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THE ART & SCIENCE OF BUILDING

Submittal Transmittal

PROJECT # 107237, AESC-SC1 – Florence, SC
1330 Estate Road
Florence, SC 29506

Date: 4/4/2024 **Reference Number: 212**

Transmitted To:	Grant Parsons I.C. Thomasson Associates, Inc. 2950 Kraft Drive Nashville, TN 37204 Tel: 615-346-3400 Fax:	**Transmitted By:**	Cesar Villagrana SPC Mechanical Corporation 1500 Wendell Blvd. Wendell, NC 27591 Tel: Fax:

Submitting Company:

Submittal Package No	Description	Package Category
212 - 23 7313	Submittal 212 - HTA-01 - HTA-03 AHU's Rev 1	**CR M E P FP**

Item #	Ref #	Rev	Description	Status	Due	Returned
1	000898	1	AIR HANDLING UNIT - MEDIUM OR LOW PRESSURE		3/21/2024	

Item Notes:

Package Notes:
Revised submittal includes Units HTA-01 thru HTA-03 addressing previous comments

C:

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- [x] Reviewed
- [ ] Reviewed As Noted
- [ ] Revise and Resubmit

This review is only for general conformance with the contract documents and is subject to final review by the Designer of Record. Corrections or Comments made on these documents during this review do not relieve subcontractor/vendor from compliance with the requirements of the plans and specifications. All dimensions, quantities, field measurements, and installation requirements remain the responsibility of the subcontractor /vendor.

Submittal #	212
Spec Section	237313
Description	Submittal 212 - HTA-01 - HTA-03 (AHU's)
Subcontractor	SPC Mechanical
Reviewer	Francisco Robledo
Date	04/04/2024

- [ ] APPROVED
- [ ] FURNISH AS CORRECTED
- [ ] REJECTED
- [ ] REVISE AND RESUBMIT
- [ ] SUBMIT SPECIFIED ITEM
- [x] REVIEWED

This review is only for general conformance with the design concept and the information given in the Construction Documents. Contractor is responsible for compliance with the information provided in the contract documents. Corrections or comments made on the shop drawings during this review do not relieve the contractor from compliance with the requirements of the plans and specifications and applicable laws, codes and regulations. Review of a specific item shall not include review of an assembly of which the item is a component. The Contractor is responsible for: dimensions to be confirmed and correlated at the jobsite; information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences and procedures of construction; coordination of the Work with that of all other trades and performing all Work in a safe and satisfactory manner.

BY: Grant Parsons

DATE: 04/08/2024

ICT
I. C. THOMASSON ASSOCIATES, INC.

Previously marked furnish as corrected. Reviewed for record. Confirmed no ecnomizer and acceptable fan selection

SPC Mechanical
10125 Berkeley Pl Dr
Charlotte, NC 28262

Submittal

REVIEW DATE:	4/2/2024
PROJECT NAME:	WR2310 Envision
JOB NUMBER:	WR2310
ARCHITECT:	Lamar Johnson
ENGINEER:	I.C Thomasson Assoc
PRODUCT/MATERIAL ID:	HTA-1 Through HTA-3
SPEC. SECTION/PARAGRAPH NO.:	237313
SUBCONTRACTOR/SUPPLIER:	JCI

NOTES:

Revised submittal includes equipment HTA-1 through HTA-3

ARCHITECT/ENGINEER REVIEW/APPROVAL	SPC REVIEW/APPROVAL
	☑ **No Exceptions Taken** ☐ **Exceptions Indicated** ☐ **Rejected - Revise & Resubmit**
	SPC'S REVIEW IS FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT AND FOR GENERAL ARRANGEMENT ONLY. REVIEW SHALL NOT BE CONSTRUED TO MEAN THAT SPC ACCEPTS ANY DEVIATIONS FROM THE CONTRACT DOCUMENTS UNLESS NOTED AND APPROVED BY SPC AND BY THE ARCH/ENG. SUPPLIER IS RESPONSIBLE FOR ERRORS OR OMISSIONS IN THE SHOP DRAWINGS, FOR MEETING ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS, FOR CONFIRMING AND CORRELATING JOBSITE DIMENSIONS, FOR INFORMATION THAT PERTAINS SOLELY TO FABRICATION PROCESSES OR TO TECHNIQUES OF CONSTRUCTION, AND FOR COORDINATION OF THE WORK, EQUIPMENT AND/OR SUPPLIES **ALL MATERIAL MUST BE SHIPPED AS PER SPC PURCHASE ORDER**

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Submittal Transmittal

PROJECT # 107237, AESC-SC1 – Florence, SC
1330 Estate Road
Florence, SC 29506

Date: 3/7/2024 **Reference Number: 212**

Transmitted To:	Grant Parsons I.C. Thomasson Associates, Inc. 2950 Kraft Drive Nashville, TN 37204 Tel: 615-346-3400 Fax:	**Transmitted By:**	Cesar Villagrana SPC Mechanical Corporation 1500 Wendell Blvd. Wendell, NC 27591 Tel: Fax:

Submitting Company:

Submittal Package No	Description	Package Category
212 - 23 7313	Submittal 212 - HTA-01 - HTA-03 AHU's	**CR M E P FP**

Item #	Ref #	Rev	Description	Status	Due	Returned
1	000898	0	AIR HANDLING UNIT - MEDIUM OR LOW PRESSURE			

Item Notes:

Package Notes:

Submittal includes equipment HTA-01 through HTA-03

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Submittal #	212
Spec Section	237313
Description	Submittal 212 -HTA-01 - HTA-03 (AHU's)
Subcontractor	SPC Mechanical
Reviewer	Francisco Robledo
Date	03/07/2024

- [ ] APPROVED
- [x] FURNISH AS CORRECTED
- [ ] REJECTED
- [ ] REVISE AND RESUBMIT
- [ ] SUBMIT SPECIFIED ITEM
- [ ] REVIEWED

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BY: Grant Parsons

DATE: 03/15/2024

ICT
I. C. THOMASSON ASSOCIATES, INC.

- With the supply fan motor BHP = 4.8, nameplate motor HP can be 7.5 HP in lieu of 15 HP
- No economizer needed

EQUIPMENT SUBMITTAL FOR APPROVAL

PROJECT: AESC Battery Manufacturing Plant

LOCATION: Florence, SC

Note: Picture is example only – see submittal for drawings

EQUIPMENT	Semi-Custom Air Handling Units
UNIT TAGS	VARIOUS
QUANTITY	**113**
SPEC SECTION	23 7313

SOLD TO:
SPC Mechanical

CONSULTANT:
I.C.Thomasson Associates

PREPARED BY:
Johnson Controls, Inc.

DATE:
Apr 2, 2024

REVISION:
1

Bill of Material and Scope Details

Product Type: Semi-Custom Air Handling Units

Unit Tags: Various

C. OUTDOOR AIR HANDLING UNITS: TAGs: HTA-01 ~ HTA-03

Furnish Eighteen (18) Outdoor Air Handling Units with 460/3/60 power furnished with the following sections:

- Mixing Box
- Filter Section
- Cooling coil
- Heating Coils
- Supply Fan
- Discharge Plenum

FURNISHED WITH THE FOLLOWING FEATURES AND ACCESSORIES:

- Unit Options:
  - Unit casing deflection no greater than L/240 at 8" of static pressure
  - Maximum leakage of 1% at 8" of static pressure
  - **GALVANIZED STEEL INTERIOR LINER**
  - 2" double wall construction
  - **CHAMPAGNE URETHANE EXTERIOR PAINT**
  - 6" base rail
  - 15 Amp GFI outlet provided in the supply fan segment
  - Vapor proof LED lights
- Mixing Box:
  - Low leakage damper
- Filter Segment:
  - Two (2) sets of 2" MERV 8 pleated filters
  - Magnehelic filter gauge
- Heating coil segment:
  - Galvanized steel bulkhead, support, and casings
  - **EXTERIOR PIPE CHASE WITH ACCESS DOOR**
- Supply Fans:
  - Direct drive plenum fan array
  - Premium efficiency motor with shaft grounding rings
  - Factory mounted VFDs **(2 VFDs Total per Unit)**
  - Fan Airflow Monitoring
- Start-Up & Warranty:
  - JCI Factory Startup
  - Standard Eighteen (18) month parts and labor warranty from shipment or twelve (12) months from startup, whichever occurs first.
  - **ADDITIONAL 1 YEAR OF PARTS AND LABOR WARRANTY (2 YEARS TOTAL) TO EXTEND WARRANTY THROUGH 1 YEAR POST SUBSTANTIAL COMPLETION**

ITEMS NOT INCLUDED (ALL SCOPE ABOVE):

- Controls
- Smoke detectors
- Wiring or installation of control components
- Piping or piping specialties; stainless steel drain pans (not applicable for heating coils)
- Hauling, Unloading, Rigging, Installation and Re-Assembly of Equipment
- Taxes, Delayed Shipment, Expedited Freight, and Long Term Storage
- Extended Warranty
- Factory or Field Leakage and Deflection Testing

Performance Ratings & Unit Drawings

Product Type: Semi-Custom Air Handling Units

Unit Tags: Various

Air Handling Unit Performance Report

Job Summary

Project Name:	Envision 2 SC Outdoor Units		
Unit Tag(s):	HTA-01, HTA-02, HTA-03		
Quantity:	3	**Environment:**	Outdoor

