

**CONSULTANTS**

**CIVIL/LANDSCAPE ARCHITECT**  
 Sebago Technics  
 75 John Roberts Road, Suite  
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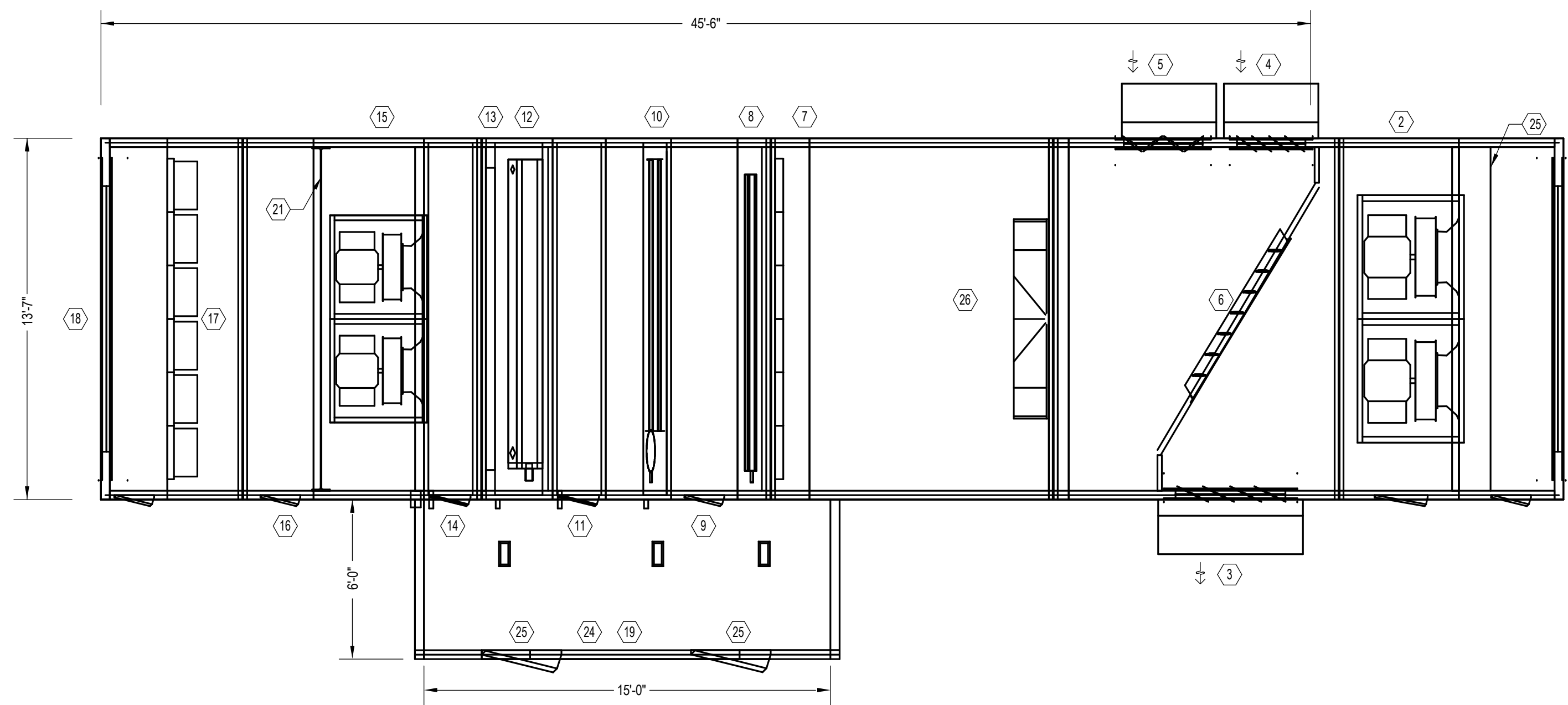
**STRUCTURAL ENG./BUILDING ENVELOPE CONSULTANT**  
 Singleton Gumpertz & Hager Inc.  
 41 Sisson Street, Building 1, Suite 570,  
 Waltham, MA 02453

