GENERAL MECHANICAL SYMBOLS

- REVISION NUMBER - SHOWN ON PLANS
- POINT WHERE NEW CONNECTS TO EXISTING
- NUMBER OF DETAIL ON SHEET / NUMBER OF SHEET WHERE DETAIL APPEARS
- KEYNOTE
- CONTINUATION SYMBOL
- Room 5 — ROOM NAME AND NUMBER
- ITEM TO BE DEMOLISHED
- AREA NOT IN CONTRACT
- 2" — PIPE SIZE TAG (DIAMETER)
- ABOVE GROUND PIPING
- 1/8" / 12" SLOPE — PIPE SLOPE TAG
- BELOW GROUND PIPING
- INVERT: -105'-1" — PIPE INVERT ELEVATION TAG
- (E) — EXISTING PIPE TAG
- PIPING BEING DEMOLISHED

ABBREVIATIONS

Ø	ROUND
ABV	ABOVE
AC	AIR CONDITIONING
AD	AREA DRAIN
ADD	ADDENDUM
AFF	ABOVE FINISHED FLOOR
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY
ALT	ALTERNATE
AP	ACCESS PANEL
ARCH	ARCHITECT/ARCHITECTURAL
BFF	BELOW FINISHED FLOOR
BLW	BELOW
BTU	BRITISH THERMAL UNITS
BTUH	BRITISH THERMAL UNITS PER HOUR
CAP	CAPACITY
CB	CATCH BASIN
CFM	CUBIC FEET PER MINUTE
CLG	CEILING
CO	CLEAN OUT
CW	COLD WATER
D	DEGREE
DB	DRY BULB
DIA	DIAMETER
DN	DOWN
DW	DISTILLED WATER
EA	EACH
EAT	ENTERING AIR TEMPERATURE
ELEC	ELECTRICAL
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EWT	ENTERING WATER TEMPERATURE
E/A	EXHAUST AIR
EXIST	EXISTING
F	DEGREES FAHRENHEIT
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FL	FLOOR
FO	FUEL OIL
FOV	FUEL OIL VENT
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FPM	FEET PER MINUTE
FS	FLOOR SINK
FT	FOOT/FEET
FTR	FIN TUBE RADIATION
GAL	GALLON
GF	GAS-FIRED
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
GW	GREASE WASTE
HB	HOSE BIB
HP	HORSE POWER
HTG	HEATING
HTR	HEATER
HW	HOT WATER
HYD	HYDRANT
ID	INDIRECT
IN	INCH
INV	INVERT
LB	POUND
LB/HR	POUNDS PER HOUR
LAT	LEAVING AIR TEMPERATURE
LP	LOW PRESSURE
LPG	LIQUEFIED PETROLEUM GAS
LVR	LOUVER
LWT	LEAVING WATER TEMPERATURE
M/A	MIXED AIR
MAX	MAXIMUM
MBH	ONE THOUSAND BTU PER HOUR
MCF	ONE THOUSAND CUBIC FEET
MD	MOTORIZED DAMPER
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MTR	MOTOR
MUA	MAKE-UP/AIR
NC	NOISE CRITERIA
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NUMBER
NO	NORMALLY OPEN
NTS	NOT TO SCALE
O	OXYGEN
O/A	OUTSIDE AIR
ORD	OVERFLOW ROOF DRAIN
PD	PRESSURE DROP
PIV	POST INDICATOR VALVE
PLBG	PLUMBING
PRESS	PRESSURE
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PWR	POWER
R	DUCT RISER
R/A	RETURN AIR
RCP	RADIANT CEILING PANEL
RD	ROOF DRAIN
REC	RECESSED
RED	REDUCER
RH	RELATIVE HUMIDITY
RL/A	RELIEF AIR
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
RW	RAIN WATER
SF	SQUARE FOOT
S/A	SUPPLY AIR
SAN	SANITARY
SF	SQUARE FOOT
SD	SMOKE DAMPER
SM	SURFACE MOUNT
SP	STANDPIPE
SP	STATIC PRESSURE
STM	STEAM
T	THERMOSTAT
TD	TEMPERATURE DROP
TDR	TRENCH DRAIN
TEMP	TEMPERATURE
TYP	TYPICAL
UG	UNDERGROUND
VAC	VACUUM
V	VENT
VAV	VARIABLE AIR VOLUME
VENT	VENTILATION
VTR	VENT THROUGH ROOF
W	WASTE
WB	WET BULB
WCO	WALL CLEAN OUT
WH	WALL HYDRANT

EQUIPMENT ABBREVIATIONS

AC	AIR CONDITIONING UNIT
ACCU	AIR COOLING CONDENSING UNIT
AHU	AIR HANDLING UNIT
AS	AIR SEPARATOR
B	BOILER
CH	CHILLER
CT	COOLING TOWER
CUH	CABINET UNIT HEATER
CHWP	CHILLED WATER PUMP
DBP	DOMESTIC WATER BOOSTER PUMP
DC	DUCT MOUNTED COIL
DCP	DOMESTIC WATER CIRCULATING PUMP
EF	EXHAUST FAN
EDC	ELECTRIC DUCT COIL
ET	EXPANSION TANK
EWH	ELECTRIC WATER HEATER
FCU	FAN COIL UNIT
FP	FIRE PUMP
GI	GREASE INTERCEPTOR
GRV	GRAVITY ROOF VENTILATOR
HWP	HEATING WATER PUMP
HRU	HEAT RECOVERY UNIT
PRV	POWER ROOF VENTILATOR
RE	RETURN/EXHAUST FAN
RTU	ROOFTOP UNIT
SP	SUMP PUMP
UH	UNIT HEATER
WH	WATER HEATER

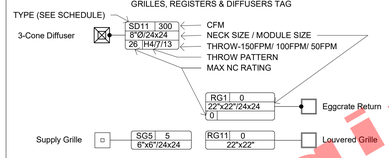
* NOTE *

ALL OF GENERAL NOTES ON THIS SHEET ARE TO BE APPLIED TO ALL OTHER DRAWINGS IN THIS SET. THE SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET MAY OR MAY NOT BE USED IN THIS SET OF DRAWINGS.

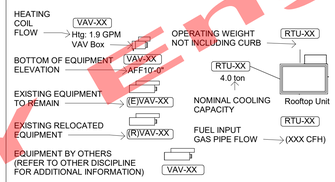
HVAC SYMBOLS

- 18"x12" — SQUARE DUCT SIZE TAG (WIDTH x HEIGHT)
- 18"/12" — OVAL DUCT SIZE TAG (WIDTH / HEIGHT)
- 18"Ø — ROUND DUCT SIZE TAG (DIAMETER)
- (E) — EXISTING DUCT TAG
- DUCT BEING DEMOLISHED
- 18"x18" S/A — SUPPLY AIR
- 18"x18" S-O/A — CONDITIONED OUTSIDE AIR
- 18"x18" O/A — OUTSIDE AIR
- 18"x18" R/A — RETURN AIR
- 18"x18" T/A — TRANSFER AIR
- 18"x18" E/A — EXHAUST AIR
- 18"x18" L/A — RELIEF AIR
- 18"x18" GE/A — GREASE EXHAUST AIR
- 18"x18" CE/A — CONDENSATE EXHAUST AIR
- 18"x18" SE/A — SMOKE EXHAUST AIR
- 6"Ø FLUE — EXHAUST GAS FLUE
- 6"Ø C/A — COMBUSTION AIR
- DROP — RECTANGULAR SUPPLY/OUTSIDE AIR DUCT RISE
- DROP — ROUND SUPPLY/OUTSIDE AIR DUCT RISE
- DROP — RECTANGULAR RETURN/TRANSFER AIR DUCT RISE
- DROP — ROUND RETURN/TRANSFER AIR DUCT RISE
- DROP — RECTANGULAR EXHAUST/RELIEF AIR DUCT RISE
- DROP — ROUND EXHAUST/RELIEF AIR DUCT RISE

GRILLES, REGISTERS & DIFFUSERS TAG



MECHANICAL EQUIPMENT TAGS

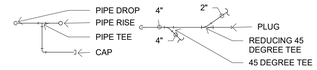


DAMPER TAGS

- SD — Smoke Damper
- FD — Fire Damper
- FSD — Comb. Fire/ Smoke Damper
- M — Manual Damper
- M — Motorized Damper
- BDD — Backdraft Damper

PIPING SYMBOLS

CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CD	CONDENSATE DRAINAGE
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
GWR	GEOTHERMAL WATER RETURN
GWS	GEOTHERMAL WATER SUPPLY
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
G	NATURAL GAS
PG	PROPANE GAS
REF-L	REFRIGERANT-LIQUID
REF-S	REFRIGERANT-SUCTION
REF-HG	REFRIGERANT-HOT GAS
STM	STEAM
CDR	CONDENSATE RETURN



