



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR HCAI SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0063

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: ClimateCraft

Manufacturer's Technical Representative: Andrew Hillis

Mailing Address: 518 North Indiana Ave., Oklahoma City, OK 73106

Telephone: (405) 415-9230

Email: ahillis@climatecraft.com

Product Information

Product Name: Air Conditioning Units

Product Type: Air Conditioning Units - Custom

Product Model Number: Custom Air Handling Units

General Description: Rigid mounted Custom Air Handling Units with components as listed in the Certified Product Tables.

Mounting Description: Rigid, Base mounted, with internally isolated fan units.

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

Applicant Information

Applicant Company Name: VMC Group

Contact Person: John Guiliano

Mailing Address: 113 Main St., Bloomingdale, NJ 07403

Telephone: (973) 838-1780

Email: john.guiliano@thevmcgroup.com

Title: President



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

Company Name: THE VMC GROUP

Name: Kenneth Tarlow

California License Number: S2851

Mailing Address: 113 Main Street, Bloomingdale, NJ 07403

Telephone: (973) 838-1780

Email: ken.tarlow@thevmcgroup.com

Certification Method

☐ GR-63-Core

☒ ICC-ES AC156

☐ IEEE 344

☐ IEEE 693

☐ NEBS 3

☐ Other (Please Specify): _____

Testing Laboratory

Company Name: UNIVERSITY OF CALIFORNIA, BERKELEY (PEER)

Contact Person: Amarnath Kasalanati

Mailing Address: 325 Davis Hall, MC1792, Berkeley CA 94720

Telephone: (510) 642-6475

Email: Amarnath1@berkeley.edu

Company Name: QUALTECH/CURTISS WRIGHT/TRENTEC

Contact Person: Timothy Geers

Mailing Address: 4600 East Tech Drive, Cincinnati OH 45245

Telephone: (513) 528-7900

Email: tgeers@curtisswright.com



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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 4.34

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

a_p (Amplification factor) = 2.5

R_p (Response modification factor) = 2.0

Ω₀ (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1

Natural frequencies (Hz) = See UUT sheets

Overall dimensions and weight = See Product Matrix and UUT Sheets

HCAI Approval (For Office Use Only) - Approval Expires on 11/06/2029

Date: 11/6/2023

Name: Timothy Piland

Title: Associate Governmental Program

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

z/h = 1

Condition of Approval (if applicable):

Table 1: Cabinet Sizes and Configurations

	Nominal Height	Max Tested Height	Single Wide Unit Width [in.] (Nominal Size) 6" Increments				Larger than Single Wide Unit Widths	UUT	Tested Weight [lb]	psf	No. of Walls Remaining	Removed Walls	Manufacturer	
			36 to 60	66 to 90	96 to 120	126 to 144								
Non-Stacked Unit Height [in]	36	52	X	X	X	X	Refer to Line Drawings of Certified Units	Extrapolated	N/A	106 Max	4 Walls	None	ClimateCraft	
	Interpolated	Interpolated	X	X	X	X		UUT-05A	4,900	73				
	84	99	X	X	99"W x 98"L	X		Interpolated	N/A	106 Max				
	Interpolated	Interpolated	X	X	X	X								
	36	52	X	X	X	X	Refer to Line Drawings of Certified Units	Interpolated	N/A	106 Max	3 Walls	Inlet or Outlet		
	Interpolated	Interpolated	X	X	X	X		UUT-03	6,000	63		Outlet		
	42	51	X	X	117"W x 118"L	X		Interpolated	N/A	106 Max		Inlet or Outlet		
	Interpolated	Interpolated	X	X	X	X		UUT-01	6,700	106		Inlet		
	132	141	X	X	99"W x 82"L	X		Interpolated	N/A	106 Max	Inlet or Outlet			
	138	147	X	X	X	X								
	36	52	X	X	X	X		Refer to Line Drawings of Certified Units	Interpolated	N/A	77 Max	2 Walls		Inlet, Outlet, or Side
	Interpolated	Interpolated	X	X	X	X			UUT-05B	4,500	67			Inlet, Side
	90	99	X	X	99"W x 98"L	X			Interpolated	N/A	77 Max			Inlet, Outlet, or Side
	Interpolated	Interpolated	X	X	X	X			UUT-02	3,700	77			Inlet, Outlet
	102	111	X	81"W x 78"L	X	X			Interpolated	N/A	77 Max	Inlet, Outlet, or Side		
	Interpolated	Interpolated	X	X	X	X			UUT-04B	10,900	77	Inlet, Outlet		
	138	147	X	X	X	141"W x 144"L								
	36	52	X	X	X	X	Refer to Line Drawings of Certified Units		Interpolated	N/A	76 Max	1 Walls		Inlet, Outlet, and Side
	Interpolated	Interpolated	X	X	X	X		UUT-04C	10,500	74				
	138	147	X	X	X	141"W x 144"L		UUT-08	4,828	40				
		151	X	X	X	146"W x 120"L		UUT-07	8,819	72				
			X	X	X	146"W x 120"L		UUT-06	9,194	76				
			36	52	X	X		X	X	Refer to Line Drawings of Certified Units	Interpolated	N/A		65 Max
	Interpolated	Interpolated	X	X	X	X		UUT-04D	9,200		65	All		
	138	147	X	X	X	141"W x 144"L								
	Stacked Unit Height (Bottom/Top) [in]	36 / 36	94	X	X	X	X	Stacked Units only allowed for Single Wide Tunnel Configurations				4 Walls		None
Interpolated		Interpolated	X	X	X	X	Interpolated		N/A	119 Max				
138 / 48		205	X	X	X	141"W x 144"L	UUT-04A		16,800	119				

Table 1A: Insulation

Material	Thickness	UUT
Fiberglass	Extrapolated	Extrapolated
	2"	UUT-01, UUT-02, UUT-03, UUT-06, UUT-07, UUT-08
	Interpolated	Interpolated
	4"	UUT-04
Foam	Extrapolated	Extrapolated
	2"	UUT-05
	Interpolated	Extrapolated
	4"	Extrapolated

Note: Foam insulation validated by fiberglass testing as fiberglass is heavier.

Table 1B: Base Rails

Material	Thickness	UUT
Carbon Steel	5"	UUT-01, UUT-02, UUT-03, UUT-04, UUT-06, UUT-07, UUT-08
Stainless Steel	6"	Interpolated
	8"	
	5"	Interpolated
	6"	
	8"	UUT-05

Cabinet Configurations:

Single Wide Unit, Double Wide Unit, Dual Double Wide Unit, Dual Tunnel and Central Vestibule Unit
L & U Shape Configurations
144" Vestibule in addition to any maximum standard tunnel size. Side Piping Dog House option included.
Partial stacked configuration (Max 4' Empty Plenum Above Single Wide Units Only - As Tested)
Nominal height dimensions listed in table 1 does not include height of roof and base rail
All design changes shall be incorporated into unit as follows:

- Enclosure corners to have 1/2" bolts in place of 3/8".
- Belt Drive Housed Fan inlet wall screws shall be set at 6" O.C., instead of 12".
- Vertical wall pieces installed per ClimateCraft drawings.
- Cable bracing as defined in approved submittal drawings
- 2"x2" Tube bracing up and downstream of any stacked water coils at top of coil
- 10 ga Brackets for connecting coil faces in any stacked water coils

Table 1D: Exterior Panels

Material	Thickness	Max Panel Width	UUT
Solid Galvanized Carbon Steel	16 ga	24"	UUT-01, UUT-02, UUT-03, UUT-04, UUT-06, UUT-07, UUT-08
Solid Stainless Steel			UUT-05

Table 1C: Interior Panels

Material	Thickness	Max Panel Width	UUT
Perforated Carbon Steel	22 ga	24"	UUT-04
Perforated Stainless Steel	22 ga		UUT-05
Solid Galvanzied Carbon Steel	20 ga		UUT-01, UUT-02, UUT-03, UUT-04, UUT-06, UUT-07, UUT-08
Solid Stainless Steel	20 ga		UUT-05

Table 2a - AHU Coils (Hydronic)

Fin Height [in]	Fin Length [in]										UUT	Manufacturer
	12	13	14	Interpolated		81	98	Interpolated		127		
12	12x12	X	X	X	X	X	X	X	X	X	UUT-05	ClimateCraft
15	X	X	X	X	X	X	X	X	X	X	Interpolated	
18	X	X	X	X	X	X	X	X	X	X		
Interpolated	X	X	X	X	X	X	X	X	X	X	UUT-03	
	X	X	X	X	X	X	39x98	X	X	X		
	X	X	X	X	X	X	X	X	X	X	Interpolated	
42	X	X	X	X	X	X	X	X	X	42x127	UUT-07	
45	X	X	X	X	X	45x81	N/A	N/A	N/A	N/A	UUT-05	

Table 2b - Hydronic Coil Options

		UUT	Manufacturer
Casing Material:	Galvanized Carbon Steel	UUT-03, UUT-05A/B	ClimateCraft
	Stainless Steel	UUT-05A/B, UUT-07	
Tube Material:	Copper	UUT-03, UUT-05A/B, UUT-07	
Tube Outer Diameter:	5/8"	UUT-03, UUT-05A/B, UUT-07	
Tube Wall Thickness:	0.020"	UUT-03, UUT-05A/B, UUT-07	
	0.035"	UUT-03, UUT-07	
	0.049"	UUT-05A/B	
Permitted Fin Material:	Aluminum	UUT-03, UUT-07	
	Copper	UUT-05A/B	
Permitted Fin Pitch:	4	UUT-05A/B	
	6	UUT-03, UUT-07	
	10	UUT-03	
	12	UUT-05A/B, UUT-07	
Permitted Tube Rows:	1	UUT-05A/B	
	2	UUT-03	
	Interpolated	Interpolated	
	10	UUT-07	
Permitted Coil Configurations	12	UUT-03, UUT-05A/B	
	Single	UUT-03, UUT-05A	
	Staggered	Interpolated	
	Side by Side ¹	UUT-05B	
Header Size:	Stacked ²	UUT-07	
	0.75"	Extrapolated	
	Interpolated		
	1.00"	UUT-05A/B	
	Interpolated	Interpolated	
	1.25"	UUT-03	
	Interpolated	Interpolated	
	1.5"	UUT-07	
	Interpolated	Interpolated	
	4.00"	UUT-03, UUT-05A/B	

1) Side by side coil installation is approved by successful testing of coil stack in AHU cabinet with inlet and side walls removed
2) Certified for up to 3 high coil stack, with side by side installation included. Stacked coil installation is approved by successful testing of 3 high coil stack in AHU cabinet with inlet, outlet and side walls removed. Refer to detail drawings for required coil bracing design changes.

Table 2c - AHU Coils (Steam)

		Fin Length [in.]					UUT	Manufacturer
		12	Interpolated			122		
Fin Height [in.]	12	12x12	X	X	X	X	UUT-08	RAE
	Interpolated	X	X	X	X	X	Interpolated	
		X	X	X	X	X		
		X	X	X	X	X		
	48	X	X	X	X	48x122	UUT-08	

Table 2d - Steam Coil Options

		UUT		Manufactuer
Casing Material:		Stainless Steel	UUT-08	
Tube Material:		Copper	UUT-08	RAE
Tube Outer Diameter:		5/8"	UUT-08	
		1"	UUT-08	
Tube Wall Thickness:		0.035"	UUT-08	
Permitted Fin Material:		Aluminum	UUT-08	
		Extrapolated	Extrapolated	
		6	UUT-08	
		Interpolated	Interpolated	
		12	UUT-08	
Permitted Tube Rows:		Up to 2	UUT-08	
		Single	UUT-08	
		Staggered	Interpolated	
		Side by Side ¹	UUT-08	
		Stacked ²	UUT-08	
		1.5"	UUT-08	
		2.5"	UUT-08	

1) Side by side coil installation is approved by successful testing of coil stack in AHU cabinet with inlet and side walls removed
2) Certified for up to 2 high coil stack, with side by side installation included. Stacked coil installation is approved by successful testing of 2 high coil stack in AHU cabinet with inlet, outlet and side walls removed. Refer to detail drawings for required coil bracing desing changes.

Table 3A - Fan Tower Assemblies

Model Family	# of Fans	Max Weight [lb]	UUT	Manufacturer
MiniTower ¹	1	688	Interpolated	ClimateCraft
	2	1003	UUT-06	
	3	1314	Interpolated	
	4	1692	UUT-06	
Matrix Tower ² (MTX)	1	1751	UUT-03	
	2	2400	Interpolated	
	3	3049	UUT-06, UUT-01	

- 1) MiniTower fan array certified for up to 4 fan high tower, as per tested unit configurations
- 2) Matrix Tower fan array certified for up to 3 fan high tower, as per tested unit configurations
- 3) MiniTowers and Matrix Towers are only one fan wide, and the towers are independently supported, as per tested configurations.
- 4) Fans are available with the following options (as included in test units): Accoustical Sound Baffles, Shaft Grounding Rings, Pressure measuring ports, Safety Screens, BalanceStreams™
- 5) Fans are horizontal shaft, direct drive, as tested

Table 3B - Tower Fans

Model Family	Diameter	Weight [lb]	Wheel Material	Housing Material	UUT	Fan Wheel Manufacturer	Tower Manufacturer	
MiniTower	10"	8.66	Aluminum	Aluminum	UUT-06	Comerfri	ClimateCraft	
	11"	9.82			Interpolated			
	12"	12.94						
	14"	15.59						
	16"	19.41						UUT-06
Matrix Tower (MTX)	12"	20.4	Aluminum	Carbon Steel	Interpolated	Greenheck Fan Corp.		
	15"	22.8			UUT-03			
	16"	25.7			Interpolated			
	18"	28.9						
	20"	33.4						UUT-06
	22"	52						
	24"	66.5			UUT-06			
	27"	74.6			UUT-01,-06			

Table 3C - Tower Fan Motors

HP	Voltage	Weight [lb]	Housing Material	UUT	Manufacturer
3	208/230/460	72	Carbon Steel	UUT-06	Nidec
5		120		Interpolated	
7.5		160		Interpolated	
10		170		UUT-06	
15		300		Interpolated	
20		340		Interpolated	
25		380		Interpolated	
30		492		UUT-06	
1	208/230/460	43	Carbon Steel	Interpolated	Baldor
2		52		Interpolated	
3		69		UUT-03	
5		95		Interpolated	
7.5		146		Interpolated	
10		158		UUT-06	
15		217		UUT-06	
20		286		Interpolated	
25		417		Interpolated	
30		380		UUT-01	

Table 3D - BalanceStream™

Wheel Size	Weight [lb]	UUT	Manufacturer
18" Diamater	35	Interpolated	ClimateCraft
20" Diamater	40		
22" Diamater	47	UUT-06	
24" Diameter	54		
27" Diameter	63		

Table 4A - Plenum Fans

Model Family	Diameter	Weight [lb]	Wheel Material	Housing Material	UUT	Manufacturer
QEP	18"	140	Aluminun	Carbon Steel	UUT-05	Greenheck Fan Corp.
	20"	170			Interpolated	
	22"	220				
	24"	270				
	27"	300				
	30"	410				
	33"	480				
	36"	530				
	40"	620				
	44"	770				
	49"	980				
	54"	1300			UUT-04	

- 1) Fans are horizontal shaft, belt drive, as tested
- 2) Fans are available with the following options (as tested): Spring Isolation of Fan Base, Safety Screens, Belt Guards, Airflow Measuring Ports

Table 4B - Plenum Fan Motors

HP	Voltage	Weight [lb]	Housing Material	UUT	Manufacturer
3	208/230/460	36	Carbon Steel	UUT-05	Baldor
10		123		Interpolated	
15		217			
20		237			
30		372			
40		441			
50		472			
60		698			
75		808			
100		898		UUT-04	

Table 5 - VFDs

Model	Dimensions [in.]			Weight [lb]	Frame Size	Controlled HP Range	Controlled Voltage Range	UUT	Manufacturer	
	Height	Width	Depth							
ACH580 ACH580-PCR ACH580-PDR	14.69	4.92	8.78	10.1	01-1-R1	1--7.5	208/230/460	UUT-06	ABB	
	18.62	4.92	9.02	14.6	01-1-R2	10--15		Interpolated		
	19.29	7.99	9.02	26	01-1-R3	20-30		UUT-06		
	25.04	7.99	10.12	41.9	01-1-R4	40-60		Interpolated		
ACH550-UH/01	29.9	10.5"	11.2"	60		75		UUT-03		
ACH550-UH/01	93.6	31.7	25.9	190		150		Interpolated		
ACH550-PCR/PDR	93.6	31.7	25.9	1041		150		UUT-04	Nidec	
ACH550-BCR/BDR	93.6	31.7	25.9	1041		150				
H300	15	3.3	7.9	10	3	1.5-7.5				UUT-06
	15.4	4.9	7.9	14	4	10--15				Interpolated
	15.4	5.6	7.9	16.3	5	20				
	15.4	8.3	8.9	31	6	25--40				UUT-06

Table 6 - Flush Mounted Electrical Enclosure (VFD or Control Panel)

		Width [in.]									UUT	Material	Manufacturer
		24	30	36	42	48	54	60	66	72			
Height [in.]	24	X	X	X	X	X	X	X	X	X	UUT-05	Stainless Steel	ClimateCraft
	36	X	X	X	X	X	X	X	X	X	Interpolated	Mild Steel	
	42	X	X	X	X	X	X	X	X	X	UUT-03		
	48	X	X	X	X	X	X	X	X	X	Interpolated		
	54	X	X	X	X	X	X	X	X	X	Interpolated		
	60	X	X	X	X	X	X	X	X	X	UUT-01		
	66	X	X	X	X	X	X	X	X	X	Interpolated		
	72	X	X	X	X	X	X	X	X	X			
	78	X	X	X	X	X	X	X	X	X			
	84	X	X	X	X	X	X	X	X	X	UUT-06		
	90	X	X	X	X	X					Interpolated		
	96	X	X	X	X	X					UUT-04		

Table 7A - Electrical Control Panel Components - Main Distribution Blocks

Model	Rating [Amps]	Weight [lb]	UUT	Manufacturer
16321-3	175	2	UUT-01,-05	Cooper Bussman
16323-3	310	2	UUT-06	
16330-3	380	2	UUT-01	

Table 7B - Electrical Control Panel Components - Fuse Blocks

Model	Description	Rating [Amps]	Weight [lb]	UUT	Manufacturer
T60030-3CR	Cube Fuse	10/15	0.5	Interpolated	Cooper Bussman
T60030-3CR		20	0.5		
T60030-3CR		30	0.5		
T60200-3CR		200	2		
T60060-3CR		50	0.5	UUT-01	
T60100-3CR		100	1		
T60200-3CR		150	2		
T60200-3CR		175	2		
TCFH30	Cube Fuse Holder	30	0.5	UUT-01,-06	Cooper Bussman
TCFH60		60	0.5		
TCFH100		100	0.5		

Table 7C - Electrical Control Panel Components - Disconnect Switches

Model	Rating [Amps]	Weight [lb]	UUT	Manufacturer
CDFN30	30	0.79	UUT-01,-05	Cooper Bussman
CDFN60	60	0.79	Interpolated	
CDFN100	100	0.79		
BDNF200A	200	6.61		
BDNF400A	400	6.61	UUT-01	

Table 7D - Electrical Control Panel Components - Transformer

Model	Rating [kVA]	Weight [lb]	UUT	Manufacturer
9070T250D19	0.25	7.1	UUT-01,-05	Square D
9070T1000D51	1.00	34	Interpolated	
9070T1500D50	1.50	47		
9070T2000D50	2.00	60		
9070T3000D50	3.00	89	UUT-01	

Table 7E - Electrical Control Panel Components - Motor Starters

Model	Rating [Amps]	Weight [lb]	UUT	Manufacturer
8536SDO1-V02-H20	30	7.75	UUT-01,-05	Square D
8536SDO1-V02-H20	40	7.75	Interpolated	
8536SEO1-V02-H20	50	15		
8536SEO1-V02-H20	60	15	UUT-01	
8536SEO1-V02-H20	75	15	Interpolated	
8536SEO1-V02-H20	90	15	UUT-01	
8536SF01-V02-H20	120	22		

Table 8 - Power Distribution Panel Components

Matrix Power Distribution Panel and Components		Smallest	Largest	Manufacturer	UUT
	Std. Encl.	36"H x 24"W x 10"D		Climatecraft	UUT-01
	MMP	1.6-2.5A	45-63A	General Electric (GE)	UUT-01
	Cube Fuse	10A	100A	Cooper Bussman	UUT-01
	Fuse Holder	30A	100A	Cooper Bussman	UUT-01
	Terminal Block	335A	335A	Marathon	UUT-01

Note: Power Distribution Panel components can also be mounted within ClimateCraft's Standard Panel Enclosures, as tested

Table 9A - Dampers

		Width [in.] (Single Bank)				Max Weight [lb]	UUT	Manufacturer
		6	12	Interpolated	60			Model
Height [in.]	6	X	X	X	X	12.5	Extrapolated	Ruskin CD60/CD50 & SD60/50
	12	X	X	X	X	25	UUT-05	
	18	X	X	X	X	Interpolated	Interpolated	
	Interpolated	X	X	X	X		Interpolated	
	48	X	X	X	X	140	UUT-04	
	Interpolated	X	X	X	X	Interpolated	Interpolated	
	60	X	X	X	X		Interpolated	
	66	X	X	X	X		Interpolated	
	72	X	X	X	X	210	UUT-01	

Table 9B - Damper Actuators

Manufacturer	Model	Torque	Voltage	Material	Weight [lb]	UUT
Belimo	AF24-S	133 in-lb	24V	Steel	4.9	UUT-01
Belimo	FSAF24	133 in-lb	24/120V	Steel	4.9	UUT-04

Table 10A - Humidifier Grids

Model	Insersion Length	Weight [lb]	Model	UUT	Manufacturer
IP03-10-108"-5	108"	65.5	Intsy-Pac	UUT-03	Pure Humidifier

Table 10B - Humidifier Grids

		Width [in.]					Weight [lb]	Model	UUT	Manufacturer
		12	Interp.	39	Interp.	123				
Height [in.]	12	X	X	X	X	X	Interpolated	UltraSorb MP 1-1/2" or 2"	Interpolated	Dri-Steem
	Interp.	X	X	X	X	X				
	43.25	X	X	X	X	X	58		UUT-08	
	Interp.	X	X	X	X	X	Interpolated		Interpolated	
	123	X	X	X	X	X	264		UUT-08	

Table 11 - Air Blenders

		Width [in.]					Weight	Model	UUT	Manufacturer
		8	Interp.	12	Interp.	36				
Height [in.]	8	X	X	X	X	X	0.25 lb/sqft	ABS-#	Interpolated	Blender Products
	Interp.	X	X	X	X	X				
	12	X	X	X	X	X			UUT-05	
	Interp.	X	X	X	X	X			Interpolated	
	36	X	X	X	X	X			UUT-05	

Table 12 - Sound Attenuators

		Width [in.]					Model	UUT	Manufacturer
		6	Interp.	24	Interp.	36			
Height [in.]	12	X	X	X	X	X	HP-LF	Interpolated	Commercial Acoustics
	Interp.	X	X	X	X	X			
	24	X	X	X	X	X		UUT-05	
	Interp.	X	x	X	X	X		Interpolated	
	48	X	X	X	X	X		UUT-05	

Note: Multiple sound attenuators banks may be combined and stacked when larger size is needed

Table 13 - Filters

AAF Model	Description	Height [in.]	Width [in.]	Depth [in.]	Weight [lb]	UUT	Manufacturer
172-112-863	Pleated Filter Class II	24	24	2	1.50	UUT5	AAF
172-112-319	Pleated Filter Class II	24	12	2	0.83		
179-480-863	Pleated Filter Class II	24	24	4	2.50		
179-480-319	Pleated Filter Class II	24	12	4	1.50		
172-112-872	Pleated Filter Class II	20	24	2	1.30	Interpolated	
172-112-314	Pleated Filter Class II	20	12	2	0.75		
172-112-863	Pleated Filter Class II	24	24	2	1.50		
170-112-319	Pleated Filter Class II	24	12	2	0.83		
172-112-782	Pleated Filter Class II	20	24	2	1.30		
172-112-314	Pleated Filter Class II	20	12	2	0.75		
147-002-863	Pleated Filter Class I	24	24	2	1.83		
147-002-319	Pleated Filter Class I	24	12	2	1.00		
147-004-863	Pleated Filter Class I	24	24	4	3.00		
147-004-319	Pleated Filter Class I	24	12	4	1.70		
147-002-782	Pleated Filter Class I	20	24	2	1.30		
147-20-11E19E-1	Pleated Filter Class I	20	12	2	0.75		
3101951-608	Mini-Pleat Filter CL2 w/ Header	24	24	4	8.5	UUT5	
3101951-808	Mini-Pleat Filter CL2 w/ Header	24	24	4	8.5	Interpolated	
3101951-908	Mini-Pleat Filter CL2 w/ Header	24	24	4	8.5		
3101951-601	Mini-Pleat Filter CL2 w/ Header	24	12	4	5.5		
3101951-801	Mini-Pleat Filter CL2 w/ Header	24	12	4	5.5		
3101951-901	Mini-Pleat Filter CL2 w/ Header	24	12	4	5.5		
333-039-001	Filter 12" Depth ,V-Bank, CL II	24	24	12	19.0		
333-021-001	Filter 12" Depth ,V-Bank, CL II	24	24	12	19.0		
333-013-001	Filter 12" Depth ,V-Bank, CL II	24	24	12	19.0		
333-039-003	Filter 12" Depth ,V-Bank, CL II	24	12	12	12.0		
333-021-003	Filter 12" Depth ,V-Bank, CL II	24	12	12	12.0		
333-013-003	Filter 12" Depth ,V-Bank, CL II	24	12	12	12.0		
QSOSB	Filter, 6" Rigid, Class II	24	24	6	11.0		
QSOSB	Filter, 6" Rigid, Class II	24	24	6	11.0		
QSOSB	Filter, 6" Rigid, Class II	24	24	6	11.0		
QSOSB	Filter, 6" Rigid, Class II	24	12	6	6.0		
QSOSB	Filter, 6" Rigid, Class II	24	12	6	6.0		
QSOSB	Filter, 6" Rigid, Class II	24	12	6	6.0		
3011079-009	Filter, 12" Rigid, Class II	24	24	12	20.0	UUT5	
3011079-005	Filter, 12" Rigid, Class II	24	24	12	20.0	Interpolated	
3011079-001	Filter, 12" Rigid, Class II	24	24	12	20.0		
3011079-012	Filter, 12" Rigid, Class II	24	12	12	12.0	UUT5	
3011079-008	Filter, 12" Rigid, Class II	24	12	12	12.0	Interpolated	
3011079-004	Filter, 12" Rigid, Class II	24	12	12	12.0		
331-953-147	Filter, 6" Rigid, Class I	24	24	6	11.0		
331-765-147	Filter, 6" Rigid, Class I	24	24	6	11.0		
331-946-147	Filter, 6" Rigid, Class I	24	24	6	11.0		
331-953-149	Filter, 6" Rigid, Class I	24	12	6	8.0		
331-765-149	Filter, 6" Rigid, Class I	24	12	6	8.0		
331-946-149	Filter, 6" Rigid, Class I	24	12	6	8.0		
331-953-148	Filter, 12" Rigid, Class I	24	24	12	18.0		
331-765-148	Filter, 12" Rigid, Class I	24	24	12	18.0		
331-946-148	Filter, 12" Rigid, Class I	24	24	12	18.0		
331-953-150	Filter, 12" Rigid, Class I	24	12	12	9.0		
331-765-150	Filter, 12" Rigid, Class I	24	12	12	9.0		
331-946-150	Filter, 12" Rigid, Class I	24	12	12	9.0		
706-116-150	Filter, 15" Bag, Class II	24	24	15	6.5	UUT5	
708-116-150	Filter, 15" Bag, Class II	24	24	15	6.5	Interpolated	
709-116-150	Filter, 15" Bag, Class II	24	24	15	6.5		
706-123-150	Filter, 15" Bag, Class II	24	12	15	3.5	UUT5	
708-123-150	Filter, 15" Bag, Class II	24	12	15	3.5	Extrapolated	
709-123-150	Filter, 15" Bag, Class II	24	12	15	3.5		

Table 14 - Louvers

		Width [in.]					Weight	Model	UUT	Manufacturer
		12	Interpolated			30				
Height [in.]	12	X	X	X	X	X	5 lb/ft	EME3625 (vertical)	Interpolated	Ruskin
	Interp.	X	X	X	X	X			UUT-04	
	60	X	X	X	X	X				
		Width [in.]					Weight	Model	UUT	Manufacturer
		12	Interp.	18	Interp.	84				
Height [in.]	12	X	X	X	X	X	4 lb/ft	ELF 837 (Stationary)	Interpolated	Ruskin
	Interp.	X	X	X	X	X			UUT-05	
	18	X	X	X	X	X			Interpolated	
	Interp.	X	X	X	X	X			UUT-05	
	48	X	X	X	X	X				

Table 15 - Exterior Hoods

		Width [in.]					Weight [lb/sq ft]	UUT	Manufacturer
		6	Interp.	54	Interp.	84			
Height [in.]	6	X	X	X	X	X	1.469	Interpolated	ClimateCraft
	Interp.	X	X	X	X	X		UUT-05	
	24	X	X	X	X	X		Interpolated	
	Interp.	X	X	X	X	X		UUT-04	
	48	X	X	X	X	X			

Note:
Exterior hood banks may be combined and stacked when larger size is needed up to 2 stacks. 2 stacked (24x84) exterior hoods were tested on UUT5

Table 16 - UV Lamp Grid

Model	Rating	Weight [lb]	UUT	Manufacturer
RLM	40	1.5	UUT-05	UV Resources
RLM	25	1	UUT-05	

Table 17 - Interior Lights Fixture

Model	Rating	Weight [lb]	UUT	Manufacturer
TP7600	100W	3.26	UUT4	Thepitt

Table 18 - Bellmouth Transition

		Width [in.]			Weight [lb]	UUT	Manufacturer
		18	24	30			
Length [in.]	18	X	X	X	53	UUT-05	ClimateCraft
	24	X	X	X	72	Interpolated	
	30	X	X	X	96		
	36	X	X	X	129.6		
	42	X	X	X	156		
	48	X	X	X	157	UUT-05	

Table 19 - Access Doors

		Width [in.]			UUT
		12	Interpolated	24	
Height [in.]	12	X	X	X	Interpolated
	18	X	X	X	
	Interpolated	X	X	X	
		X	X	42X24	UUT-03
		X	X	X	Interpolated
		X	X	54x24	UUT-02
	60	X	X	X	Interpolated
	66	X	X	66x24	UUT-01,-04,-05



UNIT UNDER TEST (UUT) Summary Sheet

UUT-1

Test Report: Q9021.0; #Q9021-01-01-01

Model Line	Model Number	Manufacturer
CAH Air Handling Units	#CAH132X96	ClimateCraft, Inc.

