APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY	
APPLICATION #:	OSP – 0248 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☒ New ☐ Renewal

Manufacturer Information

Manufacturer: Scott Springfield Mfg. Inc.

Manufacturer's Technical Representative: Jerry Olchoway

Mailing Address: 2234 Portland Street S.E., Calgary, Alberta CA T2G 4M6

Telephone: 403.236.1212 Email: jolchoway@scottspringfield.com

Product Information

Product Name: Custom Air Handling Units

Product Type: Air Handling Unit

Product Model Number: Various (see Attachment)
(List all unique product identification numbers and/or part numbers)

General Description: Air handling unit cabinets with internal and external components as outlined in Attachment A. Seismic enhancements made to test units before/during test and modifications made to address anomalies observed during test shall be incorporated into the production units.

Mounting Description: Rigid floor mounted.

Applicant Information

Applicant Company Name: Tobolski Watkins Engineering, Inc.

Contact Person: Matthew Tobolski, PhD, SE

Mailing Address: 9246 Lightwave Ave, Suite 140, San Diego, CA 92123

Telephone: 858.381.5843 Email: mtobolski@tobolskiwatkins.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2013.

Signature of Applicant: Date: 08/13/2014

Title: President & CEO Company Name: Tobolski Watkins Engineering, Inc.

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

Company Name: Tobolski Watkins Engineering, Inc.

Name: Matthew Tobolski, PhD, SE California License Number: S 5648

Mailing Address: 9246 Lightwave Ave, Suite 140, San Diego, CA 92123

Telephone: 858.381.5843 Email: mtobolski@tobolskiwatkins.com

Supports and Attachments Preapproval

☐ Supports and attachments are preapproved under OPM- _____
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)

☒ Supports and attachments are not preapproved

Certification Method

☒ Testing in accordance with: ☒ ICC-ES AC156

☐ Other (Please Specify): _____

Testing Laboratory

Company Name: QualTech Lab

Contact Name: Marie Nemier

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

Telephone: 513.528.7900 Email: mnemier@curtisswright.com

Testing Laboratory

Company Name: PEER, UC Berkeley

Contact Name: Wesley Neighbour

Mailing Address: 1302 South 46th St., Bldg 420, Richmond, CA 94804

Telephone: 510.665.3409 Email: wdn@berkeley.edu

Testing Laboratory

Company Name: Environmental Testing Laboratory

Contact Name: Paul Little

Mailing Address: 11034 Indian Trail, Dallas, TX 75229

Telephone: 972.247.9657 Email: paul@etldallas.com

Seismic Parameters

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

Design Basis of Equipment or Components (F_p/W_p) = 1.44

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

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

R_p (Equipment or component response modification factor) = 6.0

Ω_0 (System overstrength factor) = 2.5

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component Natural Frequencies (Hz) = See Attachment

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

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

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

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

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

R (Response modification coefficient) = _____

Ω_0 (System overstrength factor) = _____

C_d (Deflection amplification factor) = _____

I_p (Importance factor) = 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, 2010: ☐ Yes ☒ No

List of Attachments Supporting Special Seismic Certification

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

☒ Other(s) (Please Specify): Attachment A

OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2019

Signature: _____ Date: November 17, 2014

Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to : S_{DS} (g) = 1.93 z/h = 1

Condition of Approval (if applicable): _____

Table 1

Special Seismic Certification Certified Product Matrix

TWEI Project No.: 2013-0744-CO-001

Manufacturer: Scott Springfield Mfg. Inc.

Model Line: Custom Air Handling Unit

Certified Product Construction Summary:
Unit shall be constructed in accordance with Scott Springfield Mfg. typical seismic details. **Panel:** 2”-4” cabinet thickness with 16ga-galvanized carbon steel walls and 20ga galvanized carbon steel liners. **Base floor:** 6”-8” perimeter channel.

Certified Options Summary:
Indoor or outdoor.
Units within dimensions listed below certified for configurations shown in attached drawings.

Certified Mounting Summary:
Rigid base mounted.

Building Code: CBC 2013 | ***Seismic Certification Limits:*** S_{DS} = 1.93g | ***z/h*** = 1.0 | I_p = 1.5

Model Line	Model	Dimension (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Custom Air Handling Units	Enclosures	42.0	36.0	30.0	119 psf Max. Loading	*With or without splits. With or without corridor/vestibule.* *See representative unit drawings for more information on dimensional restrictions.*	
		…					
		98.0	98.0	98.0			1
		…					
		96.0	144.0	144.0			2
		…					
		144.0	144.0	144.0			3
		…					
		900.0	144.0	144.0			

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Table 2

Special Seismic Certification Certified Subcomponent Matrix

TWEI Project No.: 2013-0744-CO-001

Manufacturer: Scott Springfield Mfg. Inc.

Model Line: Custom Air Handling Unit | **FANS**

Certified Product Construction Summary:
Wheel material specific to Model Line (see below). Carbon steel housing. Carbon steel fan array structure.

Certified Options Summary:

Certified Mounting Summary:
Fans are mounted on vibration isolators.

Building Code: CBC 2013 | ***Seismic Certification Limits:*** S_{DS} = 1.93g | ***z/h*** = 1.0 | I_p = 1.5

Model Line	Model	Dimension (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Twin City DWDI-AF Arr.3Hor. Shaft (Belt Drive, Steel Wheel)	122	19.8	28.6	23.2	227	*UUT1:3HP(230/460V) motor*	1
	135	21.9	30.6	25.5	253		
	150	24.3	33.1	28.1	299		
	165	26.8	35.6	3.9	339		
	182	29.7	38.5	34.1	395		
	200	32.6	42.1	37.4	451		
	222	32.3	46.9	41.5	581		
	245	40.0	50.8	45.9	646		
	270	44.1	54.8	50.6	1035		
	300	49.1	59.1	57.8	1434		
	330	54.1	63.1	63.6	1640		
	365	60.0	68.9	69.6	2079		
	402	66.2	74.8	77.1	2548		
	445	73.1	80.4	84.1	3203		
	490	80.7	90.6	92.9	3506		
	542	89.3	95.7	103.3	4590	*UUT5:20HP(230/460V) motor, UUT6:125HP(230/460V) motor*	5,6
Twin City Arr. 4 Vertical Shaft (Direct Drive, Aluminum Wheel)	182	26.0	26.0	36.5	239	*UUT1:5HP(230/460V) motor*	1
	200	29.0	29.0	38.4	268		
	222	32.0	32.0	45.5	318		
	245	34.0	34.0	47.4	370		
	270	38.0	38.0	51.6	592		
	300	42.0	42.0	54.3	781		
	330	46.0	46.0	60.0	952		

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Table 2

Special Seismic Certification Certified Subcomponent Matrix

TWEI Project No.: 2013-0744-CO-001

Manufacturer: Scott Springfield Mfg. Inc.

Model Line: Custom Air Handling Unit | **FANS**

Certified Product Construction Summary:
Wheel material specific to Model Line (see below). Carbon steel housing. Carbon steel fan array structure.

Certified Options Summary:

Certified Mounting Summary:
Fans are mounted on vibration isolators.

Building Code: CBC 2013 | ***Seismic Certification Limits:*** S_{DS} = 1.93g | ***z/h*** = 1.0 | I_p = 1.5

Model Line	Model	Dimension (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Twin City Arr. 4 Vertical Shaft (Direct Drive, Aluminum Wheel)	365	51.0	51.0	70.6	1110		
	402	56.0	56.0	73.4	1260		
	445	62.0	62.0	77.7	1884		
	490	68.0	68.0	81.1	2125	*UUT3:25HP(230/460V) motor, UUT7:100HP(230/460V) motor*	3,7
Twin City Arr. 4 Hor. Shaft (Direct Drive, Aluminum Wheel)	122	25.9	20.0	20.0	151	*UUT1:3HP(230/460V) motor*	1
	150	27.9	22.0	22.0	180		
	165	29.2	24.0	24.0	201		
	182	34.8	26.0	26.0	239		
	200	36.6	29.0	29.0	268		
	222	43.8	32.0	32.0	318		
	245	45.6	34.0	34.0	370		
	270	49.9	38.0	38.0	592		
	300	52.6	42.0	42.0	781		
	330	57.8	46.0	46.0	952		
	365	67.4	51.0	51.0	1110		
	402	70.3	56.0	56.0	1260		
	445	73.9	62.0	62.0	1884		
	490	77.4	68.0	68.0	2125		
	542	87.9	76.0	76.0	3037	*UUT4:20HP(230/460V) motor, UUT7:125HP(230/460V) motor*	4,7

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Table 2

Special Seismic Certification Certified Subcomponent Matrix

TWEI Project No.: 2013-0744-CO-001

Manufacturer: Scott Springfield Mfg. Inc.

Model Line: Custom Air Handling Unit | **FANS**

Certified Product Construction Summary:
Wheel material specific to Model Line (see below). Carbon steel housing. Carbon steel fan array structure.

Certified Options Summary:

Certified Mounting Summary:
Fans are mounted on vibration isolators.

Building Code: CBC 2013 | ***Seismic Certification Limits:*** S_{DS} = 1.93g | z/h = 1.0 | I_p = 1.5

Model Line	Model	Dimension (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Ziehl-Abegg Arr.4H Fan Bundle (1Wx1H) (Direct Drive, Steel Wheel)	22	17.0	19.5	20.0	150		1
	31	20.5	26.0	25.0	213		
	35	20.5	29.0	30.0	253		
	40	20.5	32.5	31.0	266		
	45	25.0	36.0	37.0	352		
	50	32.8	39.5	37.0	478		
	56	32.5	43.5	45.0	531		
Ziehl-Abegg Arr.4H Fan Bundle (1Wx2H) (Direct Drive, Steel Wheel)	22	17.0	22.0	41.5	235		
	31	20.6	28.7	55.0	346		
	35	20.6	31.5	60.5	411		
	40	20.6	34..8	67.2	436		
	45	26.5	38.5	74.5	602		
	50	32.8	43.0	83.5	870		
	56	32.8	46.5	90.5	956		
Ziehl-Abegg Arr.4H Fan Bundle (2Wx2H) (Direct Drive, Steel Wheel)	22	17.0	44.0	41.5	468		
	31	20.6	57.5	55.0	668		
	35	20.6	63.0	60.5	795		
	40	20.6	69.7	67.2	842		
	45	26.5	77.0	74.5	1039		
	50	32.8	86.0	83.5	1504		
	56	32.8	93.0	90.5	1656		

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Table 2

Special Seismic Certification Certified Subcomponent Matrix

TWEI Project No.: 2013-0744-CO-001

Manufacturer: Scott Springfield Mfg. Inc.

Model Line: Custom Air Handling Unit | **FANS**

Certified Product Construction Summary:
Wheel material specific to Model Line (see below). Carbon steel housing. Carbon steel fan array structure.

Certified Options Summary:

Certified Mounting Summary:
Fans are mounted on vibration isolators.

Building Code: CBC 2013 | ***Seismic Certification Limits:*** S_{DS} = 1.93g | z/h = 1.0 | I_p = 1.5

Model Line	Model	Dimension (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Ziehl-Abegg Arr.4H Fan Bundle (3Wx2H) (Direct Drive, Steel Wheel)	22	17.0	66.0	41.5	690		
	31	20.6	86.2	55.0	1021		
	35	20.6	94.5	60.5	1214		
	40	20.6	104.6	67.2	1287		
	45	26.5	115.5	74.5	1767		
	50	32.8	129.0	83.5	2546		2
	56	32.8	139.5	90.5	2798		

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Table 3

Special Seismic Certification
Certified Subcomponent Matrix

TWEI Project No.: 2013-0744-CO-001

Manufacturer: Scott Springfield Mfg. Inc.

Model Line: Custom Air Handling Unit | **FAN MOTORS**

Certified Product Construction Summary:
Component construction specific to model listed below.

Certified Options Summary:
208V-600V, 1 Phase or 3 Phase.

Certified Mounting Summary:
Motors are integrally mounted with the fan.

Building Code: CBC 2013 | ***Seismic Certification Limits:*** S_{DS} = 1.93g | z/h = 1.0 | I_p = 1.5

Model Line	Model	Dimension (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Baldor/Reliance (Horizontal Shaft)	1HP				33	*UUT1: 230/460V*	1
	…				…		
	3HP				66	*UUT1: 230/460V*	1
	…				…		
	15HP				270	*UUT2: 230/460V*	2 (Qt.6)
	…				…		
	20HP				258	*UUT4: 208/460V, UUT5: 230/460V*	4,5
	…				…		
	125HP				1513	*UUT6: 230/460V, UUT7: 230/460V*	6,7
Baldor/Reliance (Vertical Shaft)	1HP				33		
	…				…		
	5HP				77	*UUT1: 230/460V*	1
	…				…		
	25HP				383	*UUT3: 208/460V*	3
	…				…		
	100HP				1455	*UUT7: 230/460V*	7

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Table 4

Special Seismic Certification Certified Subcomponent Matrix

TWEI Project No.: 2013-0744-CO-001

Manufacturer: Scott Springfield Mfg. Inc.

Model Line: Custom Air Handling Unit | **COILS**

Certified Product Construction Summary:
Copper tube. Aluminum or Copper fins

Certified Options Summary:
6 to 12 fins per inch, 0.006" to 0.010" fin thickness, 0.625" tube diameter, 0.020" to 0.049" tube wall thickness.

Certified Mounting Summary:
Components are mounted within the AHU.

Building Code: CBC 2013 | ***Seismic Certification Limits:*** S_{DS} = 1.93g | z/h = 1.0 | I_p = 1.5

Model Line	Model	Rows	Dimension (in		Weight (lb)	Notes	UUT
			Width	Height			
Luvata HeatCraft CW/HW	Single Coil	1 to 8 rows	12	12			
			…	…			
			165	54			
		1	12	12		*UUT: 1 stack, CU 0.006" fin, 0.020" wall tube*	2
	Stacked Coil (2-4 Stack)	1 to 8 rows	12	24			
			…	…			
			165	108			
		8	48	108		*UUT: 4 stack, AL 0.0095" fin, 0.020" wall tube*	2
		8	124	108		*UUT: 2 stack, AL 0.0095" fin, 0.020" wall tube*	3

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Table 5

Special Seismic Certification Certified Subcomponent Matrix

TWEI Project No.: 2013-0744-CO-001

Manufacturer: Scott Springfield Mfg. Inc.

Model Line: Custom Air Handling Unit | **DAMPERS & LOUVERS**

Certified Product Construction Summary:
Dampers: aluminum damper frame and blades.
Louvers: aluminum frame and blades.

Certified Options Summary:
Dampers: Parallel and opposed blade configurations.
Louvers: Vertical and horizontal blade configurations.

Certified Mounting Summary:
Components are mounted within the AHU.

Building Code: CBC 2013 | ***Seismic Certification Limits:*** S_{DS} = 1.93g | ***z/h*** = 1.0 | I_p = 1.5

Model Line	Model	Dimension (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
TAMCO Dampers	Model 1000	4.0	6.0	6.0			
		…					
		4.0	24.0	24.0			2 (Qt.2)
		…					
		4.0	60.0	30.0			3
		4.0	60.0	36.0		*UUT: Parallel Blade Tested*	1
		…					
		4.0	144.0	60.0			
	Model 9000	4.0	6.0	6.0			
		…					
		4.0	60.0	30.0		*UUT: Opposed Blade tested*	1
		…					
		4.0	144.0	60.0			
Greenheck	Louvers	4.0	6.0	6.0			
		…					
		4.0	24.0	30.0		*UUT: V-Blade tested*	1
		4.0	24.0	36.0		*UUT:H-Blade tested*	1

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Table 6

Special Seismic Certification
Certified Subcomponent Matrix

TWEI Project No.: 2013-0744-CO-001

Manufacturer: Scott Springfield Mfg. Inc.

