Z:\~Project Directories\9205-9299\9296 - ARK (Iorn Student Housing)\~Construction Documents\9296-M202-MECHANICAL-DETAILS.dwg-LBS, Plot Date/Time: Dec 15, 2021-3:23pm - By: tlewhues
THESE DRAWINGS AND SPECIFICATIONS ARE NOT AUTHORIZED TO BE USED AS CONTRACT DOCUMENTS. THESE DRAWINGS HAVE BEEN PREPARED TO DEMONSTRATE COMPLIANCE WITH APPLICABLE CODES, AND ARE INTENDED TO PROVIDE THE AUTHORITIES HAVING JURISDICTION WITH INFORMATION TO DETERMINE WHETHER THE PROPOSED CONSTRUCTION WILL BE INSTALLED IN ACCORDANCE WITH ANY CONTRACTUAL AGREEMENT THAT MAY EXIST WITH AN OWNER, CONSTRUCTION MANAGER, GENERAL CONTRACTOR, ETC. EBS ACCEPTS NO RESPONSIBILITY OR LIABILITY FOR THE COMPLIANCE OR CONDITION OF EXISTING EQUIPMENT AND WIRING.

HOOD INFORMATION – JOB#11084B

HOOD NO.	TAG	MODEL	MANUFACTURER	LENGTH	TYPE	APPLIANCE GRAVITY	DESIGN GRAVITY	TOTAL EXHAUST	EXHAUST REQUIREMENTS							HOOD CONNECTION	DESIGNED BY	
									DEPTH	DIM	DIM	DIM	DIA	VEL	CFM		SEND TO HOOD	FIRM
1	HD-#1	TBAT 10-0	CAPTIVE-AIRE	9'-6"	dbl island	1	MEDIUM	1.0	1.0		4'- 0"	1'- 6"	8.00	1000	4,000	20.00 WHERE SHOWN	ALCHE	ALCHE
2	HD-#2	TBAT 10-0	CAPTIVE-AIRE	9'-6"	dbl island	1	MEDIUM	1.0	1.0		4'- 0"	1'- 6"	8.00	1000	4,000	20.00 WHERE SHOWN	ALCHE	ALCHE

HOOD INFORMATION

HOOD NO.	TAG	FILTERS					FAN											
		TYPE	QTY	HEIGHT	LENGTH	REFRIGERANT OR FIREPROOF	QTY	TYPE	HP	LOCATION	REF	TYPE	VFD	MANUFACTURER MODEL #	VOLTAGE QUANTITY	FLA AMPS	HOOD CONNECT
1	HD-#1	CAPTIVE-AIRE 20X20 FILTERS	4	1'-0"	1'-0"	20% MED FILTER SPEC	1	LS1 SERIES 20 IN	1HP	WALL MNT	1Ø-115V-1Ø	TRIM FS	N/A	20-1101 SWA	1 PHASE 1 FAN	16.0	CAN
2	HD-#2	CAPTIVE-AIRE 20X20 FILTERS	4	1'-0"	1'-0"	20% MED FILTER SPEC	1	LS1 SERIES 20 IN	1HP	WALL MNT	1Ø-115V-1Ø	TRIM FS	N/A	20-1101 SWA	1 PHASE 1 FAN	16.0	CAN

WALL-MOUNT UTILITY CABINET

QUIP NO.	LOCATION	REF	FILTERS			FAN			
			TYPE	SIZE	QTY	MANUFACTURER MODEL #	QUANTITY	VOLTAGE	AMPS
1	WALL MNT	1Ø-115V-1Ø	TRIM FS	N/A		20-1101 SWA	1 PHASE 1 FAN	115/1Ø	16.0
2	WALL MNT	1Ø-115V-1Ø	TRIM FS	N/A		20-1101 SWA	1 PHASE 1 FAN	115/1Ø	16.0

