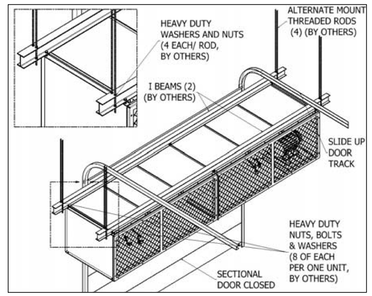


(AIR CURTAIN/FLY FAN #1 &2)

2 AIR CURTAIN MTG. DTL.

NO SCALE

H.V.A.C. ABBREVIATION LEGEND

A/C	AIR CONDITIONER	REV.	REVISION	A.H.U.	AIR HANDLING UNIT
DN.	DOWN	N.T.S.	NOT TO SCALE	D.G.	DOOR GRILLE
EXH.	EXHAUST	MFGR.	MANUFACTURER	F.I.D.	FIRE DAMPER
EXT.	EXTERIOR	R/A	RETURN AIR	DISP.	DISPOSABLE
E.F.	EXHAUST FAN	GR.	GRILLE	V.C.D.	VOLUME CONTROL DAMPER
A.F.F.	ABOVE FINISH FLOOR	C.D.	CEILING DIFFUSER	F/A	FRESH AIR
F.F.	FINISH FLOOR	REG.	REGISTER	S.P.	SAFE PAN
TYP.	TYPICAL	C.U.	CONDENSING UNIT	CD.	CONDENSATE DRAIN

RETURN GRILLE SCHEDULE

(H/100) DESIGNATES LABEL FOR GRILLE TYPE

DESIGNATES CFM QUANTITY FOR GRILLE

FILTER SHALL BE PROVIDED AT UNIT.

LABEL	MANUFACTURER & MODEL NO.	NECK SIZE	CFM RANGE	REMARKS
1	TITUS 355FL	10X10	0 – 400	LOUVER FACE
2	TITUS 50FF	24X48	2300 – 4000	EGGCRATE FACE

SUPPLY DIFFUSER SCHEDULE

(A/100) DESIGNATES LABEL FOR DIFFUSER TYPE

DESIGNATES CFM QUANTITY FOR DIFFUSER

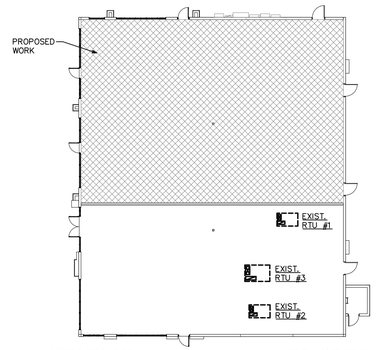
ALL DIFFUSERS ARE TO BE PROVIDED WITH OPPOSED BLADE DAMPERS UNLESS OTHERWISE SPECIFIED ON PLANS.

LABEL	MANUFACTURER & MODEL NO.	NECK SIZE	CFM RANGE	REMARKS	THROW PATTERN
A	TITUS TDC–AA	6"ø	0 – 125	12X12 LOUVERED FACE	4–WAY
B	TITUS TDC–AA	10"ø	200 – 325	24X24 LOUVERED FACE	4–WAY
C	TITUS TDC–AA	12"ø	330 – 450	24X24 LOUVERED FACE	4–WAY
D	TITUS TDC–AA	14"ø	455 – 600	24X24 LOUVERED FACE	4–WAY
E	TITUS PCS–AA	10"ø	205 – 325	24X24 PERFORATED FACE	4–WAY
F	TITUS PCS–AA	12"ø	330 – 450	24X24 PERFORATED FACE	4–WAY
G	TITUS PCS–AA	14"ø	455 – 700	24X24 PERFORATED FACE	4–WAY
H	TITUS FL–20 (FLOWBAR LINEAR)	36" LONG	350 – 450	2" – TWO SLOT W/JETTHROW OPTION	–
I	TITUS TDC–AA	14"ø	455 – 600	24X24 LOUVERED FACE	3–WAY

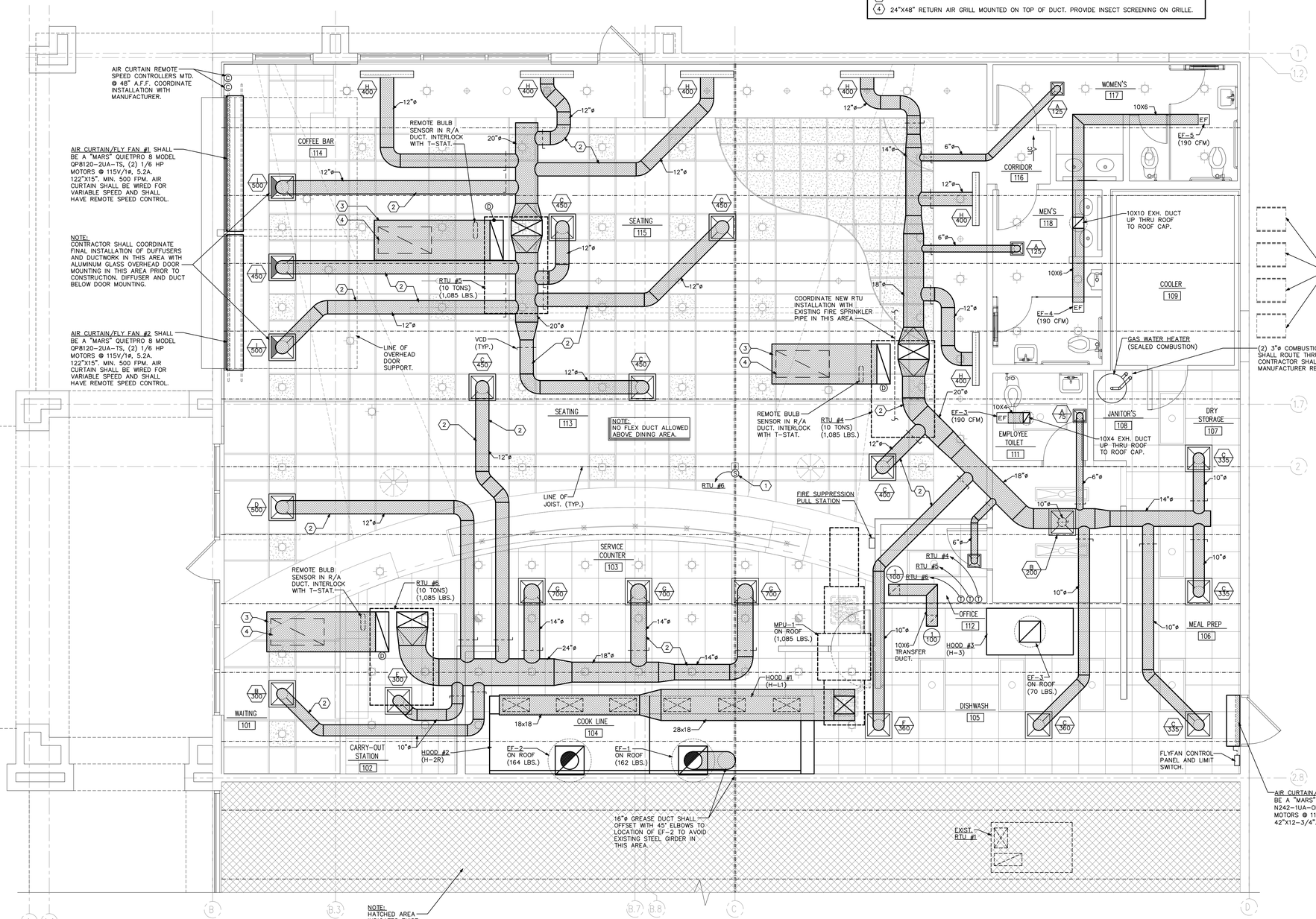
* FLOWBAR LINEAR DIFFUSER SHALL BE PROVIDED WITH FBPI–20 INSULATED PLENUM. DIFFUSER SHALL BE PROVIDED WITH BORDER TYPE 77.

SPECIFIC MECHANICAL NOTES

1. TEMPERATURE SENSOR ON COLUMN. MOUNT 56" A.F.F. INTERLOCK WITH ASSOCIATED THERMOSTAT IN OFFICE.
2. EXPOSED SPIRAL DUCT SHALL ROUTE TIGHT TO UNDERSIDE OF JOIST.
3. RETURN AIR DUCT PLENUM SHALL BE INTERNALLY LINED.
4. 24"X48" RETURN AIR GRILL MOUNTED ON TOP OF DUCT. PROVIDE INSECT SCREENING ON GRILLE.



KEY PLAN NO SCALE



HVAC SYMBOLS LEGEND

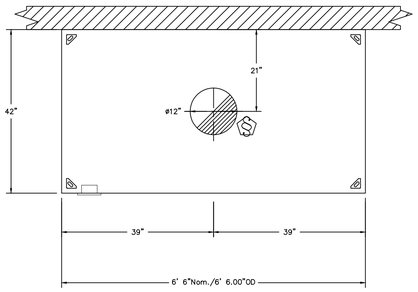
T	THERMOSTAT, MTD +47" AFF
S	TEMPERATURE SENSOR MTD +56" AFF
EF	EXHAUST FAN
	SECTION "A"–"A"
B	REMOTE BULB SENSOR
D	DUCT SMOKE DETECTOR
	TRANSITION
	TURNING VANE
	45° BRANCH DUCT TAKE–OFF
	FIRE DAMPER
VCD	VOLUME CONTROL DAMPER
	RETURN REGISTER
	SUPPLY DIFFUSER
	RETURN AIR GRILLE
	SUPPLY REGISTER
	DUCTWORK TRANSITION
	ROOF MTD. EXH. FAN
	DUCT TURN DOWN
	DUCT TURN UP
	FLEXIBLE DUCT

1 FLOOR PLAN - MECHANICAL

SCALE: 1/4"=1'–0"

SHEET NO.

M1.0



PLAN VIEW – Hood #3 (H-3)
6' 6.00" LONG 4224VHB-G-ND

ROOM TEMPERATURE SENSOR

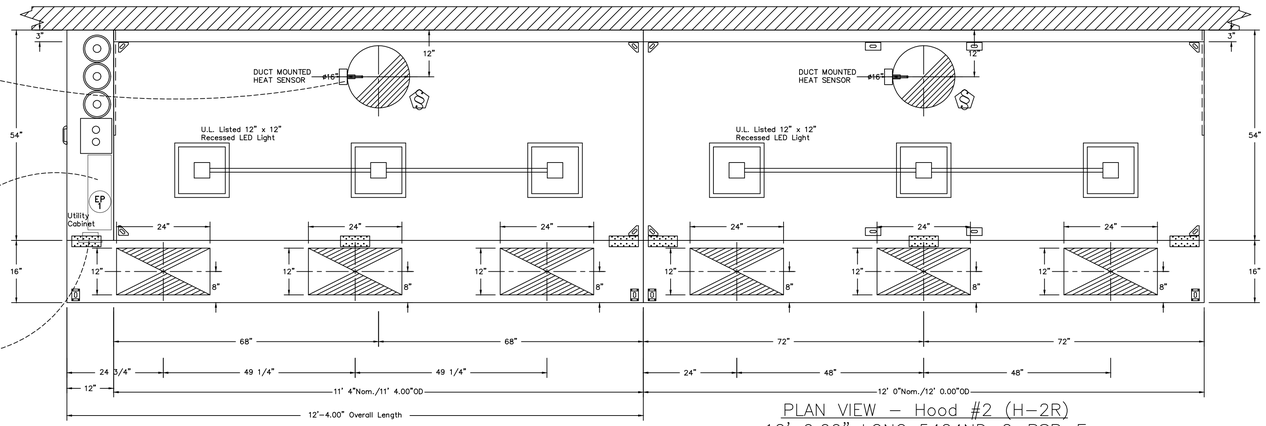
Provides room override based on temperature differential between the room and duct. Installed by electrician on a wall, 5'-6' off the finished floor, in the space but not directly under the hood or close to an appliance (including the electrical control box) or near HVAC register so that the reading is accurate for space.

DUCT TEMPERATURE SENSOR (TYPICAL)

Provides exhaust air temperature for proper hood control operation. For all installations excluding a single hood with factory risers and a hood mounted panel, duct mounted temperature sensors will need to be field wired. 2-wire 18 AWG plenum rated thermistor cable must be used.

HOOD CONTROL INTERFACE

The LCD interface provides user control and hood status. The faceplate is connected to the hood control panel through CAT-5 cable. A faceplate has 2 RJ-45 connectors. One connects to port J4 or J5 in the hood control panel and the other will typically be occupied by a RJ-45 end-of-line terminator.



PLAN VIEW – Hood #1 (H-1L)
11' 4.00" LONG 5424ND-2-PSP-F

PLAN VIEW – Hood #2 (H-2R)
12' 0.00" LONG 5424ND-2-PSP-F

NOTE: Additional hanging angles provided for hoods 12' and longer.

FOR QUESTIONS, CALL
NO. ILLINOIS FOOD SERVICE SALES/ENGINEERING OFFICE
1652 E. Main St., Suite 20 St. Charles, IL 60174
PHONE: 630-377-2611 FAX: 919-516-8738

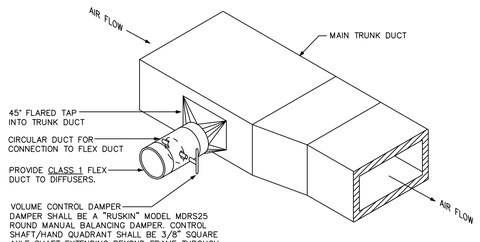
CAPTIVE-AIRE

CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH

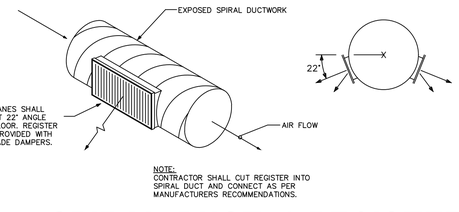
NFPA #96
NSF
E.T.L. LISTED 3054804-001 TO UL 710 & ULC710 STANDARDS

GENERAL MECHANICAL NOTES

1. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE INSTALLATION OF A COMPLETE SYSTEM IN ACCORDANCE WITH THESE DRAWINGS, THE APPLICABLE BUILDING CODE AND ALL OTHER APPLICABLE STATE, COUNTY AND LOCAL ORDINANCES AND THE LATEST ADDITION OF THE FOLLOWING PUBLICATIONS; SMACNA, ASHRAE, NFPA 90A, 90B, 91 & ANSI B-9.1 ALL DUCTWORK SHALL BE FABRICATED, INSTALLED AND SUPPORTED AS PER SMACNA STANDARDS.
2. THE CONTRACTOR SHALL PAY ALL COSTS OF PERMIT, INSPECTIONS AND ALL OTHER COSTS INCIDENTAL TO THE COMPLETION AND TESTING OF THIS WORK.
3. THE CONTRACTOR SHALL VISIT THE SITE AND COORDINATE WORK WITH OTHER TRADES. TO INSURE AN ORDERLY PROGRESS OF THIS WORK.
4. THE CONTRACTOR SHALL SUPPLY THE OWNER WITH ONE SET OF "AS-BUILT" DRAWINGS UPON COMPLETION OF THIS PROJECT. CONTRACTOR SHALL ALSO LEAVE FOR ONE AT LEAST ONE SET OF THE MANUFACTURER'S INSTALLATION AND OPERATIONS MANUALS FOR ALL EQUIPMENT PROVIDED ON THE PROJECT.
5. ALL PROVIDED MATERIALS SHALL BE NEW OF GOOD QUALITY. ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER BY SKILLED WORKMAN.
6. CONTRACTOR SHALL SUBMIT, FOR APPROVAL FIVE [5] COPIES OF MANUFACTURER'S DRAWINGS FOR EACH PIECE OF EQUIPMENT AND CONTROLS INCLUDED IN CONTRACT. IT IS STRONGLY PREFERRED THAT THE SUBMITTALS BE MADE IN THE FORM OF AN ELECTRONIC SUBMITTAL IN A PDF TYPE FORMAT.
7. ALL NEW SUPPLY AND RETURN AIR DUCTWORK SHALL BE GALVANIZED SHEET STEEL EXTERNALLY WRAPPED WITH WITH A MIN. OF R5 INSULATION OR R8 IF DUCTWORK IS LOCATED EXTERIOR TO BLDG INSULATION ENVELOPE. ALL FLEX DUCT SHALL BE "THERMOFLEX" WITH A MINIMUM 4.2 R VALUE. OR APPROVED EQUAL AND SHALL HAVE EQUIVALENT INSULATION. * ALL EXPOSED ROUND DUCTWORK SHALL BE "SPIROSAFE" NON-INSULATED SINGLE WALL SPIRAL DUCTS AS MANUFACTURED BY LINDAB, INC. http://www.lindabusa.com OR APPROVED EQUAL.
8. ALL EXHAUST DUCTS AND OUTSIDE AIR DUCTS SHALL BE GALVANIZED SHEET METAL WITH SEALED SEAMS AND JOINTS.
9. DUCT SIZES SHOWN ARE INSIDE DIMENSIONS.
10. ALL AIR DEVICES (DIFFUSERS, REGISTERS AND GRILLES) SHALL BE ALL ALUMINUM CONSTRUCTION WITH EXPOSED SURFACE OFF WHITE BAKED ENAMEL FINISH OR AS SPECIFIED BY ARCHITECT. DEVICES SHALL BE TITUS, METALAIRE, AIRGUIDE. PROVIDE OPPOSED BLADE DAMPERS AT ALL DIFFUSERS AND REGISTERS.
11. THERMOSTAT SHALL BE COMBINATION COOLING/HEATING, WITH SYSTEM "COOL-AUTO-HEAT-OFF" AND FAN "ON-AUTO" SELECTOR SWITCHES. PROVIDE PROGRAMMABLE TYPE THERMOSTAT. * CONTRACTOR SHALL FULLY INSTRUCT OWNER ON HOW TO PROPERLY PROGRAM INSTALLED THERMOSTATS. * PROGRAMMABLE THERMOSTAT SHALL BE BY MANUFACTURER OF INSTALLED AIR HANDLING UNIT. IT IS RECOMMENDED THAT DURING OCCUPIED HOURS, THE FANS BE SET TO "ON" IN LIEU OF "AUTO". * THERMOSTATS SHALL BE MOUNTED A MAX. OF 48" A.F.F.
12. REFRIGERANT LINES SHALL BE COPPER, TYPE "L" HARD DRAWN WITH WROUGHT COPPER SOLDER-JOINT TYPE FITTINGS, USE 95/5 SOLDER. REFRIGERANT LINES SHALL SIZED AS PER MANUFACTURER RECOMMENDATIONS.
13. SPLIT SYSTEMS (IF APPLICABLE) SHALL HAVE A MINIMUM OF 1-1/2" ARMAFLEX INSULATION (OR APPROVED EQUAL) USED FOR SUCTION LINES. INSTALLATION SHALL BE AS PER MANUFACTURERS INSTRUCTIONS. PRE-INSULATED LINES SETS ARE ACCEPTABLE.
14. ALL BRANCH TAKE-OFFS TO BE PROVIDED W/MANUAL VOLUME DAMPERS AND TAPS AS PER PLANS REQUIREMENTS.
15. PROVIDE NEW FILTERS FOR ALL AIR CONDITIONING EQUIPMENT BEFORE STARTING THEM. REPLACE THEM PRIOR TO FINAL ACCEPTANCE BY OWNER.
16. PROVIDE SMOKE DETECTORS WITH ACCESS DOORS IN ALL RETURN AIR DUCTS FOR FANS AND AHU'S SERVING A COMMON DESIGN SUPPLY OR RETURN PLENUM OF ABOVE 2000 CFM. ALL SMOKE DETECTORS SHALL BE BY ONE MANUFACTURER, COORDINATE VOLTAGE ETC. WITH ELECTRICAL CONTRACTOR AND FIRE ALARM SYSTEM BEFORE ORDERING. UPON DETECTION, SMOKE DETECTORS SHUT DOWN ASSOCIATED AIR MOVING EQUIPMENT AND ALL AIR MOVING EQUIPMENT SERVING THAT COMMON PLENUM.
17. HVAC CONTRACTOR SHALL PROVIDE A TEST AND BALANCE REPORT FOR ALL MECHANICAL EQUIPMENT, AIR DEVICES, DAMPERS, AHU'S AND FANS. THE T & B SHALL BE IN ACCORDANCE WITH THE AIR BALANCE COUNCIL STANDARDS, AND SHALL INCLUDE AIR QUANTITIES FOR ALL SUPPLY GRILLS, RETURN GRILLS, AND EXHAUST GRILLS, AND THE LEAVING AND ENTERING AIR TEMPERATURE (°F) FROM SUPPLY GRILLS AND EVAPORATORS.
18. THERMOSTAT LOCATION SHALL BE APPROVED BY OWNER BEFORE INSTALLATION.
19. ALL INSULATION SHALL HAVE FIRE/SMOKE RATING LESS THAN 25/50.
20. MECHANICAL PLANS IN GENERAL ARE DIAGRAMMATIC IN NATURE, AND ARE TO BE READ IN CONJUNCTION WITH ARCH. PLUMBING, ELECTRICAL AND STRUCTURAL PLANS AND SHALL BE CONSIDERED AS ONE SET OF DOCUMENTS. DUCT AND PIPING OFFSETS, BENDS AND TRANSITIONS WILL BE REQUIRED TO PROVIDE AND INSTALL A COMPLETE FUNCTIONAL SYSTEM AND SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
21. CONTRACTOR SHALL INSTALL ALL OUTDOOR EQUIPMENT TO WITHSTAND WIND LOADING FORCES AS REQUIRED BY LOCAL CODES. REFER TO STRUCTURAL PLANS BY OTHERS FOR STRUCTURAL DETAILS.
22. PROVIDE ALL NECESSARY CONTACTORS, RELAYS, ETC., FOR A COMPLETE OPERATING SYSTEM.
23. THROUGHOUT THE COURSE OF THE WORK, MINOR CHANGES AND ADJUSTMENTS TO THE PLANS AND SPECIFICATIONS MAY BE REQUESTED BY THE TENANT. THE CONTRACTOR SHALL MAKE SUCH ADJUSTMENTS WITHOUT ADDITIONAL COST TO THE TENANT, WHERE SUCH ADJUSTMENTS ARE NECESSARY FOR THE PROPER INSTALLATION AND OPERATION OF THE SYSTEMS, AND WITHIN THE INTENT OF THE CONTRACT DOCUMENTS.
24. NOTWITHSTANDING ANY OTHER PROVISIONS OF THE CONTRACT DOCUMENTS, THE CONTRACTOR BEARS ULTIMATE RESPONSIBILITY FOR COMPLIANCE OF THE INSTALLATION WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
25. IF ANY ERRORS, DISCREPANCIES OR OMISSIONS APPEAR IN THE DRAWINGS, SPECIFICATIONS OR OTHER CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING OF SUCH ERROR OR OMISSION. IN THE EVENT OF THE CONTRACTOR FAILING TO GIVE SUCH NOTICE BEFORE CONSTRUCTION AND/OR FABRICATION OF THE WORK, HE WILL BE HELD RESPONSIBLE FOR THE RESULTS OF ANY SUCH ERRORS, DISCREPANCIES OR OMISSIONS AND THE COST OF RECTIFYING SAME.