**MEPP ENGINEER CODE**  
 AKF Group LLC  
 99 Bedford Street, 2nd Floor, Boston MA 02111

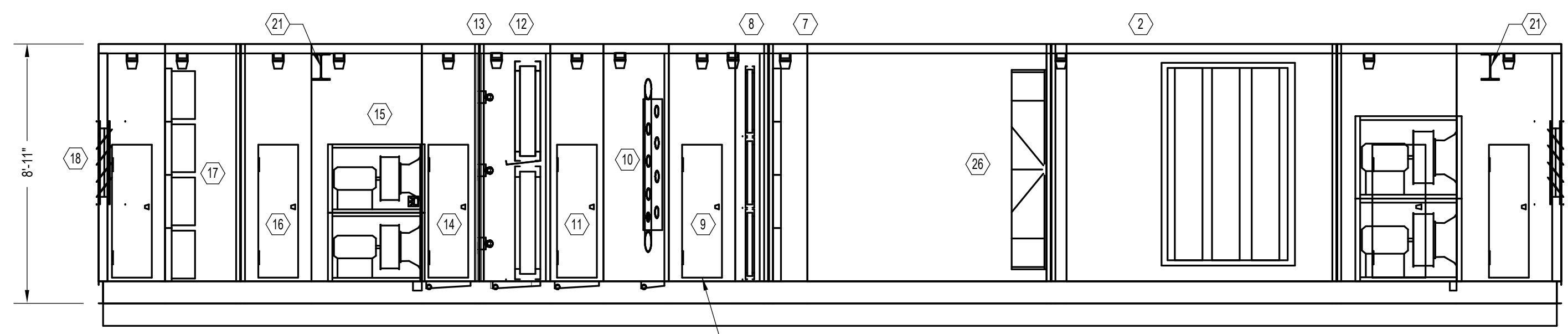
**CONSTRUCTION MANAGER**  
 Turner Construction  
 2 Seaport Lane, Suite 200, Boston, MA 02210

**ELEVATOR CONSULTANT**  
 VDA (Van Deusen & Associates)  
 101 Summer Street, 4th Floor, Boston MA  
 02110

**COIT ESTIMATOR**  
 D. G. Jones International  
 3 Baldwin Green Common, Suite 202, Westbrook, MA 01801



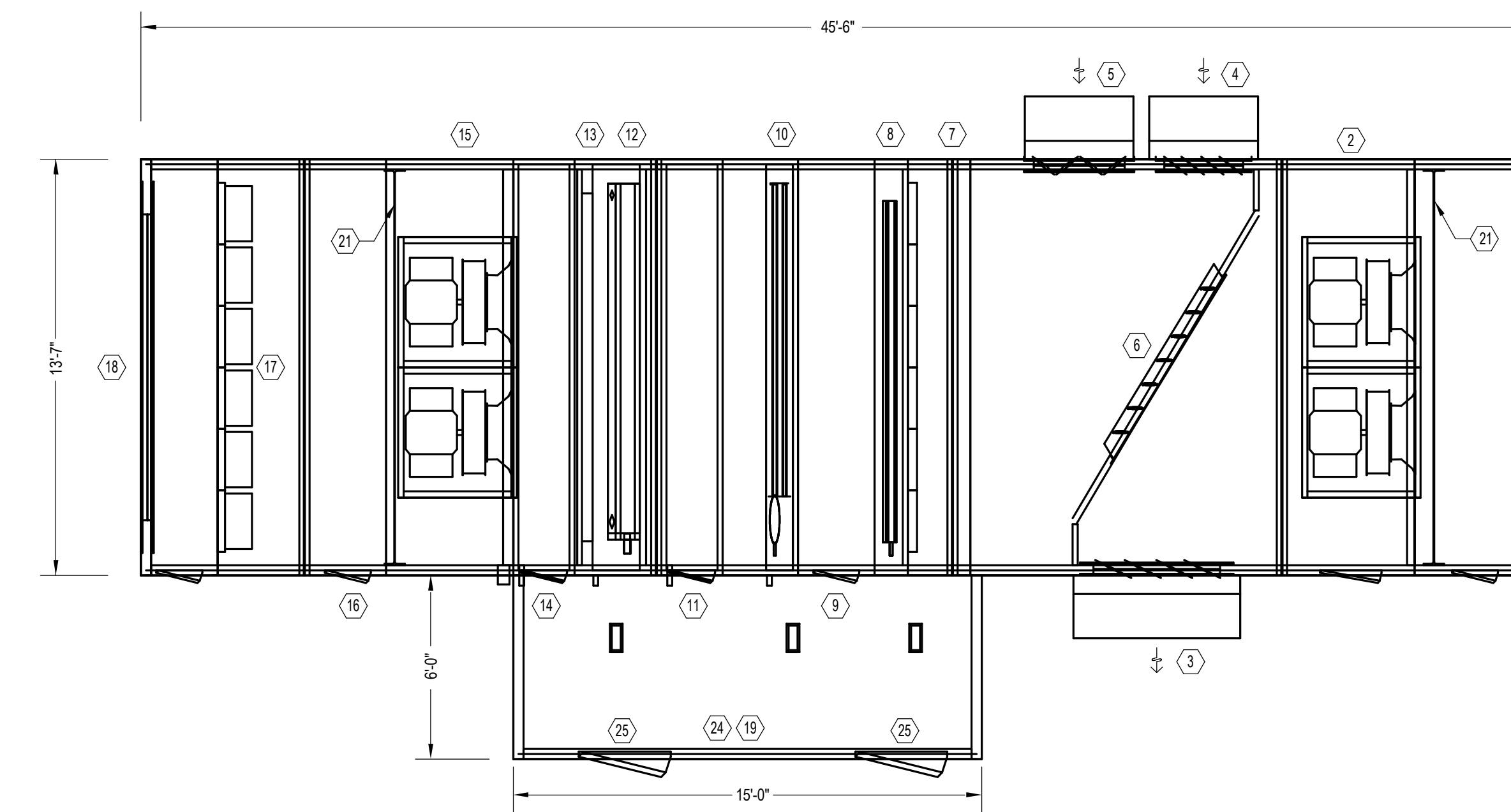
**AHU-149 PLAN**  
 SCALE: 1/4"=1'-0"