EXHAUST FAN INFORMATION – JOB#11084B

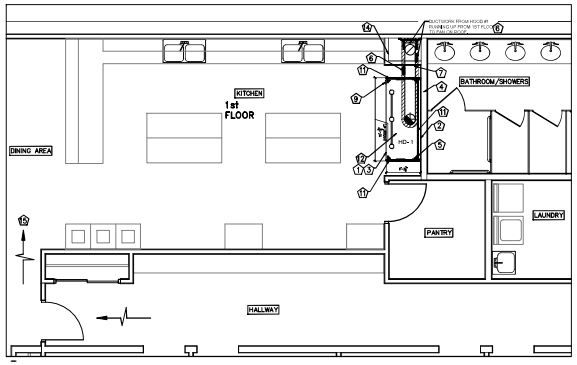
QUIP NO.	TAG	QTY	MANUFACTURER MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR EFFICI.	HP	BHP	PHASE	VOLT	FLA	TEMPERATURE RECEPTOR	SPEED SUPPL	SONES
1	EF-1	1	QUBE#18	CAPTIVE-AIRE	700	0.25	1140	TEFC+CAP	0.75	0.4688	1	115	5A	200 PPM	M	TOP
2	EF-2	1	QUBE#18	CAPTIVE-AIRE	700	0.25	1140	TEFC+CAP	0.75	0.3281	1	115	5A	200 PPM	M	TOP

ROOF/OUT FAN SCHEDULE – JOB#11084B

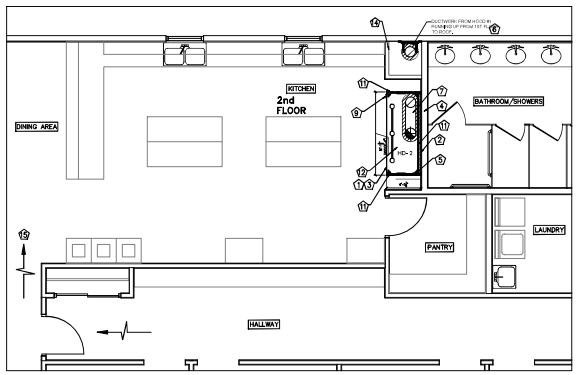
QUIP NO.	TAG	MANUFACTURER MODEL #	MANUFACTURER	BLOWER	MOTOR HP	VOLT/PHASE/HZ	TOTAL AMPS	ESP	HP	BHP	RPM	VOLT	MCA	MOCP	WEIGHT (LBS)
1	EF-#1(ROOF)	QUBE#18	CAPTIVE-AIRE	DIRECT	0.5HP	115	5.0	0.25	0.75	0.3281	1	115	5A	15A	110

ROOF/OUT COOLING SCHEDULE

QUIP NO.	TAG	CONDENSER					INDOOR COIL											
		CONNECT	VOLTAGE	PHASE	MOTOR HP	MOTOR EFFICIENCY	MOTOR QTY	DRAW	FAN AREA	OUTDOOR DB TEMP	OUTDOOR WB TEMP	INDOOR DB TEMP	INDOOR WB TEMP	LEAVING DB TEMP	LEAVING WB TEMP	LEAVING DP TEMP	TOTAL CAPACITY	SENSIBLE CAPACITY	LATENT CAPACITY	FRONT LOWER DISTANCE	FRONT UPPER DISTANCE	REAR LOWER DISTANCE	REAR UPPER DISTANCE	WEIGHT LOWER SECTION	WEIGHT UPPER SECTION	MOISTURE REMOVAL RATIO	FILTER
1	RTU-#1(ROOF)	1Ø	115/1Ø	1	0.5HP	1	80	1	5.0	5.0 SQFT	15.0 FT	75.0 °F	63.0 °F	55.0 °F	54.0 °F	15.0 BTU	14.0 BTU	10.0 BTU	15.0 BTU	15.0 FT	15.0 FT	15.0 FT	15.0 FT	110 LBS	110 LBS	0.4 LBS/HR	15A