Unit Overview

Model	Airflow (CFM)	Altitude (ft)	Weight (lbs)
XTO-132x120	38,500	0	14,076

Segment Sequence

(DP)(FS)(XA HC FF)(MB)

Unit Construction

Casing Details

Segment(s)	Thickness (in)	Exterior Paint	Exterior Gauge and Material	Interior Gauge and Material	Insulation Thickness and Material	Mylar Lining	Thermal Break	Bulkhead Material
MB, XA, DP	2"	Champagne Urethane 3,500 Hr	18 Ga. G-90 Galvanized	Standard Ga. G-90 Galvanized	2" Foam	-	-	None
FF, HC, FS	2"	Champagne Urethane 3,500 Hr	18 Ga. G-90 Galvanized	Standard Ga. G-90 Galvanized	2" Foam	-	-	Galvanized Steel

Base Details

Segment(s)	Material	Paint
MB, FF, HC, XA, FS, DP	6" Formed Steel	Champagne Urethane 3,500 Hr

Floor Details

Segment(s)	Gauge and Material	Paint	Insulation	Thermal Break	Attachment	Sub-Floor Gauge and Material
MB, FF, HC, XA, FS, DP	Standard Ga. G-90 Galvanized	None	2"	-	Screw Down	None

Notes

Enhanced Thermal Performance construction.

High Humidity OA construction.

A curb rest will be provided with the unit.

Vestibule/Pipe Chase

Casing Details						
Segment(s)	Thickness (in)	Exterior Paint	Exterior Gauge and Material	Interior Gauge and Material	Insulation Thickness and Material	Depth
PC	2"	Champagne Urethane 3,500 Hr	18 Ga. G-90 Galvanized	Standard Ga. G-90 Galvanized	2" Foam	36"

Floor Details						
Segment(s)	Gauge and Material	Paint	Insulation	Thermal Break	Attachment	Sub-Floor Gauge and Material
PC	Standard Ga. G-90 Galvanized	None	2"	-	Screw Down	None

Notes

Openings in vestibule/pipe chase floor to be field cut by others unless indicated otherwise. Refer to IOM for procedures for cutting openings.

Vestibule/pipe chase floor is designed to support a maximum point load of 300 lbs. Equipment to be installed and attached in the field.

Vestibule/Pipe Chase must be reviewed with the factory prior to release for fabrication to ensure proper structural design of vestibule/pipe chase floor.

Vestibule/pipe chase roof is not designed to be used to support field installed piping, ductwork, exhaust hoods, etc.

Unit Electrical

Circuit Details					
Circuit #	Component(s)	V/Ph/Hz	Full Load Amps (FLA)	Minimum Current Ampacity (MCA)	Maximum Overcurrent Protection (MOP)
1	Manual Motor Protector on FS,VFD on FS	460/3/60	36.2	40.73	50
2	Manual Motor Protector on FS,VFD on FS	460/3/60	36.2	40.73	50
3	Electrical Outlet and Light Switch on FS	120/1/60	-	-	20

Electrical Details			
Minimum Unit SCCR	10 kA rms Symmetrical	ETL Label (UL1995/NEC-2002)	Yes
Unit Light Type		Light Switch Enclosure	
LED		Outdoor	

Supply Fan(s)

Performance Details

Fan Manufacturer	Model	# Blades	Class	Size	% Wheel Width	% Wheel Diameter	Quantity	Airflow per Fan (CFM)	Altitude (ft)	TSP (in w.g)	ESP (in w.g)	Fan Speed (RPM)	Fan Power (BHP)
Lau	SF	9	II	245	120	100	4	9,625	0	4.58	2.00	✓ 1,745	✓ 11.02

Max RPM	Wheel Type	Blade Type	Wheel Material	Base Material	Fan Flow Isolation	AirFlow Monitoring	Inverter Drive Balancing	Isolation Type	Thrust Restraints
✓ 2,269	SWSI	Airfoil	Aluminum	-	Damper	Yes (K=2941.00)	-	Rubber Pad	-

Drive Type	FEI	FEP (KW)	Inlet Screen	Fan Cage	Fan Stand	Motor Removal Rail	Seismic Snubber
Direct Drive	0.30	36.37	-	-	-	-	-

Motor Details

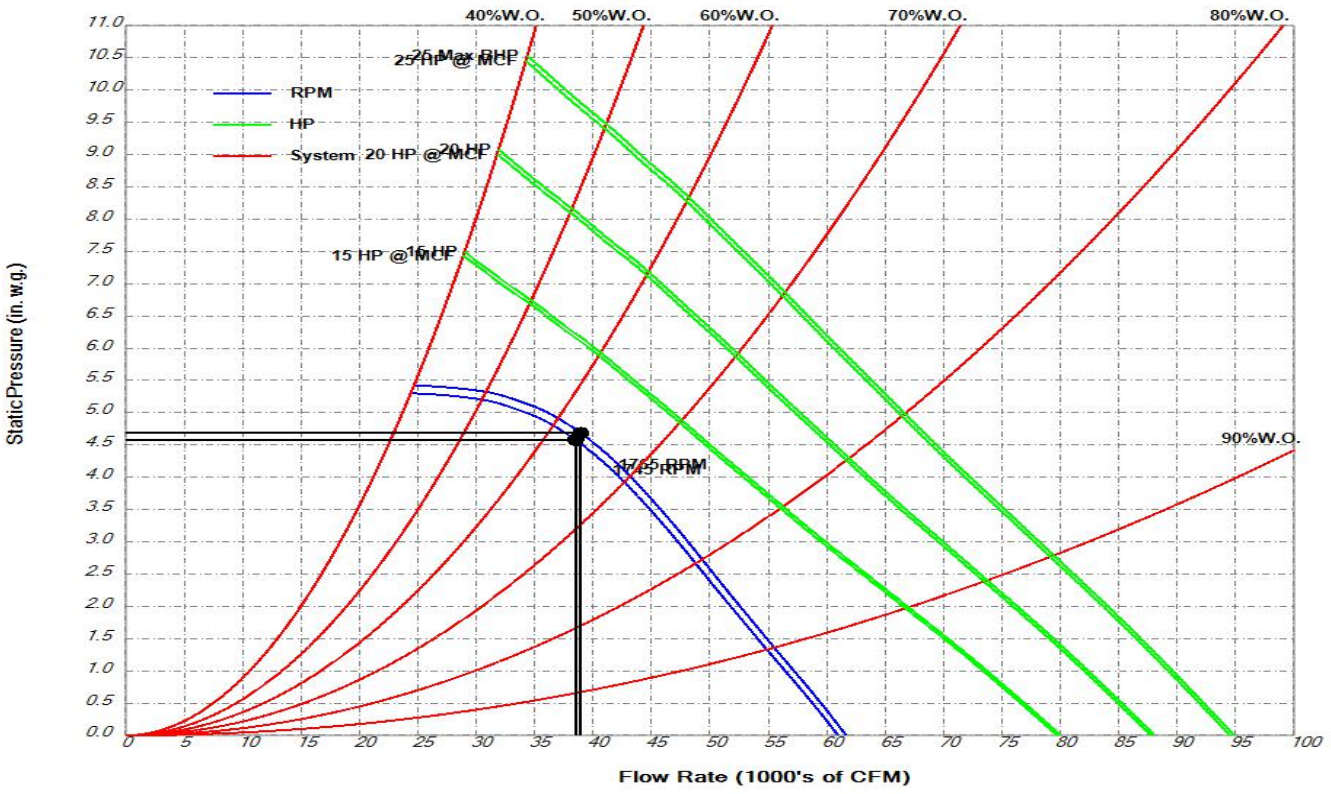
Type / MFG	Motor Power (HP)	V/Ph/Hz	Quantity	Insulation Class	RPM	Frame Size	FLA (Amps)	Efficiency	Location	SGR
TEFC / Baldor	✓ 15.0	460/3/60	4	H	1,800	254T	18.10	Premium	Left	Yes

At Motor Synchronous Details

TSP (in w.g.)	Total Air Flow (CFM)	Fan Speed (RPM)	Fan Power (BHP)
4.69	9,735	1,765	11.40

Notes

Certified by the AHRI Central Station Air-Handling Unit (AHU) Certification Program, based on AHRI Standard 430/431. AHRI certified units are subject to rigorous and continuous testing, have performance ratings independently measured and are third-party verified. Certified units may be found in the AHRI Directory at www.ahridirectory.org



Water Coil(s)

Coil Information

Segment[Index]	Coil Tag	Coil Duty	Fluid Type	Airflow (cfm)	Flow Direction	Density	Altitude (ft)
HC[1]	-	Heating	Water	38500	Horizontal	Standard	0

Coil Bank Configuration

Segment[Index]	Tube Diameter (in) Fin Type	Total Fin Height (in)	Fin Length per Coil (in)	Face Velocity (fpm)	Stacking Rack Material	Coils High	Coils Wide	Coil Configuration	Coil Stagger (in)	Coil Pull Panel
HC[1]	0.500 Corrugated	120.00	108.00	428	-	3	1	Standard	0	Left Side