Model Line: Custom Air Handling Unit | **VFD**

Certified Product Construction Summary:
Component construction specific to model number listed below.

Certified Options Summary:
200-600V

Certified Mounting Summary:
Components are mounted within the AHU.

Building Code: CBC 2013 | ***Seismic Certification Limits:*** S_{DS} = 1.93g | ***z/h*** = 1.0 | I_p = 1.5

Model Line	Model	Dimension (in)			HP	Notes	UUT
		Depth	Width	Height			
Danfoss – VFD (VLT – HVAC Drive)	FC-102P1K1				1.5	*UUT: 200/240V*	1
	FC-102P1K5				2.0		
	FC-102P2K2				3.0		
	FC-1002P3K0				4.0		
	FC-1002P3K7				5.0		
	FC-1002P5K5				7.5		
	FC-1002P7K5				10.0		
	FC-1002P11				15.0		
	FC-1002P15				20.0		
	FC-1002P18				25.0		
	FC-1002P22				30.0		
	FC-1002P30				40.0		
	FC-1002P37				50.0		
	FC-1002P45				60.0		
	FC-102P55				75.0		
	FC-102P75				100.0		
	FC-102P90				125.0	*UUT: 525/600V*	3

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Table 6

Special Seismic Certification Certified Subcomponent Matrix

TWEI Project No.: 2013-0744-CO-001

Manufacturer: Scott Springfield Mfg. Inc.

Model Line: Custom Air Handling Unit | **VFD**

Certified Product Construction Summary:
Component construction specific to model number listed below.

Certified Options Summary:
200-600V

Certified Mounting Summary:
Components are mounted within the AHU.

Building Code: CBC 2013 | ***Seismic Certification Limits:*** S_{DS} = 1.93g | ***z/h*** = 1.0 | I_p = 1.5

Model Line	Model	Dimension (in)			HP	Notes	UUT
		Depth	Width	Height			
Danfoss – VFD (VLT – Micro Drive)	132F 0001				0.25		
	132F 0008				0.33		
	132F 0002				0.50		
	132F 0009				0.50		
	132F 0017				0.50		
	132F 0003				1.0	*UUT: 200/240V*	1
	132F 0010				1.0		
	132F 0018				1.0		
	132F 0005				2.0		
	132F 0012				2.0		
	132F 0020				2.0		
	132F 0007				3.0		
	132F 0014				3.0		
	132F 0022				3.0		
	132F 0024				4.0		
	132F 0016				5.0		
	132F 0026				5.5		
	132F 0028				7.5		
	132F 0030				10.0		
	132F 0058				15.0		
	132F 0059				20.0		
	132F 0060				25.0		
	132F 0061				30.0	*UUT: 380/480V*	1

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Table 7

Special Seismic Certification Certified Subcomponent Matrix

TWEI Project No.: 2013-0744-CO-001

Manufacturer: Scott Springfield Mfg. Inc.

Model Line: Custom Air Handling Unit | **CONTROL BOX**

Certified Product Construction Summary:
Carbon steel enclosure. NEMA 4.

Certified Options Summary:
208-600V

Certified Mounting Summary:
Components are mounted within the AHU.

Building Code: CBC 2013 | ***Seismic Certification Limits:*** S_{DS} = 1.93g | ***z/h*** = 1.0 | I_p = 1.5

Model Line	Model	Dimension (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Control Box (Hoffman)	CSD12126	6.0	12.0	12.0	15		
	CSD16126	6.0	12.0	16.0	...		
	CSD16166	6.0	16.0	16.0			
	CSD16206	6.0	20.0	16.0			
	CSD20166	6.0	16.0	20.0			
	CSD20206	6.0	20.0	20.0			
	CSD24166	6.0	16.0	24.0			
	CSD24206	6.0	20.0	24.0			
	CSD24246	6.0	24.0	24.0			
	CSD16128	8.0	12.0	16.0			
	CSD16168	8.0	16.0	16.0			
	CSD16208	8.0	20.0	16.0			
	CSD20168	8.0	16.0	20.0	30	*UUT: 230/460V input*	1
	CSD20208	8.0	20.0	20.0	...		
	CSD20248	8.0	24.0	20.0			
	CSD24168	8.0	16.0	24.0			
	CSD24208	8.0	20.0	24.0			
	CSD24248	8.0	24.0	24.0			
	CSD24308	8.0	30.0	24.0			
	CSD30208	8.0	20.0	30.0			
	CSD30248	8.0	24.0	30.0	130	*UUT: 230/460V input*	2

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Table 7

Special Seismic Certification Certified Subcomponent Matrix

TWEI Project No.: 2013-0744-CO-001

Manufacturer: Scott Springfield Mfg. Inc.

Model Line: Custom Air Handling Unit | **CONTROL BOX**

Certified Product Construction Summary:
Carbon steel enclosure. NEMA 4.

Certified Options Summary:
208-600V

Certified Mounting Summary:
Components are mounted within the AHU.

Building Code: CBC 2013 | ***Seismic Certification Limits:*** S_{DS} = 1.93g | ***z/h*** = 1.0 | I_p = 1.5

Model Line	Model	Dimension (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Control Box (Rittal)	AE 1032.500	4.7	7.9	11.8	10		
	AE 1035.500	6.1	7.9	11.8	…		
	AE 1030.500	6.1	15	11.8			
	AE 1033.500	8.3	11.8	11.8			
	AE 1031.500	8.3	15	11.8			
	AE 1034.500	8.3	11.8	15.7			
	AE 1380.500	8.3	15	15			
	AE 1045.500	8.3	15.7	19.7	30	*UUT: 230/460V input*	1
	AE 1039.500	8.3	23.6	15	…		
	AE 1038.500	8.3	15	23.6			
	AE 1050.500	8.3	19.7	19.7			
	AE 1350.500	11.8	19.7	19.7			
	AE 1060.500	8.3	23.6	23.6			
	AE 1339.500	13.8	23.6	15			
	AE 1338.500	13.8	15	23.6			
	AE 1057.500	9.8	19.7	27.6			
	AE 1076.500	8.3	23.6	29.9	130	*UUT: 230/460V input*	2
	AE 1058.500	9.8	23.6	31.5	…		
	AE 1077.500	8.3	29.9	29.9			
	AE 1360.500	13.8	23.6	23.6			
	AE 1090.500	9.8	23.6	39.4			
	AE 1376.500	13.8	23.6	29.9			
	AE 1073.500	11.8	29.9	29.9	150	*UUT: 230/460V input*	1

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Form: 2010-QAP-EF-005, revision 1

Table 8

Special Seismic Certification
Certified Subcomponent Matrix

TWEI Project No.: 2013-0744-CO-001

Manufacturer: Scott Springfield Mfg. Inc.

Model Line: Custom Air Handling Unit | **MISCELLANEOUS**

Certified Product Construction Summary:
Component construction specific to model listed below.

Certified Options Summary:
N/A

Certified Mounting Summary:
Components are mounted within the AHU.

Building Code: CBC 2013 | ***Seismic Certification Limits:*** S_{DS} = 1.93g | ***z/h*** = 1.0 | I_p = 1.5

Model Line	Model	Dimension (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Vibro-Acoustic (Sound Attenuator)	RD-ULV-F4	24.0	36.0	36.0		*Galv. carbon steel*	1
		…					
		24.0	72.0	72.0			1
FARR Filters	Hepa Filters	12.0	24.0	12.0		*Front loaded*	
		12.0	24.0	24.0			1
Nortec Humidifier Grid	SAM-e					*Stainless steel*	2
KEES Air Blender	Fixed Blade					*Aluminum*	1
UV Resources UV Lights	UV Lights					*18" max length*	2

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Form: 2010-QAP-EF-005, revision 1

Table 9

Special Seismic Certification Certified Subcomponent Matrix

TWEI Project No.: 2013-0744-CO-001

Manufacturer: Scott Springfield Mfg. Inc.

Model Line: Custom Air Handling Unit | **ELECTRICAL COMPONENTS**

Certified Product Construction Summary:
Component construction specific to model number listed below.

Certified Options Summary:
N/A

Certified Mounting Summary:
Components are mounted within the AHU.

Building Code: CBC 2013 | ***Seismic Certification Limits:*** S_{DS} = 1.93g | ***z/h*** = 1.0 | I_p = 1.5

Manufacturer	Model	Dimension (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Allen Bradley	194R-HM4					*Flange mounted disconnect handle*	1
	194E-G3675						1
Cutler-Hammer - Contact	C320KGS3					*Contact*	2,4
Allen Bradley	100-SA11					*Contact*	1
	1492-PD3263					*Terminal block*	1
Cutler-Hammer	16220-3					*Power block*	2,3,4
Transfab	EXA-100-36					*Transformers*	2
	EXA-350-36						2
	EXA-150-20						1
Hammond	BF2G						2
Allen Bradley	1497-E-BASX-3-N						1
	100-C09D10					*Contactor*	1
Cutler-Hammer	C25DND330A					*Contactor*	2
	C25DNF340-A						4
	C25FNF360-A						4
	C25FNE350T						4
Allen Bradley	193-EED8					*Overloads*	1
Cutler-Hammer	C306GN38					*Overloads*	4
	C306DN3B						2,4
Reliable	MPS-H					*Reliable control unit*	2
Carlo Gavazzi	ZPY08					*120/24 VAC Relay/Bases*	2
	RPYA00212L						2
Omron	LY2DC12					*120/24 VAC Relay/Bases*	2
	PYC-A1						2

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Form: 2010-QAP-EF-005, revision 1

Table 9

Special Seismic Certification Certified Subcomponent Matrix

TWEI Project No.: 2013-0744-CO-001

Manufacturer: Scott Springfield Mfg. Inc.

Model Line: Custom Air Handling Unit | **ELECTRICAL COMPONENTS**

Certified Product Construction Summary:
Component construction specific to model number listed below.

Certified Options Summary:
N/A

Certified Mounting Summary:
Components are mounted within the AHU.

Building Code: CBC 2013 | ***Seismic Certification Limits:*** S_{DS} = 1.93g | ***z/h*** = 1.0 | I_p = 1.5

Manufacturer	Model	Dimension (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Allen Bradley	700-HLT1U24					*120/24 VAC Relay/Bases*	1
Cutler-Hammer	E22H3					*Hand/Off/Auto Switches*	2
	E22D24						2
	E22B2						2
	E22NS51						2
	E22VBG1						2
Allen Bradley	800A-L2AR24					*Hand/Off/Auto Switches*	1
	800A-L2AG24						1
	800T-J2A						1
	800T-X511						1
	800H-CRA16A						1,4
ACI	A/ASCS					*Current sensor*	1
Allen Bradley	194R-NN030P3					*Disconnect*	1
ABB	OT125E3P					*Disconnect*	2
	OETL-NF200AP						2
	OT63E3P						4
	OXZA-25					*Connecting lugs*	2
Bussman	AGC-1					*Stranded copper wiring (THHN, THW, MTW) Digital scroll controller fuses*	4
Gould	ATQR2						4
	TRS110R						4
	TRS60R						4
Ferraz Shawmut	62003R						3
Bussman	AGC-3						2
	BM6032SQ						2,4

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Form: 2010-QAP-EF-005, revision 1

Table 9

Special Seismic Certification Certified Subcomponent Matrix

TWEI Project No.: 2013-0744-CO-001

Manufacturer: Scott Springfield Mfg. Inc.

Model Line: Custom Air Handling Unit | **ELECTRICAL COMPONENTS**

Certified Product Construction Summary:
Component construction specific to model number listed below.

Certified Options Summary:
N/A

Certified Mounting Summary:
Components are mounted within the AHU.

Building Code: CBC 2013 | ***Seismic Certification Limits:*** S_{DS} = 1.93g | ***z/h*** = 1.0 | I_p = 1.5

Manufacturer	Model	Dimension (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Brews Supply LTD	S-8301-1					*Stranded copper wiring (THHN, THW, MTW) Digital scroll controller fuses*	2,4
Ferraz Shawmut	ATQR 1-1/8						2
	A6K110R						3
	60608R						2,4
Gould	TRS45R						2
Bussman	KTS-R-3						1
	KTS-R-5						1
	KTS-R-10						1
	KTS-R-15						1
	H60030-3						1
	LPJ-15SP						1
	KTK-R-1-1/2						1
	KTK-R-2-1/2						1
Allen Bradley	1492-FB3J30						1
Cutler-Hammer	H2012B					*Heater*	2
	H2013B-3						4
	H2016B-3						4
Belimo	NFB24-S					*Damper actuator*	1 (Qt.2)

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Form: 2010-QAP-EF-005, revision 1

Special Seismic Certification
UUT Summary Sheet

TWEI Project No.: 2013-0744-CO-001

Manufacturer: Scott Springfield Mfg. Inc.

Model Line: Custom Air Handling Unit

UUT	Unit Description	Report Number	Location	S_{DS}	z/h	I_p
1	AHU Cabinet (0 walls removed)*	Q1117	CW	1.93	1.0	1.5
2	AHU Cabinet *Tested with 4 walls in place, 3 walls in place (outlet removed), 2 walls in place (side/outlet removed), 1 wall in place (inlet/outlet/side removed)**	PEER-STI/2011-06	UC Berkeley	1.93	1.0	1.5
3	AHU Cabinet *Tested with 4 walls in place, 2 walls in place (inlet/outlet removed), 1 wall in place (inlet/outlet/side removed)**	PEER-STI/2011-06	UC Berkeley	1.93	1.0	1.5
4	Twin City Arr.4 Plenum Horizontal Shaft 542	Q1117	CW	1.93	1.0	1.5
5	Twin City Arr.3 DWDI-AF 542 – 20HP	Q1117	CW	1.93	1.0	1.5
6	Twin City Arr.3 DWDI-542 - 125HP	13199	ETL	1.93	1.0	1.5
7	Fan Skid	13199	ETL	1.93	1.0	1.5

**Note: wall removal certifies units for use in configurations shown in the attached drawings. The wall removal is described on UUT summaries.*

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Form: 2010-QAP-EF-006, revision 0

UUT - 1

UNIT UNDER TEST (UUT)
Summary Sheet

TWEI Project No.: 2013-0744-CO-001

Manufacturer: Scott Springfield Mfg. Inc.

Model Line: Custom Air Handling Unit

Model Number: AHU Cabinet (0 walls removed)

Product Construction Summary:
Panel 2" thick made of 16ga Galv. carbon steel with 20ga Galv. carbon steel liners and 2" Rockwool insulation. 6" base floor.