3 BRANCH TAKE-OFF DETAIL
NO SCALE



2 SPIRAL DUCT / REGISTER CONNECTION DETAIL
NO SCALE

1 ROOF CURB DETAIL
NO SCALE

OUTSIDE AIR CALCULATIONS

THE FOLLOWING IS BASED ON 2010 FLORIDA BUILDING MECHANICAL CODE TABLE 403.3 MINIMUM VENTILATION RATES FOR OUTSIDE AIR REQUIREMENTS (EQUATION 4-1)

UNIT LABEL	OCCUPANCY CATAGORY	AREA	ESTIMATED MAX. OCCUPANCY		OUTSIDE AIR REQUIRED (CFM)	ZONE AIR DIST. EFF.	TOTAL	EXHAUST AIRFLOW RATE CFM/SQ. FT. 0.7 CFM/SQ. FT.	
		A_Z	P_Z	R_P	$P_Z \times R_P$ $A_Z \times R_A$	E_Z			
RTU #1-3	EXISTING TO REMAIN IN ADJACENT SPACE (N.I.C.)		-		-	-	-		
RTU #4	KITCHEN	0,600	N/A		(N/A) + (N/A) = --- PEOPLE AREA TOTAL	N/A	N/A	600 X 0.7 = 420	EXH. HOODS = 6,225 EXH. AIRFLOW FROM HOOD.
RTU #4	STORAGE	0,200	N/A		(N/A) + (0,600 x .12) = 072 PEOPLE AREA TOTAL				
RTU #4	DINING	0,650	70 PEOPLE PER 1,000 S.F.	7.5 CFM PER PERSON	(66 x 7.5) + (0,650 x .18) = 462 PEOPLE AREA TOTAL				
					RTU #4 TOTAL = 534	1.0*	534/1.0 = 534		
RTU #5	DINING	0,750	70 PEOPLE PER 1,000 S.F.	7.5 CFM PER PERSON	(52 x 7.5) + (0,750 x .18) = 525 PEOPLE AREA TOTAL	1.0*	525/1.0 = 525		
RTU #6	DINING	0,325	70 PEOPLE PER 1,000 S.F.	7.5 CFM PER PERSON	(23 x 7.5) + (0,325 x .18) = 231 PEOPLE AREA TOTAL				
RTU #6	KITCHEN	0,465	N/A		(N/A) + (N/A) = --- PEOPLE AREA TOTAL			465 X 0.7 = 325	EXH. HOODS = 6,225 EXH. AIRFLOW FROM HOOD.
RTU #6	MAIN ENTRY LOBBIES	0,175	10 PEOPLE PER 1,000 S.F.	5.0 CFM PER PERSON	(02 x 5.0) + (0,175 x .06) = 021 PEOPLE AREA TOTAL				
					RTU #6 TOTAL = 252	1.0*	252/1.0 = 252		

A_Z — ZONE FLOOR AREA
P_Z — ZONE POPULITION
R_P — PEOPLE OUTDOOR RATE
R_A — AREA OUTDOOR RATE
E_Z — ZONE AIR DISTRIBUTION EFFECTIVENESS

* ALL SYSTEMS ON THIS PROJECT ARE SINGLE ZONE SYSTEMS WHERE ONE AIR HANDLER SUPPLIES A MIXTURE OF OUTDOOR AIR AND RECIRCULATED RETURN AIR TO ONLY ONE ZONE, SO NCMC SECTION 403.3.2.1 ALLOWS THE Ez OF 1.0 TO BE UTILIZED.

FAN SCHEDULE

LABEL	TYPE OF UNIT – AREA SERVED	MANUFACTURER & MODEL NO.	CFM	SP	MOUNTING ARRANGEMENT	MOTOR H.P.	ENCLOSURE TYPE	RPM	VOLTAGE	NOTES
EF-1,2	REFER TO HOOD DETAILS AND SPECIFICATIONS ON SHEET M-3		–	–	–	–	–	–	–	–
EF-3	CABINET FAN – REFER TO PLANS	PENN ZEPHYR Z6	90	.125"	CEILING MOUNTED	50 WATTS	OPEN DRIP PROOF	1055	115V/1ø	1
EF-4,5	CABINET FAN – REFER TO PLANS	PENN ZEPHYR Z7	190	.125"	CEILING MOUNTED	68 WATTS	OPEN DRIP PROOF	1640	115V/1ø	1

NOTES: 1.) REFER TO ELECTRICAL PLANS FOR CONTROL.

AIR BALANCE SCHEDULE

OUTSIDE	OUTSIDE AIR	RETURN AIR	SUPPLY AIR	EXHAUST AIR	RESULTING PRESSURES
RTU #1-3	EXIST. TO REMAIN. (N.I.C.)			–	–
RTU #4	765 (19%)	3170	4000		+300
RTU #5	765 (19%)	3170	4000		+790
RTU #6	765 (20%)	2820	3650		+1250
EF-1 HOOD #1 (H-1L)				2550	-2550
EF-2 HOOD #2 (H-2R)				2700	-2700
EF-3 HOOD #3 (H-3)				975	-975
EF-4 (TLT. RM.)				90	-90
EF-5 (TLT. RM.)				190	-190
EF-6 (TLT. RM.)				190	-190
MPU-1 (HOOD 1,2)	4200				+4200
TOTAL	6495	6340	11650	6695	-200

ROOFTOP PACKAGE AIR CONDITIONING SCHEDULE

SYS. LABEL	MANUFACTURER	MODEL NO.	TOTAL CAPACITY	SENSIBLE CAPACITY	TOTAL CFM	O/A CFM	E.S.P.	FAN SPEED	COMP. RLA	OUTDOOR FAN FLA	INDOOR FAN HP	HEATER KW	VOLTAGE	MOCP	IEER	NOTES	WEIGHT
RTU #4,5	CARRIER	50TC-D12A1A5-0A0G0	124,100	96,200	4,000	765	.6"	825	(1)@15.6 (1)@15.9	(2)@1.5	2.0 H.P.	12.0	208V/3ø	60	13.0	1 THRU 6	1,085 LBS.
RTU #6	CARRIER	50TC-D12A1A5-0A0G0	122,420	91,720	3,650	765	.6"	779	(1)@15.6 (1)@15.9	(2)@1.5	2.0 H.P.	12.0	208V/3ø	60	13.0	1 THRU 6	1,085 LBS.

GENERAL NOTES:

* ALL RATINGS ARE AT ARI ENTERING CONDITIONS UNLESS OTHERWISE NOTED.
* EXTERNAL STATIC PRESSURE DOES NOT INCLUDE COIL OR FILTER PRESSURE DROP.
* CONTRACTOR MAY SUBSTITUTE MANUFACTURER FOR APPROVED EQUAL. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY THAT ANY CLEARANCE REQUIREMENTS ARE MET FOR ANY SUBSTITUTIONS.

ABBREVIATION LEGEND:

O/A – OUTSIDE AIR
HP – HORSE POWER
RLA – RUNNING LOAD AMPS
FLA – FULL LOAD AMPS
MOCP – MAX. OVERCURRENT PROTECTION (DUAL ELEMENT TYPE FUSE)
E.S.P. – EXTERNAL STATIC PRESSURE
EER – ENERGY EFFICIENCY RATIO
SEER – SEASONAL ENERGY EFF. RATIO

SPECIFIC NOTES:

1.) OUTDOOR AIR MANUAL 0% TO 30% DAMPER.
2.) PROVIDE (1) YEAR WARRANTY ON ALL PARTS AND LABOR AND 5 YEAR WARRANTY ON COMPRESSOR.
3.) PROVIDE 1" FARR 30/30 THOWAWAY. (1) SET DURING CONSTRUCTION AND (1) SET AFTER FINAL INSPECTION.
4.) PROVIDE ALL NECESSARRY CONTACTORS, RELAYS, MOTOR STARTER, ETC.. FOR A COMPLETE OPERATING UNIT.
5.) CONTRACTOR SHALL INSTALL ALL OUTDOOR EQUIPMENT TO WITHSTAND WIND LOADING FORCES AS REQUIRED BY LOCAL CODES. REFER TO STRUCTURAL PLANS BY OTHERS FOR STRUCTURAL DETAILS.
6.) UNIT SHALL BE PROVIDED WITH FACTORY INSTALLED TWO POSITION MOTORIZED OUTSIDE AIR DAMPER. DAMPER SHALL AUTOMATICALLY SHUT WHEN THE SYSTEMS OR SPACES SERVED ARE NOT IN USE. VENTILATION OUTSIDE AIR DAMPERS SHALL BE CAPABLE OF AUTOMATICALLY SHUTTING OFF DURING PREOCCUPANCY BUILDING WARMUP, COOLDOWN, AND SETBACK.

SHEET NO.
M2.0

HOOD INFORMATION – Job#3276237

HOOD NO.	TAG	MODEL	LENGTH	MAX. COOKING TEMP.	EXHAUST PLENUM RISER(S) TOTAL EXH. CFM	WIDTH	LENG.	HEIGHT	DIA.	CFM	VEL.	S.P.	TOTAL SUPPLY CFM	HOOD CONSTRUCTION	HOOD CONFIG. END TO END	ROW	SWITCHES QUANTITY	LOCATION
1	H–1L	5424 ND–2–PSP–F	11' 4"	600 Deg.	2550			4"	16"	2550	1826	–0.926"	2040	430 SS Where Exposed	LEFT	ALONE		
2	H–2R	5424 ND–2–PSP–F	12' 0"	600 Deg.	2700			4"	16"	2700	1934	–1.008"	2160	430 SS Where Exposed	RIGHT	ALONE		
3	H–3	4224 VHB–G–ND	6' 6"	700 Deg.	975			4"	12"	975	1241	–0.123"	0	304 SS 100%	ALONE	ALONE	1 FAN	FRONT LEFT FACE

PATENT NUMBERS

AC–PSP (United States) – US Patent 7963830 B2
AC–PSP Wall (Canada) – CA Patent 2820509
AC–PSP Island (Canada) – CA Patent 2520330

HOOD INFORMATION

HOOD NO.	TAG	FILTER(S) TYPE	QTY.	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	LIGHT(S) QTY.	TYPE	WIRE GUARD	UTILITY CABINET(S) LOCATION	SIZE	FIRE SYSTEM TYPE	FIRE SYSTEM SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY	FIRE SYSTEM PIPING	HOOD HANGING WGHT
1	H–1L	Captrate Solo Filter	8	20"	16"	85% See Filter Spec.	3	12" x 12" LED	NO	Left	12"x54"x24"	Ansul R102	3.0/3.0/3.0	DCV–2111	1 Light 1 Fan	YES	828 LBS
2	H–2R	Captrate Solo Filter	9	20"	16"	85% See Filter Spec.	3	12" x 12" LED	NO							YES	680 LBS
3	H–3						0									NO	207 LBS

HOOD OPTIONS

HOOD NO.	TAG	OPTION
1	H–1L	FIELD WRAPPER 18.00" High Front, Left
		BACKSPLASH 80.00" High X 292.00" Long 430 SS Vertical
		LEFT VERTICAL END PANEL 27" Top Width, 21" Bottom Width, 80" High Insulated 430 SS
2	H–2R	FIELD WRAPPER 18.00" High Front, Right
		RIGHT VERTICAL END PANEL 27" Top Width, 21" Bottom Width, 80" High Insulated 430 SS

PERFORATED SUPPLY PLENUM(S)

HOOD NO.	TAG	POS.	LENGTH	WIDTH	HEIGHT	TYPE	RISER(S) WIDTH	LENG.	DIA.	CFM	S.P.
1	H–1L	Front	148"	16"	6"	MUA	12"	24"		680	0.205"
						MUA	12"	24"		680	0.205"
						MUA	12"	24"		680	0.205"
2	H–2R	Front	144"	16"	6"	MUA	12"	24"		720	0.228"
						MUA	12"	24"		720	0.228"
						MUA	12"	24"		720	0.228"

GREASE DUCT SPECIFICATIONS:
PROVIDE GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW" ROUND 20 GAUGE 430 STAINLESS STEEL DUCTWORK. MODEL "DW" IS LISTED TO UL–1978 AND IS INSTALLED USING "V" CLAMP LOCKING CONNECTIONS SEALED WITH 3M FIRE BARRIER 2000 PLUS. MODEL "DW" DOES NOT REQUIRE WELDING PROVIDING IT HAS BEEN INSTALLED PER THE MANUFACTURES INSTALLATION GUIDE.
PROVIDE RATED ACCESS DOORS AT EVERY CHANGE IN DIRECTION AND EVERY 12' ON CENTER. PER MANUFACTURES LISTING MODEL "DW" HORIZONTAL RUNS LESS THAN 75 FT. CAN BE SLOPED 1/16" PER 12", HORIZONTAL RUNS MORE THAN 75 FT. CAN BE SLOPED 3/16" PER 12". DUCT SHOULD BE SLOPED AS MUCH AS POSSIBLE TO REDUCE THE CHANCE OF GREASE ACCUMULATION IN HORIZONTAL RUNS.

IF THE DUCT IS WITHIN 18 INCHES OF COMBUSTIBLE MATERIAL, PROVIDE UL–2221 LISTED DOUBLE WALL GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW– 2R, 3R, OR 3Z" ROUND 20 GAUGE 430 STAINLESS INNER DUCT INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL.

SUPPLY DUCT SPECIFICATIONS:
HOOD SUPPLY DUCTS MATERIAL SHALL BE 22 GALVANIZED SHEET METAL. GAUGES, HANGING AND REINFORCING PER SMACNA STANDARDS.

EXHAUST FAN INFORMATION – Job#3276237

FAN UNIT NO.	TAG	FAN UNIT MODEL #	CFM	ESP.	RPM	H.P.	B.H.P.	ø	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS.)	SONES
1	EF–1	DU180HFA	2550	1.250	1162	1.500	0.8380	3	208	4.4	589 FPM	164	14.5
2	EF–2	DU180HFA	2700	1.250	1190	2.000	0.9020	3	208	6.1	624 FPM	162	15.1
3	EF–3	DU50HFA	975	0.500	1157	0.500	0.1750	1	115	5.6	371 FPM	70	9.8

CONDENSER DETAILS

FAN UNIT NO.	TAG	FAN UNIT MODEL #	CONDENSER NO.	TONNAGE	VOLTAGE	PHASE	FREQUENCY	MCA	RLA	MAX. FUSE SIZE	MIN. WIRE SIZE	SEER
4	MPU–1	A2–20D–MPU	1	3	208–230	3 PHASE	60 Hz	14.5 Amps	11.9 Amps	20 Amps	14 AWG	14
			2	5	208–230	3 PHASE	60 Hz	21.4 Amps	17.4 Amps	30 Amps	12 AWG	14

MUA FAN INFORMATION – Job#3276237

FAN UNIT NO.	TAG	FAN UNIT MODEL #	BLOWER	HOUSING	DESIGN CFM MIN	DESIGN CFM MAX	ESP.	RPM	H.P.	B.H.P.	ø	VOLT	FLA	COOLING COIL ENTERING DB TEMP.	COOLING COIL ENTERING WB TEMP.	COOLING COIL LEAVING DB TEMP.	COOLING COIL LEAVING WB TEMP.	COOLING COIL TOTAL CAPACITY	COOLING COIL SENSIBLE CAPACITY	COOLING COIL LATENT CAPACITY	WEIGHT (LBS.)	SONES
4	MPU–1	A2–20D–MPU	20MF–2–M20	A2	–	4200	0.500	1502	3.000	1.9350	3	208	9.5	91.0°F	78.0°F	77.7°F	72.7°F	96.0 MBH	60.5 MBH	35.5 MBH	1431	18.9

FAN OPTIONS

FAN UNIT NO.	TAG	OPTION (Qty. – Descr.)
1	EF–1	1 – Grease Box
		1 – Fan Base Ceramic Seal – Ship Loose – For Grease Ducts
		1 – Miami Dade Certification.
		1 – Upblast Fan Wheel Access Port
2	EF–2	1 – Grease Box
		1 – Fan Base Ceramic Seal – Ship Loose – For Grease Ducts
		1 – Miami Dade Certification.
		1 – Upblast Fan Wheel Access Port
3	EF–3	1 – ECM Wiring Package–Exhaust – Manual or 0–10VDC Reference Speed Control (NIDEC Motor)
		1 – Miami Dade Certification.
4	MPU–1	1 – Miami Dade Certification.
		1 – 8 Ton 2 Circuit (3/5) Modular Packaged Cooling Option for Size 2 MUA (2,900 to 4,800 cfm), 208V/230V, 3 phase. Cooling Thermostat or Programmable Stat Required for Proper Operation.
		1 – Insulated Blower Section Size 1–2 Commercial
		1 – Mod Package Unit AC Controls for Untempered Fans
		1 – Motorized Backdraft Damper for Size 2 Housing
		1 – Separate 120V Wiring Package (Required and used only for DCV or Prewire with VFD) – Three Phase Only
		1 – Condenser Support for Size 2 Mod Package Unit
		1 – Condensing Unit Locking Caps For Double Condenser Units.

FAN ACCESSORIES

FAN UNIT NO.	TAG	EXHAUST GREASE CUP	EXHAUST GRAVITY DAMPER	EXHAUST WALL MOUNT	SUPPLY SIDE DISCHARGE	SUPPLY GRAVITY DAMPER	SUPPLY MOTORIZED DAMPER	SUPPLY WALL MOUNT
1	EF–1	YES						
2	EF–2	YES						
3	EF–3							
4	MPU–1						YES	

CURB ASSEMBLIES

NO.	ON FAN	WEIGHT	ITEM	SIZE
1	# 1	53 LBS	Curb	26.500"W x 26.500"L x 24.000"H Vented Hinged 16 Gauge
2	# 2	53 LBS	Curb	26.500"W x 26.500"L x 24.000"H Insulated Vented Hinged 16 Gauge
3	# 3	24 LBS	Curb	19.500"W x 19.500"L x 18.000"H Insulated Hinged

SPECIFICATION: CAPTRATE GREASE–STOP SOLO FILTER

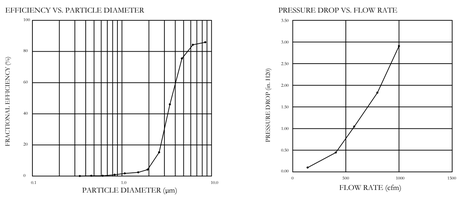
THE CAPTRATE GREASE–STOP SOLO FILTER IS A SINGLE–STAGE FILTER FEATURING A UNIQUE S–BAFFLE DESIGN IN CONJUNCTION WITH A SLOTTED REAR BAFFLE DESIGN, TO DELIVER EXCEPTIONAL FILTRATION EFFICIENCY.

FILTER IS STAINLESS STEEL CONSTRUCTION, AND SIZED TO FIT INTO STANDARD 2–INCH DEEP HOOD CHANNEL(S).

UNITS SHALL INCLUDE STAINLESS STEEL HANDLES AND A FASTENING DEVICE TO SECURE THE TWO COMPONENTS WHEN ASSEMBLED.

GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 85% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 1.0 INCHES OF WATER GAUGE.

THE CAPTRATE GREASE–STOP SOLO WAS TESTED TO ASTM STANDARD ASTM F2519–05.



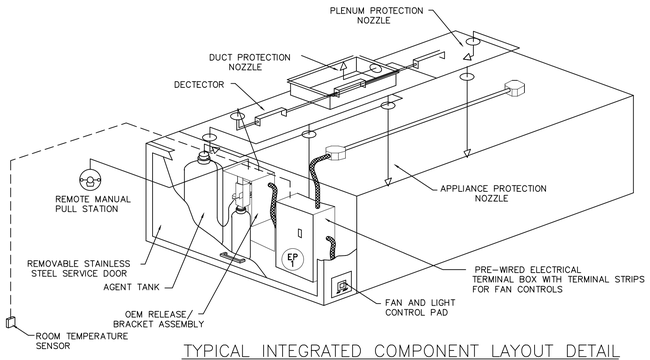
CAPTRATE FILTERS ARE BUILT IN COMPLIANCE WITH:.
NFPA #96
NSF STANDARD #2
UL STANDARD #1046
INT. MECH. CODE (IMC)
ULC–S649

Fire System Information – Job#3276237

FIRE SYSTEM NO.	Tag	TYPE	SIZE	FLOW POINTS	INSTALLATION SYSTEM	INSTALLATION LOCATION ON HOOD
1	FS–1	Ansul R102	3.0/3.0/3.0	6	Fire Cabinet Left	Left

GAS VALVE(S)

FIRE SYSTEM NO.	TAG	TYPE	SIZE	SUPPLIED BY
1	FS–1	Mechanical	2.000	Distributor



TYPICAL INTEGRATED COMPONENT LAYOUT DETAIL

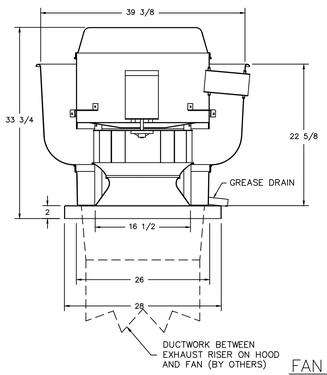
ACTUAL FIRE SYSTEM PIPING SCHEMATIC TO BE PROVIDED BY CONTRACTED FIRE SYSTEM DISTRIBUTOR AT TIME OF PERMITTING

System Design Verification (SDV)

If ordered, CAS Service will perform a System Design Verification (SDV) once all equipment has had a complete start up per the Operation and Installation Manual. Typically, the SDV will be performed after all inspections are complete.

Any field related discrepancies that are discovered during the SDV will be brought to the attention of the general contractor and corresponding trades on site. These issues will be documented and forwarded to the appropriate sales office. If CAS Service has to resolve a discrepancy that is a field issue, the general contractor will be notified and billed for the work. Should a return trip be required due to any field related discrepancy that cannot be resolved during the SDV, there will be additional trip charges.

During the SDV, CAS Service will address any discrepancy that is the fault of the manufacturer. Should a return trip be required, the general contractor and appropriate sales office will be notified. There will be no additional charges for manufacturer discrepancies.



FEATURES:

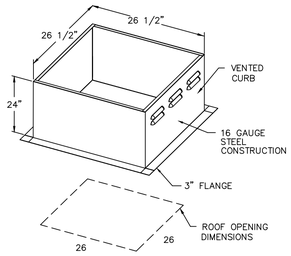
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS)
- ROOF MOUNTED FANS
- RESTAURANT MODEL
- UL705 AND UL762
- VARIABLE SPEED CONTROL
- INTERNAL WIRING
- WEATHERPROOF DISCONNECT
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE)
- HIGH HEAT OPERATION 300°F (149°C)
- GREASE CLASSIFICATION TESTING

NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

ABNORMAL FLARE–UP TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (316°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

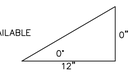
OPTIONS

GREASE BOX
FAN BASE CERAMIC SEAL – SHIP LOOSE – FOR GREASE DUCTS
MIAMI DADE CERTIFICATION.
UPBLAST FAN WHEEL ACCESS PORT

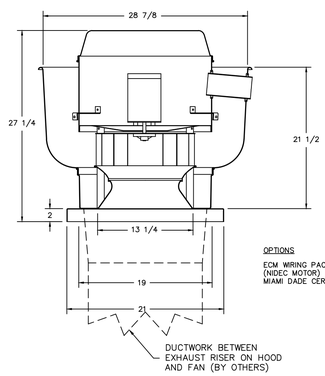


PITCHED CURBS ARE AVAILABLE FOR PITCHED ROOFS.

SPECIFY PITCH:
EXAMPLE: 7/12 PITCH = 30° SLOPE



FAN #1 DU180HFA – EXHAUST FAN (EF–1)
FAN #2 DU180HFA – EXHAUST FAN (EF–2)



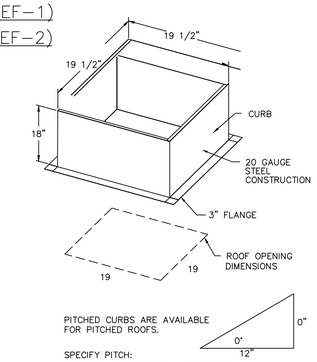
FEATURES:

- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS)
- ROOF MOUNTED FANS
- RESTAURANT MODEL
- UL705
- VARIABLE SPEED CONTROL
- INTERNAL WIRING
- WEATHERPROOF DISCONNECT
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE)
- HIGH HEAT OPERATION 300°F (149°C)

NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

OPTIONS

ECM WIRING PACKAGE–EXHAUST – MANUAL OR 0–10VDC REFERENCE SPEED CONTROL (NIDEC MOTOR)
MIAMI DADE CERTIFICATION.



PITCHED CURBS ARE AVAILABLE FOR PITCHED ROOFS.

SPECIFY PITCH:
EXAMPLE: 7/12 PITCH = 30° SLOPE

FAN #3 DU50HFA – EXHAUST FAN (EF–3)

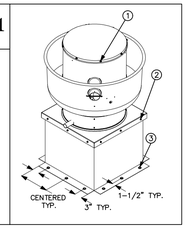
Miami–Dade – Upblast Aluminum – NOA1

Installation Instructions:

1. Secure the lid to the fan using (8) 1/4" – 14 x 1" zinc plated steel self drilling screws with rubber washers, spaced evenly around the lid.

2. Secure the fan base to the curb using a minimum of (12) 1/4" – 14 x 2" zinc plated steel self drilling screws, through pre–punched holes in the fan base with a max spacing of 16 inches.

3. Secure the curb to the roof framing members by drilling 1/4" pilot holes in the curb flanges at locations shown in the diagram and using a minimum of (12) 3/8" x 2" (minimum enbedment), zinc plated steel lag bolts and zinc plated washers, screw through curb flanges and into roof framing members with a maximum spacing 21 1/4".