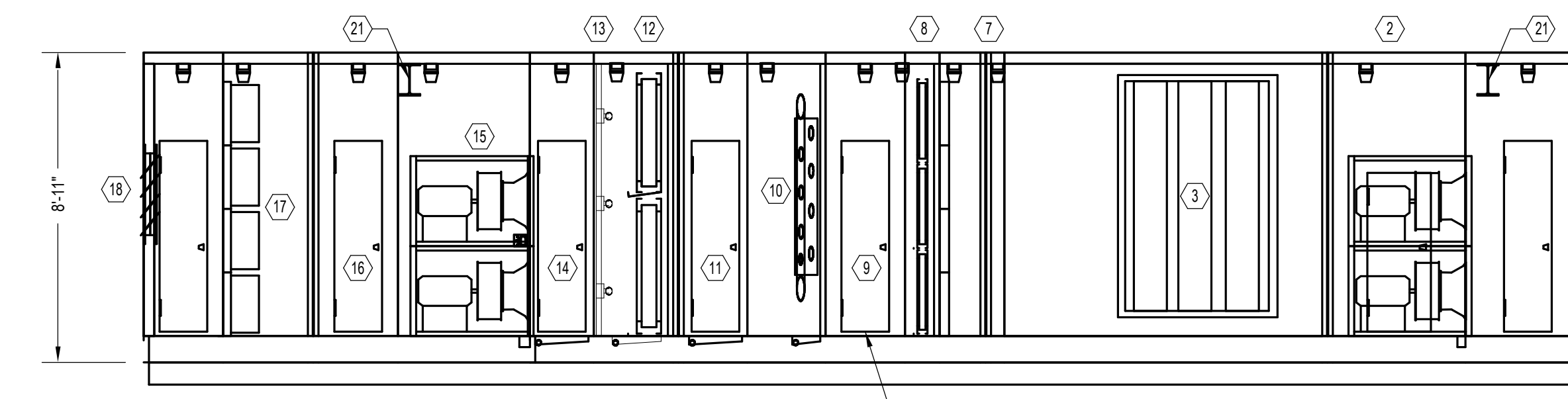
**AHU-149 SECTION**  
 SCALE: 1/4"=1'-0"