Options/Subcomponent Summary:
Louver: Greenheck (1) Fixed H-Blade 4Dx24Wx36H, (1) Fixed V-Blade 4Dx24Wx30H. **Dampers:** Tamco (1) model 9000 OB 60Wx30H and (1) model 1000 PB 60Wx36H. **Silencer:** Vibro-Acoustic (4) 24Dx36Wx36H and (1) 24Dx72Wx72H. **Filters:** FARR Hepa Filter Bank (3) 24Wx24H and (1) 24Wx12H. **Air Blender:** (1) KEES 36Wx36H. **Fans:** (1) Ziehl-Abegg Arr. 4H Plenum fan 22 cm. with (1) Baldor 0.5HP(230/460V). (1) Twin City Arr. 4H Plenum fan 122cm. with (1) Baldor 3HP(230/460V). (1) Twin City Arr. 4V Plenum fan 188 cm. with (1) Baldor 5HP(230/460V). (1) Twin City DWDI-AF Arr. 3H 122 cm. with (1) Baldor 1HP(230/460V). **Starter Panel:** Scott Springfield 8Dx16Wx20H. **Control Box:** Hoffman CSD20168, Rittal AE 1045.500, Rittal AE 1073.500. **VFD:** Danfoss (1) VLT Micro Drive-Small 1HP(200/240V) - M1 frame, (1) VLT HVAC Drive-Small 1.5HP(200/240V) – A2 frame, and (1) VLT Micro Drive-Large 30HP(380/480V) – M5 frame. **Miscellaneous:** (1) Scott Springfield air diffuser.

UUT Properties

Weight		Dimensions (in)			Lowest Natural Frequency (Hz)		
(lb)	(psf)	Depth	Width	Height	Front-Back	Side-Side	Vertical
4,300	65	98.0	98.0	98.0	10.9	10.5	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 2013	ICC-ES AC 156	1.93g	1.0	1.5	3.09g	2.32g	1.29g	0.51g

Test Mounting Details:

Unit is mounted on the seismic table using twelve (12) 5/8" A325 bolts with standard anchor clips at each end and at 45" o.c. max.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

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Form: 2010-QAP-EF-004, revision 1

UUT - 2

UNIT UNDER TEST (UUT)
Summary Sheet

TWEI Project No.: 2013-0744-CO-001

Manufacturer:	Scott Springfield Mfg. Inc.
Model Line:	Custom Air Handling Unit
Model Number:	AHU Cabinet (0, 1, 2 and 3 walls removed)

Product Construction Summary:
Tested with 4 walls in place, 3 walls in place (outlet removed), 2 walls in place (side/outlet removed), 1 wall in place (inlet/outlet/side removed). *See drawings for typical braces added.* Panel 4" thick made of 16ga Galv. carbon steel with 20ga Galv. carbon steel liners and 4" Rockwool insulation. 6" base floor.

Options/Subcomponent Summary:
Damper: (2) TAMCO 1000 Wide Series 24Wx24H. **Cooling Coil:** HeatCraft (4) 8 row 48Wx54H, 12fpi, AL fins and (1) 1 row 12Dx12H, 8fpi, Cu fins. **Fans:** Ziehl-Abegg fan bundle 50 cm. stacked 2high-3wide with (6) Baldor 15HP(230/460V). **Control Box:** Hoffman CSD30248, Rittal AE 1076.500. **Miscellaneous:** UV Light, Nortec humidifier grid, Scott Springfield filter grid 48Wx60H. **Filters:** Scott Springfield Filter Grid 48Wx60H (Cells: 4-24Wx24H, 2-12Wx24H)

UUT Properties

Weight		Dimensions (in)			Lowest Natural Frequency (Hz)		
(lb)	(psf)	Depth	Width	Height	Front-Back	Side-Side	Vertical
11,400	119	96.0	144.0	144.0	4.3	6.3	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 2013	ICC-ES AC 156	1.93g	1.0	1.5	3.09g	2.32g	1.29g	0.51g

Test Mounting Details:

Four (4) walls in place

Two (2) walls in place

Unit is mounted to the seismic table using twelve (12) 5/8" A325 bolts with standard anchor clips at each end and at 45" o.c. max.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

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Form: 2010-QAP-EF-004, revision 1

UUT - 3

UNIT UNDER TEST (UUT)
Summary Sheet

TWEI Project No.: 2013-0744-CO-001

Manufacturer:	Scott Springfield Mfg. Inc.
Model Line:	Custom Air Handling Unit
Model Number:	AHU Cabinet (0, 2 and 3 walls removed)

Product Construction Summary:
Tested with 4 walls in place, 2 walls in place (inlet/outlet removed), 1 wall in place (inlet/outlet/side removed). Panel 4" thick made of 16ga Galv. carbon steel with 20ga Galv. carbon steel liners and 4" Rockwool insulation. 8" base floor.

Options/Subcomponent Summary:
Cooling Coil: (2) HeatCraft 8 row 124Wx54H, 12fpi, AL fins. **Fans:** (1) Twin City Arr.4V Plenum 490 with (1) Baldor 25HP(230/460V). **VFD:** Danfoss (1) VLT HVAC Drive-Large 125HP(525/600V) – C2 frame. **Damper:** (1) TAMCO 1000 Series 60Wx30H.

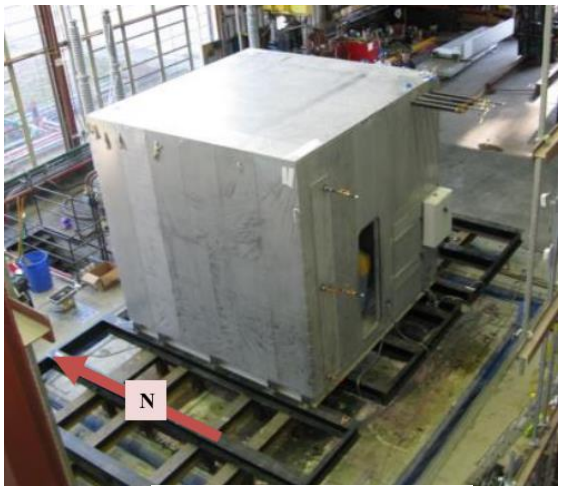
UUT Properties

Weight		Dimensions (in)			Lowest Natural Frequency (Hz)		
(lb)	(psf)	Depth	Width	Height	Front-Back	Side-Side	Vertical
12,480	87	144.0	144.0	144.0	5.3	5.7	8.1

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 2013	ICC-ES AC 156	1.93g	1.0	1.5	3.09g	2.32g	1.29g	0.51g

Test Mounting Details:



Four (4) walls in place

One (1) wall in place

Unit is mounted to the seismic table using twenty (20) 5/8" A325 bolts with standard anchor clips at each end and at 45" o.c. max.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.

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UUT - 4

UNIT UNDER TEST (UUT)
Summary Sheet

TWEI Project No.: 2013-0744-CO-001

Manufacturer: Scott Springfield Mfg. Inc.

Model Line: Custom Air Handling Unit

Model Number: Twin City Arr.4 Plenum Horizontal Shaft 542

Product Construction Summary:
(1) Twin City Arr.4 Plenum Horizontal Shaft 542 with (1) Baldor 20HP(230/460V).

Options/Subcomponent Summary:

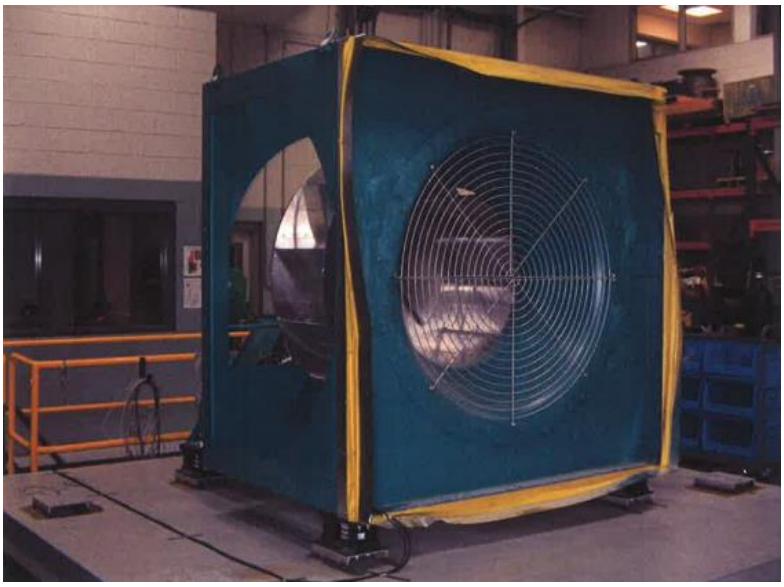
UUT Properties

Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
2,359	68.0	68.0	86.0	2.2	2.5	3.8

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 2013	ICC-ES AC 156	1.93g	1.0	1.5	3.09g	2.32g	1.29g	0.51g

Test Mounting Details:



Fan mounted on vibration isolators.
Unit maintained structural integrity and remained functional per manufacturer requirement.

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UUT - 5

UNIT UNDER TEST (UUT)
Summary Sheet

TWEI Project No.: 2013-0744-CO-001

Manufacturer: Scott Springfield Mfg. Inc.

Model Line: Custom Air Handling Unit

Model Number: Twin City Arr.3 DWDI-AF 542 – 20HP

Product Construction Summary:
(1) Twin City Arr.3 DWDI-AF 542 with (1) Baldor 20HP(230/460V).

Options/Subcomponent Summary:
N/A

UUT Properties

Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
5,796	120.0	68.0	122.0	1.6	3.9	6.2

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 2013	ICC-ES AC 156	1.93g	1.0	1.5	3.09g	2.32g	1.29g	0.51g

Test Mounting Details:

Fan mounted on vibration isolators.
Unit maintained structural integrity and remained functional per manufacturer requirement.

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UUT - 6

UNIT UNDER TEST (UUT)
Summary Sheet

TWEI Project No.: 2013-0744-CO-001

Manufacturer:	Scott Springfield Mfg. Inc.
Model Line:	Custom Air Handling Unit
Model Number:	Twin City Arr.3 DWDI-542 – 125HP

Product Construction Summary:
(1) Twin City Arr.3 DWDI-AF 542 with (1) Baldor 125HP(230/460V).

Options/Subcomponent Summary:
N/A

UUT Properties

Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
7,910	89.3	95.7	103.3	3.5	3.0	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 2013	ICC-ES AC 156	2.0g	1.0	1.5	3.20g	2.40g	1.33g	0.53g

Test Mounting Details:

Fan mounted on vibration isolators.
Unit maintained structural integrity and remained functional per manufacturer requirement.

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UUT – 7

UNIT UNDER TEST (UUT)
Summary Sheet

TWEI Project No.: 2013-0744-CO-001

Manufacturer:	Scott Springfield Mfg. Inc.
Model Line:	Custom Air Handling Unit
Model Number:	Fan Skid

Product Construction Summary:
(1) Twin City Arr.4 Vertical Shaft 490 with (1) Baldor 100HP(230/460V).
(1) Twin City Arr.4 Plenum Horizontal Shaft 542 with (1) Baldor 125HP(230/460V).

Options/Subcomponent Summary:
N/A

UUT Properties

Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
8,790	191.5	119.5	78.0	3.1	3.1	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 2013	ICC-ES AC 156	2.0g	1.0	1.5	3.20g	2.40g	1.33g	0.53g

Test Mounting Details:

Fans mounted on vibration isolators.
Unit maintained structural integrity and remained functional per manufacturer requirement.

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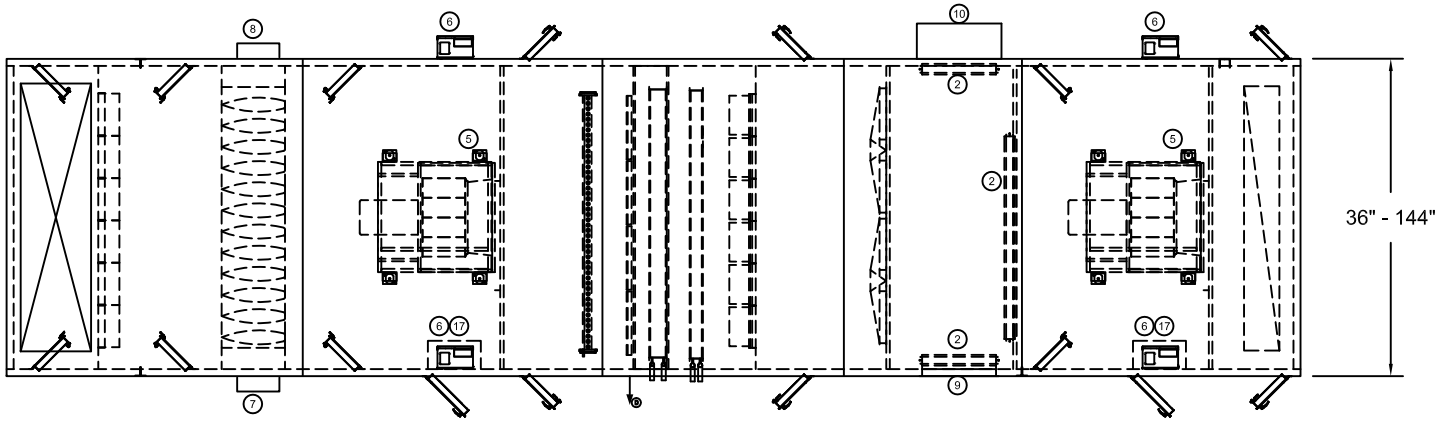
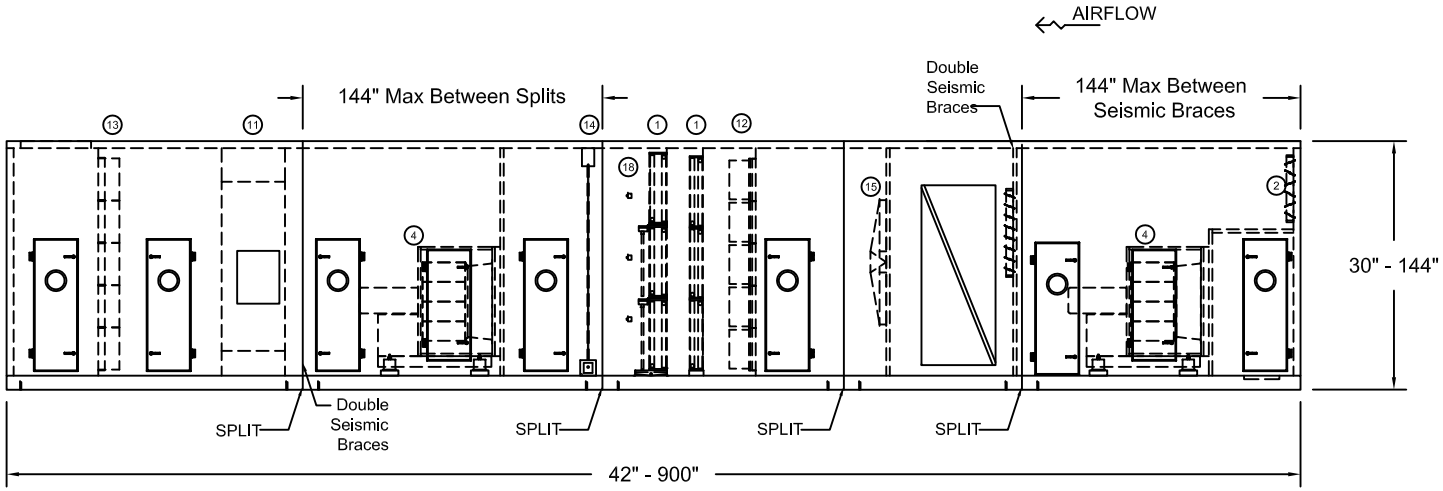
Form: 2010-QAP-EF-004, revision 1

1. Coils
2. Dampers
3. Fan Bundle
4. Fans
5. Internal Isolation Base (Std. Inertia)
6. VFD
7. Starter Panel
8. Control Panel
9. Louver
10. Air Hood
11. Sound Attenuator
12. Filters (Pre/Final)
13. HEPA Filters
14. Humidifier Grid
15. Air Blender
16. Air Diffuser
17. VFD Enclosure
18. UV Lights



