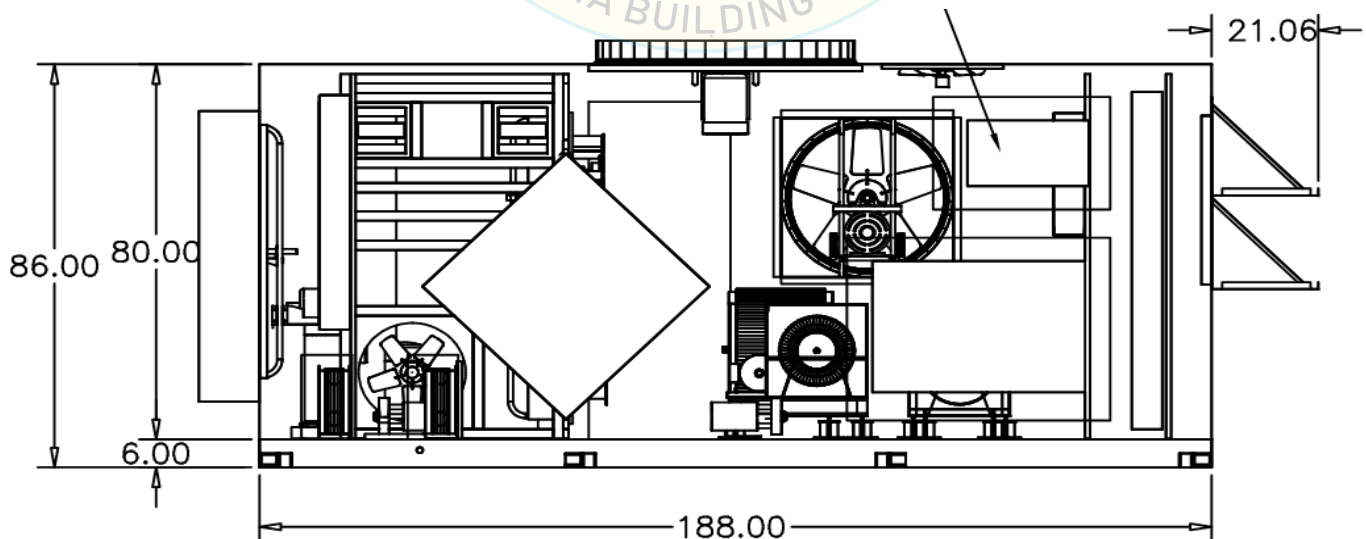
UUT 3

Test Unit Drawings:



Top View

Indicates anchor locations



Side View

TRU Compliance, by Structural Integrity Associates, Inc.

844-TRU-0200 | info@trucompliance.com

UNIT UNDER TEST (UUT) SUMMARY SHEET

1801527-CR-001 R1



Manufacturer:	United Metal Products, Inc	UUT 4
Model Line:	Custom Air Handling Units	
Model Number:	Cabinet with walls on all sides	
Serial Number:		N/A

Product Construction Summary:
Panel 2" thick with external panels made of 16ga Galv. Steel and with liners made of 20ga Galv. Steel. Decking: made of 14ga Galv. Steel with fiberglass insulation, and 20ga Galv. Steel bottom liners. Wall Framing: 1"x2"x0.063" tubular galvanized steel. Base Frame: 8" deep structural tube made of 11ga galvanized steel. Doors: (1) 28Wx72H, (1)32Wx72H with window.

Options/Subcomponent Summary:
Electrical Panel: (1) NEMA 3R – 12Dx36Wx30H. Fans: (1) Twin City Al wheel model BAE-DW490 belt drive with (1) Baldor 50HP-460v; (1) Twin City Al wheel model 490 direct drive with (1) TECO 50HP-460v; (1) Twin City Al wheel model 490 belt drive with (1) Baldor 50HP-460v. VFD: (1) ABB-ACH550-PCR-072A-4/50HP, (1) ABB-ACH550-VCR-072A-4/50HP. Damper: Ruskin (1) 60Wx72H-CD60-Parallel Blades with Siemens Actuator GIB-310 lbs-in. Louver: (1) Ruskin Galv. Steel 5Dx60Wx72H.

UUT Properties										
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)						
	Depth	Width	Height	Front-Back	Side-Side	Vertical				
14,543	280	112	113	5.34	5.30	6.32				
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 (2018)		2.5	1.0	1.50	4.00	3.00	1.67	0.67
				2.5	0.0					

Test Mounting Details: All 4 walls in place



The unit is mounted to the seismic table using eight 7/8" Grade 8 bolts (installed on base sides only).
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

1801527-CR-001 R1



United Metal
Products®

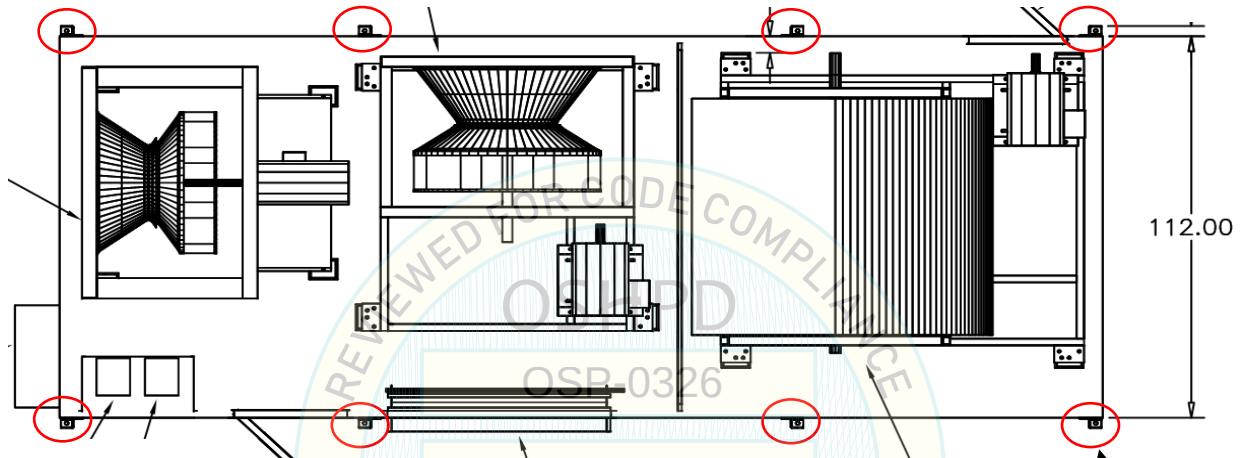
TRU
COMPLIANCE

Manufacturer: United Metal Products, Inc
Model Line: Custom Air Handling Units
Model Number: Cabinet with walls on all sides

Serial Number: N/A

UUT 4

Test Unit Drawings:

