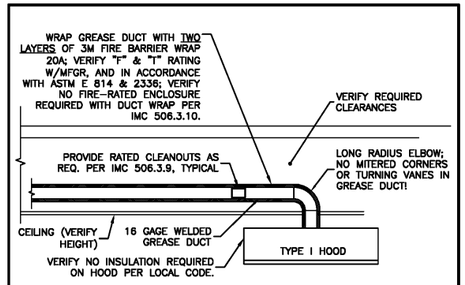
HVAC SPECIFICATIONS – DIV 15

HVAC SPECIFIC:

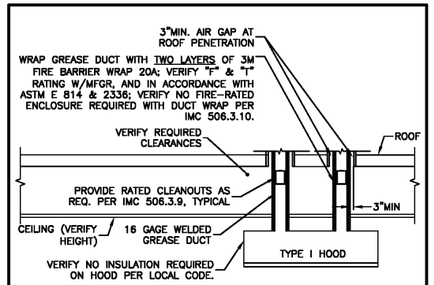
1. CURBS, SUPPORTS, and ANCHORS shall be provided for Mechanical work. No chain, tape, or wire.
2. SHEET METAL shall be SMACNA and Code standard with 45 degree maximum reducing, 20 degree maximum expanding transitions. Ductboard shall not be used. Provide listed flex connectors at duct connection to each piece of equipment.
3. DUCT INSULATION: Rectangular SA supply air and RA return air HVAC ducts located outside bldg exterior and in unconditioned spaces shall be insulated with R–8 ductliner (nom 2"thick); weatherproof where exposed outside. SA Ducts concealed above ceiling shall be lined or wrapped with R–6 (none required on RA). Liner shall be UL–181 Class–1 anti–microbial Fiberglas attached with Stic–Klips 15" OC each way and 100% coverage of flame proof adhesive. Increase duct to allow for liner. Insulate concealed round ducts with R–6 ASTM C 553 type–1 UL–181 Class–1 covered fiberglass wirsd and taped in place. Exposed ducts located over open ceiling areas shall be internally lined with R–6. Elbows for rectangular duct shall be provided multi–blade turning vanes or 1.5 centerline radius. Provide Ruskin ELF–118 or equal storm louvers with 1/4" galv mesh and 0.12" max air friction.
4. SEAL DUCT JOINTS AND SEAMS with Childers, 3–M, Hard–Cast or equal per Code. SPIRAL DUCT: Use listed joint sealant with neat sealant edges (use and remove mask–tape).
5. GREASE DUCTS: 16 gage black iron welded (no butt welds allowed). Horizontal sections shall slope min 1/4" per foot (2%) back to hood. Provide grease hood support that does not penetrate duct. Grease Ducts shall be accessible for maintenance. Cleanout doors, if required, shall be constructed of steel not less than duct, gasketed, with substantial latching operable without use of tool, all listed for use with grease duct. Wrap duct with two layers of 3–M Fyre–wrap.
6. GREASE HOOD CLEARANCE shall be not less than 18" from combustibles. This clearance is not required ot gypsum wall board that is covered by smooth, cleanable, nonabsorbant and noncombustible material installed between the hood and gypsum wallboard over an area extending not less than 18" in all directions from the hood. If hood penetrates ceiling, requirements of IMC Section 508.3.10 will apply.
7. TEST and AIR BALANCE all systems by independent company certified by NEBB or CTAB. Attain quantities shown on plans. Air CFM flow rates based on 0.075#/CF at altitude. Balance with dampers at main with registers wide open. Motors to draw 95% max nameplate amps. Tabulate all motors, grilles, registers, and diffusers with full typewritten Test and Balance Report submitted to Owner for approval prior to Final Payment by Owner.

