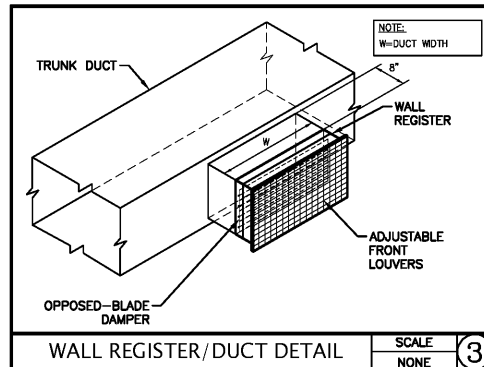
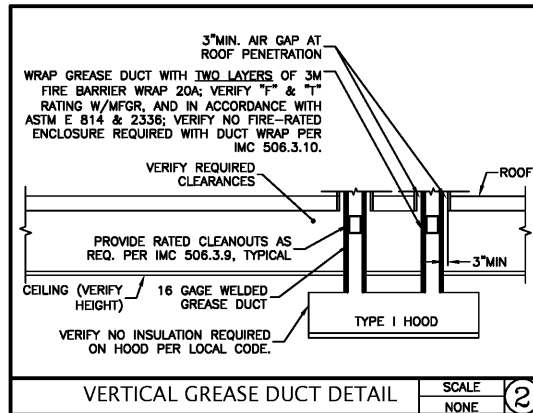
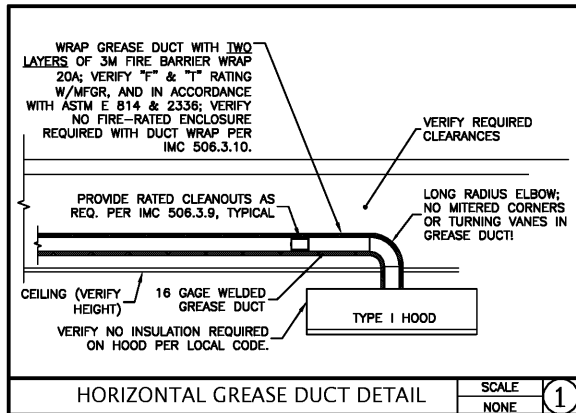


HVAC SPECIFICATIONS - DIV 15

- HVAC SPECIFIC:**
- CURBS, SUPPORTS, and ANCHORS** shall be provided for Mechanical work. No chain, tape, or wire.
 - 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.
 - 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 Fiberglass 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 wired 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 cantilever radius. Provide Ruskin ELF-118 or equal storm louvers with 1/4" galv mesh and 0.12" max air friction.
 - 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).
 - 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 without use of tool, all listed for use with grease duct. Wrap duct with two layers of 3-M Fire-wrap.
 - GREASE HOOD CLEARANCE** shall be not less than 18" from combustibles. This clearance is not required at gypsum wall board that is covered by smooth, cleanable, noncombustible 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 506.3.10 will apply.
 - TEST AND AIR BALANCE** all systems by independent company certified by NEBB or CIAB. 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:**
- 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 obtain all Permits.
 - ADOPTED ENERGY CODE** shall be followed. All equipment, insulation, and controls shall conform.
 - VISIT SITE** daily to ascertain existing conditions prior to ordering equipment or fabricating duct and piping.
 - MECHANICAL DRAWINGS** are schematic and not to be scaled. Refer to Architectural/Certified drawings and site measurements for dimensions.
 - AS-BUILT** scale drawings shall be provided by Contractor and submitted to Owner at completion showing all piping, duct, and equipment changes.
 - EQUIPMENT SHOWN ON DRAWINGS** and **SPECIFICATIONS:** Contractor shall order, purchase, receive, uncrate, 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.
 - 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.
 - BASE BID** on specified equipment as shown on plans and in specifications.
 - SUBSTITUTIONS** will be processed as change-orders after Bidding with all electrical, building alterations, and dollar amounts included and approved in writing by owner prior to ordering equipment or fabrication.
 - EXTRA COSTS** or **CHANGES** allowed only if approved in writing by Engineer with dollar amount prior to ordering.
 - 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.
 - 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, or walls in finished areas. All water, soil, waste, vent and trim including fittings to be chrome plated where exposed.
 - CANCEL** all work in finished areas.
 - CUT and PATCH** to match adjacent areas. structural member shall be cut or notched.
 - OPERATING MANUAL** shall be provided Owner by 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.
 - ONLY CONTRACTORS WITH EXPERIENCE** on at least 3 similar projects of this type may bid.
 - RFI** (Request For Information) from Contractor shall include at least one proposed solution which complies with the intent of Contract Documents.
 - WARRANTY:** all labor and new equipment for one year from the date of acceptance by Owner.
 - EQUIPMENT SUBMITTALS:** Provide submittals to Owner on all ductwork, diffusers, registers, etc.