Miami–Dade NOA1

General Notes:

1. This approval is for the structual capacity and impact rating of the exterior housing only; it does not include any interior mechanisum or electrical part.

2. These fans have not been wind tested for Wind Driven Rain Test per Florida Building Code, TAS100 (A)–95.

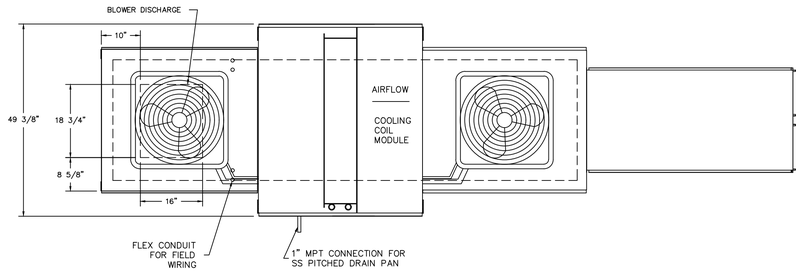
3. Tested in accordance to Florida Building Code test portocol TAS201, TAS202, TAS203.

4. Tested for areas including high velocity hurricane zones.

5. Tested under Miami–Dade County Notification number ATI–08033.

DESIGN PRESSURE: +30.0 / –66.0 PSF
LARGE MISSILE IMPACT RESISTANT

SHEET NO.
M3.0



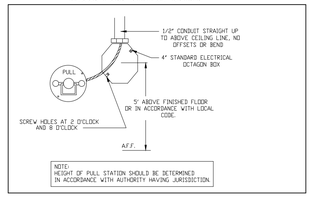
SUPPLY FAN NOTES

1. SUPPLY UNIT WITH 20" DIRECT DRIVE FAN IN SIZE #2 HOUSING
2. INTAKE HOOD WITH EZ FILTERS
3. DOWN DISCHARGE – AIR FLOW RIGHT –> LEFT
4. MIAMI DADE IMPACT AND WIND LOAD CERTIFICATION – MIAMI DADE COUNTY PRODUCT CONTROL APPROVED. FLORIDA BUILDING CODE APPROVAL. EXHAUST CURBS UP TO 20" HIGH MUST BE 20 GAUGE ALUMINIZED. EXHAUST CURBS ABOVE 20" HIGH UP TO 42" HIGH MUST BE 16 GAUGE ALUMINIZED. EXHAUST RAILS LIMITED TO 10" HIGH.
5. 8 TON, DUAL CIRCUIT (3/5) MODULAR PACKAGED COOLING OPTION FOR SIZE 2 MODULAR PACKAGED UNIT. INCLUDES CONDENSER, DX COIL, FILTER/DRYER KIT, THERMAL EXPANSION VALVE, R410A REFRIGERANT, AND REFRIGERANT PIPING. (2,900 TO 4,800 CFM) NOT BUILT WITH OPPOSITE SIDE CONTROLS OR OPPOSITE AIRFLOW DIRECTION. CONDENSERS REQUIRE SEPARATE 208V, 3 PHASE POWER SUPPLY. COIL = 3EZ11010
6. INSULATED BLOWER HOUSING SIZES 1–2 COMMERCIAL MODULAR
7. CONTROL PACKAGE FOR MOD PACKAGE UNIT COOLING ONLY UNIT. INCLUDES AIRFLOW PROVING SWITCH, RTULINK–ACHP BOARD AND TERMINAL BLOCKS.
8. MOTORIZED BACK DRAFT DAMPER 22.75" X 24" FOR SIZE 2 UNTEMPERED UNITS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LF120S ACTUATOR INCLUDED
9. SEPARATE 120VAC WIRING PACKAGE FOR MAKE–UP AIR UNITS. OPTION MUST BE SELECTED WHEN MOUNTING VFD IN PREWIRE PANEL OR WITH DCV PACKAGE. PROVIDES SEPARATE 120VAC INPUT TO SUPPLY FAN. THIS 120V SIGNAL MUST BE RUN BY ELECTRICIAN FROM DCV TO MUA SWITCH.
10. SUPPORT SHELL FOR SIZE 2 MODULAR PACKAGE UNIT. INCLUDES CONTROL VESTIBULE. INCLUDES CONDENSER SUPPORTS. DOES NOT INCLUDE RETURN AIR OR INLET AIR DAMPER.
11. LOCKING CAPS FOR DOUBLE CONDENSER UNITS. CONSISTS OF 4 LOCKING CAPS, PART# NCP–4, AND 1 KEY, PART# NC–KEY.

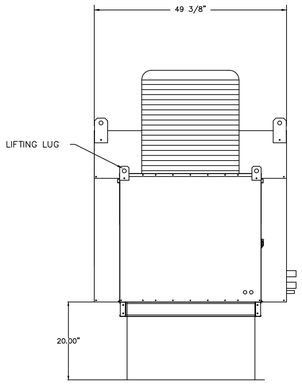
NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH EQUAL TO THREE TIMES THE SUPPLY DUCT EQUIVALENT DIAMETER MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE UNLESS OTHERWISE SPECIFIED. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY.

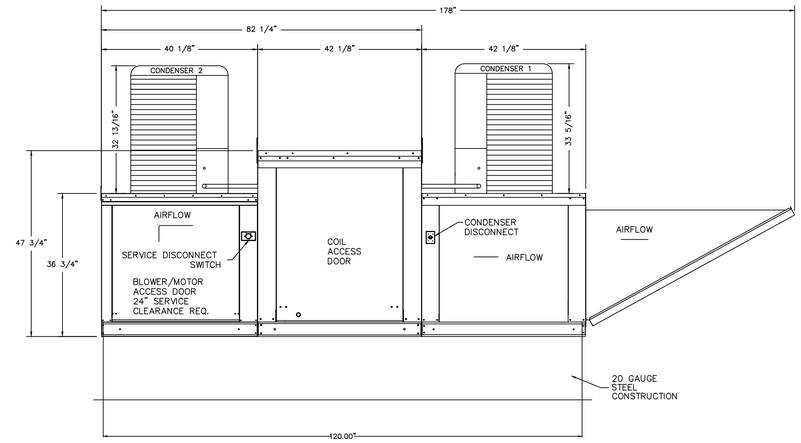
NOTE:
AS PER NFPA 17A, PULL STATION SHALL BE NO LESS THAN 10' FROM HOOD AND NOT FARTHER THAN 20' FROM HOOD AND MUST BE LOCATED IN PATH OF EGRESS.

ANSUL PULL STATION DETAIL

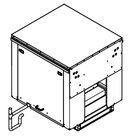


EXPOSED REMOTE FIRE PROTECTION PULL STATION DETAIL

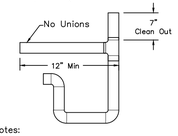




Typical Drain Trap Install



Recommended Cooling Coil Drain Trap Configuration



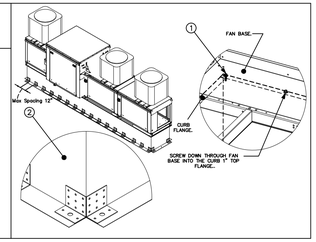
Notes:
1) 1" diameter PVC Pipe only
2) Use only low profile couplings
3) Add clean out as shown

Miami-Dade – MPU Fan – NOA2

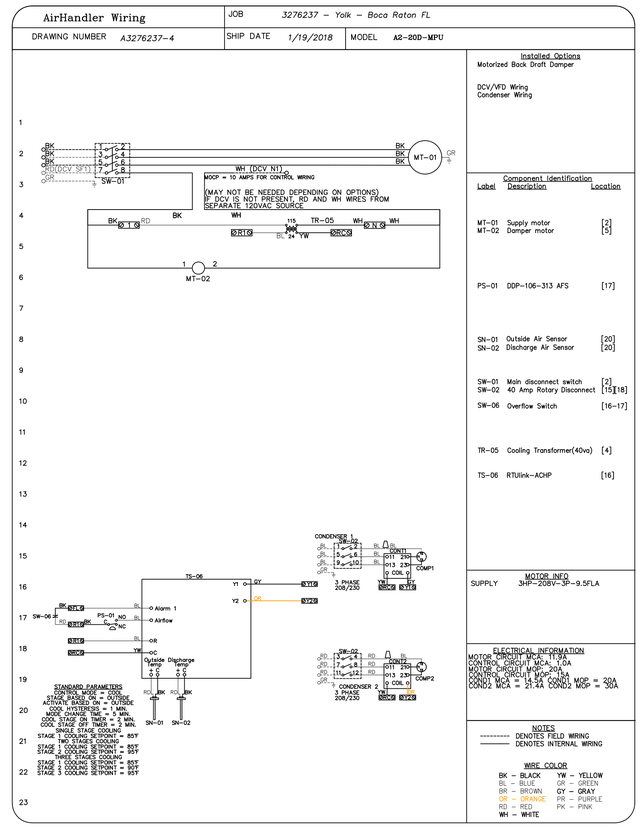
Installation Instructions:

1. Secure the fan base to the top of the curb using a minimum of (28) 1/4"–14 x 1" self drilling screws (steel zinc plated) evenly spaced on each side, secure through the fan base and into the curb.

2. Secure the curb to the roof framing members using StiffClip CL362–118 clips. Use a minimum of (2) clips per long side on each rail. Use (1) clip per short side on each rail. Use a minimum of (2) clips per side on the short side of each curb. Maximum spacing of clips on the long side of each curb is 12". For concrete, use (1) 5/8"x4" Kwik Bolt III or similar at each clip. For wood, use (2) 1/2"x3–1/2" Lag Screws at each clip. For steel, use (2) 5/16"x2" Stainless Steel bolts at each clip. Use (9) 1/4"–14 x 1" self drilling screws to attach each clip to the curb. Clip Part # CL362–118.

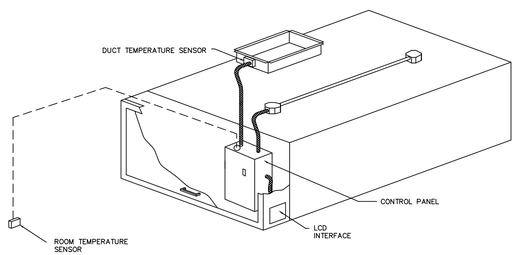


FAN #4 A2–20D–MPU – SUPPLY FAN (MPU–1)



Demand Control Ventilation Hood Control Panel Specifications:

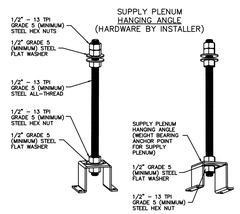
- Controls shall be listed by ETL (UL 508A) and shall comply with demand ventilation system turndown requirements outlined in IECC 403.2.8 (2015).
- The control enclosure shall be NEMA 1 rated and listed for installation inside of the exhaust hood utility cabinet. The control enclosure may be constructed of stainless steel or painted steel.
- Temperature probe(s) located in the exhaust duct riser(s) shall be constructed of stainless steel.
- A digital controller shall be provided to activate the hood exhaust fans dynamically based on a fixed differential between the ambient and duct temperatures sensors. This function shall meet the requirements of IMC 5.7.1.1.
- A digital controller shall provide adjustable hysteresis settings to prevent cycling of the fans after the cooking appliances have been turned off and/or the heat in the exhaust system is reduced.
- A digital controller shall provide an adjustable minimum fan run–time setting to prevent fan cycling.
- Variable Frequency Drives (VFDs) shall be provided for fans as required. The digital controller shall modulate the VFDs between a minimum setpoint and a maximum setpoint on demand. The duct temperature sensor input(s) to the digital controller shall be used to calculate the speed reference signal.
- The VFD speed range of operation shall be from 0% to 100% for the system, with the actual minimum speed set as required to meet minimum ventilation requirements.
- An internal algorithm to the digital controller shall modulate supply fan VFD speed proportional to all exhaust fans that are located in the same fan group as the supply fan.
- The system shall operate in PREP MODE during light cooking load or COOL DOWN MODE when sufficient heat remains underneath the hood system after cooking operations have completed. Operation during either of these periods will disable the supply fans and provide an exhaust fan speed that is equal to the minimum ventilation requirement.
- A digital controller shall disable the supply fan(s), activate the exhaust fan(s), activate the appliance shunt trip, and disable an electric gas valve automatically when fire condition is detected on a covered hood.
- A digital controller shall allow for external BMS fan control via Dry Contact (external control shall not override fan operation logic as required by code).
- An LCD interface shall be provided with the following features:
  a. On/Off push button fan & light switch activation
  b. Integrated gas valve reset for electronic gas valves (no reset relay required)
  c. VFD Fault display with audible & visual alarm notification
  d. Duct temperature sensor failure detection with audible & visual alarm notification
  e. Mis–wired duct temperature sensor detection with audible & visual alarm notification
  f. A single low voltage Cat–5 RJ45 wiring connection
  g. An energy savings indicator that utilizes measured kWh from the VFDs



TYPICAL HOOD CONTROL PANEL INSTALLATION

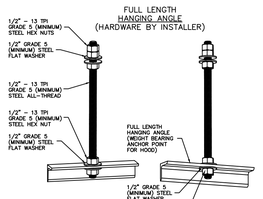
Sequence of Operations:
The hood control panel is capable of operating in one or more of the following states at any given time:

- Automatic: The system operates based on the differential between room temperature and the temperature at the hood cavity or exhaust duct collar. Fans activate at a configurable temperature differential threshold. Depending on the job configuration each fan zone can be configured as static or dynamic. These terms refer to whether a variable motor (such as EC Motors or VFD driven motors) modulate with temperature. If the panel is equipped with variable speed fans and the zone is defined as "dynamic", these will modulate within a user–defined range based on the temperature differential. Panels equipped with variable speed fans and a fan zone defined as "static", fans will run at a set speed calculated for the drive. Demand control ventilation systems are capable of modulating exhaust and make up air fan speeds per the requirements outlined in IECC 403.2.8.
- Manual: The system operates based on human input from an HMI.
- Schedule: A weekly schedule can be set to run fans for a specified period throughout the day. There are three occupied times per day to allow for the user to set up a time that is suitable to their needs. Any time that is within the defined occupied time, the system will run at modulation mode and follow the fan procedure algorithm based on temperature during this time. During unoccupied time, the system will have an extra offset to prevent unintended activation of the system during a time where the system is not being occupied.
- Other: The system operates based on the input from an external source (DDC, BMS or hard–wired interlock)



ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" – 13 TPI GRADE 5 (MINIMUM) ALL–THREAD. SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" – 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION ABOVE CEILING ANCHORS. SINGLE HEX NUT BENEATH HANGING ANGLE IS ACCEPTABLE FOR PSP HANGING ANGLES. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT–LBS.



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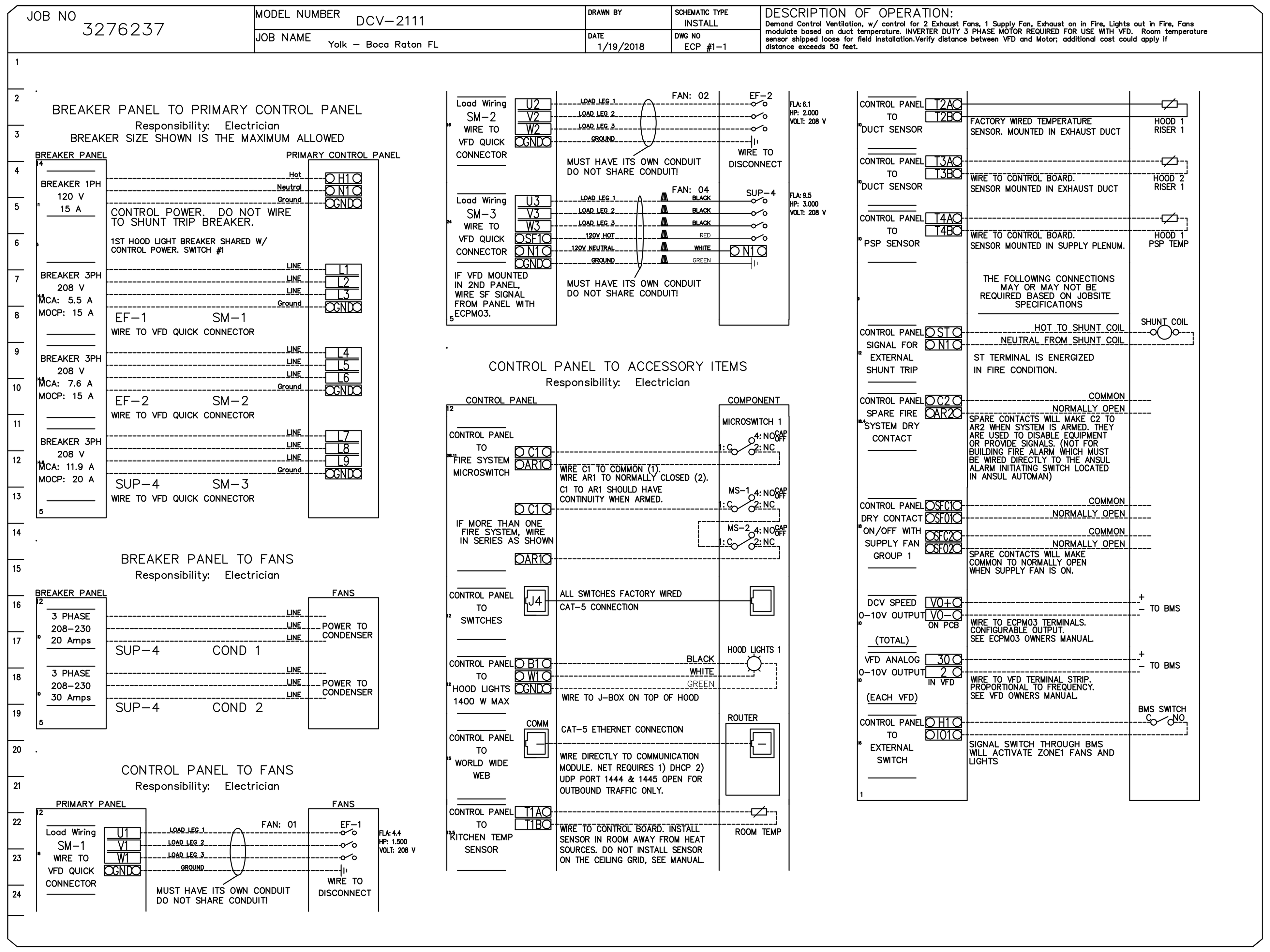
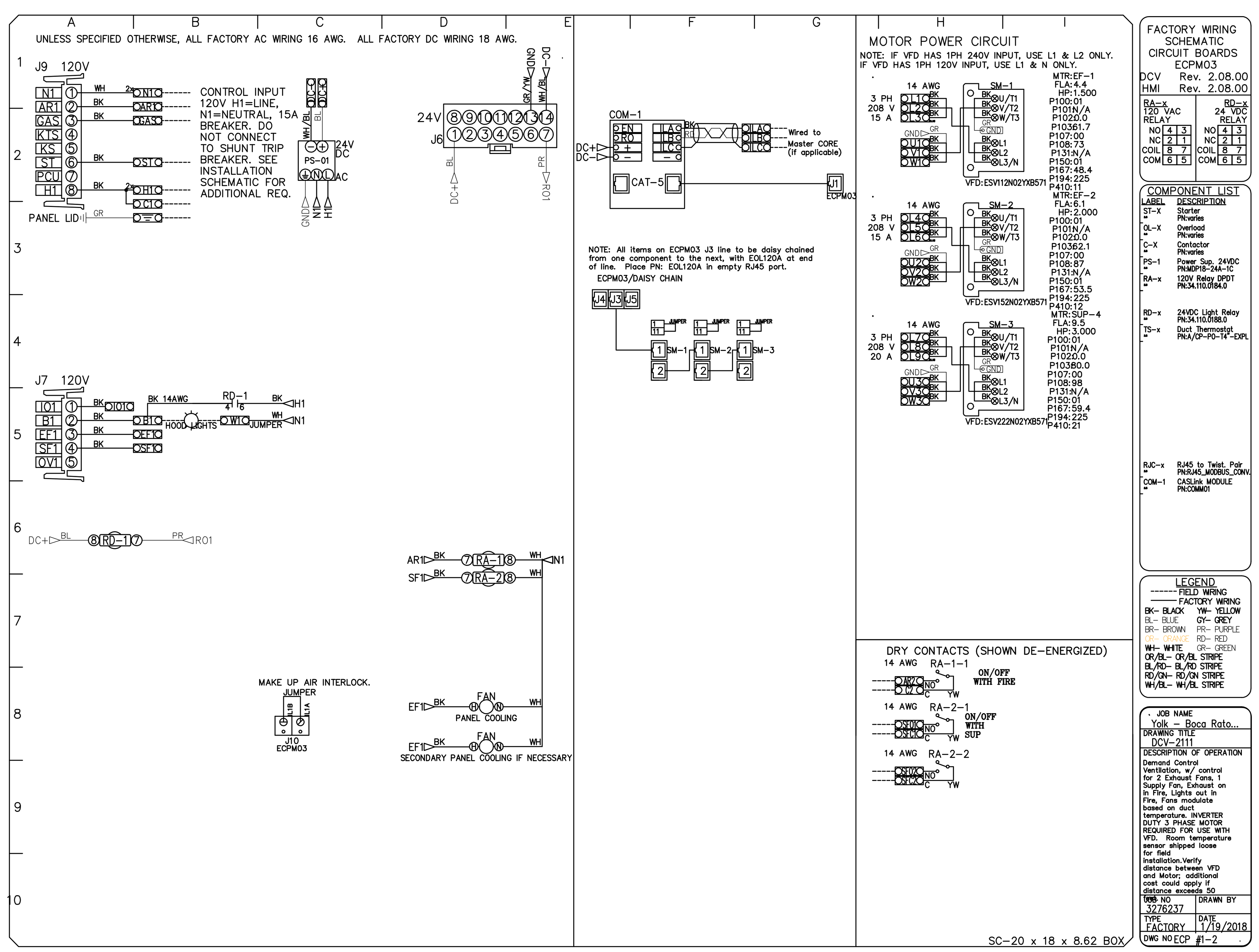
SHEET NO.
M4.0

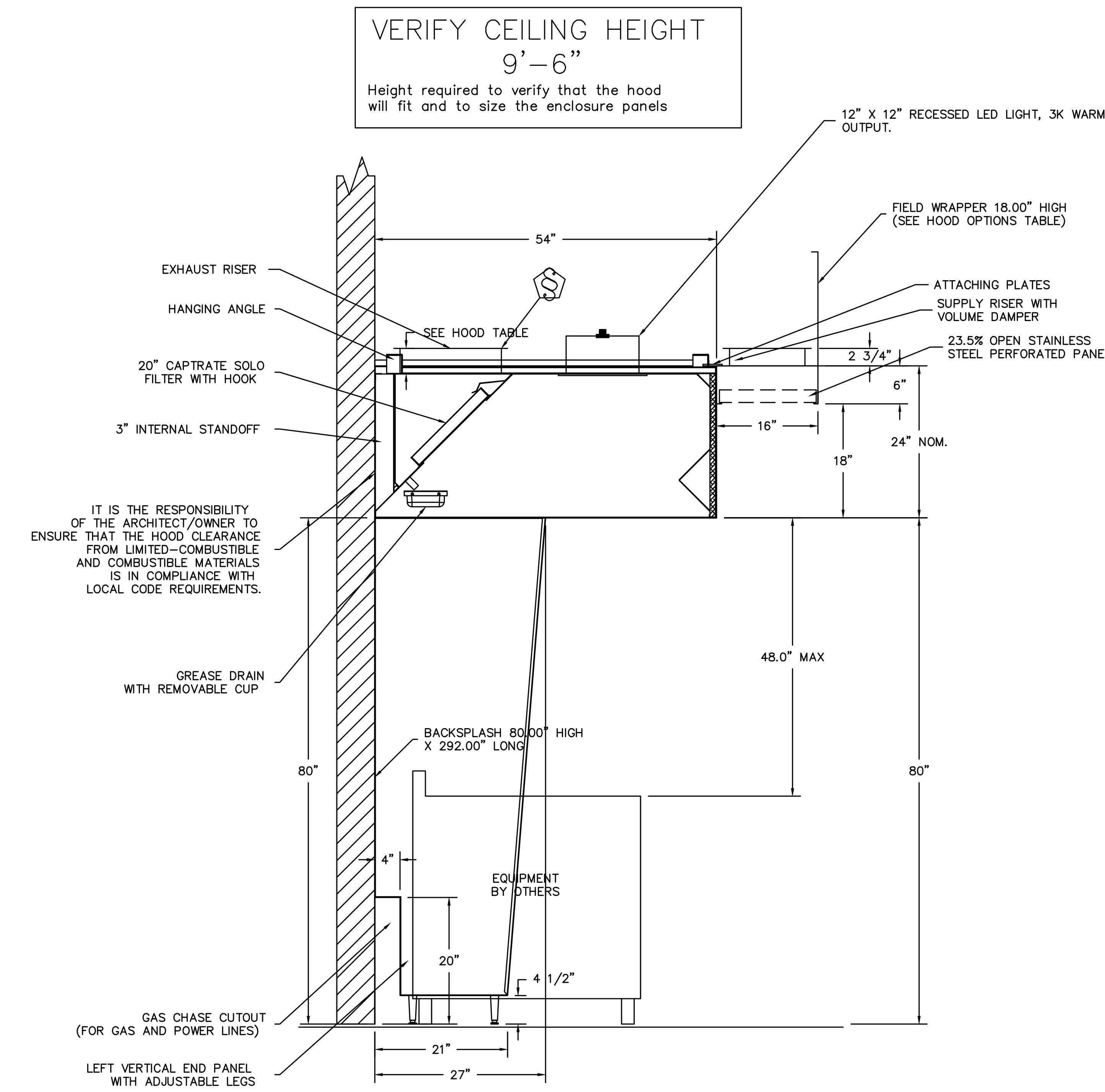
ELECTRICAL PACKAGES – Job#3276237

NO.	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED					
				LOCATION	QUANTITY		FAN TAG	TYPE	ϕ	H.P.	VOLT	FLA
1		DCV–2111	Utility Cabinet Left	03 – Utility Cabinet Left	1 Light	Smart Controls DCV	EF–1	Exhaust	3	1.500	208	4.4
				Hood # 1	1 Fan		EF–2	Exhaust	3	2.000	208	6.1
							MPU–1	Supply	3	3.000	208	9.5
2		Switches		01 – Face Mount Left Side of Hood / Hood # 3	1 Fan							