PIPE ACCESSORY TAGS

2" SHUTOFF BALL VALVE	2" LOCKED LOCK SHIELD VALVE	2" M-CNTRL ELEC. CONTROL VALVE
2" BALANCING BALANCING VALVE	2" PRV DOM. PRV	4" 3-WAY CNTRL 3-WAY ELEC. VALVE
2" BUTTERFLY BUTTERFLY VALVE	2" QUICK QUICK OPENING VALVE	
2" CHECK CHECK VALVE	2" STRAINER	
(ALTERNATE CHECK VALVE SYMBOL)	1" GAS CNTRL EMERGENCY GAS	
3" CIRC CIRCUIT SETTER	1" PLUG PLUG VALVE	
2" GATE GATE VALVE	1" GAS COCK GAS SHUTOFF COCK	
2" GLOBE GLOBE VALVE	1" REG GAS REGULATOR	

GENERAL NOTES

1. LANDLORD REQUIRES TENANT TO HAVE A ADA PLAN REVIEW AND FINAL INSPECTION. OWNER AGENT DESIGNATIONS ARE NOT ALLOWED, LANDLORD MUST SIGN AS OWNER.
2. TENANT IS RESPONSIBLE FOR OBTAINING ALL PERMITS, INSPECTIONS AND APPROVALS FROM ALL JURISDICTIONS. TENANT WILL BE RESPONSIBLE FOR ANY HEALTH DEPARTMENT PERMITS IF NEEDED.
3. COPIES OF PERMITS, FINAL INSPECTIONS, CERTIFICATES OF COMPLIANCE/OCCUPANCY SHALL BE FORWARDED TO LANDLORD UPON RECEIPT.
4. GC'S SUBCONTRACTORS SHOULD BE FAMILIAR WITH AND UNDERSTAND CONSTRUCTION RULES BEFORE BIDDING AND PRIOR TO ANY WORK COMMENCING.

REQUIREMENTS PRIOR TO COMMENCING CONSTRUCTION:

1. GC SHALL SCHEDULE PRE-CONSTRUCTION MEETING PRIOR TO STARTING CONSTRUCTION WITH LANDLORD.
2. GC SHALL PROVIDE LANDLORD WITH REQUIRED CERTIFICATE OF INSURANCE PRIOR TO COMMENCING CONSTRUCTION.
3. GC SHALL PROVIDE LANDLORD WITH SUBCONTRACTOR LIST AND CONTACT INFORMATION PRIOR TO STARTING CONSTRUCTION.
4. GC SHALL CONTACT LANDLORD FOR PRE-POUR INSPECTION PRIOR TO POURING CONCRETE.
5. GC SHALL CONTACT LANDLORD FOR COVER UP INSPECTION PRIOR TO SHEET ROCKING WALLS.
6. GC SHALL BE FAMILIAR WITH CONSTRUCTION RULES AND SHALL BID WORK BASED ON THESE RULES.

HVAC GENERAL NOTES

A. COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACES AVAILABLE, AND WITHOUT INTERFERENCES.
B. THIS CONTRACTOR SHALL PERFORM ALL WORK INDICATED AND/OR AS REQUIRED FOR THE PROPER INSTALLATION AND OPERATION OF THE MECHANICAL SYSTEMS.
C. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF DIFFUSERS.
D. INSTALL ALL DUCT, PIPE, ETC. AS HIGH AS POSSIBLE. DUCT SIZES SHOWN ARE ACTUAL SHEET METAL SIZES AND INCLUDE AN ALLOWANCE FOR DUCT LINER WHERE APPLICABLE.
E. PROVIDE FLEXIBLE CONNECTION BETWEEN DUCTWORK AND ROOFTOP UNITS, EXHAUST FANS, AND OTHER MOTORIZED EQUIPMENT.
F. NO DUCT SHALL BE ROUTED OVER THE TOP OF ELECTRICAL PANELS.
G. ALL MATERIALS WITHIN PLENUMS SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84.
H. ALL MECHANICAL SYSTEMS SHALL BE BALANCED BY A CERTIFIED BALANCING CONTRACTOR. REFER TO SPECIFICATIONS FOR DETAILS.
I. PROVIDE FIRE OR FIRE+SMOKE DAMPER WHEREVER DUCTS ARE CROSSING FIRE/SMOKE RATED ASSEMBLIES. COORDINATE WITH ARCHITECTURAL DRAWING FOR FIRE RATING OF THE ASSEMBLIES. IF NOT FIRE RATED, FIRE DAMPERS ARE NOT REQUIRED.
J. DUCT SIZES SHOWN ON PLANS ARE CLEAR INSIDE AIR STREAM DIMENSIONS.
K. ALL EXPOSED ROUND DUCTWORK SHALL BE INTERNALLY INSULATED. ALL CONCEALED DUCTWORK SHALL BE EXTERNALLY INSULATED.

MECHANICAL SHEET SCHEDULE

M-000	MECHANICAL TITLE SHEET
M-100	MECHANICAL FLOOR PLAN
M-101	MECHANICAL ROOF PLAN
M-200	MECHANICAL SCHEDULES AND DETAILS
M-201	REMOTE TEMPERATURE AND HUMIDITY SENSOR WIRING DETAILS
M-300	MECHANICAL HOOD PLANS
M-301	MECHANICAL HOOD PLANS
M-302	MECHANICAL HOOD PLANS
M-303	MECHANICAL HOOD PLANS
M-304	MECHANICAL HOOD PLANS
MP-000	MECHANICAL AND PLUMBING SPECIFICATIONS

APPLICABLE CODES

2015 INTERNATIONAL BUILDING CODE
2015 INTERNATIONAL MECHANICAL CODE
2015 INTERNATIONAL PLUMBING CODE
2014 NATIONAL ELECTRICAL CODE WITH AMENDMENTS
2015 INTERNATIONAL FIRE CODE
2015 INTERNATIONAL FUEL GAS CODE
2009 INTERNATIONAL ENERGY CONSERVATION CODE (CLIMATE ZONE 4A)

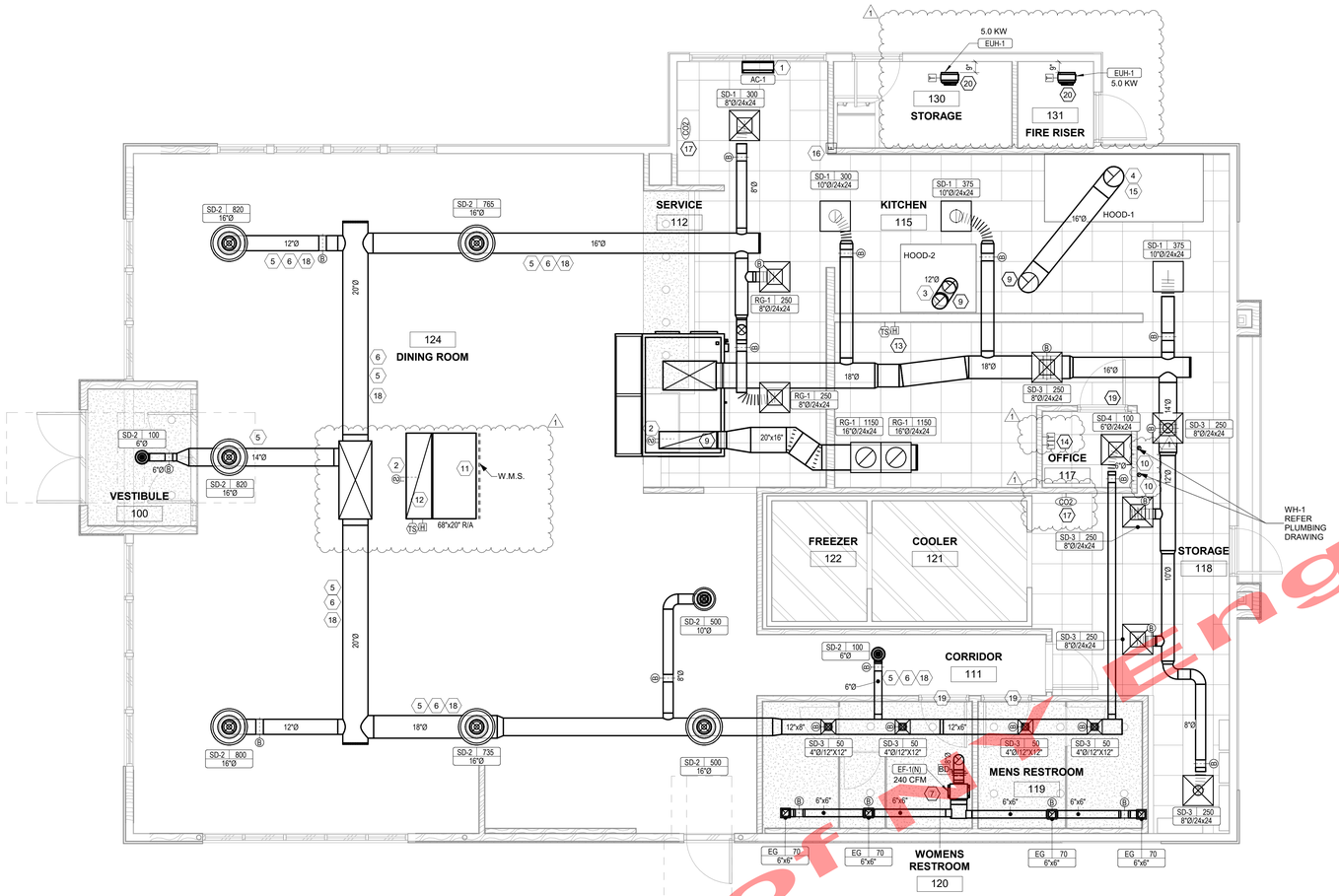
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Freddy's Frozen Custard & Steakburgers
FREDDY'S FROZEN CUSTARD