Airside Performance

Segment[Index]	EAT-DB (°F)	EAT-WB (°F)	LAT-DB (°F)	LAT-WB (°F)	TMBH	SMBH	Air Pressure Drop (in w.g.)
HC[1]	105.0	-	120.1	-	640	640	0.39

Fluidside Performance

Segment[Index]	EFT (°F)	LFT (°F)	Fluid Velocity (fps)	Fluid Flow (gpm)	Fluid Pressure Drop (ft)	Rows	Tubes Per Circuit	Reynolds Number
HC[1]	140.0	106.0	1.4	38.3	3.4	6	12	9752

Fin and Tube Configuration

Segment[Index]	Fin Thickness (in) / Material	Fin Spacing (fpi)	Tube Thickness (in)	Return Bend Thickness	Casing Material	Coil Coating	Fouling Factor (hr.ft².°F/BTU)
HC[1]	0.008 Aluminum	12	0.016	0.016	Galvanized	None	-

Header and Connection Configuration

Segment[Index]	Header Material	Connection Material	Connection Diameter (in)	Connection Offset (in)	Connection Type	Connection Location/Rotation
HC[1]	Copper	Steel	1.5	0	MPT	Left

Other Performance

Segment[Index]	Dry Weight (lbs)	Fluid Weight (lbs)	Internal Volume (ft³)
HC[1]	1530	411	7.2

Notes

- Performance is shown for the entire coil bank. Performance is not per coil.
- Coil index indicates position in segment. Example: CC-1, index 1; Spacer, index 2; CC-1, index 3
- Ratings are for coils manufactured by Johnson Controls, Inc., 507 E. Michigan St., Milwaukee WI 53202.
- All Coils: Johnson Controls suggests using red brass or copper connectors when the coil is to be attached to a copper or brass piping system.
- All Coils: AHRI Certified: No. not certified by AHRI 410. All Coils: AHRI Certified: No. rated in accordance with the AHRI Forced-Circulation Air-Cooling and Air-Heating Coils Certification program which is based on AHRI Standard 410. Certified units may be found in the AHRI Directory at www.ahridirectory.com.
- EATDB>100 deg F - All Coils: AHRI Certified: No. outside of the scope of AHRI Standard 410.
- AHRI Certified: No
- All Coils: BDW Tube Spacing: 1.25 x 1.08
- All Coils: Coil Dll Version: 8.2

Filter(s)

Details							
Segment	Type	Depth	Filter Loading	Media/MERV	# of Spares	Spare Filter Media	Frame Material
FF	Primary Filter	2"	Side	Pleated 30% Efficiency (MERV 8)	1	Pleated 30% Efficiency (MERV 8)	Galvanized Steel

Sizes						Filter Gauge Details		
Segment	Filter	1st Filter Size H x W (in)	1st Qty	2nd Filter Size H x W (in)	2nd Qty	Location	Type	Range (in w.g)
FF	Primary Filter	24x24	20	24x12	5	Door	Magnehelic with Flag	0 - 2.0

Damper(s)

Details											
Segment	Air Path	H x W (in)	Qty	Total Face Velocity (ft/min)	Face Area (ft²)	Airflow (CFM)	Min Airflow Measurement (CFM)	Type	Config	Model	Material	Blade Orientation
MB	Return Air	32.50 x 97.00	1	1,759	21.9	38,500	-	Control	100%	CD60	Galvanized	Parallel
FS	Inlet Air	37.25 x 37.68	4	987	39.0	38,500	-	Counterbalanced Backdraft	100%	CBD6	Aluminum	Parallel

Door(s)

Details												
Segment(s)	Location	Swing	Hinge Location	H x W x T (in)	View Port	ViewPort Wire	Test Port	Spare Gasket	Thermal Break	Fastener Type	Safety Latch	Noncontact Safety Interlock
MB	Left	Outward	Front	78 x 18 x 2	Standard Double Pane	-	Yes	-	Yes	Plated	-	-
FF	Left	Outward	Front	126 x 10 x 2	None	-	-	-	Yes	Plated	-	-
FF	Right	Outward	Front	126 x 10 x 2	None	-	-	-	Yes	Plated	-	-
XA	Left	Outward	Front	78 x 18 x 2	Standard Double Pane	-	Yes	-	Yes	Plated	-	-
FS	Left	Outward	Rear	78 x 21 x 2	Double Pane - 8x8	-	Yes	-	Yes	Plated	Yes	-
DP	Left	Outward	Front	78 x 18 x 2	Standard Double Pane	-	Yes	-	Yes	Plated	Yes	-
PC	Left	Outward	Front	129 x 19 x 2	None	-	-	-	-	Plated	-	-

Motor Control(s)

VFD Details									
Segment	Type	V/Ph/Hz	Input/Output Amps*	Efficiency (%)	Heat Loss (at 100% load)	Enclosure	Bypass	Disconnect Type	RFI/EMI EMC Filter
FS	AYK-580	460/3/60	44/44	98	619	NEMA 3R	-	Fused	Yes
FS	AYK-580	460/3/60	44/44	98	619	NEMA 3R	-	Fused	Yes

Notes (ABB VFD)
*Drives are rated for use below 3,000 ft and 104°F. Refer to the Air-Mod Engineering Guide Form 100.42-EGI (813) for additional information.
Drives are current rated devices. The HP ratings provided are for reference only and are based on typical 4-pole motors at nominal voltages (NEC Table 430-150). If full motor torque is required, ensure the drive has a continuous current rating equal to, or greater than, the full load amp rating of the motor.
Storage Temperature: -40°F to 158°F (-40°C to 70°C).
Ambient Operating Temperature: Temperate 5°F to 104°F (-15°C to 40°C). De-rating to operate at 122°F (50°C).
Relative Humidity: 5% to 95% non-condensing. Maximum relative humidity is 60% in the presence of corrosive gasses.
Altitude: 100% Load Capacity (No De-rating) up to 3,300 ft. (1,000 m). 1% derating for each 330 ft. above 3,300 ft. Installations above 6,600ft. (2,000 m) require review.
If 8KHZ Switching Frequency is used, de-rate output current to 80%.
Overload Current Rating: 110% for 1 minute every 10 minutes and is capable of 130% short term-overload rating for 2 seconds our of each minute.
If applicable, motor overload protection in the bypass mode is provided by a Class 20 motor overload relay.
The customer is responsible for providing either a platform/catwalk or portable means to access the VFD when the VFD is installed where the center of the handle of the disconnecting means in its uppermost position is greater than 78” above the finished floor.
Input line Impedance: 5% Equivalent Input Impedance with internal reactor(s). Patented swinging choke design for superior harmonic mitigation.
Use Copper Conductors Only. Do not use aluminum wire.

Manual Motor Protection Details					
Location Segment	Disconnect Type	Enclosure Type	V/Ph/Hz	# of Fans Served	Motor HP (Each)
FS	None	NEMA 3R	460/3/60	4	15
FS	None	NEMA 3R	460/3/60	4	15

Total Combined HP	Total Amps	Drain/Vent Assembly	Service	# of Circuits
60	36.2	-	Supply Fan motor(s)	2
60	36.2	-	Supply Fan motor(s)	2

Notes
Use Copper Conductors Only. Do not use aluminum wire.
The Class 10 trip rating of the MMP device will not withstand an across-the-line start of a fan and should not be used with VFDs with bypass circuits.

Face Velocity and Static Pressure

Summary						
Segment	Description	Face Area (ft²)	Airflow (CFM)	Face Velocity (ft/min)	Supply Fan Static Pressure (in w.g.)	Exhaust/Return Fan Static Pressure (in w.g.)
MB	CD60 (Control Damper 60 - Galvanized Airfoil)	21.9	38,500	1,759	0.04	0.00
MB	Safety Cover	21.9	38,500	1,759	0.33	0.00
MB	Return Air Opening	21.9	38,500	1,759	0.52	0.00
FF	2" Pleated 30% Efficiency (MERV 8)	90.0	38,500	428	0.23	0.00
FF	Dirty Filter Allowance	0.0		0	0.50	0.00
HC	Heating - 6 Row - 12 Fins Per Inch	90.0	38,500	428	0.39	0.00
FS	CBD6 (Backdraft Damper With Counterbalance)	39.0	38,500	987	0.05	0.00
FS	External Static - User Entered	0.0		0	2.00	0.00
DP	Safety Cover	28.0	38,500	1,375	0.20	0.00
DP	Supply Air Opening	28.0	38,500	1,375	0.32	0.00
				Total	**4.58**	**0.00**

Dimensions and Weight

Details					
Segment	Description	Length[1] (in)	Height (in)	Width[2] (in)	Weight[3] (lbs)
MB	Mixing Box	50	132	120	2,056
FF	Flat Filter	13	132	120	412
HC	Heating Coil	29	132	120	2,664
XA	Access	21	132	120	514
FS	Fan (Supply)	80	132	120	6,093
DP	Discharge Plenum	49	132	120	1,848
	Overall	**242**			

Notes

[1]The length includes bottom tier segments only.

[2]The width does not include coil connection extensions or door latches that extend beyond the unit casing. The width does not include the depth of any pipe chases.

[3]See Shipping Summary for notes on weights.