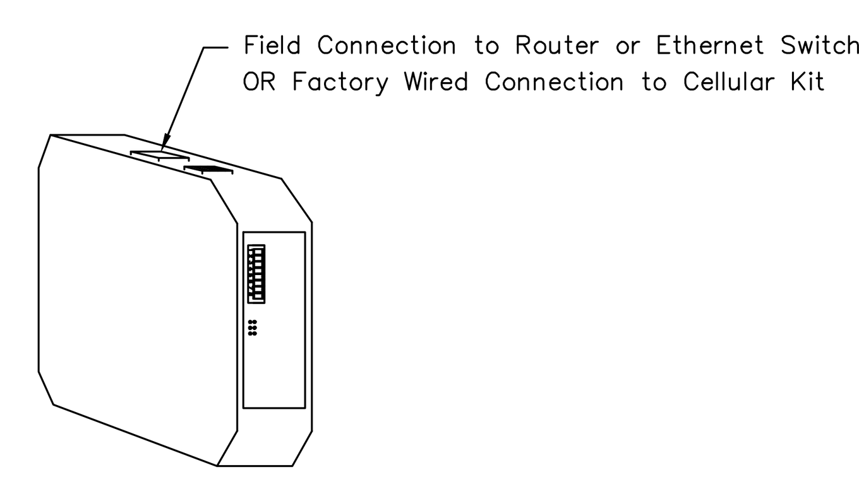
JOB NO	MODEL NUMBER	DRAWN BY	SCHEMATIC TYPE	DESCRIPTION OF OPERATION:
3276237	DCV–2111		INSTALL	Demand Control Ventilation, w/ control for 2 Exhaust Fans, 1 Supply Fan, Exhaust on in Fire, Lights out in Fire, Fans modulate based on duct temperature. INVERTER DUTY 3 PHASE MOTOR REQUIRED FOR USE WITH VFD. Room temperature sensor shipped loose for field installation.Verify distance between VFD and Motor; additional cost could apply if distance exceeds 50 feet.
	JOB NAME: Yolk – Boca Raton FL	DATE: 1/19/2018	DWG NO: ECP #1–1	







SECTION VIEW – MODEL 5424ND-2-PSP-F
HOOD – #1 (H-1L)



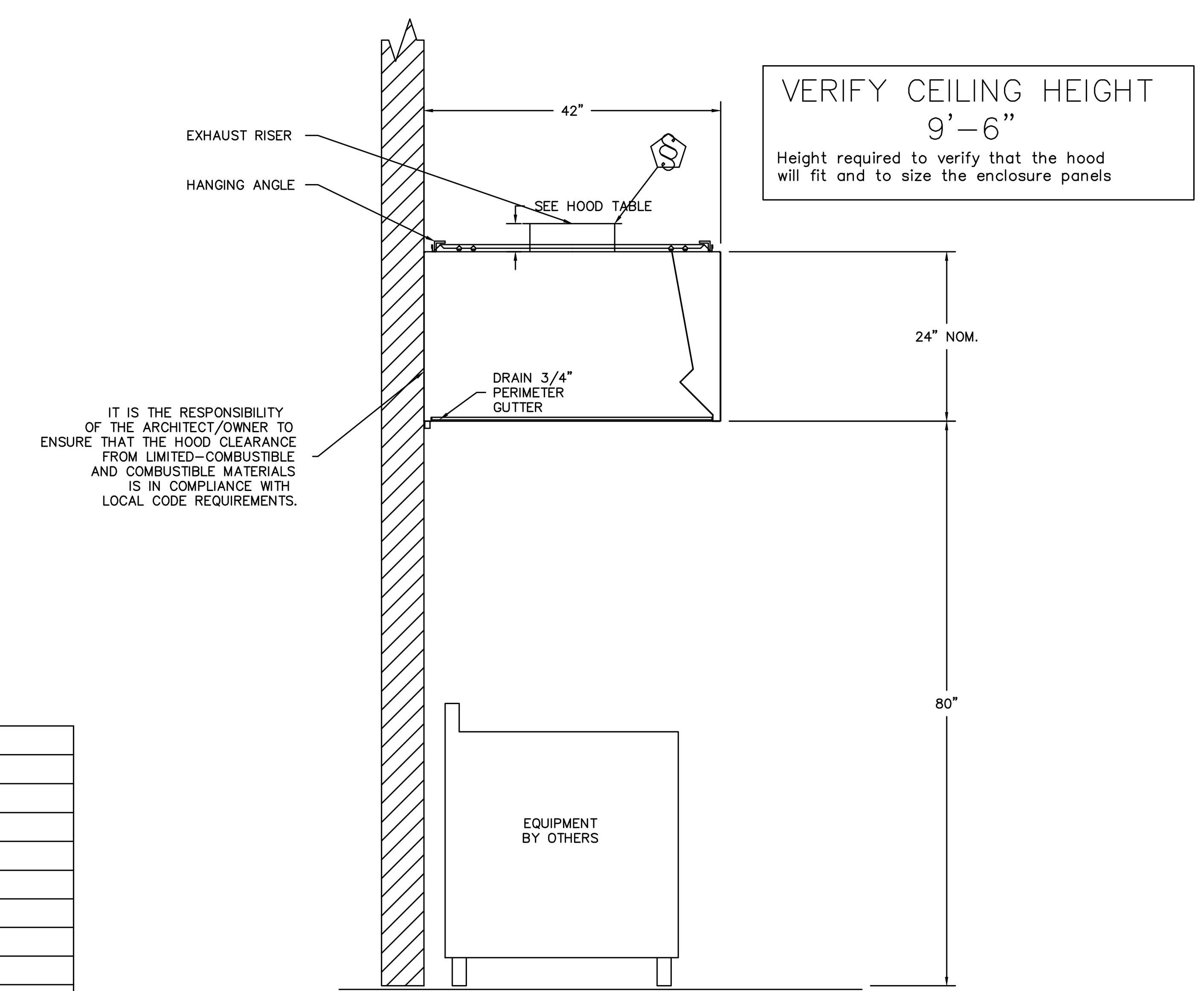
CASlink Monitor and Control

– Hood control panel to support communications to cloud-based Building Management System.
– Hood Control Panel to allow cloud-based Building Management System to monitor real time parameters outlined as MONITOR in the points list.
– Hood Control Panel to allow cloud-based Building Management System to control parameters outlined as CONTROL in the points list.
– Hood control panel to allow remote changes to system setting such as: VFD Frequencies, ECM speeds, temperature set points, fan and wash schedules, etc.

MONITORING AND CONTROL POINTS LIST

DCV Packages	Function
Room Temperature	MONITOR
Duct Temperature(s)	MONITOR
MUA Discharge Temperature	MONITOR
Kitchen RTU Discharge Temperature	MONITOR
Fan Speed	MONITOR
Fan Amperage	MONITOR
Fan Power	MONITOR
VFD Faults	MONITOR
Controller Faults	MONITOR
Fan Faults	MONITOR
Fan Status	MONITOR
PCU Faults	MONITOR
PCU Filter Clog Percentages	MONITOR
Fire Condition	MONITOR
CORE Fire System	MONITOR
Building Pressures	MONITOR
Prep Time Button	MONITOR & CONTROL
Fans Button	MONITOR & CONTROL
Lights Button	MONITOR & CONTROL
Wash Button	MONITOR & CONTROL

SC Packages	Function
Room Temperature(s)	MONITOR
Duct Temperature(s)	MONITOR
MUA Discharge Temperature	MONITOR
Kitchen RTU Discharge Temperature	MONITOR
Controller Faults	MONITOR
Fan Faults	MONITOR
Fan Status	MONITOR
PCU Faults	MONITOR
PCU Filter Clog Percentages	MONITOR
Fire Condition	MONITOR
CORE Fire System	MONITOR
Building Pressures	MONITOR
Fans Button(s)	MONITOR & CONTROL
Lights Button(s)	MONITOR & CONTROL
Wash Button	MONITOR & CONTROL



SECTION VIEW – MODEL 4224VHB-G-ND
HOOD – #3 (H-3)

SHEET NO:

M5.0

PLUMBING SYMBOLS LEGEND

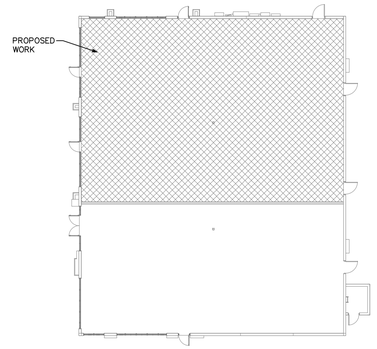
- FLOOR DRAIN
- HOSE BIBB
- CLEANOUT
- RELIEF VALVE
- AIR CHAMBER
- UNION
- SOIL OR WASTE LINE
- SANITARY VENT LINE
- DOMESTIC COLD WATER
- DOMESTIC HOT WATER
- DOMESTIC WATER RECIRCULATION
- PRESSURE & TEMP. RELIEF LINE
- CONDENSATE DRAIN LINE
- RAIN WATER LEADER
- GAS LINE
- SAFEWASTE LINE
- FIRE PROTECTION
- SHUT OFF VALVE
- SAFEPAN LINE
- FIRE SPRINKLER HEAD
- PIPE TURN UP
- PIPE TURN DOWN
- P-TRAP

PLUMBING ABBREVIATION LEGEND

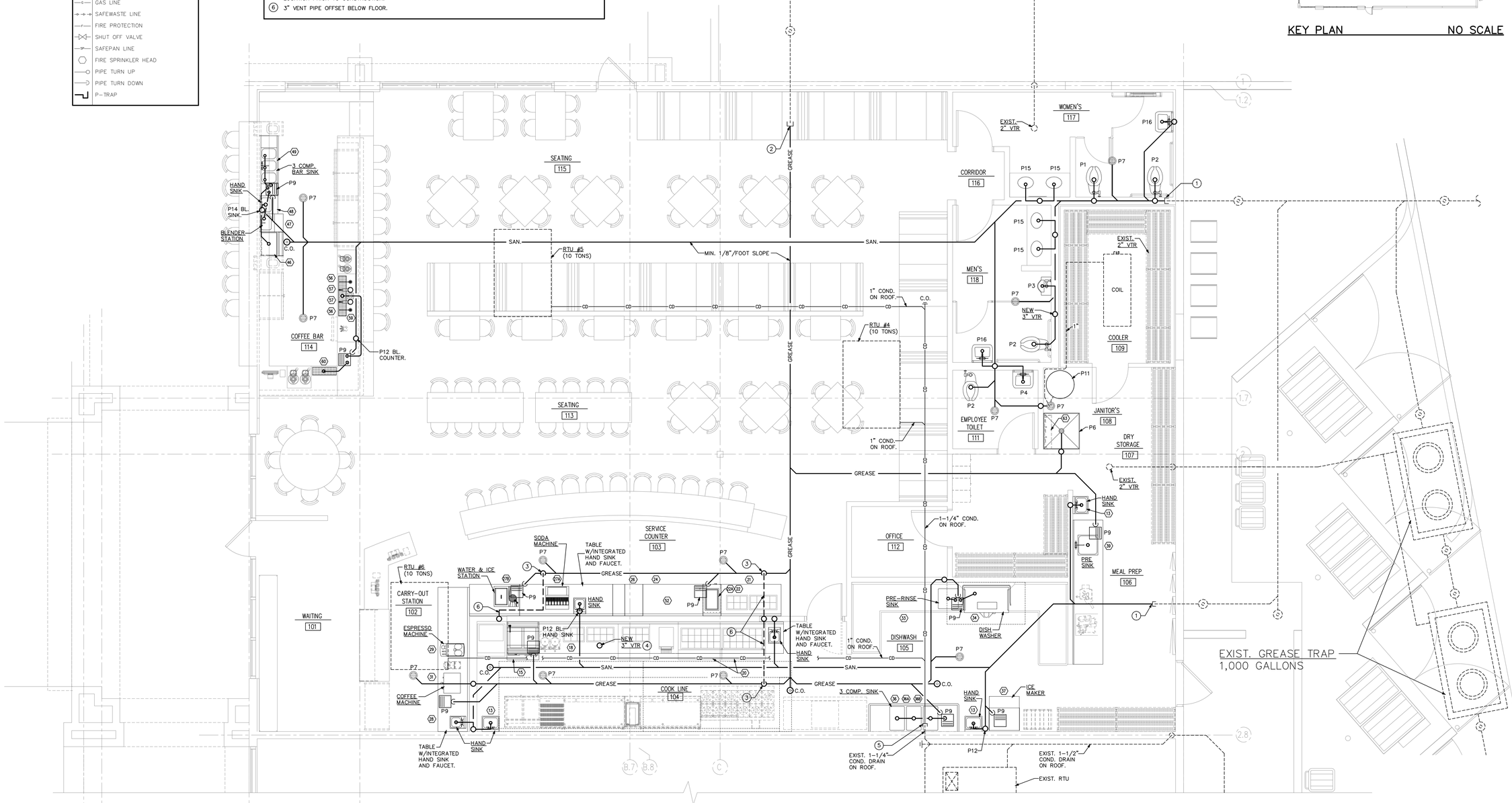
DN.	DOWN	C.C.	CENTER TO CENTER	F.U.	FIXTURE UNITS
EXT.	EXTERIOR	N.T.S.	NOT TO SCALE	H.B.	HOSE BIBBS
F.D.	FLOOR DRAIN	MFGR.	MANUFACTURER	C.O.	CLEANOUT
F.F.	FINISH FLOOR	S.O.V.	SHUT OFF VALVE	E.W.H.	ELECTRIC WATER HEATER
A.F.F.	ABOVE FINISH FLOOR	W.C.	WATER CLOSET	JAN.SK.	JANITOR SINK
V.T.R.	VENT THRU ROOF	LAV.	LAVORATORY	P & T	PRESSURE & TEMPERATURE
TYP.	TYPICAL	SK.	SINK	RWL.	RAIN WATER LEADER
R.D.	ROOF DRAIN	D.W.	DISH WASHER		
REV.	REVISION	E.D.F.	ELECTRIC DRINKING FOUNTAIN		
O.C.	ON CENTER	UR.	URINAL		

SPECIFIC PLUMBING NOTES

1. CONNECT TO EXISTING SANITARY PIPING BELOW FLOOR IN THIS AREA. CONTRACTOR SHALL VERIFY EXACT LOCATION PRIOR TO CONSTRUCTION.
2. CONNECT TO EXISTING GREASE WASTE PIPING BELOW FLOOR IN THIS AREA. CONTRACTOR SHALL VERIFY EXACT LOCATION PRIOR TO CONSTRUCTION.
3. VENT PIPE SHALL RISE VERTICALLY A MINIMUM OF 6" ABOVE HORIZONTAL DRAIN PRIOR TO OFFSET BELOW SLAB.
4. REFER TO SANITARY ISOMETRIC FOR ALL VENT PIPE ROUTING AND SIZING.
5. CONNECT TO EXISTING CONDENSATE PIPING ON ROOF IN THIS AREA. CONTRACTOR SHALL VERIFY EXACT LOCATION PRIOR TO CONSTRUCTION.
6. 3" VENT PIPE OFFSET BELOW FLOOR.



KEY PLAN NO SCALE



(SANITARY AND GREASE WASTE PIPING)

1 FLOOR PLAN - PLUMBING

SCALE: 1/4"=1'-0"

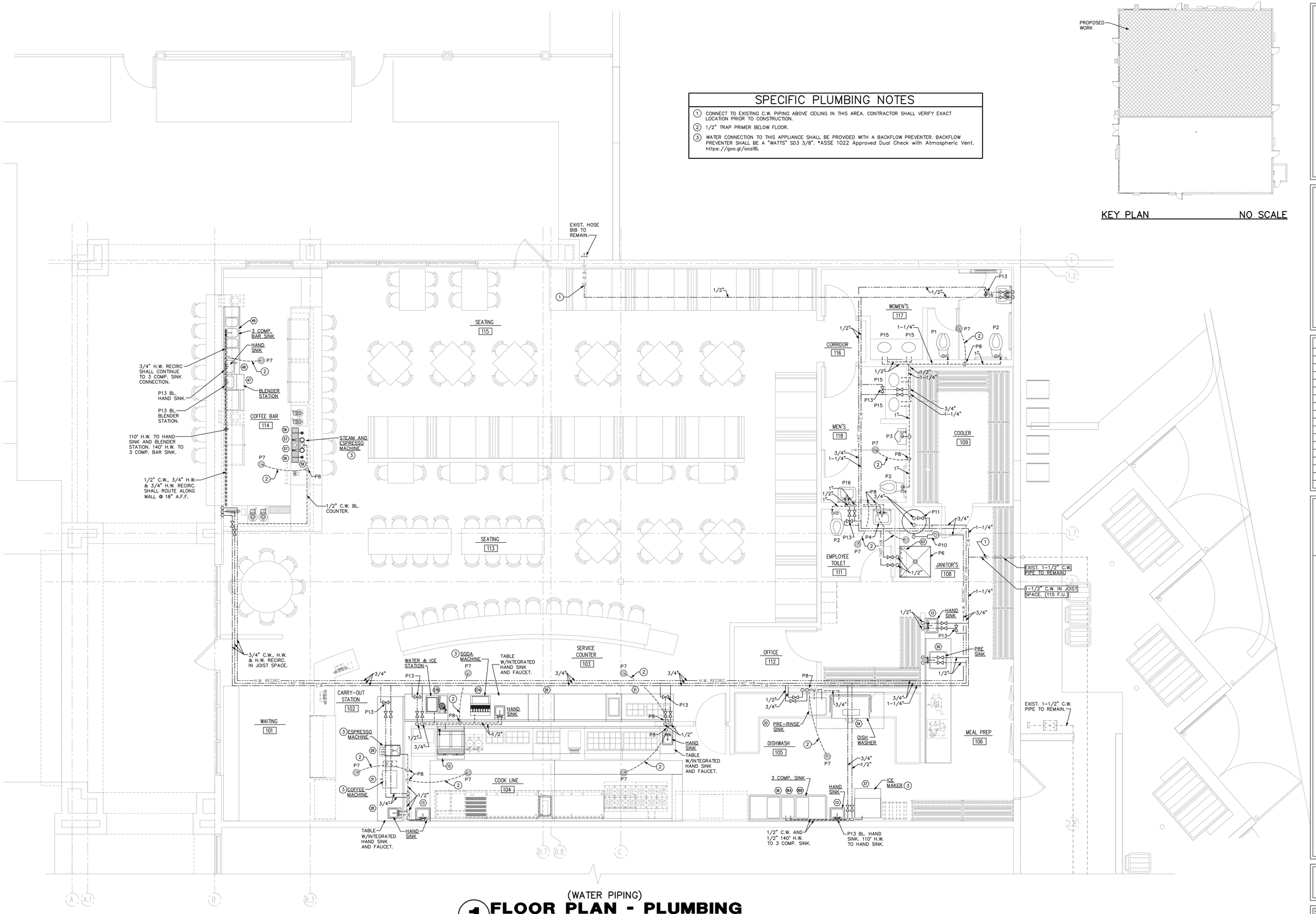
SHEET NO.

P1.0

SPECIFIC PLUMBING NOTES

1. CONNECT TO EXISTING C.W. PIPING ABOVE CEILING IN THIS AREA. CONTRACTOR SHALL VERIFY EXACT LOCATION PRIOR TO CONSTRUCTION.
2. 1/2" TRAP PRIMER BELOW FLOOR.
3. WATER CONNECTION TO THIS APPLIANCE SHALL BE PROVIDED WITH A BACKFLOW PREVENTER. BACKFLOW PREVENTER SHALL BE A "WATTS" SD3 3/8". *ASSE 1022 Approved Dual Check with Atmospheric Vent. https://goo.gl/aozi8L

KEY PLAN NO SCALE



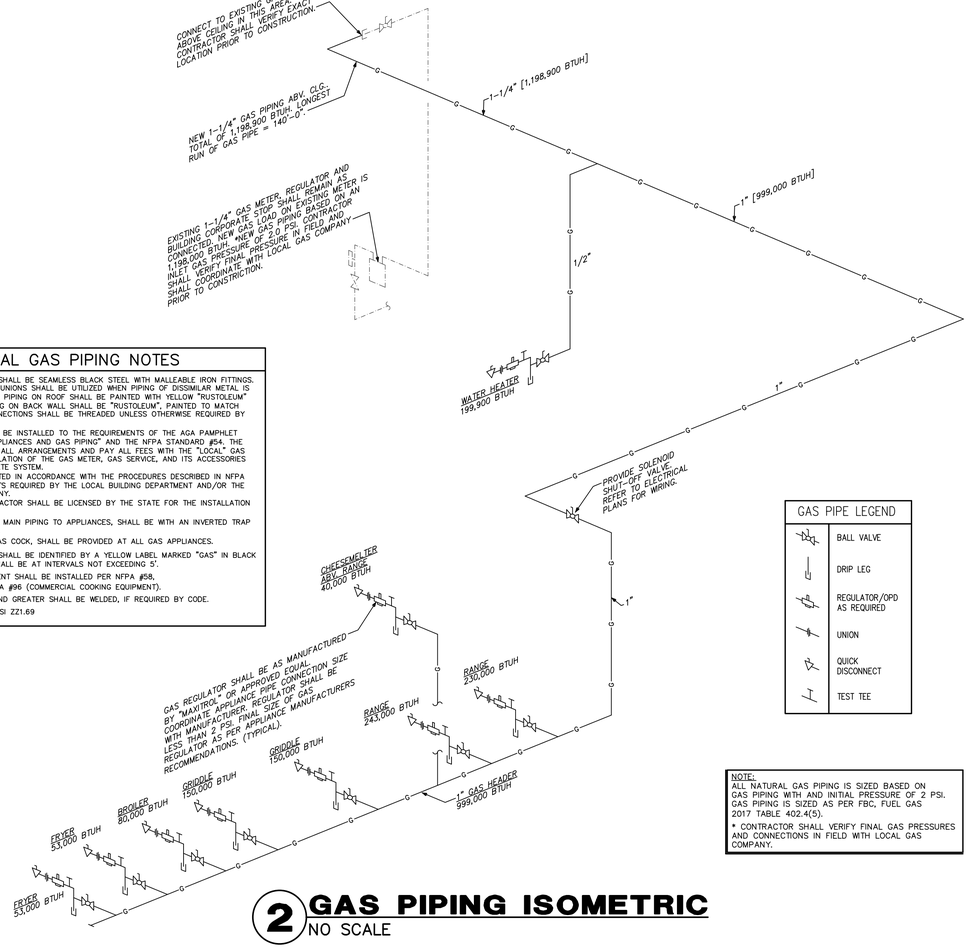
(WATER PIPING)

1 FLOOR PLAN - PLUMBING

SCALE: 1/4"=1'-0"

SHEET NO.