**AHU-149 COMPONENTS:**  
 (LAYOUT BASED ON TRANE)

- 1 RETURN AIR INTAKE WITH SMOKE DAMPER BACK: 145.5" x 37.5"
- 2 RETURN AIR FAN ARRAY WITH AIRFLOW STATION AND BACK DRAFT DAMPER PER FAN
- 3 RELIEF AIR DAMPER WITH EXHAUST HOOD: 60" x 91.5"
- 4 MINIMUM OUTSIDE AIR INTAKE LOUVER WITH AIRFLOW STATION AND INTAKE HOOD: 37.5" x 91.5"
- 5 ECONOMIZER OUTSIDE AIR INTAKE DAMPER WITH INTAKE HOOD: 42" x 91.5"
- 6 RETURN AIR DAMPER: 32" x 103"
- 7 PRE-FILTER (MERV-8)
- 8 STEAM HEATING COIL
- 9 ACCESS
- 10 STEAM HUMIDIFIER
- 11 ACCESS
- 12 CHILLED WATER COOLING COIL
- 13 18" UVC LIGHTS
- 14 ACCESS
- 15 SUPPLY AIR FAN ARRAY WITH AIRFLOW STATION AND BACK DRAFT DAMPER PER FAN
- 16 ACCESS
- 17 FINAL FILTER (HEPA)
- 18 SUPPLY AIR DISCHARGE WITH SMOKE DAMPER FRONT
- 19 SERVICE CORRIDOR FOR PIPING AND IN-LINE PIPING DEVICES.
- 20 DOORS: 18"W x 72"H WITH 12" x 12" DOUBLE PANE VIEWING WINDOW (TYP.)
- 21 HOST BEAM FOR MOTOR REMOVAL
- 22 PROVIDE BASE RAIL
- 23 PROVIDE 24" ROOF CURB
- 24 INSTALL UH-1 INSTALL VESTIBULE
- 25 VESTIBULE ACCESS DOORS ARE ALIGNED WITH STEAM AND CHILLED WATER COILS.
- 26 AIR BLENDER



**AHU-150 PLAN**  
 SCALE: 1/4"=1'-0"



**AHU-150 SECTION**  
 SCALE: 1/4"=1'-0"

**AHU-150 COMPONENTS:**  
 (LAYOUT BASED ON TRANE)

- 1 RETURN AIR INTAKE WITH SMOKE DAMPER BACK: 145.5" x 37.5"
- 2 RETURN AIR FAN ARRAY WITH AIRFLOW STATION AND BACK DRAFT DAMPER PER FAN
- 3 RELIEF AIR DAMPER WITH EXHAUST HOOD: 60" x 91.5"
- 4 MINIMUM OUTSIDE AIR INTAKE LOUVER WITH AIRFLOW STATION AND INTAKE HOOD: 37.5" x 91.5"
- 5 ECONOMIZER OUTSIDE AIR INTAKE DAMPER WITH INTAKE HOOD: 42" x 91.5"
- 6 RETURN AIR DAMPER: 32" x 103"
- 7 PRE-FILTER (MERV-8)
- 8 STEAM HEATING COIL
- 9 ACCESS
- 10 STEAM HUMIDIFIER
- 11 ACCESS
- 12 CHILLED WATER COOLING COIL
- 13 18" UVC LIGHTS
- 14 ACCESS
- 15 SUPPLY AIR FAN ARRAY WITH AIRFLOW STATION AND BACK DRAFT DAMPER PER FAN
- 16 ACCESS
- 17 FINAL FILTER (HEPA)
- 18 SUPPLY AIR DISCHARGE WITH SMOKE DAMPER FRONT
- 19 SERVICE CORRIDOR FOR PIPING AND IN-LINE PIPING DEVICES.
- 20 DOORS: 18"W x 72"H WITH 12" x 12" DOUBLE PANE VIEWING WINDOW (TYP.)
- 21 HOST BEAM FOR MOTOR REMOVAL
- 22 PROVIDE BASE RAIL
- 23 PROVIDE 24" ROOF CURB
- 24 INSTALL UH-2 INSIDE VESTIBULE
- 25 SERVICE CORRIDOR ACCESS DOORS ARE ALIGNED WITH STEAM AND CHILLED WATER COILS.