Statement of Compliance

Details

Air Handling Unit AHU's meet IBC seismic requirements for non-critical equipment (Ip = 1.0) for locations with design spectral response Sds <= 0.43. Units must be rigid mounted.

The anchorage of the unit to the ground or building structure needs to be evaluated by and is the responsibility of the engineer of record.

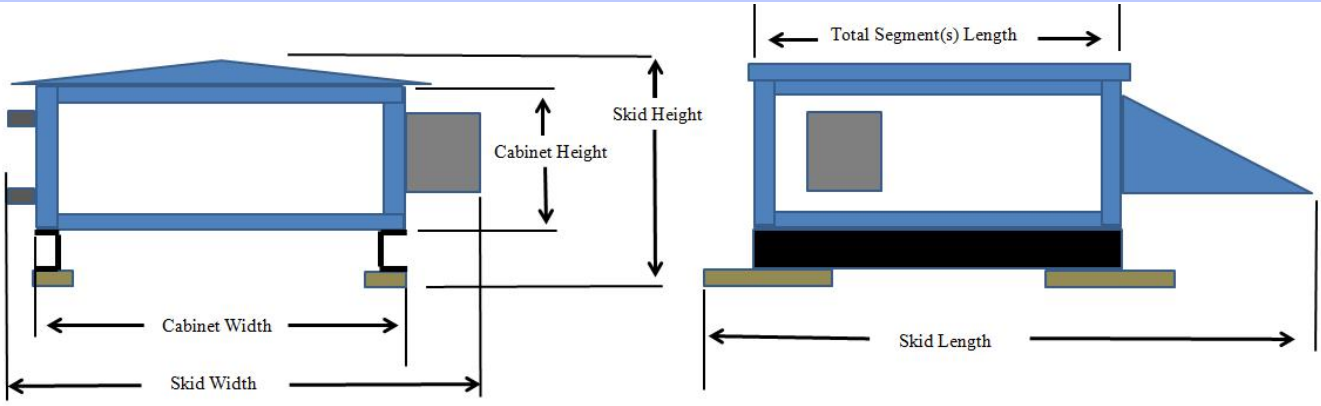
Specification of seismic requirements is the responsibility of the project design engineer. If formal certification is required, please contact your sales representative and/or application engineer for review. Certain application and site requirements may require additional cost and/or lead time.

Component locations are listed as Segment Hand (Unit Hand): ex. Left (Right). See Submittal Drawing for additional details.

Air handling unit parameters vary depending on conditions. Parameters such as airflows, air pressure drops, and coil capacities are shown for design conditions.

Shipping Summary

Details				
Skid	**Skid Length (in)**	**Skid Height (in)**	**Skid Width (in)**	**Skid Weight (lbs)**
MB	54	144	128	2,083
XA HC FF	66	144	128	3,207
FS	83	144	139	6,121
DP	52	144	128	1,876
Pipe Chase(s)	N/A	N/A	N/A	489
Overall				**13,776**



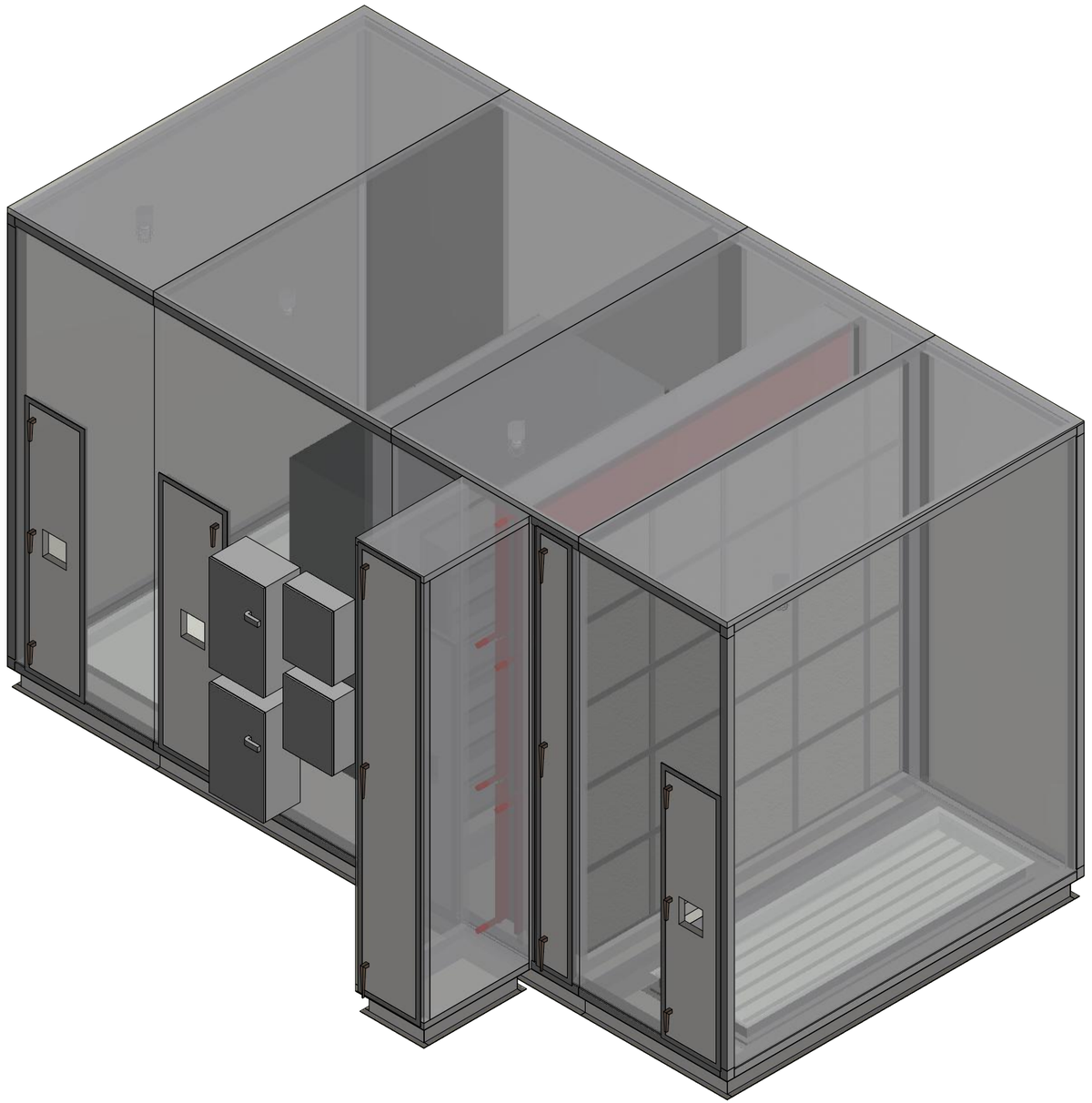
Notes

Skid Width: Total width of the shipping skid, including any items that may extend beyond the cabinet (this includes any door handles, coil connections, drain connections, lifting lugs, mounted pipe-chases, electrical/control components, tie-down brackets, side dampers).

Skid Height: Total height of the shipping skid, including any items that may extend beyond the cabinet (this includes any base-rails, shipping wood-blocks, roof peak, discharge flanges, mounted gas-furnace flue pipes).

Skid Length: Total length of the shipping skid, including any items that may extend beyond the cabinet (this includes any mounted rain-hoods, discharge flanges, tie-down brackets, shipping wood-blocks, front dampers, split connectors, electrical/control components, outrigging extensions, isolation dampers, inlet baskets).

Skid Weight: Weight values represent the estimated operational weight with a tolerance of +/- 10% for values greater than 5,000 lbs. Values less than 5,000 lbs. may have higher percentage variation but not any consequential shipping impact. Operational weight estimate includes unit shell, internal components and structure, and known ship loose and/or field-installed items (weather hoods, pipe chases, factory-provided filter media and estimated fluid weight in coils). Actual operating weight will be heaver due to additional field installed materials including but not limited to field-provided filter media, piping, control devices, and/or inertia base concrete.



REV	DATE	REVISION CHANGE	REV BY

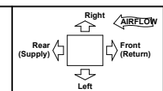
YORK SOLUTION UNIT DRAWING

MODEL: XTO-132x120 03/29/2024 05:58:02 PM UTC
DESIGNATION: HTA-01
PROJECT NAME: ENVISION 2 SC OUTDOOR UNITS

ISOMETRIC VIEW

SHEET 1 OF 6 CONTRACT#: 4E-H40118-01
UNIT TAG: HTA-01, HTA-02, HTA-03

ALL DIMENSIONS SHOWN IN: INCHES
DRAWING SCALE: NTS
DIMENSION TOLERANCES: UNIT (+/- 1/2"); PIPING (+/- 2")
WEIGHT: 14076 (+/- 10%)
DRAWING NOT TO BE USED FOR CONSTRUCTION

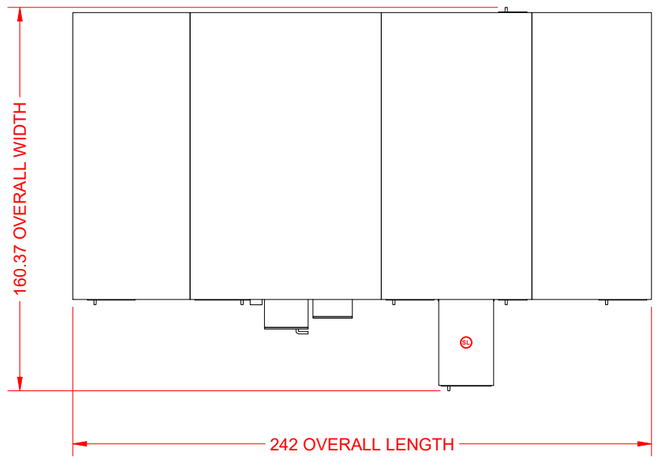


PLAN VIEW

YORK® Solution™

EaS Version: 1.23.6.2

PLAN VIEW



NOTES:

UNITS WITH A BASERAIL AND A BOTTOM OPENING: DUCT CONNECTION FLUSH WITH THE BOTTOM OF UNIT, NOT FLUSH WITH BOTTOM OF BASERAIL.

