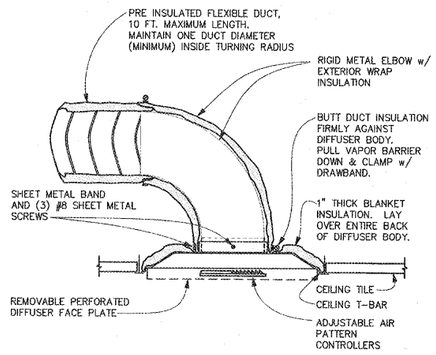
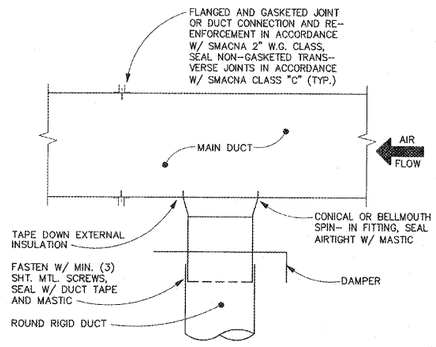


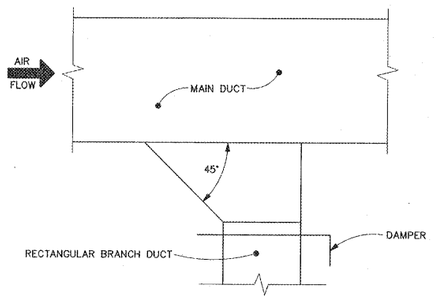
LAY-IN DIFFUSER DETAIL

N.T.S.



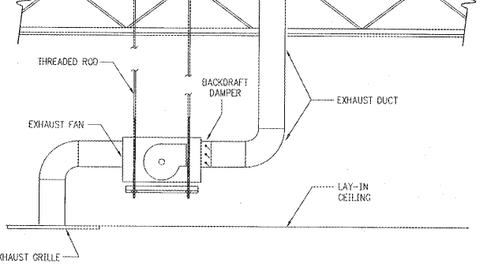
ROUND DUCT TAKEOFF DETAIL

N.T.S.



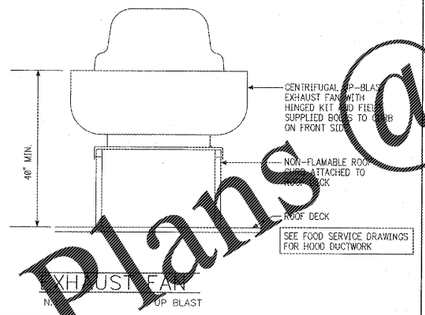
RECTANGULAR DUCT TAKEOFF DETAIL

N.T.S.



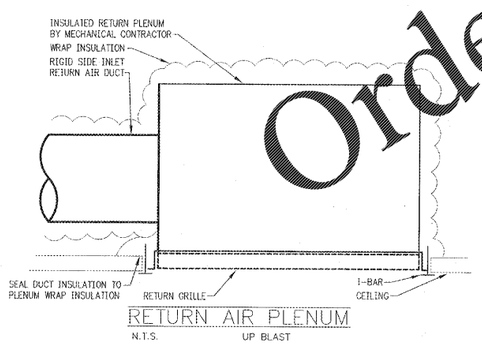
RESTROOM EXHAUST WITH ROOF CAP

N.T.S.



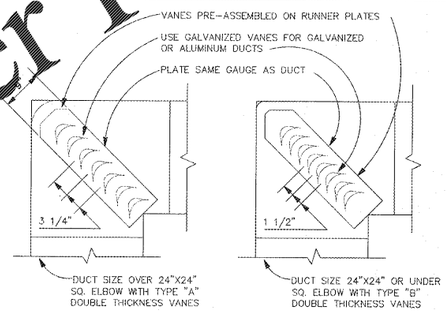
EXHAUST FAN

N.T.S. UP BLAST



RETURN AIR PLENUM

N.T.S. UP BLAST



TURNING VANE DETAIL

N.T.S.

MECHANICAL DETAILS

ROOF TOP UNIT SCHEDULE - PROVIDED BY OWNER (UNO)