GENERAL:

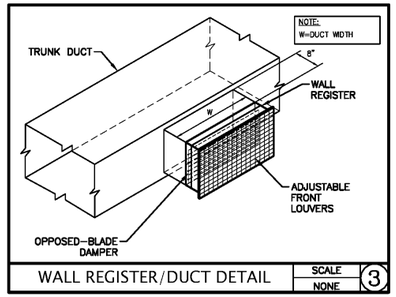
1. LOCAL and STATE CODES/ORDINANCES and CONDITIONS of CONTRACT shall be followed. SUBMIT plans to Building Department for Plan Review. Follow correction requirements. Pay all Fees and attain all Permits.
2. ADOPTED ENERGY CODE shall be followed. All equipment, insulation, and controls shall conform.
3. VISIT SITE daily to ascertain existing conditions prior to ordering equipment or fabricating duct and piping.
4. MECHANICAL DRAWINGS are schematic and not to be scaled. Refer to Architectural/Certified drawings and site measurements for dimensions.
5. AS–BUILT scale drawings shall be provided by Contractor and submitted to Owner at completion showing all piping, duct, and equipment changes.
6. EQUIPMENT SHOWN ON DRAWINGS and SPECIFICATIONS: Contractor shall order, purchase, receive, unarate, assemble, and install all items in conformance to Manufacturer's recommendations. Additionally Contractor shall install and final connect Owner furnished items as indicated on drawings. Contractor shall insure all equipment.
7. SHOP DRAWINGS: Contractor shall check Shop Drawings for 100% compliance with Contract Documents. Submit complete electronic PDF file to Owner for review prior to ordering.
8. BASE BID on specified equipment as shown on plans and in specifications.
9. SUBSTITUTIONS will be processed as change–orders after Bidding with all electrical, building alterations, and dollar amounts are included and approved in writing by owner prior to ordering equipment or fabrication.
10. EXTRA COSTS or CHANGES allowed only if approved in writing by Engineer with dollar amount prior to ordering.
11. ELECTRICAL COORDINATION: Confirm voltage, phase, and ampacity with Electrical Contractor prior to ordering equipment. All 24v controls including interlock wiring for Mechanical equipment by Division 15 Contractor. Provide magnetic starters for all 3–phase motors with protection on all three leads. Control and heating/cooling equipment to automatically restart after power failure. All wire in conduit per NEC latest edition.
12. SLEEVES and COLLARS shall be provided for all ductwork and pipes thru walls, floors, and ceilings. Provide chrome plated escutcheons for exposed piping penetrations thru ceilings, floors, and walls in finished areas. All water, soil, waste, vent and trim including fittings to be chrome plated where exposed.
13. CONCEAL all work in finished areas.
14. CUT and PATCH to match adjacent areas. No structural member shall be cut or notched.
15. OPERATING MANUAL shall be provided Owner and Engineer for all systems and equipment including manufacturer's maintenance manuals. Include lubrication, filter types and sizes, starting and stopping procedures. List Contractor's telephone numbers.
16. ONLY CONTRACTORS WITH EXPERIENCE on at least 3 similar projects of this type may bid.
17. RFI (Request For Information) from Contractor shall include at least one proposed solution which complies with the intent of Contract Documents.
18. GUARANTEE all labor and new equipment for one year from the date of acceptance by Owner.
19. EQUIPMENT SUBMITTALS: Provide submittals to Owner on all ductwork, diffusers, registers, etc.



HORIZONTAL GREASE DUCT DETAIL — SCALE NONE — 1



VERTICAL GREASE DUCT DETAIL — SCALE NONE — 2



WALL REGISTER/DUCT DETAIL — SCALE NONE — 3

BUILDING AIR BALANCE

	EXHAUST AIR	MAKEUP AIR
KEF–1	2,475 CFM	
KEF–2	2,475 CFM	
EF–150	450 CFM	
EF–150	– 150 CFM	
RTU–300A		+ 500 CFM OSA
RTU–300B		+ 540 CFM OSA
RTU–300C		+ 750 CFM OSA
RTU–300D		+ 810 CFM OSA
MUA–1		+ 4,208 CFM OSA
TOTALS=	– 5,250 CFM EXH	+ 6,708 CFM OSA

⚠4 + 1,558 CFM POSITIVE AIR PRESSURE IN TENANT SPACE (WHEN ALL FANS ARE OPERATING)

NOTE: DURING OCCUPIED TIMES ALL RTU THERMOSTATS SHALL BE SET FOR "FAN–ON" (NOT "FAN–AUTO").