Product Construction Summary

5" CS Base Frame; 16 Ga Galv. CS Outer Wall; 20 Ga Galv. CS Inner Wall; 2" Fiberglass Insulation; 24" Maximum Wall Panel Width; Inlet Wall Removed.

Options / Subcomponent Summary

Fan Motors: Baldor ; Fan Matrix: ClimateCraft ; Electrical Enclosure: ClimateCraft ; Power Distribution Panel: ClimateCraft ; Actuators: Belimo ; Doors: ClimateCraft

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
6,700	82.00	99.00	141.00	3.9	3.9	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_p	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.52
		-	-	-	-	-	-	-

Test Mounting Details

UUT attached directly to shake table using (6) 3/4" Grade 5 Bolts.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.



UNIT UNDER TEST (UUT) Summary Sheet

UUT-2

Test Report: Q9021.0; #Q9021-02-01-01

Model Line	Model Number	Manufacturer
CAH Air Handling Units	#CAH102X96	ClimateCraft, Inc.

Product Construction Summary

5" CS Base Frame; 16 Ga Galv. CS Outer Wall; 20 Ga Galv. CS Inner Wall; 2" Fiberglass Insulation; 24" Maximum Wall Panel Width; Inlet and Outlet Wall Removed.

Options / Subcomponent Summary

Hot Water Coils: RAE ; Chilled Water Coils: RAE ; Doors: ClimateCraft

UUT Properties

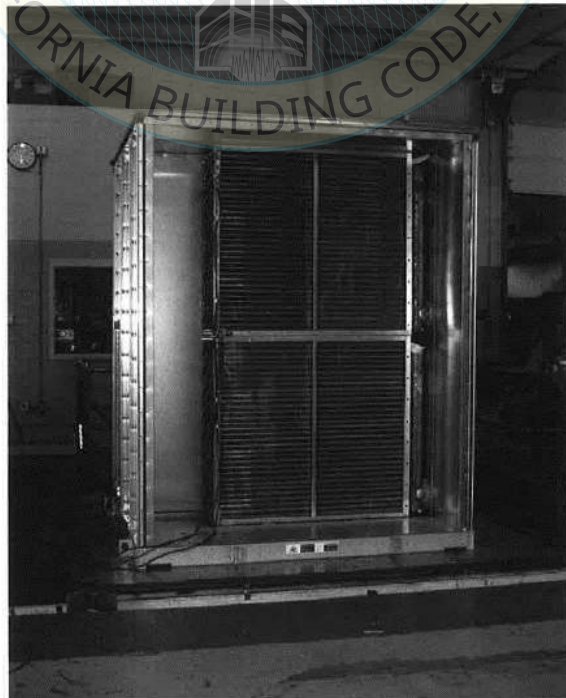
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
3,700	78.00	81.00	111.00	5.7	9.2	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2019	ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.52
		-	-	-	-	-	-	-

Test Mounting Details

UUT attached directly to shake table using (4) 3/4" Grade 5 Bolts.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.



UNIT UNDER TEST (UUT) Summary Sheet

UUT-3

Test Report: Q0012.0; #Q0012-01-01-01

Model Line	Model Number	Manufacturer
CAH Air Handling Units	#CAH42X114	ClimateCraft, Inc.

Product Construction Summary

5" CS Base Frame; 16 Ga Galv. CS Outer Wall; 20 Ga Galv. CS Inner Wall; 2" Fiberglass Insulation; 24" Maximum Wall Panel Width; Outlet Wall Removed.

Options / Subcomponent Summary

Fan Motor: Baldor ; Fan Wheel: ClimateCraft ; Electrical Enclosure: ClimateCraft ; Hot Water Coils: ClimateCraft ; Chilled Water Coils: ClimateCraft ; Dampers: Ruskin ; Doors: ClimateCraft ; Humidifiers: Pure Humidifier ; VFD: ABB ;

UUT Properties

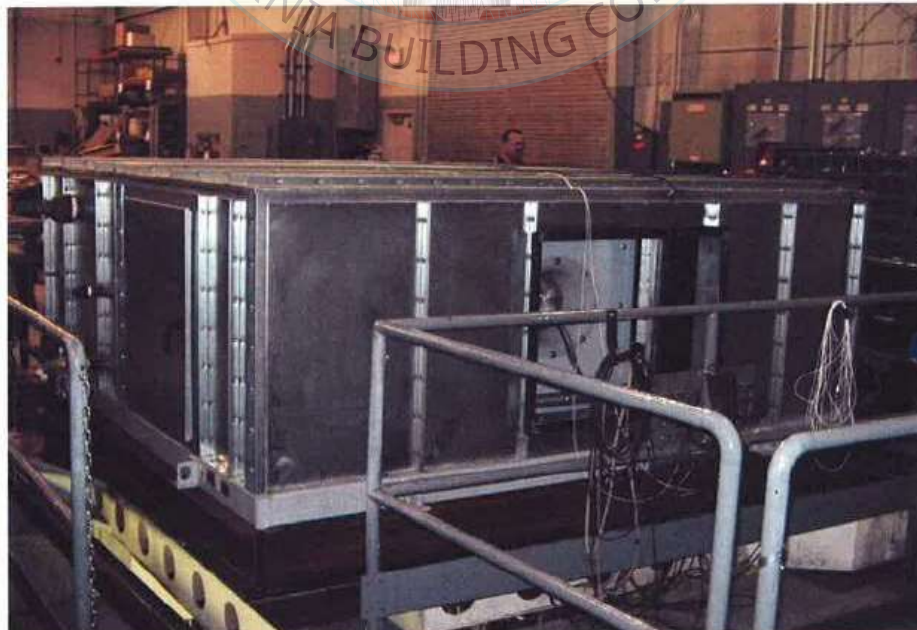
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
6,000	118.00	117.00	51.00	6.4	5.0	3.4

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2019	ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.52
		-	-	-	-	-	-	-

Test Mounting Details

UUT attached to shake table adapting frame using (4) 3/4" Grade 5 Bolts. Adapting frame mounted directly to shake table.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.



UNIT UNDER TEST (UUT) Summary Sheet

UUT-4A

Test Report: PEER STI 2012-01

Model Line	Model Number	Manufacturer
CAH Air Handling Units	CAH138X138E-S	ClimateCraft, Inc.

Product Construction Summary

5" CS Base Frame; 16 Ga Galv. CS Outer Wall; 22 Ga Perforated CS/20 Ga Glav. CS Inner Wall; 4" Fiberglass Insulation; 24" Maximum Panel Width; No Walls Removed; 205" Stacked Height; 147" Non-Stacked Height.

Options / Subcomponent Summary

Fan Motor: Baldor ; Fan Wheel: Greenheck Fan Corp. ; Electrical Enclosure: ClimateCraft ; Dampers: Ruskin ; Louvers: Ruskin ; Rainhood : ClimateCraft ; Actuators: Belimo ; Doors: ClimateCraft ; Sound Attenuator: Commercial Acoustics ; VFD: ABB

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
16,800	143.25	141.00	204.50	3.8	3.5	5.4

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2019	ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.52
		-	-	-	-	-	-	-

Test Mounting Details

Unit mounted to adapting frame using (8) 3/4" Grade 8 Bolts. Adapting frame mounted directly to shake table pedestal fixture. Shake table pedestal fixture mounted directly to shake table concrete slab using 1" prestressed rods.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.



UNIT UNDER TEST (UUT) Summary Sheet

UUT-4B

Test Report: PEER STI 2012-01

Model Line	Model Number	Manufacturer
CAH Air Handling Units	CAH138X138E-S	ClimateCraft, Inc.

Product Construction Summary

5" CS Base Frame; 16 Ga Galv. CS Outer Wall; 22 Ga Perforated CS/20 Ga Glav. CS Inner Wall; 4" Fiberglass Insulation; 24" Maximum Panel Width; Inlet and Outlet Walls Removed; Removed Inlet Replaced with Plenum Fan Wall (Airseal Brace Component); Removed Outlet Replaced with Sound Attenuator Wall (Airseal Brace Component).

Options / Subcomponent Summary

Fan Motor: Baldor ; Fan Wheel: Greenheck Fan Corp. ; Electrical Enclosure: ClimateCraft ; Dampers: Ruskin ; Louvers: Ruskin ; Rainhood : ClimateCraft ; Actuators: Belimo ; Doors: ClimateCraft ; Sound Attenuator: Commercial Acoustics ; VFD: ABB

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
10,900	143.25	141.00	147.00	3.5	2.8	6.4

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2019	ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.52
		-	-	-	-	-	-	-

Test Mounting Details

Unit mounted to adapting frame using (8) 3/4" Grade 8 Bolts. Adapting frame mounted directly to shake table pedestal fixture. Shake table pedestal fixture mounted directly to shake table concrete slab using 1" prestressed rods.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.



UNIT UNDER TEST (UUT) Summary Sheet

UUT-4C

Test Report: PEER STI 2012-01

Model Line	Model Number	Manufacturer
CAH Air Handling Units	CAH138X138E-S	ClimateCraft, Inc.

Product Construction Summary

5" CS Base Frame; 16 Ga Galv. CS Outer Wall; 22 Ga Perforated CS/20 Ga Glav. CS Inner Wall; 4" Fiberglass Insulation; 24" Maximum Panel Width; Inlet, Outlet and Side Wall Removed; Removed Side Wall Replaced with 5/16" cable X-Bracing; Removed Inlet Replaced with Plenum Fan Wall (Airseal Brace Component); Removed Outlet Replaced with Sound Attenuator Wall (Airseal Brace Component).

Options / Subcomponent Summary

Fan Motor: Baldor ; Fan Wheel: Greenheck Fan Corp. ; Electrical Enclosure: ClimateCraft ; Dampers: Ruskin ; Louvers: Ruskin ; Rainhood : ClimateCraft ; Actuators: Belimo ; Doors: ClimateCraft ; Sound Attenuator: Commercial Acoustics ; VFD: ABB

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
10,500	143.25	141.00	147.00	4.3	2.8	5.4

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2019	ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.52
		-	-	-	-	-	-	-

Test Mounting Details

Unit mounted to adapting frame using (8) 3/4" Grade 8 Bolts. Adapting frame mounted directly to shake table pedestal fixture. Shake table pedestal fixture mounted directly to shake table concrete slab using 1" prestressed rods.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.



UNIT UNDER TEST (UUT) Summary Sheet

UUT-4D

Test Report: PEER STI 2012-01

Model Line	Model Number	Manufacturer
CAH Air Handling Units	CAH138X138E-S	ClimateCraft, Inc.

Product Construction Summary

5" CS Base Frame; 16 Ga Galv. CS Outer Wall; 22 Ga Perforated CS/20 Ga Glav. CS Inner Wall; 4" Fiberglass Insulation; 24" Maximum Panel Width; All Walls Removed; Removed Side Walls Replaced with 5/16" cable X-Bracing; Removed Inlet Replaced with Plenum Fan Wall (Airseal Brace Component); Removed Outlet Replaced with Sound Attenuator Wall (Airseal Brace Component).

Options / Subcomponent Summary

Fan Motor: Baldor ; Fan Wheel: Greenheck Fan Corp. ; Electrical Enclosure: ClimateCraft ; Dampers: Ruskin ; Louvers: Ruskin ; Rainhood : ClimateCraft ; Actuators: Belimo ; Doors: ClimateCraft ; Sound Attenuator: Commercial Acoustics ; VFD: ABB

UUT Properties

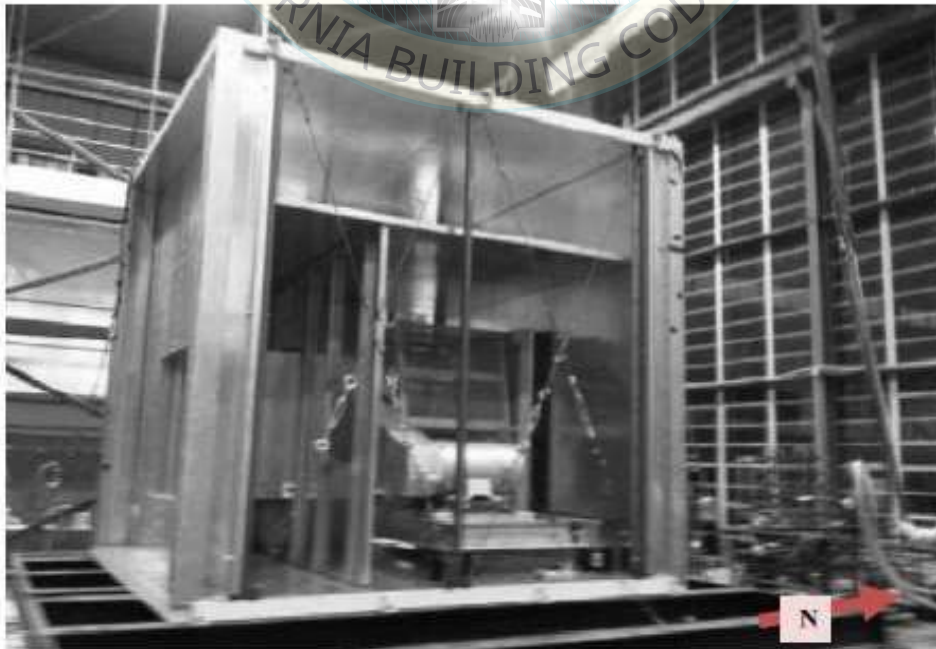
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
9,200	143.25	141.00	147.00	3.4	2.7	6.5

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2019	ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.52
		-	-	-	-	-	-	-

Test Mounting Details

Unit mounted to adapting frame using (8) 3/4" Grade 8 Bolts. Adapting frame mounted directly to shake table pedestal fixture. Shake table pedestal fixture mounted directly to shake table concrete slab using 1" prestressed rods.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.



UNIT UNDER TEST (UUT) Summary Sheet

UUT-5A

Test Report: PEER STI 2012-01

Model Line	Model Number	Manufacturer
CAH Air Handling Units	CAH90X96E-S	ClimateCraft, Inc.

Product Construction Summary

8" SS Base Frame; 16 Ga SS Outer Wall; 20 Ga SS, 22 Ga Perforated SS Inner Wall; 2" Foam Insulation; 24" Maximum Panel Width; No Walls Removed

Options / Subcomponent Summary

Fan Motor: Baldor ; Fan Wheel: Greenheck Fan Corp. ; Electrical Enclosure: ClimateCraft ; Hot Water Coils: ClimateCraft ; Chilled Water Coils: ClimateCraft ; Dampers: Ruskin ; Louvers: Ruskin ; Rainhood: ClimateCraft ; Doors: ClimateCraft ; UV Lamp: UV Resources ; Air Blenders: Blender Products ; Bellmouth: ClimateCraft ; Filters (Rigid, Bag, Mini-Pleat, Carbon): AAF/Camfill Farr

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
4,900	97.25	99.00	98.50	4.9	6.8	6.5

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2019	ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.52
		-	-	-	-	-	-	-

Test Mounting Details

UUT attached directly to adapting frame using (6) 3/4" Grade 8 Bolts. Adapting frame attached directly to shake table fixture. Shake table fixture attached directly to shake table.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.



UNIT UNDER TEST (UUT) Summary Sheet

UUT-5B

Test Report: PEER STI 2012-01

Model Line	Model Number	Manufacturer
CAH Air Handling Units	CAH90X96E-S	ClimateCraft, Inc.

Product Construction Summary

8" SS Base Frame; 16 Ga SS Outer Wall; 20 Ga SS, 22 Ga Perforated SS Inner Wall; 2" Foam Insulation; 24" Maximum Panel Width; Inlet and Side Wall Removed; Removed Side Wall Replaced with 5/16" cable X-Bracing; Removed Inlet Replaced with Water Coil Rack (Airseal Brace Component).

Options / Subcomponent Summary

Fan Motor: Baldor ; Fan Wheel: Greenheck Fan Corp. ; Electrical Enclosure: ClimateCraft ; Hot Water Coils: ClimateCraft ; Chilled Water Coils: ClimateCraft ; Dampers: Ruskin ; Louvers: Ruskin ; Rainhood: ClimateCraft ; Doors: ClimateCraft ; UV Lamp: UV Resources ; Air Blenders: Blender Products ; Bellmouth: ClimateCraft ; Filters (Rigid, Bag, Mini-Pleat, Carbon): AAF/Camfill Farr

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
4,500	97.25	99.00	98.50	2.7	2.3	6.9

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2019	ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.52
		-	-	-	-	-	-	-

Test Mounting Details

UUT attached directly to adapting frame using (6) 3/4" Grade 8 Bolts. Adapting frame attached directly to shake table fixture. Shake table fixture attached directly to shake table.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.



UNIT UNDER TEST (UUT) Summary Sheet

UUT-6

Test Report: JID 20-00450

Model Line	Model Number	Manufacturer
Custom Air Handlers	CAH120x120	ClimateCraft

Product Construction Summary

5" CS Base Frame; 16ga Galvanized Steel Outer Wall; 20ga Inner Wall; 2" Fiberglass Insulation; 24" Maximum Wall Panel Width; Inlet, Outlet and Side Wall Removed. Inlet Wall Replaced with 5/16" cable X-bracing, Outlet Wall Replaced with a Filter Wall constructed of 16ga steel (Airseal Brace Component).

Options / Subcomponent Summary

Fans: Comerfri; Fans: ClimateCraft; Motors: Baldor; Motors: Nidec; BlanceStream: ClimateCraft; VFDs: ABB; VFDs: Nidec
Matrix Fan Wall considered as Airseal Brace Component within UUT

UUT Properties

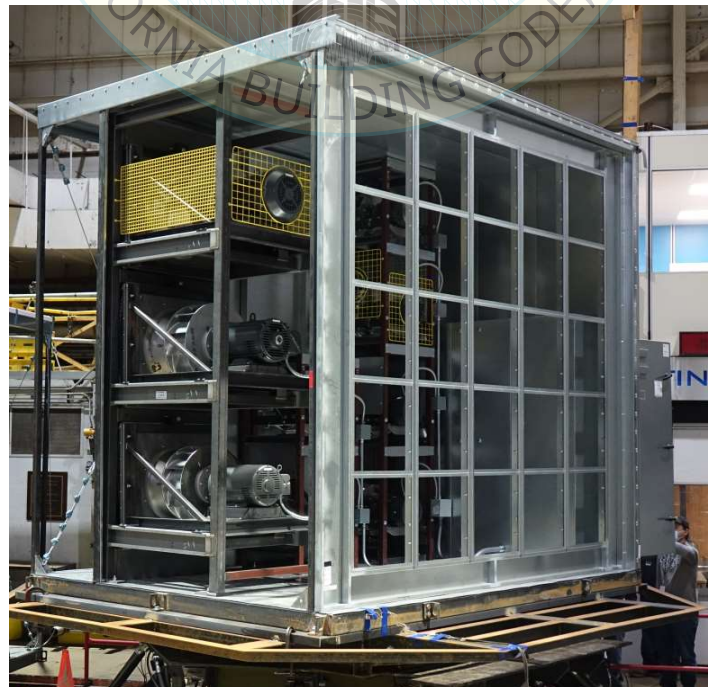
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
9,194	120.00	146.00	151.00	3.2	7.8	13.4

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2019	ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.52
		-	-	-	-	-	-	-

Test Mounting Details

UUT-6 was rigidly mounted to the shake table using (6) 7/8" diameter Grade 8 bolts.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.



UNIT UNDER TEST (UUT) Summary Sheet

UUT-7

Test Report: JID 20-00450

Model Line	Model Number	Manufacturer
Custom Air Handlers	CAH120x120	ClimateCraft

Product Construction Summary

5" CS Base Frame; 16ga Galvanized Steel Outer Wall; 20ga Inner Wall; 2" Fiberglass Insulation; 24" Maximum Wall Panel Width; Inlet, Outlet and Side Wall Removed. Inlet and outlet wall replaced with 5/16" cable X-bracing.

Options / Subcomponent Summary

Water Coils: ClimateCraft
Water Coil Rack considered as Airseal Brace Component within UUT

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
8,819	120.00	146.00	151.00	3.2	3.4	11.2

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2019	ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.52
		-	-	-	-	-	-	-

Test Mounting Details

UUT-7 was rigidly mounted to the shake table using (6) 7/8" diameter Grade 8 bolts.
DCRs: Two (2x) 1½" (16ga) box beams at the top center, front and back to secure the top of the coil; Two (2x) 12"L braces were added to the left side of the coils which helped tie the top and middle coil, and bottom to middle coil. Coil diagonally braced at open wall end with two 2"x3"x1/4" steel tubing.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.



UNIT UNDER TEST (UUT) Summary Sheet

UUT-8

Test Report: JID 20-00450

Model Line	Model Number	Manufacturer
Custom Air Handlers	CAH120x120	ClimateCraft

Product Construction Summary

5" CS Base Frame; 16ga Galvanized Steel Outer Wall; 20ga Inner Wall; 2" Fiberglass Insulation; 24" Maximum Wall Panel Width; Inlet, Outlet and Side Wall Removed. Inlet and outlet wall replaced with 5/16" cable X-bracing.

Options / Subcomponent Summary

Steam Coils: RAE; Humidifiers: Dri-Steam
Steam Coil Rack considered as Airseal Brace Component within UUT

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
4,828	120.00	146.00	151.00	3.2	4.9	12.9

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2019	ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.52
		-	-	-	-	-	-	-

Test Mounting Details

UUT-8 was rigidly mounted to the shake table using (6) 7/8" diameter Grade 8 bolts.



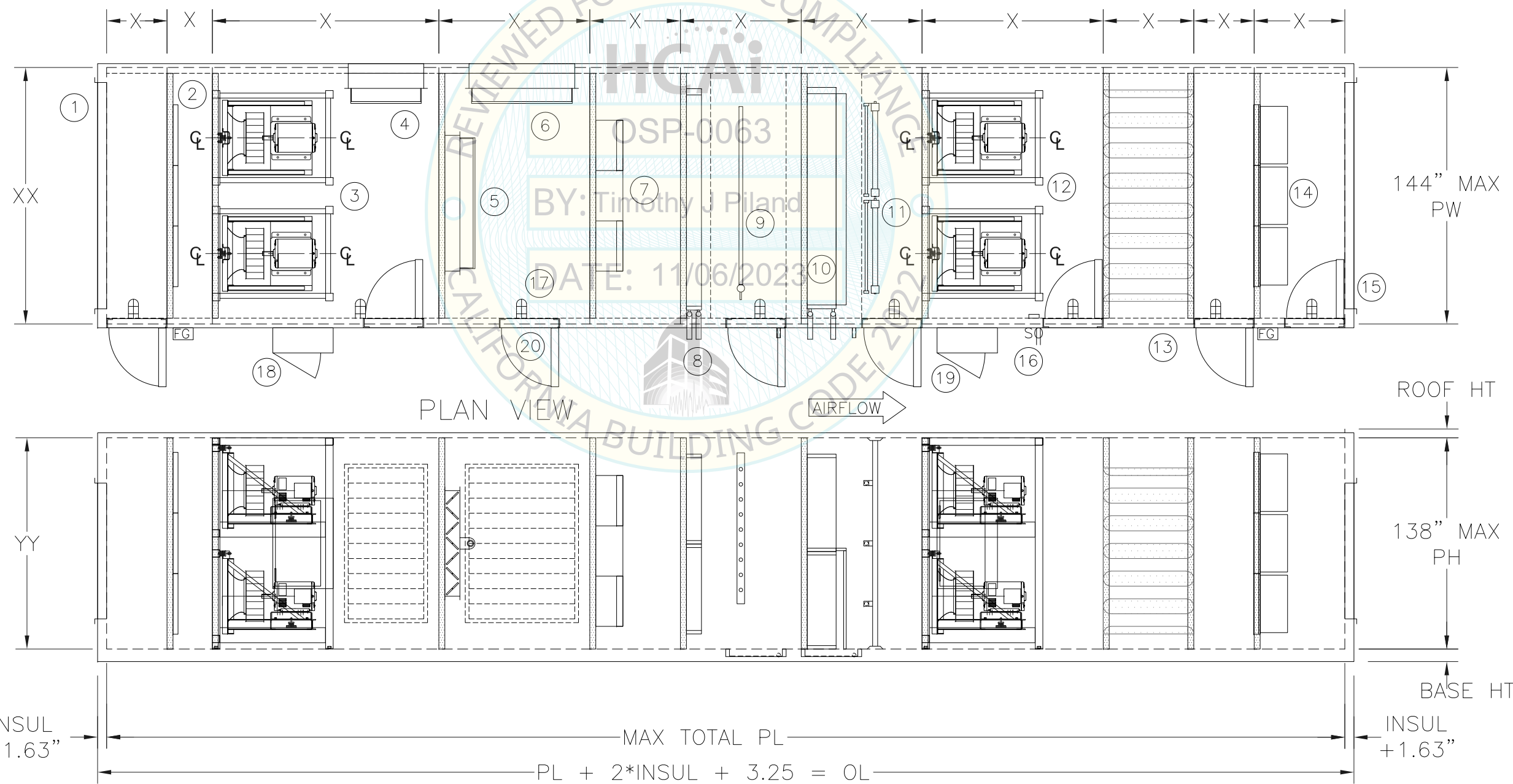
All units were filled with contents and maintained structural integrity and functionality after AC-156 test.

1. OPENING
2. FILTERS
3. MATRIX FANS
4. DAMPER
5. DAMPERS
6. DAMPER
7. AIR BLENDERS
8. STEAM COIL
9. HUMIDIFIER
10. WATER COIL
11. UV LIGHTS
12. MATRIX FANS
13. SOUND ATTENUATOR
14. FILTERS
15. OPENING
16. SWITCH & OUTLET
17. SERVICE LIGHT
18. ELECTRICAL PANEL (Internal & External)
19. POWER DISTRIBUTION PANEL
20. ACCESS DOOR

[FOR #1 THROUGH #20, REFER TO CERTIFIED PRODUCT SUBCOMPONENT TABLES]

- NOTES:
1. WALL INSULATION: 2", 3", 4" (FIBERGLASS OR FOAM).
2. EXTERNAL CABINET MATERIAL: GALVANIZED STEEL, STAINLESS STEEL, PRE-PAINTED STEEL.
3. UNIT BASE HEIGHT: 5", 6", 8" (STEEL OR STAINLESS STEEL).
4. ROOF HEIGHT DEPENDS ON INSULATION THICKNESS & PITCH.
5. SECTION SIZES, COMPONENT LOCATIONS, DOORS, OPENINGS, AND ELECTRICAL PANELS WILL VARY BASED ON CUSTOMER REQUIREMENTS.
6. LONGITUDINAL SEISMIC CABLE BRACING (X-BRACE) NOT REQUIRED ON SINGLE WIDTH UNITS 144" WIDE OR LESS.
7. TRANSVERSE SEISMIC BRACING ELEMENT IS REQUIRED BASED ON TYPE OF THE ELEMENT AND DISTANCE DETAILED ON TABLE1 SHEET 23.
8. TRANSVERSE SUPPORT ELEMENTS ARE CONSIDERED AS ANY X-BRACE, FAN WALL, SOUND ATTENUATOR WALL, COIL, BLENDER WALL, DAMPER WALL, FILTER WALL, OR UNIT END WALL.
9. REFER TO SEISMIC BRACING DETAILS DRAWINGS FOR ADDITIONAL INFORMATION.
10. REFER TO COIL BRACING REQUIREMENTS DRAWINGS FOR ADDITIONAL COIL BRACING INFORMATION.