**CUSTOM AIR HANDLING UNIT COMPONENT SCHEDULE**

AHU No.	LOCATION	SERVICE	MANUFACTURER MODEL NO.	TOTAL AIRFLOW CFM	MINIMUM OUTSIDE AIR CFM	RETEXN FAN	HEATING COIL	STEAM HUMIDIFIER	COOLING COIL	PRE-FILTER	FINAL FILTER	SUPPLY/RETURN FAN VFD	REMARKS
AHU-149	ROOF	SECTOR 1	TRANE CSA	40,000	10,400	40,000	HC-149	H-149	CC-149	PF-149	FF-149	YES	UNIT ON STAND-BY POWER
AHU-150	ROOF	SECTOR 2	TRANE CSA	38,500	10,000	38,500	HC-150	H-150	CC-150	PF-150	FF-150	YES	UNIT ON STAND-BY POWER

**HEATING COIL SCHEDULE (STEAM)**

COIL No.	LOCATION	SYSTEM No.	PERFORMANCE DATA						CONSTRUCTION DATA						FACE VELOCITY (FPM)	MANUF. MODEL #	REMARKS	
			CFM	SENSIBLE MBH	EDB (°F)	LOB (°F)	AIR P.D. (IN. W.G.)	LEASHR	TUBE LENGTH (IN.)	TOTAL COIL FACE AREA (SQ. FT.)	ROWS DEEP	MAX. NO. OF FINS/FOOT	No. OF SECTIONS	ARRANGEMENT				
HC-149	AHU-149	AHU-149	40,000	1370.9	47.7	79.3	0.094	1429.9	5	138"	86.25	1	42	3	3	1	464	TRANE STEAM-NS
HC-150	AHU-150	AHU-150	38,500	1360.2	45	77.6	0.099	1414.7	5	138"	86.25	1	42	3	3	1	446	TRANE STEAM-NS

**COOLING COIL SCHEDULE**

COIL No.	LOCATION	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	PERFORMANCE DATA						CONSTRUCTION DATA						FACE VELOCITY (FPM)	MANUF. MODEL #	REMARKS							
				CFM	MIN. O.A. CFM	SP (IN. W.G.)	EDB (°F)	LOB (°F)	LWB (°F)	GPM	PD (FT. H <sub>2</sub> O)	ENTY (°F)	EXIT SP (IN. W.G.)	VELOCITY (FPS)	NOM. TUBE LENGTH (IN.)				FACE AREA EA. COIL (SQ. FT.)	ROWS DEEP	FINS PER FOOT	No. OF SECTIONS	ARRANGEMENT		
CC-149	AHU-149	1972.2	1170.8	40,000	10,400	0.01	78.6	65.2	51.0	59.9	259	12.4	45.0	97.0	2.01	149	94.5	8	99	2	2	1	403	TRANE CHILLED WATER-4D	1.2
CC-150	AHU-150	1010.8	1126.9	38,500	10,000	0.06	78.6	65.2	51.0	59.9	259	11.6	45.0	97.0	2.01	144	94.5	8	99	2	2	1	407	TRANE CHILLED WATER-4D	1.2

- NOTE:  
 1. PROVIDE BOTTOM DRAIN CONNECTION ON COOLING COILS  
 2. PROVIDE WITH STAINLESS STEEL CASING.

**FAN ARRAY SCHEDULE**

UNIT No.	LOCATION	SERVICE	FAN TYPE	FAN ARRAY TOTAL CFM	PERFORMANCE DATA						CONSTRUCTION DATA		MOTOR DATA				MANUF. MODEL #	REMARKS		
					FAN QUANTITY	FAN CFM	TOTAL SP (IN. W.G.)	EXIT SP (IN. W.G.)	RPM	FAN BHP	CLASS	ARRANG.	DRIVE TYPE	FAN IMP	STARTER TYPE	VOLTS			PHASE	HZ
SF-149	AHU-149	AHU-149	PLENUM	40,000	4	10,000	7.3	3.0	2,222	14.4	II	2x2	DIRECT	20	VFD	460	3	60	TRANE EOP 24"	1, 2, 3, 4
RF-149	AHU-149	AHU-149	PLENUM	38,000	4	9,500	3.9	2.5	1,840	6.9	II	2x2	DIRECT	15	VFD	460	3	60	TRANE EOP 24"	1, 2, 3, 4
SF-150	AHU-150	AHU-150	PLENUM	38,500	4	9,625	7.3	3.0	2,188	12.2	II	2x2	DIRECT	20	VFD	460	3	60	TRANE EOP 24"	1, 2, 3, 4
RF-150	AHU-150	AHU-150	PLENUM	36,500	4	9,125	3.8	2.5	1,791	6.4	II	2x2	DIRECT	10	VFD	460	3	60	TRANE EOP 24"	1, 2, 3, 4