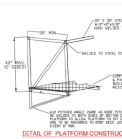


PLAN VIEW - HOOD #1
1st FLOOR



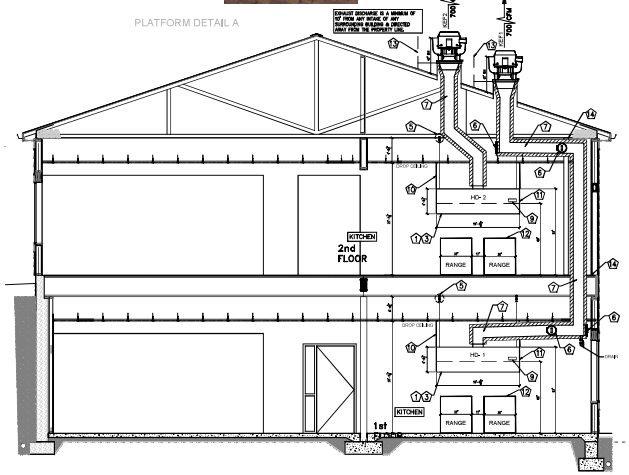
PLAN VIEW - HOOD #2
2nd FLOOR

SITE / ROOF PLAN VIEW



DETAIL OF PLATFORM CONSTRUCTION
NOT TO SCALE

PLATFORM DETAIL A



Key Notes

1. Captive-Aire ETL Listed hood in accordance to UL710 see Captive-Aire Shop Dwgs.
2. Stainless stl. wall panels or ceramic tile below & right & left of hood from floor to Ceiling. Also 18" pass the hood to left & right (minimum).
3. Low proximity Type Hood. Can underhang on front by 4.5" from cooking surface (see Captive-Aire Listing Sheet).
4. Hood wall with wood stud & cement board.
5. Hanging Rod (see Details #1, #2 & #3)
6. Grease Cleanout Door (removable by hand)
7. 10" dia Captive-Aire listed duct with qty (2) layers of listed fire wrap for zero clearance. (see firewrap spec's).
8. Hood to be supplied with listed 12" cabinet to house the UL300 Ansul system & listed Captive-Aire control panel (see C.A.S. drawings).
9. Fan and light switches.
10. Stainless Stl. enclosures from top of hood to drop ceiling.
11. 1" layer of insulation factory installed in internal standoffs on back & leftside of hood to meet 0 inch requirements for clearance to combustible surfaces (listed assembly). Also top of hood to be insulated with zero clearance to combustible listed at factory.
12. Qty (2) 30" wide gas residential ranges under hood with 12" table between ranges (see detail)
13. See platform detail A
14. General contractor to build shaft wall after listed duct is installed, wrapped, & inspected. Also provide any framing (opening) required for duct & fans.
15. Make-up-air is provided by Captive-Aire DOAS unit that is ducted to kitchen area to provide 700 CFM of conditioned (heat/cool) to space when hoods are energized. see M-1 sheet for details of DOAS system.

ROOF/OUT HEATING SCHEDULE

QUIP NO.	TAG	CAPACITY INPUT BTUH	OUTPUT BTUH	TEMP RISE	REQUIRED INPUT GAS PRESSURE		GAS TYPE	SUPPLIER CONNECTION
1	RTU-#1(ROOF)	120MBH	110MBH	70°F	7.0"WC	3.5"WC	NATURAL	1/2

FAN ACCESSORIES

FAN QUIP NO.	TAG	EXHAUST			SUPPLY			
		DAMPER	DAMPER ACTUATOR	VFD	DAMPER	DAMPER ACTUATOR	MOTORIZED DAMPER	MOTORIZED DAMPER ACTUATOR
1	EF-1	YES						
2	EF-2	YES						

CURB ACCESSORIES

QUIP NO.	TAG	ACCESS	ITEM	SIZE
1	RTU	1Ø-115V	CURB	CURB W/ 4 SLOPE, 1 FLOOR W/ 14"H, 1 CURB W/ 14"H, ALONG LENGTH, RIGHT VENTED
2	EF-1	1Ø-115V	CURB	CURB W/ 4 SLOPE, 1 FLOOR W/ 14"H, 1 CURB W/ 14"H, ALONG LENGTH, RIGHT VENTED
3	EF-2	1Ø-115V	CURB	CURB W/ 4 SLOPE, 1 FLOOR W/ 14"H, 1 CURB W/ 14"H, ALONG LENGTH, RIGHT VENTED

CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH UL 710 AND INSPECTED AND ARE RECOGNIZED BY ONE OR MORE OF THE FOLLOWING