P2.0



GENERAL GAS PIPING NOTES

1. GAS PIPING AND FITTINGS SHALL BE SEAMLESS BLACK STEEL WITH MALLEABLE IRON FITTINGS. DIELECTRIC COUPLINGS OR UNIONS SHALL BE UTILIZED WHEN PIPING OF DISSIMILAR METAL IS CONNECTED. EXTERIOR GAS PIPING ON ROOF SHALL BE PAINTED WITH YELLOW "RUSTOLEUM" PAINT. EXPOSED GAS PIPING ON BACK WALL SHALL BE "RUSTOLEUM", PAINTED TO MATCH BUILDING. GAS PIPING CONNECTIONS SHALL BE THREADED UNLESS OTHERWISE REQUIRED BY CODE.
2. GAS PIPING SYSTEM SHALL BE INSTALLED TO THE REQUIREMENTS OF THE AGA PAMPHLET "INSTALLATION OF GAS APPLIANCES AND GAS PIPING" AND THE NFPA STANDARD #54. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS AND PAY ALL FEES WITH THE "LOCAL" GAS COMPANY FOR THE INSTALLATION OF THE GAS METER, GAS SERVICE, AND ITS ACCESSORIES NECESSARY FOR A COMPLETE SYSTEM.
3. GAS PIPING SHALL BE TESTED IN ACCORDANCE WITH THE PROCEDURES DESCRIBED IN NFPA #54, AND ANY OTHER TESTS REQUIRED BY THE LOCAL BUILDING DEPARTMENT AND/OR THE LOCAL GAS UTILITY COMPANY.
4. THE INSTALLING SUBCONTRACTOR SHALL BE LICENSED BY THE STATE FOR THE INSTALLATION OF GAS PIPING.
5. RUNOUT PIPING, FROM THE MAIN PIPING TO APPLIANCES, SHALL BE WITH AN INVERTED TRAP CONNECTION AT THE MAIN.
6. A 12" DIRT LEG, AND A GAS COCK, SHALL BE PROVIDED AT ALL GAS APPLIANCES.
7. ALL EXPOSED GAS PIPING SHALL BE IDENTIFIED BY A YELLOW LABEL MARKED "GAS" IN BLACK LETTERS. THE MARKERS SHALL BE AT INTERVALS NOT EXCEEDING 5'.
8. ALL GAS BURNING EQUIPMENT SHALL BE INSTALLED PER NFPA #58, NFPA #54 (L.P.G.) OR NFPA #96 (COMMERCIAL COOKING EQUIPMENT).
9. GAS PIPE SIZES 2-1/2" AND GREATER SHALL BE WELDED, IF REQUIRED BY CODE.
10. GAS CONNECTIONS PER ANSI ZZ1.69

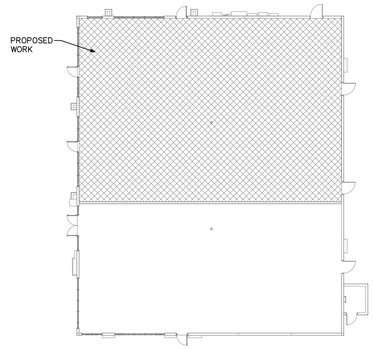
GAS PIPE LEGEND

	BALL VALVE
	DRIP LEG
	REGULATOR/OPD AS REQUIRED
	UNION
	QUICK DISCONNECT
	TEST TEE

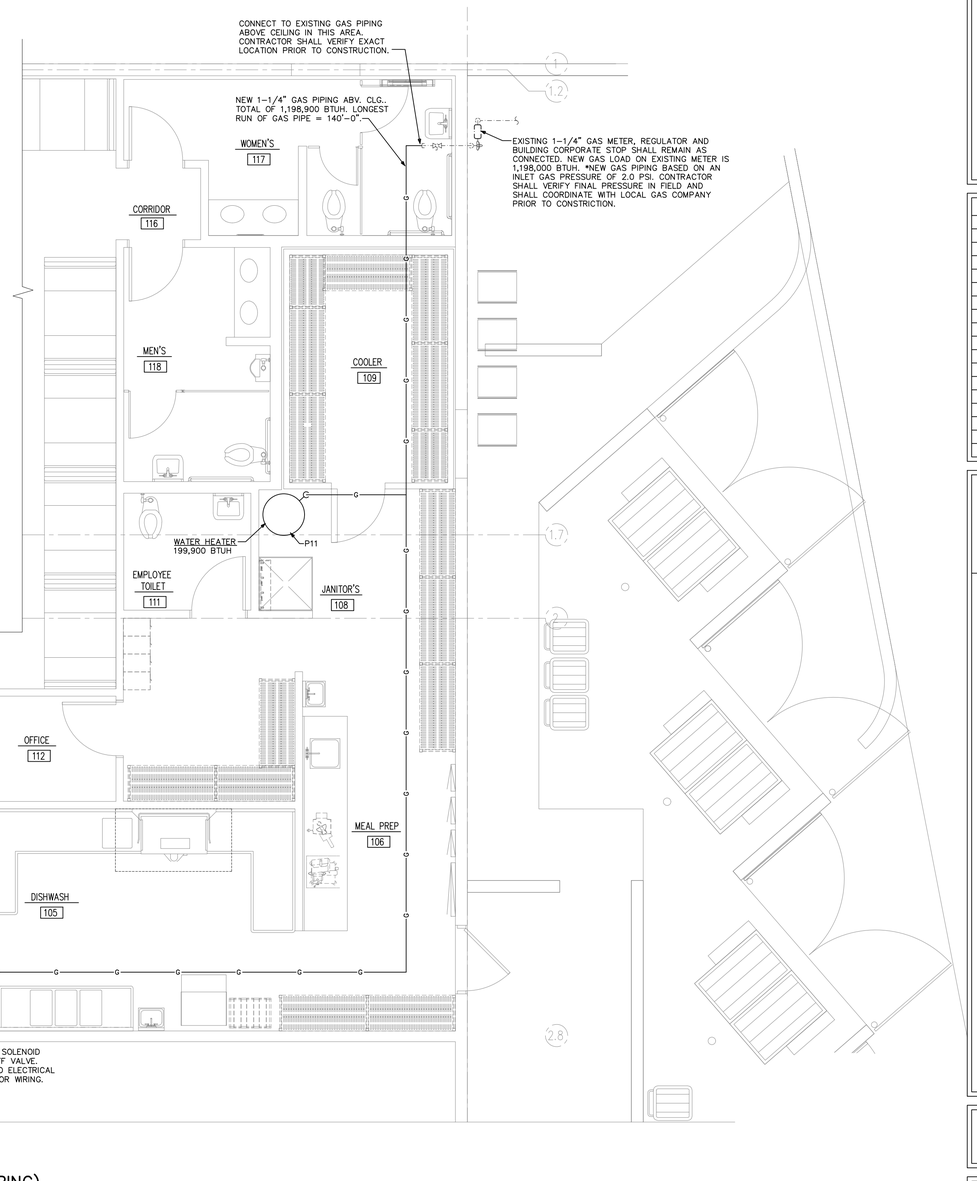
NOTE:
ALL NATURAL GAS PIPING IS SIZED BASED ON GAS PIPING WITH AND INITIAL PRESSURE OF 2 PSI. GAS PIPING IS SIZED AS PER FBC, FUEL GAS 2017 TABLE 402.4(5).

* CONTRACTOR SHALL VERIFY FINAL GAS PRESSURES AND CONNECTIONS IN FIELD WITH LOCAL GAS COMPANY.

2 GAS PIPING ISOMETRIC
NO SCALE



KEY PLAN NO SCALE



(GAS PIPING)

1 PARTIAL FLOOR PLAN - PLUMBING
SCALE: 1/4"=1'-0"

SHEET NO.
P3.0

PLUMBING FIXTURE SCHEDULE

P-1 (FLOOR MOUNTED FLUSH VALVE WATER CLOSET)
SHALL BE AM AMERICAN STANDARD MADERA FLUSH VALVE TOILET MODEL 2855.016 15" HIGH, 1.6 GPF, VITREOUS CHINA. FLUSH VALVE SHALL BE A "SLOAN ROYAL" FLUSHOMETER MODEL 115. SEAT SHALL BE AN ELONGATED OPEN FRONT POLYPROPYLENE SEAT WITHOUT COVER.

WATER CLOSET & VALVE: https://goo.gl/ABwCDc

P-2 (HANDICAPPED FLOOR MOUNTED FLUSH VALVE WATER CLOSET)
SHALL BE AM AMERICAN STANDARD MADERA FLUSH VALVE TOILET MODEL 3461.128 16-1/2" HIGH, 1.6 GPF, VITREOUS CHINA. FLUSH VALVE SHALL BE A "SLOAN ROYAL" FLUSHOMETER MODEL 115. SEAT SHALL BE AN ELONGATED OPEN FRONT POLYPROPYLENE SEAT WITHOUT COVER.

WATER CLOSET & VALVE: https://goo.gl/1cXuIu

P-3 (HANDICAPPED URINAL AND FLUSH VALVE)
SHALL BE AN AMERICAN STANDARD WASHBROOK MODEL 6501.511 3/4" TOP SPUD. 0.125 TO 1.0 GPF. URINAL INCLUDES AMERICAN STANDARD MANUAL FLUSH VALVE MODEL 6590.001 3/4" TOP SPUD.

URINAL & VALVE: https://goo.gl/ylsTAf

P-4 (HANDICAPPED WALL HUNG LAVATORY)
SHALL BE AN AMERICAN STANDARD LUCERNE LAVATORY MODEL 0356.041 (CENTER HOLE ONLY), VITREOUS CHINA, WALL MOUNT WITH EXPOSED BRACKET SUPPORT. FAUCET SHALL BE A "AMERICAN STANDARD" MODEL 1340M.105 METERING FAUCET W/MIXING VALVE SET TO 110°F. UNIT IS ADA COMPLIANT, ADJUSTABLE RUN TIME FROM 2 TO 15 SECONDS, OPENS WITH PUSH, 0.20 MAX GALLON/CYCLE. WATER PIPING AND P-TRAP SHALL BE COVERED WITH AN UNDER-SINK PROTECTIVE PIPE COVER KIT BY TRUEBRO (TRUEBRO.COM) OR APPROVED EQUAL.

LAVATORY: https://goo.gl/2RKzJN | FAUCET: https://goo.gl/o6WUQB

P-5 (HANDICAPPED COUNTER TOP LAVATORY)
SHALL BE AN AMERICAN STANDARD MODEL RONALYN MODEL 0490.156 (CENTER HOLE ONLY) VITREOUS CHINA SELF-RIMMING. FAUCET SHALL BE A "AMERICAN STANDARD" MODEL 1340M.105 METERING FAUCET W/MIXING VALVE SET TO 110°F. UNIT IS ADA COMPLIANT, ADJUSTABLE RUN TIME FROM 2 TO 15 SECONDS, OPENS WITH PUSH, 0.20 MAX GALLON/CYCLE. WATER PIPING AND P-TRAP SHALL BE COVERED WITH AN UNDER-SINK PROTECTIVE PIPE COVER KIT BY TRUEBRO (TRUEBRO.COM) OR APPROVED EQUAL.

LAVATORY: https://goo.gl/TiWyJ3 | FAUCET: https://goo.gl/o6WUQB

P-6 (FLOOR MOUNTED INTERIOR CANWASH/MOP RECEPTOR)
SHALL BE A FLORESTONE #50 36X36X6" MOLDED MOP BASIN WITH 3" OUTLET. PROVIDE WITH MR-371 THREADED FAUCET WITH WALL BRACE, PAIL HOOK AND APPROVED VACUUM BREAKER, MR-370 HOSE & HOSE BRACKET, MR-372 MOP HANGER, MR-373 BUMBER GUARDS AND MR-377 STAINLESS TEEL WALL GUARD.

SINK: https://goo.gl/NNh75Y | FAUCET/ACCESSORIES: https://goo.gl/iwcWM7

P-7 (FLOOR DRAIN WITH TRAP PRIMER)
SHALL BE A JOSAM 30003-A-50 SERIES COATED CAST IRON FLOOR DRAIN WITH 1/2" TRAP PRIMER. 3"ø PIPE CONNECTION, 6"ø DRAIN TOP, STRAINER TYPE 6A. TWO-PIECE BODY WITH DOUBLE DRAINAGE FLANGE, WEJLOC INVERTIBLE NON-PUNCTURING FLASHING COLLAR, WEEPHOLES, BOTTOM OUTLET AND ADJUSTABLE SATIN NIKALOY ROUND SUPER-FLO STRAINER.

DRAIN: https://goo.gl/OG5ily

P-8 (AUTOMATIC TRAP PRIMER)
SHALL BE A IPS CORPORATION "SIOUX CHIEF" MODEL 695 TRAP PRIMER WITH VACUUM BREAKER. AUTOMATIC TRAP PRIMER VALVE SHALL ACTIVATE WITH A 10 PSIG PRESSURE DROP BETWEEN 30-150 PSIG.

DRAIN: https://goo.gl/WqkVxK

P-9 (FLOOR SINK W/SEDIMENT BUCKET)
SHALL BE A JOSAM 49340A-3-31 SERIES SQUARE CAST IRON 8" DEEP SUPER-FLO-SEPTOR FLOOR SINK WITH PORC-COATED INTERIOR, DOUBLE DRAINAGE FLANGE WITH WEEPHOLES, BOTTOM OUTLET, ALUMINUM INTERNAL DOME STRAINER, AND CAST IRON, NON-TRAFFIC, PORC-COATED, ANTI-TILTING GRATE. WITH HALF GRATE AND ALUMINUM SEDIMENT BUCKET.

DRAIN: https://goo.gl/TCUVCG

P-10 (HOT WATER CIRCULATOR PUMP W/REMOTE TIMER)
SHALL BE A "GRUNDFUS" MODEL #007-F5, GRAINGER ITEM #4PC90, INLINE CIRCULATOR PUMP, CLOSED LOOP SYSTEM, 1/25 HP, 1 PHASE, VOLTAGE 115, 3/4" INLET/OUTLET. WET ROTOR, MAINTENANCE FREE. TIMER SHALL BE A "INTERMATIC" MODEL #MLT2EQTUZH-120, GRAINGER ITEM #20XF62, 120V/1ø, 21 AMPS, MAX. TIME SETTING: 23 HR. 45 MIN.

RECIRCULATING PUMP: https://goo.gl/eyRJUI | TIMER: https://goo.gl/6T2Jv2

P-11 (GAS WATER HEATER - DIRECT VENT - SEALED COMBUSTION)
SHALL BE A STATE "ULTRA FORCE" MODEL SUF100 199NE(A) GAS FIRED COMMERCIAL WATER HEATER. 199,900 BTU INPUT TO PRODUCE 294 GALLONS PER HOUR OF HOT WATER AT 80° RISE. INSULATED GLASSLINED 100 GALLON STORAGE TANK. WATER HEATER SHALL MEET OR EXCEED ALL APPLICABLE SECTIONS OF ASHRAE SECTIONS 90-80A AND NAECA REQUIREMENTS FOR ENERGY CONSERVATION. * HEATER SHALL BE PROVIDED WITH OPTIONAL CONCENTRIC VENT KIT.

WATER HEATER: https://goo.gl/eh4Uok

P-12 (3" STUDOR VENT - AIR ADMITTANCE VALVE)
SHALL BE A IPS CORPORATION "STUDOR MINI-VENT". 3" VENT.

STUDOR VENT: https://goo.gl/fxH9PT

P-13 (1/2" MIXING VALVE)
1/2" MIXING VALVE SHALL BE A "WATTS" MODEL LF1170-PEX-M2 SET AT 110°. LEAD FREE* CAST COPPER SILICON ALLOY BODY CONSTRUCTION

MIXING VALVE: https://goo.gl/GtO8b7

P-14 (3" STUDOR VENT - AIR ADMITTANCE VALVE)
SHALL BE A IPS CORPORATION "STUDOR MAXI-VENT". 3" VENT.

STUDOR VENT: https://goo.gl/QJYjtu

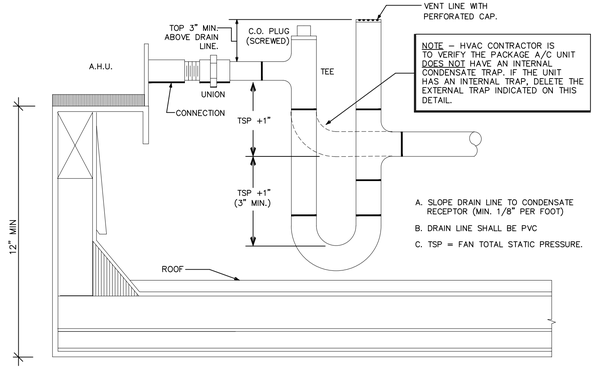
P-15 (HANDICAPPED COUNTER TOP LAVATORY W/ELECTRONIC SENSOR)
SHALL BE AN AMERICAN STANDARD MODEL AQUALYN MODEL 0475.047 (CENTER HOLE ONLY) VITREOUS CHINA SELF-RIMMING. FAUCET SHALL BE A "SLOAN" SENSOR OPERATED ELECTRONIC HAND WASHING FAUCET OPTIMA SYSTEM, MODEL ETF-610 WITH BDM AND BDT VARIATION MIXING VALVES FOR HOT AND COLD WATER SUPPLY, 120V CONTROL. SEE ELECTRICAL PLANS FOR WIRING. MIXING VALVE TO DELIVER TEMPERED WATER AT A TEMPERATURE NOT TO EXCEED 105 DEGREES. PROVIDE PROTECTIVE HOT WATER LINE TO MEET HANDICAP CODE REQ. ON ALL INSTALLATIONS WHERE THE PIPING IS EXPOSED TO THE USER.

SINK: https://goo.gl/4jrLJg | FAUCET: https://goo.gl/SL8NZE

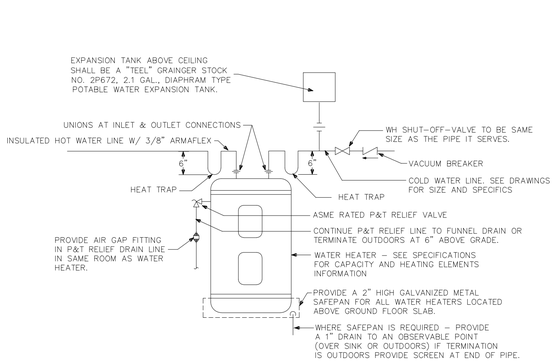
P-16 (HANDICAPPED WALL MOUNTED LAVATORY W/ELECTRONIC SENSOR)
SHALL BE AN AMERICAN STANDARD WHEELCHAIR USERS LAVATORY MODEL 9140.047 (CENTER HOLE ONLY), VITREOUS CHINA, FLOOR MOUNTED WALL CARRIER WITH CONCEALED ARMS SUPPORT - WALL CARRIER SHALL BE A ZURN MODEL Z1231. FAUCET SHALL BE A "SLOAN" SENSOR OPERATED ELECTRONIC HAND WASHING FAUCET OPTIMA SYSTEM, MODEL ETF-610 WITH BDM AND BDT VARIATION MIXING VALVES FOR HOT AND COLD WATER SUPPLY, 120V CONTROL. SEE ELECTRICAL PLANS FOR WIRING. MIXING VALVE TO DELIVER TEMPERED WATER AT A TEMPERATURE NOT TO EXCEED 105 DEGREES. PROVIDE PROTECTIVE HOT WATER LINE TO MEET HANDICAP CODE REQ. ON ALL INSTALLATIONS WHERE THE PIPING IS EXPOSED TO THE USER.

FAUCET: https://goo.gl/MdHcjb | SINK: https://goo.gl/EfrNa | ARMS: https://goo.gl/PB8cwb

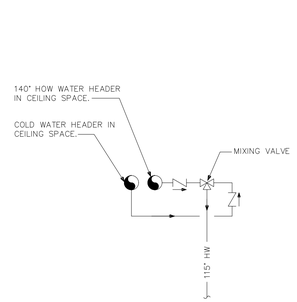
NOTES:
1.) ALL PLUMBING FIXTURES SHALL BE AS SPECIFIED OR APPROVED EQUAL.
2.) PROVIDE ANGLE STOPS ON ALL WATER SERVICE LINES TO FIXTURES FOR INDIVIDUAL SHUT-OFF.



1 CONDENSATE P-TRAP DETAIL
NOT TO SCALE



2 WATER HEATER DETAIL
NO SCALE



4 MIXING VALVE DETAIL
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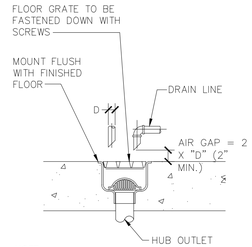
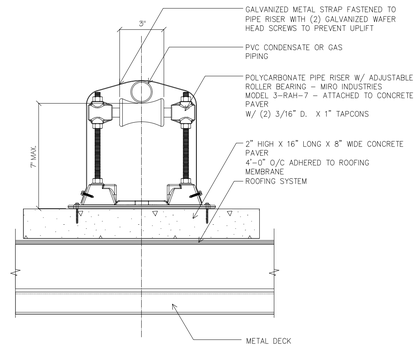


5 FLOOR SINK CONN. DETAIL
NO SCALE



3 CONDENSATE DRAIN PIPE ROOF MOUNTING DETAIL
NOT TO SCALE

EQUIPMENT SCHEDULE

ITEM NO	QTY	EQUIPMENT CATEGORY	MANUFACTURER	MODEL NUMBER	COLD WATER SIZE (IN)	COLD WATER AFF (IN)	COLD WATER ACH (IN)	HOT WATER SIZE (IN)	HOT WATER GPH	HOT WATER AFF (IN)	DIRECT DRAIN SIZE (IN)	DIRECT DRAIN AFF (IN)	INDIR DRAIN SIZE	INDIR DRAIN AFF (IN)	INDIR DRAIN ACH (IN)	GAS SIZE (IN)	MBTUH	GAS AFF (IN)	GAS ACH (IN)
2	1	RANGE, RESTAURANT, GAS	SOUTHBEND	4361A												0.75	230	30	
3	1	RANGE, RESTAURANT, GAS	SOUTHBEND	4361D												0.75	243	30	
4	1	CHEESEMELTER, GAS	SOUTHBEND	P36-CM												0.75	40		38
5	1	REFRIGERATED EQUIPMENT STAND	DELFIELD	F2875									0.5	7.5					
6	1	GRIDDLE, GAS	SOUTHBEND	HDG-60												0.75	150		1.75
9	1	GRIDDLE, GAS	SOUTHBEND	HDG-60												0.75	150		1.75
10	1	REFRIGERATED EQUIPMENT STAND	DELFIELD	F28110									0.5	7.5					
11	1	BROILER, UNDER-FIRED, GAS, COUNTER	SOUTHBEND	HDC-24												0.75	80		2.75
12	2	FRYER, COUNTER TOP, GAS	GLOBE FOOD EQUIPMENT	GF30G												0.75	0.053		
13	3	HAND SINK, WALL MOUNT	ADVANCE TABCO	7-PS-66	0.5			0.5			1.5								
15	1	TABLE, HOT FOOD, ELECTRIC	DELFIELD	F14E1232				0.5		32			0.5	25					
18	1	REFRIGERATOR, REMOTE	DELFIELD	F18RR79									0.5	7.5					
19	1	REFRIGERATOR, REMOTE	DELFIELD	F18RR60									0.5	7.5					
20	1	REFRIGERATOR, REMOTE	DELFIELD	F18RR87									0.5	7.5					
21	1	REFRIGERATOR, REMOTE	DELFIELD	F18RR60									0.5	7.5					
22A	1	BUILT-IN, HOT WELLS	WELLS	BMW-206RTD									0.5	27					
24	1	REFRIGERATOR, REMOTE	DELFIELD	F18WR60									0.5	7.5					
26	1	TABLE, TRAY STORAGE, BUILT IN HAND SINK	DELFIELD	F16OS72	0.5			0.5											
27B	1	BUILT-IN, WATER & ICE STATION	DELFIELD	204									1	35					
28	1	COFFEE STATION W/BUILT-IN HAND SINK	DELFIELD	F16OS96	0.5	35													
29	1	ESPRESSO MACHINE	LACIMBALI	M1	0.375						1								
31	1	COFFEE MAKER, INSULATED SERVER, AUTOMATIC	CURTIS CO., WILBUR	CBHVS	0.25		2												
33	1	DISHTABLE, SOILED W/BUILT-IN PRE-SINSE SK.	ADVANCE TABCO	DTS-G60-72L	0.5	39		0.5		39	1.5	27							
34	1	WAREWASHER, DOOR TYPE, LOW TEMP	CMA DISHMACHINES	B				0.75	72.67	60			2	12.5					
36	1	SINK, 3 COMP,	ADVANCE TABCO	FC-3-1824-18RL	0.5			0.5							1.5				
37	1	ICE MAKER W/ BIN	SCOTSMAN	N0922R-32D	0.375		2						0.5		2				
39	1	WORKTABLE W/PREP SINK	ADVANCE TABCO	CUSTOM	0.5			0.5							1.5				
42	1	WALK IN COOLER	KOLPAK	CUSTOM											1				
42A	1	EVAPORATOR COIL, COOLER	KOLPAK	ELC-46-90									0.75	103					
44	3	UNDERCOUNTER REFRIGERATION	PERLICK	HC48RS W/GLASS DOORS															
45	1	UNDERCOUNTER REFRIGERATION	PERLICK	HC24RS															
46	1	UNDERBAR ICE CHEST	KROWNE METAL	KR18-24										15	1				
47	1	UNDERBAR BLENDER STATION	KROWNE METAL	KR18-18BD	0.5	31.5		0.5		31.5			1.5	21					
47A	1	BLENDER, BEVERAGE	WARING COMMERCIAL	MX1500XTX															
48	1	UNDERBAR HANDSINK	KROWNE METAL	KR21-18DST	0.5	31.5		0.5		31.5	1.5	20							
49	1	UNDERBAR SINK	KROWNE METAL	KR18-53C	0.5	31		0.5		31			1.5	18					
56	2	MODBAR STEAM	MODBAR	STEAM															
57	2	MODBAR ESPRESSO	MODBAR	ESPRESSO															
59	1	SPRAY RINSER AND DRIP TRAY													1				
60	1	DRIP TRAY													1				
63	1	MOP/BROOM HOLDER	BOBRICK	B-239															

(ITEM NO, QTY, EQUIPMENT CATEGORY, MANUFACTURER, MODEL NUMBER repeated)

GENERAL PLUMBING NOTES

1.) DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATION OF ALL PLUMBING FIXTURES, EQUIPMENT, ETC.. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ALL ITEMS REQUIRED FOR A COMPLETE AND ACCEPTABLE WORKING INSTALLATION. CONTRACTOR IS RESPONSIBLE TO INSTALL ALL FIXTURES AND EQUIPMENT IN STRICT COMPLIANCE WITH THE MANUFACTURES INSTALLATION INSTRUCTIONS. THIS REQUIREMENT IS TO SUPERSEDE ANY DETAILS OR INFORMATION CONTAINED ON THESE DRAWINGS.

