

#### **ADDENDUM NO. 1**

September 24, 2024

#### FOR:

Findlay Flats Rebid OTR Scattered Sites

#### PREPARED BY:

Model Construction 1826 Race Street Cincinnati, OH 45202

#### **DRAWINGS**:

- 1732 Vine M2.00
- 1801-1805 Vine M2.00 & M2.01
- Preliminary Duke Design Sheet 1
- Preliminary Duke Design Sheet 2

#### **SPECIFICATIONS:**

- 1. The GE Profile range that is specified is discontinued. That is not a typical item quoted in projects because it has convection, no-preheat air-fy, and few other options that most tenants will never use. Please let know how you all would like to proceed.
  - a. Answer Change specified range to GE-GRF400PVSS
- 2. The Over the Range Microwave specified does not vent outside and is only recirculating.
  - a. Answer Change specified microwave to GE-JVM3160RFSS.
- 3. The 19.2 Cubic Ft. Refrigerator for the larger units has the wrong model number. I think I know the one that you need, but can you confirm?
  - a. Answer Change specified 19.2 Cubic Ft. Refrigerator to GE-GTS19KYNRFS.
- 4. 1807 Vine, Door Hardware Set HR01 calls for Lockset VV. What is VV?
  - a. Answer For HR01, provide a cylindrical grade 1 lockset with entry function.
- 5. Please clarify the scope of the site electrical service.
  - a. Answer See the attached Preliminary Duke Design for the location of the pull boxes. The electrician is responsible for setting the Duke provided pull boxes and then providing the wire and conduit from the pull box to the buildings. Exclude all concrete sidewalk demo and patching.

End of Addendum 1

Addendum No. 1 2023.08.02 Page 1 of 1

FIRE BLOCKING-

CEILING

CONNECTION BY FUTURE TENANT

RANSITION DUCT PROVIDED BY FUTURE TENANT

- DRYER WALL BOX

DRYER EXHAUST DUCT DETAIL

- AIR HANDLING UNIT (AHU)

RATED CEILING

-SUPPLY DUCT IN SOFFIT

SPACE. COORDINATE WITH

ARCHITECTURAL SHEETS.

←RACK REFRIGERANT LINE SETS
ON SIDE WALL OF MECHANICAL ROOM
←FLOOR ABOVE

RETURN GRILLE

— AIR HANDLING UNIT (AHU)

CONNECTION.

CONDENSATE DRAIN WITH P-TRAP.

ROUTE TO NEAREST DRAIN AND CONNECT WITH AN INDIRECT

DUCT SLEEVE

(NOTE 3)

WHERE REQUIRED

FIRESTOP. REFER TO

IDENTIFICATION LABEL (NOTE 5)

COMBO W/D OR STACKED

FROM LANDLORD FOR DRYER

36" MINIMUM

APARTMENT AHU DETAIL (TOP VIEW)

APARTMENT AHU DETAIL (SIDE VIEW)

NOT TO SCALE

NOT TO SCALE

FLEX CONNECTOR -

W/D BY FUTURE TENANT. TENANT TO SEEK APPROVAL

CAPABILITIES PRIOR TO

TRANSITION DUCT MUST BE NO MORE THAN 8 FT.
LONG AND CANNOT BE CONCEALED WITHIN
CONSTRUCTION. (SECTION 504.8.3).

4. DUCT LENGTH. THE MAXIMUM ALLOWABLE EXHAUST
SHALL BE DETERMINED BY ONE OF THE METHODS IN
SECTIONS 504.8.4.1 THROUGH 504.8.4.3.

4.1. 504.8.4.1 SPECIFIED LENGTH: THE MAX LENGTH
OF EXHAUST DUCT IS 35 FEET FROM
CONNECTION TO TRANSITION DUCT FROM

THE EXHAUST DUCT IS REDUCED FROM FITTINGS USED ACCORDING TO TABLE 504.8.4.1 ABOVE.

4.2. 504.8.4.2 MANUFACTURER'S INSTRUCTIONS: THE MAX LENGTH OF THE EXHAUST DUCT WILL BE DETERMINED BY THE INSTALLATION INSTRUCTIONS WHICH ARE PROVIDED BY THE

DRYER TO OUTLET. THE MAXIMUM LENGTH OF

DRYER MANUFACTURER (IF APPLICABLE).
4.3. 504.8.4.3 DRYER EXHAUST DUCT POWER
VENTILATOR LENGTH: THE MAX LENGTH OF
DRYER EXHAUST TO BE DETERMINED BY DRYER
EXHAUST DUCT POWER VENTILATOR
MANUFACTURER'S INSTALLATION

INSTRUCTIONS (IF APPLICABLE).

5. LENGTH IDENTIFICATION. IF THE EXHAUST DUCT EXCEEDS 35 FT. THE EQUIVALENT LENGTH OF DUCT SHALL BE SHOWN ON A PERMANENT LABEL/TAG. LABEL/TAG TO BE PLACED WITHIN 6FT. OF EXHAUST DUCT CONNECTION. LABEL EQUAL TO DRYER

PLACARD BRAND. (SECTION 504.8.5).

6. EXHAUST DUCT REQUIRED. WHERE THE EXHAUST DUCT SYSTEM IS INSTALLED FOR FUTURE USE, THE EXHAUST DUCT SHALL BE CAPPED AT FUTURE DRYER LOCATION. (SECTION 504.8.6).

COMMON AREAS:MECHANICAL VENTILATION CALCULATION SCHEDULE \* (ASHRAE 62.1 LEED PURPOSES ONLY)

UNIT

AREA (SQ. FT.)

VENT. AIR REQ. WHOLE BUILDING VENTILATION

823

SCHEDULE * (/	ASHRAE 6	2.2 LEED	PURPOSES C	NLY)
UNIT	AREA (SQ. FT.)	NUMBER OF BEDROOM S	VENT. AIR REQ. Qfan (Eq. 4.1a)	ACTUAL WHOLE BUILDING VENTILATION
201	582	1	21	30
202	396	1	19	30
301	587	1	21	30
302	396	1	19	30
401	587	1	21	30
402	396	1	19	30

RESIDENTIAL UNITS: MECHANICAL VENTILATION CALCULATION

			DEH	IUMIDIFIER S	CHEDUL	.E					BA	THROOM FAN SPEE	D SETTING SCH	IEDULE
TAG	AREA SERVED	MANUFACTURER	MODEL	CAPACITY - PINTS/24 HR	AMPS	FUSE	VOLT/PHASE	MOUNTING	WEIGHT	NOTES	TYPICAL UNIT	ROOMNAME	MINIMUM SPEED SETTING	MAXIMUM SPEED SETTING
					_						201	BATHROOM	30	80
DE-1	BASEMENT	APRILAIRE	1850	95	8	15	120/1	FLOOR	70	1,2,3,4	202	BATHROOM	30	80
1. ENER	GY STAR RATED	).			•			•	•		301	BATHROOM	30	80
2. DEHU	JMIDICATION COLTROL										302	BATHROOM	30	80
3. CORE	D AND PLUG CONNECTION.										401	BATHROOM	30	80
4. PROV	IDE LOW PROFI	LE CONDENSATE PL	JMP						402	BATHROOM	30	80		

50

FAN SCHEDULE

						IANO	CHEDOLL							
	TAG	TYPE	AREA SERVED	MANUFACTURER	MODEL	DRIVE	CFM	ESP	WATTS	RPM	VOLT/PHASE	MOUNTING	WEIGHT	NOTES
	E-1	EXHAUST	TYPICAL RESTROOM	PANASONIC	FV-0511VKS2	DIRECT	30-80	0.25	17	1131	115/60/1	CEILING	12	1,2,3,4
	E-2	EXHAUST	STAIRWELL	PANASONIC	FV-0511VKS2	DIRECT	50	0.25	17	1131	115/60/1	CEILING	12	2,3,4,5
	E-3	EXHAUST	RESTROOM	PANASONIC	FV-05-11VQ1	DIRECT	83	0.25	10.8	1185	115/60/1	CEILING	12	2

1. FAN SHALL RUN CONTINUOUSLY AT LOW SPEED (30 CFM) AND SHALL RAMP UP TO HIGH SPEED (50,80 CFM) WHEN SWITCH IS TURNED ON. PROVIDE ALL RELEVANT

ACCESSORIES.