MECHANICAL TITLE SHEET

M-000

CONSTRUCTION DOCUMENTS



1 M-100 MECHANICAL FLOOR PLAN
1/4" = 1'-0"

MECHANICAL FLOOR PLAN NOTES

1. PROVIDE AND INSTALL AIR CURTAIN IN LOCATION AS SHOWN ON PLAN. MOUNT AIR CURTAIN ON MULLION DIRECTLY ABOVE SERVING OPENING DOOR AT DRIVE-THRU WINDOW. REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS FOR MORE DETAILS.
2. LOCATION OF SMOKE DETECTOR IN RETURN OF RTU-1 & DOAS-1, PROVIDED BY THE MANUFACTURER. PROVIDE REMOTE ENUNCIATOR AUDIO/VISUAL. VERIFY LOCATION WITH FIRE MARSHAL PRIOR TO INSTALLATION. REFER TO SPEC SHEET MP-000 FOR ADDITONAL INFORMATION.
3. TRANSITION AND CONNECT 12" DIAMETER GREASE DUCT TO EXHAUST HOOD. ROUTE DUCT UP AND CONNECT TO EXHAUST FAN. OFFSET AS NECESSARY TO MISS ROOF STRUCTURE, AND GREASE DUCT IS TO BE INSTALLED WITH DUCT WRAP AS DETAILED AND PER THE MANUFACTURERS REQUIREMENTS FOR CLEARANCE TO COMBUSTIBLES. REFER TO ROOF PLAN M-101 FOR CONTINUATION AND M-200 FOR DETAILS.
4. TRANSITION AND CONNECT 16" DIAMETER GREASE DUCT TO EXHAUST HOOD. ROUTE DUCT UP AND CONNECT TO EXHAUST FAN. OFFSET AS NECESSARY TO MISS ROOF STRUCTURE, AND GREASE DUCT IS TO BE INSTALLED WITH DUCT WRAP AS DETAILED AND PER THE MANUFACTURERS REQUIREMENTS FOR CLEARANCE TO COMBUSTIBLES. REFER TO ROOF PLAN M-101 FOR CONTINUATION AND M-200 FOR DETAILS.
5. COORDINATE DUCT ROUTING WITH LIGHTING. REFER TO SHEET E200.
6. EXPOSED DUCTWORK SHALL BE OF PAINTLOCK CONSTRUCTION AND PAINTED PER THE DIRECTION OF ARCHITECT.
7. SUPPORT EXHAUST FAN FROM STRUCTURE AS REQUIRED BY THE MANUFACTURER.
8. ROUTE 8" EXHAUST DUCT UP THROUGH ROOF TO ROOF CAP. MAINTAIN 10'-0" CLEARANCE TO ALL OUTDOOR AIR INTAKES. SEAL PENETRATION WEATHERTIGHT.
9. DUCT UP THROUGH ROOF, SEE SHEET M101 FOR CONTINUATION. OPENING TO BE CUT BETWEEN TRUSSES AS REQUIRED. FIELD VERIFY EXACT LOCATION PRIOR TO CUTTING THE ROOF. SEAL PENETRATION WEATHERTIGHT AS REQUIRED.
10. PROVIDE 3" PVC FLUE AND COMBUSTION AIR INTAKE PIPE FOR HOT WATER HEATER THROUGH ROOF. PROVIDE MANUFACTURERS TERMINATION KIT. SEAL PENETRATION WEATHERTIGHT. VERIFY 10'-0" CLEARANCE FROM ALL OUTDOOR AIR INTAKES.
11. RETURN AIR DUCT LOCATED BETWEEN ROOF TRUSSES. ENCLOSE WITH WIRE MESH AS INDICATED ON DRAWINGS.
12. PROVIDE REMOTE TEMP AND HUMIDITY SENSOR MOUNTED IN RETURN DUCT AND WIRE BACK TO T-STAT IN OFFICE.
13. PROVIDE WALL-MOUNTED REMOTE TEMPERATURE SENSOR AND HUMIDITY SENSOR FOR DOAS-1. PROVIDE ALL REQUIRED CONTROL WIRING; COORDINATE EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN. INSTALLATION SHALL BE AS PER SITE CONDITIONS. VERIFY IN FIELD.
14. LOCATION OF RTU-1/DOAS-1 THERMOSTATS. GC TO LABEL EACH THERMOSTAT.
15. HOOD SUPPLIER SHALL PROVIDE STAINLESS STEEL TYPE I EXHAUST HOOD. CONTRACTOR SHALL INSTALL HOOD IN ACCORDANCE WITH MANUFACTURER'S SUPPORT INSTRUCTIONS. PROVIDE AND INSTALL STAINLESS STEEL WRAPPER PANELS AT TOP PERIMETER OF HOOD EXTENDING UP TO T-BAR CEILING
16. LOCATION OF MANUAL PULL STATION. INSTALL PER THE MANUFACTURERS REQUIREMENTS. CONFIRM LOCATION WITH LOCAL FIRE MARSHAL PRIOR TO INSTALLATION.
17. IF CARBON DIOXIDE STORAGE CAPACITY EXCEEDS 100 LBS, PROVIDE MACURCO #CD-6B CARBON DIOXIDE MONITOR WITH EXTERNAL AMBER HORN/STROBE FOR AUDIBLE AND VISUAL ALARM; UNIT SHALL BE 24V LOW VOLTAGE WITH THREE (3) ALARM LEVEL RELAYS AND 0–5% BY VOLUME DETECTION RANGE; VERIFY ACTUAL CARBON DIOXIDE CAPACITY WITH KITCHEN CONTRACTOR/VENDOR; COORDINATE INSTALLATION AND POWER WITH ELECTRICAL CONTRACTOR; VERIFY IN FIELD AND COORDINATE WITH SITE CONDITIONS.
18. ALL EXPOSED DUCTWORK IN DINING ROOM IS SIZED BY INNER DIAMETER. IF OPTION OF DUCT LINING IS INTENDED TO BE USED, DUCT SIZES WILL NEED TO BE INCREASED TO ACCOMMODATE FREE AREA OF INTERNAL LINER (TYP THROUGHOUT).
19. PROVIDE DOOR UNDERCUT OF MIN. 1/2" FOR MAKE-UP AIR
20. PROVIDE AND INSTALL UNIT HEATER IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED CLEARANCE REQUIREMENTS AND SUPPORT DETAILS.