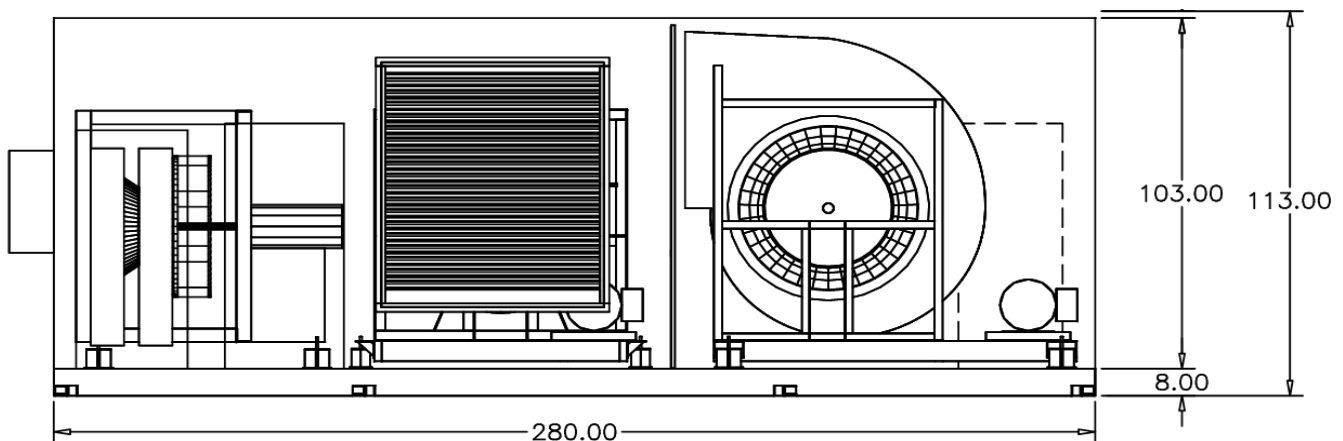


BY: Mohammad Aliaari

DATE: 10/22/2020

Top View

Indicates anchor
locations



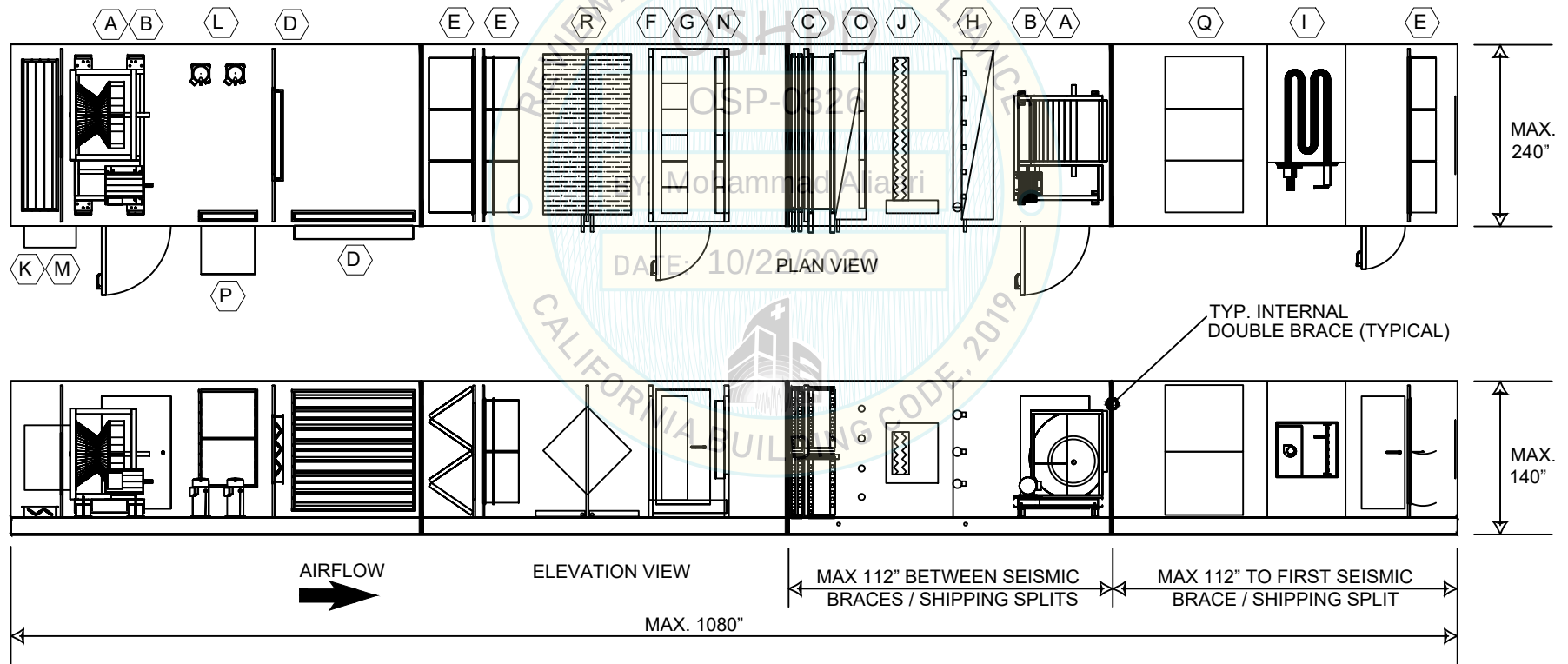
Side View

TRU Compliance, by Structural Integrity Associates, Inc.

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- A Fans (Table 2)
 B Motors (Table 3)
 C Coils (Table 4)
 D Dampers & Louvers (Table 5)
 E Filters (Table 6)
 F Pumps (Table 7)
 G Valves (Table 8)
 H Humidifiers (Table 9)
 I Furnaces (Table 10)
 J Electric Heaters (Table 11)
 K VFDs (Table 12)
 L Compressors (Table 13)
 M Electrical Panel (Table 14)
 N Evaporative Humidifier (Table 15)
 O U.V. Lights (Table 15)
 P Rain Hoods (Table 15)
 Q Sound Attenuators (Table 15)
 R Air-to-Air Heat Exchangers (Table 15)

1. ALL DIMENSIONS ARE IN INCHES. DO NOT SCALE.
2. WALL INSULATION: NONE or 2" THICK.
3. GALVANIZED OR STAINLESS STEEL BASE FRAME HEIGHT: 6" - 8".
4. ELECTRICAL PANELS MAY BE AT VARIOUS LOCATIONS ON THE UNIT.
5. MAXIMUM UNIT WEIGHT: 80 PSF MAX. LOADING.
6. CASING CONSTRUCTION: GALVANIZED STEEL, STAINLESS STEEL OR ALUMINUM PANELS FASTENED TO AN INTERIOR STEEL FRAMEWORK WITH MECHANICAL FASTENERS.
7. MAXIMUM SIZE PER SECTION / SHIPPING SPLIT: 112"Dx240"Wx140"H. INTERNAL SEISMIC BRACES REQUIRED AT ALL SPLITS. SEE "BRACING DETAIL" DRAWING.
8. ALL COMPONENTS ARE SHOWN FOR REFERENCE AND CAN BE RECONFIGURED AS REQUIRED TO MEET APPLICATION AND SITE REQUIREMENTS.
9. STRUCTURAL INTEGRITY SHALL BE MAINTAINED BETWEEN SHIPPING SPLITS.
10. ALL TRANSVERSE BASE MEMBERS TO BE DESIGNED FOR TRIBUTARY DEAD LOAD AND FULL CAPACITY OF SEISMIC BRACED FRAME ELEMENTS.



MULTIPLE CONFIGURATIONS MAY BE DESIGNED UP TO THE MAXIMUM STANDARD AHU CABINET SIZES SHOWN WITH INTERNAL SEISMIC BRACES AS NEEDED. SEE SEISMIC BRACING INSTALLATION DRAWING FOR BRACING CONSTRUCTION DETAILS. ALL CERTIFIED COMPONENTS MAY BE CONFIGURED WITHIN EACH AHU AS REQUIRED TO MEET APPLICATION AND SITE REQUIREMENTS.