- WHERE PENETRATING ITEMS ARE STEEL. FERROUS OR COPPER PIPES. TUBES

1 IN CONCRETE OR MASONRY WALLS WHERE THE PENETRATING ITEM IS A

MAXIMUM 6" NOMINAL DIAMETER AND THE AREA OF THE OPENING THROUGH

THE WALL DOES NOT EXCEED 144 SQUARE INCHES, CONCRETE, GROUT OR

WALL OR THE THICKNESS REQUIRED TO MAINTAIN THE FIRE-RESISTANCE

2. THE MATERIAL USED TO FILL THE ANNULAR SPACE SHALL PREVENT THE

EQUIVALENT TO THE FIRE-RESISTANCE RATING OF THE CONSTRUCTION

PASSAGE OF FLAME AND HOT GASES SUFFICIENT TO IGNITE COTTON WASTE WHEN SUBJECTED TO ASTM E 119 OR UL 263 TIME-TEMPERATURE FIRE

CONDITIONS UNDER A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH OF WATER AT THE LOCATION OF THE PENETRATION FOR THE TIME PERIOD

MORTAR IS PERMITTED WHERE IT IS INSTALLED THE FULL THICKNESS OF THE

- ASTME E 119 OR UL 263 OR CONDUITS, THE ANNULAR SPACE BETWEEN THE PENETRATING ITEM AND THE

TESTED FIRE CAULKING FIRE-RESISTANCE-RATED WALL SHALL BE PROTECTED AS FOLLOWS:

PENETRATED.

PIPE PENETRATION THROUGH RATED WALLS

2. INSTALL RADIATION DAMPER PC-RD05C5
3. PROVIDE FV-CSVK1 CONDESNSATION SENSOR

ENTRY/STAIRWELL/CORRIDOR

4. REFER TO FAN SPEED SCHEDULE FOR FAN SPEED SETTINGS
5. FAN SHALL RUN CONTINUOUSLY AT LOW SPEED (50 CFM)

5. FAN SHALL RUN CONTINUOUSLY AT LOW SPEED (50 CFM)

				HEATE	RS							
TAG	TYPE	AREA SERVED	MANUFACTURER	MODEL	HEAT-MBH	FUEL	HEAT-KW	VOLT/PHASE	FLA	MOUNTING	WEIGHT	NOTES
DH-1	DUCT HEATER	REFER TO PLANS	HOTPOD	HP6-1000120-2T	3.4	ELECTRIC	1	120/1/60		INLINE	7	3,4
H-1	WALL HEATER	REFER TO PLANS	BERKO	FRA4020	6.8	ELECTRIC	2	208/1/60		IN WALL	30	1,2
1. SEMI-RECES	EMI-RECESSED MOUNTING SLEEVE.											

DUCT STAT INCLUDED
 REPLACEABLE FILTER INCLUDED

2. INTEGRAL THERMOSTAT

								1	APARTME	NT SPLI	T SYST	EM SCH	EDULE										
System	Outdoor Unit Tag	Model	Volts	Phase	MCA	МОСР	Outdoor Unit Weight	Indoor Unit Tag	Indoor Coil	Static	Air Flow CFM	Cool Cap Total	Cool Cap Sens	SEER	EER	Elect Heat Kw (240)	Elect Heat Kw (208)	Htg Cap 47 deg	Htg Cap 17 deg	HSPF	MCA	МОСР	Indoor Unit Weight
					Amps	Amps	lb	]		in wg.	cfm	Btuh	Btuh			kW	kW	Btuh	Btuh		Amps	Amps	lb
								AHU-A-1.5														1	1
1.5 Ton 10KW	HP-1.5	DLCSRBH18AAK	208/230	1	16	25	101	(10KW)	FMA4X1800AL	0.50	650	18000	12690	17	11.8	10	7.2	19,200	15,000	11	47.6	60	103
								AHU-A-1.5															1
1.5 Ton 10KW	HP-1.5	DLCSRBH18AAK	208/230	1	16	25	101	(10KW)	FMA4X1800AL	0.50	650	18000	12690	17	11.8	8	5.6	19,200	15,000	11	36.3	50	103
**Requires Pipin	g Adaptor Kit 11	Adaptor Kit 1174192 and 24V interface KSAlC0401230																					

												Spli	it Syst	em Sc	hedu	ıle														
Unit	Tag	Furnace AFUE	Htg Cap In	Heating Cap	Air Flow	Static	hp N	MCA MOCP U	nit Weight	Outside Air	Out DE	B Indoor Coil	Ent DB	Ent WB	Lv DB	Lv WB	Cool Cap	Sens Cap	Latent Cap	Total Weight	Tag	Model	Volts	Phase	MCA	MOCP	SEER	REER	EED 2	
Oilit	ray	Furnace AFUE	Btuh	Btuh	cfm	in wg.	IIP A	Amps Amps	lb	CFM	°F	IIIdooi Coli	°F	°F	°F	°F	Btuh	Btuh	Btuh	lb	ıay	Woder	VOILS	Phase	Amps	Amps	2			Accessories
SYS-01	GF-4	<b>N96MSN0802120A</b> 96%	80,000	78,000	1649	0.5	1 '	17.3 20	158	240	95	EAM4X48L21A	80	67	59.8	58.1	47,360	36,022	11,338	199	CU-4	N4A5S48AKAWA	208/230	1	32.8	50 14.5	.5 13.8	3 11.7	11.2	1,5,6,7,8,9,10

## ACCESSORIES:

1 EXTERNAL TRAP KIT
2 CONDENSATE NEUTRALIZER KIT
3 CONCENTRIC VENT KIT
4 TWINING KIT

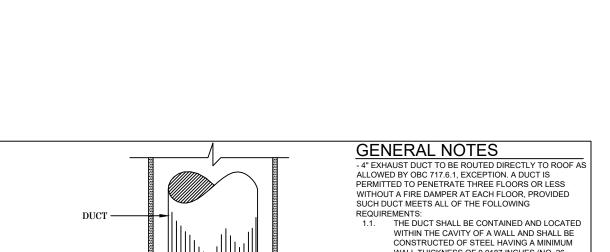
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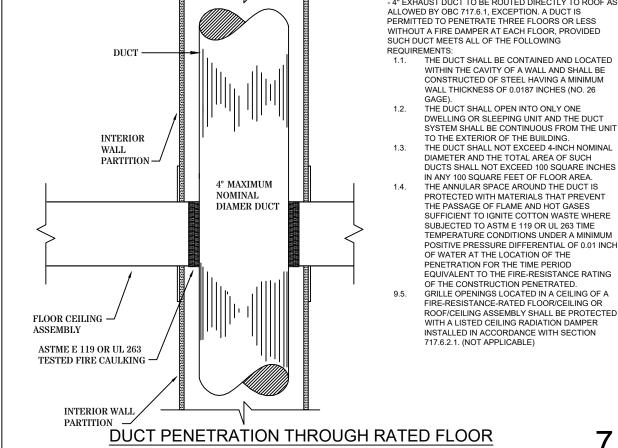
5 CRANKCASE HEATER
6 EVAPORATOR FREEZE THERMOSTAT
7 WINTER START KIT
8 HARD START KIT

ASTME E 119 OR UL 263 TF

9 LOW AMBIENT PRESSURE SWITCH 10 LOW PRESSURE SWITCH LONG LINE APPLICATIONS

11 CRANKCASE HEATER 12 HARD START KIT





			DUCT INS	ULATION	SCHEDUL	E
			А	IR DISTRIBUT	TION TYPE	
		SA	SA (EXPOSED)	RA	OA	ADDITIONAL NOTES
EQUIPMENT	GF-4	R-3.5	R-3.5	N/A	R-3.5	-
EQUIP	AHU-A-1.5	R-3.5	R-3.5	N/A	N/A	-
DU	СТІ	INSULATION I	REQUIREMEN	NTS ARE BAS	ED ON TABL	E 6.8.2B OF ASHRAE

90.1 2010 ENERGY CODE.

PROVIDE DUCTWORK OF SUFFICIENT THICKNESS TO MEET THE INSTALLED R-VALUE REQUIREMENTS LISTED ABOVE.

ITEMS NOT REQUIRED TO BE INSULATED: FIBROUS-GLASS DUCTS, DUCTS WITH LINER THAT MEETS ASHRAE 90.1, FACTORY-INSULATED FLEXIBLE DUCTS, FACTORY-INSULATED PLENUMS AND CASINGS, FLEX CONNECTORS, VIBRATION-CONTROL DEVICES, FACTORY-INSULATED ACCESS PANELS AND DOORS.

1732 VINE ST./1734 VINE ST.											
UNIT	ROOM NAME	AREA	DOOR OPENABLE AREA [SQ. FT]	WINDOW OPENABLE AREA [SQ. FT]	UNOBSTRUCED OPENING	TOTAL OPENABLE AREA	4% OF FLOOR AREA	8% OF FLOOR AREA			
201	LIVING	295	0	30	N/A	30	12	N/A			
201	BEDROOM	129	0	18	N/A	18	5	N/A			
202	LIVING	62	0	9	N/A	9	2	N/A			
202	BEDROOM	212	0	18	N/A	18	8	N/A			
301	LIVING	295	0	30	N/A	30	12	N/A			
301	BEDROOM	129	0	18	N/A	18	5	N/A			
302	LIVING	62	0	9	N/A	9	2	N/A			
302	BEDROOM	212	0	18	N/A	18	8	N/A			
401	LIVING	295	0	30	N/A	30	12	N/A			
401	BEDROOM	129	0	18	N/A	18	5	N/A			
402	LIVING	62	0	9	N/A	9	2	N/A			
402	BEDROOM	212	0	18	N/A	18	8	N/A			

NATURAL VENTILATION SCHEDULE

NATURAL VENILATION OF THE OCCUPIED SPACE SHALL BE THROUGH WINDOWS, DOORS, OR OTHER OPENINGS TO THE SPACE. THE OPERATING MECHANISIM FOR SUCH OPENINGS SHALL BE PROVIDED WITH READY ACCESS SO THAT THE OPENINGS ARE READILY CONTROLLABLE BY THE BUILDING OCCUPANTS.