VENTILATION CALCULATION (IMC 2015)

ROOM NAME	AREA (SQ.FT.)	NUMBER OF PEOPLE/1000 SQ.FT. AS PER IMC 2015	NUMBER OF PEOPLE AS PER IMC 2015	NUMBER OF CHAIR	FINAL PEOPLE NO.	MIN OUTSIDE AIR CFM/PEOPLE	MIN OUTSIDE AIR CFM/SQ.FT	REQUIRED OA (CFM)	PROVIDED OA (CFM)	EXHAUST AIRFLOW RATE (CFM/SQ.FT. OR /FIXT.)	REQUIRED EXHAUST AIR (CFM)	PROVIDED EXHAUST AIR (CFM)	CODE REFERANCE AS PER IMC 2015
100 VESTIBULE	63	0	0	0	0	0	0	10	1065	0	0	0	-
101 DINING	1646	70	115	69	70	8	0	821		0	0	0	FOOD AND BEVERAGE SERVICE – DINING ROOMS
111 CORRIDOR	76	0	0	0	0	0	0	10		0	0	0	CORRIDORS
112 SERVICE	237	15	4	0	4	8	0	73		0	0	0	RETAIL STORES, SALES FLOORS AND SHOWROOM FLOORS-SALES
115 KITCHEN	370	0	0	0	0	0	0	0		1	259	2375	FOOD AND BEVERAGE SERVICE – KITCHENS (COOKING)
119 MENS RESTROOM	91	0	0	0	0	0	0	0		70	70	70	PUBLIC SPACES – TOILET ROOMS — PUBLIC
120 WOMENS RESTROOM	116	0	0	0	0	0	0	0		70	70	70	PUBLIC SPACES – TOILET ROOMS — PUBLIC
118 STORAGE	465	0	0	0	0	0	0	56	2300	0	0	0	RETAIL STORES, SALES FLOORS AND SHOWROOM FLOORS- STORAGE ROOMS
117 OFFICE	29	5	0	0	1	5	0	7		0	0	0	OFFICES-OFFICE SPACES
TOTAL	3093				75			976	3365		399	2515	

AIR BALANCE SCHEDULE

SUPPLY AIR UNIT	OUTSIDE AIRFLOW (CFM)	RETURN AIRFLOW (CFM)	SUPPLY AIRFLOW (CFM)	OA/SA %	EXHAUST AIR UNIT	EXHAUST AIRFLOW (CFM)
RTU-1	1065	4935	6000	17.7%	EF-1&EF-2	140
DOAS-1	2300	0	2300	100%	KEF-1	2375
TOTAL	3365	4935	8300	40%	TOTAL	2515
				RESULTING BUILDING PRESSURIZATION		850

THE BUILDING HVAC SYSTEM SHALL BE BALANCED BY NATIONAL TAB HIRED BY THE OWNER. CONTACT Dan Hertenstein -National TAB at: 816-215-1593 - DAN@NATIONALTAB.COM

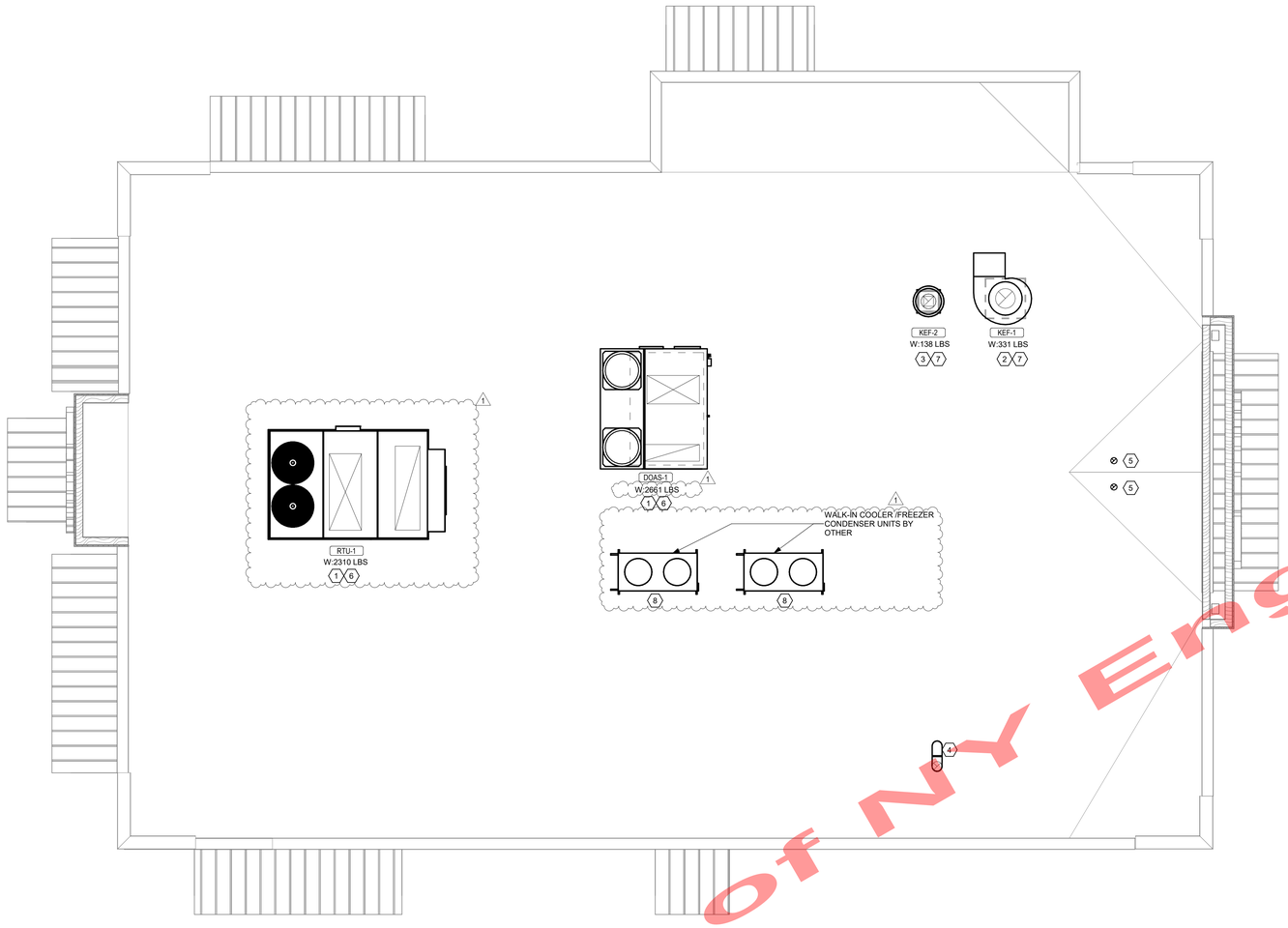
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Freddy's Frozen Custard & Steakburgers
FREDDY'S FROZEN CUSTARD

MECHANICAL FLOOR PLAN

M-100

CONSTRUCTION DOCUMENTS



1 M-101 MECHANICAL ROOF PLAN
1/4" = 1'-0"

MECHANICAL ROOF PLAN NOTES

1. INSTALL RTU-1/DOAS-1 IN LOCATION AS SHOWN ON PLANS. COORDINATE EXACT UNITS LOCATION AND DUCT DROPS WITH STRUCTURAL TRUSS LAYOUT. MAINTAIN MINIMUM 10'-0" CLEARANCE BETWEEN OUTDOOR AIR INTAKES AND EXHAUST TERMINATIONS.
2. INSTALL TYPE I EXHAUST FAN IN LOCATION AS SHOWN ON PLANS. CONNECT 16" DIAMETER EXHAUST DUCT FROM EXHAUST HOOD UP TO KEF-1 ON ROOF. COORDINATE EXHAUST DUCT ROUTING WITH STRUCTURAL TRUSS LAYOUT.
3. INSTALL TYPE I EXHAUST FAN IN LOCATION AS SHOWN ON PLANS. CONNECT 12" DIAMETER EXHAUST DUCT FROM EXHAUST HOOD UP TO KEF-2 ON ROOF. COORDINATE EXHAUST DUCT ROUTING WITH STRUCTURAL TRUSS LAYOUT.
4. 8"Ø EXHAUST DUCT ROUTED TO ROOF AND TERMINATED WITH GOOSENECK ROOF CAP. MAINTAIN MINIMUM 10'-0" CLEARANCE BETWEEN EXHAUST TERMINATION AND ANY OUTDOOR AIR INTAKE. VERIFY FINAL TERMINATION LOCATION IN FIELD.
5. PROVIDE & INSTALL MANUFACTURER'S CONCENTRIC TERMINATION VENT KIT SERVING HOT WATER HEATER BELOW. INSTALL IN STRICT ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. ENSURE AT LEAST 10'-0" DISTANCE BETWEEN OUTDOOR AIR INTAKES
6. INSTALL CONDENSATE DRAIN PIPING FOR RTU-1 AND DOAS-1 AND ROUTE TO APPROVED DRAIN LOCATION. REFER TO PLUMBING PLANS FOR FINAL TERMINATION POINT.
7. TERMINATE ALL EXHAUST AIR DUCTS AT-LEAST 10' HORIZONTALLY AWAY OR 3' VERTICALLY ABOVE ALL OUTSIDE AIR INTAKE OPENINGS AND 10' FEET HORIZONTALLY AWAY FROM LOT LINES. CONTRACTOR TO FIELD VERIFY EXACT TERMINATION LOCATION ON SITE.
8. MECHANICAL CONTRACTOR SHALL COORDINATE THE ROOF INSTALLATION LOCATION OF ALL HVAC EQUIPMENT WITH THE FINAL CONDENSING UNIT LOCATION. VERIFY THE FINAL CONDENSING UNIT LOCATION IN THE FIELD PRIOR TO INSTALLATION. REPORT ANY DISCREPANCIES TO THE EOR.