SINGLE TUNNEL UNIT
W/NO SHIPPING SPLIT



ELEVATION VIEW

OSP-0063

JOB	SINGLE TUNNEL UNIT WITH NO SPLITS			SN	NA	REV	5/2022	BSZ
TAG	OSP-AHU-TYPE 1	Sheet	1	DATE	01/01/2012	MODEL NO.	CAHYXXXE-S	

1. OPENING

2. FILTERS

3. MATRIX FANS

4. DAMPERS

5. DAMPERS

6. DAMPERS

7. AIR BLENDERS

8. STEAM COIL

9. HUMIDIFIER

10. WATER COIL

11. UV LIGHTS
12. MATRIX FANS

13. SOUND ATTENUATOR

14. FILTERS

15. OPENING

16. SWITCH & OUTLET

17. SERVICE LIGHT

18. ELECTRICAL PANEL (Internal & External)

19. POWER DISTRIBUTION PANEL

20. ACCESS DOOR

[FOR #1 THROUGH #20, REFER TO CERTIFIED PRODUCT SUBCOMPONENT TABLES]

- NOTES:
1. WALL INSULATION: 2", 3", 4" (FIBERGLASS OR FOAM).

2. EXTERNAL CABINET MATERIAL: GALVANIZED STEEL, STAINLESS STEEL, PRE-PAINTED STEEL.

3. UNIT BASE HEIGHT: 5", 6", 8" (STEEL OR STAINLESS STEEL).

4. ROOF HEIGHT DEPENDS ON INSULATION THICKNESS & PITCH.

5. SECTION SIZES, COMPONENT LOCATIONS, DOORS, OPENINGS, AND ELECTRICAL PANELS WILL VARY BASED ON CUSTOMER REQUIREMENTS.

6. LONGITUDINAL SEISMIC CABLE BRACING (X-BRACE) NOT REQUIRED ON SINGLE WIDTH UNITS 144" WIDE OR LESS.

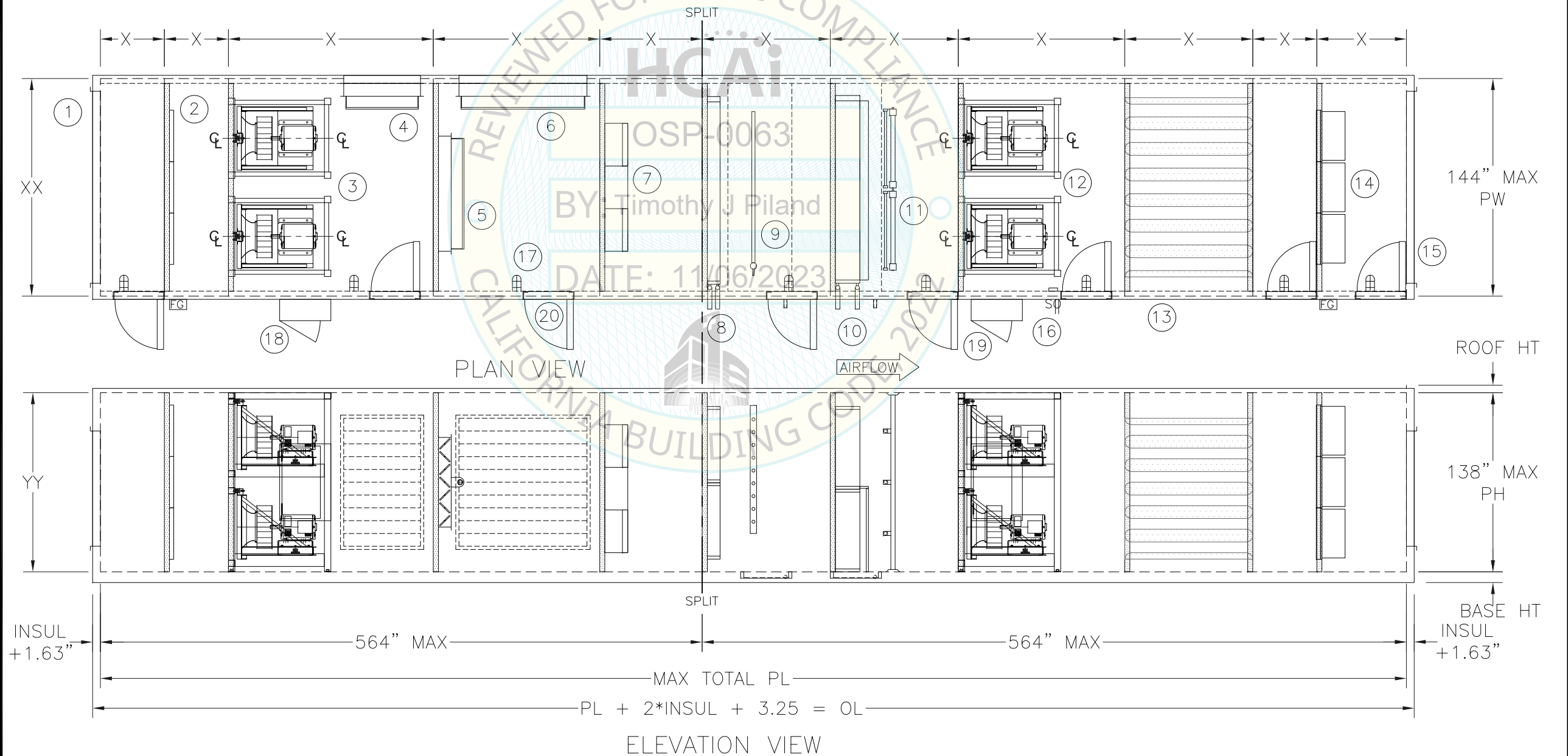
7. TRANSVERSE SEISMIC BRACING ELEMENT IS REQUIRED BASED ON TYPE OF THE ELEMENT AND DISTANCE DETAILED ON TABLE1 SHEET 23.

8. TRANSVERSE SUPPORT ELEMENTS ARE CONSIDERED AS ANY X-BRACE, FAN WALL, SOUND ATTENUATOR WALL, COIL, BLENDER WALL, DAMPER WALL, FILTER WALL, OR UNIT END WALL.

9. REFER TO SEISMIC BRACING DETAILS DRAWINGS FOR ADDITIONAL INFORMATION.

10. REFER TO COIL BRACING REQUIREMENTS DRAWINGS FOR ADDITIONAL COIL BRACING INFORMATION.

SINGLE TUNNEL UNIT
W/SINGLE SHIPPING SPLIT



1. OPENING

2. FILTERS

3. MATRIX FANS

4. DAMPERS

5. DAMPERS

6. DAMPERS

7. AIR BLENDERS

8. STEAM COIL

9. HUMIDIFIER

10. WATER COIL

11. UV LIGHTS

12. MATRIX FANS

13. SOUND ATTENUATOR

14. FILTERS

15. OPENING

16. SWITCH & OUTLET

17. SERVICE LIGHT

18. ELECTRICAL PANEL (Internal & External)

19. POWER DISTRIBUTION PANEL

20. ACCESS DOOR
- [FOR #1 THROUGH #20, REFER TO CERTIFIED PRODUCT SUBCOMPONENT TABLES]

- NOTES:
1. WALL INSULATION: 2", 3", 4" (FIBERGLASS OR FOAM).

2. EXTERNAL CABINET MATERIAL: GALVANIZED STEEL, STAINLESS STEEL, PRE-PAINTED STEEL.

3. UNIT BASE HEIGHT: 5", 6", 8" (STEEL OR STAINLESS STEEL).

4. ROOF HEIGHT DEPENDS ON INSULATION THICKNESS & PITCH.

5. SECTION SIZES, COMPONENT LOCATIONS, DOORS, OPENINGS, AND ELECTRICAL PANELS WILL VARY BASED ON CUSTOMER REQUIREMENTS.

6. LONGITUDINAL SEISMIC CABLE BRACING (X-BRACE) NOT REQUIRED ON SINGLE WIDTH UNITS 144" WIDE OR LESS.

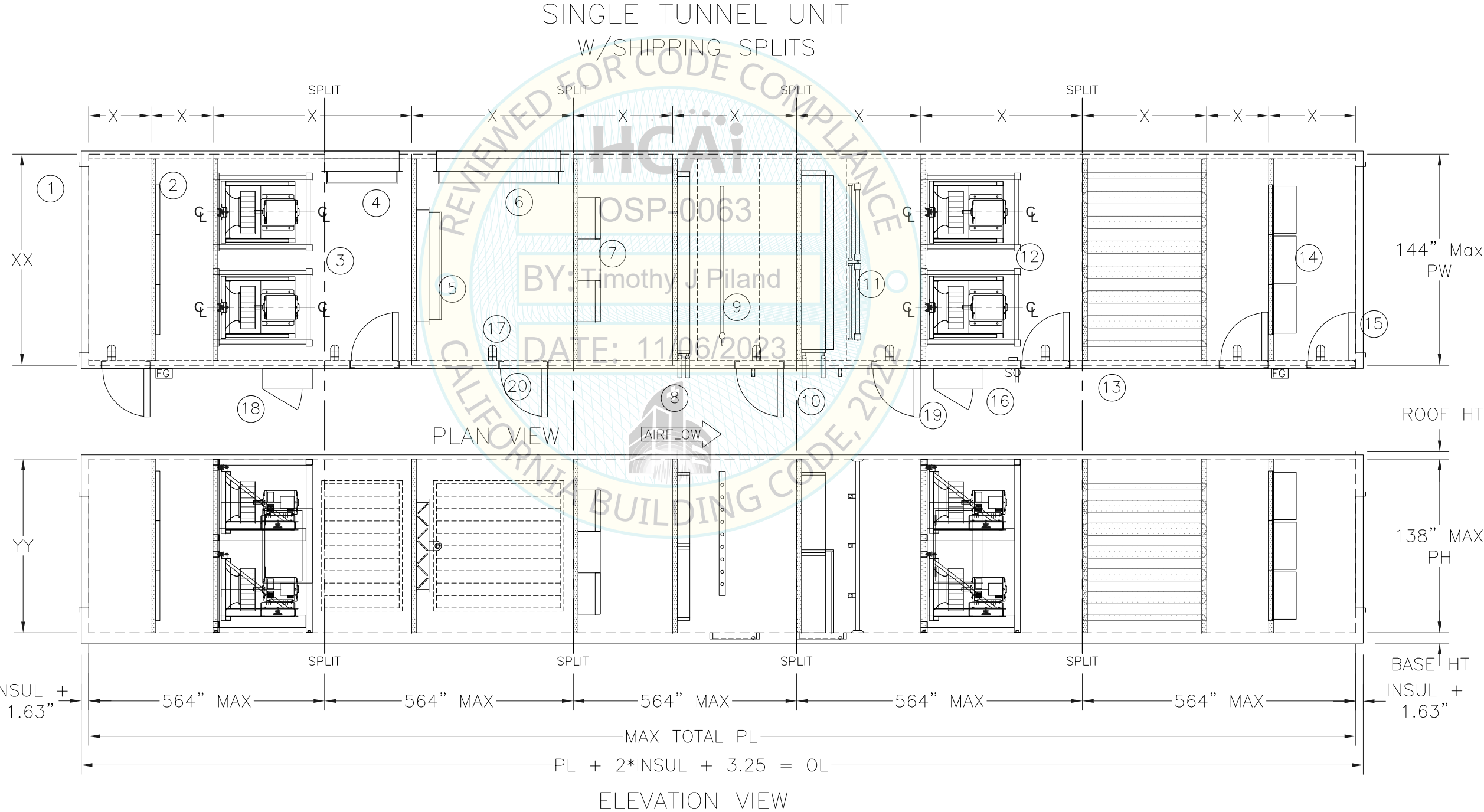
7. TRANSVERSE SEISMIC BRACING ELEMENT IS REQUIRED BASED ON TYPE OF THE ELEMENT AND DISTANCE DETAILED ON TABLE1 SHEET 23.

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9. REFER TO SEISMIC BRACING DETAILS DRAWINGS FOR ADDITIONAL INFORMATION.

10. REFER TO COIL BRACING REQUIREMENTS DRAWINGS FOR ADDITIONAL COIL BRACING INFORMATION.

JOB		TAG		DATE		MODEL NO.		REV		BY	
SINGLE TUNNEL UNIT WITH MULTIPLE SPLITS		OSP-AHU-TYPE 3		01/01/2012		CAHYXXXE-S		5/2022		BSZ	
Sheet		3									



- NOTES:
1. WALL INSULATION: 2", 3", 4" (FIBERGLASS OR FOAM).
 2. EXTERNAL CABINET MATERIAL: GALVANIZED STEEL, STAINLESS STEEL, PRE-PAINTED STEEL.
 3. UNIT BASE HEIGHT: 5", 6", 8" (STEEL OR STAINLESS STEEL).
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 9. REFER TO SEISMIC BRACING DETAILS DRAWINGS FOR ADDITIONAL INFORMATION.
 10. REFER TO COIL BRACING REQUIREMENTS DRAWINGS FOR ADDITIONAL COIL BRACING INFORMATION.

SINGLE TUNNEL UNIT W/VESTIBULE AND MULTIPLE SHIPPING SPLITS



1. OPENING

2. FILTERS

3. MATRIX FANS

4. DAMPERS

5. DAMPERS

6. DAMPERS

7. AIR BLENDERS

8. STEAM COIL

9. HUMIDIFIER

10. WATER COIL

11. UV LIGHTS
12. MATRIX FANS

13. SOUND ATTENUATOR

14. FILTERS

15. OPENING

16. SWITCH & OUTLET

17. SERVICE LIGHT

18. ELECTRICAL PANEL (Internal & External)

19. POWER DISTRIBUTION PANEL

20. ACCESS DOOR

[FOR #1 THROUGH #20, REFER TO CERTIFIED PRODUCT SUBCOMPONENT TABLES]

- NOTES:
1. WALL INSULATION: 2", 3", 4" (FIBERGLASS OR FOAM).

2. EXTERNAL CABINET MATERIAL: GALVANIZED STEEL, STAINLESS STEEL, PRE-PAINTED STEEL.

3. UNIT BASE HEIGHT: 5", 6", 8" (STEEL OR STAINLESS STEEL).

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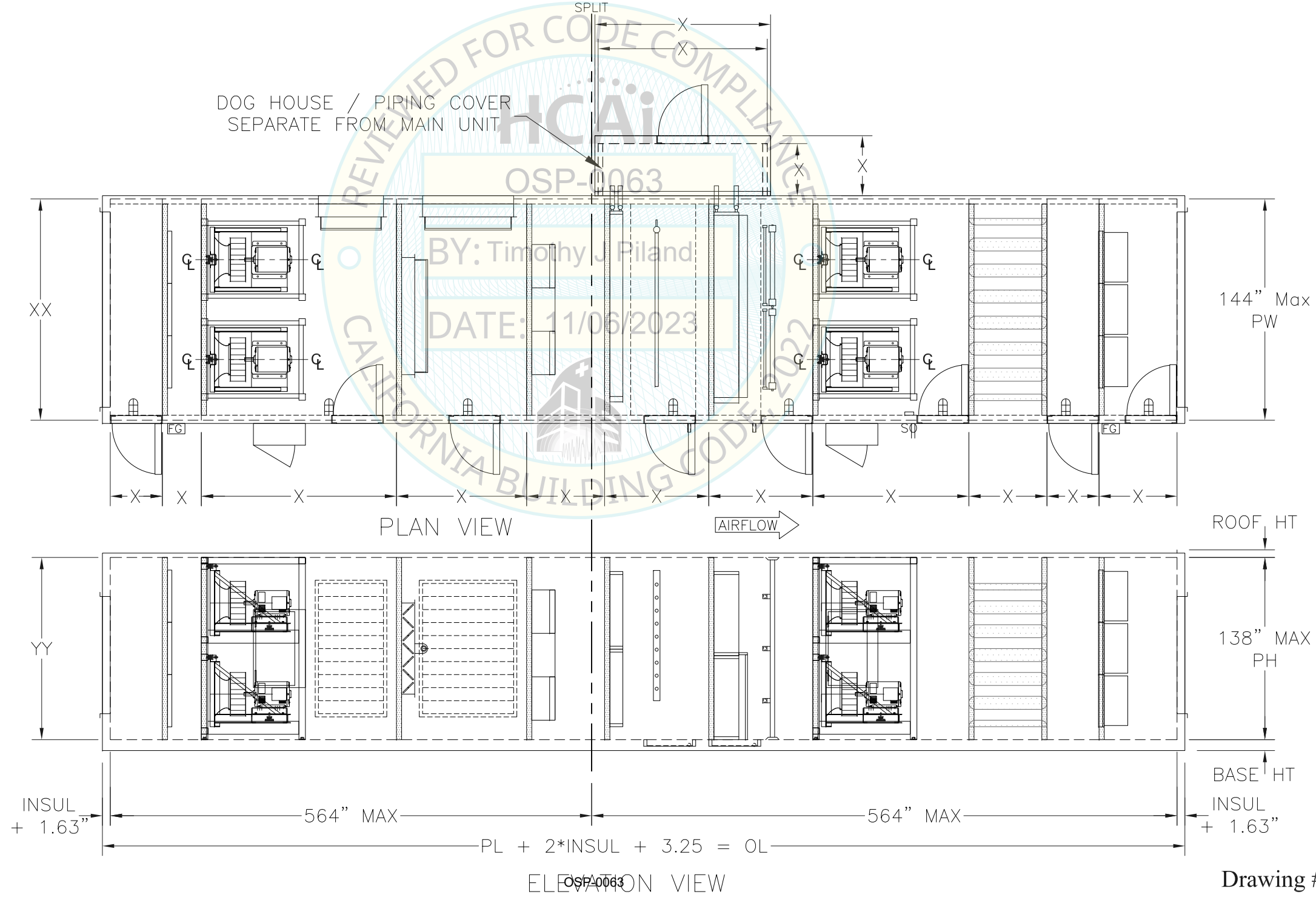
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9. REFER TO SEISMIC BRACING DETAILS DRAWINGS FOR ADDITIONAL INFORMATION.

10. REFER TO COIL BRACING REQUIREMENTS DRAWINGS FOR ADDITIONAL COIL BRACING INFORMATION.

SINGLE TUNNEL UNIT
W/DOGHOUSE AND SHIPPING SPLIT(S)



1. OPENING

2. FILTERS

3. PLENUM FANS

4. DAMPERS

5. DAMPERS

6. DAMPERS

7. AIR BLENDERS

8. STEAM COIL

9. HUMIDIFIER

10. WATER COIL

11. UV LIGHTS
12. PLENUM FANS

13. SOUND ATTENUATOR

14. FILTERS

15. OPENING

16. SWITCH & OUTLET

17. SERVICE LIGHT

18. ELECTRICAL PANEL (Internal & External)

19. POWER DISTRIBUTION PANEL

20. ACCESS DOOR

[FOR #1 THROUGH #20, REFER TO CERTIFIED PRODUCT SUBCOMPONENT TABLES]

- NOTES:
1. WALL INSULATION: 2", 3", 4" (FIBERGLASS OR FOAM).

2. EXTERNAL CABINET MATERIAL: GALVANIZED STEEL, STAINLESS STEEL, PRE-PAINTED STEEL.

3. UNIT BASE HEIGHT: 5", 6", 8" (STEEL OR STAINLESS STEEL).

4. ROOF HEIGHT DEPENDS ON INSULATION THICKNESS & PITCH.

5. SECTION SIZES, COMPONENT LOCATIONS, DOORS, OPENINGS, AND ELECTRICAL PANELS WILL VARY BASED ON CUSTOMER REQUIREMENTS.

6. LONGITUDINAL SEISMIC CABLE BRACING (X-BRACE) NOT REQUIRED ON SINGLE WIDTH UNITS 144" WIDE OR LESS.

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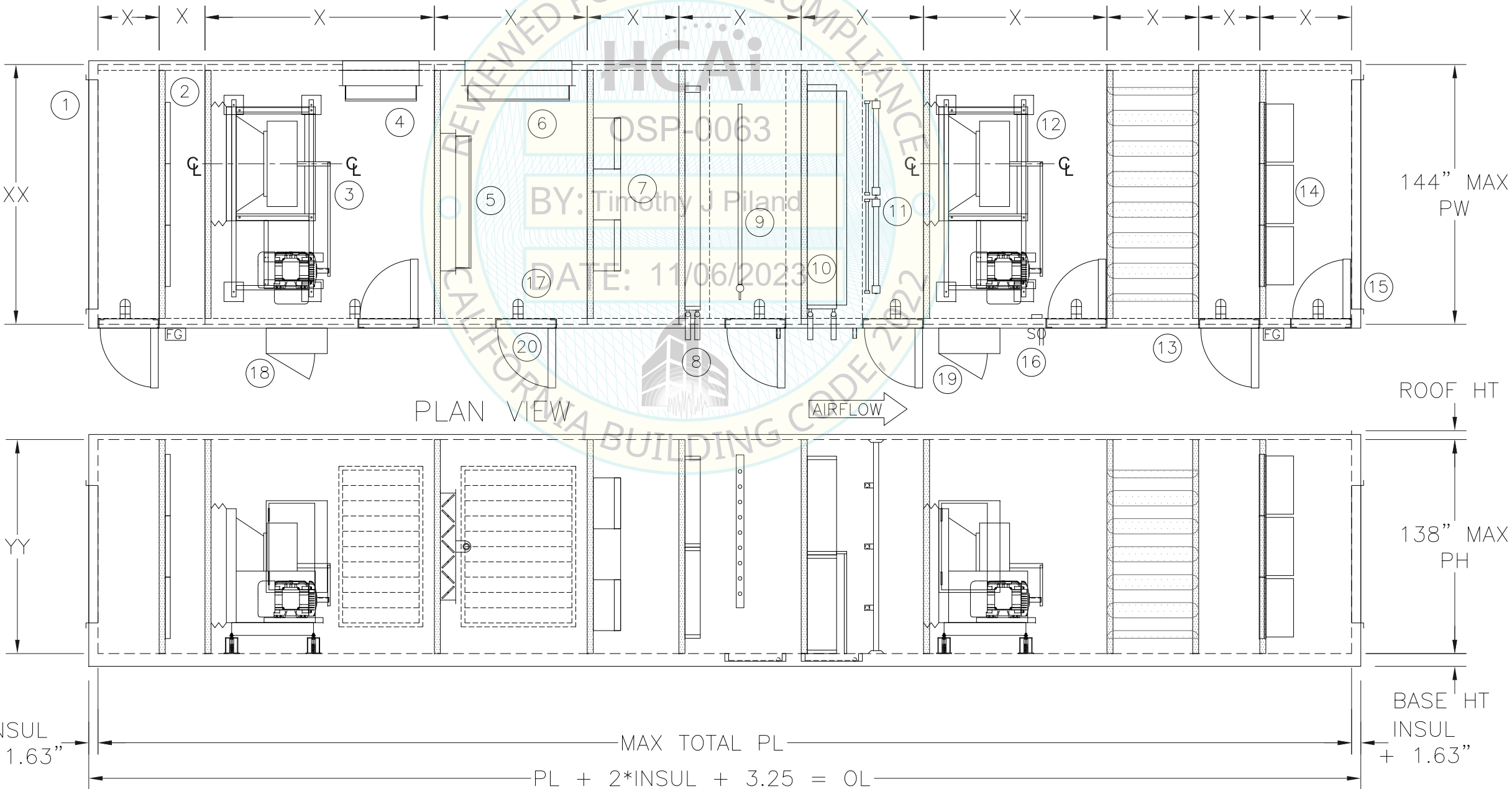
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9. REFER TO SEISMIC BRACING DETAILS DRAWINGS FOR ADDITIONAL INFORMATION.

10. REFER TO COIL BRACING REQUIREMENTS DRAWINGS FOR ADDITIONAL COIL BRACING INFORMATION.

SINGLE TUNNEL UNIT

W/NO SHIPPING SPLIT



ELEVATION VIEW

OSP-0063

JOB	TAG	Sheet	DATE	SN	MODEL NO.	REV	BY
SINGLE TUNNEL UNIT WITH NO SPLITS	OSP-AHU-TYPE 6	6	01/01/2012	NA	CAHYXXXE-S	5/2022	BSZ

1. OPENING

2. FILTERS

3. PLENUM FANS

4. DAMPERS

5. DAMPERS

6. DAMPERS

7. AIR BLENDERS

8. STEAM COIL

9. HUMIDIFIER

10. WATER COIL

11. UV LIGHTS
12. PLENUM FANS

13. SOUND ATTENUATOR

14. FILTERS

15. OPENING

16. SWITCH & OUTLET

17. SERVICE LIGHT

18. ELECTRICAL PANEL (Internal & External)

19. POWER DISTRIBUTION PANEL

20. ACCESS DOOR

[FOR #1 THROUGH #20, REFER TO CERTIFIED PRODUCT SUBCOMPONENT TABLES]

- NOTES:
1. WALL INSULATION: 2", 3", 4" (FIBERGLASS OR FOAM).

2. EXTERNAL CABINET MATERIAL: GALVANIZED STEEL, STAINLESS STEEL, PRE-PAINTED STEEL.

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4. ROOF HEIGHT DEPENDS ON INSULATION THICKNESS & PITCH.

5. SECTION SIZES, COMPONENT LOCATIONS, DOORS, OPENINGS, AND ELECTRICAL PANELS WILL VARY BASED ON CUSTOMER REQUIREMENTS.

6. LONGITUDINAL SEISMIC CABLE BRACING (X-BRACE) NOT REQUIRED ON SINGLE WIDTH UNITS 144" WIDE OR LESS.

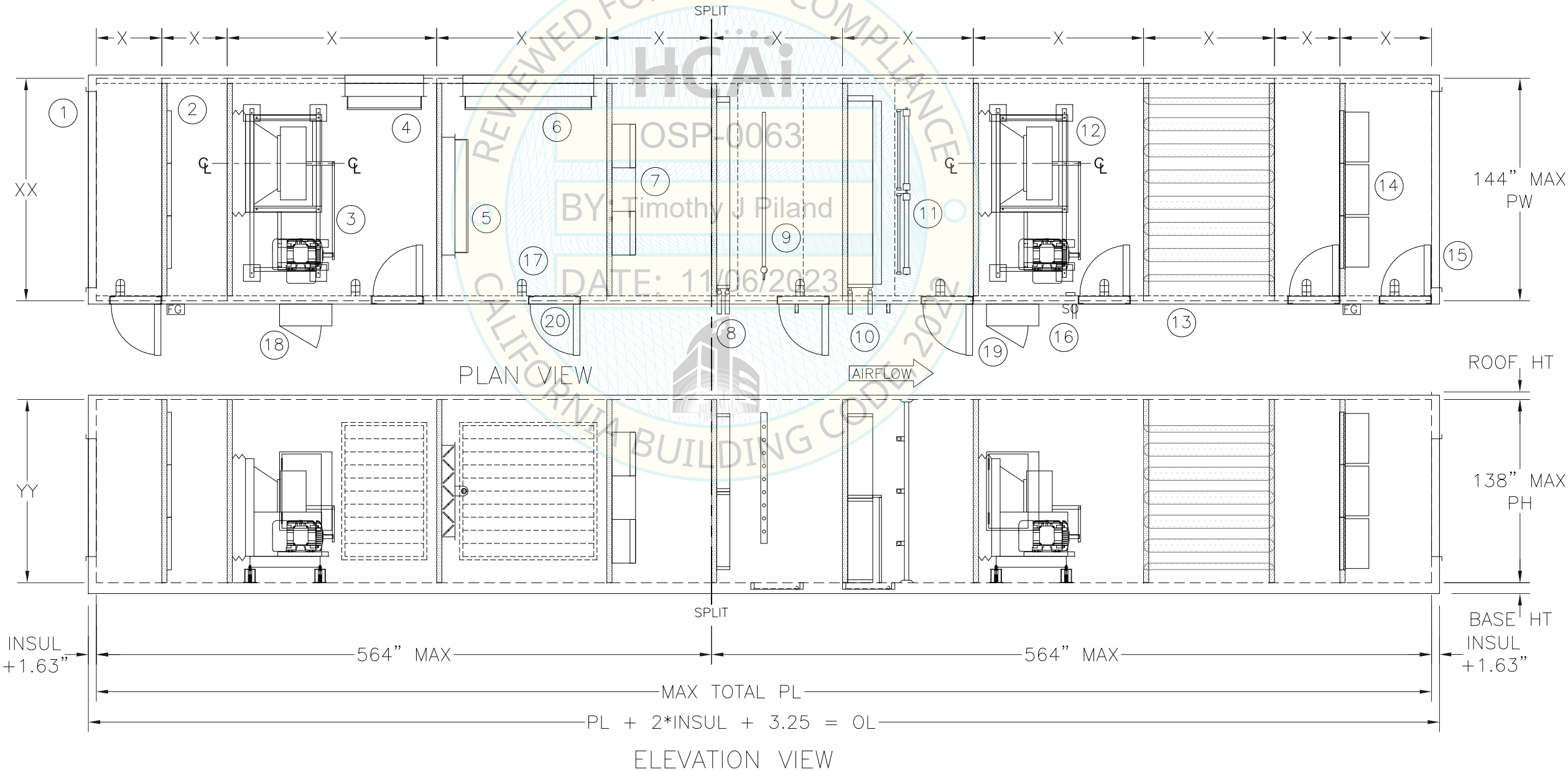
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9. REFER TO SEISMIC BRACING DETAILS DRAWINGS FOR ADDITIONAL INFORMATION.