2.) ALL WORK AND MATERIALS SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL, STATE, AND ALL LOCAL CODES AND ORDINANCES HAVING JURISDICTION.

3.) THE PLUMBING CONTRACTOR SHALL VISIT THE SITE AND THOROUGHLY FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS. ALL EXECUTION AND BACKFILL AS REQUIRED FOR THIS PHASE OF CONSTRUCTION SHALL BE A PART OF THIS CONTRACT.

4.) ALL MATERIAL SHALL BE NEW.

5.) ALL WORK SHALL BE PERFORMED BY A LICENSED PLUMBING CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE AND ACCEPTED BY ENGINEER/ARCHITECT.

6.) ALL REQUIRED INSURANCE SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LIABILITY OR PROPERTY DAMAGE FOR THE DURATION OF THE WORK.

7.) THE PLUMBING CONTRACTOR SHALL SECURE AND PAY ALL PERMIT FEES, INSPECTIONS, AND TESTS.

8.) ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION.

9.) THE PLUMBING CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN (1) ONE YEAR FROM DATE OF ACCEPTANCE. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED THEREBY.

10.) VERIFY LOCATION, SIZE AND INVERTS OF ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION. ADVISE ARCHITECT/ENGINEER OF ANY DISCREPANCIES.

11.) ALL FIXTURES SHALL BE PROVIDED WITH READILY ACCESSIBLE STOPS.

12.) WATER PIPING SHALL BE TYPE "L" COPPER FOR UP TO AND INCLUDING 2" AND SHALL BE TYPE "K" FOR 2 1/2" AND LARGER.

13.) SOIL, WASTES AND VENT PIPING SHALL BE PVC #40 DMV. WASTE AND VENT PIPING ABOVE SLAB SHALL BE PVC, IF APPROVED BY LOCAL AUTHORITIES HAVING JURISDICTION, OTHERWISE CAST IRON. PVC SHALL NOT BE INSTALLED IN A/C RETURN AIR PLENUM OR PENETRATE FIRE RATED WALLS OR FLOORS.

14.) AIR CONDITIONING CONDENSATE DRAIN PIPING SHALL BE PVC #40 OR COPPER DRAIN WASTE AND BENT PIPE AND FITTINGS. INSULATE ALL CONDENSATE PIPING EXCEPT EXTERIOR PIPING. INSTALL ALL CONDENSATE PIPING FOR AIR CONDITIONING UNITS AS REQUIRED PER LOCAL CODES.

15.) FURNISH AND INSTALL APPROVED WATER HAMMER ARRESTORS AT EACH GROUP OF FIXTURES. INSTALLATION OF WATER HAMMER ARRESTORS SHALL CONFORM TO THE MANUFACTURER'S RECOMMENDATIONS. PROVIDE AND INSTALL AN APPROVED WATER HAMMER ARRESTOR AT EACH FIXTURE OR DEVICE THAT HAS A SOLENOID WATER CONTROL VALVE.

16.) PROVIDE CHROME PLATED COMBINATION COVERED PLATE AND CLEANOUT PLUG FOR ALL WALL CLEANOUTS, JOSAM 58890.

17.) INSULATE LINES AS FOLLOWS:

A.) 1-1/2" THICK ARMAFLEX PREFORMED INSULATION SHALL BE PROVIDED ON BOTH C.W. & H.W. WHEN PIPING IS LOCATED OUTSIDE OF THE INSULATED BUILDING ENVELOPE.

B.) 1-1/2" THICK ARMAFLEX PREFORMED INSULATION SHALL BE PROVIDED ON HW PIPING & H.W. RECIRC. PIPING, ONLY WHEN THERE IS A H.W. RECIRCULATING PIPING SYSTEM.

C.) CONDENSATE PIPING: 1/2" THICK ARMAFLEX PREFORMED OR APPROVED EQUAL.

SHEET NO.
P4.0

Storage Tank Water Heater Sizing Calculator

Facility Name:	Yolk Restaurant
Address:	Boca Raton, FL

EQUIPMENT						GPH CALCULATED
Enter the description, and number and size of compartments for each sink below	**Description**	**Number of compartments**	**(inches)**			**Gallons Per Hour (GPH)**
			Length	**Width**	**Depth**	
Largest Sink #1	3 Comp. Sink	3	24	18	14	59
Sink #2	3 Comp. Bar Sink	3	14	10	10	14
Sinks are calculated at 75% capacity					**Total**	73

Enter type of prep sink and number of sink compartments for each sink below	**Type of prep sink (vegetable, meat, seafood)**	**Number of compartments**	**Gallons Per Hour (GPH)**
Prep sink #1	Prep Sink	1	5
Prep sinks are calculated at 5 gallons per compartment		**Total**	5

Enter the quantity of equipment below	**Quantity**	**Gallons Per Hour (GPH)**
Hand sinks	6	30
Can wash	1	10

Enter a description and estimated gallon per hour (GPH) usage for other equipment below	**Description**	**Estimated gallons per hour (GPH) usage**	
Other Equipment	(6) Lavatory	6	6
Hand sinks and mop sinks are calculated at 5 GPH each, can washes at 10 GPH each. Hose reels are calculated at 5 GPH, clothes washers at 15 GPH, other equipment at the usage entered		**Total**	46

Enter the make, model and Final Rinse Usage in gallons per hour (GPH) for dishmachines	**Make**	**Model**	**Final Rinse Usage (GPH)** Found in "Dishmachine Specs" sheet below or on manufacturer's spec sheet	**Gallons Per Hour (GPH)**
Dishmachine #1	CMA	B	72.67	50.869
Dishmachine #2				0

Enter the quantity of pre-rinse units	**Quantity**	**Gallons Per Hour (GPH)**
Pre-rinse	1	45
Dishmachines are calculated at 70% of the final rinse usage specified by the manufacturer. Pre-rinses are calculated at 45 GPH	**Total**	95.869

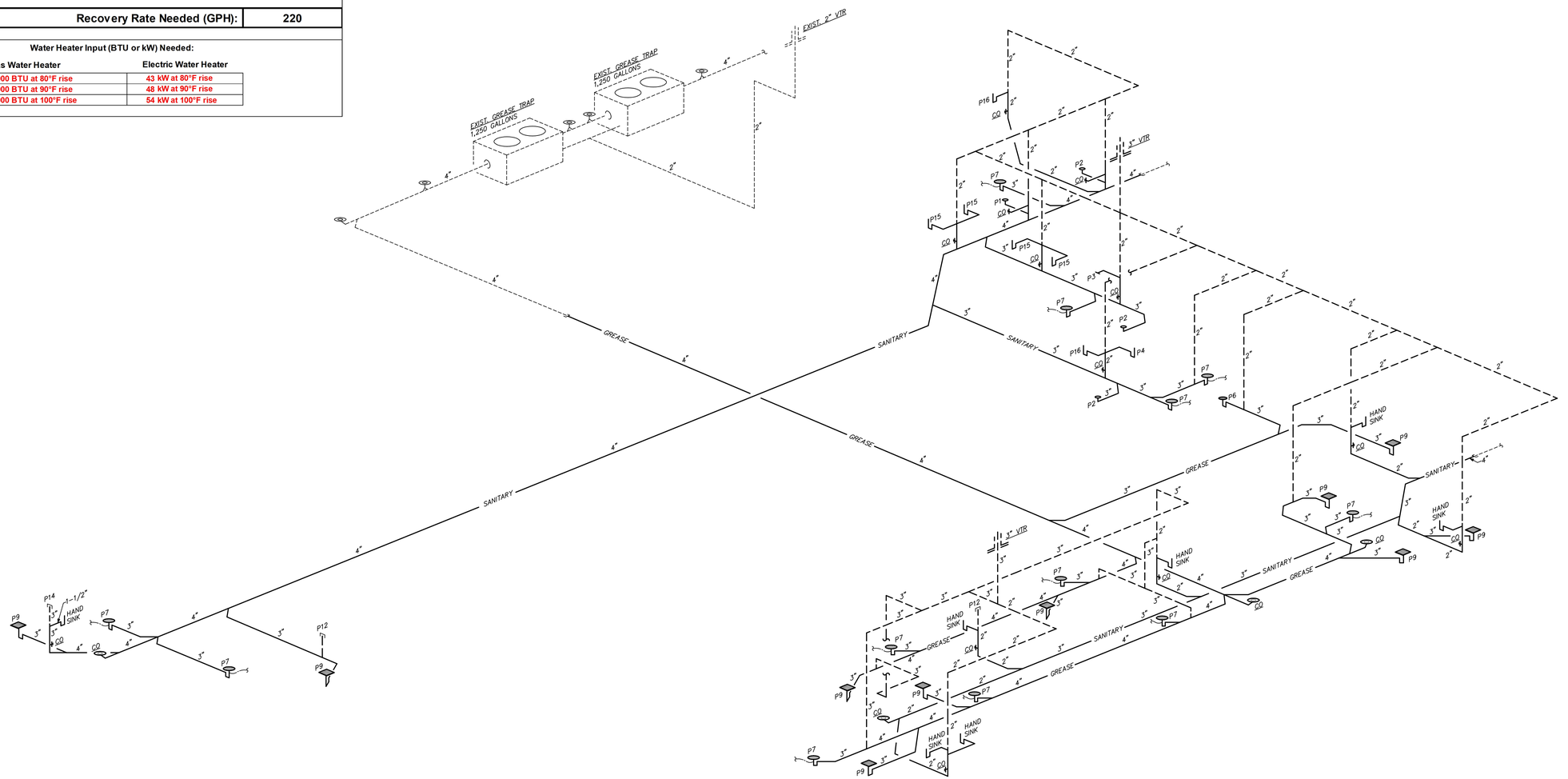
Recovery Rate Needed (GPH):	**220**

Water Heater Input (BTU or kW) Needed:

Gas Water Heater	Electric Water Heater
193 ,000 BTU at 80°F rise	43 kW at 80°F rise
217 ,000 BTU at 90°F rise	48 kW at 90°F rise
241 ,000 BTU at 100°F rise	54 kW at 100°F rise

PLUMBING FIXTURE CONNECTION SIZES

FIXTURE	C.W. CONN. SIZE	H.W. CONNECTION SIZE	SANITARY BRANCH SIZE	F.U. LOAD VALUES
WATER CLOSET (P1,P2)	1/2"	–	3"	5.0
URINAL (P3)	3/4"	–	2"	5.0
LAVATORY (P4,5)	1/2"	1/2" (110°F)	1-1/4"	2.0
CAN WASH (P6)	1/2"	1/2" (140°F)	3"	4.0
HAND SINK	1/2"	1/2" (110°F)	1-1/2"	2.0
PREP SINK	1/2"	1/2" (140°F)	1-1/2"	4.0
PRE-RINSE SINK	1/2"	1/2" (140°F)	1-1/2"	4.0
3 COMP. SINK	1/2"	1/2" (140°F)	1-1/2"	4.0



1 OVERALL SANITARY AND GREASE WASTE PIPING ISOMETRIC

NO SCALE

SHEET NO:

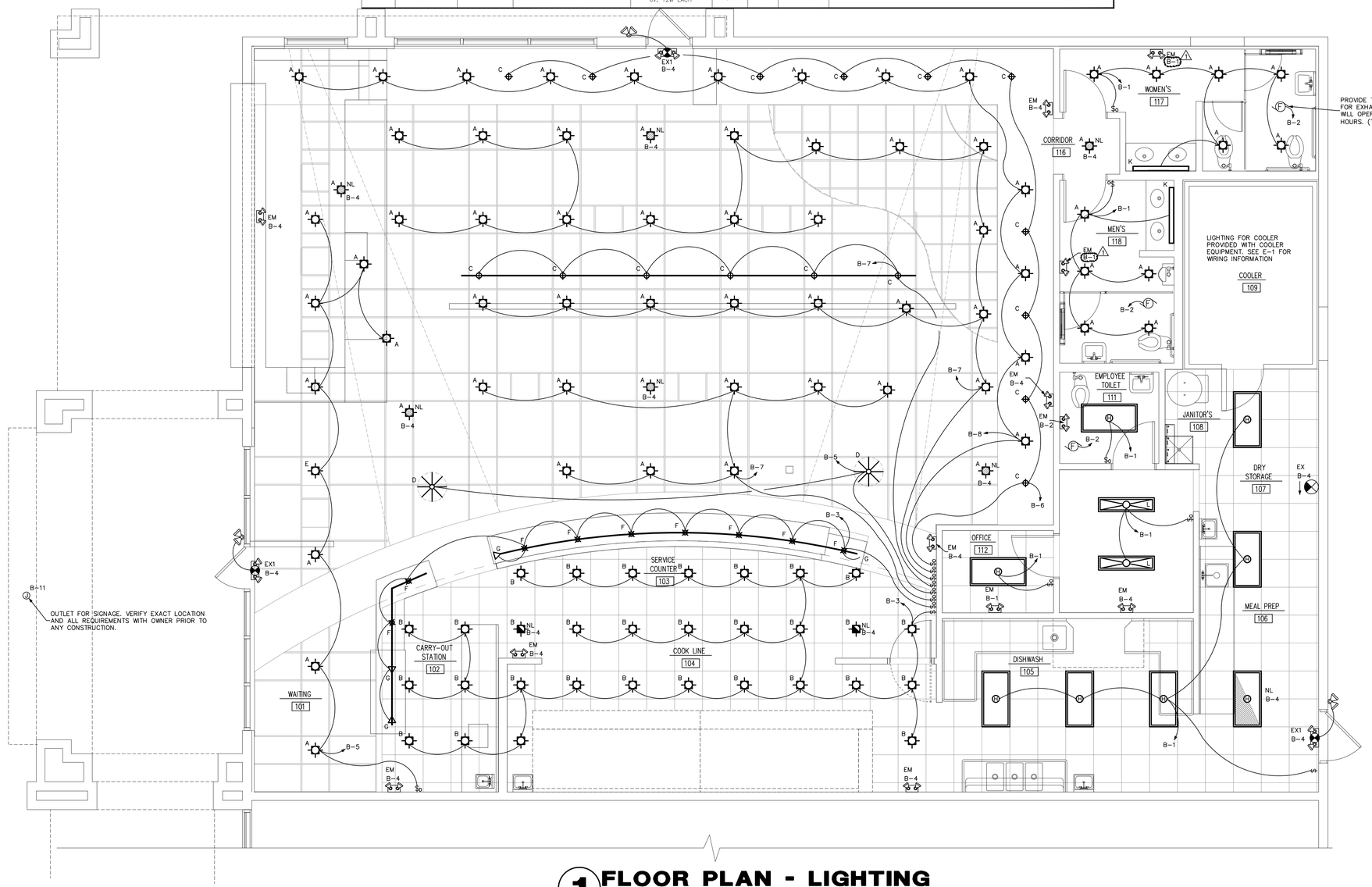
P5.0

FIXTURE TAG	SYMBOL	MANUFACTURER	MODEL NUMBER	LAMPS	VOLTAGE	WATTAGE	MOUNTING	NOTES
A	A	HALO	H271 ICAT-47OSC DIMMABLE	75W PAR 30 INC (USE LAMP LED 9W 3000K, 82 CRI, 1100lm)	120V	9W	RECESSED	RECESSED 6" FLUORESCENT DOWN LIGHT
B	B	HALO	H271 ICAT-73P	75W PAR 30 INC (USE LAMP LED 9W 3000K, 82 CRI, 1100lm)	120V	9W	RECESSED	RECESSED 6" FLUORESCENT CAN DOWN LIGHT WITH FRESNEL LENS FOR FOOD PREPARATION LOCATION
C	C	LIGHTOLOGY	TECH LIGHTING FREEJACK INNER FIRE PENDANT 700 FJ FIRE M S (PROVIDE MOUNTING CEILING ACCESSORY AS SELECTED BY ARCHITECT	35W-12V HALOGEN (USE LAMP LED MR16)	120V-277V	4W	PENDANT	DIMMABLE DECORATIVE PENDANT FIXTURE 56" ABOVE FINISH FLOOR TO BOTTOM OF FIXTURE, CENTER LIGHT FIXTURE ON BOOTH, VERIFY WITH G.C. AND ARCHITECT PRIOR TO INSTALLATION. SATIN NICKEL BODY FINISH AND AMBER SHADE COLOR, UNLESS OTHERWISE INDICATED BY ARCHITECT FINAL, COLOR AND FINISH AS SELECTED BY ARCHITECT.
D	D	LIGHTOLOGY	GRACIANO SUSPENSION WITH SATIN NICKEL FINISH	(8)40W HALOGEN (USE LAMP LED 3500K-2000LM -80CRI)	120V	40W	PENDANT	PROVIDE 1 SATIN FIXTURE AND 1 CLEAR FIXTURE, E.C SHALL ALTERNATE SATIN NICKEL AND CLEAR GLOBES, TO 50% ON EACH FIXTURE. DECORATIVE PENDANT CHANDELIER 92" ABOVE FINISHED FLOOR TO BOTTOM OF FIXTURE, VERIFY WITH G.C. AND ARCHITECT PRIOR INSTALLATION.
E	E	LIGHTOLOGY	GREGG GRANDE SUSPENSION WITH SATIN NICKEL FINISH AND WHITE LAMP COLOR	150W HALOGEN (USE LAMP LED E26)	120V	32W	SUSPENDED	DECORATIVE SUSPENDED LIGHT, VERIFY WITH G.C. AND ARCHITECT PRIOR INSTALLATION.
F	F	LIGHTOLOGY	FREEJACK APOLLO 5205IUS-BS (PROVIDE CEILING ACCESSORY AS SELECTED BY ARCHITECT)	(1)50W -12V HALOGEN (USE LAMP LED 6W)	120V	6W	TRACK/ PENDANT	DECORATIVE LOW-VOLTAGE PENDANT FIXTURE SUSPENDED ON MONORAIL TRACK 66" ABOVE FINISHED FLOOR TO BOTTOM OF FIXTURE.
G	G	LIGHTOLOGY	FREEJACK APOLLO 5205IUS-BS (PROVIDE CEILING ACCESSORY AS SELECTED BY ARCHITECT.)	(1)50W -12V HALOGEN (USE LAMP LED 6W)	120V	6W	TRACK/ PENDANT	DECORATIVE LOW-VOLTAGE PENDANT FIXTURE SUSPENDED ON MONORAIL TRACK 66" ABOVE FINISHED FLOOR TO BOTTOM OF FIXTURE.
H		METALUX	24GR-LD4-30-UNV-L835-CD1	LED 3000LM-3500K	120-277V	27W	RECESSED	2'X4' LED LIGHT FIXTURE FOR FOOD PREPARATION LOCATION.
K	K	LIGHTOLOGY	1200WS-GRETA-036H1-WHSN	(8) T3/MINICAN E11 40W 120V (USE LAMP LED E12 (8)5W)	120V	40W	WALL	DECORATIVE WALL SCONCE ABOVE MIRROR. SATIN NICKEL BODY FINISH AND WHITE COLOR.
L		METALUX	14GF-LD5-24-UNV-L835-CD1	LED 2425LM-3500K	120-277V	21W	RECESSED	1'X4' GENERAL PURPOSED RECESSED LIGHT
EX	EX	SURE-LITES	CHX7 SERIES	LED	UNIVERSAL 120V-277V	5W	WALL/CEILING	LED EXIT SIGN W/ RED LETTERS AND EMERG. BATT. (SINGLE OR DOUBLE FACE & CHEVRONS AS REQD). SHALL HAVE A NINETY (90) MINUTE BATT. BACK-UP ILLUM. TIME
EX1	EX1	SURE-LITES	CHX71-DH	LED EXIT & (2) HEADS 6V, 12W EACH	120V/277V	20W	WALL/CEILING	LED EXIT SIGN WITH RED LETTERS AND TWO EMERGENCY HEAD LIGHTS. TWO SEPARATE CIRCUITS
EM	EM	SURE-LITES	XR1624C	(2) HEADS 6V, 12W EACH	120V/277V	16W	WALL	EMERGENCY HEAD LIGHT

ELECTRICAL SYMBOLS LEGEND

NOTE = NOT ALL SYMBOLS MAY BE USED ON PROJECT

SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION
	DUPLEX RECEPTACLE, MTD. +18" AFF.	T	TRANSFORMER – SIZE AS NOTED
	240 VOLT RECEPTACLE (HT. AS REQ.)		PANEL – SIZE AS NOTED
	QUADRUPLEX RECEPTACLE, MTD. +18"		MOMENTARY CONTACT PUSH BUTTON
	COUNTERTOP HT. RECEPTACLE +42"	F	F-FAN; M-MOTOR; P-PUMP
$	SINGLE POLE SWITCH, MTD +47"		SPECIAL OUTLET – AS REQUIRED
$3	THREE-WAY SWITCH, MTD +47"	B-2	CKT. HOMERUN (B INDICATES PANEL) "2" DESIGNATES CIRCUIT NUMBER
$M	MANUAL STARTER SWITCH		EXIT SIGN; ONE SIDED, OR TWO SIDED
$D	DIMMER SWITCH, MTD +47"		EMERGENCY LIGHTING
$L	SWITCH W/ ILLUM WHEN ON MTD +47"	B	RECESSED MOUNTED LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
$O3	THREE-WAY SWITCH W/ OCCU SENSOR MTD. +47"		OVERHEAD OCCUPANCY SENSOR
$O	SWITCH W/ OCCU SENSOR. MTD. +47"	B	HIGHBAY HID LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
J	JUNCTION BOX, FLUSH IF POSSIBLE	B	FLUORESCENT LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
	TELEPHONE / DATA OUTLET +18"	B NL	FLUORESCENT LIGHTING NIGHT LIGHT B DESIGNATES FIXTURE TYPE
	DED. COMPUTER TERM. OUTLET +18"	B	FLUORESCENT STRIP LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
	DISCONNECT SWITCH W/ STARTER	B	LED LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
	DISCONNECT SWITCH	IG	ISOLATED GROUND
	FLR. MTD. FLUSH DUPLEX RECEPTACLE	WP	WEATHER-PROOF
	FLR. MTD. FLUSH QUAD. RECECPTACLE	BC	BELOW COUNTER
	FLR. MTD. FLUSH PHONE/DATA OUTLET	TC	TIME CLOCK – 24 HOUR
	FLR. MTD. FLUSH COMPUTER OUTLET	GFI	GROUND FAULT INTERRUPTER
	AREA SMOKE DETECTOR	AFF	ABOVE FINISHED FLOOR
	HEAT DETECTOR	EWC	ELECTRIC WATER COOLER
	DUCT SMOKE DETECTOR	ASW	ABOVE SHOW WINDOW
F	FIRE ALARM MAN. PULL STATION +47"	BSW	BELOW SHOW WINDOW
V30	HORN WITH STROBE LIGHT, MTD. +80" # BESIDE DEVICE IS CANDELLA RATING	FACP	FIRE ALARM CONTROL PANEL
L30	STROBE LIGHT ONLY, MTD. +80" # BESIDE DEVICE IS CANDELLA RATING	FAAP	FIRE ALARM ANNUNCIATOR PANEL



1 FLOOR PLAN - LIGHTING

SCALE: 1/4"=1'-0"

SHEET NO.