OUTSIDE AIR CALCULATIONS: IMC Code (table 403.3)

HVAC SYSTEM:	RTU-4	6.0 Ton Cooling	Total SA = 2,400 CFM	Set OSA min set = 25.0%													
Room Type:	Room Name and Room #	Az	Rp	Ra	Default Occ	Pz	If all Return Air is at Floor Level	Effectiveness Factor = 0.8	Total Room Supply Air (SA) CFM	Total OSA CFM Provided	OSA INTAKE RESULT:	# of WC, U, SH, etc	Exhaust CFM per pitg fixture or per sqft	Exhaust CFM Required	Total Exhaust CFM Provided	Exhaust Results:	
Storage	102	215	0.0	0.12	0.0	0.0	26	32	300	75	OSA Complies	na	na	na	na	na	
OFFICE	106	44	5.0	0.06	5	0	4	5	100	25	OSA Complies	na	na	na	na	na	
Kitchen	103,104,105	744							2,000	500	na	0	0.70	521	5,000	Exhaust Complies	
Total Floor Area = 1,003 sqft						Totals = 30		37		2,400		600		521		5,000	

HVAC SYSTEM:	RTU-6A	10.0 Ton Cooling	Total SA = 4,000 CFM	Set OSA min set = 25.0%													
Room Type:	Room Name and Room #	Az	Rp	Ra	Default Occ	Pz	If all Return Air is at Floor Level	Effectiveness Factor = 0.8	Total Room Supply Air (SA) CFM	Total OSA CFM Provided	OSA INTAKE RESULT:	# of WC, U, SH, etc	Exhaust CFM per pitg fixture or per sqft	Exhaust CFM Required	Total Exhaust CFM Provided	Exhaust Results:	
Toilet Rooms (EXHAUST)	107	87							75	19	na	2	75	150	150	Exhaust Complies	
Toilet Rooms (EXHAUST)	108	118							75	19	na	2	75	150	150	Exhaust Complies	
Main Entry Lobby	110	76	5.0	0.06	10	1	8	10	100	25	OSA Complies	na	na	na	na	na	
BAR, Fast Food	101	742	7.5	0.18	100	74	690	863	3,750	938	OSA Complies	na	na	na	na	na	
Total Floor Area = 1,023 sqft						Totals = 698		873		4,000		1,000		300		300	

HVAC SYSTEM:	RTU-6B	10.0 Ton Cooling	Total SA = 4,000 CFM	Set OSA min set = 25.0%													
Room Type:	Room Name and Room #	Az	Rp	Ra	Default Occ	Pz	If all Return Air is at Floor Level	Effectiveness Factor = 0.8	Total Room Supply Air (SA) CFM	Total OSA CFM Provided	OSA INTAKE RESULT:	# of WC, U, SH, etc	Exhaust CFM per pitg fixture or per sqft	Exhaust CFM Required	Total Exhaust CFM Provided	Exhaust Results:	
DINING	100	1,227	7.5	0.18	70	86	865	1,081	4,000	1,120	OSA Complies	na	na	na	na	na	
Total Floor Area = 1,227 sqft						Totals = 865		1,081		4,000		1,120		0		0	

BUILDING AIR BALANCE

	EXHAUST AIR	MAKEUP AIR
KEF-1	- 2,500 CFM	
KEF-2	- 2,500 CFM	
EF-150	- 150 CFM	
EF-150	- 150 CFM	
RTU-4		+ 600 CFM OSA
RTU-6A		+ 1000 CFM OSA
RTU-6B		+ 120 CFM OSA
MUA-1		+ 100 CFM SA
TOTALS=	- 5,300 CFM	+ 820 CFM OSA

+ 1,420 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").