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FREDDY'S FROZEN CUSTARD

MECHANICAL ROOF PLAN

M-101

CONSTRUCTION DOCUMENTS

ROOF TOP UNIT SCHEDULE

MARK	MANUFACTURER	MODEL NO.	NOMINAL TON	EVAP CFM	EXT. STATIC P.IN.WG.	COOLING					HOT GAS REHAT	HEATING (GAS)			ELECTRICAL				SUPPLY FAN TYPE	MINIMUM OUTDOOR AIR	EER / IEER	TOTAL WEIGHT (LBS)
						COOLING STAGES	TOTAL MBH	SENSIBLE MBH	AMB	EVAP. EAT DB/WB		INPUT MBH	OUTPUT MBH	HEATING STAGES	VOLT/PH/HZ	BLOWER MOTOR HP	MCA	MOCP				
RTU-1	YORK	KV18N1CP2S1AMPL6B1	17.5	6000	1.0	2	225	149	94 °F	78°F / 65°F	YES	220	178	2	208/3/60	3.0	101	125	VFD	1065 CFM	10.8 / 14.0	2310

ALTERNATE TRANE ROOF TOP UNIT SCHEDULE

MARK	MANUFACTURER	MODEL NO.	NOMINAL TON	EVAP CFM	EXT. STATIC P.IN.WG.	COOLING					HOT GAS REHAT	HEATING (GAS)			ELECTRICAL				SUPPLY FAN TYPE	MINIMUM OUTDOOR AIR	EER / IEER	TOTAL WEIGHT (LBS)
						COOLING STAGES	TOTAL MBH	SENSIBLE MBH	AMB	EVAP. EAT DB/WB		INPUT MBH	OUTPUT MBH	HEATING STAGES	VOLT/PH/HZ	BLOWER MOTOR HP	MCA	MOCP				
RTU-1	TRANE	YSK180A3S0L**P0E0A1A1A	15.0	6000	1.0	3	177	135	94 °F	80°F / 67°F	YES	250	202.5	2	208/3/60	3.0	80	110	VFD	1065 CFM	10.8 / 14.0	1820

NOTES:
1. EQUIPMENT MUST BE HIGH EFFICIENT, MEETING OR EXCEEDING THE BRANDS MINIMUM REQUIREMENTS.
2. ELECTRICAL CONNECTION TO BE SINGLE POINT AND TO BE THROUGH THE BOTTOM OF THE UNIT.
3. PROVIDE DISCONNECT SWITCH AND AN UNPOWERED GFIC RECEPTACLE.
4. CONDENSATE DRAIN SHALL DISCHARGE TO AN APPROVED DISPOSAL LOCATION. THE EXACT POINT OF DISCHARGE SHALL BE DETERMINED BY THE CONTRACTOR UPON FIELD VERIFICATION.
5. PROVIDE CABINET WITH 1/2" FIBERGLASS INSULATION.
6. PROVIDE 8-WIRE, 24 VAC, AUTOMATIC CHANGEOVER, 2-STAGE HEAT/COOL, REMOTELY PROGRAMMABLE THERMOSTAT.
7. PROVIDE REMOTE TEMP. SENSORS SHALL BE PROVIDED IN RETURN AIR DUCT AND WIRED BACK TO PROGRAMMABLE, 24 HOUR, 7 DAY, THERMOSTATS.
8. PROVIDE WITH ANTI SHORT CYCLE TIMER.
9. PROVIDE WITH THROWAWAY 2" FILTERS (MERV 13).
10. PROVIDE ALL COMPRESSORS WITH 5 YEAR WARRANTY.
11. PROVIDE HOT GAS REHEAT WITH ASSOCIATED CONTROLS AND SENSORS FOR DEHUMIDIFICATION CONTROL.
12. PROVIDE DIFFERENTIAL ENTHALPY WITH FIXED DRY-BULB TEMPERATURE ECONOMIZER WITH BAROMETRIC RELIEF/MOTORIZED OUTSIDE AIR DAMPER ASSEMBLY WITH HOOD, PROVIDE FDD.
13. REFRIGERATION DETECTION SYSTEM (RDS)-
    FUNCTION: REFRIGERANT DETECTION SYSTEM (RDS) IS INSTALLED IN THIS EQUIPMENT TO DETECT ANY A2L LEAKAGE IN THE COIL AND TAKE ACTION TO MITIGATE ANY RISK OF IGNITION/FIRE.
    OPERATION: WHEN THERE IS A LEAK DETECTED, THE RDS SHALL SEND SIGNALS FOR THE UNIT TO MITIGATE LEAK AS REQUIRED BY MANUFACTURER TO:
    - TURN OFF THE THERMAL STATS.
    - TURN ON THE BLOWER FOR AIR CIRCULATION.

NATIONAL ACCOUNT INFORMATION

FREDDY'S FROZEN CUSTARD HAS NATIONAL ACCOUNT AGREEMENTS FOR ROOF TOP UNITS WITH YORK AND TRANE.
NO ALTERNATE MANUFACTURERS ARE ALLOWED.

FOR YORK EQUIPMENT CONTACT:
LISA JUMP, NATIONAL ACCOUNT MANAGER, (405)-370-4481
LisaE.Jump@bosch-rcgroup.com

FOR TRANE EQUIPMENT EQUAL TO THE UNITS SPECIFIED CONTACT:
SHANE LAFLEUR, NATIONAL ACCOUNT EXECUTIVE, (914) 278-0464
Shane.Lafleur@tranetechnologies.com

FAN SCHEDULE

UNIT ID	MANUFACTURER	MODEL NO.	LOCATION	TYPE	FAN								
					DESIGN AIRFLOW	E.S.P	DRIVE TYPE	MOTOR					
								POWER	RPM	ECM	VOLT/PH/HZ	MCA	MOP
EF-1(N)	GREENHECK	CSP-A390-VG	CEILING	INLINE FAN	280	0.7	DIRECT	78 W	1498	NO	208/1/60	1.1	15

NOTES:
1. PROVIDE CEILING GRILLE, INTEGRAL BACKDRAFT DAMPER AND ROOF CAP.
2. PROVIDE THERMAL OVERLOAD PROTECTION.

ELECTRIC HEATER SCHEDULE

MARK	TYPE	AREA SERVED	QTY.	HEATING CAPACITY	MAXIMUM CFM	ELECTRICAL		MAKE	MODEL
						VOLT/PHHZ	AMPS		
EUH-1	UNIT/CABINET	SEE PLAN	2	5.0 KW	350	208/1/60	24	6000	6000

NOTES:
1. COORDINATE POWER SUPPLY AND DISCONNECT REQUIREMENTS WITH ELECTRICAL CONTRACTOR.
2. INSTALL UNIT COMPLETE WITH MANUFACTURER'S STANDARD SUSPENSION MOUNTING BRACKET.
3. PROVIDE MANUFACTURER'S FACTORY-INSTALLED INTEGRAL THERMOSTAT TO PREVENT FREEZING.

AIR CURTAIN SCHEDULE

UNIT ID	MANUFACTURER	MODEL NO.	LENGTH (IN.)	CFM	QUANTITY	MOTOR HP	V/PH/HZ	AMPS (A)
AC-1	MARS	LPV236-1UA-OB	36	900	1	1/6	115/1/60	2.4

NOTES:
1. COORDINATE WITH ARCHITECT/OWNER FOR FINAL MOUNTING, FRAME TYPE & FINISH.
2. PROVIDE MANUFACTURE RECOMMENDED ACCESSORIES
3. COORDINATE WITH ELECTRICAL CONTRACTOR FOR POWER REQUIREMENT.
4. PROVIDE LIMIT SWITCH FOR OPERATION. AIR CURTAIN SHALL TURN ON WHEN WINDOW IS OPENED.