E1.0

ELECTRICAL NOTES:

1. GENERAL: ALL WORK SHALL CONFORM TO THE LATEST APPROVED EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) AND ALL LOCAL JURISDICTIONAL CODES.

   THE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE DRAWINGS AND ANY APPLICABLE SPECIFICATIONS. IF A PROBLEM IS ENCOUNTERED IN COMPLYING WITH THIS REQUIREMENT, THE CONTRACTOR SHALL NOTIFY THE OWNER OR HIS REPRESENTATIVE AS SOON AS POSSIBLE AFTER DISCOVERY OF THE PROBLEM, AND SHALL NOT PROCEED WITH THAT PORTION OF THE WORK UNTIL THE OWNER HAS DIRECTED THE CORRECTIVE ACTION TO BE TAKEN.

   THE CONTRACTOR SHALL COORDINATE THE PROPOSED LOCATIONS OF ALL ELECTRICAL MATERIALS AND EQUIPMENT WITH THE REPRESENTATIVES OF THE OTHER TRADES INVOLVED BEFORE STARTING INSTALLATION OF THOSE ITEMS.

   COORDINATE THE INSTALLATION OF REQUIRED SUPPORTING DEVICES, CONDUIT, AND SLEEVES TO BE SET IN CAST-IN-PLACE CONCRETE AND OTHER STRUCTURAL COMPONENTS, AS THEY ARE CONSTRUCTED.

   UNLESS OTHERWISE SPECIFIED ON THE PLANS, ALL SPECS ARE NOT INTENDED TO BE PROPRIETARY, SUBSTITUTIONS WILL BE ACCEPTABLE FOR EQUAL RATED AND LISTED UNITS.

2. SCOPE: EXCEPT WHERE OTHERWISE SPECIFICALLY INDICATED ON THE DRAWINGS BY "FUTURE", "BY OTHERS", OR BY A SIMILAR NOTATION, IT IS THE INTENT THAT THE CONTRACTOR FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND TOOLS NECESSARY TO PROVIDE ALL SYSTEMS IN COMPLETE AND OPERATING CONDITION.

3. EXCAVATE AS NECESSARY FOR THE INSTALLATION OF ELECTRICAL MATERIALS AND EQUIPMENT. VERIFY THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES OR STRUCTURES BEFORE EXCAVATING AND EXERCISE CARE TO AVOID DAMAGE TO SUCH ITEMS DURING EXCAVATION. BACKFILL WITH EARTH FREE OF LARGE CLODS, LARGE STONES AND FOREIGN DEBRIS, DEPOSITED IN 6" LAYERS AND COMPACTED TO A DENSITY OF NOT LESS THAN THAT OF THE SURROUNDING UNDISTURBED MATERIAL.

4. MATERIALS: THE MATERIALS AND EQUIPMENT FURNISHED SHALL BE AS INDICATED ON THE DRAWINGS; SUBSTITUTIONS SHALL NOT BE MADE EXCEPT WHERE EXPRESSLY APPROVED BY THE OWNER OR HIS REPRESENTATIVE PRIOR TO STARTING INSTALLATION OF THE ITEMS. THE ELECTRICAL MATERIALS AND EQUIPMENT FURNISHED SHALL BE LISTED OR LABELED BY UNDERWRITERS LABORATORIES OR OTHER RECOGNIZED TESTING ORGANIZATION, AND SHALL BE ACCEPTABLE TO THE LOCAL BUILDING AUTHORITY.

5. GROUNDING: GROUNDING SHALL BE IN ACCORDANCE WITH ARTICLE 250, NEC.

6. SHARED NEUTRAL CONDUCTORS SHALL NOT BE ALLOWED UNLESS INSTALLED IN ACCORDANCE WITH NEC-210.4

7. CONDUITS: PROVIDE CONDUITS WHERE CALLED FOR ON PANEL SCHEDULES: ELECTRICAL METALLIC TUBING (EMT) SHALL BE INSTALLED ONLY IN DRY LOCATIONS, IN CONCRETE ABOVE GRADE, AND WHERE NOT SUBJECT TO PHYSICAL DAMAGE.

   CONDUITS INSTALLED UNDERGROUND SHALL BE POLYVINYLCHLORIDE (PVC) AND SHALL NOT BE SMALLER THAN 3/4" TRADE SIZE. WHERE PVC CONDUIT IS INSTALLED UNDERGROUND, ELBOWS TURNING UP AND CONDUIT EMERGING ABOVE GRADE SHALL BE RSC. THE TOPS OF CONDUITS SHALL NOT BE LESS THAN 24" BELOW FINISHED GRADE. PVC CONDUIT INSTALLED ABOVE GRADE OR DIRECT-BURIED IN EARTH SHALL BE NEMA TC2 TYPE EPC-40-PVC (SCHEDULE 40) EXCEPT THAT WHERE UNDER AREAS SUBJECT TO HEAVY VEHICULAR TRAFFIC, IT SHALL BE NEMA TC2 TYPE EPC-80-PVC (SCHEDULE 80).

   ALL ARMOR CLAD CABLE (AC CABLE) WIRING SHALL MEET OR EXCEED ALL NEC, OSHA AND HUD STANDARDS.

8. CONDUCTORS: CONDUCTORS SHALL BE AS SCHEDULED ON PANEL SCHEDULES. ALL POWER CONDUCTORS SHALL NOT BE SMALLER THAN #14 AWG (CU), OR #12 AWG (AL), CONTROL CIRCUIT CONDUCTORS SHALL NOT BE SMALLER THAN #18 AWG CU. CONDUCTORS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET WITHOUT SPLICES EXCEPT WITHIN WIREWAY OR JUNCTION BOXES. MARK CONDUCTORS IN PANELS, PULL BOXES OR WIREWAYS AND TERMINAL STRIP TERMINALS FOR IDENTIFICATION OF CIRCUITS.

   CONDUCTORS SHALL BE JOINED USING COMPRESSION SPLICES, EXCEPT THAT CONDUCTORS #10 AND SMALLER MAY BE JOINED USING WIRE NUT TYPE CONNECTORS. CONDUCTORS SHALL BE TERMINATED USING COMPRESSION OR PRESSURE TYPE TERMINAL LUGS, OR IN PRESSURE TERMINALS. COMPRESSION SPLICES USED ON CONDUCTORS #10 AWG. AND SMALLER, SHALL BE THE SELF-INSULATED TYPE; OTHER SPLICES SHALL BE INSULATED USING 3M #33+ OR #88 PLASTIC TAPE. SPLICES IN WET LOCATIONS SHALL BE INSULATED WITH ELECTRICAL TAPE AND ENCAPSULATED WITH SCOTCHCAST OR EQUAL POTTING COMPOUND.

9. PROVIDE AND INSTALL JUNCTION AND PULL BOXES WHERE INDICATED AND WHERE NECESSARY TO TERMINATE, TAP OFF, OR REDIRECT MULTIPLE CONDUIT RUNS, OF SIZE INDICATED OR AS REQUIRED BY NEC. WHERE FEEDER SPLICES ARE TO BE MADE, INSTALL BOXES LARGE ENOUGH TO PROVIDE AMPLE WORK SPACE.

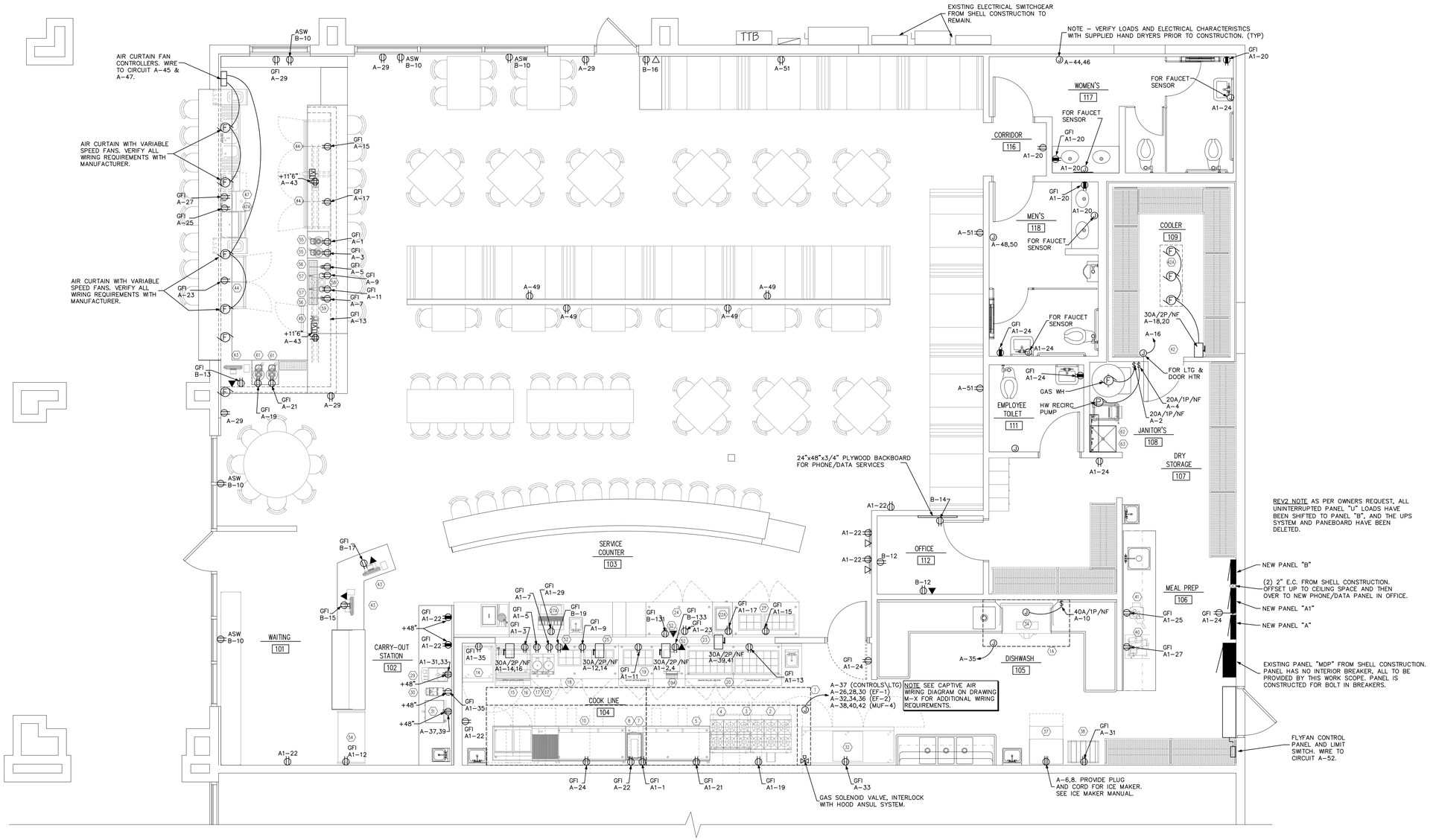
10. LIGHTING FIXTURES: LIGHTING FIXTURES SHALL BE AS INDICATED ON THE DRAWINGS, AND SHALL BE INSTALLED COMPLETE WITH LAMPS.

    FIXTURES WITH ADJUSTMENTS AFFECTING LIGHT DISTRIBUTION SHALL BE SET TO PROVIDE THE REQUIRED LIGHT PATTERNS PRIOR TO THE FINAL DEMONSTRATION TEST.

11. TESTS: AFTER EACH SYSTEM HAS BEEN COMPLETED, A FUNCTIONAL TEST SHALL BE PERFORMED TO DEMONSTRATE THAT THE SYSTEM OPERATES IN ACCORDANCE WITH THE REQUIREMENTS OF THE DRAWINGS. THE TEST SHALL BE PERFORMED BY THE CONTRACTOR IN THE PRESENCE OF THE OWNER OR HIS REPRESENTATIVE.

12. TERMINALS: ALL ELECTRICAL EQUIPMENT FURNISHED ON THIS PROJECT IS TO HAVE TERMINALS RATED FOR 75° C. OPERATION.

13. ALL PANELBOARDS, UNLESS OTHERWISE NOTED, SHALL BE PROVIDED WITH PLUG-IN TYPE CIRCUIT BREAKERS.

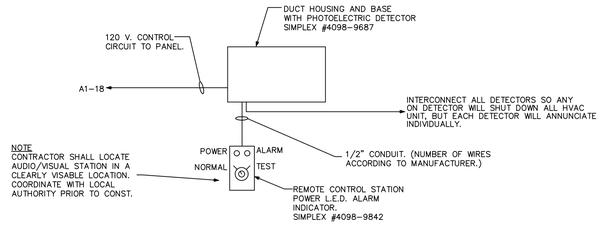


1 FLOOR PLAN - POWER

SCALE: 1/4"=1'-0"

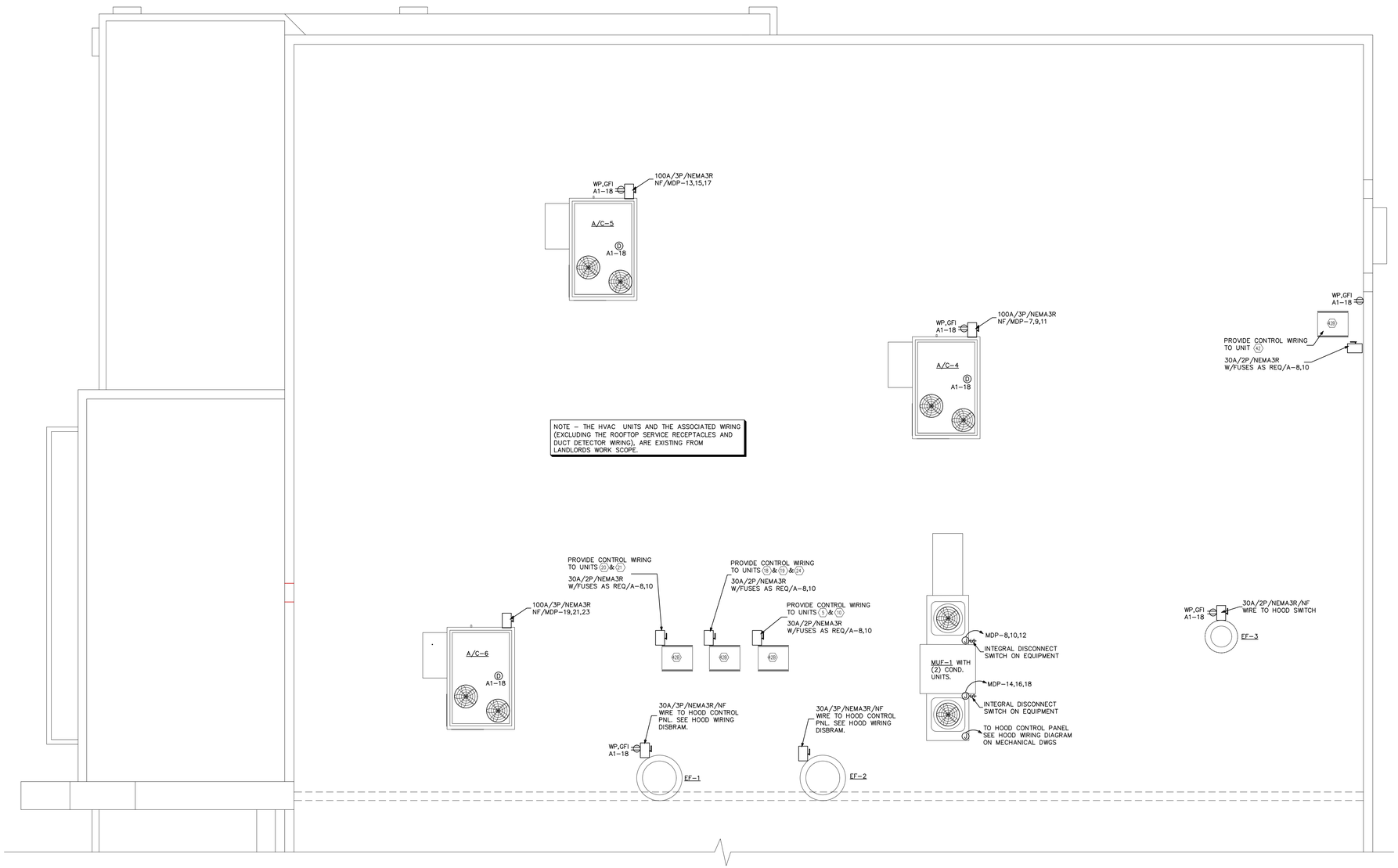
SHEET NO.

E2.0



NOTE: ELECTRICAL CONTRACTOR SHALL COORDINATE A/C SHUT DOWN WITH MECHANICAL CONTRACTOR.

2 DUCT SMOKE DETECTOR WIRING
NO SCALE



1 ROOF PLAN - POWER
SCALE: 1/4"=1'-0"

SHEET NO:
E3.0

PANEL SCHEDULE A1

100 AMP, 120/208 VOLT, THREE PHASE, FOUR WIRE, 100A. M.C.B., 10000 AMPS MINIMUM A.I.C. BRACING, FLUSH MOUNTED, TYPE NEMA 1 ENCLOSURE

##	BKR.	WIRE AND CONDUIT COND.	NEUTRAL	GND	C.	KEYS	LOAD DESCRIPTION	NEUT.	LINE A	LINE B	LINE C	LOAD DESCRIPTION	WIRE AND CONDUIT KEYS	C.	GND	NEUTRAL	COND.	BKR.	##
1	20/1	#12	#12	#12	1/2	CHAL	OH FOOD WARMER (7) *	756 0	756 1664	------ ------	------ ------	TOASTER CONVERYOR (19A)	CHAL	1/2	#12	---	#12	20/2	2 4
3	20/1	#12	#12	#12	1/2	CHAL	MICROWAVE OVER (16)	1560 0	------ ------	1560 1664	------ ------								
5	20/1	#12	#12	#12	1/2	CHAL	WAFFLE BAKER (17)	996 864	------ ------	------ ------	996 864	REACH IN FREEZER (14)	CHAL	1/2	#12	#12	#12	20/1	6
7	20/1	#12	#12	#12	1/2	CHAL	WAFFLE BAKER (17)	996 0	996 624	------ ------	------ ------	REMOTE AIR COND, (42B)CU1	CHAL	1/2	#12	---	#12	20/2	8 10
9	20/1	#12	#12	#12	1/2	CHAL	REFR. W/ REMOTE CU (18)	600 0	------ ------	600 624	------ ------								
11	20/1	#12	#12	#12	1/2	CHAL	REFR. W/ REMOTE CU (19)	600 2208	------ ------	------ ------	600 2208	REFRG. SELF SER CASE (54)	CHAL	1/2	#10	#10	#10	30/1	12
13	20/1	#12	#12	#12	1/2	CHAL	REFR. W/ REMOTE CU (20)	600 0	600 1040	------ ------	------ ------	HOT FOOD TABLE (15)	CHAL	1/2	#12	---	#12	20/2	14 16
15	20/1	#12	#12	#12	1/2	CHAL	REFR. W/ REMOTE CU (21)	600 0	------ ------	600 1040	------ ------								
17	20/1	#12	#12	#12	1/2	CHAL	BUILT IN HOT WELLS (22A)	1200 920	------ ------	------ ------	1200 920	ROOF RECEPT / DUCT DET.	CHAL	1/2	#12	#12	#12	20/1	18
19	20/1	#12	#12	#12	1/2	CHAL	GAS RANGE (2) *	600 720	600 720	------ ------	------ ------	GENERAL RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	20
21	20/1	#12	#12	#12	1/2	CHAL	REFRIG EQUIP, STAND (5) *	360 1260	------ ------	360 1260	------ ------	GENERAL RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	22
23	20/1	#12	#12	#12	1/2	CHAL	REFR. W/ REMOTE CU (24)	600 900	------ ------	------ ------	600 900	GENERAL RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	24
25	20/1	#12	#12	#12	1/2	CHAL	FOOD SLICER (40)	720 1200	720 1200	------ ------	------ ------	(4) EXTERIOR TV OUTLETS	CHAL	1/2	#12	#12	#12	20/1	26
27	20/1	#12	#12	#12	1/2	CHAL	VEGETABLE CUTTER (41)	1440 720	------ ------	1440 720	------ ------	GENERAL RECEPTACLE	CHAL	1/2	#12	#12	#12	20/1	28
29	20/1	#12	#12	#12	1/2	CHAL	POP DISPENSER (27A)	360 540	------ ------	------ ------	360 540	GENERAL RECEPTACLE	CHAL	1/2	#12	#12	#12	20/1	30
31	40/2	#8	---	#10	1/2	CHAL	EXPRESSO MACHINE (29)	0 0	3120 624	------ ------	------ ------	REMOTE AIR COND, (42B)CU2	CHAL	1/2	#12	---	#12	20/2	32 34
33								0 0	------ ------	3120 624	------ ------								
35	20/1	#12	#12	#12	1/2	CHAL	COFFEE GRINDER (30)	480 0	------ ------	------ ------	480 624	REMOTE AIR COND, (42B)CU3	CHAL	1/2	#12	---	#12	20/2	36 38
37	30/2	#10	---	#10	1/2	CHAL	AUTO COFFEE MAKER (31)	0 0	2860 624	------ ------	------ ------								
39								0 0	------ ------	2860 624	------ ------	REMOTE AIR COND, (42B)CU4	CHAL	1/2	#12	---	#12	20/2	40 42
41	20/1	#12	#12	#12	1/2	CHAL	REACH IN FREEZER (32)	1764 0	------ ------	------ ------	1764 624								

WIRE/CONDUIT KEY	WIRING TYPE	INSULATION	CONDUIT TYPE	TEMP RATING
1234 └TEMP RATING └CONDUIT TYPE └INSULATION └WIRING TYPE	C-CU WIRE	H-THWN	A-EMT	L-78-86 Deg. F.