PLAN VIEW

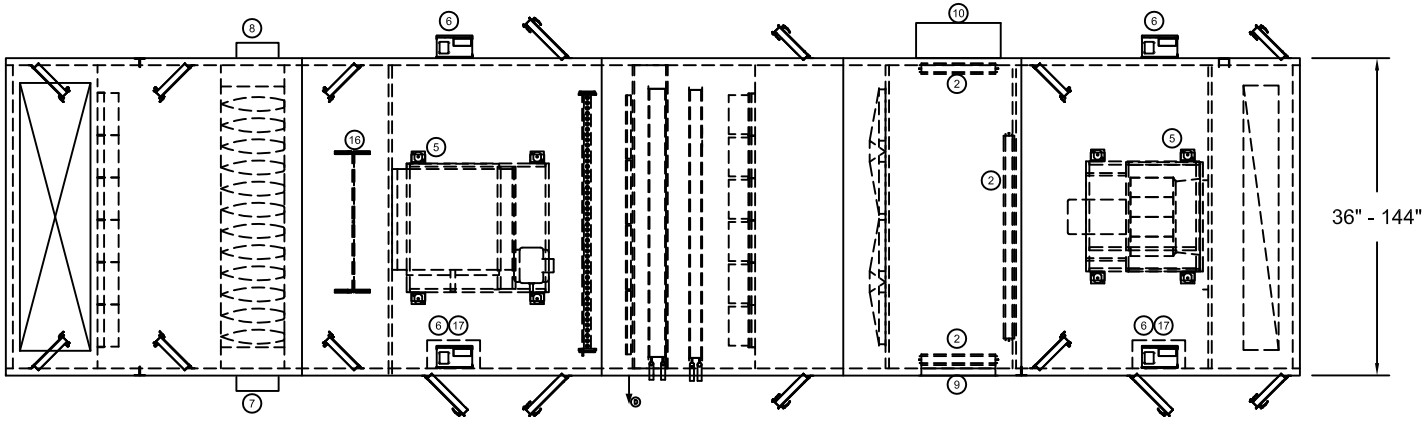


ELEVATION VIEW

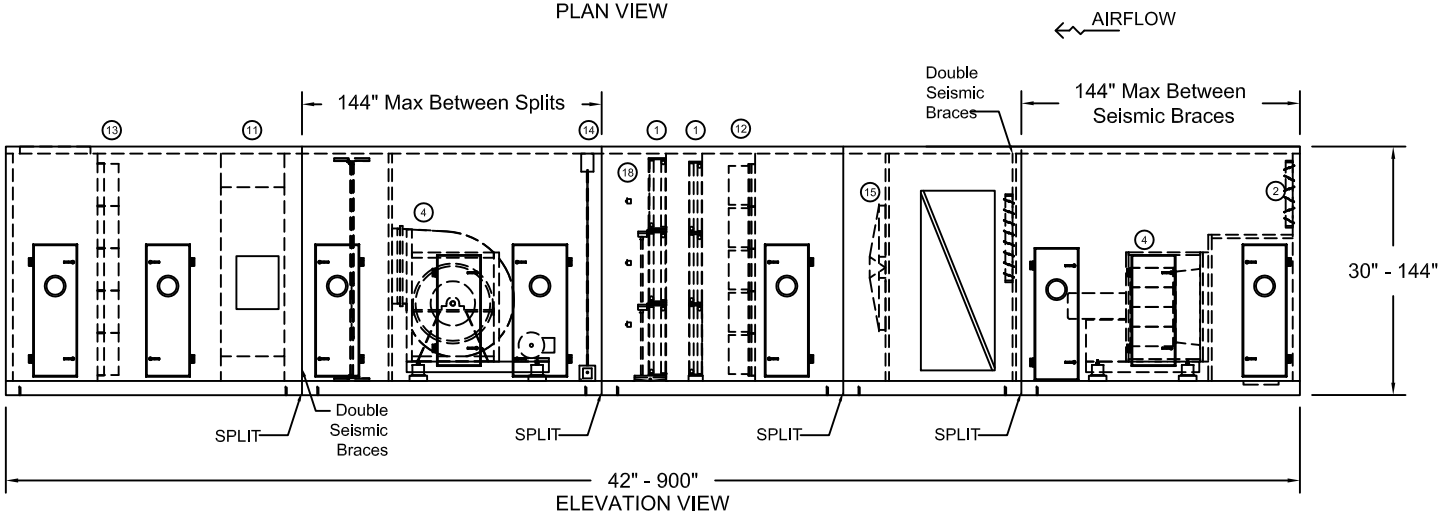
Notes:
1.) Wall Casing Insulation thickness: 2", 4"
2.) Casing Construction: 16 Gauge Galvanized carbon steel panels fastened to a unitized interior carbon steel framework from the outside with mechanical fasteners. 20 Gauge interior liner construction from galvanized carbon steel, perforated galvanized carbon steel, stainless steel or aluminum.
3.) Unit Base Heights: 4", 6", 8"
4.) Approved components listed above are shown as reference and can be re-configured as required.
5.) Maximum spacing between seismic braces is 144", see ISB1 for Seismic Bracing Requirements.
6.) In addition to the seismic braces, the following are considered seismic braces: fan walls, blender walls, full height coil wall.
7.)Double Seismic Braces are required at all interior locations as depicted on the line drawings and at all shipping splits.

ECO#: N/A	REV: 3	NAME: R.M.	DATE:10-02-2014	DESCRIPTION: PER OSHPD COMMENTS	Scott Springfield Mfg. Inc.	CO: — —	TAG: OSHPD-1
ECO#: N/A	REV: 2	NAME: M.L.	DATE:14-02-2012	DESCRIPTION: UPDATE DRAWING			
ECO#: N/A	REV: 1	NAME: O.M.	DATE:11-22-2011	DESCRIPTION: UPDATED NOTES	PROJECT: OSHPD - SINGLE WIDE DIRECT DRIVE W/ SPLITS	UNITS: INCHES	DWG # — —
ECO#: N/A	REV: 4	NAME: R.M.	DATE:10-20-2014	DESCRIPTION: PER MARKUPS			

1. Coils
2. Dampers
3. Fan Bundle
4. Fans
5. Internal Isolation Base (Std. Inertia)
6. VFD
7. Starter Panel
8. Control Panel
9. Louver
10. Air Hood
11. Sound Attenuator
12. Filters (Pre/Final)
13. HEPA Filters
14. Humidifier Grid
15. Air Blender
16. Air Diffuser
17. VFD Enclosure
18. UV Lights



PLAN VIEW

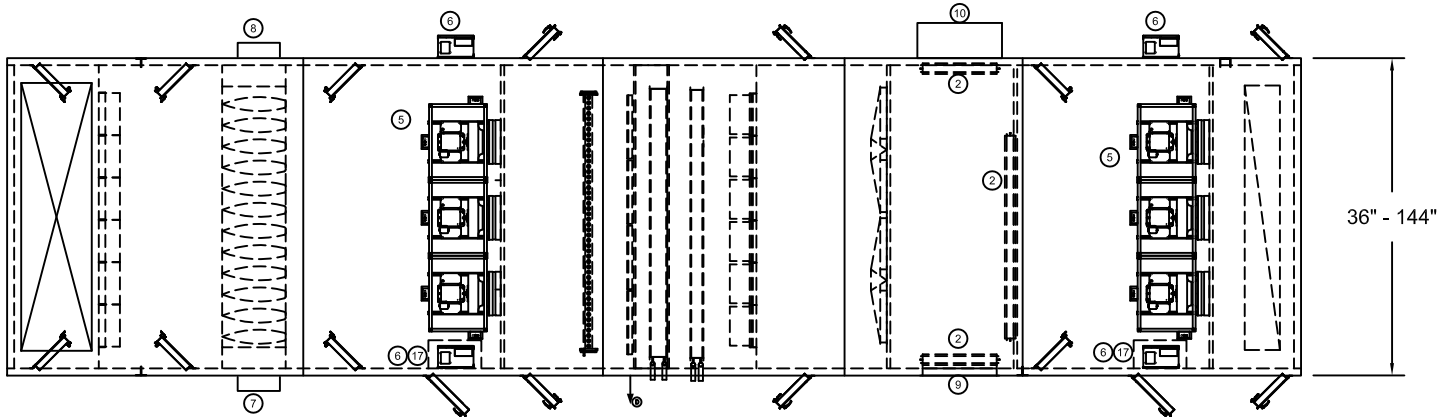


ELEVATION VIEW

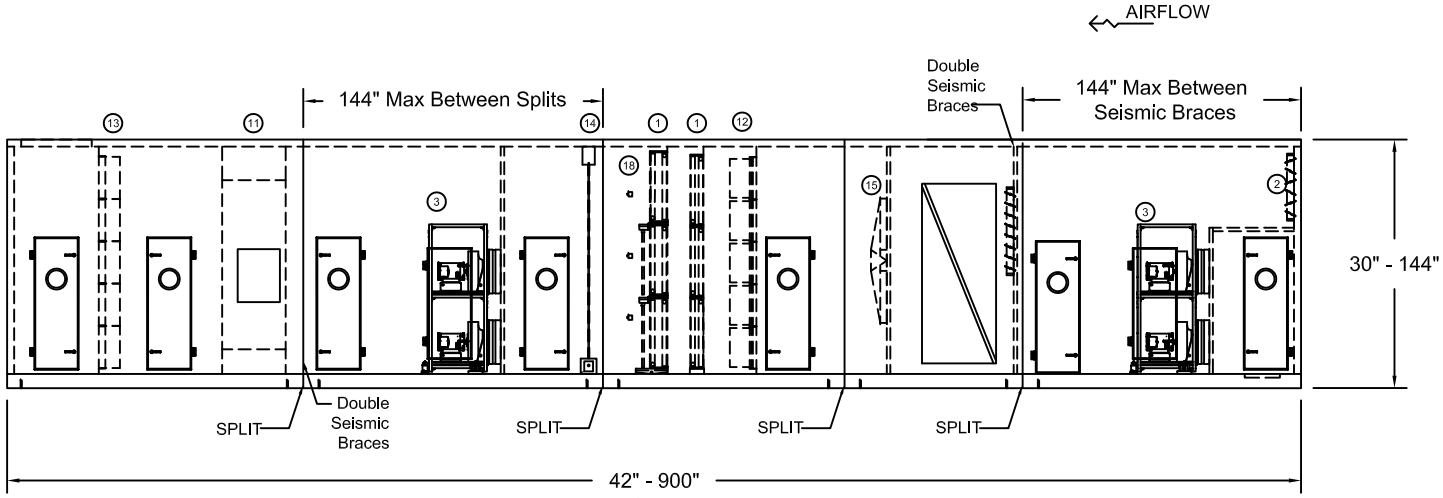
Notes:
1.) Wall Casing Insulation thickness: 2", 4"
2.) Casing Construction: 16 Gauge Galvanized carbon steel panels fastened to a unitized interior carbon steel framework from the outside with mechanical fasteners. 20 Gauge interior liner construction from galvanized carbon steel, perforated galvanized carbon steel, stainless steel or aluminum.
3.) Unit Base Heights: 4", 6", 8"
4.) Approved components listed above are shown as reference and can be re-configured as required.
5.) Maximum spacing between seismic braces is 144", see ISB1 for Seismic Bracing Requirements.
6.) In addition to the seismic braces, the following are considered seismic braces: fan walls, blender walls, full height coil wall.
7.) Double Seismic Braces are required at all interior locations as depicted on the line drawings and at all shipping splits.

ECO#: N/A	REV: 3	NAME: R.M.	DATE:10-02-2014	DESCRIPTION: PER OSHPD COMMENTS	Scott Springfield Mfg. Inc.	CO: — —	TAG: OSHPD-2
ECO#: N/A	REV: 2	NAME: M.L.	DATE:14-02-2012	DESCRIPTION: UPDATE DRAWING			
ECO#: N/A	REV: 1	NAME: O.M.	DATE:11-22-2011	DESCRIPTION: UPDATED NOTES	PROJECT: OSHPD - SINGLE WIDE DIRECT DRIVE & CENTRIFUGAL W/ SPLITS	UNITS: INCHES	DWG # — —
ECO#: N/A	REV: 4	NAME: R.M.	DATE:10-20-2014	DESCRIPTION: PER MARKUPS			

1. Coils
2. Dampers
3. Fan Bundle
4. Fans
5. Internal Isolation Base (Std. Inertia)
6. VFD
7. Starter Panel
8. Control Panel
9. Louver
10. Air Hood
11. Sound Attenuator
12. Filters (Pre/Final)
13. HEPA Filters
14. Humidifier Grid
15. Air Blender
16. Air Diffuser
17. VFD Enclosure
18. UV Lights