JOB NAME: OSHPD SEISMIC CERTIFICATION

DATE DRAWN: 3-14-2013

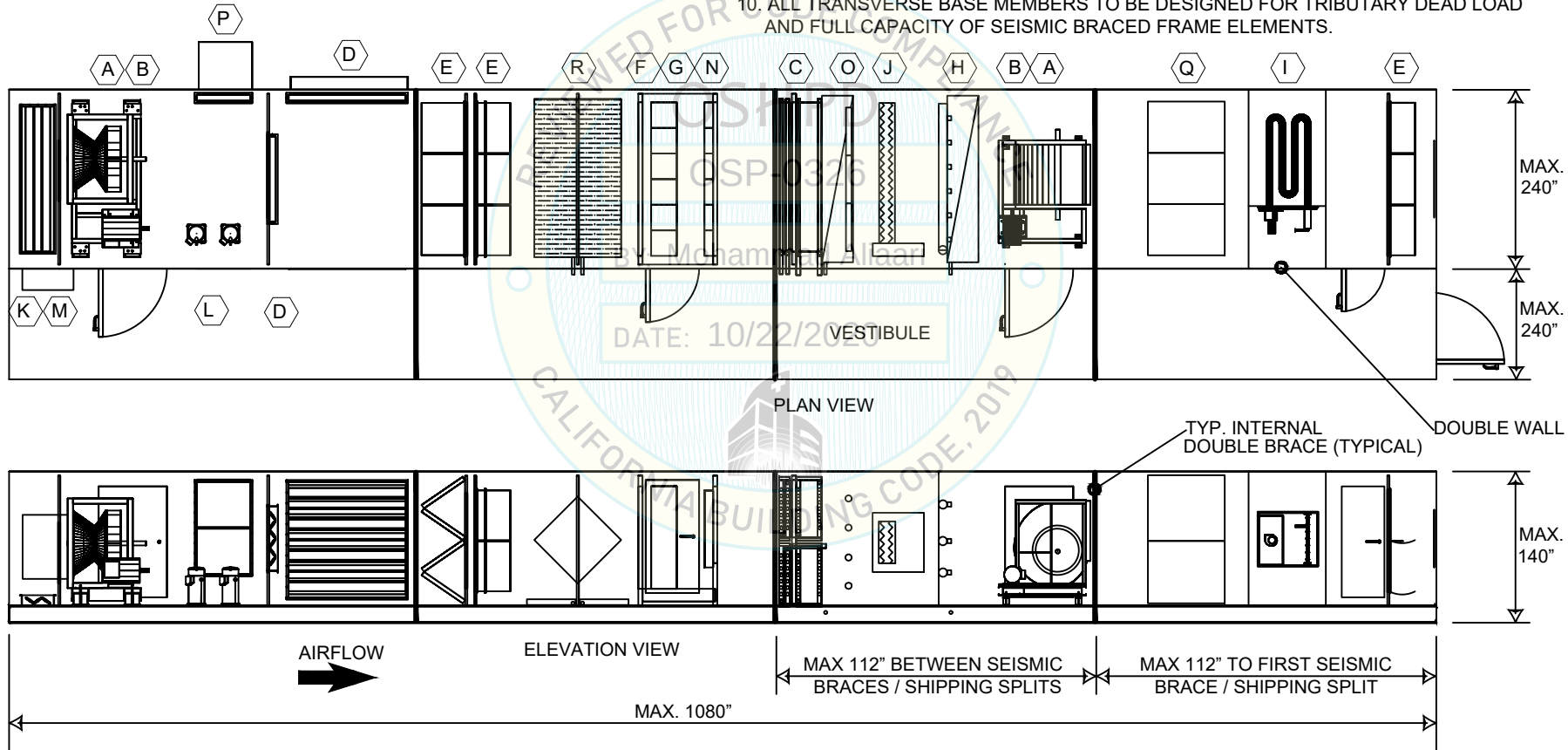
UNIT TYPE: SINGLE AIR TUNNEL WITH SPLITS

DRAWING No.: SEISMIC - 001

REV No.:	1	2	3	4	5
DATE:	8-5-13	8-20-13	8-30-13	5-11-20	10-09-20
INITIAL:	PA	PA	PA	BKS	BKS

- J** Electric Heaters (Table 11)
- K** VFDs (Table 12)
- L** Compressors (Table 13)
- M** Electrical Panel (Table 14)
- N** Evaporative Humidifier (Table 15)
- O** U.V. Lights (Table 15)
- P** Rain Hoods (Table 15)
- Q** Sound Attenuators (Table 15)
- R** Air-to-Air Heat Exchangers (Table 15)

1. ALL DIMENSIONS ARE IN INCHES. DO NOT SCALE.
2. WALL INSULATION: NONE or 2" THICK.
3. GALVANIZED OR STAINLESS STEEL BASE FRAME HEIGHT: 6" - 8".
4. ELECTRICAL PANELS MAY BE AT VARIOUS LOCATIONS ON THE UNIT.
5. MAXIMUM UNIT WEIGHT: 80 PSF MAX. LOADING.
6. CASING CONSTRUCTION: GALVANIZED STEEL, STAINLESS STEEL OR ALUMINUM PANELS FASTENED TO AN INTERIOR STEEL FRAMEWORK WITH MECHANICAL FASTENERS.
7. MAXIMUM SIZE PER SECTION / SHIPPING SPLIT: 112"Dx240"Wx140"H. INTERNAL SEISMIC BRACES REQUIRED AT ALL SPLITS. SEE "BRACING DETAIL" DRAWING.
8. ALL COMPONENTS ARE SHOWN FOR REFERENCE AND CAN BE RECONFIGURED AS REQUIRED TO MEET APPLICATION AND SITE REQUIREMENTS.
9. STRUCTURAL INTEGRITY SHALL BE MAINTAINED BETWEEN SHIPPING SPLITS.
10. ALL TRANSVERSE BASE MEMBERS TO BE DESIGNED FOR TRIBUTARY DEAD LOAD AND FULL CAPACITY OF SEISMIC BRACED FRAME ELEMENTS.



MULTIPLE CONFIGURATIONS MAY BE DESIGNED UP TO THE MAXIMUM STANDARD AHU CABINET SIZES SHOWN WITH INTERNAL SEISMIC BRACES AS NEEDED. SEE SEISMIC BRACING INSTALLATION DRAWING FOR BRACING CONSTRUCTION DETAILS. ALL CERTIFIED COMPONENTS MAY BE CONFIGURED WITHIN EACH AHU AS REQUIRED TO MEET APPLICATION AND SITE REQUIREMENTS.



JOB NAME: OSHPD SEISMIC CERTIFICATION

DATE DRAWN: 3-14-2013

UNIT TYPE: SINGLE AIR TUNNEL WITH VESTIBULE
WITH SPLITS
DRAWING No.: SEISMIC - 002

REV No.:	1
DATE:	5-8-13
INITIAL:	PA

2
8-20-1
PA

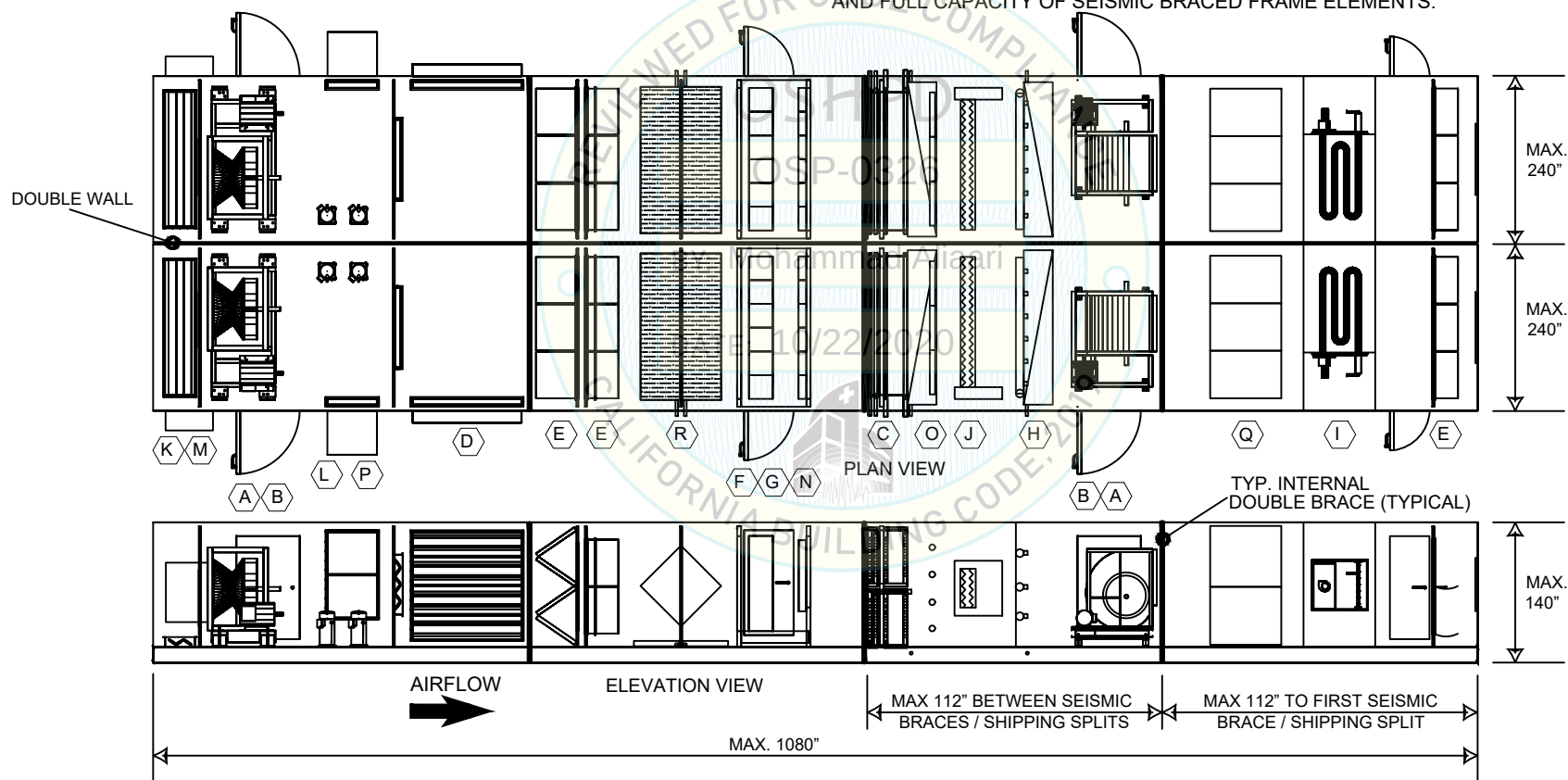
3
8-30-13
PA

4
5-11-20
BKS

5
10-09-20
BKS

- A Fans (Table 2)
 B Motors (Table 3)
 C Coils (Table 4)
 D Dampers & Louvers (Table 5)
 E Filters (Table 6)
 F Pumps (Table 7)
 G Valves (Table 8)
 H Humidifiers (Table 9)
 I Furnaces (Table 10)
 J Electric Heaters (Table 11)
 K VFDs (Table 12)
 L Compressors (Table 13)
 M Electrical Panel (Table 14)
 N Evaporative Humidifier (Table 15)
 O U.V. Lights (Table 15)
 P Rain Hoods (Table 15)
 Q Sound Attenuators (Table 15)
 R Air-to-Air Heat Exchangers (Table 15)

1. ALL DIMENSIONS ARE IN INCHES. DO NOT SCALE.
2. WALL INSULATION: NONE or 2" THICK.
3. GALVANIZED OR STAINLESS STEEL BASE FRAME HEIGHT: 6" - 8".
4. ELECTRICAL PANELS MAY BE AT VARIOUS LOCATIONS ON THE UNIT.
5. MAXIMUM UNIT WEIGHT: 80 PSF MAX. LOADING.
6. CASING CONSTRUCTION: GALVANIZED STEEL, STAINLESS STEEL OR ALUMINUM PANELS FASTENED TO AN INTERIOR STEEL FRAMEWORK WITH MECHANICAL FASTENERS.
7. MAXIMUM SIZE PER SECTION / SHIPPING SPLIT: 112"Dx240"Wx140"H. INTERNAL SEISMIC BRACES REQUIRED AT ALL SPLITS. SEE "BRACING DETAIL" DRAWING.
8. ALL COMPONENTS ARE SHOWN FOR REFERENCE AND CAN BE RECONFIGURED AS REQUIRED TO MEET APPLICATION AND SITE REQUIREMENTS.
9. STRUCTURAL INTEGRITY SHALL BE MAINTAINED BETWEEN SHIPPING SPLITS.
10. ALL TRANSVERSE BASE MEMBERS TO BE DESIGNED FOR TRIBUTARY DEAD LOAD AND FULL CAPACITY OF SEISMIC BRACED FRAME ELEMENTS.