REFER TO PERFORMANCE REPORT FOR SHIPPING SPLIT DETAILS.

ALLOW SUFFICIENT SPACE AROUND THE UNIT FOR REMOVING THE ACCESS PANELS AND VARIOUS PARTS OF THE UNIT. A MINIMUM CLEARANCE EQUAL TO THE WIDTH OF THE UNIT MUST BE PROVIDED ON ONE SIDE OF THE UNIT FOR REMOVING THE COIL OR FAN ASSEMBLY.

CONTRACTOR RESPONSIBLE FOR PENETRATIONS AND CONNECTIONS OF ALL ELECTRICAL BOXES AND INTERNAL COIL CONNECTIONS (IF PRESENT).

OVERALL DIMENSIONS ACCOUNT FOR COMPONENTS EXTENDING BEYOND UNIT CABINET IN ORDER TO CONVEY THE TRUE SPACE REQUIREMENTS FOR THE UNIT. THESE ITEMS MAY INCLUDE OUTDOOR ROOF PEAK, MOTOR CONTROL AND/OR FACTORY PACKAGE CONTROL BOXES, WEATHER HOODS, PIPE CHASES, DAMPER/LOUVER ASSEMBLIES, AND/OR UNIT BASE RAIL.

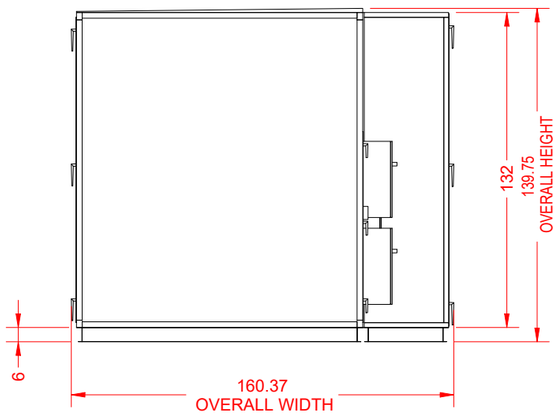
CERTAIN ITEMS MAY EXTEND BEYOND CABINET DIMENSIONS INCLUDING: COIL CONNECTIONS, ROOF TRIM, DOOR HANDLES, LIGHT SWITCHES, ELECTRICAL PANEL HANDLES, LIFTING LUGS, GAS FUEL SYSTEM, ETC.

THE OVERALL UNIT LENGTH MAY INCLUDE ADDITIONAL 1/4" PER SHIPPING SPLIT (IF APPLICABLE) FOR GASKET AND CONNECTION HARDWARE.

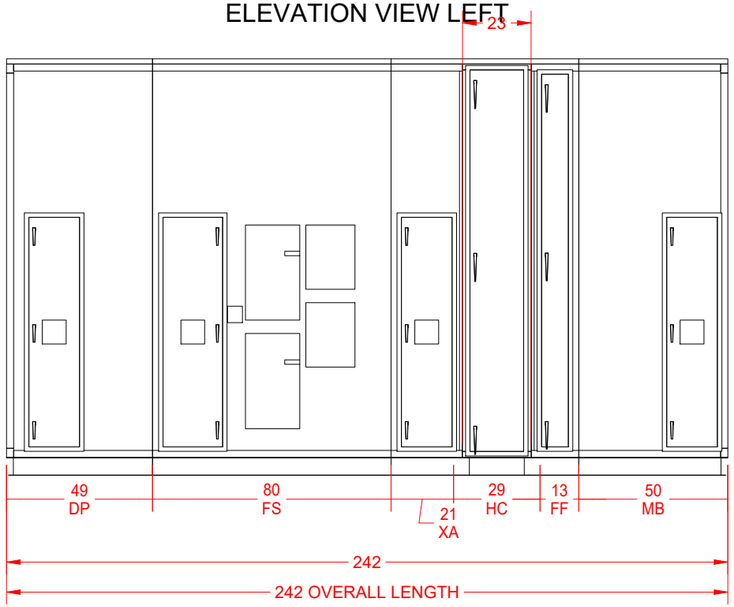
FILTER DIMENSIONS ARE NOMINAL SIZES.

ELECTRICAL DEVICES (LIGHTS, SWITCHES, PANELS, ETC.) INDICATE GENERAL AREA OF UNIT (E.G., SEGMENT); FINAL PLACEMENT DETERMINED DURING MANUFACTURING.

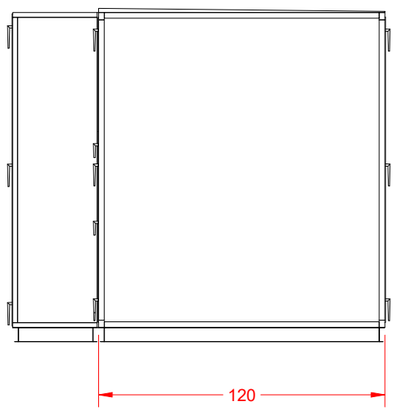
REAR VIEW



ELEVATION VIEW LEFT



FRONT VIEW



REV	DATE	REVISION CHANGE	REV BY

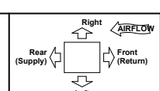
YORK SOLUTION UNIT DRAWING

MODEL: XTO-132x120 03/29/2024 05:58:02 PM UTC
DESIGNATION: HTA-01
PROJECT NAME: ENVISION 2 SC OUTDOOR UNITS

EXTENTS VIEW

SHEET 2 OF 6 CONTRACT#: 4E-H40118-01
UNIT TAG: HTA-01, HTA-02, HTA-03

ALL DIMENSIONS SHOWN IN: INCHES
DRAWING SCALE: NTS
DIMENSION TOLERANCES: UNIT (+/- 1/2"); PIPING (+/- 2")
WEIGHT: 14076 (+/- 10%)
DRAWING NOT TO BE USED FOR CONSTRUCTION



PLAN VIEW

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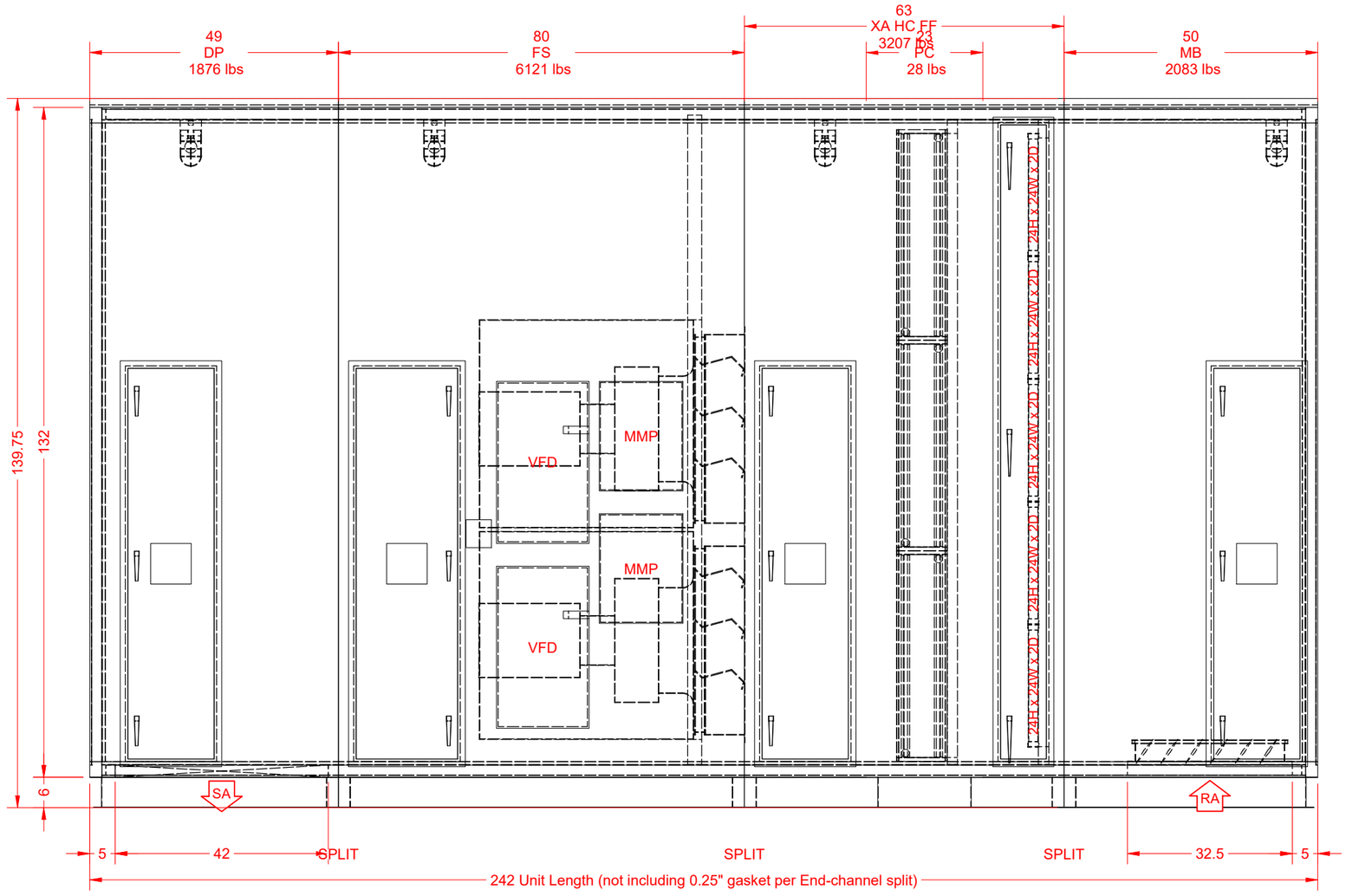
EaS Version: 1.23.6.2