- NOTE:  
 1. PROVIDE EACH FAN WITH A BACK DRAFT DAMPER.  
 2. PROVIDE EACH FAN WITH AN AIRFLOW STATION (PRECOMETER RING).  
 3. FAN ARRAY SHALL BE CAPABLE OF DESIGN AIRFLOW WITH ONE FAN FAILURE. FAN ARRAY HAS N+1 REDUNDANCY.  
 4. ALL FANS SHALL MEET ASHRAE 90.1-2013 AND HAVE AN IEG RATING OF 67 OR HIGHER. INCLUDE IN SUBMITTALS.

**STEAM HUMIDIFIER SCHEDULE**

UNIT No.	LOCATION	SYSTEM No./SERVICE	CFM	MINIMUM O.A. CFM	No. OF MANIFOLDS	FLOW (LESHR)	AIR DATA				MANUF. MODEL #	REMARKS	
							STEAM PRESSURE (PSIG)	AIR P.D. (IN. W.G.)	EDB (°F)	LOB (°F)			
H-149	AHU-149	AHU-149	40,000	12,000	1	540	5.0	0.02	51.0	55.0	36.0	63.6	DR-STEAM ULTRA-SORB XY
H-150	AHU-150	AHU-150	38,500	11,500	1	520	5.0	0.02	51.0	55.0	36.0	63.6	DR-STEAM ULTRA-SORB XY

**AIR FILTER SCHEDULE**

DESIGNATION	LOCATION	SERVICE	FILTER TYPE	CFM	FACE VELOCITY	PRESSURE DROP (IN. W.C.)		No. OF CELLS	COIL DIMENSIONS			REMARKS
						INITIAL	FINAL		HIGH	WIDTH	DEPTH	
PF-149	AHU-149	PRE-FILTER	MERV-8	40,000	417	0.2	0.7	24	24	24	2"	96 SQ. FT. FACE AREA
FF-149	AHU-149	FINAL FILTER	HEPA	40,000	417	0.05	1.5	24	24	24	12"	96 SQ. FT. FACE AREA. PROVIDE WIGEL SEAL.
PF-150	AHU-150	PRE-FILTER	MERV-8	38,500	401	0.2	0.7	24	24	24	2"	96 SQ. FT. FACE AREA
FF-150	AHU-150	FINAL FILTER	HEPA	38,500	401	0.05	1.5	24	24	24	12"	96 SQ. FT. FACE AREA. PROVIDE WIGEL SEAL.