MULTIPLE CONFIGURATIONS MAY BE DESIGNED UP TO THE MAXIMUM STANDARD AHU CABINET SIZES SHOWN WITH INTERNAL SEISMIC BRACES AS NEEDED. SEE SEISMIC BRACING INSTALLATION DRAWING FOR BRACING CONSTRUCTION DETAILS. ALL CERTIFIED COMPONENTS MAY BE CONFIGURED WITHIN EACH AHU AS REQUIRED TO MEET APPLICATION AND SITE REQUIREMENTS.



JOB NAME: OSHPD SEISMIC CERTIFICATION

DATE DRAWN: 3-14-2013

UNIT TYPE: DOUBLE AIR TUNNEL WITH SPLITS

DRAWING No.: SEISMIC - 003

REV No.: 1

DATE:

INITIAL:

1

8-5-13

PA

2

8-20-13

PA

3

8-30-13

PA

4

5-11-20

BKS

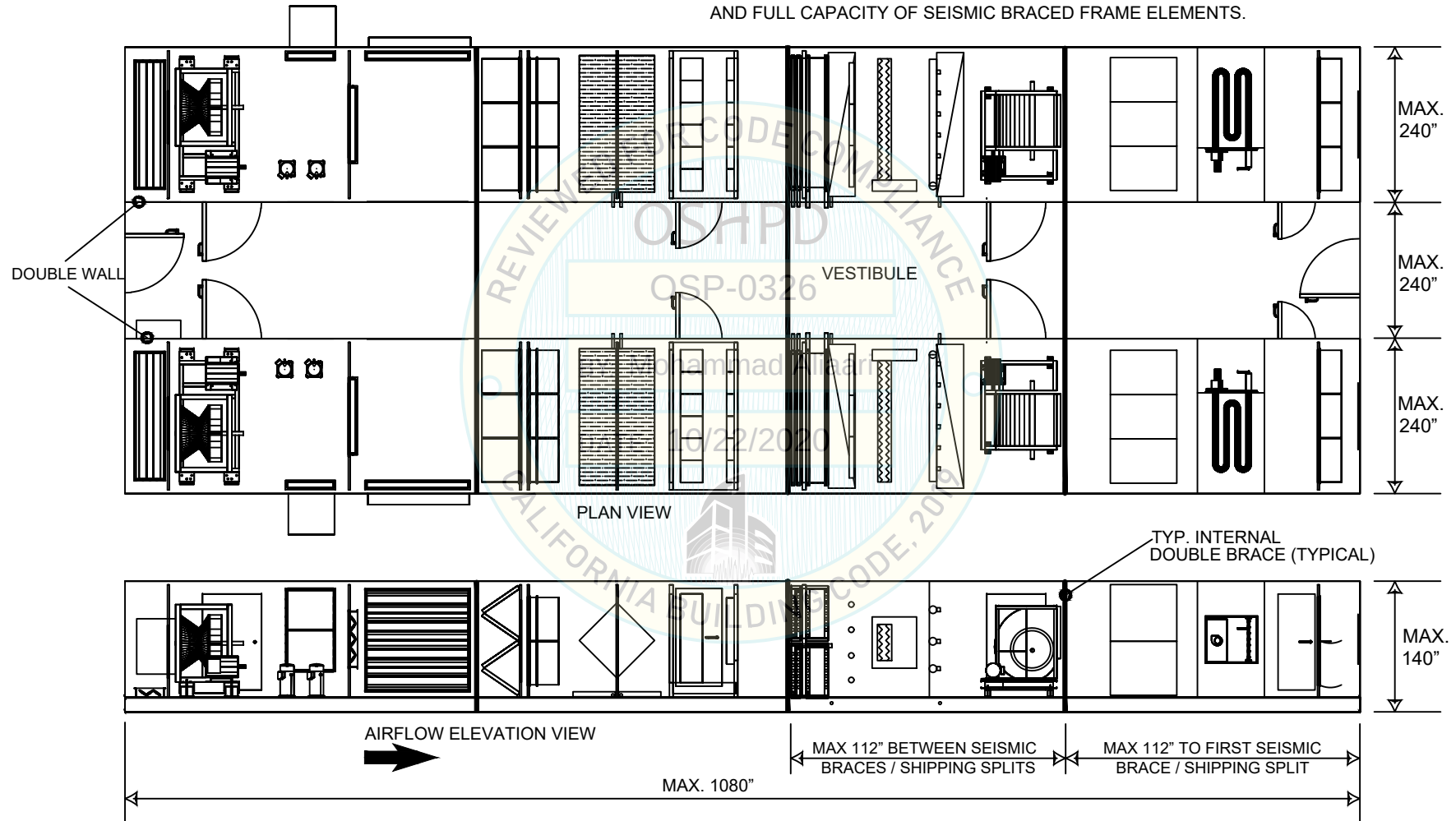
5

10-09-20

BKS

1. ALL DIMENSIONS ARE IN INCHES. DO NOT SCALE.
2. WALL INSULATION: NONE or 2" THICK.
3. GALVANIZED OR STAINLESS STEEL BASE FRAME HEIGHT: 6" - 8".
4. ELECTRICAL PANELS MAY BE AT VARIOUS LOCATIONS ON THE UNIT.
5. MAXIMUM UNIT WEIGHT: 80 PSF MAX. LOADING.

6. CASING CONSTRUCTION: GALVANIZED STEEL, STAINLESS STEEL OR ALUMINUM PANELS FASTENED TO AN INTERIOR STEEL FRAMEWORK WITH MECHANICAL FASTENERS.
7. MAXIMUM SIZE PER SECTION / SHIPPING SPLIT: 112"Dx240"Wx140"H. INTERNAL SEISMIC BRACES REQUIRED AT ALL SPLITS. SEE "BRACING DETAIL" DRAWING.
8. ALL COMPONENTS ARE SHOWN FOR REFERENCE AND CAN BE RECONFIGURED AS REQUIRED TO MEET APPLICATION AND SITE REQUIREMENTS.
9. STRUCTURAL INTEGRITY SHALL BE MAINTAINED BETWEEN SHIPPING SPLITS.
10. ALL TRANSVERSE BASE MEMBERS TO BE DESIGNED FOR TRIBUTARY DEAD LOAD AND FULL CAPACITY OF SEISMIC BRACED FRAME ELEMENTS.



MULTIPLE CONFIGURATIONS MAY BE DESIGNED UP TO THE MAXIMUM STANDARD AHU CABINET SIZES SHOWN WITH INTERNAL SEISMIC BRACES AS NEEDED. SEE SEISMIC BRACING INSTALLATION DRAWING FOR BRACING CONSTRUCTION DETAILS. ALL CERTIFIED COMPONENTS MAY BE CONFIGURED WITHIN EACH AHU AS REQUIRED TO MEET APPLICATION AND SITE REQUIREMENTS.