PLAN VIEW

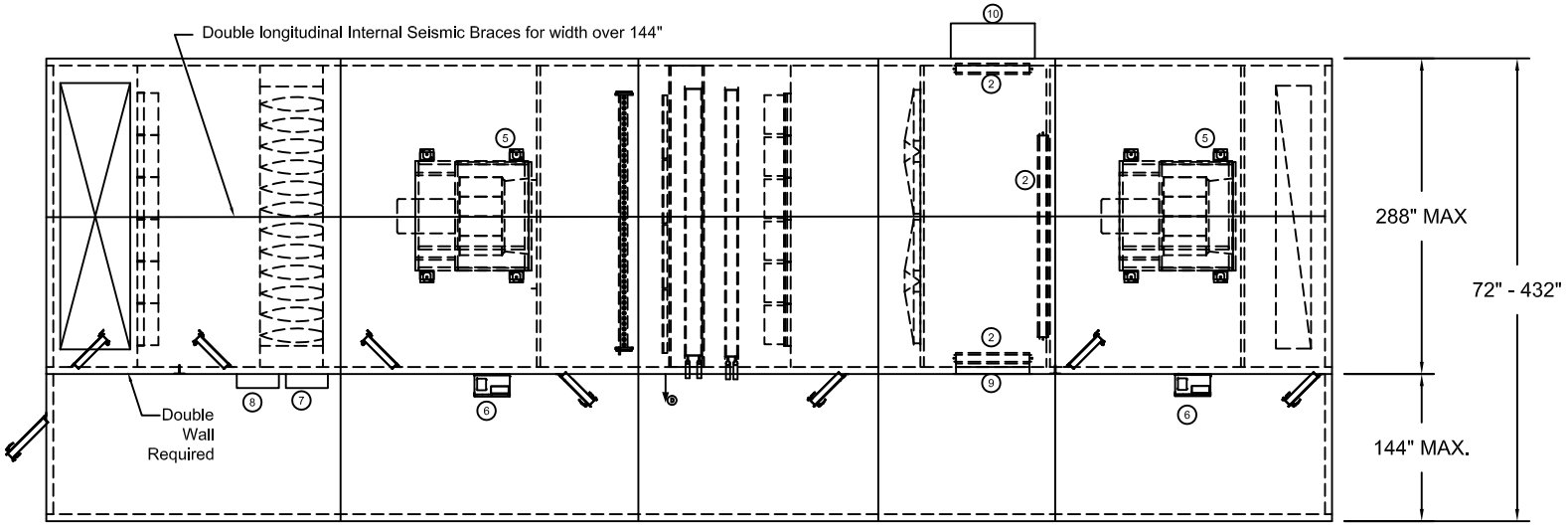


ELEVATION VIEW

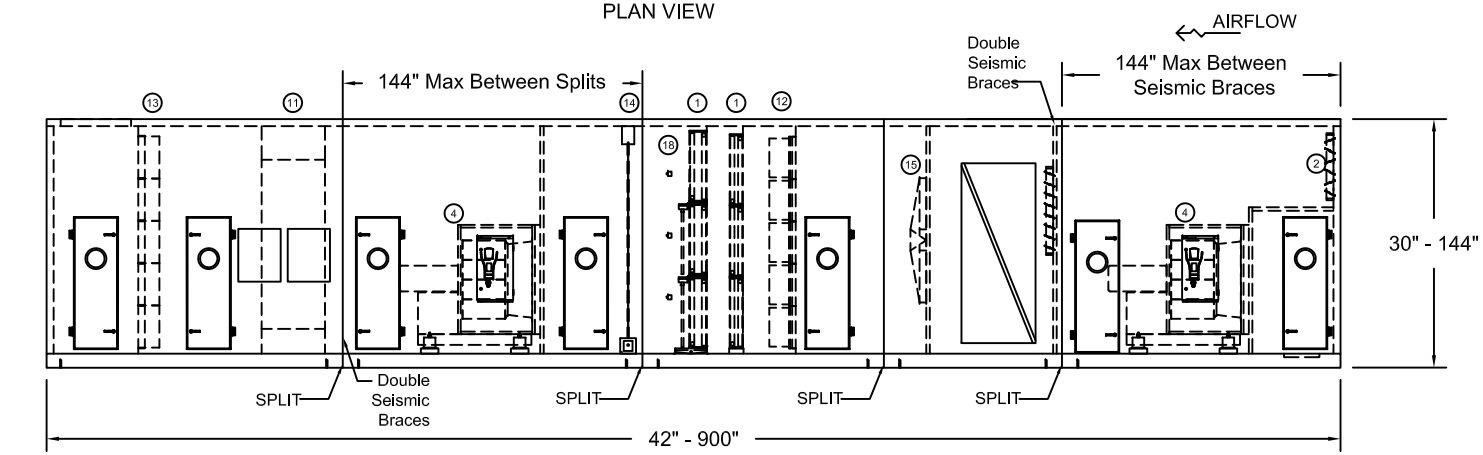
Notes:
1.) Wall Casing Insulation thickness: 2", 4"
2.) Casing Construction: 16 Gauge Galvanized carbon steel panels fastened to a unitized interior carbon steel framework from the outside with mechanical fasteners. 20 Gauge interior liner construction from galvanized carbon steel, perforated galvanized carbon steel, stainless steel or aluminum.
3.) Unit Base Heights: 4", 6", 8"
4.) Approved components listed above are shown as reference and can be re-configured as required.
5.) Maximum spacing between seismic braces is 144", see ISB1 for Seismic Bracing Requirements.
6.) In addition to the seismic braces, the following are considered seismic braces: fan walls, blender walls, full height coil wall.
7.) Double Seismic Braces are required at all interior locations as depicted on the line drawings and at all shipping splits.

ECO#: N/A	REV: 3	NAME: R.M.	DATE:10-02-2014	DESCRIPTION: PER OSHPD COMMENTS	Scott Springfield Mfg. Inc.	CO: — —	TAG: OSHPD-3
ECO#: N/A	REV: 2	NAME: M.L.	DATE:14-02-2012	DESCRIPTION: UPDATE DRAWING			
ECO#: N/A	REV: 1	NAME: O.M.	DATE:11-22-2011	DESCRIPTION: UPDATED NOTES	PROJECT: OSHPD - SINGLE WIDE FAN BUNDLE W/ SPLITS	UNITS: INCHES	DWG #: — —
ECO#: N/A	REV: 4	NAME: R.M.	DATE:20-10-2014	DESCRIPTION: PER MARKUPS			

1. Coils
2. Dampers
3. Fan Bundle
4. Fans
5. Internal Isolation Base (Std. Inertia)
6. VFD
7. Starter Panel
8. Control Panel
9. Louver
10. Air Hood
11. Sound Attenuator
12. Filters (Pre/Final)
13. HEPA Filters
14. Humidifier Grid
15. Air Blender
16. Air Diffuser
17. VFD Enclosure
18. UV Lights



PLAN VIEW

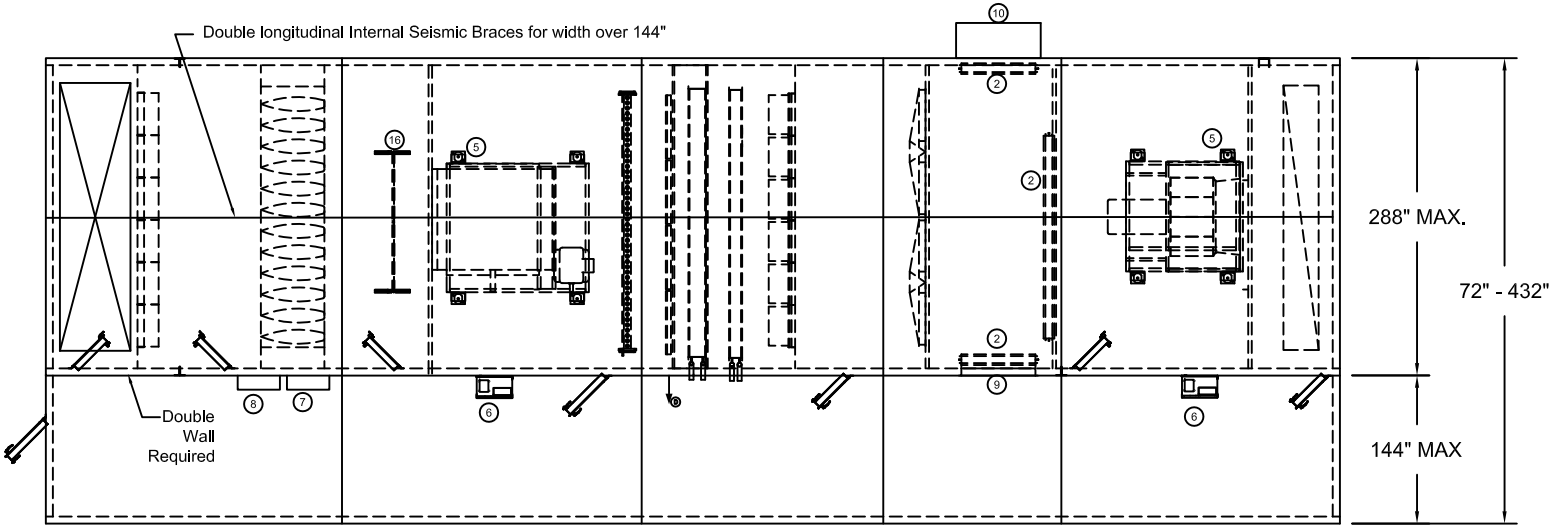


ELEVATION VIEW

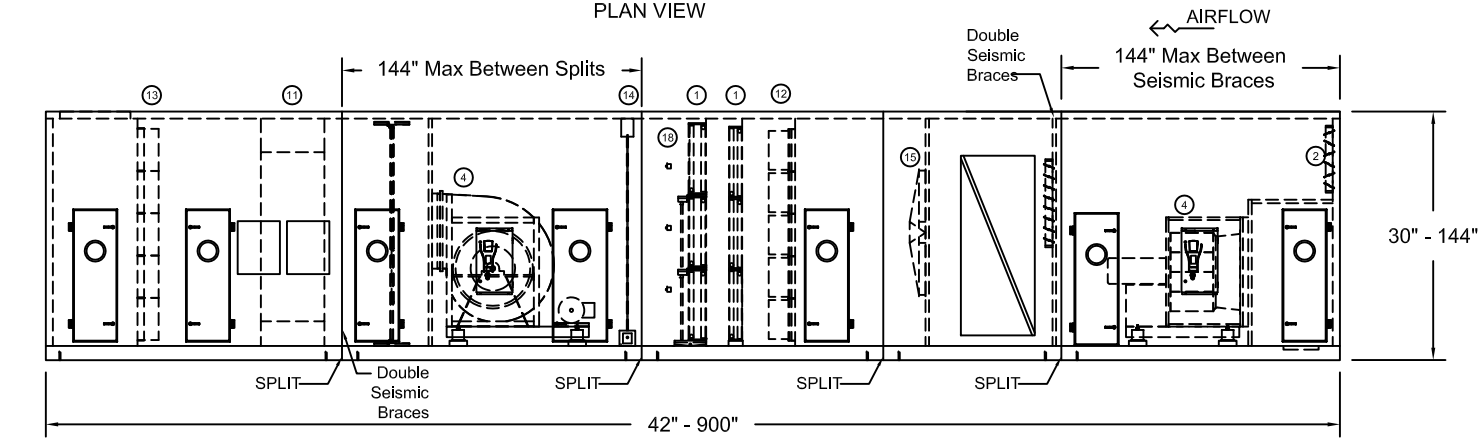
Notes:
1.) Wall Casing Insulation thickness: 2", 4"
2.) Casing Construction: 16 Gauge Galvanized carbon steel panels fastened to a unitized interior carbon steel framework from the outside with mechanical fasteners. 20 Gauge interior liner construction from galvanized carbon steel, perforated galvanized carbon steel, stainless steel or aluminum.
3.) Unit Base Heights: 4", 6", 8"
4.) Approved components listed above are shown as reference and can be re-configured as required.
5.) Maximum spacing between seismic braces is 144", see ISB1 for Seismic Bracing Requirements.
6.) In addition to the seismic braces, the following are considered seismic braces: fan walls, blender walls, full height coil wall.
7.)Double Seismic Braces are required at all interior locations as depicted on the line drawings and at all shipping splits.

ECO#: N/A	REV: 3	NAME: R.M.	DATE:10-02-2014	DESCRIPTION: PER OSHPD COMMENTS	Scott Springfield Mfg. Inc.	CO: — —	TAG: OSHPD-4
ECO#: N/A	REV: 2	NAME: M.L.	DATE:14-02-2012	DESCRIPTION: UPDATE DRAWING			
ECO#: N/A	REV: 1	NAME: O.M.	DATE:11-22-2011	DESCRIPTION: UPDATED NOTES	PROJECT:	UNITS:	DWG #
ECO#: N/A	REV: 4	NAME: R.M.	DATE:10-20-2014	DESCRIPTION: PER MARKUPS	OSHPD - DOUBLE WIDE DIRECT DRIVE W/ SIDE CORRIDOR & SPLITS	INCHES	— —

1. Coils
2. Dampers
3. Fan Bundle
4. Fans
5. Internal Isolation Base (Std. Inertia)
6. VFD
7. Starter Panel
8. Control Panel
9. Louver
10. Air Hood
11. Sound Attenuator
12. Filters (Pre/Final)
13. HEPA Filters
14. Humidifier Grid
15. Air Blender
16. Air Diffuser
17. VFD Enclosure
18. UV Lights



PLAN VIEW

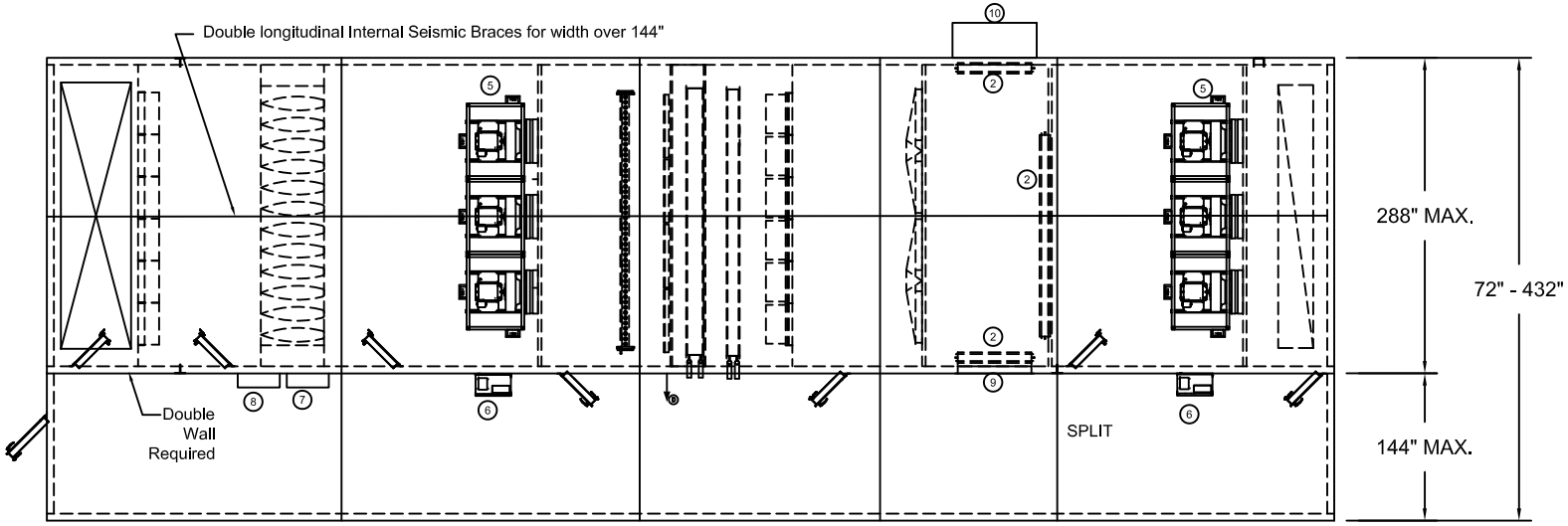


ELEVATION VIEW

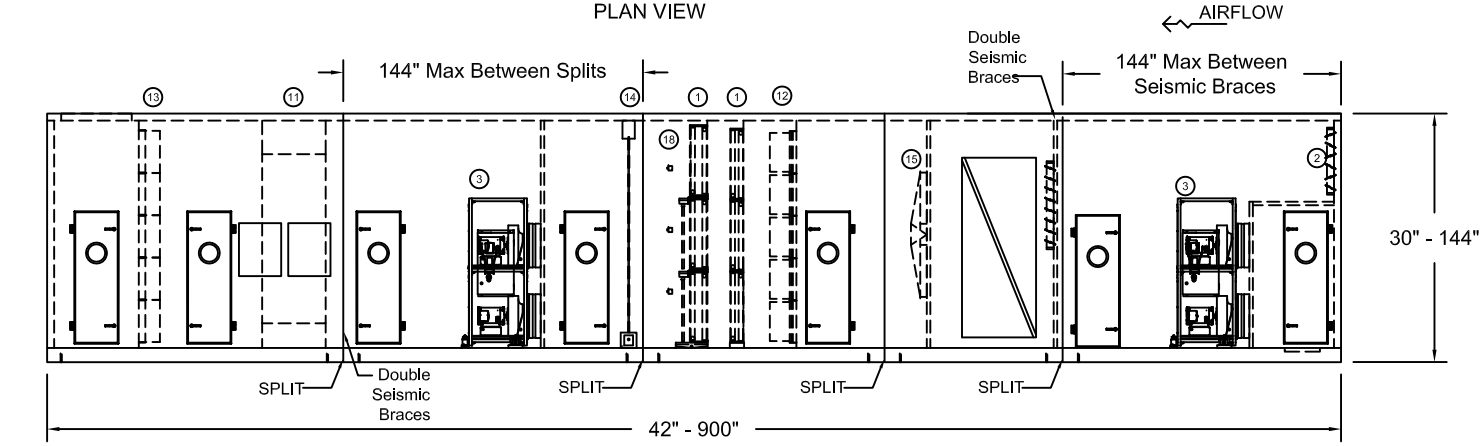
Notes:
1.) Wall Casing Insulation thickness: 2", 4"
2.) Casing Construction: 16 Gauge Galvanized carbon steel panels fastened to a unitized interior carbon steel framework from the outside with mechanical fasteners. 20 Gauge interior liner construction from galvanized carbon steel, perforated galvanized carbon steel, stainless steel or aluminum.
3.) Unit Base Heights: 4", 6", 8"
4.) Approved components listed above are shown as reference and can be re-configured as required.
5.) Maximum spacing between seismic braces is 144", see ISB1 for Seismic Bracing Requirements.
6.) In addition to the seismic braces, the following are considered seismic braces: fan walls, blender walls, full height coil wall.
7.)Double Seismic Braces are required at all interior locations as depicted on the line drawings and at all shipping splits.