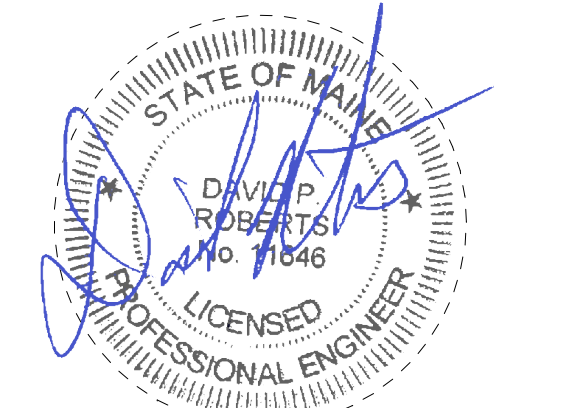
**VARIABLE FREQUENCY DRIVE SCHEDULE**

UNIT No.	LOCATION	SERVICE	ELECTRICAL DATA			MOTOR (HP)	MOTOR FULL LOAD (AMPS)	UNIT DIMENSIONS			MOUNTING TYPE (WALL OR FLOOR)	INTEGRAL DISCONNECT SWITCH	BYPASS TYPE	3% LINE REACTOR	2.5% D.C. CHOKER	ENCLOSURE (NEMA TYPE)	BMS GATEWAY REQUIRED (BMS SYSTEM MANUFACTURER)	VFD MOUNTED BY MANUF. AS PART OF EQUIPMENT	MANUF. MODEL #	REMARKS	
			VOLTS	PHASE	HZ			LENGTH (IN.)	WIDTH (IN.)	HEIGHT (IN.)											WEIGHT (LBS)
VFD-088 THRU -071	ELEVATOR VESTIBULE	SF-149	460	3	60	20	27	10.9	8.4	47.7	71	WALL	YES	YES	YES	NO	NEMA-1	YES	NO	ABB ACH 500	E PULSE
VFD-072 THRU -075	ELEVATOR VESTIBULE	RF-149	460	3	60	15	21	10.3	5.4	44.1	40	WALL	YES	YES	NO	NEMA-1	YES	NO	ABB ACH 500	E PULSE	
VFD-076 THRU -079	ELEVATOR VESTIBULE	SF-150	460	3	60	20	27	10.9	8.4	47.7	71	WALL	YES	YES	NO	NEMA-1	YES	NO	ABB ACH 500	E PULSE	
VFD-080 THRU -083	ELEVATOR VESTIBULE	RF-150	460	3	60	10	14	10.3	5.4	44.1	40	WALL	YES	YES	NO	NEMA-1	YES	NO	ABB ACH 500	E PULSE	

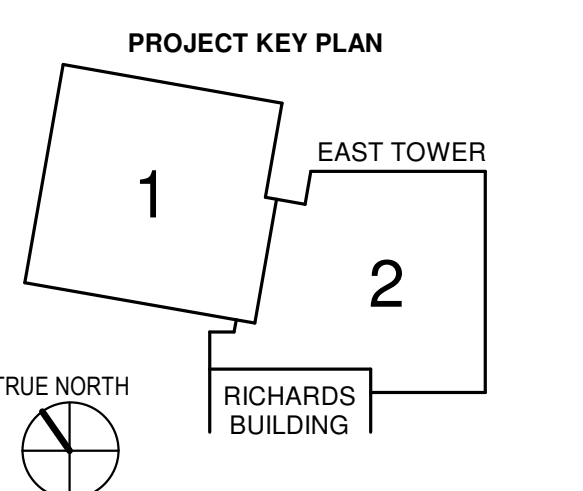
- NOTE:  
 1. SEE SPECIFICATION FOR ADDITIONAL INFORMATION.

**PROJECT TITLE**

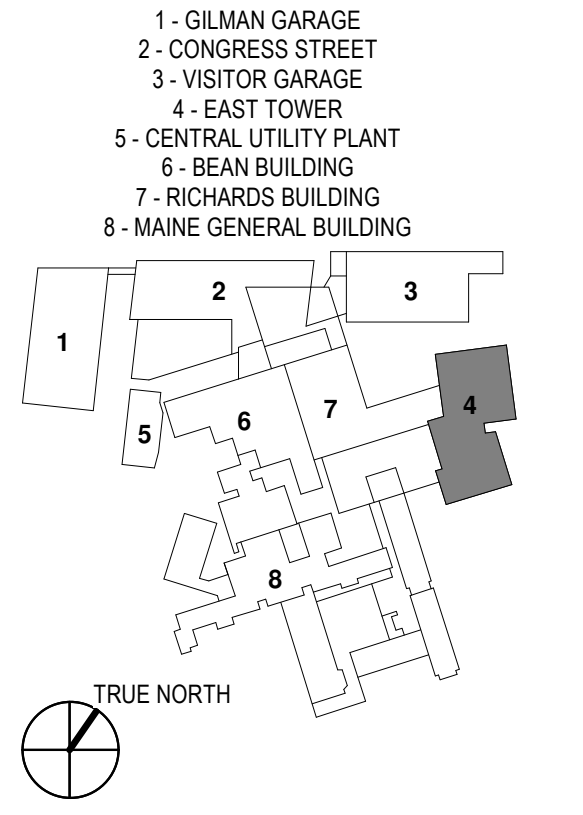
**East Tower 6 & 7 Addition**  
 22 Bramhall Street  
 Portland, ME 04102



**KEY PLANS**



**OVERALL KEY PLAN**



**CONSTRUCTION DOCUMENTS**  
 JANUARY 26, 2018

NO.	ISSUE	DATE

Job Number: B150312-000  
 Drawn: TLJ  
 Checked: DPR  
 Approved: DPR

**MECHANICAL SCHEDULES**

SHEET NUMBER

**MOO-11**