JOB NAME: OSHPD SEISMIC CERTIFICATION

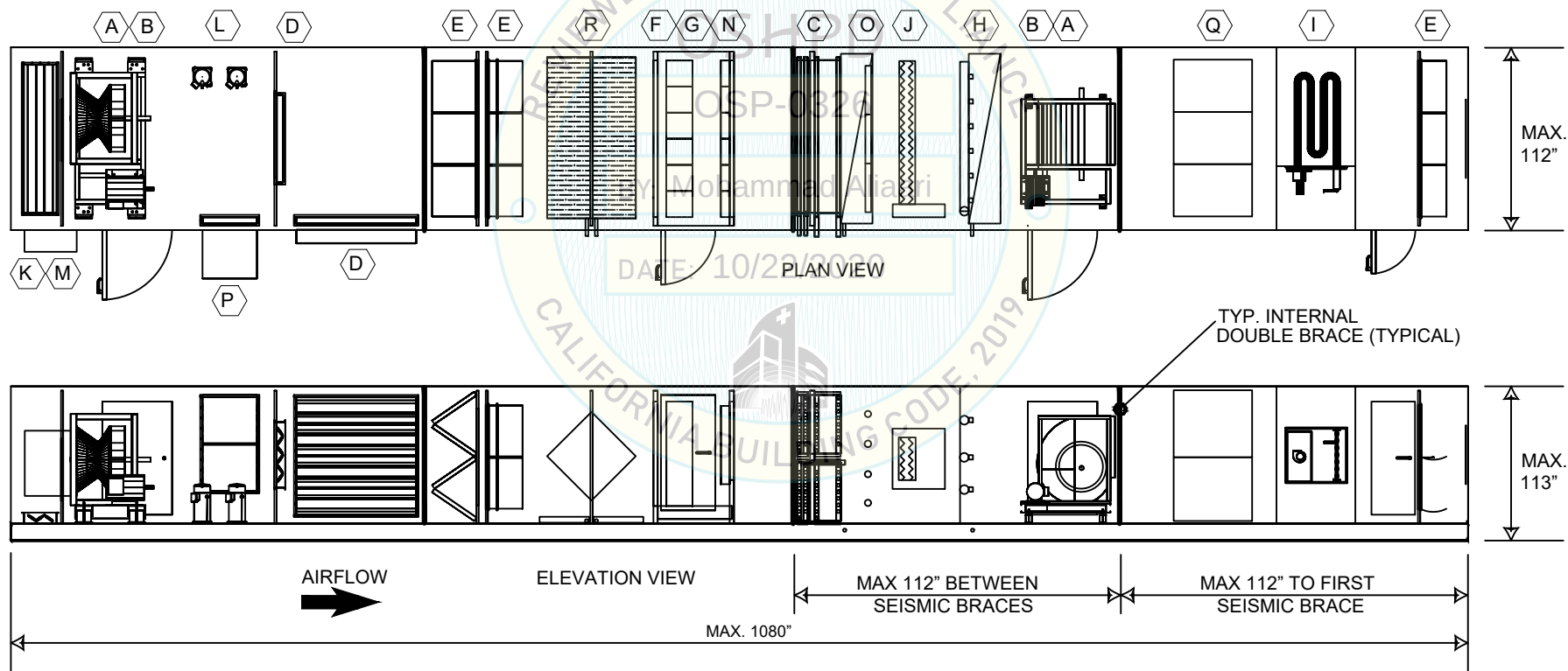
DATE DRAWN: 3-14-2013

UNIT TYPE: DOUBLE AIR TUNNEL WITH VESTIBULE
WITH SPLITS
DRAWING No.: SEISMIC - 004

REV No.:	1	2	3	4	5
DATE:	8-5-13	8-20-13	8-30-13	5-11-20	10-09-20
INITIAL:	PA	PA	PA	BKS	BKS

- (A) Fans (Table 2)
 (B) Motors (Table 3)
 (C) Coils (Table 4)
 (D) Dampers & Louvers (Table 5)
 (E) Filters (Table 6)
 (F) Pumps (Table 7)
 (G) Valves (Table 8)
 (H) Humidifiers (Table 9)
 (I) Furnaces (Table 10)
 (J) Electric Heaters (Table 11)
 (K) VFDs (Table 12)
 (L) Compressors (Table 13)
 (M) Electrical Panel (Table 14)
 (N) Evaporative Humidifier (Table 15)
 (O) U.V. Lights (Table 15)
 (P) Rain Hoods (Table 15)
 (Q) Sound Attenuators (Table 15)
 (R) Air-to-Air Heat Exchangers (Table 15)

1. ALL DIMENSIONS ARE IN INCHES. DO NOT SCALE.
2. WALL INSULATION: NONE or 2" THICK.
3. GALVANIZED OR STAINLESS STEEL BASE FRAME HEIGHT: 6" - 8".
4. ELECTRICAL PANELS MAY BE AT VARIOUS LOCATIONS ON THE UNIT.
5. MAXIMUM UNIT WEIGHT: 80 PSF MAX. LOADING.
6. CASING CONSTRUCTION: GALVANIZED STEEL, STAINLESS STEEL OR ALUMINUM PANELS FASTENED TO AN INTERIOR STEEL FRAMEWORK WITH MECHANICAL FASTENERS.
7. MAXIMUM SIZE PER SECTION / SHIPPING SPLIT: 280"Dx112"Wx113"H. INTERNAL SEISMIC BRACES REQUIRED AT ALL SPLITS. SEE "BRACING DETAIL" DRAWING.
8. ALL COMPONENTS ARE SHOWN FOR REFERENCE AND CAN BE RECONFIGURED AS REQUIRED TO MEET APPLICATION AND SITE REQUIREMENTS.
9. STRUCTURAL INTEGRITY SHALL BE MAINTAINED BETWEEN SHIPPING SPLITS.
10. ALL TRANSVERSE BASE MEMBERS TO BE DESIGNED FOR TRIBUTARY DEAD LOAD AND FULL CAPACITY OF SEISMIC BRACED FRAME ELEMENTS.



MULTIPLE CONFIGURATIONS MAY BE DESIGNED UP TO THE MAXIMUM STANDARD AHU CABINET SIZES SHOWN WITH INTERNAL SEISMIC BRACES AS NEEDED. SEE SEISMIC BRACING INSTALLATION DRAWING FOR BRACING CONSTRUCTION DETAILS. ALL CERTIFIED COMPONENTS MAY BE CONFIGURED WITHIN EACH AHU AS REQUIRED TO MEET APPLICATION AND SITE REQUIREMENTS.



JOB NAME: OSHPD SEISMIC CERTIFICATION

DATE DRAWN: 8-14-2013

UNIT TYPE: SINGLE AIR TUNNEL

DRAWING No.: SEISMIC - 005

REV No.: 1

DATE: 8-20-13
INITIAL: PA

2

8-30-13
PA

3

9-5-13
PA

4

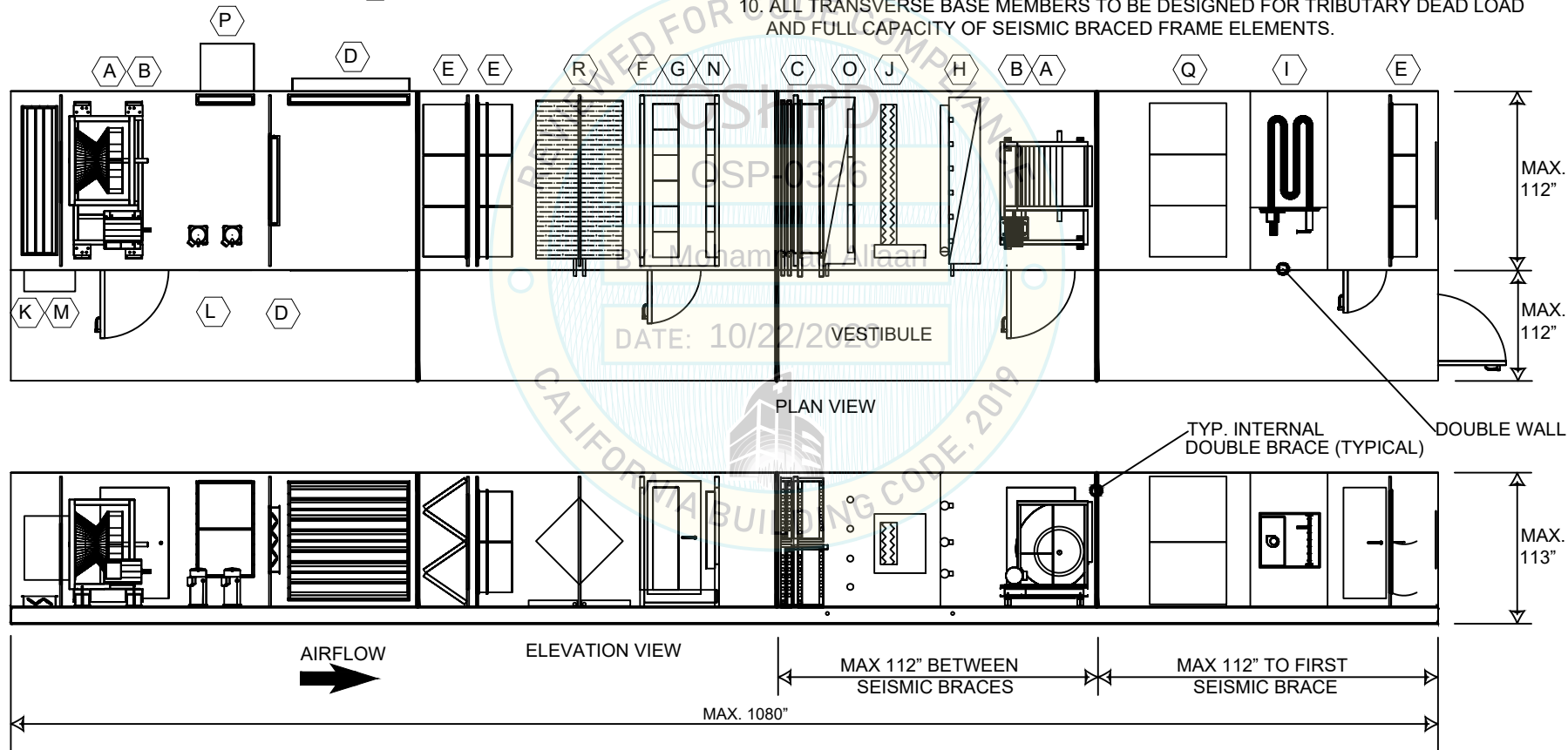
5-11-20
BKS

5

10-09-20
BKS

- A Fans (Table 2)
 B Motors (Table 3)
 C Coils (Table 4)
 D Dampers & Louvers (Table 5)
 E Filters (Table 6)
 F Pumps (Table 7)
 G Valves (Table 8)
 H Humidifiers (Table 9)
 I Furnaces (Table 10)
 J Electric Heaters (Table 11)
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 R Air-to-Air Heat Exchangers (Table 15)