ECO#: N/A	REV: 3	NAME: R.M.	DATE:10-02-2014	DESCRIPTION: PER OSHPD COMMENTS	Scott Springfield Mfg. Inc.	CO: — —	TAG: OSHPD-5
ECO#: N/A	REV: 2	NAME: M.L.	DATE:14-02-2012	DESCRIPTION: UPDATE DRAWING			
ECO#: N/A	REV: 1	NAME: O.M.	DATE:11-22-2011	DESCRIPTION: UPDATED NOTES	PROJECT:	UNITS:	DWG #
ECO#: N/A	REV: 4	NAME: R.M.	DATE:10-20-2014	DESCRIPTION: PER MARKUPS	OSHPD - DOUBLE WIDE DIRECT DRIVE & CENTRIFUGAL W/ SIDE CORRIDOR & SPLITS	INCHES	— —

1. Coils
2. Dampers
3. Fan Bundle
4. Fans
5. Internal Isolation Base (Std. Inertia)
6. VFD
7. Starter Panel
8. Control Panel
9. Louver
10. Air Hood
11. Sound Attenuator
12. Filters (Pre/Final)
13. HEPA Filters
14. Humidifier Grid
15. Air Blender
16. Air Diffuser
17. VFD Enclosure
18. UV Lights



PLAN VIEW

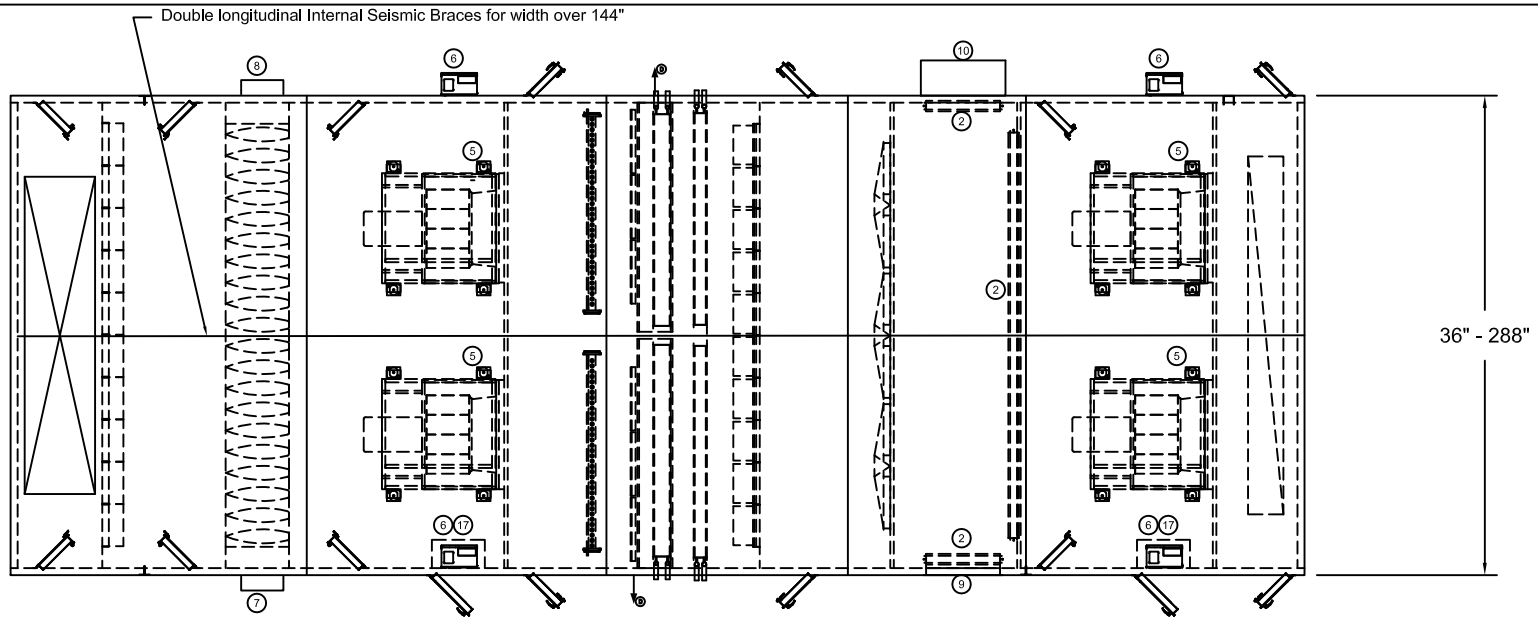


ELEVATION VIEW

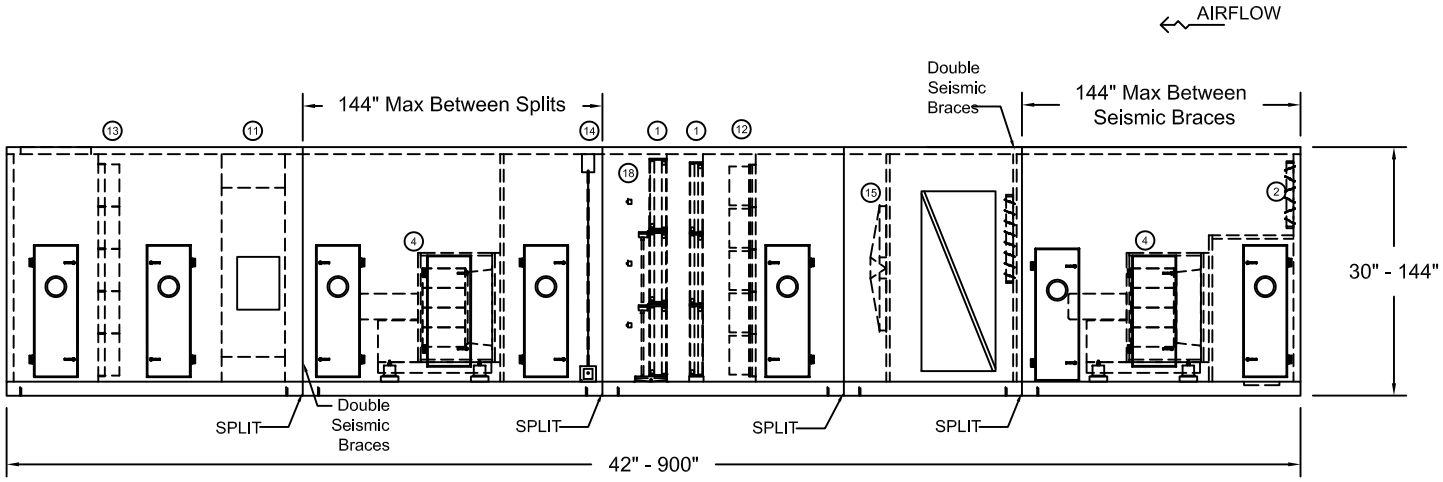
Notes:
1.) Wall Casing Insulation thickness: 2", 4"
2.) Casing Construction: 16 Gauge Galvanized carbon steel panels fastened to a unitized interior carbon steel framework from the outside with mechanical fasteners. 20 Gauge interior liner construction from galvanized carbon steel, perforated galvanized carbon steel, stainless steel or aluminum.
3.) Unit Base Heights: 4", 6", 8"
4.) Approved components listed above are shown as reference and can be re-configured as required.
5.) Maximum spacing between seismic braces is 144", see ISB1 for Seismic Bracing Requirements.
6.) In addition to the seismic braces, the following are considered seismic braces: fan walls, blender walls, full height coil wall.
7.) Double Seismic Braces are required at all interior locations as depicted on the line drawings and at all shipping splits.

ECO#: N/A	REV: 3	NAME: R.M.	DATE:10-02-2014	DESCRIPTION: PER OSHPD COMMENTS	Scott Springfield Mfg. Inc.	CO: — —	TAG: OSHPD-6
ECO#: N/A	REV: 2	NAME: M.L.	DATE:14-02-2012	DESCRIPTION: UPDATE DRAWING			
ECO#: N/A	REV: 1	NAME: O.M.	DATE:11-22-2011	DESCRIPTION: UPDATED NOTES	PROJECT:	UNITS:	DWG #
ECO#: N/A	REV: 4	NAME: R.M.	DATE:10-20-2014	DESCRIPTION: PER MARKUPS	OSHPD - DOUBLE WIDE FAN BUNDLE W/ SIDE CORRIDOR & SPLITS	INCHES	— —

1. Coils
2. Dampers
3. Fan Bundle
4. Fans
5. Internal Isolation Base (Std. Inertia)
6. VFD
7. Starter Panel
8. Control Panel
9. Louver
10. Air Hood
11. Sound Attenuator
12. Filters (Pre/Final)
13. HEPA Filters
14. Humidifier Grid
15. Air Blender
16. Air Diffuser
17. VFD Enclosure
18. UV Lights



PLAN VIEW

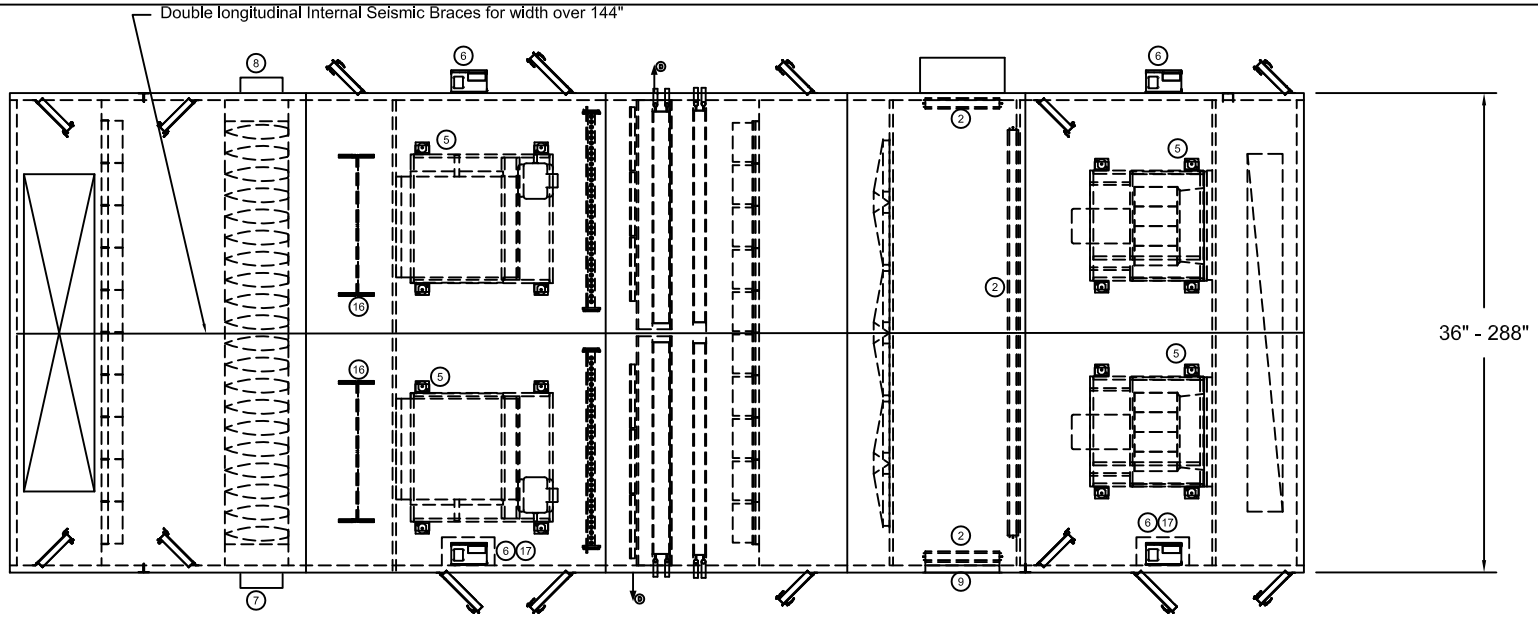


ELEVATION VIEW

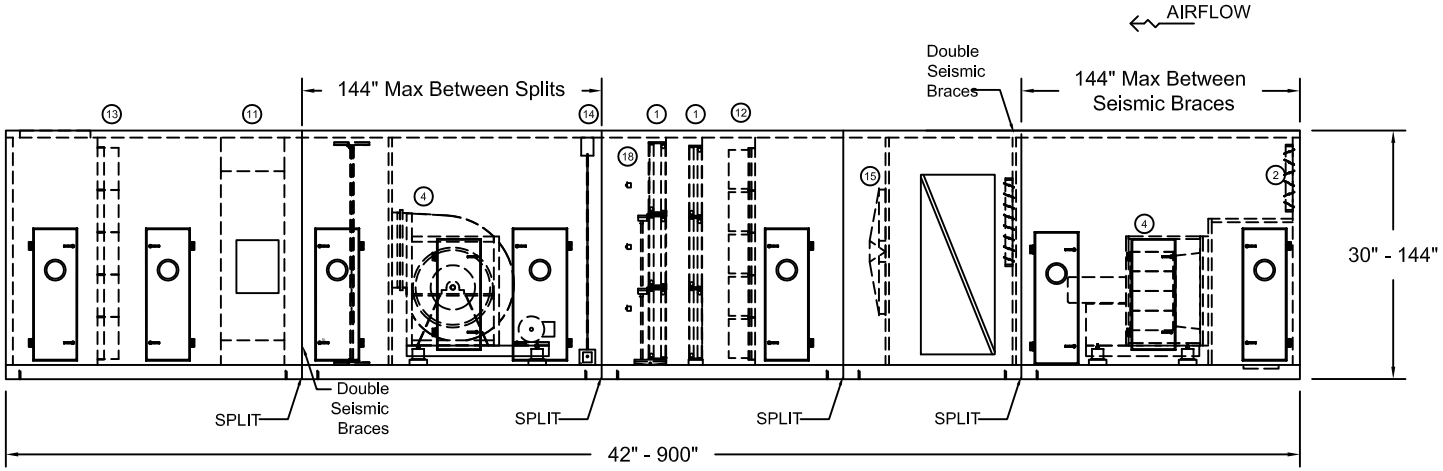
Notes:
1.) Wall Casing Insulation thickness: 2", 4"
2.) Casing Construction: 16 Gauge Galvanized carbon steel panels fastened to a unitized interior carbon steel framework from the outside with mechanical fasteners. 20 Gauge interior liner construction from galvanized carbon steel, perforated galvanized carbon steel, stainless steel or aluminum.
3.) Unit Base Heights: 4", 6", 8"
4.) Approved components listed above are shown as reference and can be re-configured as required.
5.) Maximum spacing between seismic braces is 144", see ISB1 for Seismic Bracing Requirements.
6.) In addition to the seismic braces, the following are considered seismic braces: fan walls, blender walls, full height coil wall.
7.)Double Seismic Braces are required at all interior locations as depicted on the line drawings and at all shipping splits.