OUTSIDE AIR CALCULATIONS: IMC Code (table 403.3)

HVAC SYSTEM:	RTU–300A		5.0 Ton Cooling			Total SA =	2,000 CFM		Set OSA min set = 25.0%							
Room Type:	Room Name and Room #	Az AREA (sqft)	Rp OSA per person	Ra OSA CFM per sqft	Default Occ People per 1000sqft	Pz # of People	If all Return Air is at Floor Level: Total min OSA CFM req'd	Effectiveness Factor = 0.8: Total minimum OSA CFM req'd	Total Room Supply Air (SA) CFM	Total OSA CFM Provided	OSA INTAKE RESULT:	# of WC, U, SH, etc	Exhaust CFM per plbg fixture or per sqft	Exhaust CFM Required	Total Exhaust CFM Provided	Exhaust Results:
OFFICE	Office	75	5.0	0.06	5	0	6	8	100	25	OSA Complies	na	na	na	na	na
Kitchen	Kitchen, Prep Area, Dish Area	1,025							1,900	475	na	0	0.70	718	4,950	Exhaust Complies
							Total min OSA reqd floor RA	Total min OSA CFM required	Total SA	Total OSA Provided				Total EXHAUST required	Total Exhaust CFM Provided	
	Total Floor Area =	1,100 sqft				Totals =	6	8	2,000	500				718	4,950	

HVAC SYSTEM:	RTU–300B		5.0 Ton Cooling			Total SA =	2,000 CFM		Set OSA min set = 27.0%							
Room Type:	Room Name and Room #	Az AREA (sqft)	Rp OSA per person	Ra OSA CFM per sqft	Default Occ People per 1000sqft	Pz # of People	If all Return Air is at Floor Level: Total min OSA CFM req'd	Effectiveness Factor = 0.8: Total minimum OSA CFM req'd	Total Room Supply Air (SA) CFM	Total OSA CFM Provided	OSA INTAKE RESULT:	# of WC, U, SH, etc	Exhaust CFM per plbg fixture or per sqft	Exhaust CFM Required	Total Exhaust CFM Provided	Exhaust Results:
Storage	Server Area	293	0.0	0.12	0.0	0.0	35	44	700	189	OSA Complies	na	na	na	na	na
Toilet Rooms (EXHAUST)	Men's	89							75	20	na	2	75	150	150	Exhaust Complies
Toilet Rooms (EXHAUST)	Women's	118							75	20	na	2	75	150	150	Exhaust Complies
Corridors	–	92	0.0	0.06	0.0	0.0	6	7	150	41	OSA Complies	na	na	na	na	na
DINING	Dining Room	297	7.5	0.18	70	21	209	262	1,000	270	OSA Complies	na	na	na	na	na
							Total min OSA reqd floor RA	Total min OSA CFM required	Total SA	Total OSA Provided				Total EXHAUST required	Total Exhaust CFM Provided	
	Total Floor Area =	889 sqft				Totals =	250	313	2,000	540				300	300	

HVAC SYSTEM:	RTU–300C		7.5 Ton Cooling			Total SA =	3,000 CFM		Set OSA min set = 25.0%							
Room Type:	Room Name and Room #	Az AREA (sqft)	Rp OSA per person	Ra OSA CFM per sqft	Default Occ People per 1000sqft	Pz # of People	If all Return Air is at Floor Level: Total min OSA CFM req'd	Effectiveness Factor = 0.8: Total minimum OSA CFM req'd	Total Room Supply Air (SA) CFM	Total OSA CFM Provided	OSA INTAKE RESULT:	# of WC, U, SH, etc	Exhaust CFM per plbg fixture or per sqft	Exhaust CFM Required	Total Exhaust CFM Provided	Exhaust Results:
Main Entry Lobby	Hostess Area	180	5.0	0.06	10	2	20	25	100	100	OSA Complies	na	na	na	na	na
DINING	Dining Room	137	7.5	0.18	70	10	121	152	1,200	125	OSA Complies	na	na	na	na	na
BAR, Fast Food	Bar	323	7.5	0.18	100	32	300	377	2,100	525	OSA Complies	na	na	na	na	na
							Total min OSA reqd floor RA	Total min OSA CFM required	Total SA	Total OSA Provided				Total EXHAUST required	Total Exhaust CFM Provided	
	Total Floor Area =	640 sqft				Totals =	417	521	3,000	750				0	0	