\*VENTILATION CALCULATIONS PER OMC 2017 TABLE 403.3.1.1

		MECHANICAL EXH	IAUST :	SCHEDULE -	2017 OHIO M	ECHANICAL	CODE			
						FIXT	JRES		TOTAL	TOTAL
ROOM NUMBER/UNIT TYPICAL	ROOMNAME	OCCUPANCY AF		EXHAUST AIRFLOW RATE (CFM/ft2)	EXHAUST RATE PER FIXTURE (CFM)	LOWER CONTINUOUS RATE?	HIGHER INTERMITTENT RATE?	QTY. OF FIXTURES	EXHAUST	EXHAUST AIRFLOW ACT. (CFM)
	RESTROOM	PUBLIC SPACES - TOILET ROOM	-	-	50/70	NO	YES	1	70	83
	BATHROOM	PRIVATE DWELLING - TOILET ROOMS	-	-	30/80	YES	NO	1	30	30

\*EXHAUST CALCULATIONS PER OMC 2017 TABLE 403.3.1.1

architecture
202 W. ELDER STREET 4TH FLOOR
www.PLATTEDESIGN.COM T: 513.8

Progress Dates
05/05/2023 BID P/E/FP
08/30/2024 BID SET 2

Revisions

Checked By: SSS

Drawn by: RPG

ENGINEERED BUILDING SYSTEMS INC.

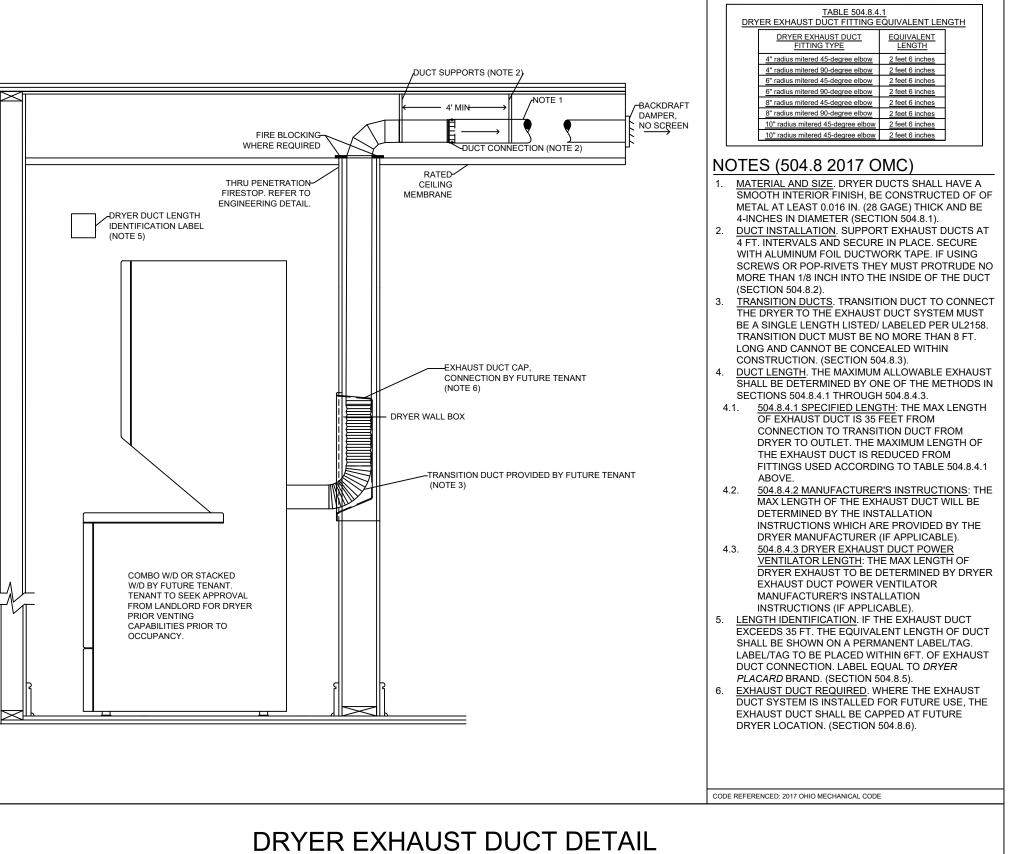
TEAMWORK • COLLABORATION
SHARED SUCCESS
515 Monmouth Street, Suite 204
Newport, KY 41071 (859) 261-0585
MEP Consulting Services, Inc. in OH
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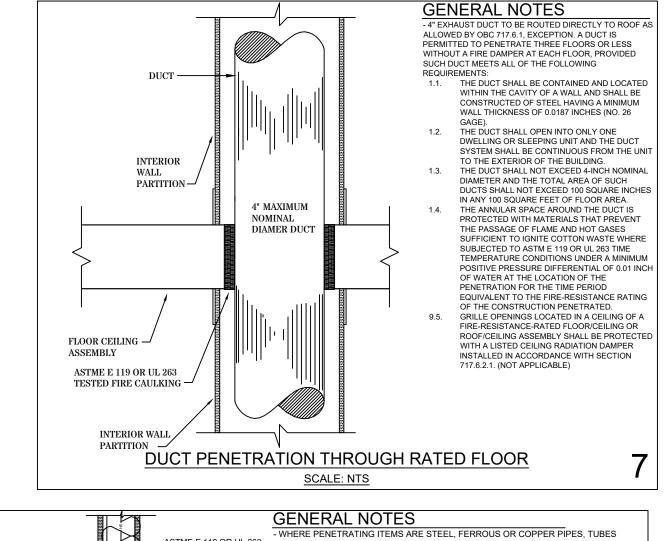
CONTAINS MAY BE USED FOR OTHER THAN THE SPECIFIC PURPOSE FOR WHICH IT WAS PREPARED WITHOUT WRITTEN CONSENT OF ENGINEERED BUILDING SYSTEMS, INC.

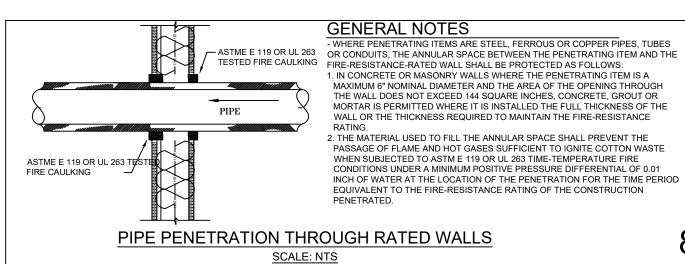
SOVATION FOR SZ VINE ST / 17

Job No: 22042 8/10/2022

M2.00







#### BATHROOM FAN SPEED SETTING SCHEDULE TYPICAL MINIMUM SPEED | MAXIMUM SPEED ROOMNAME SETTING **BATHROOM** 202 BATHROOM 301 BATHROOM 302 BATHROOM 80 302 BATHROOM

RESIDENTIAL UNITS SCHEDULE * (				
UNIT		NUMBER OF BEDROOMS	VENT. AIR REQ.	ACTUAL WHOLE BUILDING VENTILATION
201	823	2	31	40
202	730	3	37	60
301	827	2	31	40
302	1081	3	41	60

					FAN S	CHEDULE							
TAG	TYPE	AREA SERVED	MANUFACTURER	MODEL	DRIVE	CFM	ESP	WATTS	RPM	VOLT/PHASE	MOUNTING	WEIGHT	NOTE
E-1	EXHAUST	TYPICAL RESTROOM	PANASONIC	FV-0511VKS2	DIRECT	30,40-80	0.25	17	1131	115/60/1	CEILING	12	1,2,3,
E-2	EXHAUST	STAIRWELL	PANASONIC	FV-0511VKS2	DIRECT	40	0.25	17	1131	115/60/1	CEILING	12	2,3,4,
E-4	EXHAUST	RESTROOM	PANASONIC	FV-1115VK2	DIRECT	150	0.1	12.9	684	120/60/1	CEILING	12	2

I. FAN SHALL RUN CONTINUOUSLY AT LOW SPEED (0/30/40/50 CFM) AND SHALL RAMP UP TO HIGH SPEED (50,80 CFM) WHEN SWITCH IS TURNED ON. PROVIDE ALL RELEVANT