ECO#: N/A	REV: 3	NAME: R.M.	DATE:10-02-2014	DESCRIPTION: PER OSHPD COMMENTS	Scott Springfield Mfg. Inc.	CO: — —	TAG: OSHPD-7
ECO#: N/A	REV: 2	NAME: M.L.	DATE:14-02-2012	DESCRIPTION: UPDATE DRAWING			
ECO#: N/A	REV: 1	NAME: O.M.	DATE:11-22-2011	DESCRIPTION: UPDATED NOTES	PROJECT: OSHPD - DOUBLE WIDE DIRECT DRIVE W/ SPLITS	UNITS: INCHES	DWG # — —
ECO#: N/A	REV: 4	NAME: R.M.	DATE:10-20-2014	DESCRIPTION: PER MARKUPS			

1. Coils
2. Dampers
3. Fan Bundle
4. Fans
5. Internal Isolation Base (Std. Inertia)
6. VFD
7. Starter Panel
8. Control Panel
9. Louver
10. Air Hood
11. Sound Attenuator
12. Filters (Pre/Final)
13. HEPA Filters
14. Humidifier Grid
15. Air Blender
16. Air Diffuser
17. VFD Enclosure
18. UV Lights



PLAN VIEW

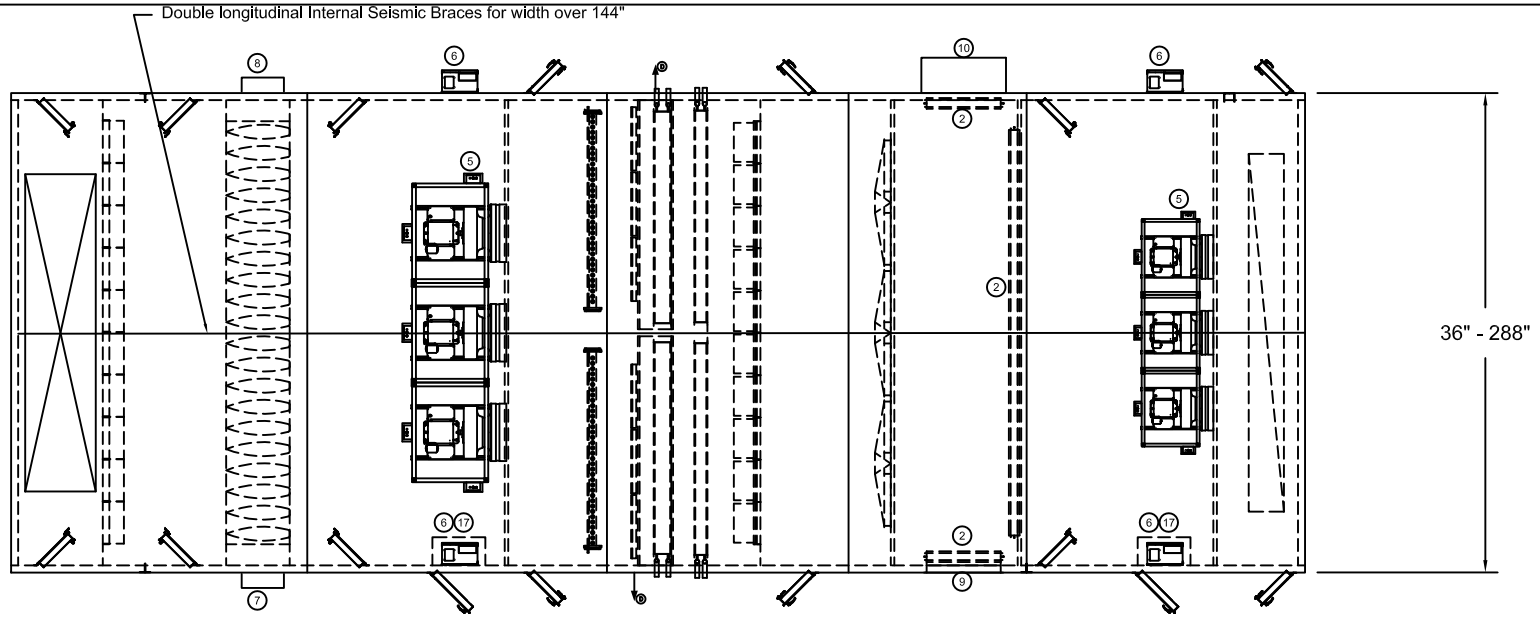


ELEVATION VIEW

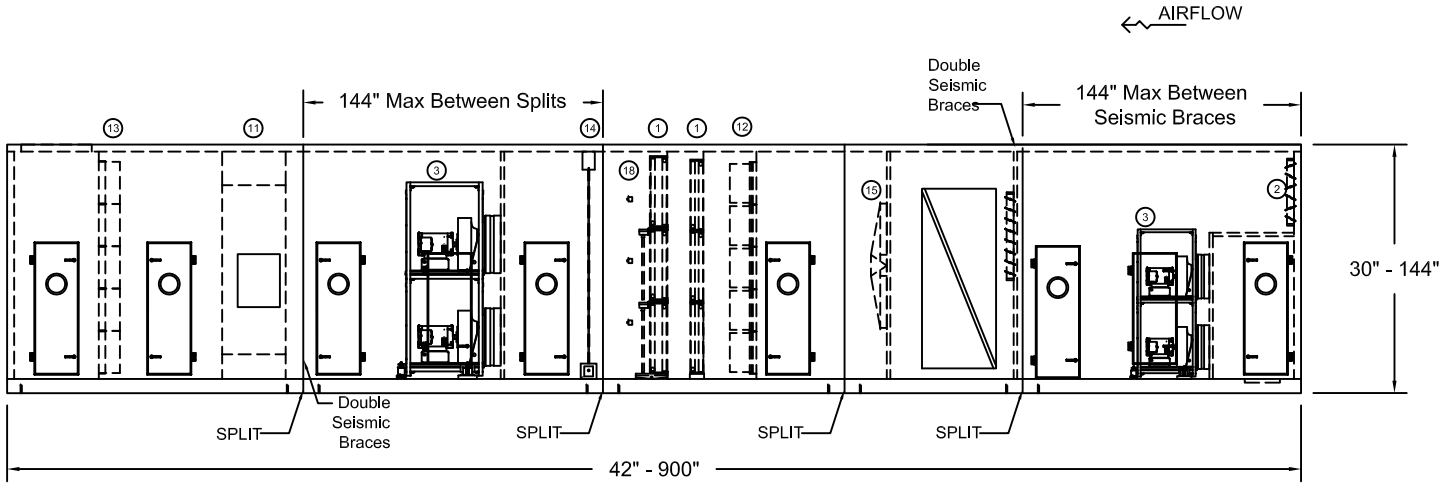
Notes:
1.) Wall Casing Insulation thickness: 2", 4"
2.) Casing Construction: 16 Gauge Galvanized carbon steel panels fastened to a unitized interior carbon steel framework from the outside with mechanical fasteners. 20 Gauge interior liner construction from galvanized carbon steel, perforated galvanized carbon steel, stainless steel or aluminum.
3.) Unit Base Heights: 4", 6", 8"
4.) Approved components listed above are shown as reference and can be re-configured as required.
5.) Maximum spacing between seismic braces is 144", see ISB1 for Seismic Bracing Requirements.
6.) In addition to the seismic braces, the following are considered seismic braces: fan walls, blender walls, full height coil wall.
7.)Double Seismic Braces are required at all interior locations as depicted on the line drawings and at all shipping splits.

ECO#: N/A	REV: 3	NAME: R.M.	DATE:10-02-2014	DESCRIPTION: PER OSHPD COMMENTS	Scott Springfield Mfg. Inc.	CO: — —	TAG: OSHPD-8
ECO#: N/A	REV: 2	NAME: M.L.	DATE:14-02-2012	DESCRIPTION: UPDATE DRAWING			
ECO#: N/A	REV: 1	NAME: O.M.	DATE:11-22-2011	DESCRIPTION: UPDATED NOTES	PROJECT: OSHPD - DOUBLE WIDE DIRECT DRIVE & CENTRIFUGAL W/ SPLITS	UNITS: INCHES	DWG # — —
ECO#: N/A	REV: 4	NAME: R.M.	DATE:10-20-2014	DESCRIPTION: PER MARKUPS			

1. Coils
2. Dampers
3. Fan Bundle
4. Fans
5. Internal Isolation Base (Std. Inertia)
6. VFD
7. Starter Panel
8. Control Panel
9. Louver
10. Air Hood
11. Sound Attenuator
12. Filters (Pre/Final)
13. HEPA Filters
14. Humidifier Grid
15. Air Blender
16. Air Diffuser
17. VFD Enclosure
18. UV Lights



PLAN VIEW

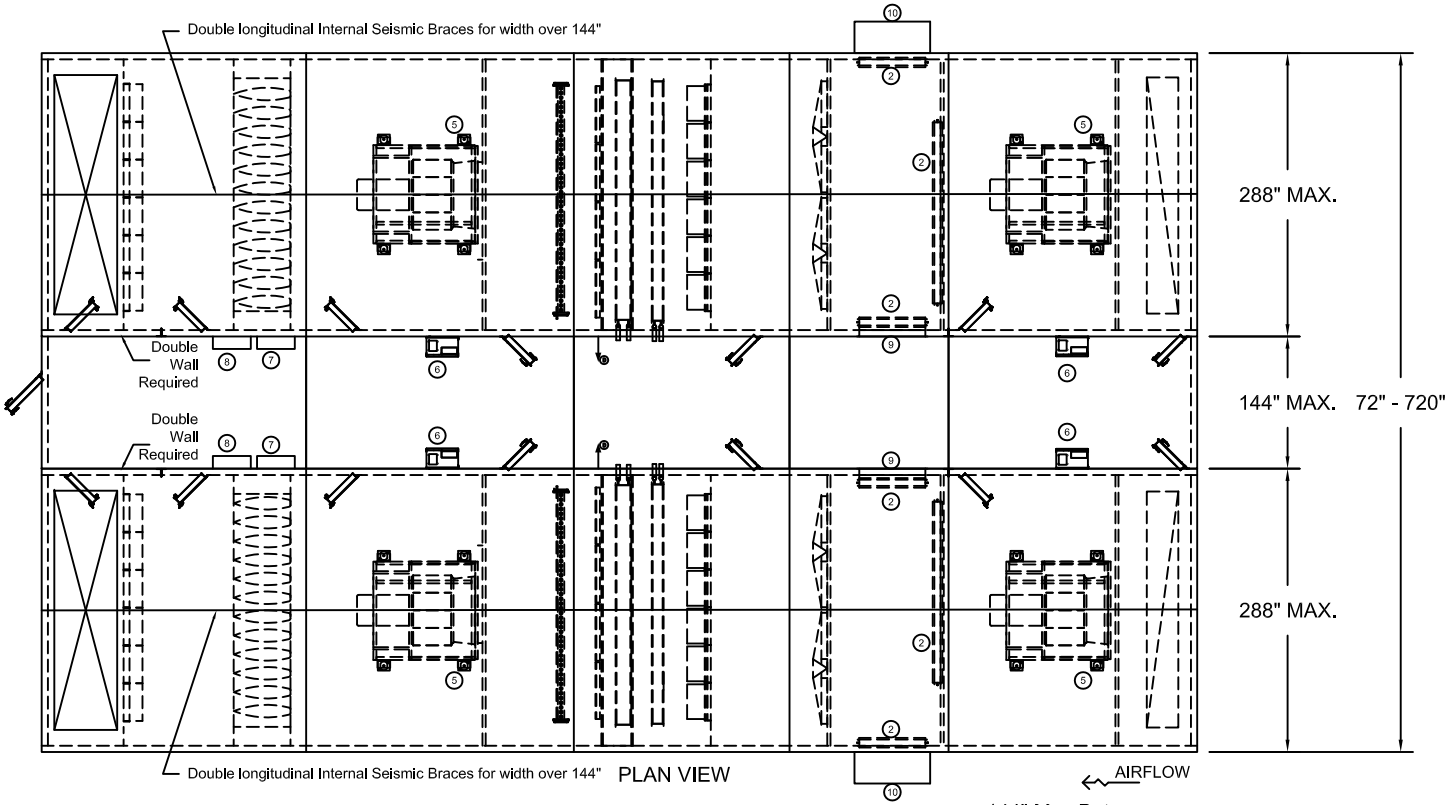


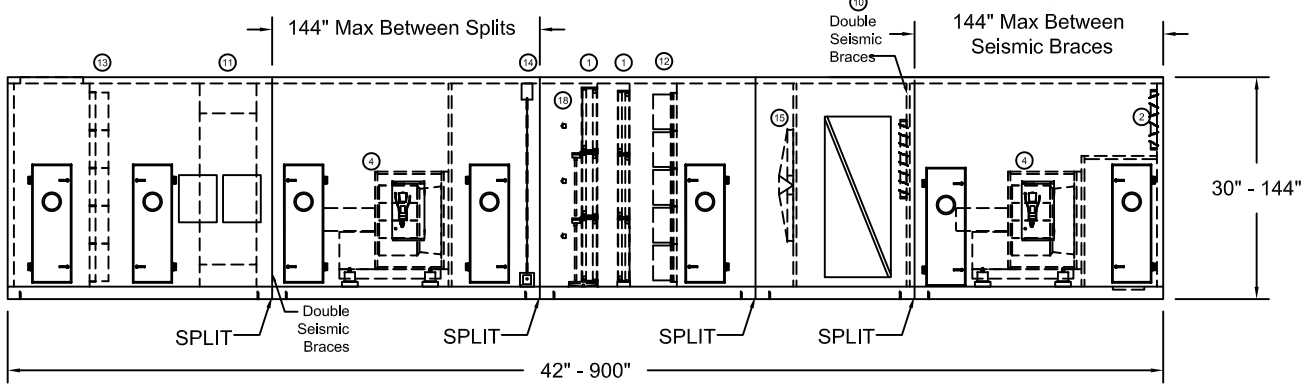
ELEVATION VIEW

Notes:
1.) Wall Casing Insulation thickness: 2", 4"
2.) Casing Construction: 16 Gauge Galvanized carbon steel panels fastened to a unitized interior carbon steel framework from the outside with mechanical fasteners. 20 Gauge interior liner construction from galvanized carbon steel, perforated galvanized carbon steel, stainless steel or aluminum.
3.) Unit Base Heights: 4", 6", 8"
4.) Approved components listed above are shown as reference and can be re-configured as required.
5.) Maximum spacing between seismic braces is 144", see ISB1 for Seismic Bracing Requirements.
6.) In addition to the seismic braces, the following are considered seismic braces: fan walls, blender walls, full height coil wall.
7.)Double Seismic Braces are required at all interior locations as depicted on the line drawings and at all shipping splits.