10. REFER TO COIL BRACING REQUIREMENTS DRAWINGS FOR ADDITIONAL COIL BRACING INFORMATION.

SINGLE TUNNEL UNIT
W/SINGLE SHIPPING SPLIT



JOB	TAG	Sheet	DATE	SN	MODEL NO.	REV	BY
SINGLE TUNNEL UNIT WITH MULTIPLE SPLITS	OSP-AHU-TYPE 7	7	01/01/2012	NA	CAHYXXXE-S	5/2022	BSZ

1. OPENING

2. FILTERS

3. PLENUM FANS

4. DAMPERS

5. DAMPERS

6. DAMPERS

7. AIR BLENDERS

8. STEAM COIL

9. HUMIDIFIER

10. WATER COIL

11. UV LIGHTS

12. PLENUM FANS

13. SOUND ATTENUATOR

14. FILTERS

15. OPENING

16. SWITCH & OUTLET

17. SERVICE LIGHT

18. ELECTRICAL PANEL (Internal & External)

19. POWER DISTRIBUTION PANEL

20. ACCESS DOOR
- [FOR #1 THROUGH #20, REFER TO CERTIFIED PRODUCT SUBCOMPONENT TABLES]

- NOTES:
1. WALL INSULATION: 2", 3", 4" (FIBERGLASS OR FOAM).

2. EXTERNAL CABINET MATERIAL: GALVANIZED STEEL, STAINLESS STEEL, PRE-PAINTED STEEL.

3. UNIT BASE HEIGHT: 5", 6", 8" (STEEL OR STAINLESS STEEL).

4. ROOF HEIGHT DEPENDS ON INSULATION THICKNESS & PITCH.

5. SECTION SIZES, COMPONENT LOCATIONS, DOORS, OPENINGS, AND ELECTRICAL PANELS WILL VARY BASED ON CUSTOMER REQUIREMENTS.

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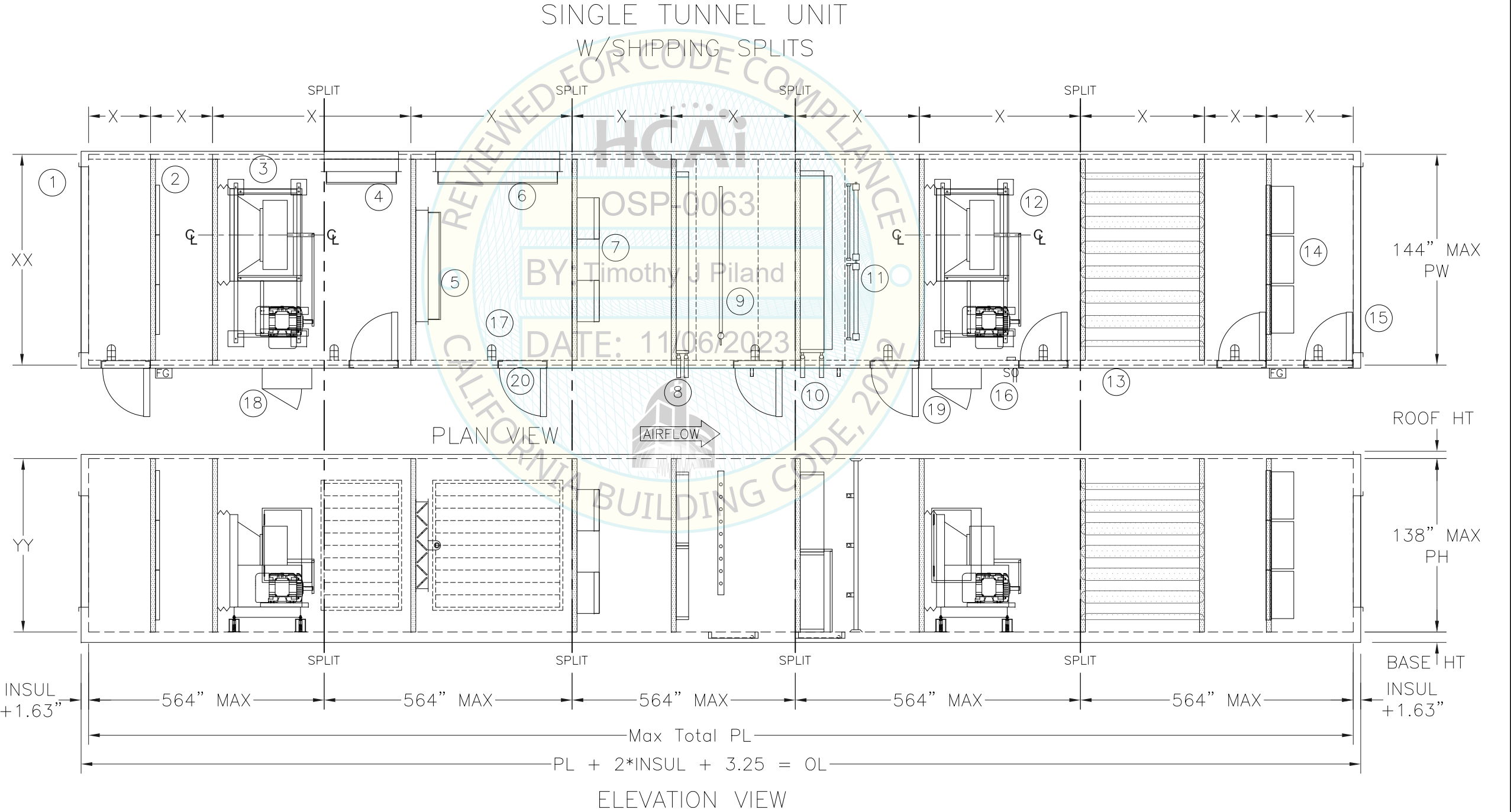
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9. REFER TO SEISMIC BRACING DETAILS DRAWINGS FOR ADDITIONAL INFORMATION.

10. REFER TO COIL BRACING REQUIREMENTS DRAWINGS FOR ADDITIONAL COIL BRACING INFORMATION.

JOB	SINGLE TUNNEL UNIT WITH MULTIPLE SPLITS			SN	NA	REV	BY
TAG	OSP-AHU-TYPE 8	Sheet	8	DATE	01/01/2012	MODEL NO.	CAHYXXXE-S
11/06/2023							
5/2022							
BSZ							



1. OPENING

2. FILTERS

3. PLENUM FANS

4. DAMPERS

5. DAMPERS

6. DAMPERS

7. AIR BLENDERS

8. STEAM COIL

9. HUMIDIFIER

10. WATER COIL

11. UV LIGHTS
12. PLENUM FANS

13. SOUND ATTENUATOR

14. FILTERS

15. OPENING

16. SWITCH & OUTLET

17. SERVICE LIGHT

18. ELECTRICAL PANEL (Internal & External)

19. POWER DISTRIBUTION PANEL

20. ACCESS DOOR

[FOR #1 THROUGH #20, REFER TO CERTIFIED PRODUCT SUBCOMPONENT TABLES]

- NOTES:
1. WALL INSULATION: 2", 3", 4" (FIBERGLASS OR FOAM).

2. EXTERNAL CABINET MATERIAL: GALVANIZED STEEL, STAINLESS STEEL, PRE-PAINTED STEEL.

3. UNIT BASE HEIGHT: 5", 6", 8" (STEEL OR STAINLESS STEEL).

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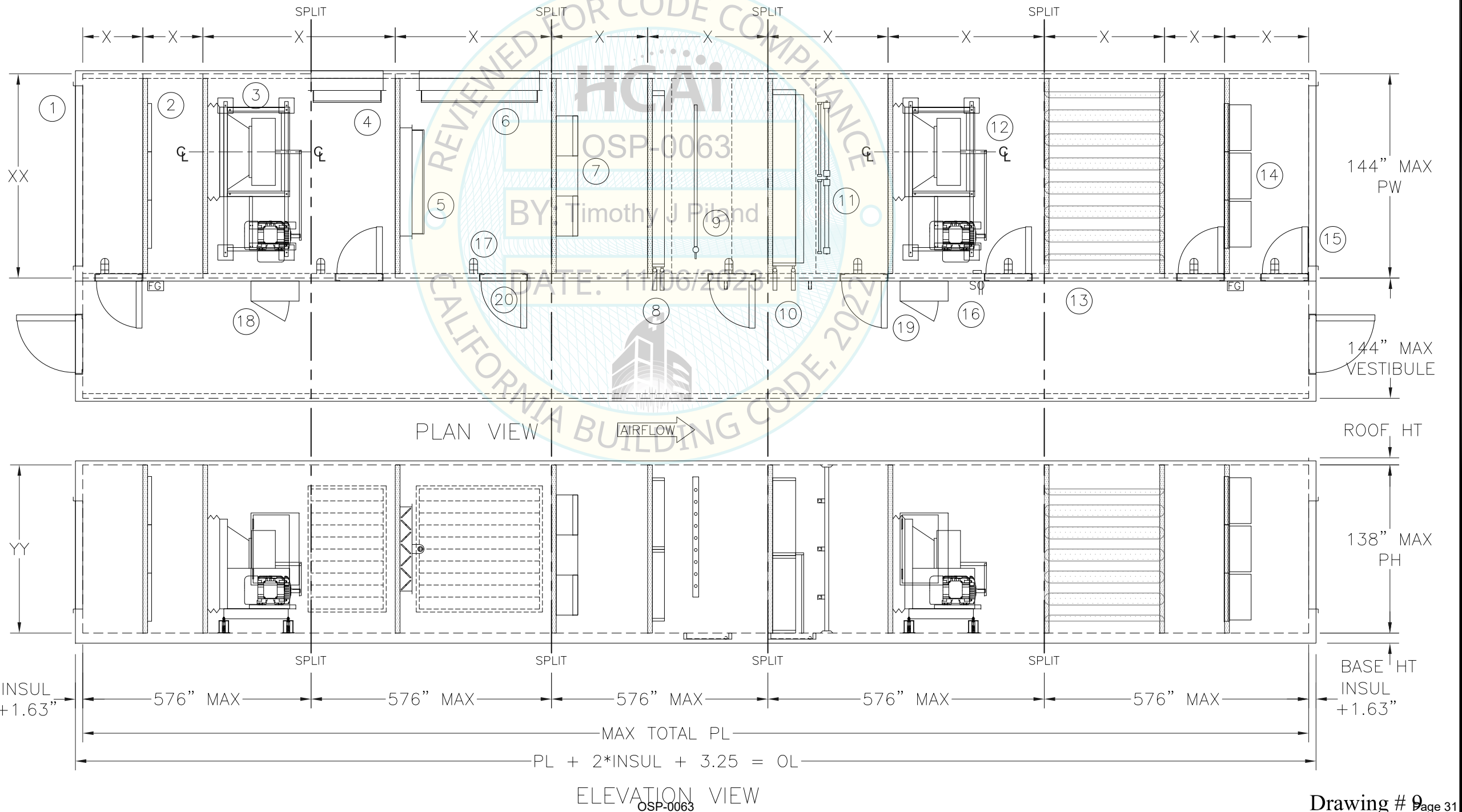
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9. REFER TO SEISMIC BRACING DETAILS DRAWINGS FOR ADDITIONAL INFORMATION.

10. REFER TO COIL BRACING REQUIREMENTS DRAWINGS FOR ADDITIONAL COIL BRACING INFORMATION.

SINGLE TUNNEL UNIT W/VESTIBULE AND MULTIPLE SHIPPING SPLITS



1. OPENING

2. FILTERS

3. PLENUM FANS

4. DAMPERS

5. DAMPERS

6. DAMPERS

7. AIR BLENDERS

8. STEAM COIL

9. HUMIDIFIER

10. WATER COIL

11. UV LIGHTS
12. PLENUM FANS

13. SOUND ATTENUATOR

14. FILTERS

15. OPENING

16. SWITCH & OUTLET

17. SERVICE LIGHT

18. ELECTRICAL PANEL (Internal & External)

19. POWER DISTRIBUTION PANEL

20. ACCESS DOOR

[FOR #1 THROUGH #20, REFER TO CERTIFIED PRODUCT SUBCOMPONENT TABLES]

- NOTES:
1. WALL INSULATION: 2", 3", 4" (FIBERGLASS OR FOAM).

2. EXTERNAL CABINET MATERIAL: GALVANIZED STEEL, STAINLESS STEEL, PRE-PAINTED STEEL.

3. UNIT BASE HEIGHT: 5", 6", 8" (STEEL OR STAINLESS STEEL).

4. ROOF HEIGHT DEPENDS ON INSULATION THICKNESS & PITCH.

5. SECTION SIZES, COMPONENT LOCATIONS, DOORS, OPENINGS, AND ELECTRICAL PANELS WILL VARY BASED ON CUSTOMER REQUIREMENTS.

6. LONGITUDINAL SEISMIC CABLE BRACING (X-BRACE) NOT REQUIRED ON SINGLE WIDTH UNITS 144" WIDE OR LESS.

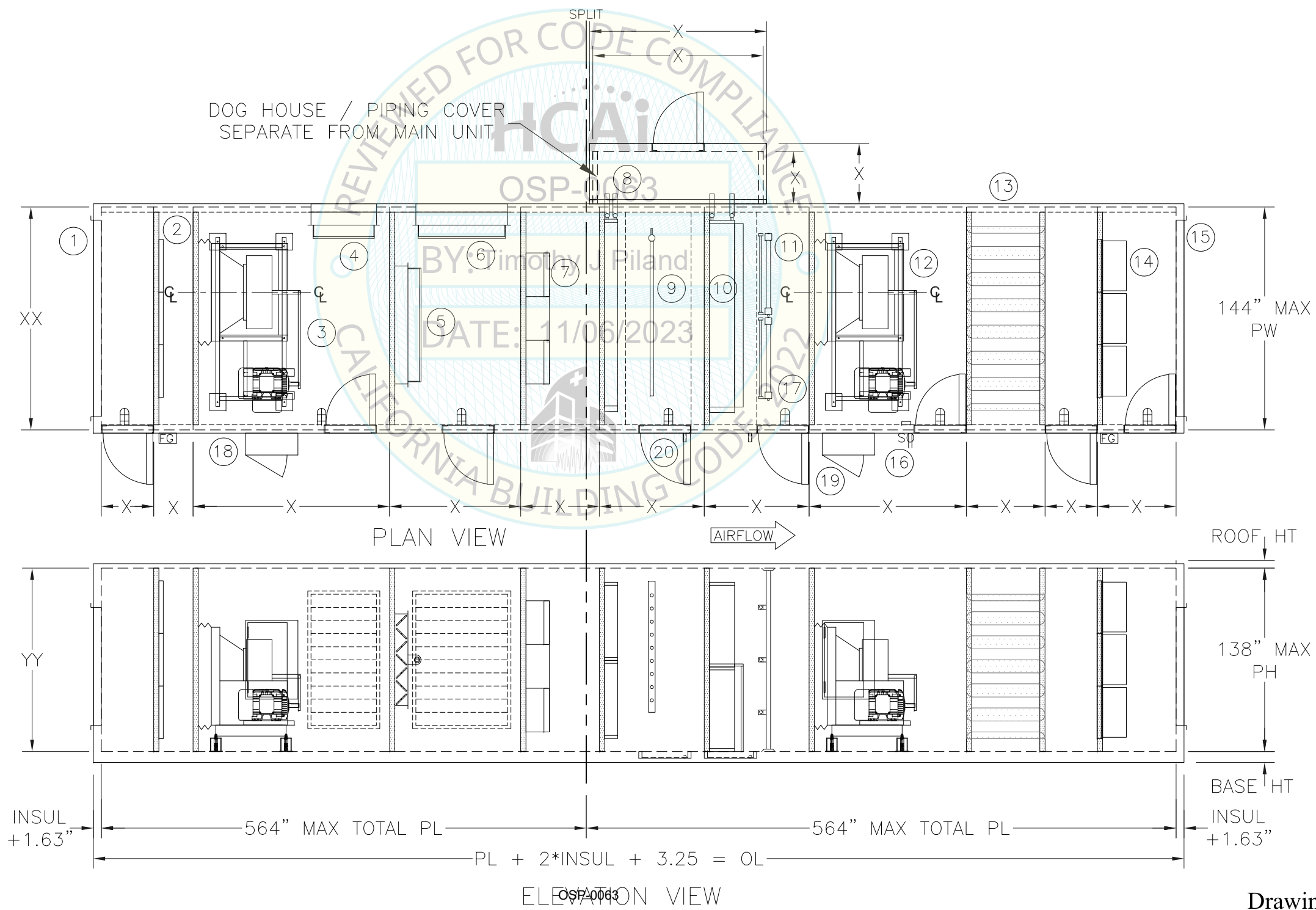
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9. REFER TO SEISMIC BRACING DETAILS DRAWINGS FOR ADDITIONAL INFORMATION.

10. REFER TO COIL BRACING REQUIREMENTS DRAWINGS FOR ADDITIONAL COIL BRACING INFORMATION.

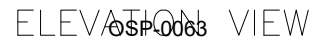
SINGLE TUNNEL UNIT
W/DOGHOUSE AND ONE SHIPPING SPLIT



JOB	SINGLE TUNNEL UNIT WITH DOGHOUSE AND ONE SPLIT			SN	NA	REV	BY
TAG	OSP-AHU-TYPE 10	Sheet	10	DATE	01/01/2012	MODEL NO.	CAHYXXXE-S
						6/2023	BSZ
						REV-G	

- [FOR #1 THROUGH #20, REFER TO CERTIFIED PRODUCT SUBCOMPONENT TABLES]

- NOTES:
1. WALL INSULATION: 2", 3", 4" (FIBERGLASS OR FOAM).
 2. EXTERNAL CABINET MATERIAL: GALVANIZED STEEL, STAINLESS STEEL, PRE-PAINTED STEEL.
 3. UNIT BASE HEIGHT: 5", 6", 8" (STEEL OR STAINLESS STEEL).
 4. ROOF HEIGHT DEPENDS ON INSULATION THICKNESS & PITCH.
 5. SECTION SIZES, COMPONENT LOCATIONS, DOORS, OPENINGS, AND ELECTRICAL PANELS WILL VARY BASED ON CUSTOMER REQUIREMENTS.
 6. LONGITUDINAL SEISMIC CABLE BRACING (X-BRACE) NOT REQUIRED ON SINGLE WIDTH UNITS 144" WIDE OR LESS.
 7. TRANSVERSE SEISMIC BRACING ELEMENT IS REQUIRED BASED ON TYPE OF THE ELEMENT AND DISTANCE DETAILED ON TABLE 1, SHEET 23.
 8. DOUBLE LONGITUDINAL BRACING IS REQUIRED PER TABLE 2, AND DETAILS ON SHEET 23-24.
 9. TRANSVERSE SUPPORT ELEMENTS ARE CONSIDERED AS ANY X-BRACE, FAN WALL, SOUND ATTENUATOR WALL, COIL, BLENDER WALL, DAMPER WALL, FILTER WALL, OR UNIT END WALL.
 10. REFER TO SEISMIC BRACING DETAILS DRAWINGS FOR ADDITIONAL INFORMATION.
 11. REFER TO COIL BRACING REQUIREMENTS DRAWINGS FOR ADDITIONAL COIL BRACING INFORMATION.



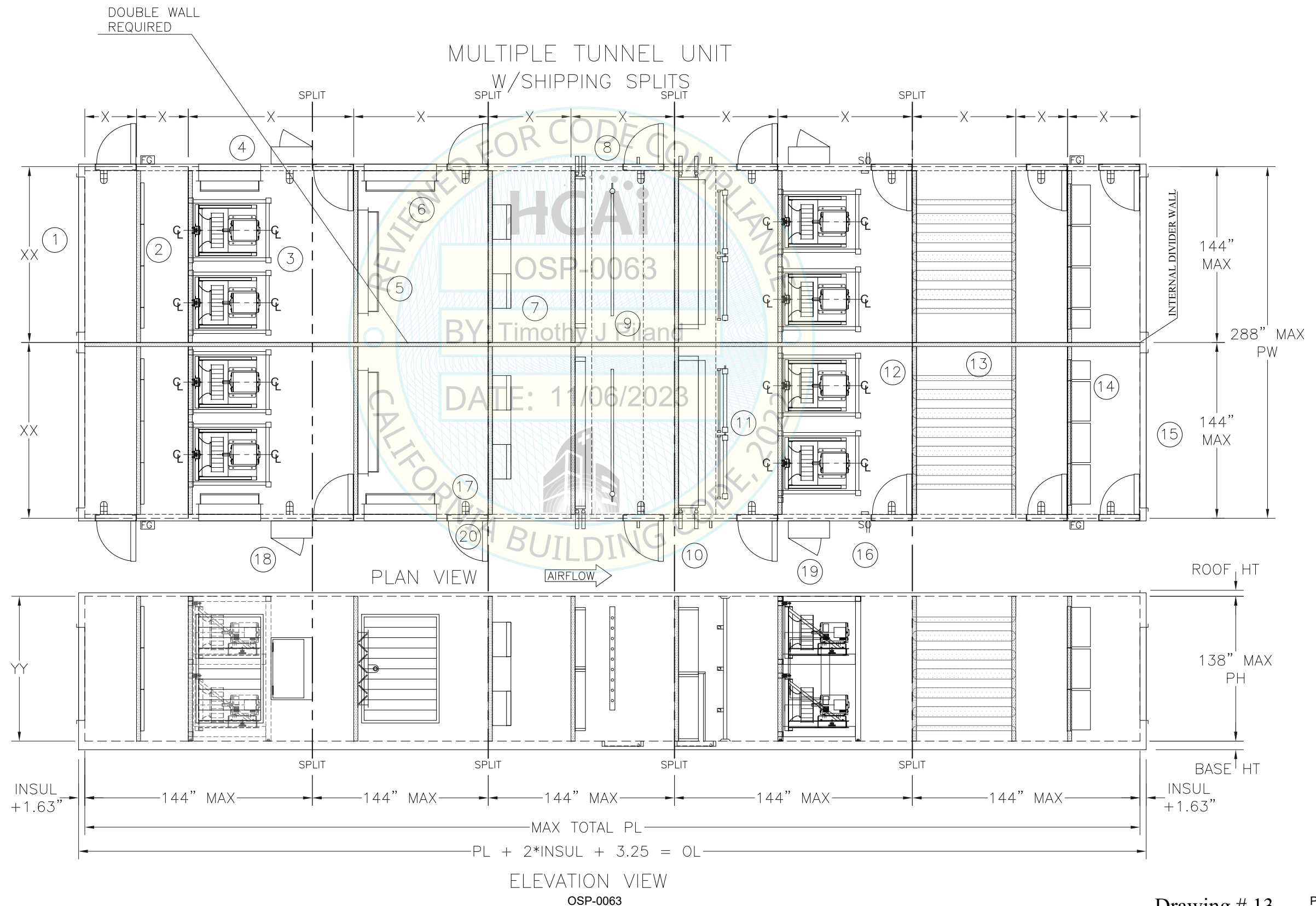
- Drawing # 12
- ^{Page 34 of 60}



1. OPENING
2. FILTERS
3. MATRIX FANS
4. DAMPERS
5. DAMPERS
6. DAMPERS
7. AIR BLENDERS
8. STEAM COIL
9. HUMIDIFIER
10. WATER COIL
11. UV LIGHTS
12. MATRIX FANS
13. SOUND ATTENUATOR
14. FILTERS
15. OPENING
16. SWITCH & OUTLET
17. SERVICE LIGHT
18. ELECTRICAL PANEL (Internal & External)
19. POWER DISTRIBUTION PANEL
20. ACCESS DOOR

[FOR #1 THROUGH #20, REFER TO CERTIFIED PRODUCT SUBCOMPONENT TABLES]

- NOTES:
1. WALL INSULATION: 2", 3", 4" (FIBERGLASS OR FOAM).
 2. EXTERNAL CABINET MATERIAL: GALVANIZED STEEL, STAINLESS STEEL, PRE-PAINTED STEEL.
 3. UNIT BASE HEIGHT: 5", 6", 8" (STEEL OR STAINLESS STEEL).
 4. ROOF HEIGHT DEPENDS ON INSULATION THICKNESS & PITCH.
 5. SECTION SIZES, COMPONENT LOCATIONS, DOORS, OPENINGS, AND ELECTRICAL PANELS WILL VARY BASED ON CUSTOMER REQUIREMENTS.
 6. LONGITUDINAL SEISMIC CABLE BRACING (X-BRACE) NOT REQUIRED ON SINGLE WIDTH UNITS 144" WIDE OR LESS.
 7. TRANSVERSE SEISMIC BRACING ELEMENT IS REQUIRED BASED ON TYPE OF THE ELEMENT AND DISTANCE DETAILED ON TABLE 1, SHEET 23.
 8. TRANSVERSE SUPPORT ELEMENTS ARE CONSIDERED AS ANY X-BRACE, FAN WALL, SOUND ATTENUATOR WALL, COIL, BLENDER WALL, DAMPER WALL, FILTER WALL, OR UNIT END WALL.
 9. REFER TO SEISMIC BRACING DETAILS DRAWINGS FOR ADDITIONAL INFORMATION.
 10. REFER TO COIL BRACING REQUIREMENTS DRAWINGS FOR ADDITIONAL COIL BRACING INFORMATION.



1. OPENING

2. FILTERS

3. MATRIX FANS

4. DAMPERS

5. DAMPERS

6. DAMPERS

7. AIR BLENDERS

8. STEAM COIL

9. HUMIDIFIER

10. WATER COIL

11. UV LIGHTS

12. MATRIX FANS

13. SOUND ATTENUATOR

14. FILTERS

15. OPENING

16. SWITCH & OUTLET

17. SERVICE LIGHT

18. ELECTRICAL PANEL (Internal & External)

19. POWER DISTRIBUTION PANEL

20. ACCESS DOOR
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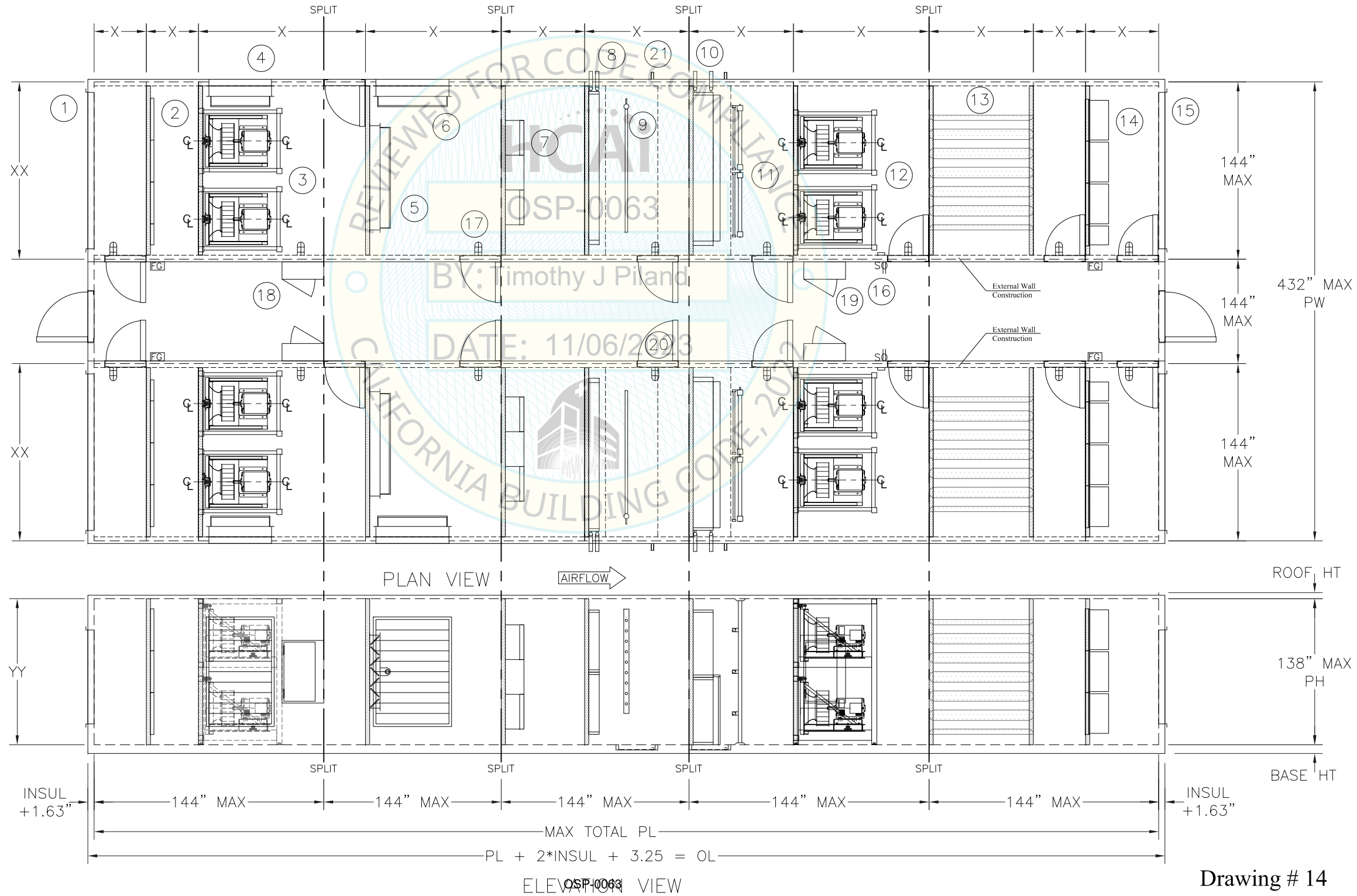
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10. REFER TO COIL BRACING REQUIREMENTS DRAWINGS FOR ADDITIONAL COIL BRACING INFORMATION.