- ACCESSORIES. 2. INSTALL RADIATION DAMPER PC-RD05C5
- 3. PROVIDE FV-CSVK1 CONDESNSATION SENSOR
- 4. REFER TO FAN SPEED SCHEDULE FOR FAN SPEED SETTINGS 1. FAN SHALL RUN CONTINUOUSLY AT LOW SPEED (40 CFM)

MEQUANICAL EVILATION COLIEDTINE 10047 OFFICIAL COLE	
MECHANICAL EXHAUS I SCHEDULE - 2017 OHIO MECHANICAL CODE	MECHANICAL EXHAUST SCHEDULE - 2017 OHIO MECHANICAL CODE

				001120022						
						FIXT	JRES		TOTAL	TOTAL
ROOM NUMBER/UNIT TYPICAL	ROOMNAME	OCCUPANCY CLASSIFICATION	AREA (ft2)	EXHAUST AIRFLOW RATE (CFM/ft2)	EXHAUST RATE PER FIXTURE (CFM)	LOWER CONTINUOUS RATE?	HIGHER INTERMITTENT RATE?	QTY. OF FIXTURES	EXHAUST AIRFLOW REQ. (CFM)	EXHAUST AIRFLOW ACT. (CFM)
	RESTROOM	PUBLIC SPACES - TOILET ROOM	-	-	50/70	NO	YES	2	140	150
	BATHROOM	PRIVATE DWELLING - TOILET ROOMS	-	-	30/80	YES	NO	1	30	30
	BATHROOM	PRIVATE DWELLING - TOILET ROOMS	-	-	40/80	YES	NO	1	40	40
*EXHAUST CALCULA	ATIONS PER OMC 2017 TABLE 403.	3.1.1								

		DUCT INS	ULATION	SCHEDULE
		А	IR DISTRIBU	TION TYPE
		SA	RA	ADDITIONAL NOTES
	AHU-A-1.5	R-3.5	N/A	-
EQUIPMENT	AHU-A-2	R-3.5	N/A	-
EC	GF-3	R-3.5	N/A	-
	GF-3.5	R-3.5	N/A	-

DUCT INSULATION REQUIREMENTS ARE BASED ON TABLE 6.8.2B OF ASHRAE 90.1 2010 ENERGY CODE. PROVIDE DUCTWORK OF SUFFICIENT THICKNESS TO MEET THE INSTALLED R-VALUE REQUIREMENTS LISTED ABOVE.

ITEMS NOT REQUIRED TO BE INSULATED: FIBROUS-GLASS DUCTS, DUCTS WITH LINER THAT MEETS ASHRAE 90.1, FACTORY-INSULATED FLEXIBLE DUCTS, FACTORY-INSULATED PLENUMS AND CASINGS, FLEX CONNECTORS, VIBRATION-CONTROL DEVICES, FACTORY-INSULATED ACCESS PANELS AND DOORS.

			4004.4	LOOF VANIE				
			1801-1	1805 VINE				ı
UNIT	ROOM NAME	AREA	DOOR OPENABLE AREA [SQ. FT]	WINDOW OPENABLE AREA [SQ. FT]	UNOBSTRUCED OPENING	TOTAL OPENABLE AREA	4% OF FLOOR AREA	8% OF FLOOR ARE
101	COMMERCIAL	1266	74	0	N/A	74	51	N/A
201	BEDROOM 1	194	0	19	N/A	19	8	N/A
201	LIVING	395	0	19	N/A	19	16	N/A
201	BEDROOM 2	143	0	20	N/A	20	6	N/A
202	BEDROOM 1	146	0	7	N/A	7	6	N/A
202	BEDROOM 2	172	0	26	N/A	26	7	N/A
202	BEDROOM 3	172	0	26	N/A	26	7	N/A
202	LIVING	337	0	19	N/A	19	13	N/A
301	BEDROOM 1	141	0	19	N/A	19	6	N/A
301	LIVING	345	0	19	N/A	19	14	N/A
301	BEDROOM 2	191	0	20	N/A	20	8	N/A
302	BEDROOM 1	150	0	16	N/A	16	6	N/A
302	LIVING	409	0	19	N/A	19	16	N/A
302	BEDROOM 2	180	0	33	N/A	33	7	N/A
302	BEDROOM 3	170	0	13	N/A	13	7	N/A

NATURAL VENILATION OF THE OCCUPIED SPACE SHALL BE THROUGH WINDOWS, DOORS, OR OTHER OPENINGS TO THE SPACE. THE OPERATING MECHANISIM FOR SUCH OPENINGS SHALL BE PROVIDED WITH READY ACCESS SO THAT THE OPENINGS ARE READILY CONTROLLABLE BY THE BUILDING OCCUPANTS. \*VENTILATION CALCULATIONS PER OMC 2017 TABLE 403 3 1 1

	VENTILATI	ON CALCULATIONS P	EK ONC 201	1 TABLE 403.3.1.1								
DEHUMIDIFIER SCHEDULE												
TAG	AREA SERVED	MANUFACTURER	MODEL	CAPACITY - PINTS/24 HR	AMPS	FUSE	VOLT/PHASE	MOUNTING	WEIGHT	NOTES		
DE-1	BASEMENT	APRILAIRE	1850	95	8	15	120/1	FLOOR	70	1,2,3,4		

- 1. ENERGY STAR RATED. 2. DEHUMIDICATION COLTROL
- 3. CORD AND PLUG CONNECTION.
- 4. PROVIDE LOW PROFILE CONDENSATE PUMP

	HEATERS												
TAG	TYPE	AREA SERVED	MANUFACTURER	MODEL	HEAT-MBH	FUEL	HEAT-KW	VOLT/PHASE	FLA	MOUNTING	WEIGHT	NOTES	
DH-1	DUCT HEATER	REFER TO PLANS	HOTPOD	HP6-1000120-2T	3.4	ELECTRIC	1	120/1/60		INLINE	7	3,4	
H-1	WALL HEATER	REFER TO PLANS	BERKO	FRA4020	6.8	ELECTRIC	2	208/1/60		IN WALL	30	1,2	
1. SEMI-RECE	I. SEMI-RECESSED MOUNTING SLEEVE.												

1. SEMI-RECESSED MOUNTING SLEEV
2. INTEGRAL THERMOSTAT
3. DUCT STAT INCLUDED
4. REPLACEABLE FILTER INCLUDED

														Spl	lit Syst	tem S	chedu	ıle															
Unit	Ton	Furnoso	\	Htg Cap I	n Heating Cap	Air Flo	w Stati		MCA	МОСР	Unit Weight	Outside Air	Out DB	3 Indoor Coil	Ent DB	Ent WB	Lv DB	Lv WB	Cool Cap	Sens Cap	Latent Cap	Total Weight	Too	Model	Volto	Bhasa	MCA	МОСР	SEED	SEER	EED	EED 2	,
Unit	rag	Furnace	AFUE	Btuh	Btuh	cfm	in wo	g. hp	Amps	Amps	lb	CFM	°F	Indoor Coil	°F	°F	°F	°F	Btuh	Btuh	Btuh	lb	Tag	Model	voits	Phase	Amps	Amps	SEER	2	EER		Accessories
SYS-08	GF-3.5	N96MSN0601726A	96%	60,000	58,000	1417	0.5	0.75	13.6	15	142	187	95	EAM4X43L21A	. 80	67	58.3	27.1	44,924	33,162	11,762	199	CU-3.5	N4A5S42AKAWA	208/230	1	32.8	50	14.5	13.8	11.7	11.2	1,5,6,7,8,9,1
978 09	GE 3	NIGENIS NIGEO1716 A	96%	58 000	60,000	1220	0.50	0.75	13.6	15	1/12	13/	95	EAMAY271 17A	80	67	60.3	58.2	34 736	25 957	8 770	160	CIL2	NAAES36AKAWA	208/230	1	167	25	15	1/13	122	11 7	1567801

SYS-09	
ACCESSORIES:	

1 EXTERNAL TRAP KIT 2 CONDENSATE NEUTRALIZER KIT 3 CONCENTRIC VENT KIT

4 TWINING KIT

5 CRANKCASE HEATER 6 EVAPORATOR FREEZE THERMOSTAT 7 WINTER START KIT 8 HARD START KIT 9 LOW AMBIENT PRESSURE SWITCH

10 LOW PRESSURE SWITCH LONG LINE APPLICATIONS 11 CRANKCASE HEATER 12 HARD START KIT

GF-3 | N96MSN0601716A | 96% | 58,000 | 60,000 | 1220 | 0.50 | 0.75 | 13.6 | 15 | 14.2 | 134 | 95 | EAM4X37L17A | 80 | 67 | 60.3 | 58.2 | 34,736 | 25,957 | 8,779 | 169 | CU-3 | N4A5S36AKAWA | 208/230 | 1 | 16.7 | 25 | 15 | 14.3 | 12.2 | 11.7 | 1,5,6,7,8,9,10