HVAC SYSTEM:	RTU–300D		7.5 Ton Cooling			Total SA =	3,000 CFM		Set OSA min set = 27.0%							
Room Type:	Room Name and Room #	Az AREA (sqft)	Rp OSA per person	Ra OSA CFM per sqft	Default Occ People per 1000sqft	Pz # of People	If all Return Air is at Floor Level: Total min OSA CFM req'd	Effectiveness Factor = 0.8: Total minimum OSA CFM req'd	Total Room Supply Air (SA) CFM	Total OSA CFM Provided	OSA INTAKE RESULT:	# of WC, U, SH, etc	Exhaust CFM per plbg fixture or per sqft	Exhaust CFM Required	Total Exhaust CFM Provided	Exhaust Results:
DINING	Dining Room	684	7.5	0.18	70	48	482	603	3,000	810	OSA Complies	na	na	na	na	na
							Total min OSA reqd floor RA	Total min OSA CFM required	Total SA	Total OSA Provided				Total EXHAUST required	Total Exhaust CFM Provided	
	Total Floor Area =	684 sqft				Totals =	482	603	3,000	810				0	0	

⚠3

H.V.A.C. LEGEND (Commercial)

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SUPPLY DUCT UP	(E)	EXISTING
	SUPPLY DUCT DN	(R)	REMOVE EXISTING
	RETURN OR EXHAUST DUCT UP	(R)	REMOVE & RELOCATE
	RETURN OR EXHAUST DUCT DN		EXISTG DUCT
	ROUND DUCT SECTION UP		EXISTG DUCT ALT
	ROUND DUCT SECTION DN		REMOVE (E) DUCT
	TRUNK DUCT ELBOW (TURNING VANES REQ'D)		REMOVE (E) DUCT ALT
	SIDE CONNECTION OF ROUND DUCT		GALV. STEEL DUCT
	TOP (OR BOTTOM) CONN OF ROUND DUCT		GALV. STEEL DUCT ALT
	VOLUME DAMPER (TYP.)		INSUL. FLEX ROUND DUCT
	SIDE CONNECTION OF RECTANGULAR DUCT		EQUIPMENT SYMBOL (SEE EQUIPMENT SCHEDULE)
SA	SUPPLY AIR DUCT		POINT OF CONNECTION
RA	RETURN AIR DUCT	T	THERMOSTAT CONTROLLER
MUA	MAKE–UP AIR DUCT	T(LOW)	REMOTE TSTAT SENSOR
GE	GREASE EXHAUST DUCT	SD	SMOKE DETECTOR
OSA	OUTSIDE AIR	H(MH)	REMOTE HUMIDISTAT
U.C.	UNDERCUT DOOR 1" AFF		
A.F.F.	ABOVE FINISHED FLOOR		

MECHANICAL EQUIPMENT LIST

(EXISTING)EQUIPMENT BY LANDLORD:

RTU–300A ROOFTOP HVAC UNIT: Verify CARRIER model 48KCDA06 packaged rooftop HVAC unit; 5.0ton 1–stage cooling, 14.1 SEER, 2,000 CFM at 0.75"ESP; 72 MBH gas heat input. ELECTRICAL: Verify 208/230v–3ph, 30 MCA, 45 MOCP.

RTU–300B ROOFTOP HVAC UNIT: Verify same as RTU–300A.

RTU–300C ROOFTOP HVAC UNIT: Verify CARRIER model 48TCDD08 packaged rooftop HVAC unit; 7.5ton 2–stage cooling, 11.0 EER, 3,000 CFM at 0.75"ESP; 125 MBH gas heat input. ELECTRICAL: Verify 208/230v–3ph, 51 MCA, 60 MOCP.