1. ALL DIMENSIONS ARE IN INCHES. DO NOT SCALE.
2. WALL INSULATION: NONE or 2" THICK.
3. GALVANIZED OR STAINLESS STEEL BASE FRAME HEIGHT: 6" - 8".
4. ELECTRICAL PANELS MAY BE AT VARIOUS LOCATIONS ON THE UNIT.
5. MAXIMUM UNIT WEIGHT: 80 PSF MAX. LOADING.
6. CASING CONSTRUCTION: GALVANIZED STEEL, STAINLESS STEEL OR ALUMINUM PANELS FASTENED TO AN INTERIOR STEEL FRAMEWORK WITH MECHANICAL FASTENERS.
7. MAXIMUM SIZE PER SECTION / SHIPPING SPLIT: 280"Dx112"Wx113"H. INTERNAL SEISMIC BRACES REQUIRED AT ALL SPLITS. SEE "BRACING DETAIL" DRAWING.
8. ALL COMPONENTS ARE SHOWN FOR REFERENCE AND CAN BE RECONFIGURED AS REQUIRED TO MEET APPLICATION AND SITE REQUIREMENTS.
9. STRUCTURAL INTEGRITY SHALL BE MAINTAINED BETWEEN SHIPPING SPLITS.
10. ALL TRANSVERSE BASE MEMBERS TO BE DESIGNED FOR TRIBUTARY DEAD LOAD AND FULL CAPACITY OF SEISMIC BRACED FRAME ELEMENTS.



MULTIPLE CONFIGURATIONS MAY BE DESIGNED UP TO THE MAXIMUM STANDARD AHU CABINET SIZES SHOWN WITH INTERNAL SEISMIC BRACES AS NEEDED. SEE SEISMIC BRACING INSTALLATION DRAWING FOR BRACING CONSTRUCTION DETAILS. ALL CERTIFIED COMPONENTS MAY BE CONFIGURED WITHIN EACH AHU AS REQUIRED TO MEET APPLICATION AND SITE REQUIREMENTS.



JOB NAME: OSHPD SEISMIC CERTIFICATION

DATE DRAWN: 8-14-2013

UNIT TYPE: SINGLE AIR TUNNEL WITH VESTIBULE

DRAWING No.: SEISMIC - 006

REV No.: 1

DATE: 8-20-13

INITIAL: PA

2

8-30-13

PA

3

9-5-13

PA

4

5-11-20

BKS

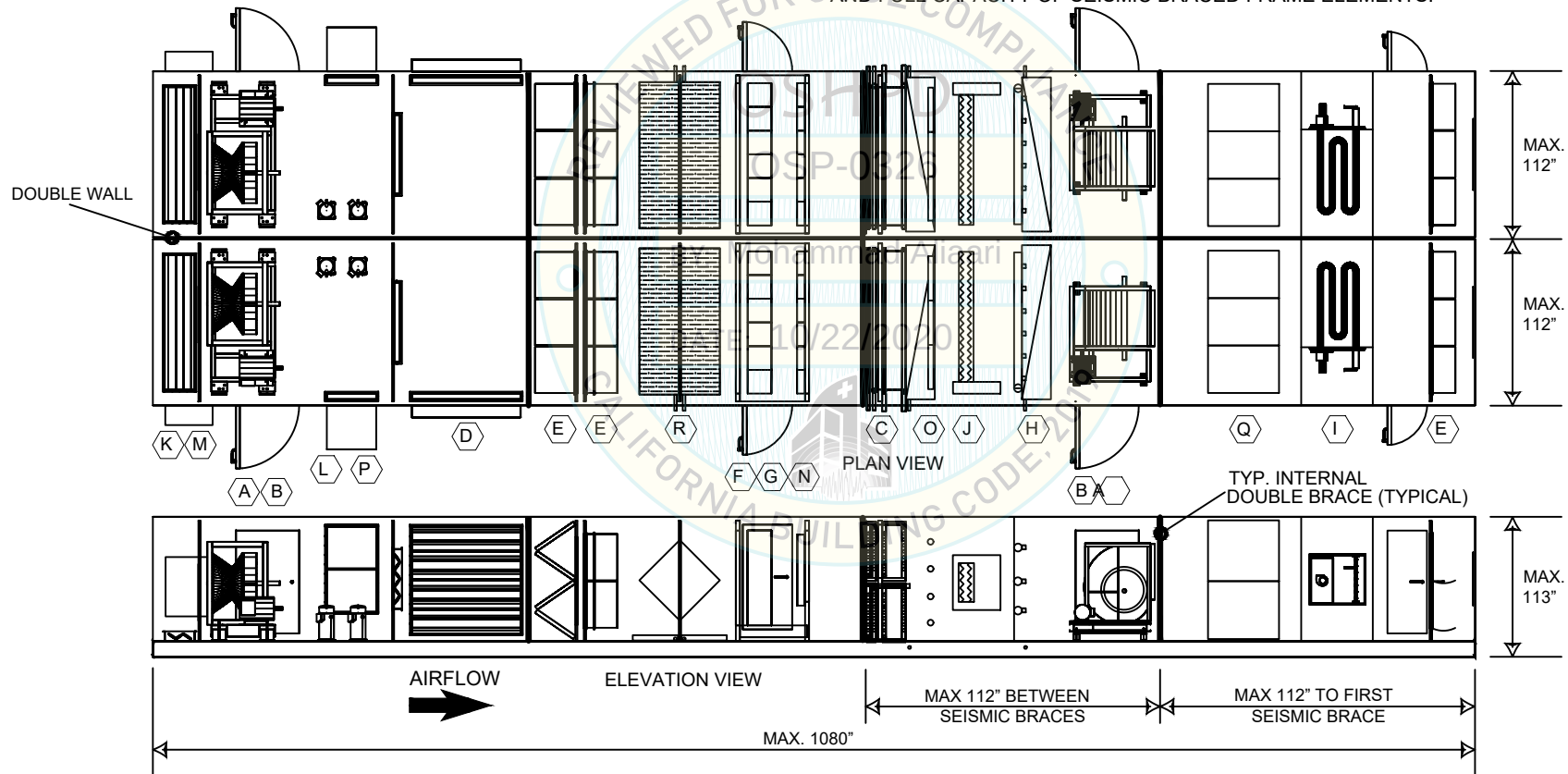
5

10-09-20

BKS

- A Fans (Table 2)
 B Motors (Table 3)
 C Coils (Table 4)
 D Dampers & Louvers (Table 5)
 E Filters (Table 6)
 F Pumps (Table 7)
 G Valves (Table 8)
 H Humidifiers (Table 9)
 I Furnaces (Table 10)
 J Electric Heaters (Table 11)
 K VFDs (Table 12)
 L Compressors (Table 13)
 M Electrical Panel (Table 14)
 N Evaporative Humidifier (Table 15)
 O U.V. Lights (Table 15)
 P Rain Hoods (Table 15)
 Q Sound Attenuators (Table 15)
 R Air-to-Air Heat Exchangers (Table 15)

1. ALL DIMENSIONS ARE IN INCHES. DO NOT SCALE.
2. WALL INSULATION: NONE or 2" THICK.
3. GALVANIZED OR STAINLESS STEEL BASE FRAME HEIGHT: 6" - 8".
4. ELECTRICAL PANELS MAY BE AT VARIOUS LOCATIONS ON THE UNIT.
5. MAXIMUM UNIT WEIGHT: 80 PSF MAX. LOADING.
6. CASING CONSTRUCTION: GALVANIZED STEEL, STAINLESS STEEL OR ALUMINUM PANELS FASTENED TO AN INTERIOR STEEL FRAMEWORK WITH MECHANICAL FASTENERS.
7. MAXIMUM SIZE PER SECTION / SHIPPING SPLIT: 280"Dx112"Wx113"H. INTERNAL SEISMIC BRACES REQUIRED AT ALL SPLITS. SEE "BRACING DETAIL" DRAWING.
8. ALL COMPONENTS ARE SHOWN FOR REFERENCE AND CAN BE RECONFIGURED AS REQUIRED TO MEET APPLICATION AND SITE REQUIREMENTS.
9. STRUCTURAL INTEGRITY SHALL BE MAINTAINED BETWEEN SHIPPING SPLITS.
10. ALL TRANSVERSE BASE MEMBERS TO BE DESIGNED FOR TRIBUTARY DEAD LOAD AND FULL CAPACITY OF SEISMIC BRACED FRAME ELEMENTS.