80

Progress Dates

Revisions

Checked By: SSS

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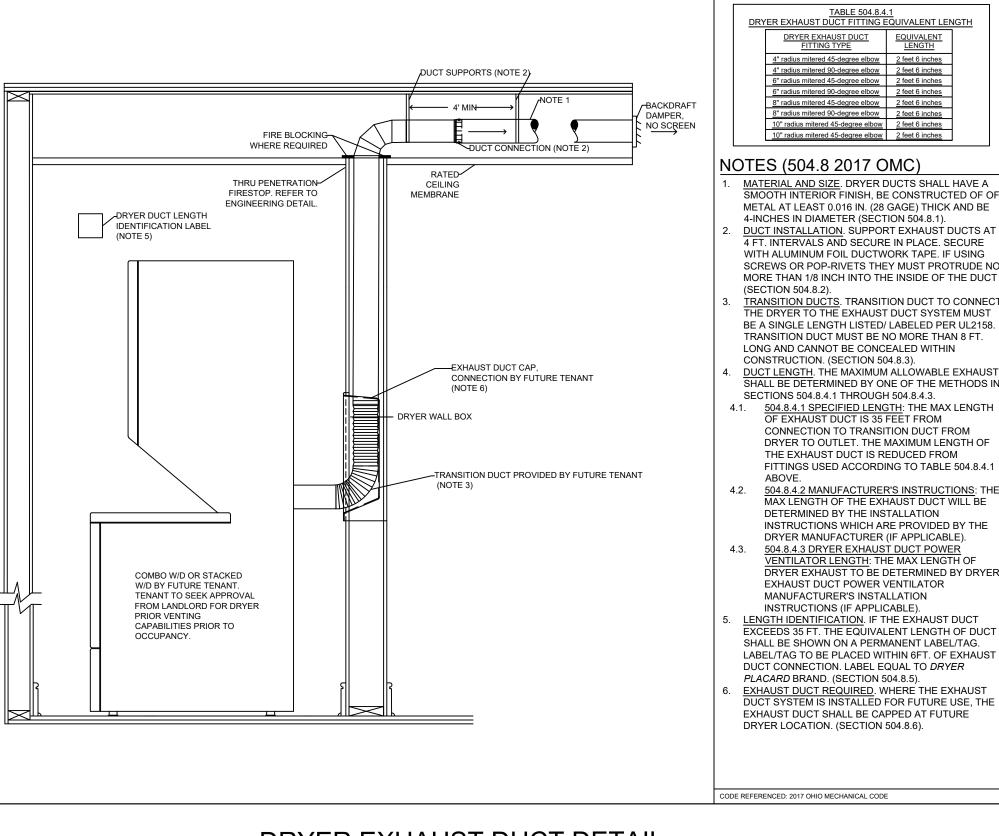
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Drawn by: RPG

05/05/2023 BID P/E/FP 08/30/2024 BID SET 2

Job No: 22042 8/10/2022



	APARTMENT SPLIT SYSTEM SCHEDULE																						
System	Outdoor Unit Tag	Model	Volts	Phase	MCA	МОСР	Outdoor Unit Weight	Indoor Unit Tag	Indoor Coil	Static	Air Flow CFM	Cool Cap Total	Cool Cap Sens	SEER	EER	Elect Heat Kw (240)	Elect Heat Kw (208)	Htg Cap 47 deg	Htg Cap 17 deg	HSPF	MCA	МОСР	Indoor Unit Weight
					Amps	Amps	lb	7		in wg.	cfm	Btuh	Btuh			kW	kW	Btuh	Btuh		Amps	Amps	lb
1.5 Ton 8KW	HP-1.5	DLCSRBH18AAK	208/230	1	16	25	101	AHU-A-1.5 (8KW)	FMA4X1800AL	0.50	650	18000	12690	17	11.8	8	5.6	19,200	15,000	11	47.6	60	103
1.0 1011 0101	111 1.0	BEGGI (BITTO) ( (IX	200,200		10	20	101	AHU-A-1.5	1 1017 ( 17 (1000) (2	0.00		10000	12000	.,	11.0		0.0	10,200	10,000	''	17.0		100
1.5 Ton 10KW	HP-1.5	DLCSRBH18AAK	208/230	1	16	25	101	(10KW)	FMA4X1800AL	0.50	650	18000	12690	17	11.8	10	7.2	19,200	15,000	11	47.6	60	103
2 Ton 10KW	HP-2	DLCSRBH24AAK	208/230	1	25	35	135	AHU-A-2 (10KW)	FMA4X2400AL	0.50	763	21800	18110	15	11.5	10	7.2	26,200	16,000	10	47.6	60	103

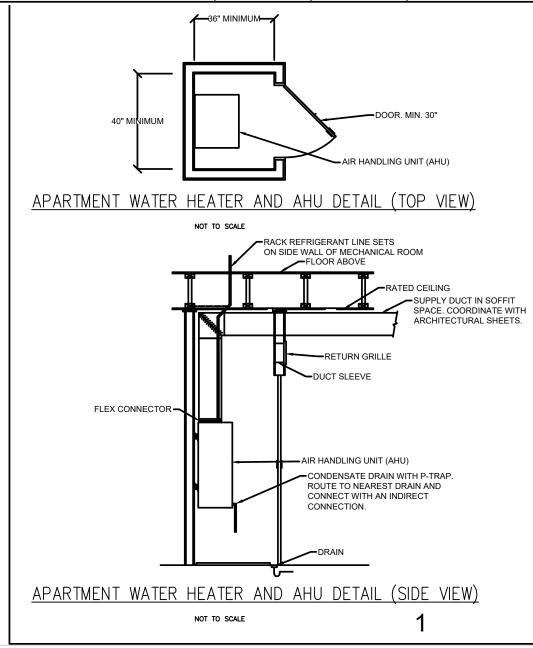
\*\*Requires Piping Adaptor Kit 1174192 and 24V interface KSAIC0401230

TAG	AREA SERVED	MANUFACTURER	SERIES	MODEL	CFM	BTUH COOLING	BTUH HEATING	ESP	VOLT/PHASE	WEIGHT	NOTE
IDU-1	REFER TO DRAWINGS	LG	HV4	LC128HV4	335/283/247	11,000	14,000	0.1	208-230/60/1	40	N/A

	LG CASSETTE STYLE (OUTDOOR)																		
TAG	AREA SERVED	MANUFACTURER	SERIES	MODEL	CLG-MBH	NOMINAL TONS	MIN. SEER	EER	HSPF	HEAT-MBH	MAX HEAT @5 DEGREES/ MBH	COOLING OPERATING RANGE (F)	HEATING OPERATING RANGE (F)	VOLT/PHASE	MCA	MOCP	REFRIDGERANT	WEIGHT	NOTE
ODU-1	REFER TO DRAWINGS	LG	HV4	LUU127HV	12,400	1	19.4	12.6	10.5	15,500	N/A	0~118	-4~64	208-230/1	12.3	15	R410A	89	N/A

COMMON AREAS:MECH	IANICAL VEN	TILATION CAL	CULATION
SCHEDULE * (ASHR	RAE 62.1 LEE	D PURPOSES	ONLY)
UNIT	AREA (SQ. FT.)	VENT. AIR REQ. CFM	ACTUAL WHOLE BUILDING VENTILATION
ENTRY/STAIRWELL/CORRIDOR	646	39	40