REV	DATE	REVISION CHANGE	REV BY

EaS Version: 1.23.6.2

YORK SOLUTION UNIT DRAWING

MODEL: XTO-132x120 03/29/2024 05:58:02 PM UTC
DESIGNATION: HTA-01
PROJECT NAME: ENVISION 2 SC OUTDOOR UNITS

ELEVATION VIEW

SHEET 3 OF 6 CONTRACT#: 4E-H40118-01
UNIT TAG: HTA-01, HTA-02, HTA-03

ALL DIMENSIONS SHOWN IN: INCHES
DRAWING SCALE: NTS
DIMENSION TOLERANCES: UNIT (+/- 1/2"); PIPING (+/- 2")
WEIGHT: 14076 (+/- 10%)
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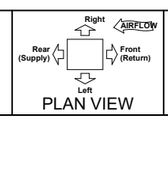
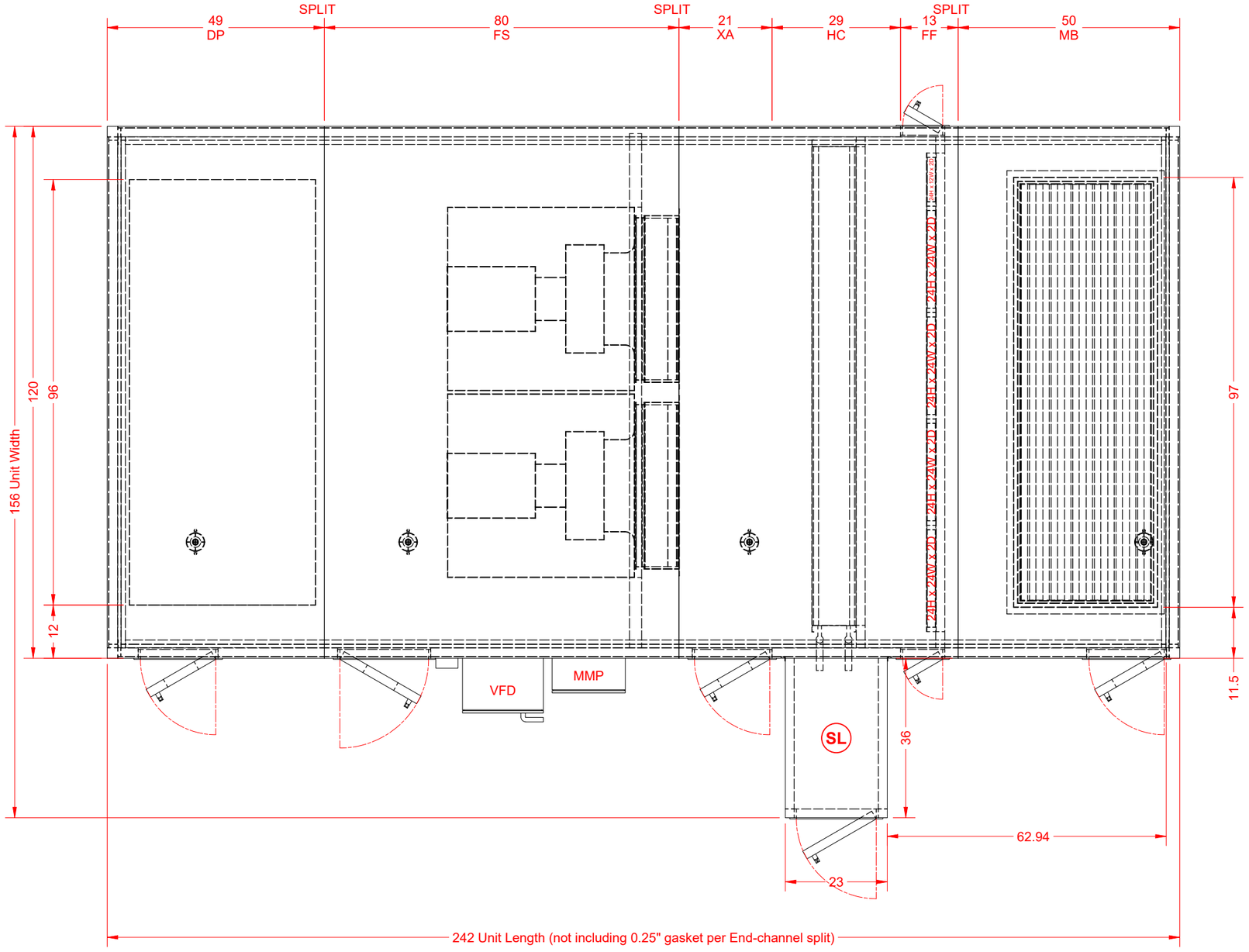


PLAN VIEW

YORK® Solution™



REV	DATE	REVISION CHANGE	REV BY

EaS Version: 1.23.6.2

YORK SOLUTION UNIT DRAWING

MODEL: XTO-132x120 03/29/2024 05:58:02 PM UTC
DESIGNATION: HTA-01
PROJECT NAME: ENVISION 2 SC OUTDOOR UNITS

PLAN VIEW

SHEET 4 OF 6 CONTRACT#: 4E-H40118-01
UNIT TAG: HTA-01, HTA-02, HTA-03

ALL DIMENSIONS SHOWN IN: INCHES
DRAWING SCALE: NTS
DIMENSION TOLERANCES: UNIT (+/- 1/2"); PIPING (+/- 2")
WEIGHT: 14076 (+/- 10%)
DRAWING NOT TO BE USED FOR CONSTRUCTION