DUAL TUNNEL UNIT
W/CENTER VESTIBULE AND SHIPPING SPLITS



1. OPENING

2. FILTERS

3. PLENUM FANS

4. DAMPERS

5. DAMPERS

6. DAMPERS

7. AIR BLENDERS

8. STEAM COIL

9. HUMIDIFIER

10. WATER COIL

11. UV LIGHTS
12. PLENUM FANS

13. SOUND ATTENUATOR

14. FILTERS

15. OPENING

16. SWITCH & OUTLET

17. SERVICE LIGHT

18. ELECTRICAL PANEL (Internal & External)

19. POWER DISTRIBUTION PANEL

20. ACCESS DOOR

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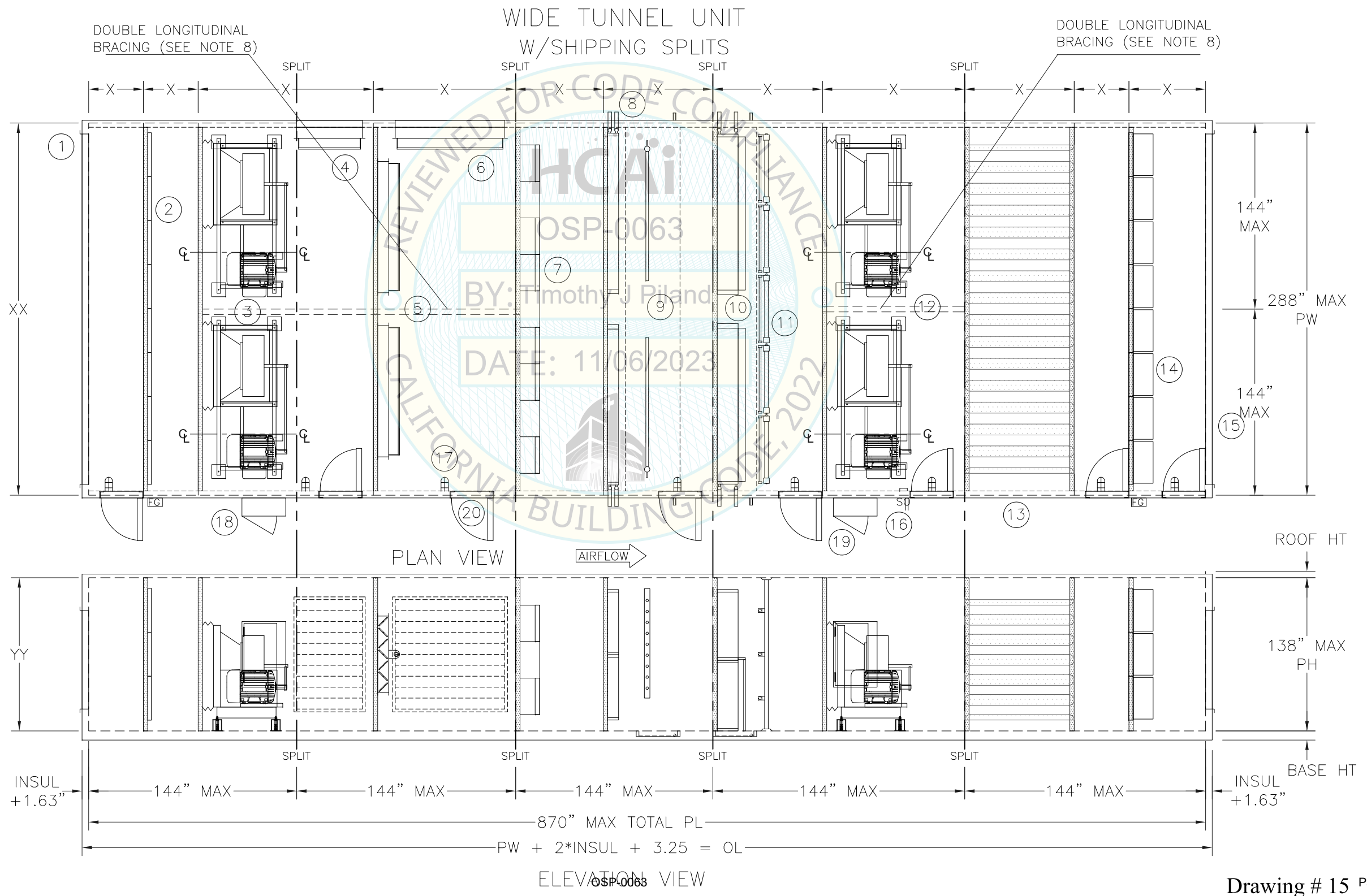
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8. DOUBLE LONGITUDINAL BRACING IS REQUIRED PER TABLE 2, AND DETAILS ON SHEET 23-24.

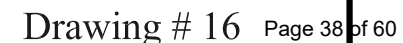
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 9. TRANSVERSE SUPPORT ELEMENTS ARE CONSIDERED AS ANY X-BRACE, FAN WALL, SOUND ATTENUATOR WALL, COIL, BLENDER WALL, DAMPER WALL, FILTER WALL, OR UNIT END WALL.
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1. OPENING

2. FILTERS

3. PLENUM FANS

4. DAMPERS

5. DAMPERS

6. DAMPERS

7. AIR BLENDERS

8. STEAM COIL

9. HUMIDIFIER

10. WATER COIL

11. UV LIGHTS

12. PLENUM FANS

13. SOUND ATTENUATOR

14. FILTERS

15. OPENING

16. SWITCH & OUTLET

17. SERVICE LIGHT

18. ELECTRICAL PANEL (Internal & External)

19. POWER DISTRIBUTION PANEL

20. ACCESS DOOR
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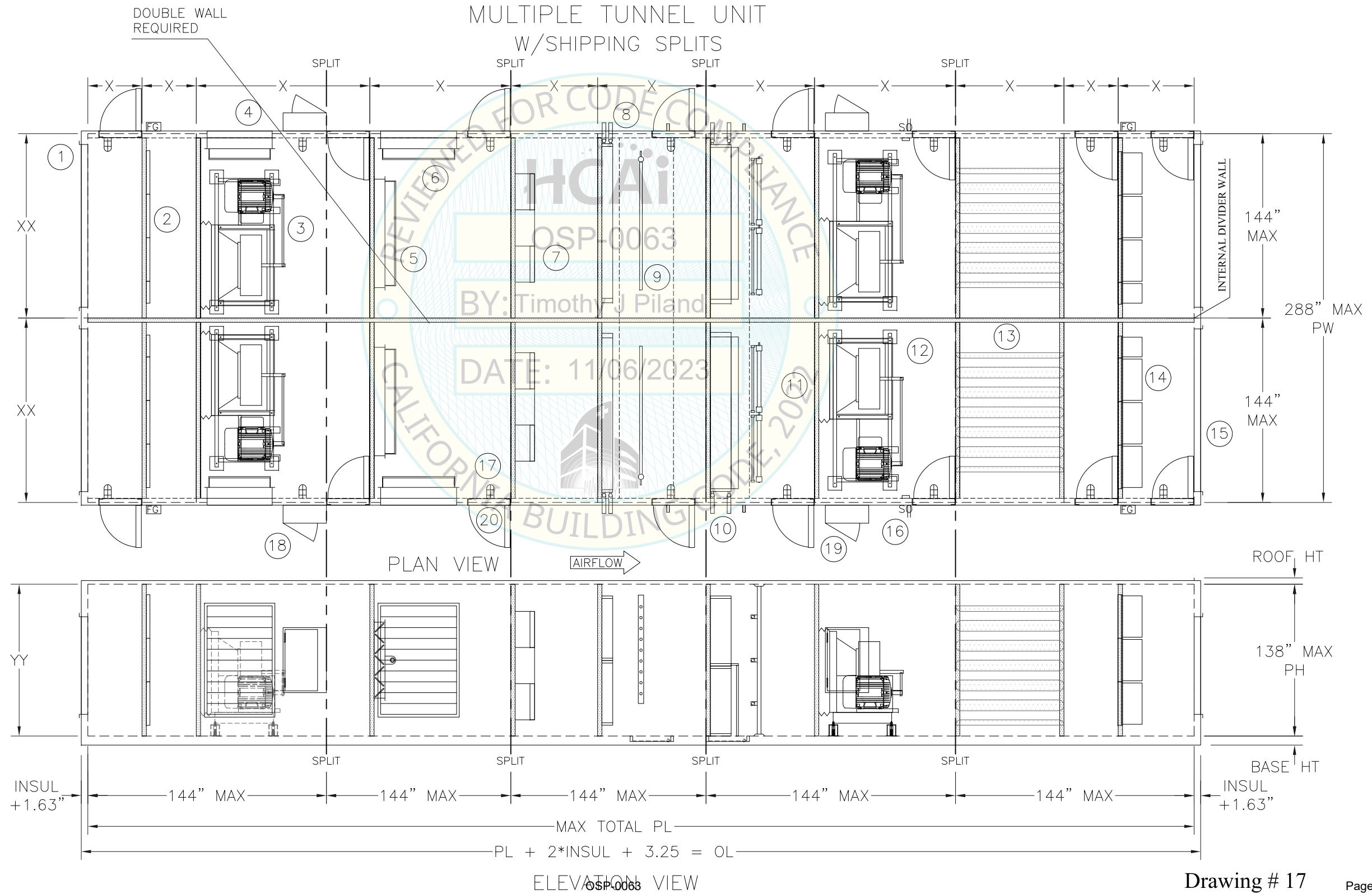
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1. OPENING

2. FILTERS

3. PLENUM FANS

4. DAMPERS

5. DAMPERS

6. DAMPERS

7. AIR BLENDERS

8. STEAM COIL

9. HUMIDIFIER

10. WATER COIL

11. UV LIGHTS
12. PLENUM FANS

13. SOUND ATTENUATOR

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15. OPENING

16. SWITCH & OUTLET

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18. ELECTRICAL PANEL (Internal & External)

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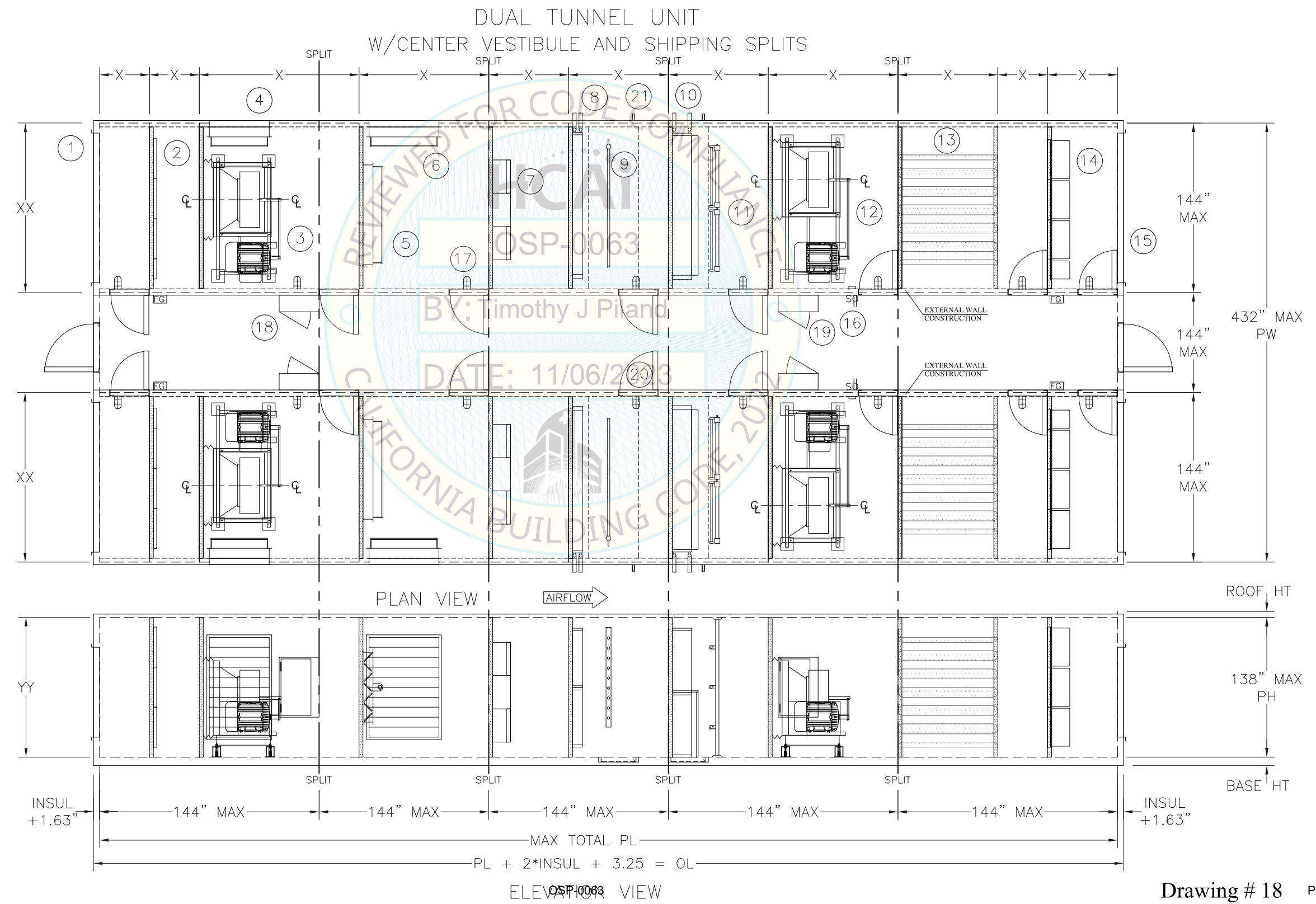
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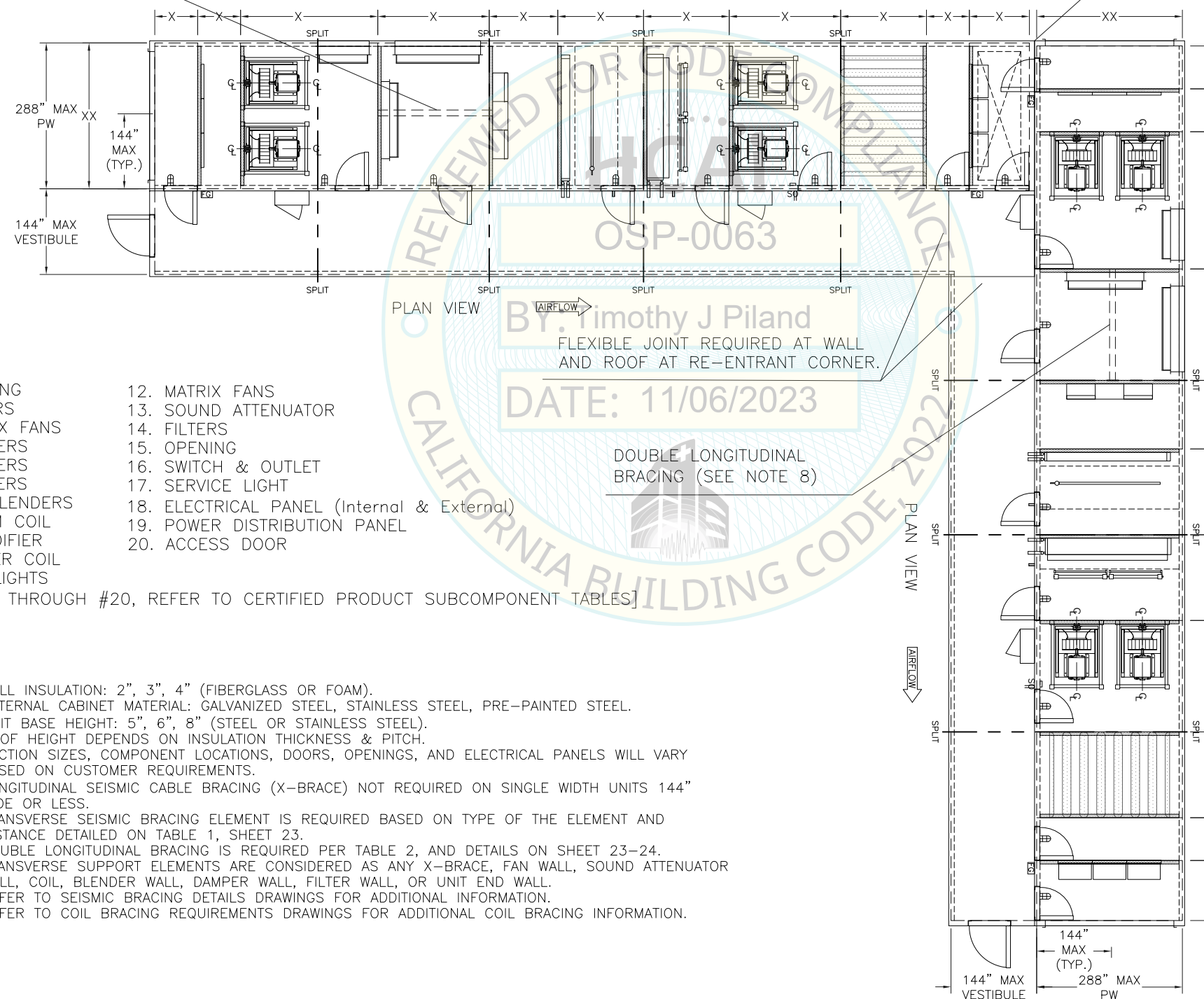
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10. REFER TO COIL BRACING REQUIREMENTS DRAWINGS FOR ADDITIONAL COIL BRACING INFORMATION.



DOUBLE LONGITUDINAL
BRACING (SEE NOTE 8)



- [FOR #1 THROUGH #20, REFER TO CERTIFIED PRODUCT SUBCOMPONENT TABLES]

- NOTES:

ELEVATION VIEW

1. OPENING

2. FILTERS

3. MATRIX FANS

4. DAMPERS

5. DAMPERS

6. DAMPERS

7. AIR BLENDERS

8. STEAM COIL

9. HUMIDIFIER

10. WATER COIL

11. UV LIGHTS
12. MATRIX FANS

13. SOUND ATTENUATOR

14. FILTERS

15. OPENING

16. SWITCH & OUTLET

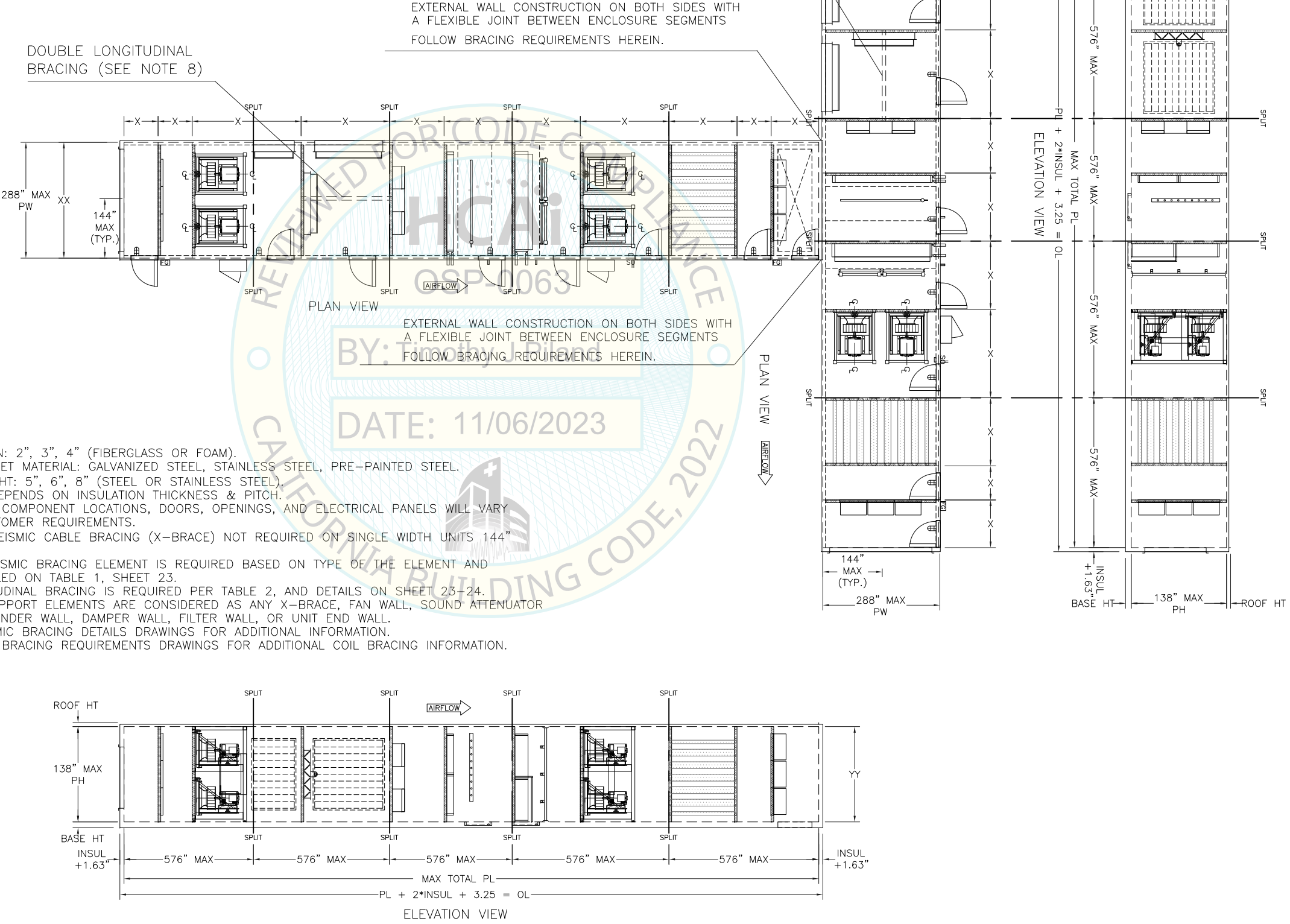
17. SERVICE LIGHT

18. ELECTRICAL PANEL (Internal & External)

19. POWER DISTRIBUTION PANEL

20. ACCESS DOOR

[FOR #1 THROUGH #20, REFER TO CERTIFIED PRODUCT SUBCOMPONENT TABLES]



- NOTES:
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 - EXTERNAL CABINET MATERIAL: GALVANIZED STEEL, STAINLESS STEEL, PRE-PAINTED STEEL.
 - UNIT BASE HEIGHT: 5", 6", 8" (STEEL OR STAINLESS STEEL).
 - ROOF HEIGHT DEPENDS ON INSULATION THICKNESS & PITCH.
 - SECTION SIZES, COMPONENT LOCATIONS, DOORS, OPENINGS, AND ELECTRICAL PANELS WILL VARY BASED ON CUSTOMER REQUIREMENTS.
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 - REFER TO SEISMIC BRACING DETAILS DRAWINGS FOR ADDITIONAL INFORMATION.
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1. OPENING

2. FILTERS

3. MATRIX FANS

4. DAMPERS

5. DAMPERS

6. DAMPERS

7. AIR BLENDERS

8. STEAM COIL

9. HUMIDIFIER

10. WATER COIL

11. UV LIGHTS
12. MATRIX FANS

13. SOUND ATTENUATOR

14. FILTERS

15. OPENING

16. SWITCH & OUTLET

17. SERVICE LIGHT

18. ELECTRICAL PANEL (Internal & External)

19. POWER DISTRIBUTION PANEL

20. ACCESS DOOR
- [FOR #1 THROUGH #20, REFER TO CERTIFIED
PRODUCT SUBCOMPONENT TABLES]

DOUBLE LONGITUDINAL
BRACING (SEE NOTE 8)

- NOTES:
1. WALL INSULATION: 2", 3", 4" (FIBERGLASS OR FOAM).

2. EXTERNAL CABINET MATERIAL: GALVANIZED STEEL, STAINLESS STEEL, PRE-PAINTED STEEL.

3. UNIT BASE HEIGHT: 5", 6", 8" (STEEL OR STAINLESS STEEL).

4. ROOF HEIGHT DEPENDS ON INSULATION THICKNESS & PITCH.

5. SECTION SIZES, COMPONENT LOCATIONS, DOORS, OPENINGS, AND ELECTRICAL PANELS WILL VARY BASED ON CUSTOMER REQUIREMENTS.

6. LONGITUDINAL SEISMIC CABLE BRACING (X-BRACE) NOT REQUIRED ON SINGLE WIDTH UNITS 144" WIDE OR LESS.

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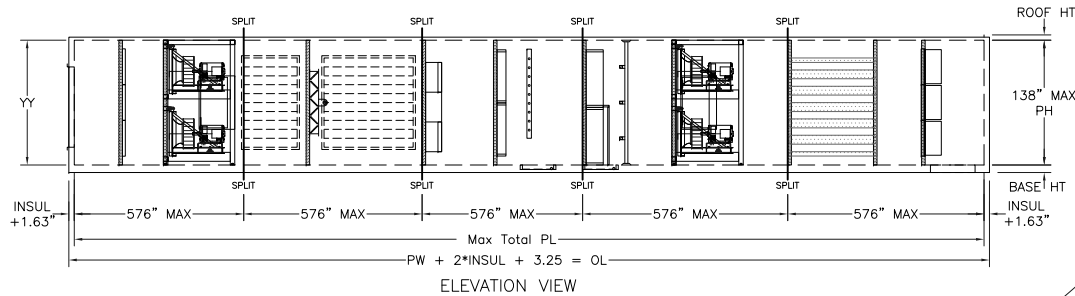
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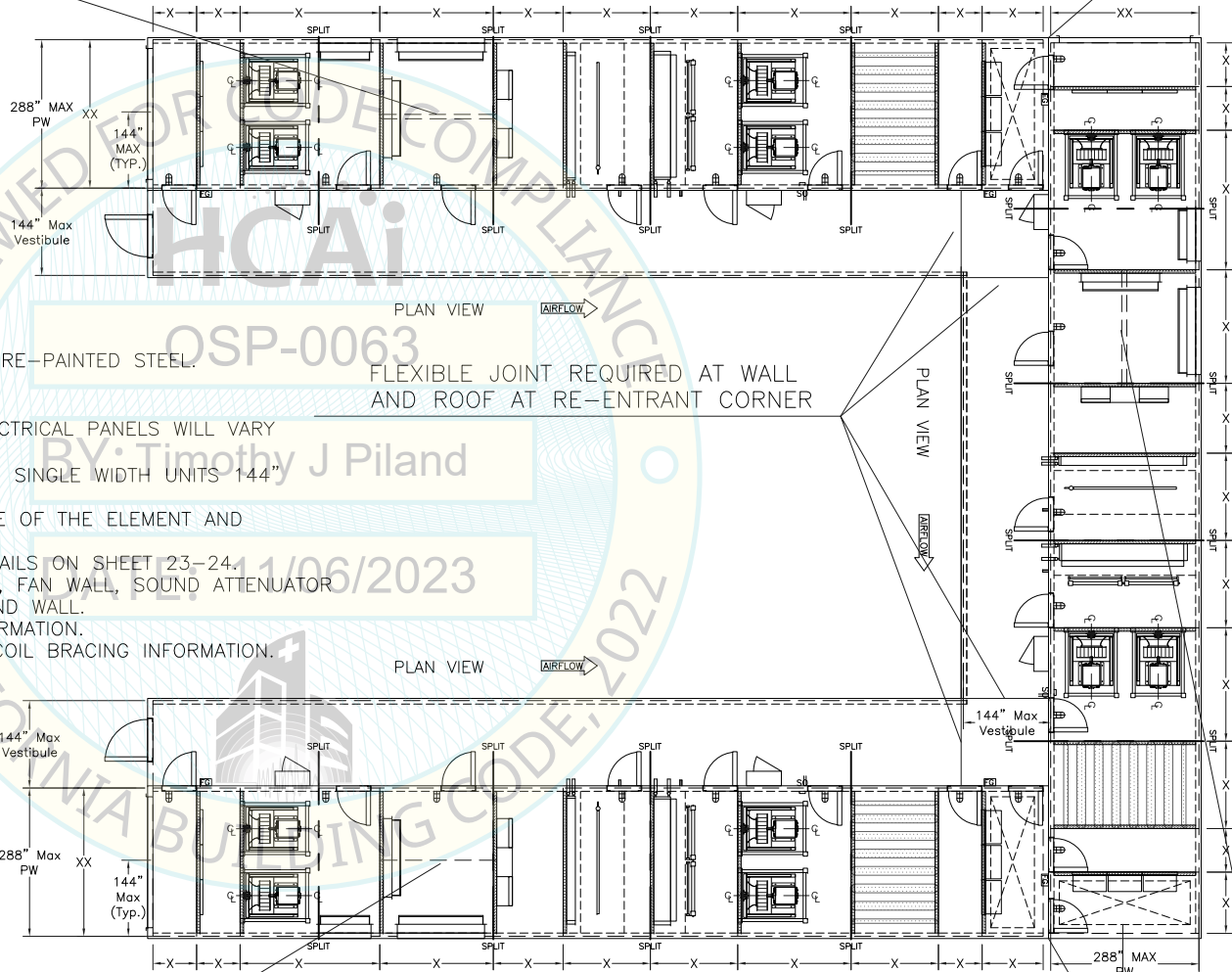
DOUBLE LONGITUDINAL
BRACING (SEE NOTE 8)

DOUBLE LONGITUDINAL
BRACING (SEE NOTE 8)

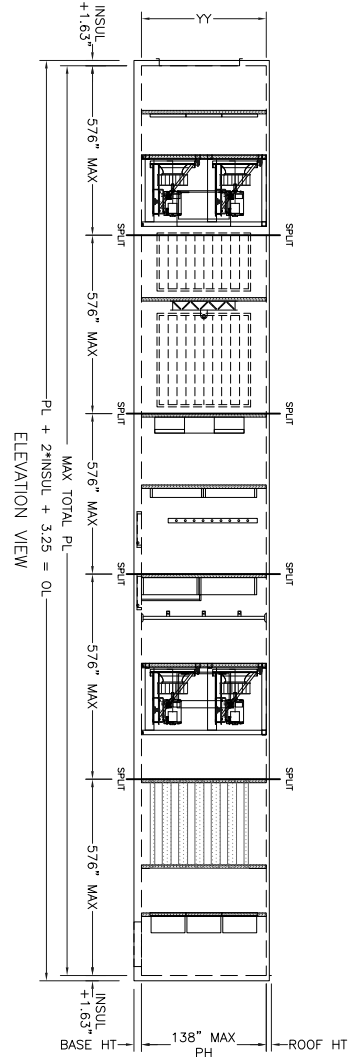
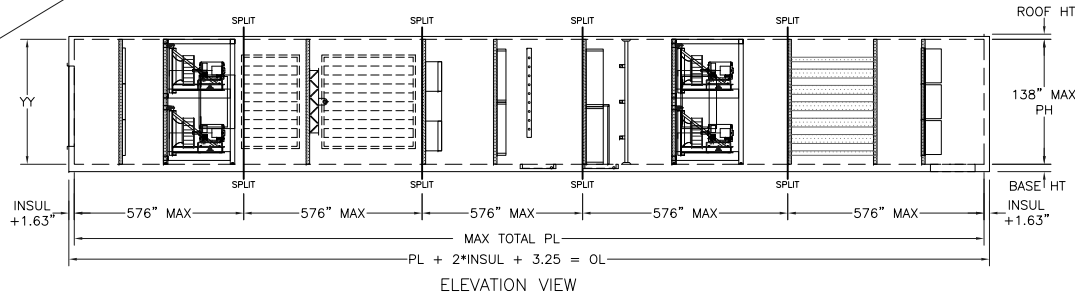
U-SHAPED UNIT
W/VESTIBULE AND MULTIPLE SHIPPING SPLITS



EXTERNAL WALL CONSTRUCTION ON BOTH SIDES WITH
A FLEXIBLE JOINT BETWEEN ENCLOSURE SEGMENTS.
FOLLOW BRACING REQUIREMENTS HEREIN.