EBS - RESIDENTIAL DIFFUSER, GRILLE, AND REGISTER SCHEDULE					
CALLOUT	DESCRIPTION	FACE SIZE (IN)	INLET SIZE (IN)	MODEL	NOTE 1
DTG-1	RETURN AIR GRILLE, ALL-STEEL CONSTRUCTION, 1/3" SPACED FINS AT 20 DEGREES	18x12	16x10	HART AND COOLEY/ 650	BRIGHT WHITE FINISH
DTG-1C	RETURN AIR GRILLE, ALL-STEEL CONSTRUCTION, 1/3" SPACED FINS AT 20 DEGREES	18x12	16x10	HART AND COOLEY/ 650	BRIGHT WHITE FINISH
EVH-4	28 GAUGE GALVANIZED STEEL. PRE-PAINTED EXHAUST VENT.	6x7	4Ø	FAMCO SDWVP	BACKDRAFT DAMPER/ANGLED HOOD. 1/4 INCH INSECT SCREEN.
EVH-6	28 GAUGE GALVANIZED STEEL. PRE-PAINTED EXHAUST VENT.	8x9	6Ø	FAMCO SDWVP	BACKDRAFT DAMPER/ANGLED HOOD. 1/4 INCH INSECT SCREEN.
FR-1	FLOOR REGISTER, ALL-STEEL CONSTRUCTION, 75% FREE AREA, TOE-OPERATED VALVE CONTROL	12x6	10x4	HART AND COOLEY/ 210	GOLDEN SAND ENAMEL FINISH
FR-3	FLOOR REGISTER, ALL-STEEL CONSTRUCTION, 75% FREE AREA, TOE-OPERATED VALVE CONTROL	10x8	8x6	HART AND COOLEY/ 210	GOLDEN SAND ENAMEL FINISH
FR-4	FLOOR REGISTER, ALL-STEEL CONSTRUCTION, 75% FREE AREA, TOE-OPERATED VALVE CONTROL	16x6	14x4	HART AND COOLEY/ 210	GOLDEN SAND ENAMEL FINISH
FRG-1	RETURN AIR FILTER GRILLE, ALL-STEEL CONSTRUCTION, 1/3" SPACED FINS AT 20 DEGREES	26x10	24x8	HART AND COOLEY/ 265	GOLDEN SAND ENAMEL FINISH
IVH-4	28 GAUGE GALVANIZED STEEL. PRE-PAINTED INTAKE VENT.	6x7	4Ø	FAMCO SWVP	ANGLED HOOD.1/4 INCH INSECT SCREEN.
IVH-6	28 GAUGE GALVANIZED STEEL. PRE-PAINTED INTAKE VENT.	8x9	6Ø	FAMCO SWVP	ANGLED HOOD.1/4 INCH INSECT SCREEN.
RG-8	RETURN AIR GRILLE, ALL-STEEL CONSTRUCTION, 1/3" SPACED FINS AT 20 DEGREES	22x16	20x14	HART AND COOLEY/ 650	BRIGHT WHITE FINISH
RG-8C	RETURN AIR GRILLE, ALL-STEEL CONSTRUCTION, 1/3" SPACED FINS AT 20 DEGREES	22x16	20x14	HART AND COOLEY/ 650	BRIGHT WHITE FINISH
RG-9	RETURN AIR GRILLE, ALL-STEEL CONSTRUCTION, 1/3" SPACED FINS AT 20 DEGREES	26x16	24x14	HART AND COOLEY/ 650	BRIGHT WHITE FINISH
RG-9C	RETURN AIR GRILLE, ALL-STEEL CONSTRUCTION, 1/3" SPACED FINS AT 20 DEGREES	26x16	24x14	HART AND COOLEY/ 650	BRIGHT WHITE FINISH
RR-1	STEEL RETURN GRILLE, 3/4" BLADE SPACING, 35 DEGREE DEFLECTION, BLADES PARALLEL TO LONG DIMENSION	8x8	6x6	TITUS 350RL	STEEL OPPOSED-BLADE DAMPER OPERABLE FROM THE FACE OF THE GRILLE.
SDG1W-1	ALUMINUM SINGLE DEFLECTION SPIRAL DIFFUSER	12x5	10x3	HART AND COOLEY/ SV	ADJUSTABLE DAMPER, BRIGHT WHITE FINISH
SR1W-1	STEEL 1-WAY REGISTER, PLATE DAMPER, 1/3" FIN SPACING	10x6	8x4	HART AND COOLEY/ 651	ADJUSTABLE PLATE DAMPER, BRIGHT WHITE FINISH
SR1W-1C	STEEL 1-WAY REGISTER, PLATE DAMPER, 1/3" FIN SPACING	10x6	8x4	HART AND COOLEY/ 651	ADJUSTABLE PLATE DAMPER, BRIGHT WHITE FINISH
SR1W-2	STEEL 1-WAY REGISTER, PLATE DAMPER, 1/3" FIN SPACING	12x6	10x4	HART AND COOLEY/ 651	ADJUSTABLE PLATE DAMPER, BRIGHT WHITE FINISH
SR1W-3	STEEL 1-WAY REGISTER, PLATE DAMPER, 1/3" FIN SPACING	10x8	8x6	HART AND COOLEY/ 651	ADJUSTABLE PLATE DAMPER, BRIGHT WHITE FINISH
SR1W-3C	STEEL 1-WAY REGISTER, PLATE DAMPER, 1/3" FIN SPACING	10x8	8x6	HART AND COOLEY/ 651	ADJUSTABLE PLATE DAMPER, BRIGHT WHITE FINISH
SR1W-4	STEEL 1-WAY REGISTER, PLATE DAMPER, 1/3" FIN SPACING	12x8	10x6	HART AND COOLEY/ 651	ADJUSTABLE PLATE DAMPER, BRIGHT WHITE FINISH
SR1W-5	STEEL 1-WAY REGISTER, PLATE DAMPER, 1/3" FIN SPACING	14x8	12x6	HART AND COOLEY/ 651	ADJUSTABLE PLATE DAMPER, BRIGHT WHITE FINISH
SR1W-6	STEEL 1-WAY REGISTER, PLATE DAMPER, 1/3" FIN SPACING	16x8	14x6	HART AND COOLEY/ 651	ADJUSTABLE PLATE DAMPER, BRIGHT WHITE FINISH
SR1WS-1	STEEL 1-WAY REGISTER, MS DAMPER, 1/2" FIN SPACING	10x8	8x6	HART AND COOLEY/ 681	ADJUSTABLE DAMPER, SIDE DEFLECTION, BRIGHT WHITE FINISH



#### MECHANICAL SPECIFICATIONS

a. Refer to architectural drawings, general notes, instructions to bidders, general conditions, supplementary general conditions, base building specifications and drawings, shop drawing manuals and as-built plans, except as noted herein, which apply in all respects to this section. The contractor shall visit the site and familiarize himself with all existing conditions prior to bidding the work

### 2. Use of Drawings And Specifications

a. EBS drawings and specifications are intended to convey design intent only. All means and methods sequences, techniques, and procedures of construction as well as any associated safety precautions and programs, and all incidental and temporary devices required to construct the project, and to provide a complete and fully operational mechanical system are the responsibility of the mechanical contractor.

### Standards

a. Equipment and materials shall conform with appropriate provisions of AGA, ARI, ASME, ASTM, CISPI, UL, NEMA, ANSI, SMACNA, ASHRAE, NFPA, NEC, as applicable to each individual unit or assembly. All equipment must bear UL label.

a. Contractor must be licensed by the state to install HVAC systems/equipment. Contractor must also have a minimum of 5 years of experience and have installed at least (5) successful project installations of similar size and scope. References must be provided upon request.

a. All work shall be performed in strict accordance with all applicable state and local codes and ordinances. The mechanical contractor shall satisfy code requirements at a minimum without any extra cost to the owner. In case of conflict between

#### the drawings/specifications and the codes and ordinances, the highest standard shall apply. 6. Permits and Fees

a. The mechanical contractor shall procure and pay for all permits, fees, taxes, and inspections necessary to complete the mechanical work. Furnish certificate of approval for work from inspection authority to owner before final acceptance for payment will be approved without this certificate.

work. Certificate of final inspection and approval shall be submitted with the contractor's request for payment. No final 7. Site Examination a. The mechanical contractor shall thoroughly examine all areas of work where equipment, ductwork, and piping will be

installed and shall report any condition that, in his opinion, prevents the proper installation of the mechanical work prior to bid. Contractor shall also examine the drawings and specifications of other branches of work, making reference to them for details of new or existing building conditions. No extras will be allowed for failure to include all required work in bid. b. All work shall be done at times convenient to the owner and only during normal working hours, unless specified otherwise.

d. Access panels are not shown on drawings. During site examination, contractor shall identify all areas where access panels are required, and report to general contractor. Designation of who furnishes and who installs access panels must be

coordinated with general contractor prior to starting work.

### 8. Contractor Coordination

a. Coordination drawings showing system and component installation layout, routing, details, etc. Shall be produced by the mechanical contractor and under the supervision of the general contractor/construction manager, or appropriate party as

b. All systems installed by each sub-contractor shall be coordinated with one another and approved by general contractor/construction manager, etc. prior to installation and/or fabrication.

c. If questions concerning design intent arise during coordination, EBS can assist where appropriate.

c. Mechanical contractor shall take their own measurements and be responsible for them.

d. The architectural drawings shall take precedence over all other drawings. Do not scale distances off the mechanical drawings; use actual building dimensions.

#### 9. Shop Drawings / Submittals

a. Submit to the architect electronic copies of complete and certified shop drawings, descriptive data, performance data and ratings, diagrams and specifications on all specified equipment, including accessories, and materials for review. The make, model number, type, finish and accessories of all equipment and materials shall be reviewed and approved by the mechanical contractor and general contractor prior to submitting to the architect for their review and approval. Approval of shop drawings does not relieve the mechanical contractor/vendor from compliance with the requirements of the contract drawings, specifications and applicable codes.

b. Shop drawings shall be required for the following:

HVAC equipment

•Diffusers, registers, grilles, dampers, louvers, and all sheet metal accessories

Temperature controls

 Sheet metal coordination drawings Duct Sealants

c. Products installed by the mechanical contractor and provided by others must be submitted for review prior to purchasing. Products shall not be selected based on permit drawings without express permission - products shall be selected based on construction drawings.

### 10. Record Drawing

a. The mechanical contractor shall be responsible for creating record drawings where required. Drawings shall be produced in Autocad 2004 format or later.

b. The mechanical contractor shall be responsible for creating record drawings in a format agreed upon by 3CDC, ZHx, and the contracting parties.

a. All mechanical systems shall be tested for proper operation.