Right (AIRFLOW) Rear (Supply) Front (Return) Left
PLAN VIEW

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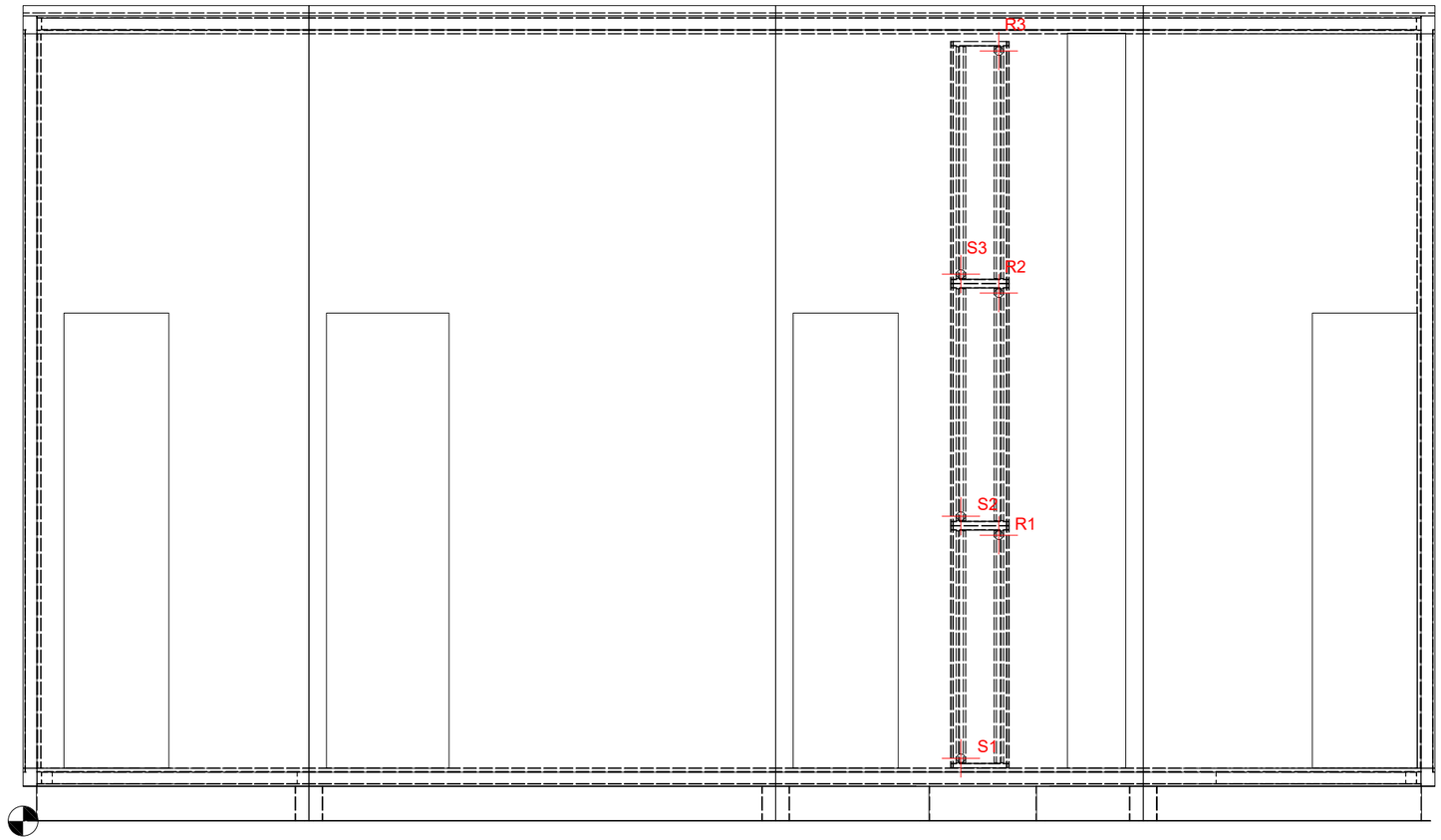
COIL CONNECTIONS							
CNCT	XDIM	YDIM	SEG	HAND	TYPE	SIZE	SRVC
S1	160.8	10.7	HC	LEFT	MPT	1.5	SPLY
R1	167.3	49.0	HC	LEFT	MPT	1.5	RTRN
S2	160.8	52.2	HC	LEFT	MPT	1.5	SPLY
R2	167.3	90.5	HC	LEFT	MPT	1.5	RTRN
S3	160.8	93.7	HC	LEFT	MPT	1.5	SPLY
R3	167.3	132.0	HC	LEFT	MPT	1.5	RTRN



REV	DATE	REVISION CHANGE	REV BY

EaS Version: 1.23.6.2

YORK SOLUTION UNIT DRAWING

MODEL: XTO-132x120 03/29/2024 05:58:02 PM UTC
DESIGNATION: HTA-01
PROJECT NAME: ENVISION 2 SC OUTDOOR UNITS

PIPING CONNECTIONS

SHEET 5 OF 6 CONTRACT#: 4E-H40118-01
UNIT TAG: HTA-01, HTA-02, HTA-03

ALL DIMENSIONS SHOWN IN: INCHES
DRAWING SCALE: NTS
DIMENSION TOLERANCES: UNIT (+/- 1/2"); PIPING (+/- 2")
WEIGHT: 14076 (+/- 10%)
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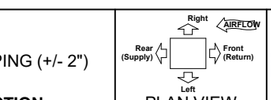

PLAN VIEW

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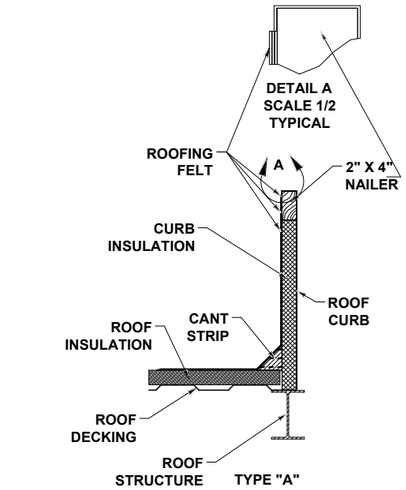
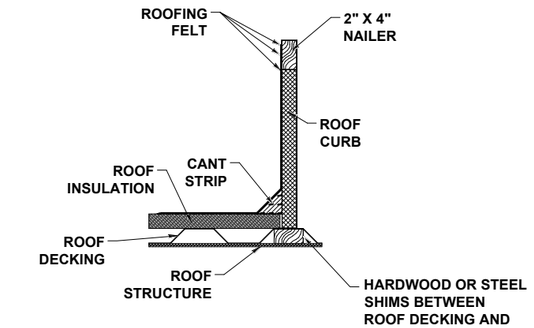
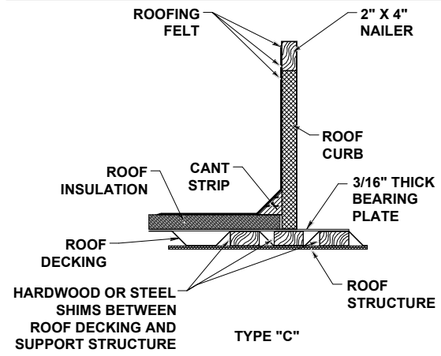
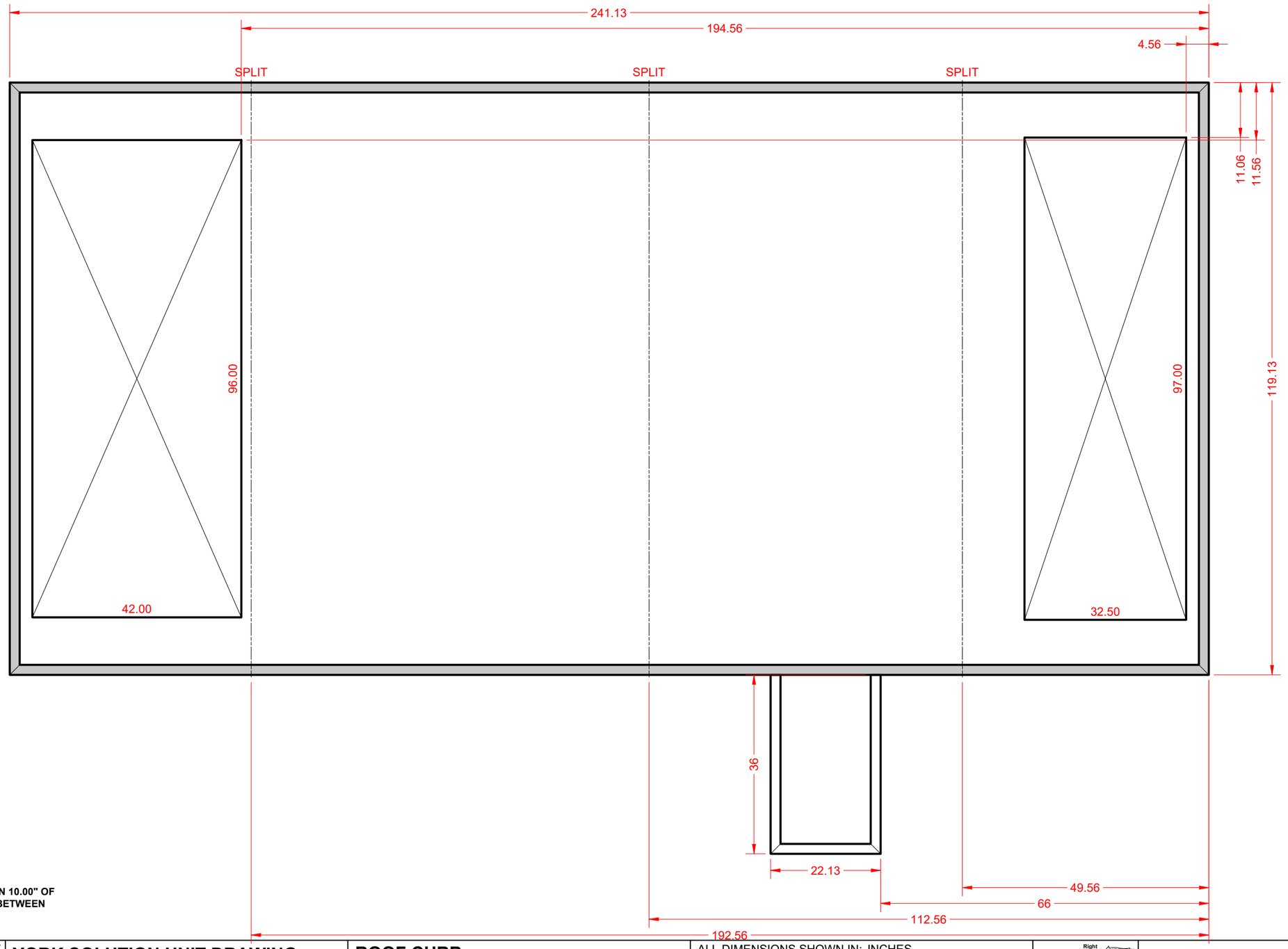
Not official curb drawings. Drawings are for reference only.









NOTES:
1. CERTAIN ITEMS MAY EXTEND BYOND CABINET DIMENSIONS. (ex. COIL CONNECTIONS, DOOR Handles, MOUNTING FEET, ETC.)
2. ROOF CURB MUST BE INSTALLED SQUARE And LEVEL.
3. CROSS BRACES As REQ'D: NO SPLICES OR CROSS BRACES WITHIN 10.00" OF EITHER END OF PIPE CHASE. CROSS BRACING CAN BE LOCATED BETWEEN PIPE CHASE ENDS.