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

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
[Symbol]	SUPPLY DUCT UP	(E)	EXISTING
[Symbol]	SUPPLY DUCT DN	(R)	REMOVE EXISTING
[Symbol]	RETURN OR EXHAUST DUCT UP	(R)	REMOVE & RELOCATE
[Symbol]	RETURN OR EXHAUST DUCT DN	[Symbol]	EXISTG DUCT
[Symbol]	ROUND DUCT SECTION UP	[Symbol]	EXISTG DUCT ALT
[Symbol]	ROUND DUCT SECTION DN	[Symbol]	REMOVE (E) DUCT
[Symbol]	TRUNK DUCT ELBOW (TURNING VANES REQ'D)	[Symbol]	REMOVE (E) DUCT ALT
[Symbol]	SIDE CONNECTION OF ROUND DUCT	[Symbol]	GALV STEEL DUCT
[Symbol]	TOP (OR BOTTOM) CONN OF ROUND DUCT	[Symbol]	GALV STEEL DUCT ALT
[Symbol]	VOLUME DAMPER (TYR)	[Symbol]	INSUL LEX ROUND DUCT
[Symbol]	SIDE CONNECTION OF RECTANGULAR DUCT	[Symbol]	EQUIPMENT SYMBOL (SEE EQUIPMENT SCHEDULE)
SA	SUPPLY AIR DUCT	[Symbol]	POINT OF CONNECTION
RA	RETURN AIR DUCT	[Symbol]	THERMOSTAT CONTROLLER
MUA	MAKEUP AIR DUCT	[Symbol]	REMOTE TSTAT SENSOR
OSA	OUTSIDE AIR	[Symbol]	SMOKE DETECTOR
I.C.	INTERLOCK DOOR 1" AFF ABOVE FINISHED FLOOR	[Symbol]	REMOTE HUMIDISTAT

MECHANICAL EQUIPMENT LIST - NO SUBSTITUTIONS

MUA-1 ROOFTOP MAKE-UP AIR UNIT - FURNISHED BY OWNER. INSTALLED BY HVAC SUB: ACCUREX model XRG-112-1H10; 232 MEB gas input; 4,000 CFM @0.4"ESP; 5.0HP blower, verify 20B-3ph with Electrical Contractor prior to ordering; verify 800lbs operating weight with Mfr. Provide filters, 20"hi roof curb. Interlock "ON" with KEF-1 & KEF-2. Contact ACCUREX (913-634-4445) for equipment details & pricing before ordering any equipment or materials.

KEF-1 GREASE EXHAUST FAN - FURNISHED BY OWNER. INSTALLED BY HVAC SUB: ACCUREX model XRG-180HP-20; 2HP motor, 2,500 CFM exhaust @1.75"SP; verify 20B-3ph; verify 172lbs. operating weight with Mfr. 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: ACCUREX model XRW-132-S; 11' long, U.L. listed, w/dual PSP; 2,500 CFM exhaust, 2,500 CFM supply.

KH-2 KITCHEN HOOD (TYPE-I GREASE HOOD) - FURNISHED BY OWNER. INSTALLED BY HVAC SUB: Same as KH-1.

EF-150 CEILING EXHAUST FAN: GREENHECK model SP-A200; 150 CFM at 0.25"SP, 84 watts, back-draft damper. Duct 6" 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.

THERMOSTAT NOTE:
THERMOSTAT CONTROLLERS AND REMOTE SENSORS WILL BE PROVIDED BY OWNER.

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BAD DADDY'S BURGER BAR
"SANDY PLAINS"
3460 SANDY PLAINS RD
SUITE 110
MARIETTA, GA 30062

Issue Record:
06.07.2019 FOR PLAN REVIEW
08.01.2019 BAR FIXT. TO GREASE WST
08.28.2019 QCR

Drawn:
DRAWN BY: F Long

Checked:
CHECKED BY: R Blank

Project No.
PROJECT#: 2019-041

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