## Fire Stopping

a. Provide fire stopping at all penetrations through rated separations per local codes & regulations & per UL recommendations for assemblies encountered in project

b. The fire stopping material shall meet the integrity of the fire rated wall, floor, ceiling & roof being penetrated. Refer to architect's drawings for wall, floor, ceiling & roof fire ratings prior to bidding work.

c. Refer to architect's drawings for wall, floor, ceiling, and roof fire ratings prior to bidding work.

## Access Panels

a. Provide ceiling and wall access panel quantities & locations to the general contractor prior to bidding. Access panels are required for all concealed appliances, controls devices, heat exchangers and HVAC system components that utilize energy. Where access panels are used, the access panel should be sized to allow accessibility for inspection, service, repair and replacement without disabling the function of a fire-resistance-rated assembly or removing permanent construction, other appliances, venting systems or any other piping or ducts not connected to the appliance being inspected, serviced, repaired or replaced. There shall be no extras for having to add access panels after bids are

## 14. Cutting and Patching

a. Neatly do all cutting as required and patch all cut surfaces to match building construction. The contractor shall employ and pay a trade trained and qualified to perform the required patching work. All surfaces disturbed shall be restored with like materials to the satisfaction of the owner. All penetrations through roof shall be made by bonded roofer. Mechanical contractor shall pay all fees required.

## 15. Flashing & Counterflashing

a. Roof flashing shall be furnished and installed by the roofing contractor. Roof counterflashing shall be furnished and installed by the mechanical contractor. Coordinate work with roofing contractor and pay all fees.

b. Obtain approval from general contractor, construction manager, owner and/or roofing contractor prior to making any penetrations so that warranties are not compromised or voided.

## 16. Warranty

a. The mechanical contractor shall unconditionally warrant all work to be free of defects in equipment, material and workmanship for a period of one (1) year from the date of final acceptance by owner. The mechanical contractor will repair or replace any defective work promptly and without charge to the owner.

b. Restore any other existing work damaged in the course of repairing defective equipment, materials and workmanship.

## 17. Mechanical Work

a. The mechanical contractor shall provide new hvac equipment, fans, ductwork, piping, air devices, controls as indicated on drawings and as specified. Startup and 1st year parts and labor warranty shall be included and manufacturer's extended warranties. Equipment and appliances shall be installed as required by the terms of their approval, in accordance with the conditions of the listing, the manufacturer's installation instructions, and the applicable code.

## 18. Owner's Instructions

a. Provide two sets of complete operating and maintenance instructions with drawings, typewritten instructions and operating sequences and descriptive data sheets. Assemble each set in a hard-bound cover. Provide pdf files of all documentation.

a. Put all equipment in service and demonstrate that all conditions of the contract have been fulfilled. Remove all tools, debris, etc. occasioned by work under this contract. Mechanical Contractor to provide a new set of filters in all HVAC units prior to turnover. Submit all warranties, test reports, operating and maintenance manuals for HVAC systems, log sheets and charts, and guarantees as previously specified. Provide all reports, forms, etc. required by inspectors to the satisfaction of the owner. Provide as-built record drawings (in Autocad 2007 or later) showing an accurate account of the final installed systems. Systems including but not limited to all equipment and associated controls, ductwork/piping, air devices, etc.

## 20. Sheetmetal Ductwork

a. All sizes of ducts shown on the drawings are interior duct dimensions. All ductwork shall be rigid sheetmetal constructed from galvanized sheet steel in accordance with SMACNA low velocity duct construction standards. All exposed ductwork shall be round, spiral, or rectangular lock-seam type, as shown on HVAC drawings. Assemble and install ductwork in accordance with recognized industry practice for achieving air tight (5% leakage) and noiseless (no objectionable noise) systems, capable of performing each indicated service. Furnish all required dampers, transitions, offsets, connections to air devices, and other accessories necessary for a complete operating system. Flexible ductwork shall not

b. All 90-degree duct turns must be 1.5 radius elbows. If a 1.5 radius elbow will not fit, square elbows with turning vanes can be provided in lieu of radius but should be limited to only areas where there are space constraints. c. All takeoff/branch ductwork must utilize boot or conical tee fittings.

## 21. Adhesives and Sealants

a. Seal all longitudinal and transverse duct joints with a UL 181A or 181B non-hardening, non-migrating mastic or liquid elastic sealant of a type recommended by the manufacturer for sealing joints and seams in sheet metal ductwork. Cover all field joints, joints around spin-in fittings and fastening screws with mastic. All sealants and gaskets shall have surface-burning characteristics with a maximum flame-spread index of 25 and a maximum smoke-developed index of 50

b. Exposed Ductwork: trim duct sealants flush with metal. Create a smooth and uniform exposed bead. Do not use two-part

c. All duct boots sealed to drywall/finished floor (any interface with another material).

#### 22. Duct Supports

a. Furnish and install hot-dipped galvanized steel fasteners, hangers, anchors, rods, straps, trim, and angles for support of 23. Flexible Connections

a. Furnish and install neoprene flexible duct connections at the inlet and discharge of units and fans.

### 24. Duct Manual Volume Dampers

a. Furnish and install opposed-blade, leak-proof volume control dampers where indicated on drawings and locations in supply return and exhaust ducts where branches are taken from larger ducts or at each individual duct register in order to achieve system air balance quantities. Balancing devices must be provided in accordance with IMC 603.18. All manual volume dampers must be shown on coordination drawings when submitted for review.

#### 25. Duct Access Doors

A. Furnish and install conveniently located duct access doors of ample size and quantity for servicing the dampers.

### 26. Diffusers, Grilles and Registers

A.Diffusers, grilles and registers shall be manufactured by titus, price, or engineered approved equal and shall be furnished and installed by the mechanical contractor. Diffusers shall be installed as indicated on the drawings and schedules. The mechanical contractor shall provide all miscellaneous items necessary for a complete and proper installation in the type of ceiling and walls used in this project.

### 27. Exhaust Fan

A.Fan manufacturer shall be Broan, Cook, Panasonic, Greenheck, or engineered approved equal. Refer to drawings and schedules for unit location, technical data, and any applicable accessories

### 28. Ducted Split Systems

a. Split systems shall consist of high efficient air handling unit and associated heat pump. Equipment shall have manufacturer's

#### b. Split system manufacturer shall be Tempstar, Carrier, Goodman, or engineered equal. 29. Indoor Furnace

A. Split systems shall consist of high efficient condensing gas furnace and associated condensing unit. Furnace shall be a 4-way multipoise design and installed per manufacturer's requirements. Refer to drawings and schedules for unit location,

30. Condensate Drain Piping A. The mechanical contractor shall furnish and install condensate drains, p-traps with removable cleanout caps for air equipment per manufacturer's recommendations. The p-trap depth shall be at least the depth specified for the respective pressure drop of the unit. Condensate drain piping shall be schedule 40 CPVC pipe with solvent weld fittings [Insulate condensate walls of pipe with Armaflex AP, flexible closed cell elastomeric foam, self-sealing insulation. Provide 1/2" thick insulation on piping < 1" in diameter and 1" thick insulation on piping between 1" and 1-1/2" in diameter. Pipe insulation

shall not exceed 25/50 flame-smoke ratings]. All condensate drain lines shall be configured to permit the clearing of blockages and performance of maintenance without requiring the drain line to be cut. For condensate pumps located in uninhabitable spaces (i.e. attics and crawl spaces), provide controls that will shut down the equipment if the condensate

#### B. All cooling equipment shall have a wet switch in the primary drain line, the overflow drain line, or in the equipment-supplied drain pan (located at a point higher than the primary drain line connection and below the overflow rim of the pan) that will shut down the unit when the condensate is clogged..

### 31. Piping Supports (Metal Pipe)

A.Furnish and install hot-dipped galvanized steel fasteners, hangers, anchors, rods, straps, trim and angles for support of

### 32. Piping Supports (Plastic Pipe)

A. Furnish and install hangers for plastic piping per manufacturer's requirements.

#### 33. Temperature Controls and Control Wiring

A. The mechanical contractor shall provide all control wiring necessary for the complete and proper operating temperature control system. Programmable thermostats shall be provided with equipment packages unless otherwise noted. B.Exposed wiring: All wiring exposed to the space shall be run in conduit. Coordinate requirements with architectural

### 34. Commissioning

a. 3CDC has hired ZHCx to act as their commissioning provider. The commissioning process will be implemented on the HVAC systems.

b. ZHCx will conduct onsite observations throughout construction. ZHCx shall be notified prior to any ductwork being

c. ZHCx shall be notified prior to any equipment start up. ZHCx will witnedd start up of all split systems. If a start up occurs without notifying ZHCx the responsible contractor is required to perform another start up in the presence of ZHCx.

d. ZHCx will conduct functional performance testing on all HVAC equipment. Any findings will be reported to 3CDC, project architect, mechanical contractor, and the engineer of record. The responsible party is required to document the correction so that ZHCx can verify the correction has been made. ZHCx will perform one back check of the correction to ensure it has been implemented in its entirety.