EXTERNAL WALL CONSTRUCTION ON BOTH SIDES WITH
A FLEXIBLE JOINT BETWEEN ENCLOSURE SEGMENTS.
FOLLOW BRACING REQUIREMENTS HEREIN.



STACKED SINGLE TUNNEL UNIT WITH NO SPLITS		SN	REV	BT
NA		5/2022		BSZ
TAG	Sheet	DATE	MODEL NO.	
OSP-AHU-TYPE 22	22	01/01/2012	CAHYTXXXE-S	
6/2023				

- [FOR #1 THROUGH #20, REFER TO CERTIFIED PRODUCT SUBCOMPONENT TABLES]

STACKED SINGLE TUNNEL UNIT
W/NO SHIPPING SPLIT

PLAN VIEW

AIRFLOW

ELEVATION VIEW

144" MAX PW

48" MAX PH

138" MAX PH

1.63" INSUL

MAX TOTAL PL

PL + 2*INSUL + 3.25 = OL

ROOF HT

BASE HT

INSUL + 1.63"

Drawing # 22

BRACING DEFINITION:
LONGITUDINAL BRACING IS THE BRACING PARALLEL TO
AIRFLOW DIRECTION.
TRANSVERSE BRACING IS THE BRACING PERPENDICULAR TO
AIRFLOW DIRECTION.

APPROVED LONGITUDINAL BRACING ELEMENTS (See Table 3):

TRANSVERSE ELEMENT TYPE	"X " MAX (IN)
FAN MATRIX WALL	72
FILTER AIRSEAL WALL	72
WATER COIL WALL	60
STEAM COIL WALL	60
PLENUM FAN WALL	72
SOUND ATTENUATOR	72
SINGLE TRANSVERSE "X" BRACE	72
DOUBLE TRANSVERSE "X" BRACE	144

TABLE2: SECTIONS THAT REQUIRE
DOUBLE LONGITUDINAL BRACING ELEMENTS

COMPONENTS	NEEDS DOUBLE LONGITUDINAL BRACING
DAMPER WALL	YES
AIR BLENDERS	YES
PLENUM FAN WALL	YES

Diagram illustrating the layout and dimensions of a unit, showing a series of rectangular sections separated by walls.

Key dimensions and labels:

- TOTAL UNIT LENGTH**: Indicated by a dimension line at the top.
- EXTERNAL WALLS**: Indicated by arrows pointing to the outer walls.
- "X"**: Repeated six times, indicating the length of individual sections.
- TOTAL UNIT WIDTH "XX" >= 144"**: Indicated by a dimension line on the left.
- 144" MAX.**: Indicated by dimension lines on the right, showing the maximum height of the sections.
- DOUBLE LONGITUDINAL BRACING**: Indicated by an arrow pointing to the internal bracing structure.
- EXTERNAL WALLS**: Indicated by an arrow pointing to the outer walls at the bottom right.
- SCALE 0.013**: Indicated below the diagram.
- DIRECTION OF AIRFLOW**: Indicated by a pink arrow pointing right.
- TRANSVERSE ELEMENT BRACING (SEE TABLE 1)**: Indicated by an arrow pointing to the internal bracing structure.

The diagram shows a unit layout with a total unit length and a total unit width. The unit is divided into sections by walls, with a maximum height of 144 inches. The diagram includes a scale of 0.013 and a direction of airflow arrow. A large circular stamp is overlaid on the diagram, containing the text "REVIEWED FOR CODE COMPLIANCE", "HCAi", "OSP-0063", "BY: Timothy J Piland", "SCALE 0.013", and "CALIFORNIA BUILDING CODE, 2022".

DOUBLE LONGITUDINAL "X" BRACE
INTERNAL DIVIDER WALL
EXTERNAL WALL CONSTRUCTION

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SEISMIC BRACING REQUIREMENTS ~ Continued

ADDITIONAL SEISMIC BRACING IS REQUIRED ON CLIMATECRAFT UNITS WHEN THE PLENUM WIDTH OF THE TUNNEL EXCEEDS 144" PER THE DETAILS OUTLINED BELOW:

PLENUM WIDTH "XX" - AS SHOWN ON DRAWINGS 1 THROUGH 22.

LONGITUDINAL BRACING IS DEFINED AS THE BRACING PARALLEL TO AIRFLOW DIRECTION.

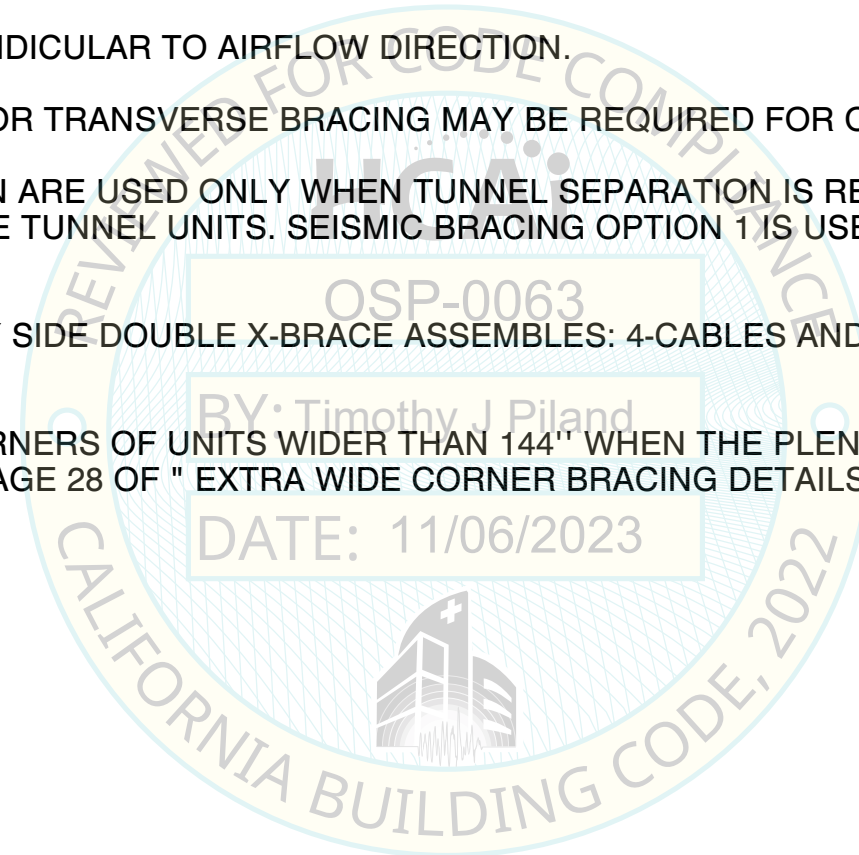
TRANSVERSE BRACING IS DEFINED AS THE BRACING PERPENDICULAR TO AIRFLOW DIRECTION.

ON UNITS WHERE "XX" > 144" LONGITUDINAL BRACING AND/OR TRANSVERSE BRACING MAY BE REQUIRED FOR OSHPD APPROVAL.

INTERNAL DIVIDER WALL OR EXTERNAL WALL CONSTRUCTION ARE USED ONLY WHEN TUNNEL SEPARATION IS REQUIRED AS SHOWN IN THE CONFIGURATION DRAWINGS FOR DUAL TUNNEL / CENTER VESTIBULE UNITS AND MULTIPLE TUNNEL UNITS. SEISMIC BRACING OPTION 1 IS USED IN ALL OTHER CASES AS THE PRIMARY SEISMIC BRACING METHOD.

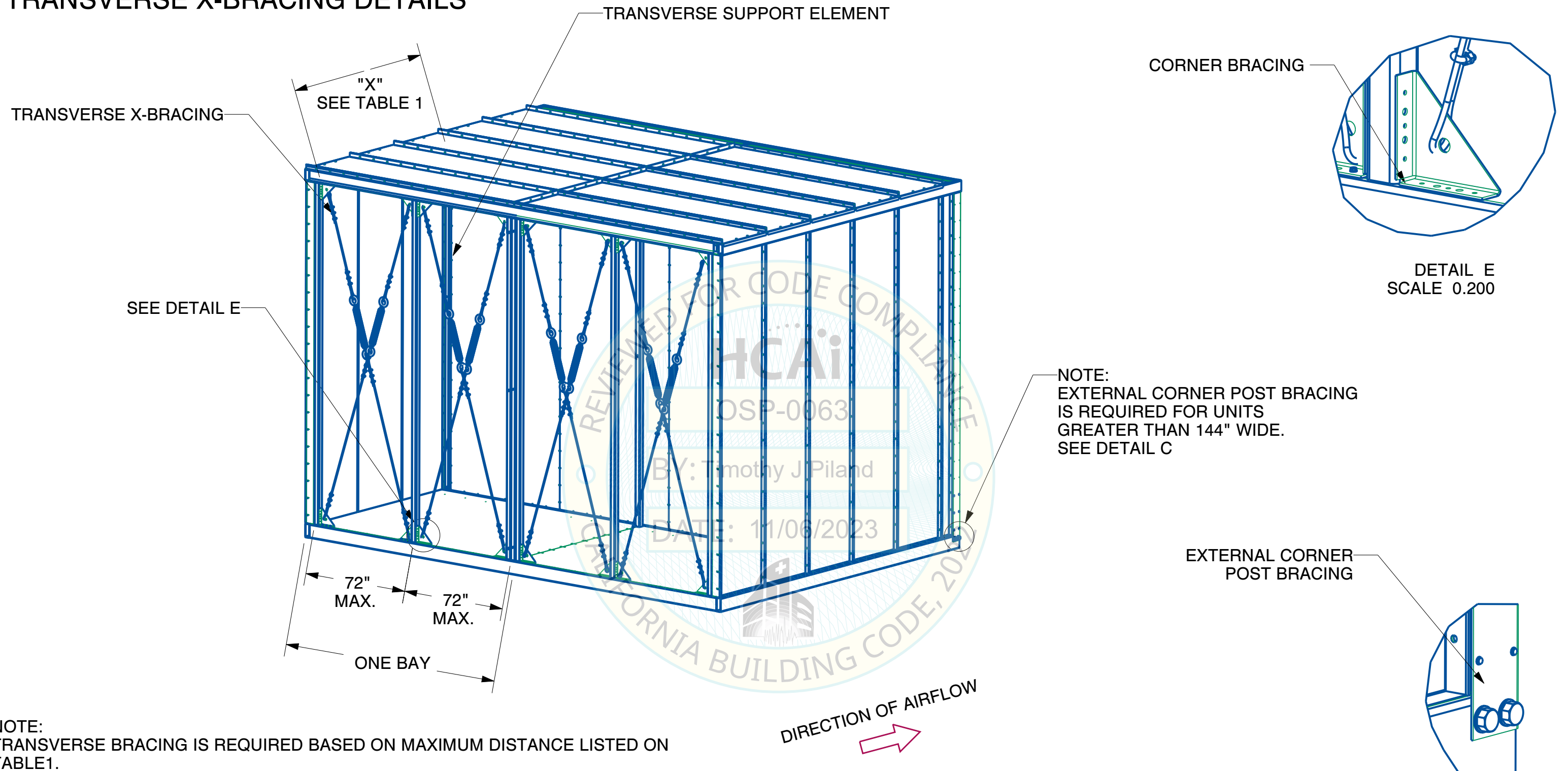
X-BRACING IS REQUIRED TO BE "DOUBLE" X-BRACES (SIDE BY SIDE DOUBLE X-BRACE ASSEMBLES: 4-CABLES AND 4- POSTS) AT ALL INTERIOR SECTIONS; LONGITUDINAL OR TRANSVERSE AND AT ANY EXTERIOR ADJOINING SECTIONS.

EXTERNAL CORNER BRACING IS REQUIRED ON ALL FOUR CORNERS OF UNITS WIDER THAN 144" WHEN THE PLENUM WIDTH " XX " > 144".
DETAILS OF TYPICAL CORNER BRACING CAN BE FOUND ON PAGE 28 OF " EXTRA WIDE CORNER BRACING DETAILS".



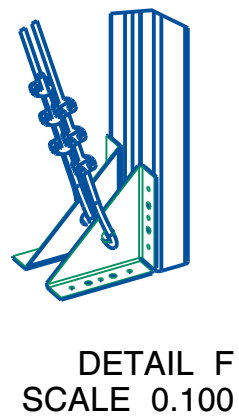
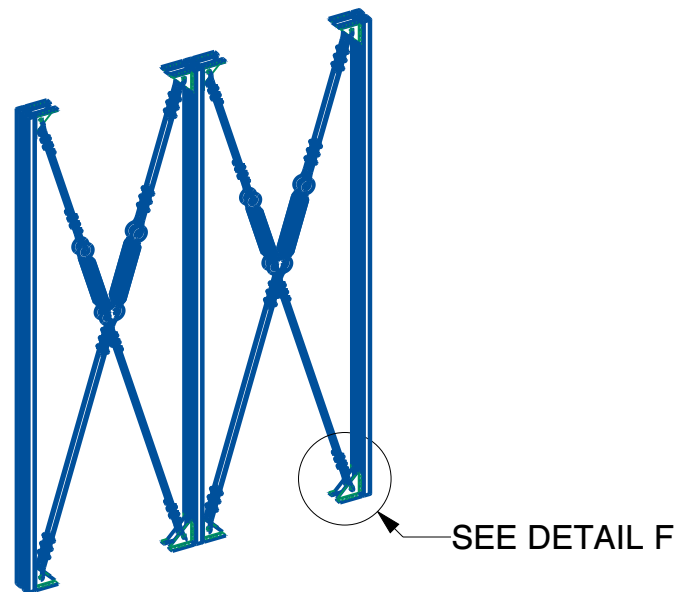
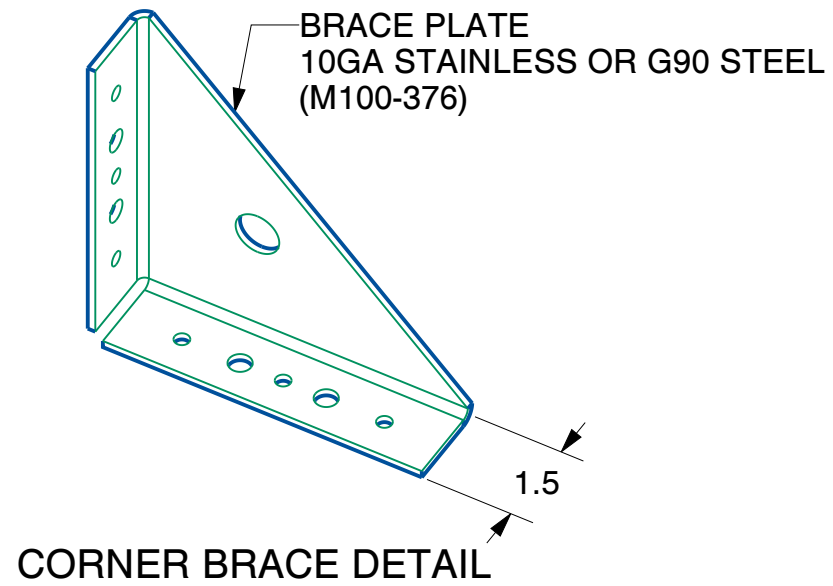
REV	DESCRIPTION	ECN #	BY	DATE	THIRD ANGLE PROJECTION	TOLERANCES	MANUFACTURING DRAWING	SEISMIC BRACING DETAILS		
D	DRAWING DETAILS	N/A	BSZ	04/07/2021		UNLESS OTHERWISE SPECIFIED .XXX ± .015 .XX ± .030 .X ± .060 ANG ± 1°	 P.O. BOX 1538, 1427 N.W. THIRD OKLAHOMA CITY, OK 73101-1538 PHONE (405) 415-9230 FAX (405) 415-9231	DRAWING #: SBD01		APPR: H.B.
E	DRAWING DETAILS , FIRST OSP REV	N/A	BSZ	1/13/2022				BY: AJH	DATE: 03/26/2012	SIZE: B
F	DRAWING DETAILS, SECOND OSP REV	N/A	BSZ	5/25/2022				UNITS IN INCHES UNLESS OTHERWISE SPECIFIED		SHEET: 24 OF 57
G	OSHPD-REV 2023	NA	LB	08/16/2023						
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TRANSVERSE X-BRACING DETAILS

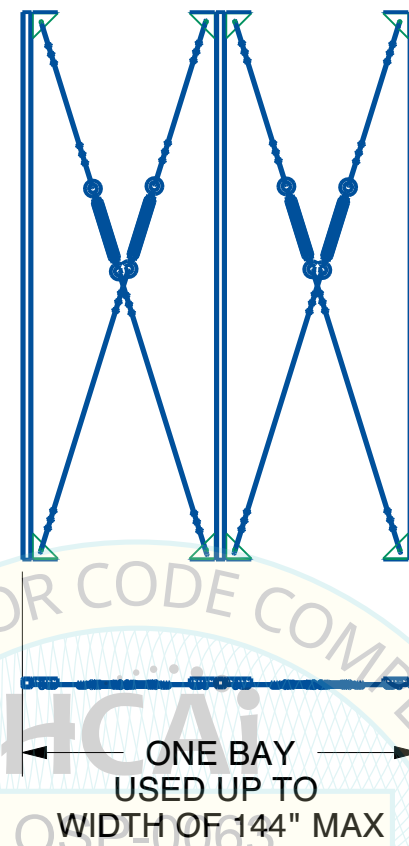


REV	DESCRIPTION	ECN #	BY	DATE	THIRD ANGLE PROJECTION	TOLERANCES	MANUFACTURING DRAWING	SEISMIC BRACING DETAILS		
D	DRAWING DETAILS	N/A	BSZ	04/07/2021		UNLESS OTHERWISE SPECIFIED $.XXX \pm .015$ $.XX \pm .030$ $.X \pm .060$ $ANG \pm 1^\circ$	 P.O. BOX 1538, 1427 N.W. THIRD OKLAHOMA CITY, OK 73101-1538 PHONE (405) 415-9230 FAX (405) 415-9231	DRAWING #: SBD01		APPR: H.B.
E	DRAWING DETAILS, FIRST OSP REV	N/A	BSZ	1/13/2022				BY: AJH	DATE: 03/26/2012	SIZE: B
F	DRAWING DETAILS, SECOND OSP REV	N/A	BSZ	5/25/2022				UNITS IN INCHES UNLESS OTHERWISE SPECIFIED		SHEET: 25 OF 57
G	OSHPD-REV 2023	NA	LB	08/16/2023						
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OSHPD CABLE X-BRACE DETAILS FOR TRANSVERSE AND LONGITUDINAL BRACES

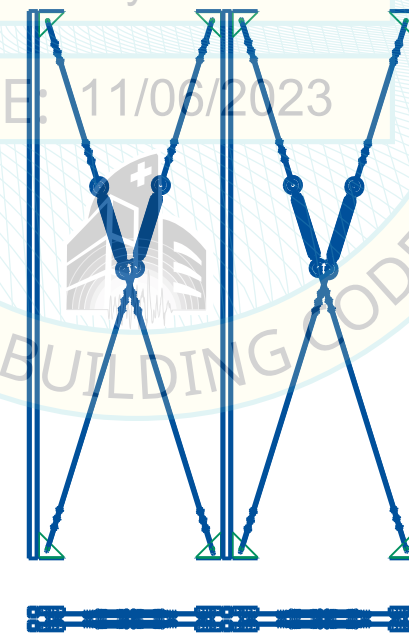


SINGLE BRACING

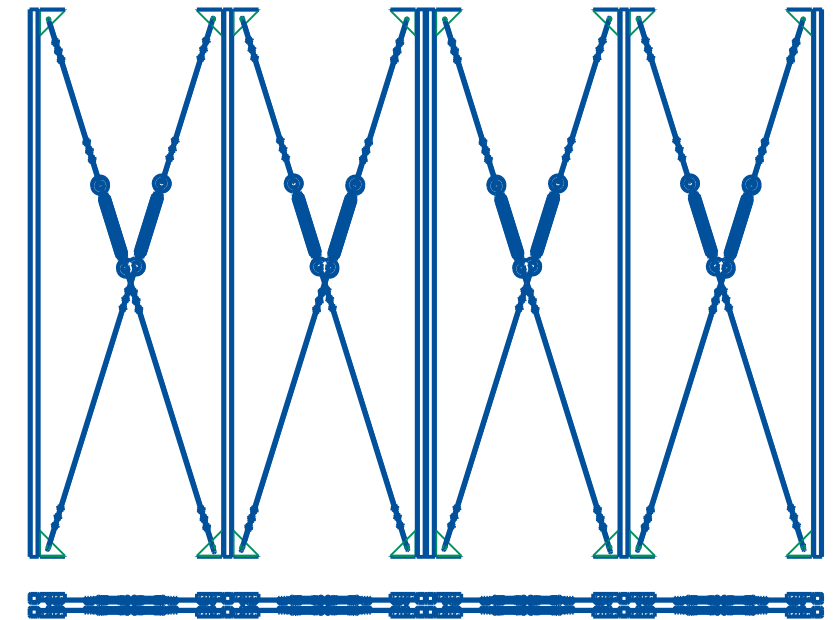
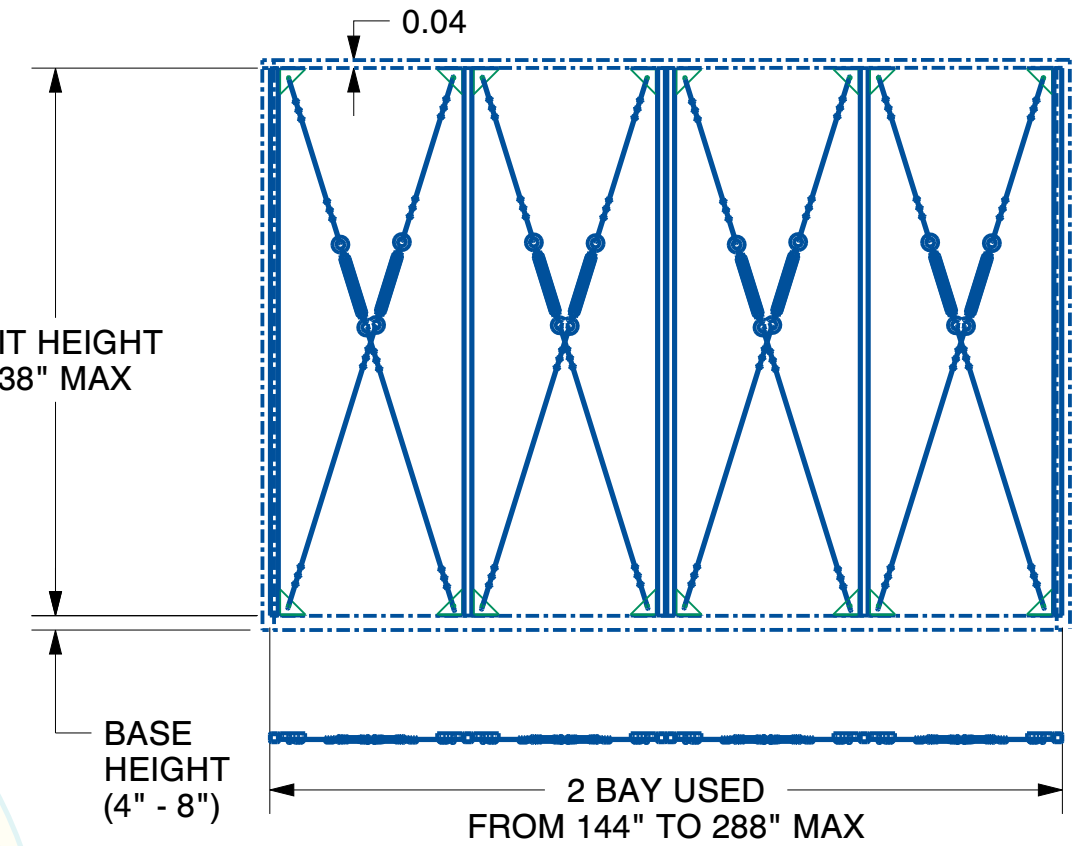


ONE BAY
USED UP TO
WIDTH OF 144" MAX

DOUBLE BRACING



ONE BAY, DOUBLE BRACING



TWO BAY, DOUBLE BRACING

REV	DESCRIPTION	ECN #	BY	DATE	THIRD ANGLE PROJECTION	TOLERANCES	MANUFACTURING DRAWING	SEISMIC BRACING DETAILS		
D	DRAWING DETAILS	N/A	BSZ	04/07/2021		UNLESS OTHERWISE SPECIFIED $.XXX \pm .015$ $.XX \pm .030$ $.X \pm .060$ $ANG \pm 1^\circ$	 P.O. BOX 1538, 1427 N.W. THIRD OKLAHOMA CITY, OK 73101-1538 PHONE (405) 415-9230 FAX (405) 415-9231	DRAWING #: SBD01		APPR: H.B.
E	DRAWING DETAILS, FIRST OSP REV	N/A	BSZ	1/13/2022				BY: AJH	DATE: 03/26/2012	SIZE: B
F	DRAWING DETAILS, SECOND OSP REV	N/A	BSZ	5/25/2022				UNITS IN INCHES UNLESS OTHERWISE SPECIFIED		SHEET: 26 OF 57
G	OSHDP-REV 2023	NA	LB	08/16/2023						

11/06/2023

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OSP-0663

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12-14 SELF TAPPING
SHEET METAL SCREW
6" O.C. INTO STANDARD
16 GAUGE CORNER POST

DIRECTION OF AIRFLOW

10 GAUGE CORNER
POST BRACING
TYP ALL 4 EXTERNAL
CORNERS

REV	DESCRIPTION	ECN #	BY	DATE	THIRD ANGLE PROJECTION	TOLERANCES	MANUFACTURING DRAWING	SEISMIC BRACING DETAILS		
D	DRAWING DETAILS	N/A	BSZ	04/07/2021		UNLESS OTHERWISE SPECIFIED .XXX ± .015 .XX ± .030 .X ± .060 ANG ± 1°	 P.O. BOX 1538, 1427 N.W. THIRD OKLAHOMA CITY, OK 73101-1538 PHONE (405) 415-9230 FAX (405) 415-9231	DRAWING #: SBD01		APPR: H.B.
E	DRAWING DETAILS, FIRST OSP REV	N/A	BSZ	1/13/2022				BY: AJH	DATE: 03/26/2012	SIZE: B
F	DRAWING DETAILS, SECOND OSP REV	N/A	BSZ	5/25/2022				UNITS IN INCHES UNLESS OTHERWISE SPECIFIED		SHEET: 28 OF 57
G	OSHPD-REV 2023	NA	LB	08/16/2023						
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CROSS SECTIONAL VIEW OF WIDE TUNNEL UNIT WITH TRANSVERSE AND LONGITUDINAL BRACING

NOTE:

TRANSVERSE SEISMIC BRACING IS REQUIRED BASED ON THE MAXIMUM DISTANCE LISTED ON TABLE1.

TRANSVERSE SUPPORT ELEMENTS ARE CONSIDERED AS ANY X-BRACE, FAN WALL, SOUND ATTENUATOR WALL, COIL, BLENDER WALL, DAMPER WALL, FILTER WALL, OR UNIT END WALL

DOUBLE LONGITUDINAL SEISMIC CABLE BRACING (X-BRACE) IS REQUIRED ON UNITS WIDER THAN 144" ONLY IN DAMPERS, AIR BLENDERS AND PLENUM FANS SECTIONS.