REV	DATE	REVISION CHANGE	REV BY

EaS Version: 1.23.6.2

YORK SOLUTION UNIT DRAWING

MODEL: XTO-132x120 03/29/2024 05:58:02 PM UTC
DESIGNATION: HTA-01
PROJECT NAME: ENVISION 2 SC OUTDOOR UNITS

ROOF CURB

SHEET 6 OF 6 CONTRACT#: 4E-H40118-01
UNIT TAG: HTA-01, HTA-02, HTA-03

ALL DIMENSIONS SHOWN IN: INCHES
DRAWING SCALE: NTS
DIMENSION TOLERANCES: UNIT (+/- 1/2"); PIPING (+/- 2")
WEIGHT: 14076 (+/- 10%)
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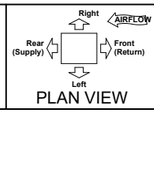

PLAN VIEW

YORK® Solution™

Startup Checklist

Product Type: Semi-Custom Air Handling Units

Unit Tags: Various

YORK BY JOHNSON CONTROLS	AIR HANDLING UNITS	
START-UP CHECKLIST	Supersedes: 100.00-CL1 (909)	Form 100.00-CL1 (313)

AIR HANDLER START-UP CHECKLIST

OFFICE LOCATION _____ UNIT TAG # _____

QUALIFIED TECHNICIAN _____ UNIT MODEL # _____

JOB NAME _____ UNIT SERIAL # _____

YORK JOB ID OR CONTRACT # _____ START DATE _____

JOB SITE LOCATION _____

JOB SITE CONTACT AND PHONE # _____

IMPORTANT SAFETY REQUIREMENT: FOLLOW THE LATEST"LOCK OUT TAG OUT" PROCEDURE.

PRE START-UP

GENERAL UNIT INSPECTION

Identify and perform appropriate “lock out/tag out” and safety rules. For details on points below see appropriate section of the Installation Instruction provided with each air handler.

For VFD equipped air handlers, refer to the VFD forms for additional requirements.

Serious damage to the AHU and/ or system is eminent if the AHU is operated under any of the following conditions:

- ***Without proper control of dampers.***
- ***With smoke dampers closed.***
- ***During a fire alarm or smoke purge test.***
- ***Any airflow restriction greater than normal.***

Solution	AH Units	Form	102.20-OM1	Air Modulator	VFD Quick Start	Form	100.42-NO1
Custom	AH Units	Form	100.31-NOM1				

□ Equipment received as ordered.	□ Unit installed with proper clearances.
□ Unit checked for damage to interior and exterior.	□ Visually inspect roof curb for tight seal around unit.
□ Unit installed on flat and level surface. Outdoor unit mounted within roof slope limitations where applicable.	□ All penetrations MUST be sealed. All conduits MUST be sealed internally.
□ Terminal screws and wiring connections secure in control, electric and Air Modulator panels.	□ Clean air filters installed properly and secured.
□ Air hoods installed properly.	□ Filter gauge set to zero.
□ Condensate drain properly trapped.	□ All field wiring complete and inspected.
□ All wiring and tubing connections made at shipping splits.	□ All shipping splits sealed and secured properly.
□ All field piping connections complete.	□ Pipe chase floor sealed at penetrations.
□ All shipped loose parts installed.	□ All shipping bolts and other material have been removed. (Fan, VIFB, Energy Recovery Wheel, Damper).
□ Installer has cleaned out interior.	□ Damper linkage is tight and in correct "power off" position.
□ Verify all plug-ins and wire connections are tight on UV equipment.	□ Controls installation complete.
□ Verify Energy Recovery Wheel turns freely and wheel segments are fully engaged.	□ Verify all spacers removed from door edges.
□ Verify all ductwork is complete and available for full air flow.	□ Verify correct piping of split system. Reference Section 2 of Solution IOM & Split System Application Guide (050.40-ES3).

FAN INSPECTION	
□ Check bearings and locking collars for properly tightened setscrews, bolts and nuts.	□ Fan wheel properly aligned, tight on shaft and freely moving.
□ Sheaves properly aligned and tight on shaft.	□ Check fan base isolators and thrust restraints for proper adjustment. **Note: Do not remove functional bolts from seismic isolators.**
□ Belt tension adjusted properly per drive pkg. label on fan.	
□ Check fan alignment with unit discharge. Adjust with isolation.	□ Fan bearings have been re-lubricated properly.

START-UP

PERFORM THE FOLLOWING STEPS IN ORDER:

Refer to safety standards. Ensure all door latches are secured before starting.

□ 1. With all Electric Power off, all disconnect switches open and fuses removed, check each circuit with an Ohm meter to ground observing no continuity. Reinstall fuses.	□ 8. Immediately check current draw of each leg of each motor.
□ 2. Energize power to the unit disconnect switch.	□ 9. VFD, refer to manufactures start up guide
□ 3. Verify correct voltage, phase and cycles.	□ 10. Check doors and latches for air leaks.
□ 4. Energize fan motor(s) briefly (bump) and check for correct fan rotation.	□ 11. Check for obvious audible leaks.
□ 5. Check operation of dampers. Insure unit will not operate with all dampers closed.	□ 12. Apply steam to cold coils slowly to prevent damage.
□ 6. Energize fan motor(s). Observe fan(s) for smooth operation.	□ 13. Observe energy recovery wheel rotation is correct.
□ 7. Check motor nameplate Full Load Amp rating.	□ 14. Purge on energy recovery wheel is set to specification.

RECORD DATA

POWER SUPPLY: Unit Nameplate V___ PH___ CYC, ____ Verify V _____/ _____/ _____

DATA	SUPPLY FAN MOTOR	EXHAUST/RETURN FAN MOTOR
Nameplate	Volts _____ Amps _____	Volts _____ Amps _____
Run Amps	_____/ _____/ _____	_____/ _____/ _____
Catalog Number	_____	_____
Spec Number	_____	_____
Horse Power	_____	_____
RPM	Nameplate _____ Actual_____	Nameplate _____ Actual _____
Frame size	_____	_____
Service Factor	_____	_____
Jump (Skip) Frequencies	_____/ _____/ _____	_____/ _____/ _____
	SUPPLY FAN	EXHAUST/RETURN FAN
Manufacture Name	_____	_____
Type or Model Number	_____	_____
Code or Shop Order Number	_____	
Serial Number	_____	_____
	SUPPLY FAN DRIVE KIT	EXHAUST/RETURN FAN DRIVE KIT
Belts (Qty & ID #)	_____	_____
Belt Tension	Tag_____ Actual _____	Tag_____ Actual _____
Fan RPM (DN)	Tag_____ Actual _____	Tag_____ Actual _____

OTHER UTILITIES

Steam Pressure	Heating Coils _____PSI,	Humidifier _____PSI
Hot Water Pressure/Temp.	Supply _____PSI, _____°F,	Return _____PSI, _____°F
Chilled Water Pressure/Temp.	Supply _____PSI, _____°F,	Return _____PSI, _____°F
Potable Water Pressure	_____PSI,	Pneumatic Air Pressure _____PSI

MAINTENANCE

Upon completion of start-up the customer assumes responsibility for periodic maintenance of this equipment in order to continue warranty. Refer to the Installation Operation and Maintenance Manual (Form 102.20-OM1).

Customer's agent signature: _____ **Date:** _____

P.O. Box 1592, York, Pennsylvania USA 17405-1592
800-861-1001
Subject to change without notice. Printed in USA

Form 100.00-CL1 (313)
Issue Date: March 31, 2013
Supersedes:100.00-CL1 (309)

Submittal Approval Page

Product Type: Semi-Custom Air Handling Units

Unit Tags: Various

Equipment Release Approval Form

SUBMITTAL NOTES

The following table must be completed prior to releasing the equipment for fabrication. Please initial the column indicating the information contained in this submittal has been verified, or indicate to refer to a marked-up page.

SUBMITTAL VERIFICATION	
	Purchaser Initials
Electrical voltage and electrical connections are compatible with jobsite requirements.	
Piping / Ductwork connections shown in this submittal are correct .	
Unit tag designations are correct.	

SUBMITTAL VERIFICATION	
	Purchaser Initials
Indicate equipment configuration choices on the **Equipment Release /Configuration Process** form (if included on this Submittal package), and sign the form.	

Important Notes:

1) Actual fabrication release cannot commence until this form is signed by the customer and returned to JCI along with a release notification want date and ship to address.

2) Equipment "lead-time" does not start until confirmed release documentation is received, and the order is actually released to the factory.

3) Modifications to equipment configurations after fabrication release may impact cost and lead-time

Please fill out the following table and refer to the receiving/rigging instructions in this submittal to help ensure a smooth delivery and installation of the equipment.

DELIVERY INFORMATION	
	Please fill out information below
Contact name for coordinating delivery of equipment with transportation company	
Contact phone number	
Advance notice required from transportation company prior to delivering equipment (typically 48 hours)	
Ship to address:	
Other special shipping instructions or requirements	

CUSTOMER APPROVAL:

Customer Name: _____

Signature (*) _____

Date: _____