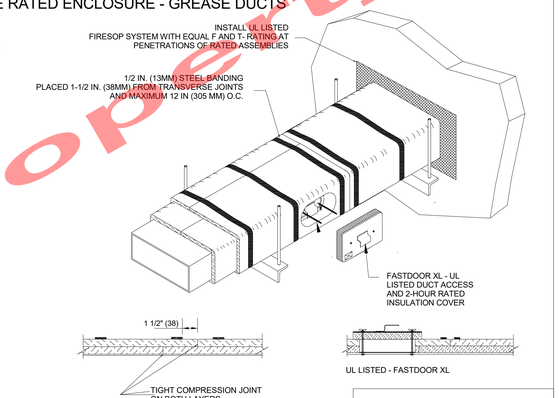
GRILLES, REGISTERS AND DIFFUSERS SCHEDULE

ID	MANUFACTURER	MODEL	MATERIAL	FINISH	NECK			NOTES
					SIZE	WIDTH	HEIGHT	
RG-1	AMER. LOUVER CO	STRATUS	ALUMINUM	WHITE ENAMEL	16"	0"	0"	SEE NOTE 1.
RG-2	TITUS	TMR	ALUMINUM	WHITE ENAMEL	0"	12"	12"	PROVIDE RECTANGULAR TO ROUND TRANSITION
RG-3	TITUS	56L	STEEL	WHITE ENAMEL	14"	0"	0"	WITH O.B DAMPER
SD-1	TITUS	PAS-AA	ALUMINUM	WHITE ENAMEL	0	12"	12"	NO DEFLECTOR
SD-2	TITUS	TMR	STEEL	WHITE ENAMEL	10"	0"	0"	WITH O.B DAMPER AND FIELD PREP FOR PAINTING
SD-3	TITUS	TMS-AA	ALUMINUM	WHITE ENAMEL	10"	0"	0"	-
SD-4	TITUS	TMS-AA	ALUMINUM	WHITE ENAMEL	6"	0"	0"	-
SD-5	TITUS	T3SQ-4	STEEL	WHITE ENAMEL	8"	0"	0"	THERMAL VAV DIFFUSER
SD-6	TITUS	TMR	STEEL	WHITE ENAMEL	6"	0"	0"	WITH O.B DAMPER AND FIELD PREP FOR PAINTING

NOTES:
1. RETURN GRILLE TO BE PLASTIC FILTER RETURN, FILTER TO BE AMERICAN AIR FILTER (AAF) FRONTLINE GREEN 1", WITH AAF AMERIFRAME SIZE 20X20X1.
2. PAINT DIFFUSERS IN DINING AREA 'LID' COLOR – SW 7035 AESTHECTIC WHITE.

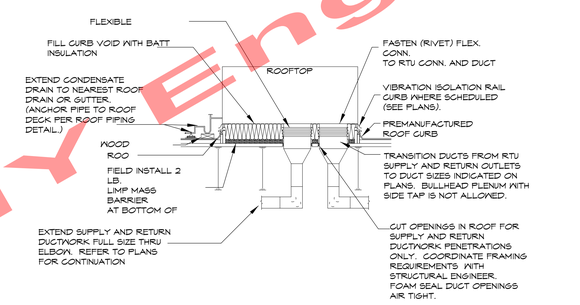
FIRE RATED ENCLOSURE - GREASE DUCTS

1. THERMAL CERAMICS FIREMASTER FASTWRAP XL IS TESTED TO ASTM E2336 AND UL LISTED PER HNKT.G18 TO PROVIDE ZERO CLEARANCE TO COMBUSTIBLES AND TO PROVIDE A 1- OR 2- HOUR ENCLOSURE. THROUGH PENETRATIONS FIRESTOP SYSTEMS ARE TESTED IN ACCORDANCE WITH ASTM E 814 (UL 1479). ICC-ES APPROVAL PER REPORT ESR 2213 OR ESR 2832.
2. COMPLIANT TO THE FOLLOWING CODES:
   NFPA 96
   INTERNATIONAL MECHANICAL CODES
   UNIFORM MECHANICAL CODE
   CALIFORNIA MECHANICAL CODE
3. INSULATION APPLIED IN TWO LAYERS WITH TIGHT COMPRESSION JOINT ON BOTH LAYERS AT ALL JOINTS.
4. MINIMUM 16 GAUGE CARBON STEEL (OR 18 GAGE STAINLESS STEEL) RECTANGULAR OR ROUND GREASE EXHAUST DUCT.
5. INSTALL UL LISTED AND LIQUID TIGHT THERMAL CERAMICS FASTDOOR XL ACCESS DOORS AT ALL CHANGES IN DIRECTION AND AT MINIMUM EVERY 20 FT ON HORIZONTAL RUNS.
6. SUPPORT HANGER SYSTEMS DO NOT NEED TO BE WRAPPED PROVIDED THE HANGER RODS ARE MINIMUM OF 3/8 IN. DIAMETER AND SUPPORTS ARE MINIMUM 2 X 2 X 1/8 IN. STEEL ANGLE OR SMACNA EQUIVALENT SUPPORT SYSTEM.
7. THERMAL CERAMICS DUCT WRAP SHALL BE INSTALLED DIRECTLY ONTO THE DUCT AND APPLIED FROM THE HOOD CONNECTION TO THE CONNECTION TO THE FAN.
8. THERMAL CERAMICS DUCT ENCLOSURE SYSTEM SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS AND UL LISTINGS.

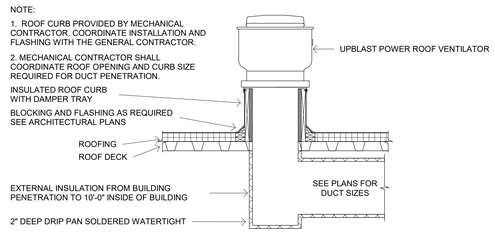


Morgan ThermalCeramics
P.O. Box 923
Augusta, Georgia 30903-0923
Phone: (706) 560-4038

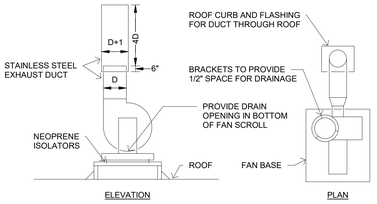
9 M-200 DINING ROOM DIFFUSER DETAIL
NO SCALE



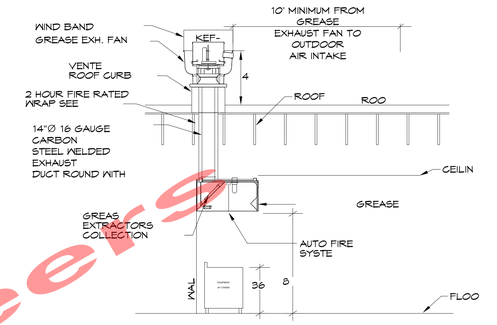
13 M-200 DOWNFLOW ROOFTOP UNIT DETAIL
NO SCALE



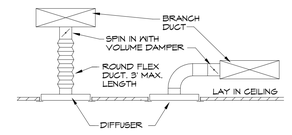
11 M-200 UPBLAST POWER ROOF VENTILATOR DETAIL - GREASE
NO SCALE



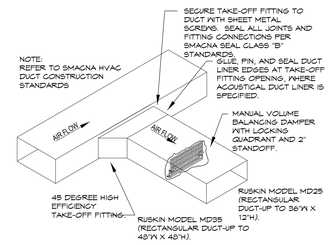
10 M-200 EXHAUST FAN DISCHARGE DETAIL
NO SCALE



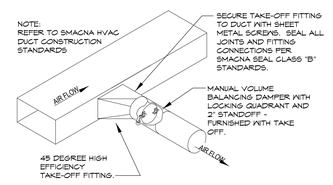
14 M-200 GREASE HOOD DETAIL
NO SCALE



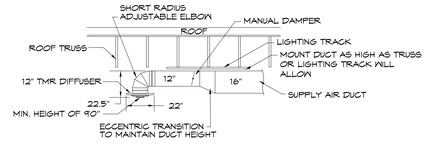
1 M-200 DIFFUSER DETAIL
NO SCALE



2 M-200 RECTANGULAR DUCT TAKE OFF DETAIL
NO SCALE



3 M-200 ROUND DUCT TAKE OFF DETAIL
NO SCALE



8 M-200 DINING ROOM DIFFUSER DETAIL
NO SCALE

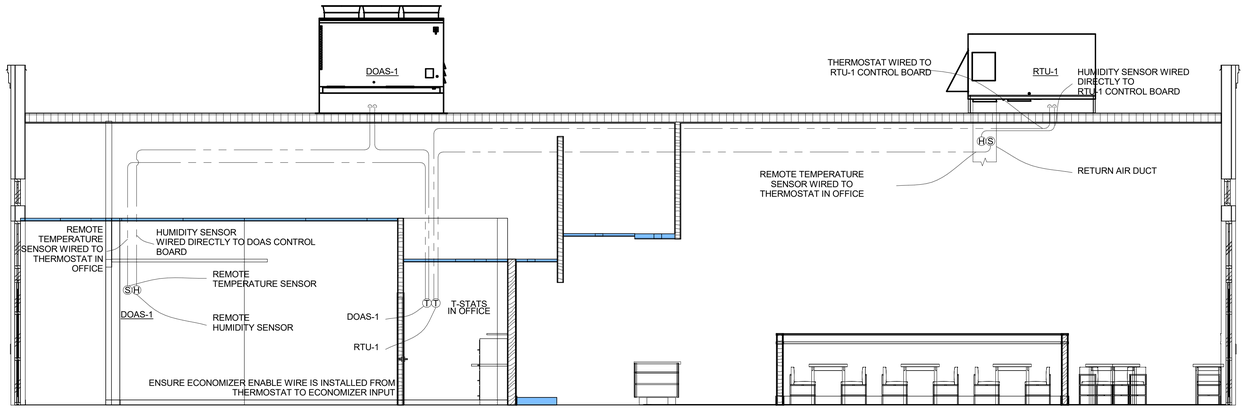
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Freddy's Frozen Custard & Steakburgers
FREDDY'S FROZEN CUSTARD

MECHANICAL SCHEDULES AND DETAILS

M-200

CONSTRUCTION DOCUMENTS



REMOTE TEMPERATURE AND HUMIDITY SENSOR WIRING

ALL LOW VOLTAGE WIRING FOR THE HVAC SYSTEM IS TO BE PROVIDED AND INSTALLED BY THE HVAC CONTRACTOR.