#### 35. Sequence of Operation Heaters

•H-X: heater shall be controlled from the integral thermostat. When the temperature of the space drops below the thermostat setpoint, the heater fan shall run and the electric heating element shall engage to maintain temperature setpoint.

## Exhaust Fans

•E-X: exhaust fan shall run on a wall switch (provided by the electrical contractor).

• AHU/HP-1.5:

•Heating mode - indoor air handler shall be controlled from a thermostat in the space. When the thermostat calls for heating the fan shall run and the heat pump in heating mode shall run to maintain temperature setpoint. If the heat pump cannot maintain temperature in the space, the electric heat kit shall energize until set point is reached. When the setpoint is reached the unit shall shut off.

•Cooling mode - when the thermostat calls for cooling the heat pump unit shall run in cooling mode, the air handler fan shall run, and the dx cooling coil shall cool the air to maintain temperature setpoint.

#### •Heating mode - indoor air handler shall be controlled from a thermostat in the space. When the thermostat calls for heating the fan shall run and the heat pump in heating mode shall run to maintain temperature setpoint. If the heat pump cannot maintain temperature in the space, the electric heat kit shall energize until set point is reached. When the setpoint is reached the unit shall shut off.

•Cooling mode - when the thermostat calls for cooling the heat pump unit shall run in cooling mode, the air handler fan shall run, and the dx cooling coil shall cool the air to maintain temperature setpoint.

•Heating mode - indoor furnaces shall be controlled from a thermostat in the space. When the thermostat calls for heating the fan shall run and the gas fired heat exchanger shall fire to maintain temperature setpoint. When the setpoint is reached the unit shall shut off.

•Cooling mode - when the thermostat calls for cooling the condensing unit shall engage, the furnace fan shall run, and the dx cooling coil shall cool the air to maintain temperature setpoint. •GF/CU-3.5

•Heating mode - indoor furnaces shall be controlled from a thermostat in the space. When the thermostat calls for heating the fan shall run and the gas fired heat exchanger shall fire to maintain temperature setpoint. When the setpoint is reached the unit shall shut off.

•Cooling mode - when the thermostat calls for cooling the condensing unit shall engage, the furnace fan shall run, and the dx cooling coil shall cool the air to maintain temperature setpoint. •IDU/ODU-1

•Heating mode - indoor unit shall be controlled from a thermostat in the space. When the thermostat calls for heating the fan shall run and the heat pump in heating mode shall run to maintain temperature setpoint. •Cooling mode - when the thermostat calls for cooling the heat pump unit shall run in cooling mode, the unit fan shall run, and the dx cooling coil shall cool the air to maintain temperature setpoint.

Dehumidifier

•Dehumidifier shall be controlled from an integral humidistat. When the humidity of the space rises above set point the dehumidifier shall energize and begin to dehumidify the space. When the humidity setpoint is reached the dehumidifier shall shut off.

Progress Dates 05/05/2023 BID P/E/FP 08/30/2024 BID SET 2

Revisions

Checked By: SSS

Drawn by: RPG



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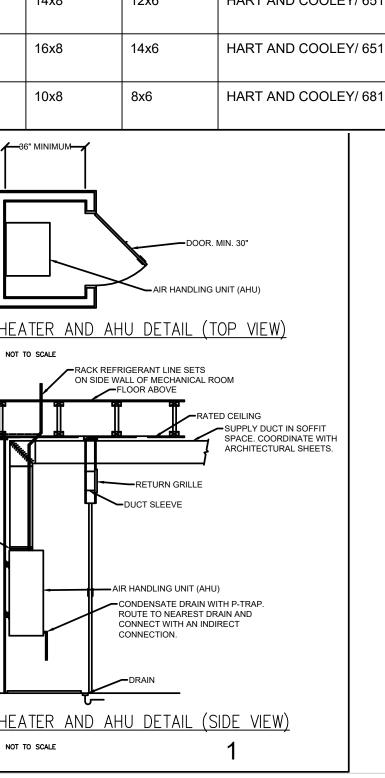
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Job No: 22042

8/10/2022





SP: SP: SP: SP:

# CONCLE FOR ?:

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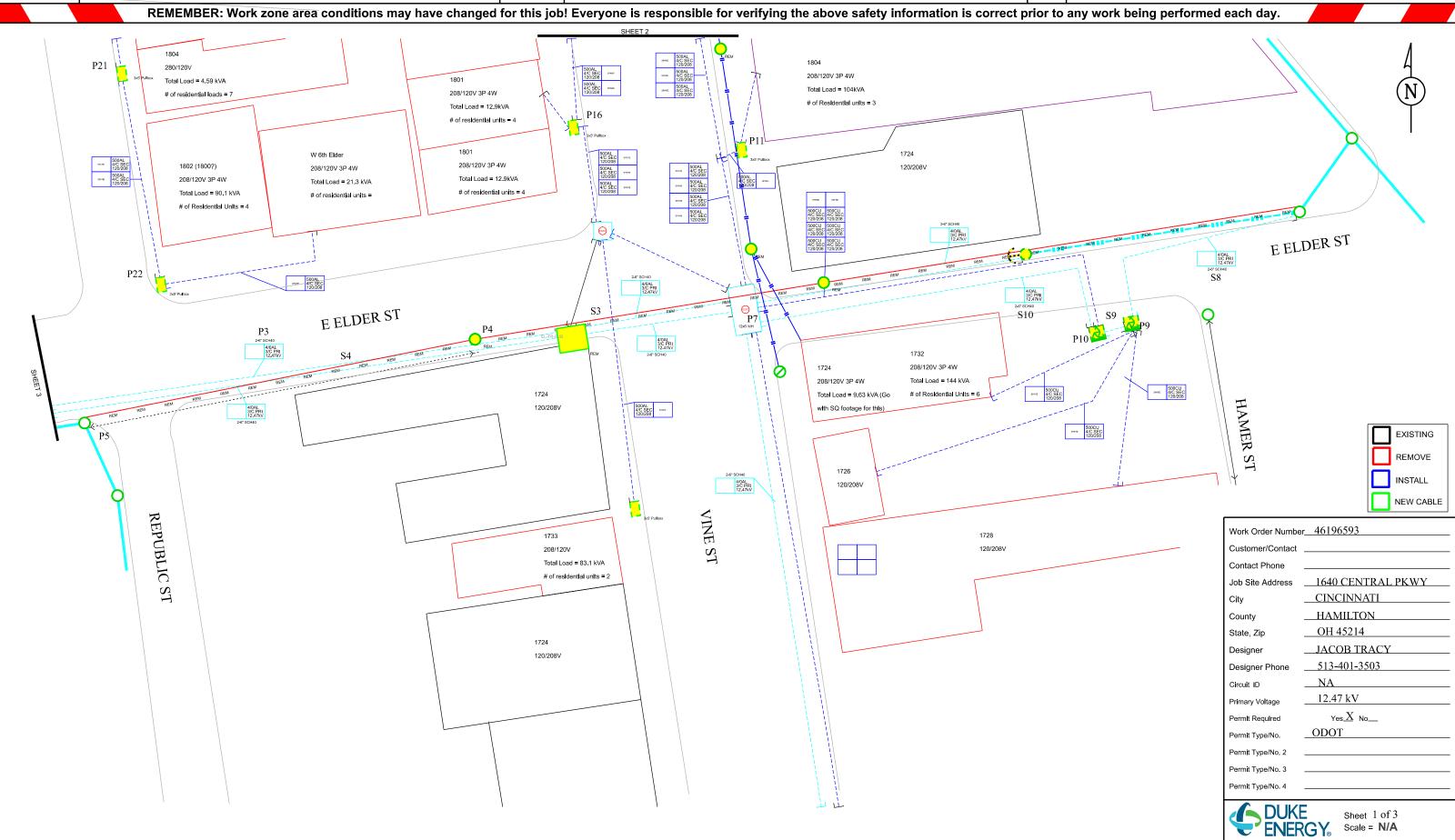
## Safety Reminders / Adverse Conditions

**?**: REMEMBER CESR: COVER-UP, INSULATE, GROUND **?**:



Work Zone General Comments:

REMEMBER YOUR CIRCLE OF SAFETY
STAY ALERT FOR PEDESTRIANS AND TRAFFIC
FLAGGING REQUIRED





USP: USP: USP:

### Safety Reminders / Adverse Conditions

?: REMEMBER CESR: COVER-UP, INSULATE, GROUND





#### **Work Zone General Comments:**

REMEMBER YOUR CIRCLE OF SAFETY STAY ALERT FOR PEDESTRIANS AND TRAFFIC FLAGGING REQUIRED

REMEMBER: Work zone area conditions may have changed for this job! Everyone is responsible for verifying the above safety information is correct prior to any work being performed each day.