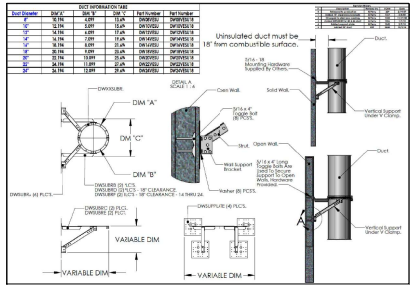
ETL SANITATION LISTED

ETL LISTED FOR 2010 NSF/ANSI 2

HOOD SYSTEM IS FABRICATED & DESIGNED PER UL-710 STANDARDS

DUCT INFORMATION TABLE

Duct Diameter	DIM "A"	DIM "B"	DIM "C"	Part Number	Part Number
6"	12.75	4.00	13.25	DW5010SU	DW5010SU-B
7"	13.75	4.00	13.25	DW5010SU	DW5010SU-B
10"	16.75	4.00	13.25	DW5010SU	DW5010SU-B
12"	14.75	7.00	15.25	DW5015SU	DW5015SU-B
14"	16.75	8.00	15.25	DW5015SU	DW5015SU-B
16"	20.75	8.00	15.25	DW5015SU	DW5015SU-B
20"	23.75	10.00	15.25	DW5015SU	DW5015SU-B
22"	24.75	11.00	15.25	DW5015SU	DW5015SU-B
24"	26.75	12.00	15.25	DW5015SU	DW5015SU-B



VERTICAL SUPPORT DETAIL

AIR BALANCE SCHEDULE

TAG	ROOMS SERVED	O.A. CFM	EXHAUST CFM
EF-1	KITCHEN	–	– 700
EF-2	KITCHEN	–	– 700
DOAS	KITCHEN	+ 1400	–
NET		0 CFM	

KITCHEN TO MAINTAIN A SLIGHTLY NEGATIVE PRESSURE. OVERALL BUILDING PRESSURE TO BE BETWEEN –0.02" TO +0.02" WC PER IMC COMMENTARY RECOMMENDATIONS

RESPONSIBILITY MATRIX

A) REQUIREMENTS FOR HOOD INSTALLER VIA HVAC CONTRACTOR.
1) HOOD & ALL ASSOCIATED EXHAUST IS PROVIDED & INSTALLED BY HOOD REPRESENTATIVE.
2) HOOD SYSTEM TO BE STARTED UP BY CONTRACTOR
   A) SMOKE TEST ON THE HOODS IN FRONT OF THE OWNER TO ENSURE SATISFACTION WITH COOKING EQUIPMENT OIL.
3) ALL WALL STAINLESS FOR UNDER & AROUND HOODS SHALL BE INSTALLED ALSO (IF ANY)
4) HOOD & ANSUL PERMIT DRAWINGS TO BE PROVIDED REPRESENTATIVE AND SUBMITTED UNLESS REQUESTED DIFFERENTLY BY ARCHITECT OR OWNER.
5) SET CURB & FANS AS SHOWN ON DRAWINGS AND INSTALL PLATFORMS.
6) INSTALLER TO ENSURE ALL HOOD AND FAN ACCESSORIES ARE INSTALLED SUCH AS GREASE CUPS, HINGE KITS, FILTER INTAKES, AND ANY OTHER MISC. ITEMS SHIPPED WITH THE PRODUCT.
7) INSTALL CAPTIVE-AIRE LISTED STAINLESS STEEL GREASE DUCT FROM HOOD TO FAN.
8) INSTALL TYPE (3) LAYERS OF FIREWRAP ON GREASE DUCT.
9) BALANCE SYSTEM WITH CONTRACTOR TO DOAS SYSTEM.
10) HVAC (DOAS) INSTALLER TO RUN 18-14-2 (120V) WIRE & CAT5 CABLE FROM DOAS UNIT TO HOOD CONTROL PANEL IN EACH KITCHEN.