RTU–300D ROOFTOP HVAC UNIT: Verify same as RTU–300C.

EQUIPMENT BY TENANT:

MUA–1 ROOFTOP MAKE–UP AIR UNIT – FURNISHED BY OWNER, INSTALLED BY HVAC SUB: CAPTIVE AIRE model A2–D.500–20D; 318 MBH gas input; 4,208 CFM @0.4"ESP; 3.0HP blower, verify 208V–3ph with Electrical Contractor prior to ordering; verify 800lbs operating weight with Mfgr. ⚠3 Provide filters, 20"hi roof curb. Interlock "ON" with KEF–1 & KEF–2. Contact CAPTIVE AIRE (720–570–0981) for equipment details & pricing before ordering any equipment or materials.

KEF–1 GREASE EXHAUST FAN – FURNISHED BY OWNER, INSTALLED BY HVAC SUB: CAPTIVE AIRE model DU180HFA; 2HP motor, 2,475 CFM exhaust @1.75"SP; verify 208V–3ph; verify 220lbs. operating weight with Mfgr. Provide 20"high roof curb.

KEF–2 GREASE EXHAUST FAN – FURNISHED BY OWNER, INSTALLED BY HVAC SUB: Same as KEF–1.

KH–1 KITCHEN HOOD (TYPE–I GREASE HOOD) – FURNISHED BY OWNER, INSTALLED BY HVAC SUB: CAPTIVE AIRE model 5424–ND–2–ACPSP–F; 11' long, U.L. listed, w/dual PSP; 2,475 CFM exhaust, 2,178 CFM supply.

KH–2 KITCHEN HOOD (TYPE–I GREASE HOOD) – FURNISHED BY OWNER, INSTALLED BY HVAC SUB: Same as KH–1. EXCEPT: 2,030 CFM supply.

EF–150 CEILING EXHAUST FAN: GREENHECK model SP–A200; 150 CFM at 0.25"SP, 84 watts, back–draft damper. Duct 6"ø thru roof to approved SMACNA roof cap. Switch ON with lights.

WR WALL REGISTER: TITUS model 300FS; double deflection, mill aluminum, unfinished, DO NOT PAINT; size as shown on plan; provide duct fitting with opposed blade balancing damper. No substitutes allowed.

CR ROUND CEILING DIFFUSER: TITUS model TMR–AA; aluminum construction, mill aluminum, unfinished, DO NOT PAINT. Provide balancing damper in neck or at branch connection; duct connection size shown on plan, verify unit size & installation details with manufacturer prior to ordering materials. No substitutes allowed.

CD CEILING DIFFUSER: TITUS model OMNI plaque diffuser, 24x24 face size; neck–size shown on plan. No substitutes allowed.

CD–2 CEILING DIFFUSER: TITUS model OMNI plaque diffuser, 12x12 face size; neck–size shown on plan. No substitutes allowed.

PCD PERFORATED FACE CEILING DIFFUSER: Titus model PAS perforated face with pattern controllers, Border Type 3 (Lay–In), provide neck damper, size as shown on plan.

RG RETURN GRILLE: Titus model 50F, eggcrate grille, 90% free area, aluminum border & grid; Size as shown on plan.

Consultant:
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SEAL
ALABAMA LICENSED No. 27267 PROFESSIONAL ENGINEER ARWIN DALE PRIEST 2–10–2021

DATE :

Red Daddy's BURGER BAR

GOOD TIMES RESTAURANTS, INC.
141 Union Blvd, Suite 400
Lakewood, CO 80228
tel: (303) 384–1430

BAD DADDY'S BURGER BAR
"EASTCHASE"
MONTGOMERY, AL 36117

Issue Record:
04.23.2019 FOR PLAN REVIEW

Revisions:
⚠2 02.10.2021 TO GO REVS

Drawn:
DRAWN BY: E Long

Checked:
CHECKED BY: R Blank

Project No.
PROJECT#: 2019–029

Contents:
MECHANICAL:
LEGEND, SPECIFICATIONS, EQUIPMENT LIST, VENTILATION SCHEDULE

M–1 ⚠2
of 3

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