A. PACKAGED ROOFTOP UNITS
UNIT SHALL CONSIST OF SUPPLY AIR FAN, FILTERS, DX COOLING COIL, HOT GAS REHEAT COIL, GAS-FIRED HEAT SECTION, AND A 7-DAY PROGRAMMABLE THERMOSTAT.

1. PROVIDE AN OVERRIDE CONTROL TO OPERATE THE UNIT DURING UNOCCUPIED HOURS. THIS CONTROL SHALL BE PART OF THE PROGRAMMABLE THERMOSTAT. OVERRIDE SWITCH ALLOWS THE UNIT TO OPERATE FOR TWO HOURS (ADJUSTABLE).

2. OCCUPIED MODE: BASED ON THE ROOFTOP UNIT'S HOURS OF OCCUPANCY, START THE UNIT AT THE BEGINNING OF OCCUPANCY AND SHUT DOWN THE UNIT AT THE END OF OCCUPANCY (NOTE: OUTSIDE AIR DAMPER WITHIN THE RTU SHALL OPEN AND THEN THE RTU SHALL START). THE UNIT SHALL START EARLIER AS DETERMINED BY THE PROGRAM FOR EARLY WARM-UP OR COOL DOWN. ON A SYSTEM STARTUP, THE RTU FAN SHALL START AND RUN CONTINUOUSLY. BASED ON THE SPACE TEMPERATURE SENSOR, THE UNIT SHALL CYCLE THE HEATING/COOLING TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE 2 SPEED SUPPLY FAN SHALL REDUCE TO LOW SPEED WHEN THE UNIT IS IN FIRST STAGE HEATING OR COOLING MODE TO OPERATE THE UNIT IN SINGLE ZONE VAV MODE.

2.1. ECONOMIZER MODE: WHEN THE TEMPERATURE OF THE OUTSIDE AIR IS BELOW 55° OR HAS AN ENTHALPY BELOW 28 BTU/LB, ECONOMIZER MODE SHALL BE ENABLED. ECONOMIZER MODE SHALL LINEARLY MODULATE OUTDOOR AIR CFM FROM MINIMUM OA CFM TO 100% BASED ON ENTHALPY READINGS.

2.2. HUMIDITY CONTROL: UPON DETECTION OF RELATIVE HUMIDITY ABOVE 55%, THE UNIT SHALL CYCLE INTO DEHUMIDIFICATION MODE IF NOT ALREADY IN COOLING AND MODULATE THE COMPRESSORS AND HOT GAS REHEAT VALVE TO SUPPLY SPACE NEUTRAL DEHUMIDIFIED AIR UNTIL THE RELATIVE HUMIDITY DROPS BELOW 55% RH.

3. UNOCCUPIED MODE: THE RTU INTERNAL OA DAMPERS SHALL REMAIN CLOSED WHEN THE BUILDING IS NOT OCCUPIED. THE RTU SHALL STOP HEATING/COOLING AND THE FAN SHALL STOP. BASED ON THE SPACE TEMPERATURE SENSOR, THE UNIT SHALL CYCLE THE HEATING/COOLING TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE 2 SPEED SUPPLY FAN SHALL REDUCE TO LOW SPEED WHEN THE UNIT IS IN FIRST STAGE HEATING OR COOLING MODE.

4. UPON DETECTION OF SMOKE BY UNIT SMOKE DETECTOR ALL RTUS SHALL SHUT DOWN AND AN ALARM SHALL BE SENT TO THE FIRE ALARM CONTROL PANEL (WHERE APPLICABLE). LOCAL REMOTE ANNUNCIATORS SHALL ALSO BE ACTIVATED.

B. KITCHEN HOOD EXHAUST FAN (KEF-1, AND KEF-2)
1. THE KITCHEN HOOD EXHAUST FAN SHALL BE ENABLED WHEN ANY COOKING APPLIANCE LOCATED UNDER ITS RESPECTIVE HOOD, IS IN USE.

C. EF-1, EF-2
1. EXHAUST FAN SHALL RUN WHEN THE RESTROOM IS OCCUPIED.

D. DOAS-1
1. THE MAKE UP AIR UNIT SHALL BE ENABLED WHEN THE KITCHEN HOOD EXHUAST FANS (KEF-1 AND KEF-2) ARE ENERGIZED.

2. OCCUPIED MODE: BASED ON THE DOAS UNIT'S HOURS OF OCCUPANCY, START THE UNIT AT THE BEGINNING OF OCCUPANCY AND SHUT DOWN THE UNIT AT THE END OF OCCUPANCY (NOTE: OUTSIDE AIR DAMPER WITHIN THE UNIT SHALL OPEN 100% AND THEN THE FAN SHALL START). THE UNIT SHALL START EARLIER AS DETERMINED BY THE PROGRAM FOR EARLY WARM-UP OR COOL DOWN. ON A SYSTEM STARTUP, THE FAN SHALL START AND RUN CONTINUOUSLY. BASED ON THE SPACE TEMPERATURE SENSOR, THE UNIT SHALL MODULATE THE HEATING/COOLING TO MAINTAIN THE SPACE TEMPERATURE SETPOINT.

2.1. HUMIDITY CONTROL: UPON DETECTION OF RELATIVE HUMIDITY ABOVE 55%, THE UNIT SHALL CYCLE INTO DEHUMIDIFICATION MODE IF NOT ALREADY IN COOLING AND MODULATE THE COMPRESSORS AND HOT GAS REHEAT VALVE TO SUPPLY SPACE NEUTRAL DEHUMIDIFIED AIR UNTIL THE RELATIVE HUMIDITY DROPS BELOW 55% RH.

3. UNOCCUPIED MODE: THE DOAS INTERNAL OA DAMPERS SHALL REMAIN CLOSED WHEN THE BUILDING IS NOT OCCUPIED AND THE UNIT SHALL OPERATE IN RECIRCULATION MODE. THE UNIT SHALL STOP HEATING/COOLING AND THE FAN SHALL STOP. BASED ON THE SPACE TEMPERATURE SENSOR, THE UNIT SHALL CYCLE THE HEATING/COOLING TO MAINTAIN THE SPACE TEMPERATURE SETPOINT.

4. UPON DETECTION OF SMOKE BY UNIT SMOKE DETECTOR ALL RTUS SHALL SHUT DOWN AND AN ALARM SHALL BE SENT TO THE FIRE ALARM CONTROL PANEL (WHERE APPLICABLE). LOCAL REMOTE ANNUNCIATORS SHALL ALSO BE ACTIVATED.

E. ANSUL SYSTEM ACTIVATION
1. UPON ACTIVATION OF ANSUL SYSTEM, SHUT DOWN RTU-1. PROVIDE RELAYS CONTACTS, INTERLOCKS, TRANSFORMERS AND ALL ASSOCIATED WIRING TO ACCOMPLISH SEQUENCE. DOAS-1 IS ALREADY PREWIRED TO SHUT DOWN IN HOOD CONTROL PANEL. MECHANICAL CONTRACTOR SHALL INTERLOCK RTU-1 TO ALSO SHUT DOWN.

F. RTU-1 WIRING AND CONTROL

1. WIRE THE REMOTE TEMPERATURE SENSOR FOR RTU-1 TO THE THERMOSTAT LOCATED IN THE OFFICE. SET THERMOSTAT FOR REMOTE SENSOR OPERATION.

2. WIRE THE REMOTE HUMIDITY SENSOR DIRECTLY TO THE HUMIDITY TERMINALS ON THE RTU CONTROL PANEL PER THE MANUFACTURERS REQUIREMENTS.

3. PROGRAM THE RTU TO OPERATE THE HOT GAS REHEAT CONTROLS BASED ON THE REMOTE SENSOR TO CONTROL HUMIDITY IN THE SPACE.

4. REFER TO THE RTU SEQUENCE OF OPERATIONS FOR UNIT OPERATION.

G. DOAS-1 WIRING AND CONTROL

1. WIRE THE REMOTE TEMPERATURE SENSOR FOR DOAS-1 TO THE DOAS UNIT CONTROL PANEL. SET HMI FOR REMOTE SENSOR OPERATION.

2. WIRE THE REMOTE HUMIDITY SENSOR DIRECTLY TO THE HUMIDITY TERMINALS ON THE DOAS UNIT CONTROL PANEL PER THE MANUFACTURERS REQUIREMENTS.