ECO#: N/A	REV: 3	NAME: R.M.	DATE:10-02-2014	DESCRIPTION: PER OSHPD COMMENTS	Scott Springfield Mfg. Inc.	CO: — —	TAG: OSHPD-9
ECO#: N/A	REV: 2	NAME: M.L.	DATE:14-02-2012	DESCRIPTION: UPDATE DRAWING			
ECO#: N/A	REV: 1	NAME: O.M.	DATE:11-22-2011	DESCRIPTION: UPDATED NOTES	PROJECT: OSHPD - DOUBLE WIDE FAN BUNDLE W/ SPLITS	UNITS: INCHES	DWG # — —
ECO#: N/A	REV: 4	NAME: R.M.	DATE:10-20-2014	DESCRIPTION: PER MARKUPS			

1. Coils
2. Dampers
3. Fan Bundle
4. Fans
5. Internal Isolation Base (Std. Inertia)
6. VFD
7. Starter Panel
8. Control Panel
9. Louver
10. Air Hood
11. Sound Attenuator
12. Filters (Pre/Final)
13. HEPA Filters
14. Humidifier Grid
15. Air Blender
16. Air Diffuser
17. VFD Enclosure
18. UV Lights



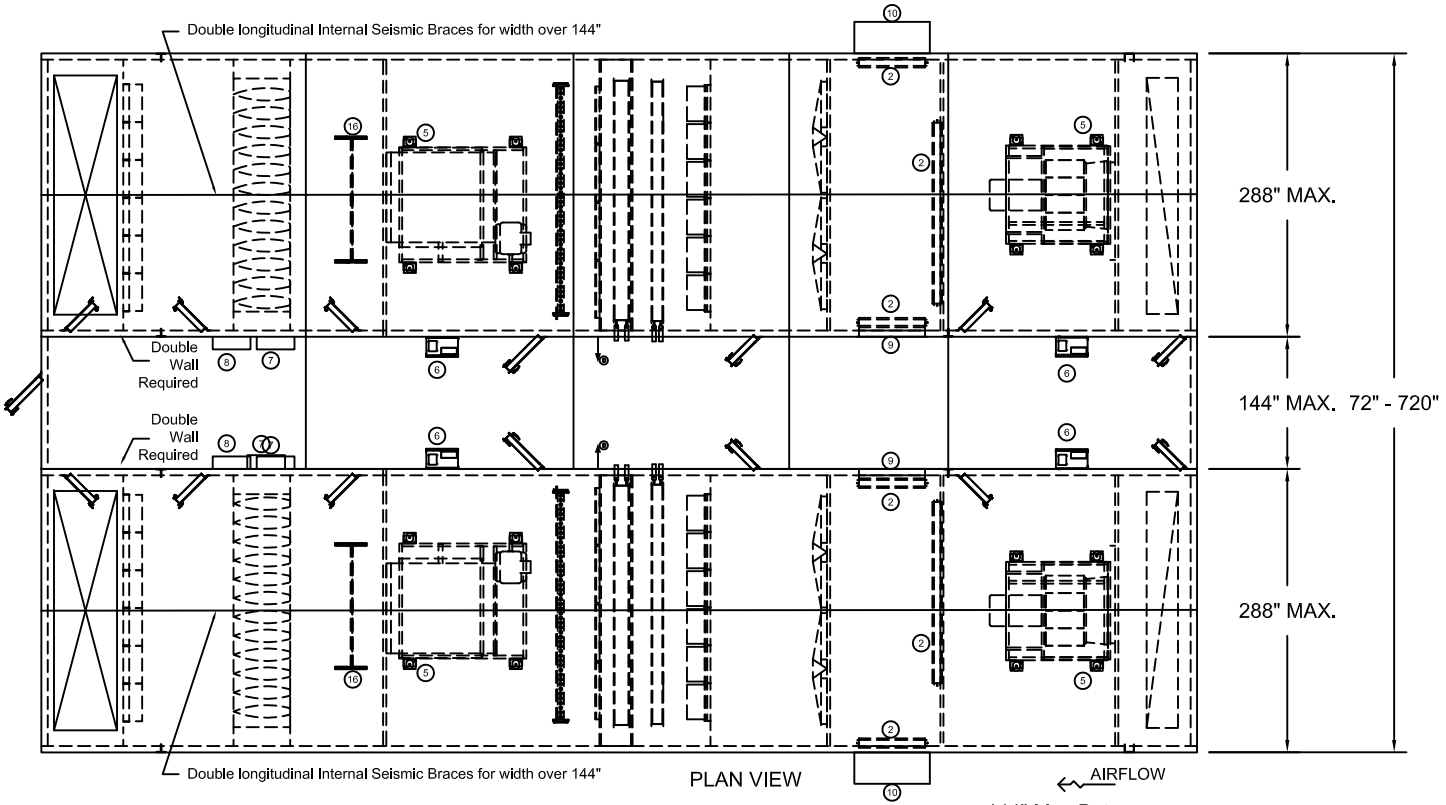


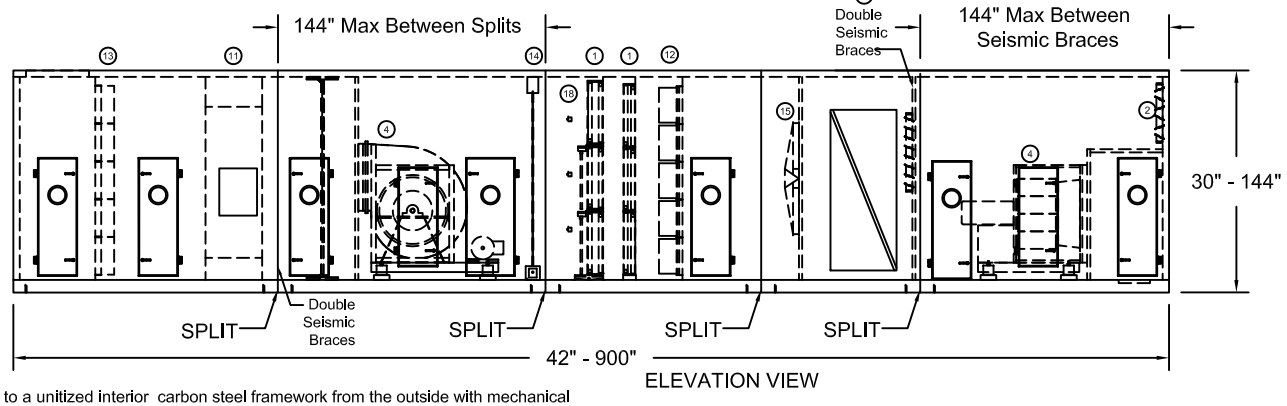
ELEVATION VIEW

Notes:
1.) Wall Casing Insulation thickness: 2", 4"
2.) Casing Construction: 16 Gauge Galvanized carbon steel panels fastened to a unitized interior carbon steel framework from the outside with mechanical fasteners. 20 Gauge interior liner construction from galvanized carbon steel, perforated galvanized carbon steel, stainless steel or aluminum.
3.) Unit Base Heights: 4", 6", 8"
4.) Approved components listed above are shown as reference and can be re-configured as required.
5.) Maximum spacing between seismic braces is 144", see ISB1 for Seismic Bracing Requirements.
6.) In addition to the seismic braces, the following are considered seismic braces: fan walls, blender walls, full height coil wall.
7.)Double Seismic Braces are required at all interior locations as depicted on the line drawings and at all shipping splits.

ECO#: N/A	REV: 3	NAME: R.M.	DATE:10-02-2014	DESCRIPTION: PER OSHPD COMMENTS	Scott Springfield Mfg. Inc.	CO: — —	TAG: OSHPD-10
ECO#: N/A	REV: 2	NAME: M.L.	DATE:14-02-2012	DESCRIPTION: UPDATE DRAWING			
ECO#: N/A	REV: 1	NAME: O.M.	DATE:11-22-2011	DESCRIPTION: UPDATED NOTES	PROJECT:	UNITS:	DWG #
ECO#: N/A	REV: 4	NAME: R.M.	DATE:10-20-2014	DESCRIPTION: PER MARKUPS	OSHPD - DOUBLE WIDE DIRECT DRIVE W/ CENTER CORRIDOR & SPLITS	INCHES	— —

1. Coils
2. Dampers
3. Fan Bundle
4. Fans
5. Internal Isolation Base (Std. Inertia)
6. VFD
7. Starter Panel
8. Control Panel
9. Louver
10. Air Hood
11. Sound Attenuator
12. Filters (Pre/Final)
13. HEPA Filters
14. Humidifier Grid
15. Air Blender
16. Air Diffuser
17. VFD Enclosure
18. UV Lights

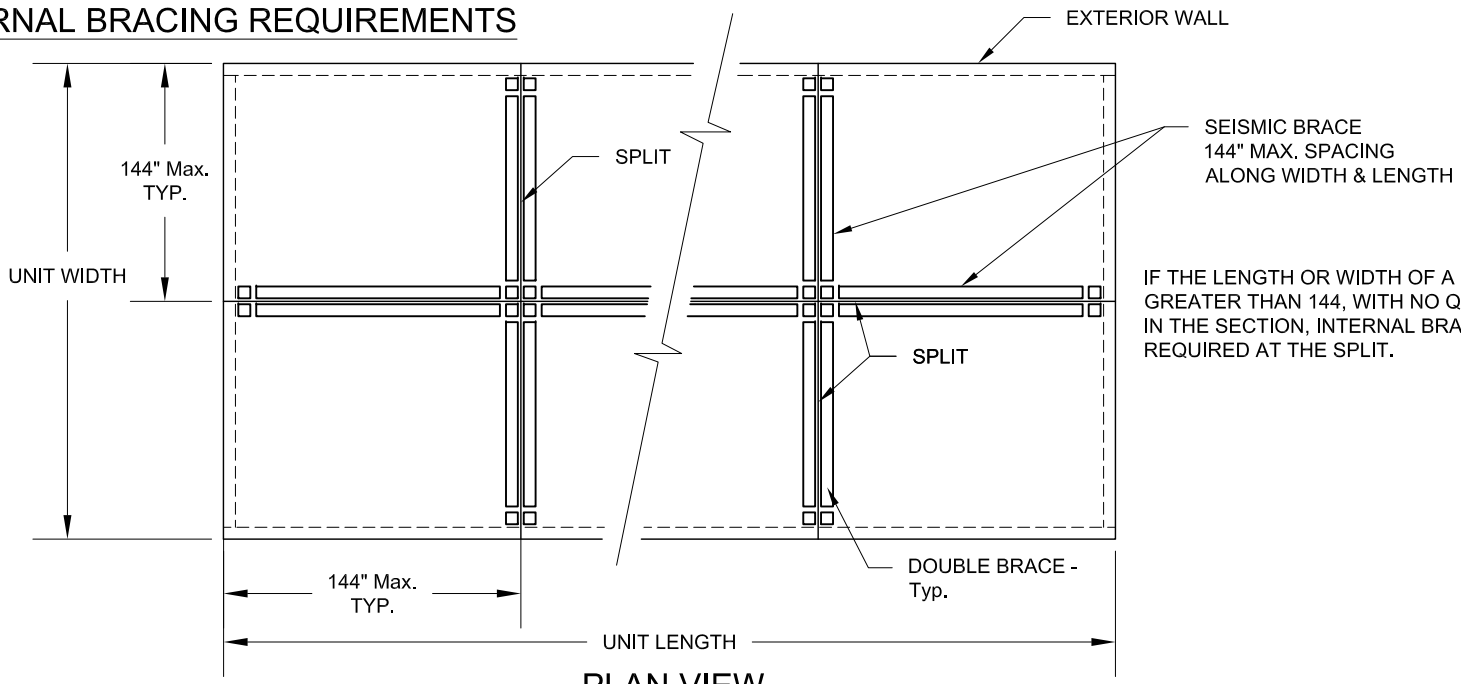




Notes:
1.) Wall Casing Insulation thickness: 2", 4"
2.) Casing Construction: 16 Gauge Galvanized carbon steel panels fastened to a unitized interior carbon steel framework from the outside with mechanical fasteners. 20 Gauge interior liner construction from galvanized carbon steel, perforated galvanized carbon steel, stainless steel or aluminum.
3.) Unit Base Heights: 4", 6", 8"
4.) Approved components listed above are shown as reference and can be re-configured as required.
5.) Maximum spacing between seismic braces is 144", see ISB1 for Seismic Bracing Requirements.
6.) In addition to the seismic braces, the following are considered seismic braces: fan walls, blender walls, full height coil wall.
7.)Double Seismic Braces are required at all interior locations as depicted on the line drawings and at all shipping splits.

ECO#: N/A	REV: 3	NAME: R.M.	DATE:10-02-2014	DESCRIPTION: PER OSHPD COMMENTS	Scott Springfield Mfg. Inc.	CO: — —	TAG: OSHPD-11
ECO#: N/A	REV: 2	NAME: M.L.	DATE:14-02-2012	DESCRIPTION: UPDATE DRAWING			
ECO#: N/A	REV: 1	NAME: O.M.	DATE:11-22-2011	DESCRIPTION: UPDATED NOTES	PROJECT:	UNITS:	DWG #
ECO#: N/A	REV: 4	NAME: R.M.	DATE:10-20-2014	DESCRIPTION: PER MARKUPS	OSHPD - DOUBLE WIDE DIRECT DRIVE & CENTRIFUGAL W/ CENTER CORRIDOR & SPLITS	INCHES	— —

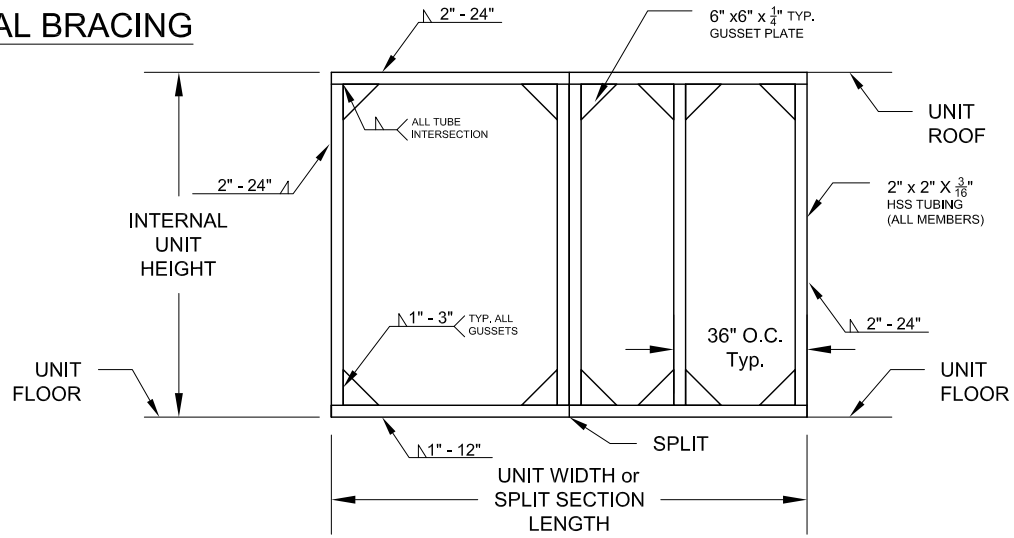
INTERNAL BRACING REQUIREMENTS



IF THE LENGTH OR WIDTH OF A SPLIT SECTION IS GREATER THAN 144, WITH NO QUALIFYING WALL IN THE SECTION, INTERNAL BRACING IS REQUIRED AT THE SPLIT.

PLAN VIEW

INTERNAL BRACING



ELEVATION VIEW

ECO#: N/A	REV: 3	NAME: R.M.	DATE:10-22-2014	DESCRIPTION: PER MARKUPS	Scott Springfield Mfg. Inc.	CO:	TAG:
ECO#: N/A	REV: 2	NAME: R.M.	DATE:09-30-2014	DESCRIPTION: PER OSHPD COMMENTS			
ECO#: N/A	REV: 1	NAME: M.L.	DATE:02-29-2012	DESCRIPTION: UPDATED DRAWING	PROJECT: INTERNAL SEISMIC BRACING	UNITS: INCHES	DWG # ISB1
ECO#: N/A	REV: 0	NAME: M.L.	DATE:02-23-2012	DESCRIPTION: INITIAL SUBMISSION			