TABLE1:

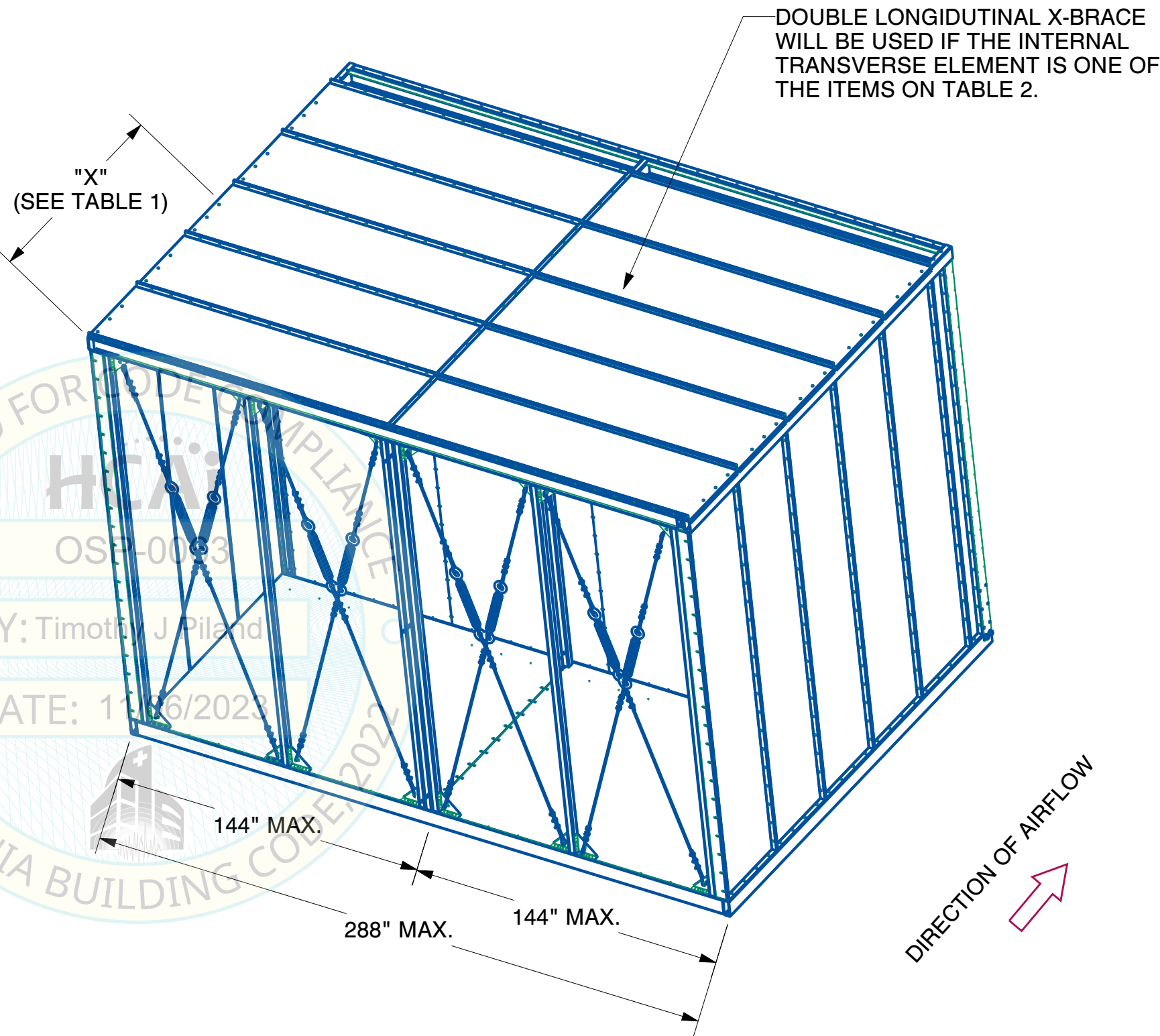
TRANSVERSE ELEMENT	"X " MAX (IN)
FAN MATRIX WALL	72
FILTER AIRSEAL WALL	72
WATER COIL WALL	60
STEAM COIL WALL	60
PLENUM FAN WALL	72
SOUND ATTENUATOR	72
SINGLE TRANSVERSE BRACING ELEMENT	72
DOUBLE TRANSVERSE BRACING ELEMENT	72

TABLE 1: MAX DISTANCES "X" FROM TRANSVERSE ELEMENT TO ANOTHER TRANSVERSE ELEMENT OR A TRANSVERSE CROSS BRACE CABLING.

TABLE2:

COMPONENTS	NEEDS DOUBLE LONGITUDINAL BRACING
DAMPER WALL	YES
AIR BLENDERS	YES
PLENUM FAN WALL	YES

TABLE 2: INTERNAL COMPONENTS THAT NEED TO BE SUPPORTED BY DOUBLE LONGITUDINAL BRACING ON UNITS WIDTH GREATER THAN 144".

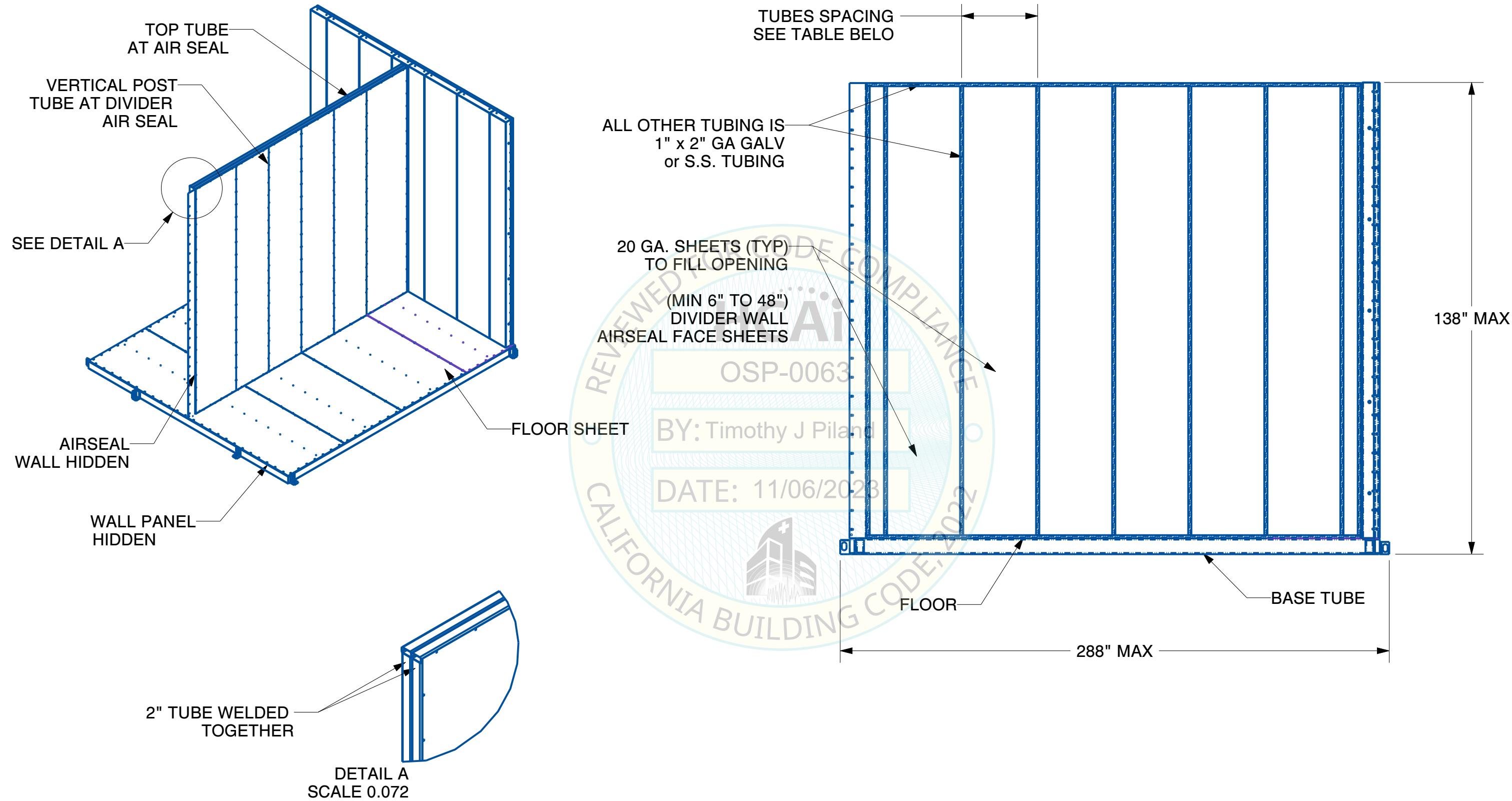


SCALE 0.030

REV	DESCRIPTION	ECN #	BY	DATE	THIRD ANGLE PROJECTION	TOLERANCES	MANUFACTURING DRAWING	SEISMIC BRACING DETAILS		
D	DRAWING DETAILS	N/A	BSZ	04/07/2021		UNLESS OTHERWISE SPECIFIED .XXX ± .015 .XX ± .030 .X ± .060 ANG ± 1°	 P.O. BOX 1538, 1427 N.W. THIRD OKLAHOMA CITY, OK 73101-1538 PHONE (405) 415-9230 FAX (405) 415-9231	DRAWING #: SBD01		APPR: H.B.
E	DRAWING DETAILS, FIRST OSP REV	N/A	BSZ	1/13/2022				BY: AJH	DATE: 03/26/2012	SIZE: B
F	DRAWING DETAILS, SECOND OSP REV	N/A	BSZ	5/25/2022				UNITS IN INCHES UNLESS OTHERWISE SPECIFIED		SHEET:29 OF 57
G	OSHDPD-REV 2023	NA	LB	08/16/2023						

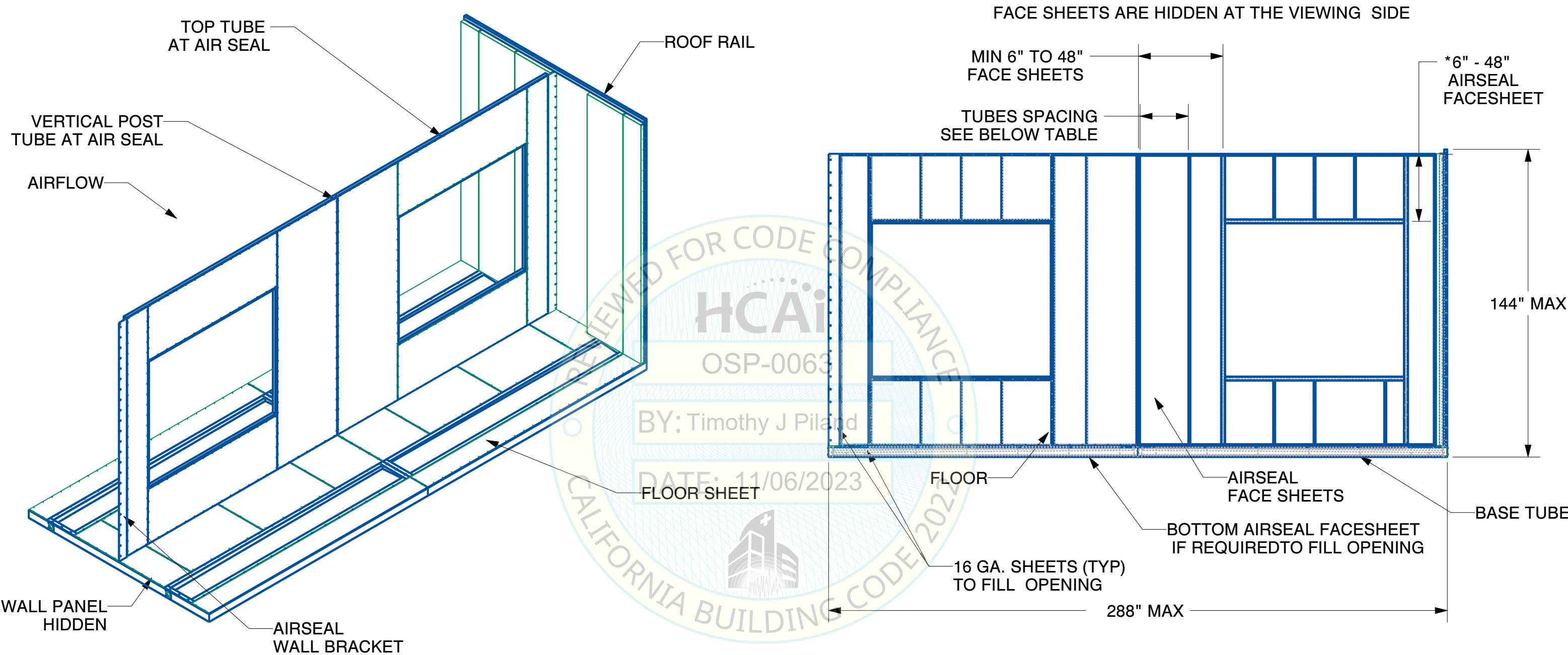
DIVIDER AIRSEAL ACTS AS LONGITUDINAL MEMBER

FACE SHEETS ARE HIDDEN AT THE VIEWING SIDE



REV	DESCRIPTION	BY	DATE	THIRD ANGLE PROJECTION	TOLERANCES	PRODUCTION DRAWING	4 INCH DIVIDER WALL AIRSEAL DETAILS		
A	INITIAL RELEASE	SZ-PC	08/22/2023		UNLESS OTHERWISE SPECIFIED .XXX ± .015 .XX ± .030 .X ± .060 ANG ± 1°	 P.O. BOX 1538, 1427 N.W. THIRD OKLAHOMA CITY, OK 73101-1538 PHONE (405) 415-9230 FAX (405) 415-9231	JOB NAME: N/A		FAB ID:
B	OSHPD REV-2023	LB	08/25/2023				SERIAL #:	TAG:	SECTION #:
							BY: SZ-PC	DATE: 08/22/2023	SIZE: B
	11/06/2023						UNITS IN INCHES UNLESS OTHERWISE SPECIFIED		

TYPICAL DESIGN FOR AIR BLENDERS , DAMPERS , SOUND ATTENUATORS , PLENUM FANS



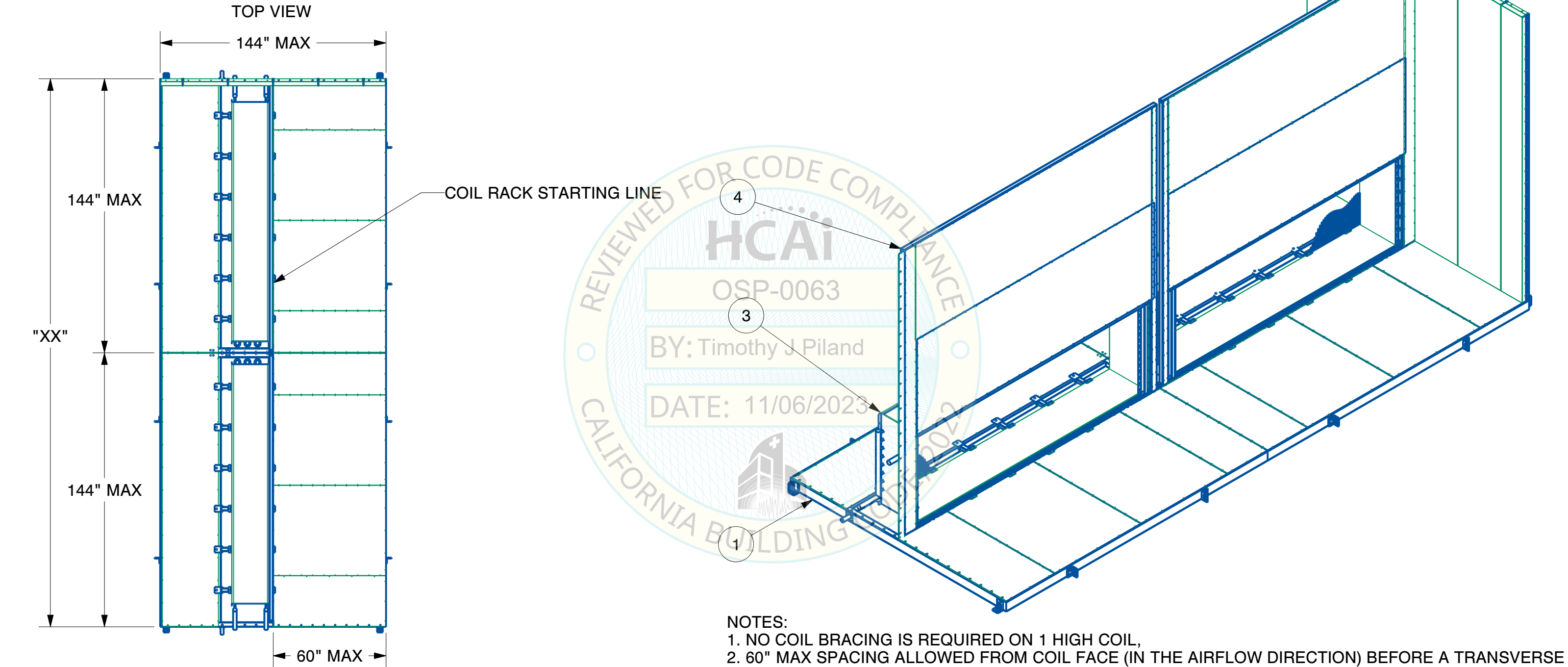
TUBE SPACING SCENARIOS	GENERAL TUBE CHOICE
AIRSEAL HEIGHT < 48", (LOW PRESSUREIN. W.C)	1x2 TUBE EVERY 24"
AIRSEAL HEIGHT < 48", (LOW PRESSUREIN. W.C OR BLOWER AIRSEAL)	2x2 TUBE EVERY 24"
AIRSEAL HEIGHT > 48", (LOW PRESSUREIN. W.C)	2x2 TUBE EVERY 24"
AIRSEAL HEIGHT > 48", (LOW PRESSUREIN. W.C OR BLOWER AIRSEAL)	2x2 TUBE EVERY 18"

- * MULTIPLE SHEETS ABOVE (BELOW) MAY BE USED, AIRSEAL FACESHEET MUST EXTEND OR ADDED WIDTH OF OPENING
- ** SPACE MAY BE EMPTY IF AIRSEAL IS ONLY REQUIRED FOR RIGIDITY
- *** MIN 6" AIRSEAL FACESHEET EACH SIDE AND TOP FOR WIDTH ≤144", FOR WIDTH > 144" AS PER AIRSEAL REQUIRED SIZES.

REV	DESCRIPTION	ECN #	BY	DATE	THIRD ANGLE PROJECTION	TOLERANCES	MANUFACTURING DRAWING	OSHDP AIRSEAL DETAILS		
A	INITIAL RELEASE	-	-	04/08/2021		UNLESS OTHERWISE SPECIFIED .XXX ± .015 .XX ± .030 .X ± .060 ANG ± 1°	 P.O. BOX 1538, 1427 N.W. THIRD OKLAHOMA CITY, OK 73101-1538 PHONE (405) 415-9230 FAX (405) 415-9231	DRAWING #: AIRSEAL		APPR: PSL / RMW
B	DRAWING UPDATE, OSP FIRST REV		BSZ	01/19/2022				BY: PSL	DATE: 04/08/2021	SIZE: B
C	OSHDP REV-2023		LB	08/24/2023				UNITS IN INCHES UNLESS OTHERWISE SPECIFIED		SHEET: 32 OF 57

ITEM NO	DESCRIPTION
1	BASEFRAME
2	WALL PANELS
3	WATER COIL
4	WATER COIL AIRSEAL

WATER COIL UNIT ASSEMBLY - 1 HIGH COIL, ("XX" > 144")



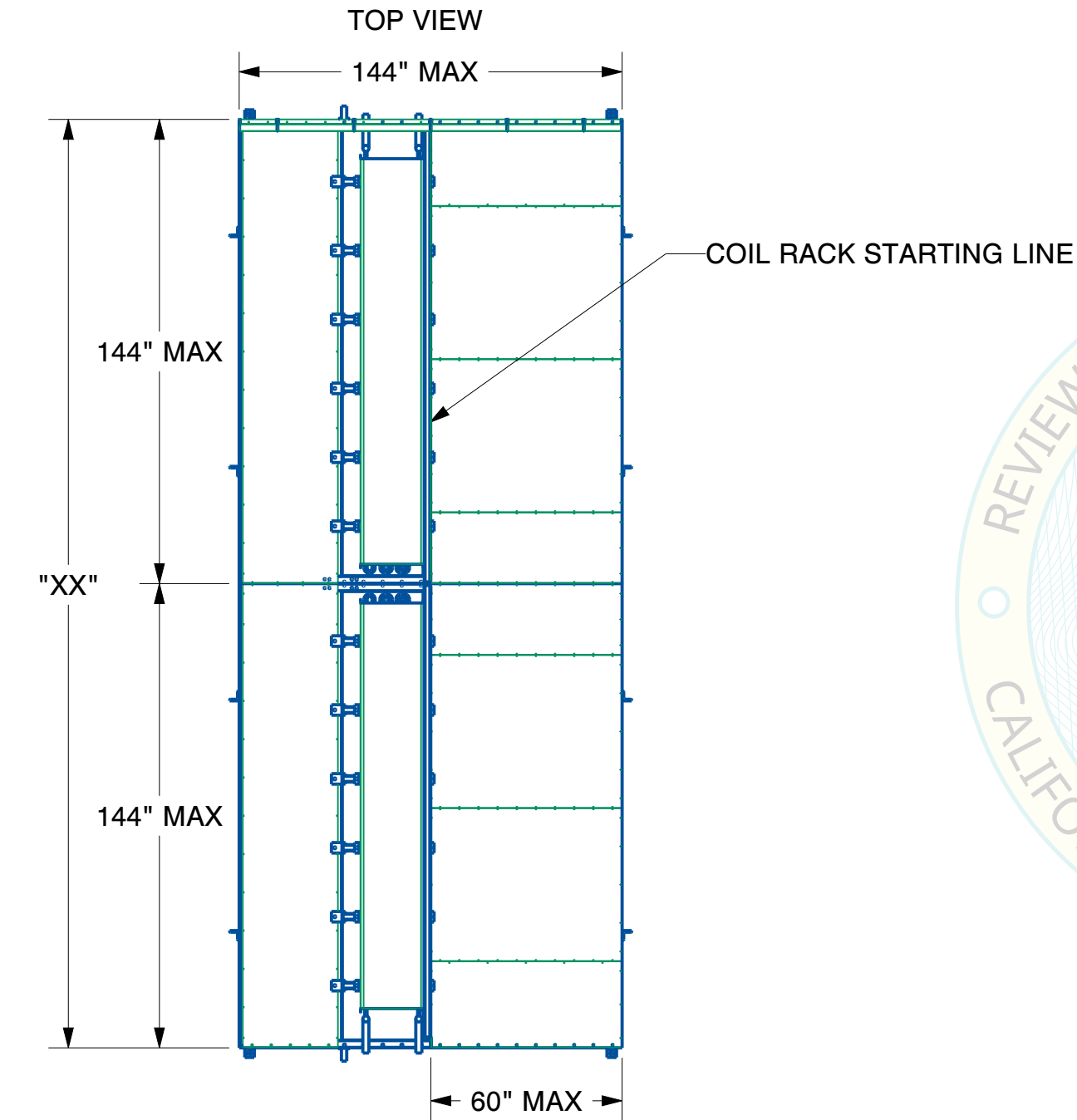
NOTES:

1. NO COIL BRACING IS REQUIRED ON 1 HIGH COIL,
2. 60" MAX SPACING ALLOWED FROM COIL FACE (IN THE AIRFLOW DIRECTION) BEFORE A TRANSVERSE BRACING ELEMENT IS REQUIRED.
3. TRANSVERSE SUPPORT ELEMENTS ARE CONSIDERED AS ANY X-BRACE, FAN WALL, SOUND ATTENUATOR WALL, COIL, BLENDER WALL, DAMPER WALL, FILTER WALL OR UNIT END WALL.

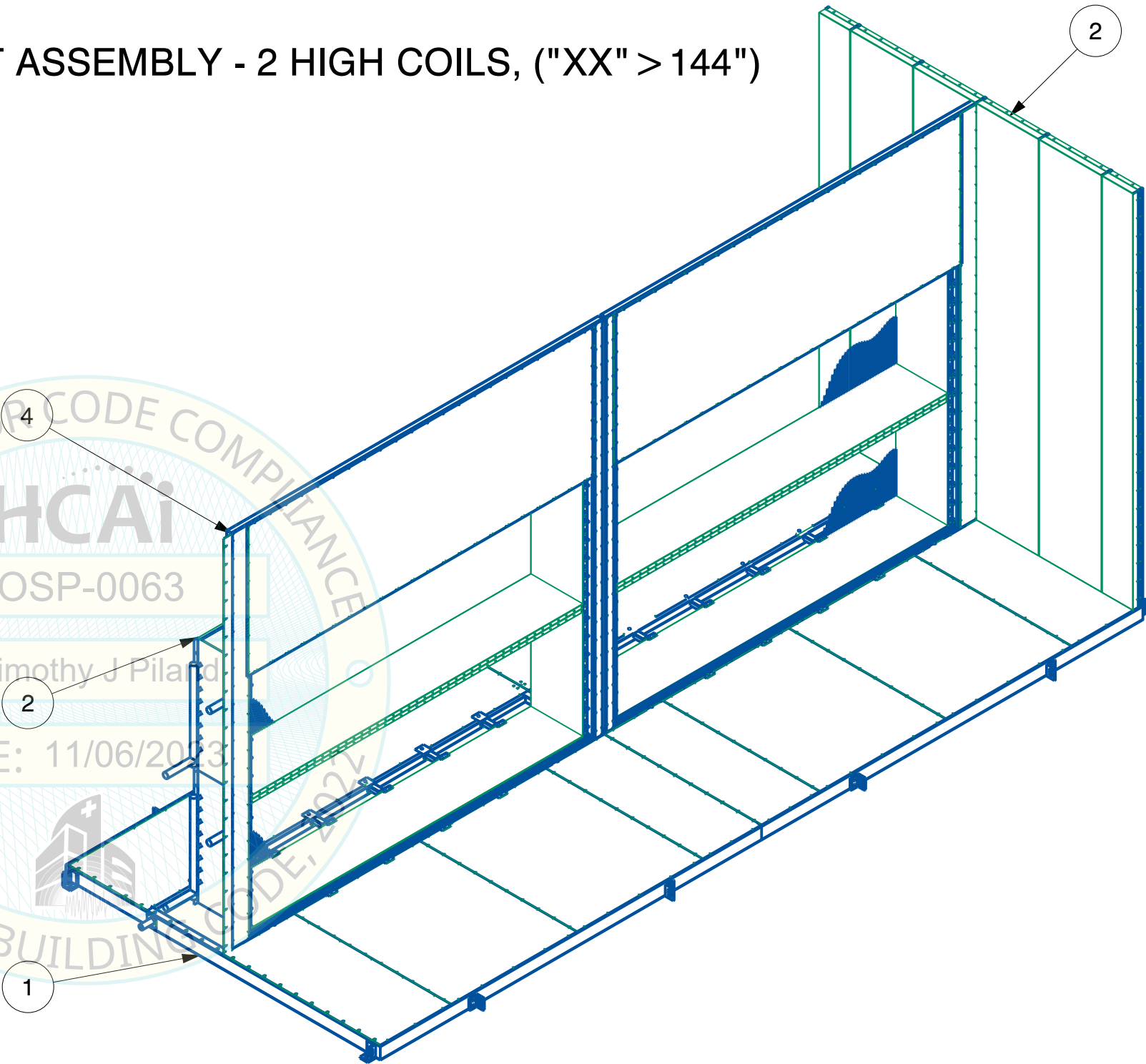
REV	DESCRIPTION	ECN #	BY	DATE	THIRD ANGLE PROJECTION	TOLERANCES	MANUFACTURING DRAWING	COILS BRACING REQUIREMENTS				
A	INITIAL RELEASE	NA	SZ-VKR	04/21/2021		UNLESS OTHERWISE SPECIFIED .XXX ± .015 .XX ± .030 .X ± .060 ANG ± 1°	 P.O. BOX 1538, 1427 N.W. THIRD OKLAHOMA CITY, OK 73101-1538 PHONE (405) 415-9230 FAX (405) 415-9231	DRAWING #: OSHPD TESTING UNIT (UUTS)		APPR: PSL / BSZ		
B	OSHPD-2023		LB	08/17/2023				BY: SZ-VKR		DATE: 04/21/2021	SIZE: B	
								UNITS IN INCHES UNLESS OTHERWISE SPECIFIED		SHEET: 33 OF 57		

ITEM NO	DESCRIPTION
1	BASEFRAME
2	WALL PANELS
3	WATER COIL
4	WATER COIL AIRSEAL

WATER COIL UNIT ASSEMBLY - 2 HIGH COILS, ("XX" > 144")



MAX 60" BEFORE TRANSVERSE ELEMENT IS REQUIRED

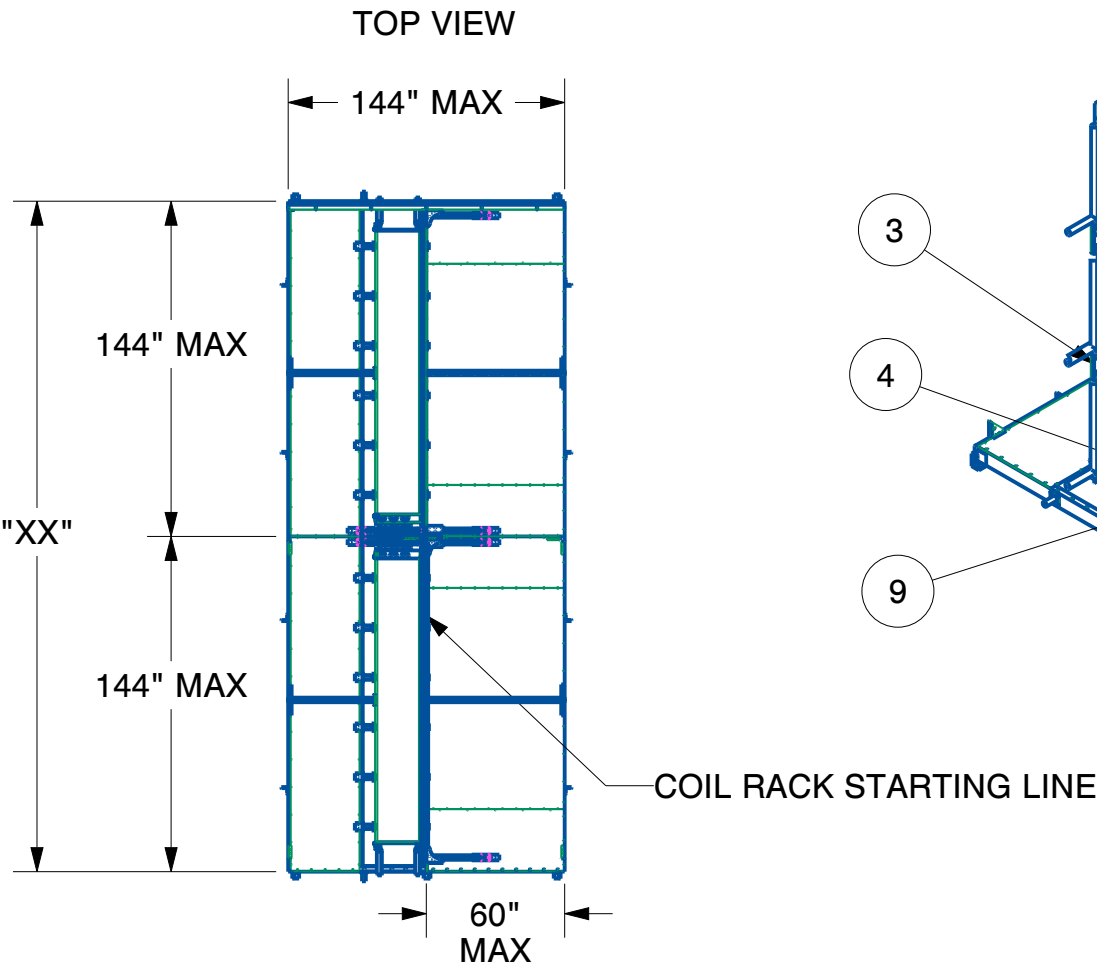


- NOTES:
1. NO COIL BRACING IS REQUIRED ON 1 HIGH COIL,
 2. 60" MAX SPACING ALLOWED FROM COIL FACE (IN THE AIRFLOW DIRECTION) BEFORE A TRANSVERSE BRACING ELEMENT IS REQUIRED.
 3. TRANSVERSE SUPPORT ELEMENTS ARE CONSIDERED AS ANY X-BRACE, FAN WALL, SOUND ATTENUATOR WALL, COIL, BLENDER WALL, DAMPER WALL, FILTER WALL OR UNIT END WALL.