B) NOTES (RECOMMENDED) FOR ELECTRICIAN:
1) FIELD WIRE FROM BUILDING PANEL. 1 PHASE (115V) POWER FOR EXHAUST FAN TO THE DISCONNECT ON THE EXHAUST.
2) THEN WIRE THE C.A.S. SUPPLIED BRADED WIRE FROM EXHAUST FAN TO PIA & PIB OF THE HOOD CONTROL PANEL AT HOOD.
3) FIELD WIRE FROM BUILDING PANEL TO CAPTIVE AIRE CONTROLS CABINET (HOOD MOUNTED) 1 PHASE, 115V. CIRCUIT TO BE USED FOR LIGHTS & CONTROLS CIRCUITRY.
4) BLACK/BROWN WIRES ON ANSUL CABINET TO CAPTIVE-AIRES CONTROL CT1 & CT2 TERMINAL IF NOT ALREADY DONE AT FACTORY.
5) FIELD WIRE THE DUCT SENSORS LOCATED IN EXHAUST COLLARS TO CAPTIVE AIRE CABINET. CAPTIVE AIRE SUPPLIES THE WHITE STAT WIRE & SHIPPED IN CABINET.
6) FIELD WIRE & INSTALL ROOM SENSOR SUPPLIED BY CAPTIVE AIRE. MOUNT SENSOR 6" AWAY FROM HOOD UP HIGH. STAT WIRE PROVIDED BY CAPTIVE AIRE.
7) FIELD WIRE THE BUILDING ALARM SYSTEM (IF APPLICABLE) INTO THE ANSUL MICRO SWITCH LOCATED AT THE RIGHT END OF THE HOOD.
8) IF ANY ELECTRIC UNDER HOOD, BREAKER MUST BE OF SHUNT TRIP TYPE & ELECTRICIAN TO WIRE FROM ST & M1 TERMINALS OF HOOD PANEL TO SHUNT TRIP DEVICE BY OTHERS
9) ELECTRICIAN TO RUN 14-2 (120V) WIRE FROM EACH HOOD CONTROL PANEL TO EACH RESPECTIVE MOTORIZED DAMPER LOCATED IN SUPPLY DUCT ON EACH FLOOR.

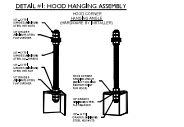
C) FIELD NOTES (OTHER TRADES):
1) STE PLUMBER TO INSTALL THE CAPTIVE-AIRE PROVIDED ANSUL GAS VALVE FOR EACH SYSTEM. PLUMBER TO FIELD INSTALL GAS VALVE, BUNK WITH THE GAS PIPING GOING TO THE COOKING EQUIPMENT OF THE SYSTEM. PLUMBER TO COORDINATE WITH THE F.E.C. FOR ALL HOOK UP OF GAS COOKING EQUIPMENT & ENSURE ALL GAS IS VENTED ONCE HOOKED UP. USE GAS REGULATORS TO MAINTAIN 7–14" OF GAS PRESSURE.
2) INSTALL GAS LINE TO DOAS SYSTEM.

D) GENERAL CONTRACTOR (GC/OWNER) RESPONSIBILITIES
1) GC/OWNER IS RESPONSIBLE TO HOLD A COORDINATION MEETING WITH ALL TRADES TO ENSURE UNDERSTANDING OF REQUIREMENTS AND MAKE SURE THERE ARE NO CONFLICTS THROUGHOUT THE PROJECT & ASSIST AS REQUIRED
2) GC/OWNER IS RESPONSIBLE FOR ANY BUILDING CONSTRUCTION CHANGES OR MODIFICATIONS TO ACCOMMODATE THE HOOD & DUCT SYSTEM. GC TO BE READY TO ACCEPT WALL STAINLESS & HOOD, ANY REQUIREMENTS TO HEAD OFF JOIST FOR DUCT ROUTING, ANY STRUCTURAL SUPPORTS REQUIRED TO SHORE UP BUILDING OR STRUCTURE, AND ANY FINISHED CEILING WORK, CEILING WORK, DEMO, OR COSMETIC & PATCHING WORK. (ANY REQUIRED HOLES IN BUILDING)
3) PROVIDE A WORKING CONSTRUCTION SCHEDULE TO ALL TRADES. ALSO TO ENSURE AREA IS COMPLETELY CLEARED OUT TO ALLOW WORK TO BE PREFORMED.