MULTIPLE CONFIGURATIONS MAY BE DESIGNED UP TO THE MAXIMUM STANDARD AHU CABINET SIZES SHOWN WITH INTERNAL SEISMIC BRACES AS NEEDED. SEE SEISMIC BRACING INSTALLATION DRAWING FOR BRACING CONSTRUCTION DETAILS. ALL CERTIFIED COMPONENTS MAY BE CONFIGURED WITHIN EACH AHU AS REQUIRED TO MEET APPLICATION AND SITE REQUIREMENTS.



JOB NAME: OSHPD SEISMIC CERTIFICATION

DATE DRAWN: 8-14-2013

UNIT TYPE: DOUBLE AIR TUNNEL

DRAWING No.: SEISMIC - 007

REV No.: 1

DATE: 8-20-13
INITIAL: PA

2

8-30-13
PA

3

9-5-13
PA

4

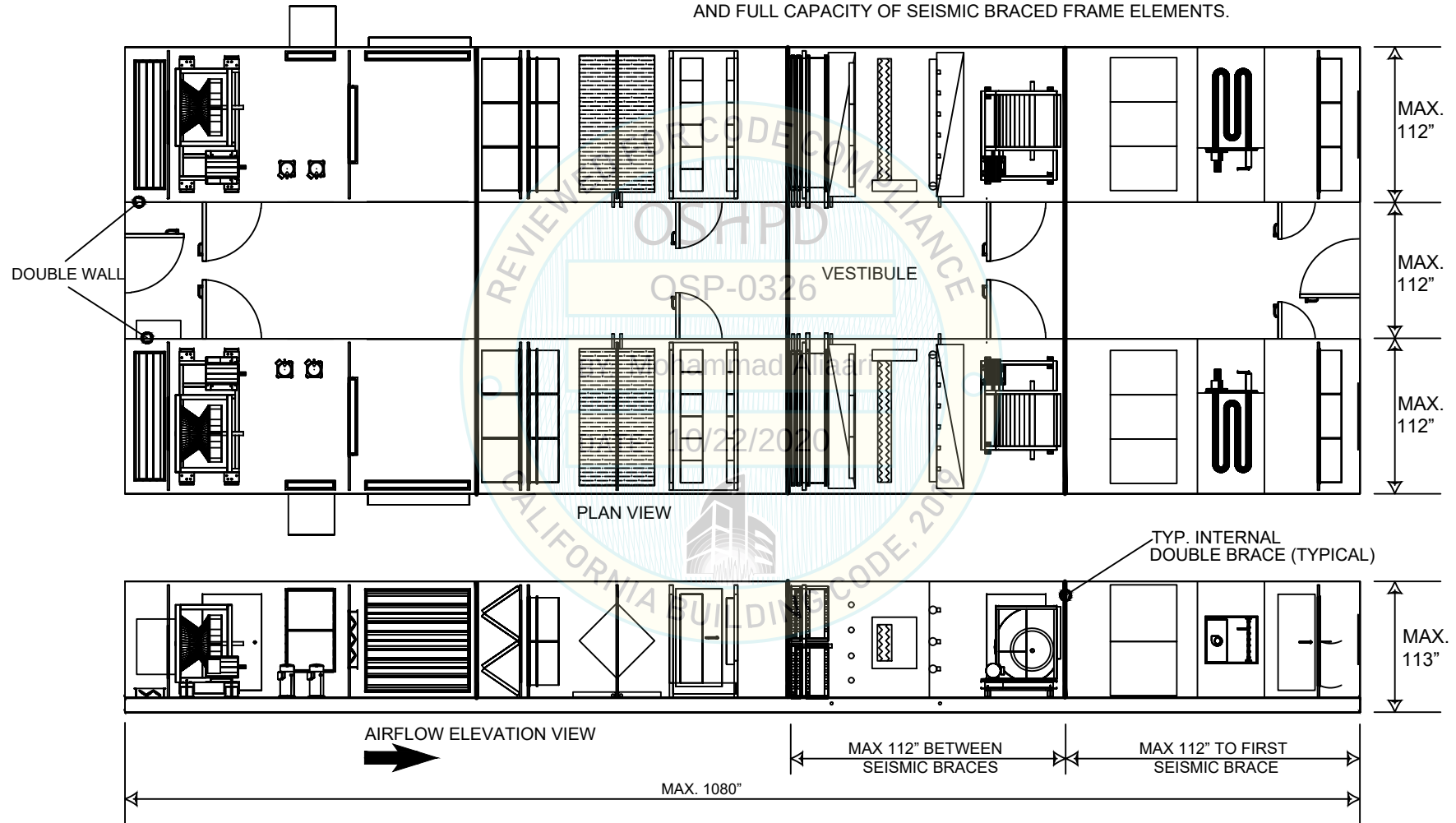
5-11-20
BKS

5

10-09-20
BKS

1. ALL DIMENSIONS ARE IN INCHES. DO NOT SCALE.
2. WALL INSULATION: NONE or 2" THICK.
3. GALVANIZED OR STAINLESS STEEL BASE FRAME HEIGHT: 6" - 8".
4. ELECTRICAL PANELS MAY BE AT VARIOUS LOCATIONS ON THE UNIT.
5. MAXIMUM UNIT WEIGHT: 80 PSF MAX. LOADING.

6. CASING CONSTRUCTION: GALVANIZED STEEL, STAINLESS STEEL OR ALUMINUM PANELS FASTENED TO AN INTERIOR STEEL FRAMEWORK WITH MECHANICAL FASTENERS.
7. MAXIMUM SIZE PER SECTION / SHIPPING SPLIT: 280"Dx112"Wx113"H. INTERNAL SEISMIC BRACES REQUIRED AT ALL SPLITS. SEE "BRACING DETAIL" DRAWING.
8. ALL COMPONENTS ARE SHOWN FOR REFERENCE AND CAN BE RECONFIGURED AS REQUIRED TO MEET APPLICATION AND SITE REQUIREMENTS.
9. STRUCTURAL INTEGRITY SHALL BE MAINTAINED BETWEEN SHIPPING SPLITS.
10. ALL TRANSVERSE BASE MEMBERS TO BE DESIGNED FOR TRIBUTARY DEAD LOAD AND FULL CAPACITY OF SEISMIC BRACED FRAME ELEMENTS.



MULTIPLE CONFIGURATIONS MAY BE DESIGNED UP TO THE MAXIMUM STANDARD AHU CABINET SIZES SHOWN WITH INTERNAL SEISMIC BRACES AS NEEDED. SEE SEISMIC BRACING INSTALLATION DRAWING FOR BRACING CONSTRUCTION DETAILS. ALL CERTIFIED COMPONENTS MAY BE CONFIGURED WITHIN EACH AHU AS REQUIRED TO MEET APPLICATION AND SITE REQUIREMENTS.