MARK	MFG/MODEL NO.	NOMINAL CAP. (TONS)	CFM	(S)/(E)/COP	ESP, SP. (IN.W.C.)	TOT. SP. (IN.W.C.)	FAN RPM	MOTOR HP	COOLING CAPACITY TOT. MBH	SENS. MBH	ENT. DB (°F)	ENT. WB (°F)	AMB. TEMP (°F)	WEIGHT LBS.	ELEC HEAT @208	CONTROL STAGES	ELECTRICAL FLA	MCA	MOCP	V/PH
RTU-1	TRANE WSD150	12.5	4,000	10.6/3.2	0.50	0.74	633	3.0	143.6	100.3	83.1	68.2	100.1	2178#	40.6 KW	2	174.5	209.0	225.0	208/3
RTU-2	TRANE WSC060	5.0	1,600	14.3/3.5	0.46	0.69	830	1.0	58.0	44.9	83.8	68.6	100.1	1071#	13.1 KW	2	63.0	77.0	80.0	208/3
RTU-3	TRANE WSC060	5.0	1,600	14.3/3.5	0.49	0.72	830	1.0	58.0	44.9	81.1	68.2	100.1	1071#	13.1 KW	2	63.0	77.0	80.0	208/3

NOTES:
1. DOWN FLOW ECONOMIZER W/ BAROMETRIC RELIEF FOR ALL ROOF TOP UNITS.
2. PREFAB RTU CURB FURNISHED WITH UNIT INSULATED BY CONTRACTOR.
3. ALL ROOFTOP UNITS ARE TO BE PROVIDED BY OWNER.
4. START-UP/CHECK TEST AND SYSTEM AIR BALANCE SERVICE TO BE PERFORMED BY MECHANICAL CONTRACTOR.
5. AIR VOLUME BASED ON RESTAURANT ELEVATION OF 800 FT ABOVE SEA LEVEL.
6. HINGED PANEL/STANDARD FILTERS.
7. FACTORY 115V GFI RECEPTACLE (FIELD WIRED)
8. 5-10 YR. COMPRESSOR WARRANTY.
9. THROUGH BASE ELECTRICAL.
10. MANUFACTURER PROVIDED CIRCUIT BREAKER.
11. MANUFACTURER PROVIDED FROSTSTAT.
12. PROVIDE BLACK EPOXY PRE-COATED COILS.
13. FLA INCLUDES AUX. ELEC HEAT.
14. ROOFTOP UNITS ARE ELECTRICALLY INTERLOCKED WITH HOODS THRU BUILDING CONTROL PANEL (CPI).

AIR BALANCE SCHEDULE

UNIT	SUPPLY	RETURN	OUTSIDE	EXHAUST	SERVING
RTU-1	4,000	2,800	1,200		KITCHEN
RTU-2	1,600	1,060	540		SERV & ORDER
RTU-3	1,600	1,060	540		DINING
MUA-1			2130		
EF-1				977	OVEN HOOD
EF-2				660	BROILER HOOD
EF-3				1,989	FRYER/GRIDDLE HOOD
EF-4				350	RESTROOM
TOTAL	7,200	4,920	4,410	3,976	
				434	TOTAL EXHAUST AIRFLOW

GRILLE AND DIFFUSER SCHEDULE

MARK	AIR-GUIDE MODEL	FACE SIZE	NECK SIZE	TYPE	MOUNTING	MAT'L/FINISH
SD-1	AVP-PLT	24"x24"	PER PLAN	SUPPLY	T-BAR	ALUM/NOTE 5
	PS-1	24"x24"	PER PLAN	SUPPLY	T-BAR	ALUM/WHITE
SG	-	-	-	-	-	
SD-4	AVP-A-FM	12"x 12"	PER PLAN	SUPPLY	SURFACE	ALUM/WHITE
SD-5	RAME-P	24"x24"	PER PLAN	SUPPLY	T-BAR	ALUM/WHITE
SD-8	AVP-PLT	24"x24"	PER PLAN	SUPPLY	T-BAR	ALUM/WHITE
SG-1	VH	14"x6"	PER PLAN	SUPPLY	WALL MTD.	ALUM/WHITE
RG-1	PR-1	24"x24"	PER PLAN	RETURN	T-BAR	ALUM/WHITE
EG-1	RA-AG	12"x 12"	PER PLAN	RETURN/EXHAUST	SURFACE	ALUM/WHITE

NOTES:
1) TRANSITION TO DUCT AS REQUIRED.
2) PROVIDE OPPOSED BLADE DAMPERS (OBD) FOR GRILLES AND DIFFUSERS INSTALLED WITHIN SHEETROCK CEILINGS.
3) NOT ALL DEVICES MAY BE USED.
4) ALL "SD" DIFFUSERS WITHIN 10' OF A HOOD SHALL HAVE THE AIR PATTERN REMOVED OR ALIMED IN A DIRECTION YOID OF A HOOD.
5) DIFFUSER FINISH TO MATCH SURROUNDING CEILING COLOR, SEE SHEET A2.