TYPE I EXHAUST GREASE DUCT (SPECIFICATIONS):

1) GREASE DUCT SERVING TYPE I HOODS USED IN GREASE APPLICATIONS SHALL BE CONSTRUCTED OF 16 GAGE (0.0747) BLACK IRON STEEL, CONTINUOUSLY LIQUID TIGHT WELDED.
2) PROVIDE ALL SQUARE ELBOWS IN GREASE DUCT WITH UNVANED SMOOTH RADIUS CONSTRUCTION WITH RADIUS EQUAL TO 1-1/2 TIMES THE DUCT WIDTH. AVOID SITUATIONS WHICH WOULD REQUIRE 90 DEGREE FITTINGS BACK TO BACK.
3) DUCT TO HOOD JOINTS SHALL BE CONTINUOUS LIQUID TIGHT WELDED.
4) TYPE I HOODS AND GREASE DUCTS SHALL BE SUPPORTED USING NON-COMBUSTIBLE MATERIALS.
5) GREASE DUCT SYSTEMS SHALL BE INSTALLED SO AS TO NOT COLLECT GREASE IN ANY PORTION. SLOPE DUCTWORK A MINIMUM OF 1/4"/FT BACK TOWARDS THE HOOD. CLEAN OUTS SHALL BE PROVIDED AT EVERY CHANGE IN DIRECTION, AS REQUIRED TO PROPERLY CLEAN THE DUCT AND AT A MINIMUM OF ONE EVERY 20 FEET.
6) ALL COMBUSTIBLE MATERIALS SHALL BE KEPT A MINIMUM OF 18" AWAY FROM ANY PART OF A TYPE I HOOD OR THE GREASE DUCT SERVING A TYPE I HOOD. IF THE COMBUSTIBLE MATERIALS CANNOT BE MOVED TO ALLOW 18" CLEARANCE, AN APPROVED CLEARANCE REDUCTION METHOD SHALL BE USED.

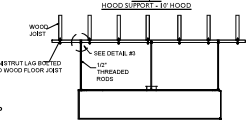
DETAIL #1: HOOD HANGING ASSEMBLY



ASSEMBLY INSTRUCTIONS

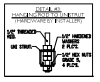
HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 UNC GRADE 5 CUPPED HEX NUTS (NORMALLY WRENCH TIGHTENED) AND CUPPED WASHER PRIOR TO WELDING. WASHER STRIP, FLAT WASHERS AND NUTS TO BE 1/4" THICK MINIMUM. WASHER STRIP MUST USE ONE NUT ON EACH SIDE. WASHER STRIP MUST BE CONTINUOUS WELDED AND ABOVE CEILING AND FULL WIDTH OF STRIP. USE THREADED BRACKETS FITTING ABOVE NUTS. FOR USE ALL NUTS TO BE FIXED.

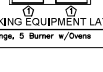
DETAIL 2:
HOOD SUPPORT - 10" HOOD



HOOD SUPPORT REQUIREMENTS	
HOOD LENGTH	NUMBER OF UNISTRUT
(2) 6'-0"	4

DETAIL #3
HANGER CONNECTION DETAIL





COOKING EQUIPMENT LAYOUT
(1) Range, 5 Burner w/Ovens

DATE: 11/29/21
DRAWN BY: JAH
SCALE: NONE
REVISION | DATE

ISSUANCES
DATE | NO. | DESCRIPTION

ARK ENCOUNTER DORMITORIES

WILLIAMSTOWN, KENTUCKY
41097

ARK ENCOUNTER
1 ARK ENCOUNTER DRIVE
WILLIAMSTOWN, KY 41097
NEW COMMERCIAL HOOD FOR RESIDENTIAL RANGES

MANAGED BY:
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CINCINNATI, OH 45246
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PR-09296
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MEP Consulting Services, Inc. in OH
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PROJECT NO.: 9296
SCALE: AS NOTED
DATE: ##-##-####
DRAWING TITLE
MECHANICAL DETAILS

SHEET NO.
H-1

SHEET NO.
M202