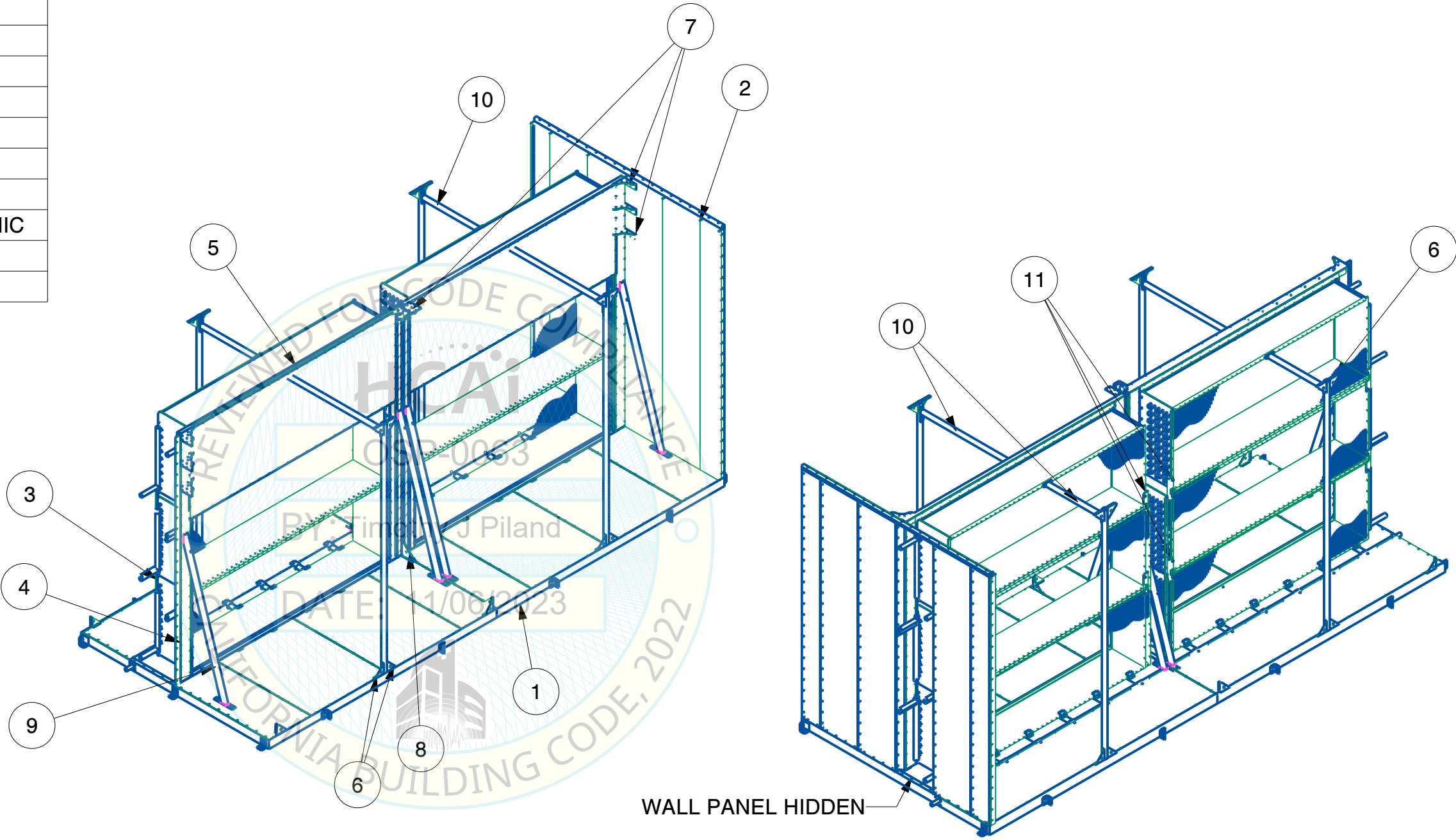
REV	DESCRIPTION	ECN #	BY	DATE	THIRD ANGLE PROJECTION	TOLERANCES	MANUFACTURING DRAWING	COILS BRACING REQUIREMENTS	
A	INITIAL RELEASE	NA	SZ-VKR	04/21/2021		UNLESS OTHERWISE SPECIFIED .XXX ± .015 .XX ± .030 .X ± .060 ANG ± 1°	 P.O. BOX 1538, 1427 N.W. THIRD OKLAHOMA CITY, OK 73101-1538 PHONE (405) 415-9230 FAX (405) 415-9231	DRAWING #: OSHPD TESTING UNIT (UUTS)	APPR: PSL / BSZ
B	OSHPD-2023		LB	08/17/2023				BY: SZ-VKR	DATE: 04/21/2021
								UNITS IN INCHES UNLESS OTHERWISE SPECIFIED	SHEET: 34 OF 57

ITEM NO	DESCRIPTION
1	BASEFRAME
2	WALL PANELS
3	WATER COIL
4	WATER COIL AIRSEAL
5	ROOF SEISMIC COIL BRACE
6	CORNER BRACE
7	COIL GUSSET
8	COIL CORNER GUSSET
9	A-BRACE SIDE ASSY WELDMENT SEISMIC
10	LATERAL BRACING
11	SEISMIC COIL BRACKET

WATER COIL UNIT ASSEMBLY - 3 HIGH COILS, ("XX" > 144")



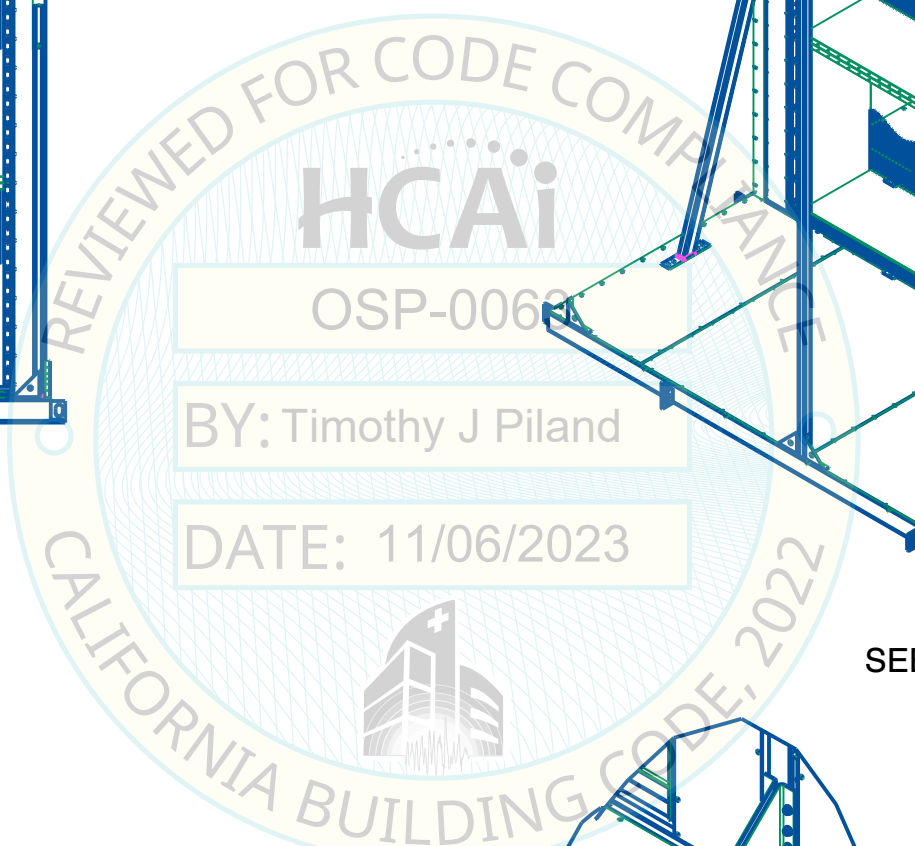
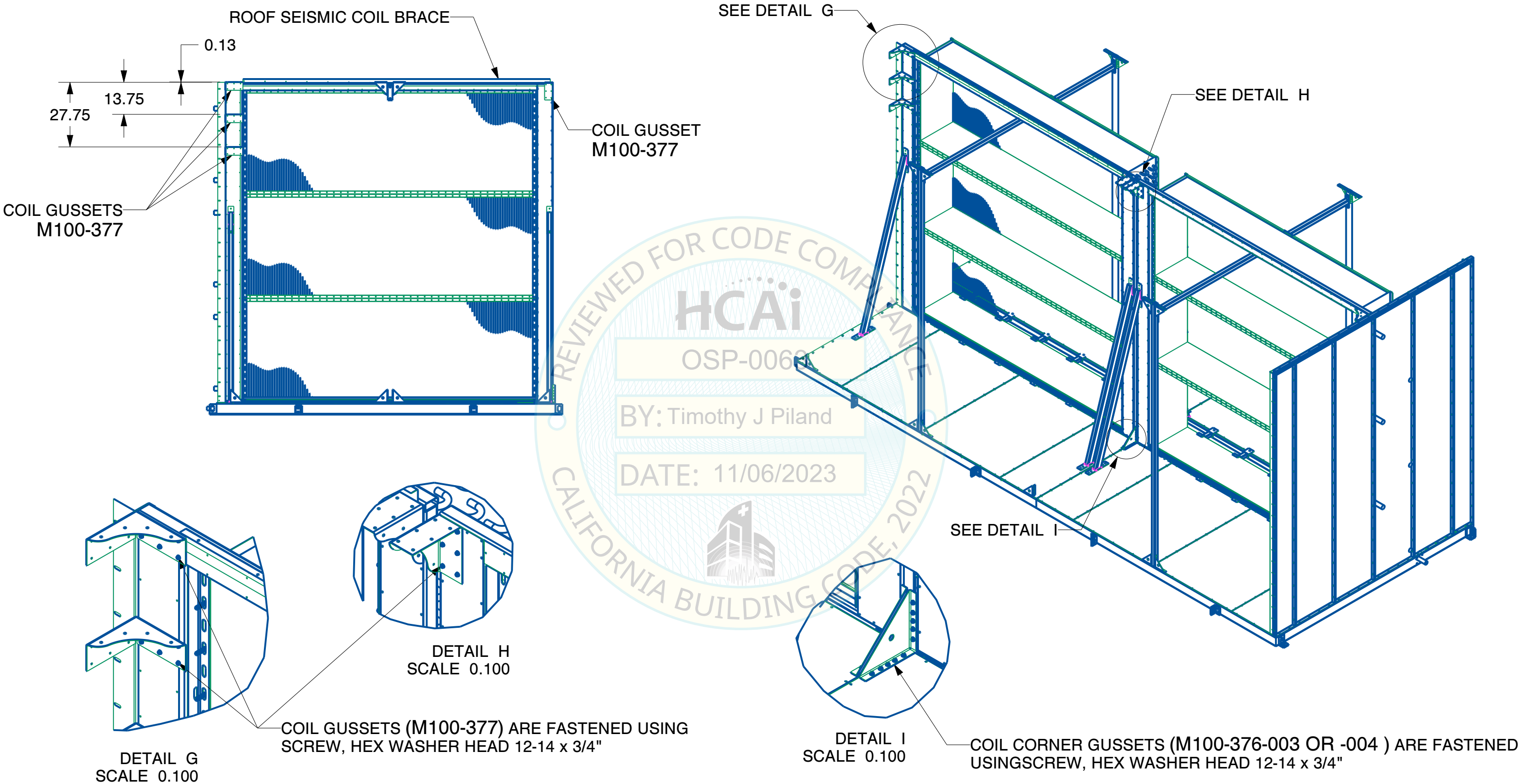
MAX 60" BEFORE TRANSVERSE ELEMENT IS REQUIRED



- NOTE:
1. 60" MAX SPACING ALLOWED FROM COIL FACE (IN THE AIRFLOW DIRECTION) BEFORE A TRANSVERSE BRACING ELEMENT IS REQUIRED.
 2. TRANSVERSE SUPPORT ELEMENTS ARE CONSIDERED AS ANY X-BRACE, FAN WALL, SOUND ATTENUATOR WALL, COIL, BLENDER WALL, DAMPER WALL, FILTER WALL OR UNIT END WALL.

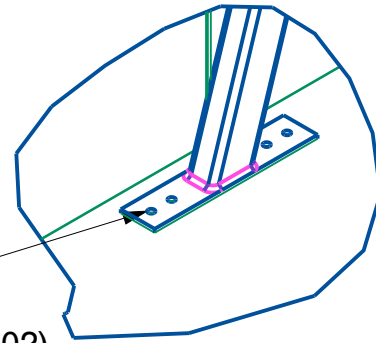
REV	DESCRIPTION	ECN #	BY	DATE	THIRD ANGLE PROJECTION	TOLERANCES	MANUFACTURING DRAWING	COILS BRACING REQUIREMENTS			
A	INITIAL RELEASE	NA	SZ-VKR	04/21/2021		UNLESS OTHERWISE SPECIFIED .XXX ± .015 .XX ± .030 .X ± .060 ANG ± 1°	 P.O. BOX 1538, 1427 N.W. THIRD OKLAHOMA CITY, OK 73101-1538 PHONE (405) 415-9230 FAX (405) 415-9231	DRAWING #: OSHPD TESTING UNIT (UUTS)		APPR: PSL / BSZ	
B	OSHPD-2023		LB	08/17/2023				BY: SZ-VKR	DATE: 04/21/2021	SIZE: B	
								UNITS IN INCHES UNLESS OTHERWISE SPECIFIED		SHEET: 35 OF 57	

COIL GUSSETS AND COIL CORNER GUSSETS DETAILS (3 HIGH COILS)



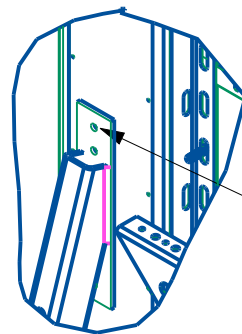
REV	DESCRIPTION	ECN #	BY	DATE	THIRD ANGLE PROJECTION	TOLERANCES	MANUFACTURING DRAWING	COILS BRACING REQUIREMENTS			
A	INITIAL RELEASE	NA	SZ-VKR	04/21/2021		UNLESS OTHERWISE SPECIFIED .XXX ± .015 .XX ± .030 .X ± .060 ANG ± 1°	 P.O. BOX 1538, 1427 N.W. THIRD OKLAHOMA CITY, OK 73101-1538 PHONE (405) 415-9230 FAX (405) 415-9231	DRAWING #: OSHPD TESTING UNIT (UUTS)		APPR: PSL / BSZ	
B	OSHPD-2023		LB	08/17/2023				BY: SZ-VKR		DATE: 04/21/2021	SIZE: B
								UNITS IN INCHES UNLESS OTHERWISE SPECIFIED		SHEET: 37 OF 57	

A-BRACE SIDE ASSY, LATERAL BRACING MOUNTING DETAILS (3 HIGH COILS), ("XX" > 144")



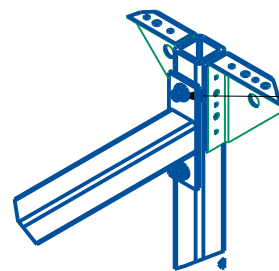
BOTTOMS OF A - BRACES ARE FASTENED USING
 HEX, 3/8"-16 THREAD, 1-1/4" LONG , SS, BOLT (P/N: PFAS-034-002)
 FLAT WASHER (P/N: PFAS-014-006)
 TAP 3/8"-16 THREAD ON BASEFRAME FOR BOLT FASTENING

DETAIL A
SCALE 0.100



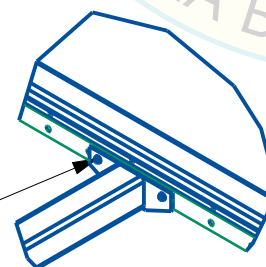
DETAIL B
SCALE 0.100

—TOPS OF A - BRACES ARE FASTENED USING HEX, 3/8" THREAD, 3-1/2" LONG, SS BOLT, WASHER (P/N: PFAS-014-006) ON EACH SIDE AND HEX NUT, 3/8"-16 (P/N: PFAS-017-003)

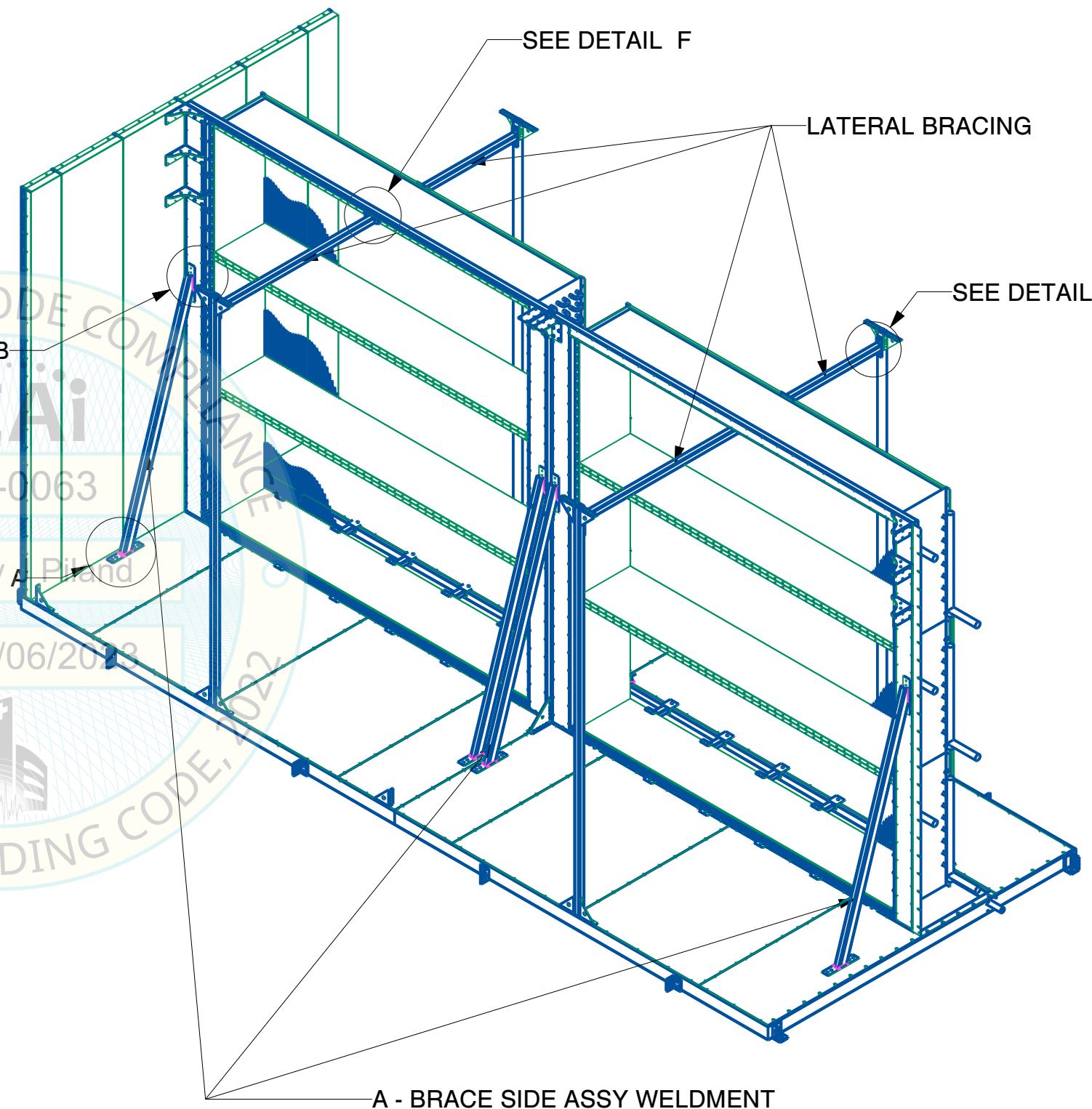


DETAIL C
SCALE 0.100

—SUPPORT SIDE LATERAL BRACINGS ARE FASTENED USING HEX BOLT, 5/16"-18 x 2 - 3/4", LOCK WASHER 5/16" AND HEX NUT, 5/16"-18 ON SUPPORT TUBE.

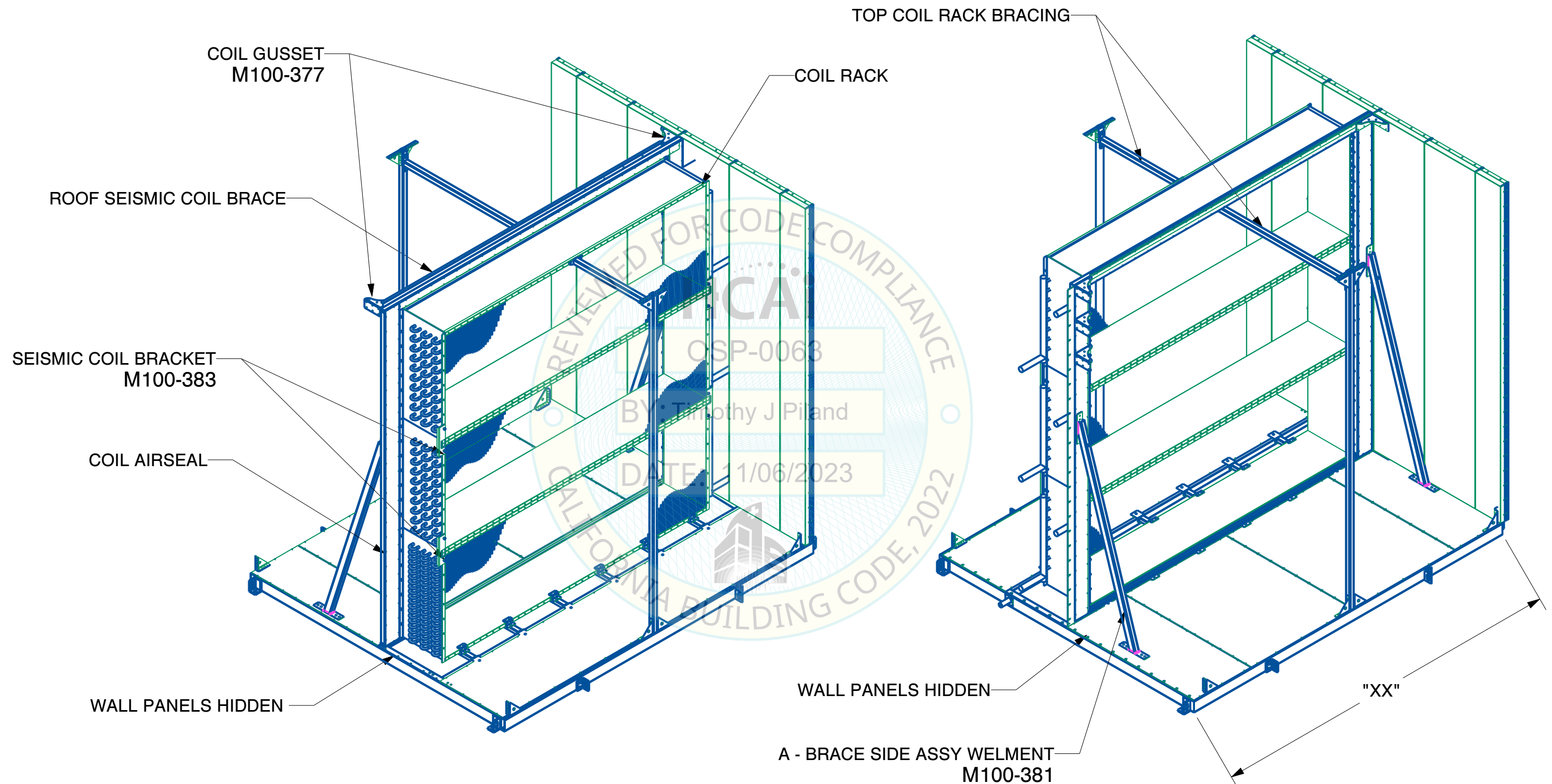


DETAIL F
SCALE 0.100



REV	DESCRIPTION	ECN #	BY	DATE	THIRD ANGLE PROJECTION	TOLERANCES	MANUFACTURING DRAWING	COILS BRACING REQUIREMENTS		
A	INITIAL RELEASE	NA	SZ-VKR	04/21/2021		UNLESS OTHERWISE SPECIFIED .XXX ± .015 .XX ± .030 .X ± .060 ANG ± 1°	 P.O. BOX 1538, 1427 N.W. THIRD OKLAHOMA CITY, OK 73101-1538 PHONE (405) 415-9230 FAX (405) 415-9231	DRAWING #: OSHPD TESTING UNIT (UUTS) APPR: PSL / BSZ		
B	OSHPD-2023		LB	08/17/2023				BY: SZ-VKR DATE: 04/21/2021 SIZE: B		
								UNITS IN INCHES UNLESS OTHERWISE SPECIFIED SHEET: 38 OF 57		
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WATER COIL UNIT ASSEMBLY - SINGLE TUNNEL UNIT, (3 HIGH COILS), ("XX" > 144")



REV	DESCRIPTION	ECN #	BY	DATE	THIRD ANGLE PROJECTION	TOLERANCES	MANUFACTURING DRAWING	COILS BRACING REQUIREMENTS		
A	INITIAL RELEASE	NA	SZ-VKR	04/21/2021		UNLESS OTHERWISE SPECIFIED .XXX ± .015 .XX ± .030 .X ± .060 ANG ± 1°	 P.O. BOX 1538, 1427 N.W. THIRD OKLAHOMA CITY, OK 73101-1538 PHONE (405) 415-9230 FAX (405) 415-9231	DRAWING #: OSHPD TESTING UNIT (UUTS) APPR: PSL / BSZ		
B	OSHPD-2023		LB	08/17/2023				BY: SZ-VKR DATE: 04/21/2021 SIZE: B		
								UNITS IN INCHES UNLESS OTHERWISE SPECIFIED SHEET: 39 OF 57		
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