FAN SCHEDULE

SYMBOL	MFGR.	MODEL	CFM	EXT. SP	SERVING	ELECTRICAL FLA	HP	VOLT	PHASE	WEIGHT	REMARKS
EF-1	CAPTIVE AIRE	NCA8FA	977	0.75	OVEN HOOD	1.90	0.50	208	3	138	SEE HOOD SHEET
EF-2	CAPTIVE AIRE	NCA8FA	660	0.75	BROILER HOOD	1.90	0.50	208	3	138	SEE HOOD SHEET
EF-3	CAPTIVE AIRE	NCA14FA	1,989	0.80	GRIDDLE/ FRYER	2.50	0.75	208	3	171	SEE HOOD SHEET
EF-4	CAPTIVE AIRE	SIF10DD	350	0.25	RESTROOMS	3.70	0.25	115	1	60	SEE HOOD SHEET
MUA-1	CAPTIVE AIRE	A1-E.362-G10	2,133	0.55	HOODS	3.40	1.00	208	3	731	SEE HOOD SHEET

DEHUMIDIFIER SCHEDULE (ALTERNATE BID)

EQUIP NO.	MFGR.	MODEL	CFM	FLA	VOLTAGE	WEIGHT (LB.)	REMARKS
DH-1	APRILAIRE	1870A	310	8.3	120/1	113	SEE NOTES

NOTES:
1) M.C. SHALL BID THE DEHUMIDIFIER PACKAGE AS AN ALTERNATE.
2) THE DEHUMIDIFIER PACKAGE IS PROVIDED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
3) UNIT IS PROVIDED WITH FACTORY CONTROLS.
4) PROVIDE EACH UNIT WITH A CONDENSATE DRAIN PAN OVERFLOW SWITCH WIRED FOR SHUT DOWN.

NATIONAL RESTAURANT DESIGNERS RECOMMENDS THE INSTALLATION OF THE DEHUMIDIFIER PACKAGE TO PREVENT HIGH HUMIDITY CONDITIONS RESULTING IN CUSTOMER DISCOMFORT AND POTENTIAL CONDITIONS DETRIMENTAL TO THE BUILDING MATERIALS AND INTERIOR ENVIRONMENT.

NOTE: SEE SHEETS CPI-1.0 THRU CPI-2.3 FOR CPI INFORMATION RELATED TO WIRING OF CONTROLS & ENERGY MANAGEMENT.

OUTDOOR AIR CALCULATION

DINING	847 SF / 1000	X 100 = 85 PEOPLE	85 x 7.5/ 0.8 = 797 CFM
			847 SF x 0.18/ 0.8 = 191 CFM
SERVING	237 SF / 1000	X 30 = 7 PEOPLE	7 x 5/ 0.8 = 44 CFM
			237 SF x 0.06/ 0.8 = 18 CFM
WALKWAY	360 SF		360 x 0.06/ 0.8 = 27 CFM
			TOTAL DINING OA REQ'D.= 1077 CFM
			OUTDOOR AIR PROVIDED THROUGH RTU-2 & 3= 1080 CFM
KITCHEN	703 SF		703 x .7/ 0.8 = 615 CFM
OFFICE	53 SF / 1000	X 5 =1 PERSON	1 x 5/ 0.8 = 6 CFM
			53 x .06/ 0.8 = 4 CFM
STORAGE	320 SF		320 x .12/ 0.8 = 48 CFM
			TOTAL KITCHEN/OFFICE/STOR. OA REQUIRED = 673 CFM
			OUTDOOR AIR PROVIDED THROUGH RTU-1 = 1200 CFM

OUTDOOR AIR VENTILATION FORMULA:

BREATHING ZONE AREA (Az) X OCCUPANT DENSITY ÷ 1000 SF = OCCUPANTS
OCCUPANTS X PEOPLE OUTDOOR AIR RATE CFM/PERSON(Rp) = CFM
CFM ÷ ZONE AIR DISTRIBUTION EFFECTIVENESS(Ez) = CFM (1)
+ BREATHING ZONE AREA(Az) X AREA OUTDOOR AIR RATE (Ra) = CFM
CFM ÷ ZONE AIR DISTRIBUTION EFFECTIVENESS(Ez) = = CFM (2)
(1) + (2) = TOTAL CFM REQUIRED FOR THAT ZONE

KITCHEN OUTDOOR AIR: BREATHING ZONE AREA (Az) X 0.7 CFM PER SQ. FT = CFM
CFM ÷ ZONE AIR DISTRIBUTION EFFECTIVENESS(Ez) = TOTAL CFM REQUIRED

MECHANICAL SCHEDULES

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BNE WOOD PROTOTYPE REVERSE
LARGE DINING ROOM- BN2016 LD-R
COUNTY ROUTE
DISPUTANTA, VA 23842

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REVISIONS

NO	DESCRIPTION	DATE

DRAWN BY | CHECKED BY

MECHANICAL DETAILS

DATE: 9-4-2019

SHEET NUMBER: M-2

18228_M2.dwg Sep 04, 2019 - 12:58pm