LINE A	LINE B	LINE C
16148	17096	12680
45,924		

PEAK PHASE (C) UNBALANCED NEUTRAL LOAD AMPS = 95.3 AMPS
NON DIVERSIFIED LOAD AT 208 VOLT, THREE PHASE = 127.6 AMPS

PRINTED ON PANELS PROGRAM SERIAL NUMBER 2001.4001
REGISTERED TO - TODD W. CAREY AND ASSOCIATES OF THE CAROLINAS, PA

PANEL NOTES:
* - RUN THIS CIRCUIT THRU A 10 POLE, MECH. HELD CONTRACTOR, INTERLOCED WITH HOOD ANSUL SYSTEM

PANEL A1 DIVERSIFICATION CALCULATIONS

RECEPTACLES (34) - 6060 VA TOTAL	
FIRST 10 KVA AT 100% -	6060
MISC NON-CONTINUOUS LOADS AT 100% -	4488
KITCHEN EQUIPMENT (29)	
35376 X 0.65 -	22994
TOTAL DIVERSIFIED PANEL LOAD -	33542
LOAD AT 120/208V/3-PHASE/4-WIRE -	93.2A

PANEL SCHEDULE A

225 AMP, 120/208 VOLT, THREE PHASE, FOUR WIRE, M.L.O., 10000 AMPS MINIMUM A.I.C. BRACING, SURFACE MOUNTED, TYPE NEMA 1 ENCLOSURE

##	BKR.	WIRE AND CONDUIT COND.	NEUTRAL	GND	C.	KEYS	LOAD DESCRIPTION	NEUT.	LINE A	LINE B	LINE C	LOAD DESCRIPTION	WIRE AND CONDUIT KEYS	C.	GND	NEUTRAL	COND.	BKR.	##
1	20/1	#12	#12	#12	1/2	CHAL	COFFEE GRINDER (55)	350 666	350 666	------ ------	------ ------	GAS WATER HEATER FAN	CHAL	1/2	#12	#12	#12	20/1	2
3	20/1	#12	#12	#12	1/2	CHAL	COFFEE GRINDER (55)	350 499	------ ------	350 499	------ ------	HW RECIRC PUMP	CHAL	1/2	#12	#12	#12	20/1	4
5	20/1	#12	#12	#12	1/2	CHAL	MODBAR STEAM (56)	1500 0	------ ------	------ ------	1500 1373	ICE MAKER	CHAL	1/2	#12	---	#12	20/2	6 8
9	20/2	#12	---	#12	1/2	CHAL	MODBAR EXPRESSOR (57)	0 3120	------ ------	750 3120	------ ------								
11								0 3120	------ ------	------ 3120	750 ------	LOW TEMP DISHWASHER (34)	CHAL	1/2	#10	#8	#8	40/1	10
11	20/1	#12	#12	#12	1/2	CHAL	MODBAR EXPRESSOR (57)	1500 0	------ ------	------ ------	1500 2590	O.H. FOOD WARMER (25)	CHAL	1/2	#10	---	#10	30/2	12 14
13	20/1	#12	#12	#12	1/2	CHAL	PERLICK U.C. REFRIG (58)	276 0	276 2590	------ ------	------ ------								
15	20/1	#12	#12	#12	1/2	CHAL	PERLICK 2 DR. REFRIG (44)	336 700	------ ------	336 700	------ ------	COOLER LTG/DOOR HTR (42)	CHAL	1/2	#12	#12	#12	20/1	16
17	20/1	#12	#12	#12	1/2	CHAL	PERLICK 2 DR. REFRIG (44)	336 0	------ ------	------ ------	336 1539	COOLER EVAP/DEF.HTR (42A)	CHAL	1/2	#12	---	#12	20/2	18 20
19	20/1	#12	#12	#12	1/2	CHAL	COFFEE GRINDER (61)	1320 0	1320 1539	------ ------	------ ------								
21	20/1	#12	#12	#12	1/2	CHAL	COFFEE GRINDER (61)	1320 1200	------ ------	1320 1200	------ ------	HOT FOOD WELL (8) *	CHAL	1/2	#12	#12	#12	20/1	22
23	20/1	#12	#12	#12	1/2	CHAL	PERLICK 2 DR. REFRIG (44)	336 720	------ ------	------ ------	336 720	REFRIG EQUIP STAND (10) *	CHAL	1/2	#12	#12	#12	20/1	24
25	20/1	#12	#12	#12	1/2	CHAL	BEVERAGE BLENDER (47A)	1560 0	1560 660	------ ------	------ ------	EXHAUST HOOD EXH FAN 1	CHAL	1/2	#12	---	#12	15/3	26 28 30
27	20/1	#12	#12	#12	1/2	CHAL	U.C. BLENDER STATION (47)	1800 0	------ ------	1800 660	------ ------								
29	20/1	#12	#12	#12	1/2	CHAL	GENERAL PURPOSE RECEPT	540 0	------ ------	------ ------	540 660								
31	20/1	#12	#12	#12	1/2	CHAL	BAG IN A BOX (38)	600 0	600 912	------ ------	------ ------	EXHAUST HOOD EXH FAN 2	CHAL	1/2	#12	---	#12	15/3	32 34 36
33	20/1	#12	#12	#12	1/2	CHAL	REACH IN FREEZER (33)	1764 0	------ ------	1764 912	------ ------								
35	20/1	#12	#12	#12	1/2	CHAL	DISHWASHER HOOD/FAN	672 0	------ ------	------ ------	672 912								
37	15/1	#12	#12	#12	1/2	CHAL	EXHAUST HOOD CONTROLS (1)	300 0	300 1140	------ ------	------ ------	EXHAUST HOOD MUP FAN 4	CHAL	1/2	#12	---	#12	20/3	38 40 42
39	20/2	#12	---	#12	1/2	CHAL	OH FOOD WARMER (23)	0 0	------ ------	1664 1140	------ ------								
41								0 0	------ ------	------ ------	1664 1140								
43	20/1	#12	#12	#12	1/2	CHAL	(4) LED TV	600 0	600 1250	------ ------	------ ------	ELECTRIC HAND DRYER	CHAL	1/2	#12	---	#12	20/2	44 46
45	20/1	#12	#12	#12	1/2	CHAL	BAR WINDOW AIR CURTAIN	1056 0	------ ------	1056 1250	------ ------								
47	20/1	#12	#12	#12	1/2	CHAL	BAR WINDOW AIR CURTAIN	1056 0	------ ------	------ ------	1056 1250	ELECTRIC HAND DRYER	CHAL	1/2	#12	---	#12	20/2	48 50
49	20/2	#12	---	#12	1/2	CHAL	MODBAR EXPRESSOR (57)	0 0	750 1250	------ ------	------ ------								
51								0 0	------ ------	750 750	------ ------	MODBAR EXPRESSOR (57)	CHAL	1/2	#12	---	#12	20/2	52 54
53	20/1	#12	#12	#12	1/2	CHAL	DOOR AIR CURTAIN	612 0	------ ------	------ ------	612 750								

WIRE/CONDUIT KEY	WIRING TYPE	INSULATION	CONDUIT TYPE	TEMP RATING
1234 └TEMP RATING └CONDUIT TYPE └INSULATION └WIRING TYPE	C-CU WIRE	H-THWN	A-EMT	L-78-86 Deg. F.

LINE A	LINE B	LINE C
34784	37117	31260
103,161		

PEAK PHASE (B) UNBALANCED NEUTRAL LOAD AMPS = 155.7 AMPS
NON DIVERSIFIED LOAD AT 208 VOLT, THREE PHASE = 286.6 AMPS

PRINTED ON PANELS PROGRAM SERIAL NUMBER 2001.4001
REGISTERED TO - TODD W. CAREY AND ASSOCIATES OF THE CAROLINAS, PA

PANEL NOTES:
* - RUN THIS CIRCUIT THRU A 10 POLE, MECH. HELD CONTRACTOR, INTERLOCED WITH HOOD ANSUL SYSTEM
PROVIDE FEED THRU LUGS ON THIS PANELBOARD. LOAD SUMMARY INCLUDES FEED THRU LUG LOADS.

PANEL A DIVERSIFICATION CALCULATIONS

RECEPTACLES (38) - 6780 VA TOTAL	
FIRST 10 KVA AT 100% -	6780
LIGHTING - 100 X 125% -	125
MOTOR LOADS AT 100% -	10347
MISC NON-CONTINUOUS LOADS AT 100% -	10388
MISC CONTINUOUS LOADS AT 125%	
600 X 1.25 -	750
KITCHEN EQUIPMENT (56)	
74945 X 0.65 -	48714
TOTAL DIVERSIFIED PANEL LOAD -	77104
LOAD AT 120/208V/3-PHASE/4-WIRE -	214.2A

EQUIPMENT SCHEDULE (ELECTRICAL)

ITEM NO	QTY	EQUIPMENT CATEGORY	MANUFACTURER	MODEL NUMBER	AMPS	KW	HP	VOLTS	PHASE	CYCLE	DIRECT	PLUG	NEMA	ELECTRICAL AFF (IN)	ELECTRICAL ACH (IN)
1	1	EXHAUST HOOD	CAPTIVE AIRE	CUSTOM											
1A	1	CONDENSATE HOOD	CAPTIVE AIRE	CUSTOM											
2	1	RANGE, RESTAURANT, GAS	SOUTHBEND	4361A	5.0		0.3	120	1	60		X	5-15P	28	
5	1	REFRIGERATED EQUIPMENT STAND	DELFIELD	F2875	3.0			115	1	60	X			9.5	
7	1	WARMER, FOOD OVERHEAD	HATCO	UGFF	6.3	0.8		120	1	60		X	5-15P		2
8	1	HOT FOOD WELL	HATCO	HW-FUL	10.0	1.2		120	1	60		X	5-15P		2.5
10	1	REFRIGERATED EQUIPMENT STAND	DELFIELD	F28110	6.0			115	1	60	X			9.5	
14	1	FREEZER, REACH-IN	DELFIELD	GBF1P-S	7.2		0.6	115	1	60		X	5-15P	67	
15	1	TABLE, HOT FOOD, ELECTRIC	DELFIELD	F14EI232	10.0	2.0		208	1	60	X			25	
16	1	OVEN, MICROWAVE	ACP, INC.	RCS10TS	13.0	1.6		120	1	60		X	5-15	13.25	
17	2	WAFFLE BAKER, ELECTRIC	STAR MANUFACTURING	SWB7RB	8.3	1.0		120	1	60		X	5-15P		2
18	1	REFRIGERATOR, REMOTE	DELFIELD	F18RR79	5.0			120	1	60	X			9.5	
19	1	REFRIGERATOR, REMOTE	DELFIELD	F18RR60	5.0			120	1	60	X			9.5	
19A	1	TOASTER, CONVEYOR	APW WYOTT	XTRM-2	16.0	3.3		208	1	60		X	6-20P		5
20	1	REFRIGERATOR, REMOTE	DELFIELD	F18RR87	5.0			120	1	60	X			9.5	
21	1	REFRIGERATOR, REMOTE	DELFIELD	F18RR60	5.0			120	1	60	X			9.5	
22A	1	BUILT-IN, HOT WELLS	WELLS	BMW-206RTD	10.0	1.2		120	1	60	X			28	
23	1	WARMER, FOOD OVERHEAD	HATCO	GRAHL-60D3	16.0	3.1		120/208	1	60	X				30
24	1	REFRIGERATOR, REMOTE	DELFIELD	F18WR60	3.0			115	1	60	X			9.5	
25	1	WARMER, FOOD OVERHEAD	HATCO	GRAHL-84D3	24.9	4.5		120/208	1	60	X				30
27A	1	POP DISPENSER	LANCER	ICD 2300				115	1	60	X				
29	1	ESPRESSO MACHINE	LACIMBALI	M1	30.0			220	1			X	L6-30R		
30	1	COFFEE GRINDER	BUNN-O-MATIC	G9WD-RH	4.0		0.8	120	1	60		X	5-15P		2
31	1	COFFEE MAKER, INSULATED SERVER, AUTOMATIC	CURTIS CO., WILBUR	CBHVS	27.5	6.6		120/208	1	60	X				4.9
32	1	FREEZER, REACH-IN	DELFIELD	GBF3P-S	14.7		0.6	115	1	60		X	5-20P	67	
34	1	WAREWASHER, DOOR TYPE, LOW TEMP	CMA DISHMACHINES	B	26.0			115	1	60	X			60	
37	1	ICE MAKER W/ BIN	SCOTSMAN	N0922R-32D	12.2			208	1	60	X				23.5
41	1	CUTTER, VEGETABLE	ROBOT COUPE	CL50	12.0		0.5	120	1	60		X	5-15P		4
42	1	WALK IN COOLER	KOLPAK	CUSTOM											
42A	1	EVAPORATOR COIL, COOLER	KOLPAK	ELC-46-90	1.8			120	1	60	X			103	
42B	4	CONDENSER REMOTE, AIR-COOLED	KOLPAK				1.5	208-230	1	60	X				
43	3	POS TERMINALS W/PRINTER	CUSTOM												
44	3	UNDERCOUNTER REFRIGERATION	PERLICK	HC48RS W/GLASS DOORS	2.8		0.2	115	1	60		X	5-15P		
45	1	UNDERCOUNTER REFRIGERATION	PERLICK	HC24RS	2.3		0.2	115	1	60		X	5-15P		
47	1	UNDERBAR BLENDER STATION	KROWNE METAL	KR18-18BD	15.0			120	1	60	X			20	
47A	1	BLENDER, BEVERAGE	WARING COMMERCIAL	MX1500XTX	13.0			120	1	60		X			
54	1	REFRIGERATED SELF-SERVICE CASE	STRUCTURAL CONCEPTS	B424TM	18.4	1.6		120	1	60		X	5-30P	75	
55	2	COFFEE GRINDER	MAZZER	SUPER JOLLY											
56	2	MODBAR STEAM	MODBAR	STEAM											
57	2	MODBAR ESPRESSO	MODBAR	ESPRESSO											
61	2	COFFEE GRINDER	MAHLKONIG	EK43											

NOTE – CONTRACTOR IS RESPONSIBLE TO CAREFULLY COORDINATE ALL REQUIREMENTS OF THE KITCHEN EQUIPMENT WITH THE VENDORS, OR THE ACTUAL EQUIPMENT, PRIOR TO ANY CONSTRUCTION WORK OR ORDERING OF EQUIPMENT.

PANEL SCHEDULE B

200 AMP, 120/208 VOLT, THREE PHASE, FOUR WIRE, M.L.O., 10000 AMPS MINIMUM A.I.C. BRACING, SURFACE MOUNTED, TYPE NEMA 1 ENCLOSURE

##	BKR.	WIRE AND CONDUIT COND.	NEUTRAL	GND	C.	KEYS	LOAD DESCRIPTION	NEUT.	LINE A	LINE B	LINE C	LOAD DESCRIPTION	WIRE AND CONDUIT KEYS	C.	GND	NEUTRAL	COND.	BKR.	##
1	20/1	#12	#12	#12	1/2	CHAL	BATHROOMS / B.O.H. LTG	480 250	480 250	------ ------	------ ------	BATHROOM EXHAUST FANS *	CHAL	1/2	#12	#12	#12	20/1	2
3	20/1	#12	#12	#12	1/2	CHAL	COOKLINE AREA LTG	286 260	------ ------	286 260	------ ------	NIGHT/EMERGENCY LTG	CHAL	1/2	#12	#12	#12	20/1	4
5	20/1	#12	#12	#12	1/2	CHAL	FRNT ENTRY / BAR LIGHTS	258 238	------ ------	------ ------	258 238	PERIMETER AREA LIGHTS	CHAL	1/2	#12	#12	#12	20/1	6
7	20/1	#12	#12	#12	1/2	CHAL	DINING AREA LIGHTS	350 238	350 238	------ ------	------ ------	PERIMETER AREA LIGHTS	CHAL	1/2	#12	#12	#12	20/1	8
9	20/1	#12	#12	#12	1/2	CHAL	DINING AREA TRACK LIGHTS	68 900	------ ------	68 900	------ ------	SHOW WINDOUT OUTLETS **	CHAL	1/2	#12	#12	#12	20/1	10
11	20/1	#12	#12	#12	1/2	CHAL	TENANT SIGNAGE **	1500 540	------ ------	------ ------	1500 540	OFFICE RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	12
13	20/1	#12	#12	#12	1/2	CHAL	POS TERMINAL W/ PRINTER	800 360	800 360	------ ------	------ ------	PHONE/DATA BOARD OUTLET	CHAL	1/2	#12	#12	#12	20/1	14
15	20/1	#12	#12	#12	1/2	CHAL	POS TERMINAL W/ PRINTER	800 800	------ ------	800 800	------ ------	POS TERMINAL W/ PRINTER	CHAL	1/2	#12	#12	#12	20/1	16
17	20/1	#12	#12	#12	1/2	CHAL	POS TERMINAL W/ PRINTER	800 0	------ ------	------ ------	800 0	SPACE							18
19	20/1	#12	#12	#12	1/2	CHAL	COOK LINE POS PRNTER (52)	500 0	500 0	------ ------	------ ------	SPACE							20
21	20/1	#12	#12	#12	1/2	CHAL	COOK LINE POS PRNTER (52)	500 0	------ ------	500 0	------ ------	SPACE							22
23	20/1	#12	#12	#12	1/2	CHAL	COOK LINE POS PRNTER (52)	500 0	------ ------	------ ------	500 0	SPACE							24
25							SPACE	0 0	0 0	------ ------	------ ------	SPACE							26
27							SPACE	0 0	------ ------	0 0	------ ------	SPACE							28
29							SPACE	0 0	------ ------	------ ------	0 0	SPACE							30

WIRE/CONDUIT KEY	WIRING TYPE	INSULATION	CONDUIT TYPE	TEMP RATING
1234 └TEMP RATING └CONDUIT TYPE └INSULATION └WIRING TYPE	C-CU WIRE	H-THWN	A-EMT	L-78-86 Deg. F.

LINE A	LINE B	LINE C
2978	3614	3836
10,428		

PEAK PHASE (C) UNBALANCED NEUTRAL LOAD AMPS = 32. AMPS
NON DIVERSIFIED LOAD AT 208 VOLT, THREE PHASE = 29. AMPS

PRINTED ON PANELS PROGRAM SERIAL NUMBER 2001.4001
REGISTERED TO - TODD W. CAREY AND ASSOCIATES

PANEL NOTES:
* - PROVIDE TIMECLOCK CONTROL SO EXHAUST FANS RUN DURING BUISNESS HOURS
** - PROVIDE SEPARATE TIMECLCOK CONTROL

PANEL B DIVERSIFICATION CALCULATIONS

RECEPTACLES (10) - 1800 VA TOTAL	
FIRST 10 KVA AT 100% -	1800
LIGHTING - 2178 X 125% -	2723
MOTOR LOADS AT 100% -	250
PLUS 25% OF THE LARGEST MOTOR -	63
MISC NON-CONTINUOUS LOADS AT 100% -	4700
MISC CONTINUOUS LOADS AT 125%	
1500 X 1.25 -	1875
TOTAL DIVERSIFIED PANEL LOAD -	11411
LOAD AT 120/208V/3-PHASE/4-WIRE -	31.7A

PANEL SCHEDULE MDP

800 AMP, 120/208 VOLT, THREE PHASE, FOUR WIRE, M.L.O., 10000 AMPS MINIMUM A.I.C. BRACING, SURFACE MOUNTED, TYPE NEMA 1 ENCLOSURE

##	BKR.	WIRE AND CONDUIT COND.	NEUTRAL	GND	C.	KEYS	LOAD DESCRIPTION	NEUT.	LINE A	LINE B	LINE C	LOAD DESCRIPTION	WIRE AND CONDUIT KEYS	C.	GND	NEUTRAL	COND.	BKR.	##
1	225/3	#4/0	#4/0	#4	2-1/2	CHAL	POWER PANELBOARD 'A'	10964 1318	28486 1318	------ ------	------ ------	LIGHTING PANELBOARD B	CHAL	2	#6	#3/0	#3/0	200/3	2 4 6
3								18409 614	------ ------	32093 614	------ ------								
5								16676 496	------ ------	------ ------	26554 496								
7	60/3	#6	---	#10	3/4	CHAL	NEW ROOFTOP A/C UNIT #4	0 0	5040 1392	------ ------	------ ------	EXHAUST HOOD MUF CU1	CHAL	1/2	#12	---	#12	20/3	8 10 12
9								0 0	------ ------	5040 1392	------ ------								
11								0 0	------ ------	------ ------	5040 1392								
13	60/3	#3	---	#10	3/4	CHAL	NEW ROOFTOP A/C UNIT #5	0 0	5040 2054	------ ------	------ ------	EXHAUST HOOD MUF CU2	CHAL	1/2	#10	---	#10	30/3	14 16 18
15								0 0	------ ------	5040 2054	------ ------								
17								0 0	------ ------	------ ------	5040 2054								
19	60/3	#3	---	#10	3/4	CHAL	NEW ROOFTOP A/C UNIT #6	0 2640	5040 2640	------ ------	------ ------	UPS SYSTEM / PANELBOARD U	CHAL	3/4	#10	#6	#6	60/2	20 22
21								0 2160	------ ------	5040 2160	------ ------								
23								0 0	------ ------	------ ------	5040 0	SPACE							24
25							SPACE	0 0	0 0	------ ------	------ ------	SPACE							26
27							SPACE	0 0	------ ------	0 0	------ ------	SPACE							28
29							SPACE	0 0	------ ------	------ ------	0 0	SPACE							30
31							SPACE	0 0	0 0	------ ------	------ ------	SPACE							32
33							SPACE	0 0	------ ------	0 0	------ ------	SPACE							34
35							SPACE	0 0	------ ------	------ ------	0 0	SPACE							36
37							SPACE	0 0	0 0	------ ------	------ ------	SPACE							38
39							SPACE	0 0	------ ------	0 0	------ ------	SPACE							40
41							SPACE	0 0	------ ------	------ ------	0 0	SPACE							42

WIRE/CONDUIT KEY	WIRING TYPE	INSULATION	CONDUIT TYPE	TEMP RATING
1234 └TEMP RATING └CONDUIT TYPE └INSULATION └WIRING TYPE	C-CU WIRE	H-THWN	A-EMT	L-78-86 Deg. F.

LINE A	LINE B	LINE C
51010	53433	45616
150,059		

PEAK PHASE (B) UNBALANCED NEUTRAL LOAD AMPS = 176.5 AMPS
NON DIVERSIFIED LOAD AT 208 VOLT, THREE PHASE = 416.8 AMPS

PRINTED ON PANELS PROGRAM SERIAL NUMBER 2001.4001
REGISTERED TO - TODD W. CAREY AND ASSOCIATES

PANEL MDP DIVERSIFICATION CALCULATIONS

RECEPTACLES (29) - 5220 VA TOTAL	
FIRST 10 KVA AT 100% -	5220
LIGHTING - 2278 X 125% -	2848
HVAC LOAD AT 100% -	69360
MOTOR LOADS AT 100% -	20936
PLUS 25% OF THE LARGEST MOTOR -	1541
MISC NON-CONTINUOUS LOADS AT 100% -	8688
MISC CONTINUOUS LOADS AT 125%	
600 X 1.25 -	750
KITCHEN EQUIPMENT (46)	
66977 X 0.65 -	43535
TOTAL DIVERSIFIED PANEL LOAD -	152878
LOAD AT 120/208V/3-PHASE/4-WIRE -	424.7A

800A/120/208V/3Ø/4W EXTG PANEL FROM SHELL WORK. ALL NEW BREAKERS TO BE PROVIDED AS PER PANEL SCHEDULE

(4) #1 CU THWN CONDUCTORS AND (1) #6 CU GROUND ALL IN A 1-1/2" CONDUIT

SEE PANEL "MDP" SCHEDULE FOR WIRE AND CONDUIT SIZES.

METERING AS PER UTILITY COMPANY REQUIREMENT (TYP)

(4) 2-1/2" CONDUIT EACH WITH (4) #350 CU THWN CONDUCTORS TO TRANSFORMER

C.T. METERING (TYP)

PANEL 'HP' 100A MCB

TO UTILITY CO. TRANSFORMER. VERIFY ALL REQUIREMENTS WITH LOCAL SERVICE REPRESENTATIVE PRIOR TO CONSTRUCTION.

400A/3P/NEMA3R W/(3) 400A FUSES

800A/3P/NEMA3R W/(3) 800A FUSES

(2) 4" CONDUITS, EACH WITH (4) 600MCM CU THWN COND AND (1) #1/0 CU GROUND

#3/0 CU GROUND

(4) #3 THWN CU CONDUCTORS AND (1) #6 CU GROUND FROM FEED THRU LUGS IN PANEL "A" TO FEED PANEL "A1"

400A/120/208V/3Ø/4W

(1) 4" EMPTY CONDUIT, ALL WIRING IN FUTURE BY TENANT

PROVIDE PROPER GROUNDING AS PER NEC-250 SEE DETAIL ON THIS DRAWING

NOTE – WORK IN SHADED AREAS IS EXISTING FROM SHELL CONSTRUCTION AND NOT PART OF THIS WORK SCOPE.

REV2 NOTE AS PER OWNERS REQUEST, ALL UNINTERRUPTED PANEL "U" LOADS HAVE BEEN SHIFTED TO PANEL "B", AND THE UPS SYSTEM AND PANEBOARD HAVE BEEN DELETED.

1 BUILDING ELECTRICAL SERVICE RISER
NO SCALE

SHEET NO.
E4.0