JOB NAME: OSHPD SEISMIC CERTIFICATION

DATE DRAWN: 8-14-2013

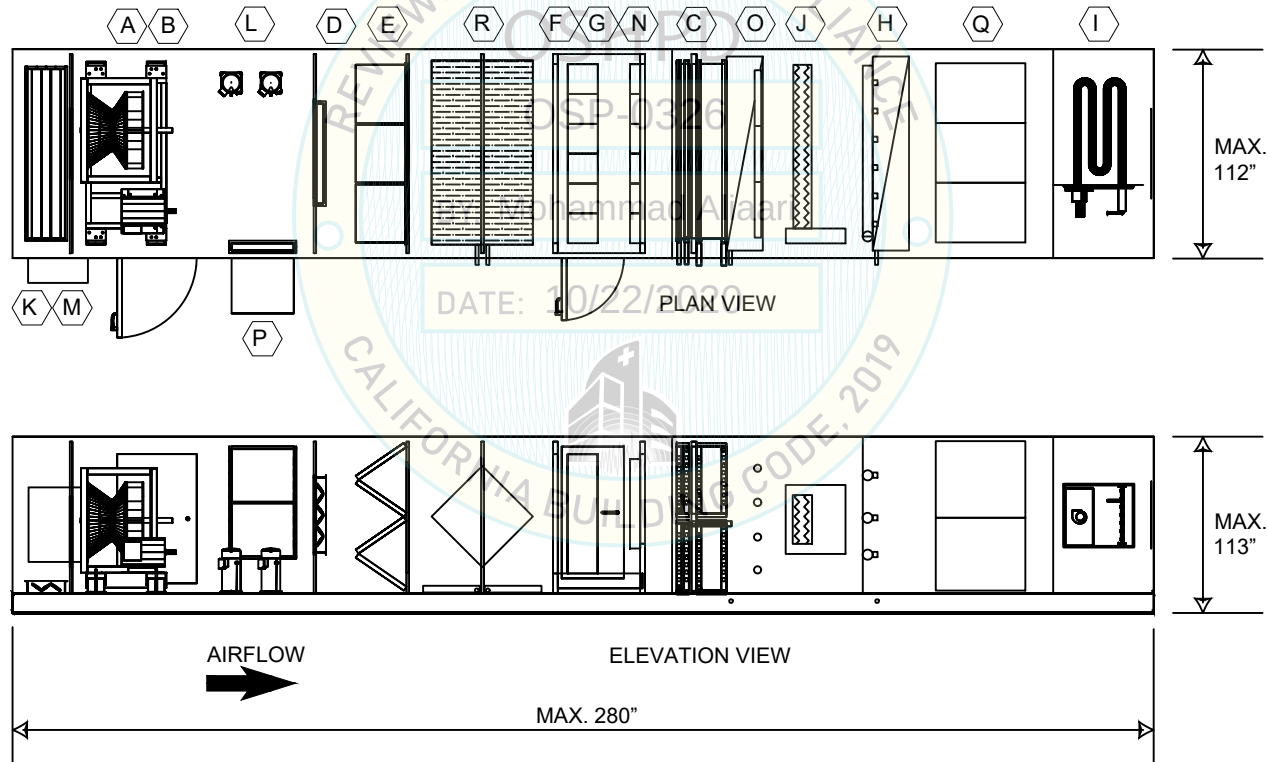
UNIT TYPE: DOUBLE AIR TUNNEL WITH VESTIBULE

DRAWING No.: SEISMIC - 008

REV No.:	1	2	3	4	5
DATE:	8-20-13	8-30-13	9-5-13	5-11-20	10-09-20
INITIAL:	PA	PA	PA	BKS	BKS

- | | |
|--------------------------------------|--|
| A Fans (Table 2) | J Electric Heaters (Table 11) |
| B Motors (Table 3) | K VFDs (Table 12) |
| C Coils (Table 4) | L Compressors (Table 13) |
| D Dampers & Louvers (Table 5) | M Electrical Panel (Table 14) |
| E Filters (Table 6) | N Evaporative Humidifier (Table 15) |
| F Pumps (Table 7) | O U.V. Lights (Table 15) |
| G Valves (Table 8) | P Rain Hoods (Table 15) |
| H Humidifiers (Table 9) | Q Sound Attenuators (Table 15) |
| I Furnaces (Table 10) | R Air-to-Air Heat Exchangers (Table 15) |

1. ALL DIMENSIONS ARE IN INCHES. DO NOT SCALE.
2. WALL INSULATION: NONE or 4" THICK.
3. GALVANIZED OR STAINLESS STEEL BASE FRAME HEIGHT: 6" - 8".
4. ELECTRICAL PANELS MAY BE AT VARIOUS LOCATIONS ON THE UNIT.
5. MAXIMUM UNIT WEIGHT: 50 PSF MAX. LOADING.
6. CASING CONSTRUCTION: GALVANIZED STEEL, STAINLESS STEEL OR ALUMINUM PANELS FASTENED TO AN INTERIOR STEEL FRAMEWORK WITH MECHANICAL FASTENERS.
7. MAXIMUM SIZE PER SECTION / SHIPPING SPLIT: 280"Dx112"Wx113"H. INTERNAL SEISMIC BRACES REQUIRED AT ALL SPLITS. SEE "BRACING DETAIL" DRAWING.
8. ALL COMPONENTS ARE SHOWN FOR REFERENCE AND CAN BE RECONFIGURED AS REQUIRED TO MEET APPLICATION AND SITE REQUIREMENTS.
9. ALL TRANSVERSE BASE MEMBERS TO BE DESIGNED FOR TRIBUTARY DEAD LOAD AND FULL CAPACITY OF SEISMIC BRACED FRAME ELEMENTS.
10. AHU CABINET SHALL HAVE 4 WALLS IN PLACE



MULTIPLE CONFIGURATIONS MAY BE DESIGNED UP TO THE MAXIMUM STANDARD AHU CABINET SIZES SHOWN ON THIS DRAWING WITHOUT ANY SEISMIC BRACES
ALL CERTIFIED COMPONENTS MAY BE CONFIGURED WITHIN EACH AHU AS REQUIRED TO MEET APPLICATION AND SITE REQUIREMENTS.



JOB NAME: OSHPD SEISMIC CERTIFICATION

DATE DRAWN: 9-5-2013

UNIT TYPE: SINGLE AIR TUNNEL WITH 4 WALLS

DRAWING No.: SEISMIC - 009

REV No.:

DATE:

INITIAL:

1

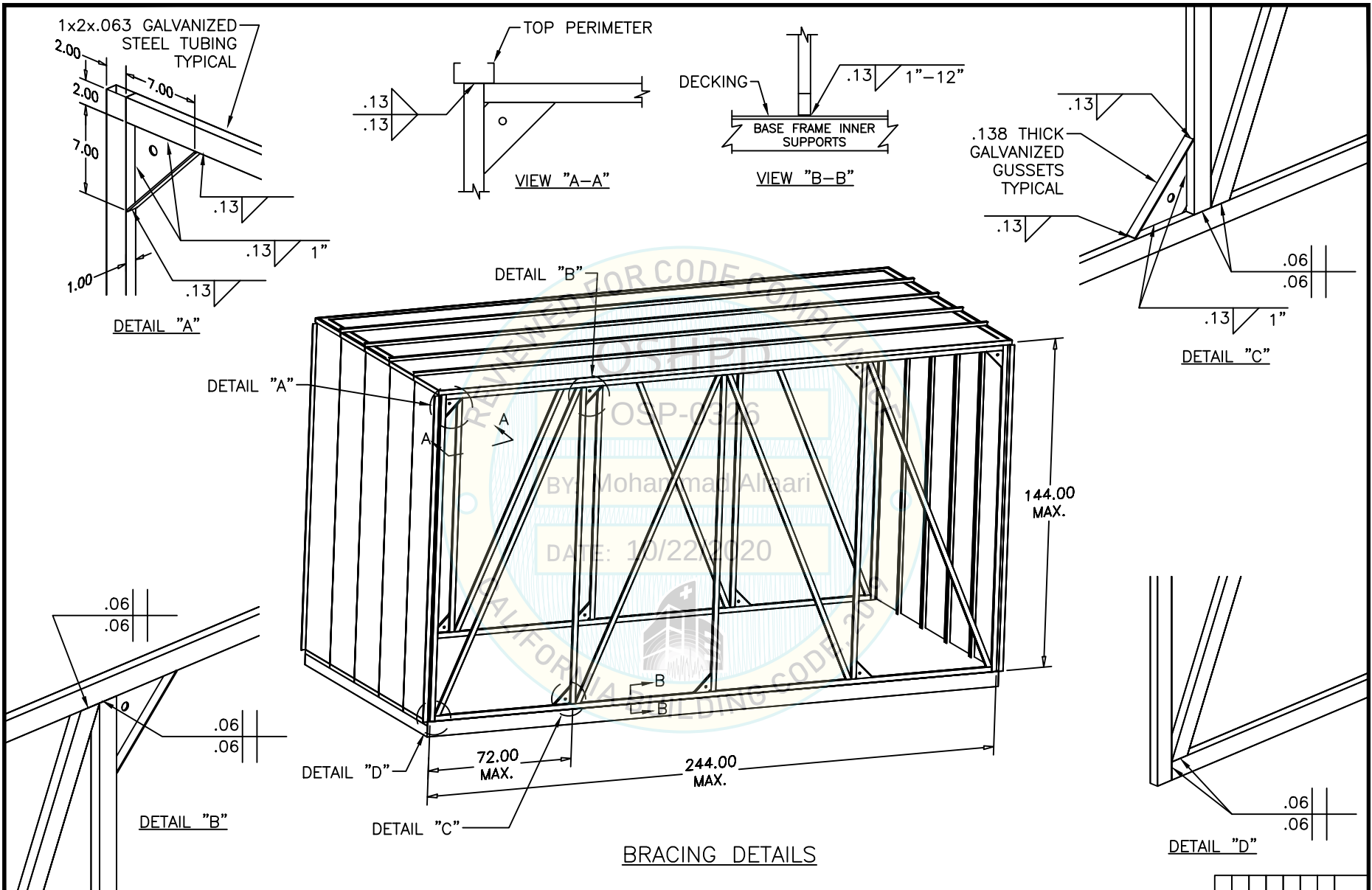
5-11-20

BKS

2

10-09-20

BKS



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Products**

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JOB NAME: SEISMIC TESTING

MODEL NO.

TAG NO.

CONTRACTOR:

REVISIONS

DWG. NO.

ENGINEER:

DATE 8-20-13 5-11-20

SHOP #

DATE DRAWN:

INT. PA BKS

JOB NO. 0908205