3. PROGRAM THE DOAS UNIT TO OPERATE THE HOT GAS REHEAT CONTROLS BASED ON THE REMOTE SENSOR TO CONTROL HUMIDITY IN THE SPACE.

4. REFER TO THE DOAS-1 SEQUENCE OF OPERATIONS FOR UNIT OPERATION.

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Freddy's Frozen Custard & Steakburgers
FREDDY'S FROZEN CUSTARD

REMOTE TEMPERATURE AND HUMIDITY SENSOR WIRING DETAILS

M-201

CONSTRUCTION DOCUMENTS

ND-2 HANGING ANGLE DETAIL

1/2" DIA. ALL THREAD ROD CONNECTED TO ROOF JOIST THROUGH ANOTHER HANGING ANGLE

1/2" DIA HEAVY DUTY NUT DOUBLED HEX NUT CONFIGURATION BENEATH HOOD HANGING ANGLES AND ABOVE CEILING ANCHORS



* ROD AND NUTS TO BE SUPPLIED BY INSTALLING CONTRACTOR HANGING ANGLE IS PRE-PUNCHED AT FACTORY

HANGING ANGLE LOCATIONS

HOOD STYLE	DIM. FROM REAR	DIM. FROM FRONT (24"H)	DIM. FROM FRONT (30"H)
CANOPY ND2	4.166"	2.246"	2.246"
ND2-PSP-F	4.166"	2.246"	2.246"
BACKSHELF BD-2	4.166"	2.246	–
VHB/VHB-G	36"X36"	42"X42"	48"X48"
FRONT/BACK DIMS BY SIZE	2.246"	2.246"	2.246"

CALCULATIONS UTILIZED

EXHAUST CFM=LENGTH OF HOOD X CFM/LIN.FT. (LOAD)

SUPPLY CFM=EXHAUST CFM X PERCENTAGE REQUIRED

TOTAL DUCT AREA=144 X $\frac{\text{CFM}}{\text{FPM(*)}}$

DUCT LENGTH= $\frac{\text{TOTAL DUCT AREA}}{\text{DUCT DEPTH}}$

*CAPTIVE-AIRE DUCT CONNECTION SIZES ARE CALCULATED USING AN EXHAUST VELOCITY OF 1500-1800 FPM AND A SUPPLY VELOCITY OF 300-400 FPM.

BUILDING CODES

CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH

STANDARD 710

& 3054804-002

Listed under ETL File number 3054804-001/002

CLEARANCE TO COMBUSTIBLES

CAPTIVE-AIRE HOODS HAVE OPTIONAL CLEARANCE REDUCTION SYSTEMS AVAILABLE AS FOLLOWS:

MATERIAL	CLEARANCE REDUCTION SYSTEM
NON-COMBUSTIBLE	NONE REQUIRED
LIMITED-COMBUSTIBLE	3" UNINSULATED STANDOFF
COMBUSTIBLE	1" INSULATED STANDOFF

GENERAL NOTES

INSTALLATION

1. ALL ELECTRICAL "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY ELECTRICAL CONTRACTORS.
2. ALL PLUMBING "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY PLUMBING CONTRACTORS.
3. HANGING BRACKETS LOCATED AND WELDED AS SHOWN ON PLANS. ALL OTHER HANGER MATERIALS PROVIDED BY INSTALLING CONTRACTORS.
4. ALL CONNECTIONS FROM CAPTIVE-AIRE DUCT PER MECHANICAL CONTRACTOR'S PLANS.
5. COOKING EQUIPMENT TO SHUTOFF IN EVENT OF FIRE.
6. EXHAUST FANS TO TURN ON IN EVENT OF FIRE.
7. ALL LIGHTS FIXTURE SHOWN INSTALLED BY CAPTIVE-AIRE ARE FACTORY PREWIRED. INTERCONNECTIONS BETWEEN HOODS AND TO SWITCHES BY ELECTRICAL CONTRACTORS.
8. LAMPS FOR LIGHT FIXTURES BY INSTALLING CONTRACTORS.
9. SEISMIC RESTRAINTS ARE RESPONSIBILITY OF INSTALLING CONTRACTOR.
10. INSTALLING CONTRACTORS ASSUME ALL RELATED REPONSIBILITY FOR VERIFICATION OF DIMENSIONAL DATA CONTAINED ON THESE DOCUMENTS FOR ACCURACY, INTEGRATION, AND ADMINISTRATION OF EDGE REQUIREMENTS IN EFFECT PRIOR TO ANY RELEASE FOR PRODUCTION OF EQUIPMENT SHOWN.

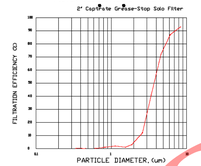
BALANCE

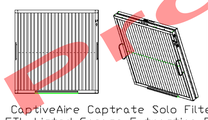
11. KITCHEN HOODS MUST BE BALANCED WITH KITCHEN.
12. KITCHEN SHALL BE NEGATIVE WITH RESPECT TO DINING AREA.
13. RESTAURANT SHALL BE POSITIVE WITH RESPECT TO AMBIENT PRESSURE.

ADDITIONAL

14. WRITTEN HOOD DIMENSIONS HAVE PRECEDENCE OVER SCALE.
15. SIGNED AND "APPROVED" COPIES OF THIS DOCUMENT MUST BE RECEIVED BY THE FACTORY PRIOR TO COMMENCEMENT OF FABRICATION.

FILTER DETAIL





CaptiveAire Captrate Solo Filter
ETL Listed Grease Extracting Filters
Made From 430 Stainless Steel

HOOD INFORMATION – JOB#8678511

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S) WIDTH	LENG	HEIGHT	DIA	CFM	VEL	SP	HOOD CONSTRUCTION	HOOD CONFIG END TO END	ROW
1	ITEM 33A	5424 ND-2	CAPTIVEAIRE	8' 0"	450 DEG	1	MEDIUM	200	1600			4"	14"	1600	1492	-0.734"	430 SS WHERE EXPOSED	ALONE	FRONT
2	ITEM 33B	5424 ND-2	CAPTIVEAIRE	5' 0"	450 DEG	1	MEDIUM	155	775			4"	10"	775	1421	-0.436"	430 SS WHERE EXPOSED	ALONE	ALONE

HOOD INFORMATION

HOOD NO	TAG	FILTER(S) TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QTY	LIGHT(S) TYPE	WIRE GUARD	LOCATION	SIZE	UTILITY CABINET(S) FIRE SYSTEM TYPE	FIRE SYSTEM SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY	FIRE SYSTEM PIPING	HOOD HANGING WEIGHT
1	ITEM 33A	CAPTRATE SOLID FILTER	5	16"	16"	85% SEE FILTER SPEC	2	RECESSED ROUND	NO	LEFT	12"x54"x24"	TANK FS	4.0/4.0/4.0	DCV-2111	1 LIGHT 1 FAN	YES	921 LBS
2	ITEM 33B	CAPTRATE SOLID FILTER	3	16"	16"	85% SEE FILTER SPEC	2	RECESSED ROUND	NO							YES	355 LBS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1	ITEM 33A	FIELD WRAPPER 18.00" HIGH FRONT, LEFT, RIGHT.
		RIGHT END STANDOFF (FINISHED) 1" WIDE 54" LONG INSULATED.
		LEFT QUARTER END PANEL. 23" TOP WIDTH, 0" BOTTOM WIDTH, 23" HIGH 430 SS.
		RIGHT QUARTER END PANEL. 23" TOP WIDTH, 0" BOTTOM WIDTH, 23" HIGH 430 SS.
		INSULATION FOR TOP OF HOOD.
		INSULATION FOR BACK OF HOOD.
		RISER SENSOR INSTALL 6IN PLEN.
2	ITEM 33B	FIELD WRAPPER 18.00" HIGH FRONT, LEFT, RIGHT.
		LEFT QUARTER END PANEL. 23" TOP WIDTH, 0" BOTTOM WIDTH, 23" HIGH 430 SS.
		RIGHT QUARTER END PANEL. 23" TOP WIDTH, 0" BOTTOM WIDTH, 23" HIGH 430 SS.
		INSULATION FOR TOP OF HOOD.
		INSULATION FOR BACK OF HOOD.
		RISER SENSOR INSTALL 6IN PLEN.

SPECIFICATION: CAPTRATE GREASE-STOP SOLID FILTER

THE CAPTRATE GREASE-STOP SOLID 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.

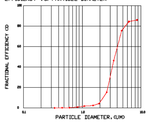
FILTER IS STAINLESS STEEL CONSTRUCTION, AND SIZED TO FIT INTO STANDARD 2-INCH DEEP HOOD CHANNEL(S).

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

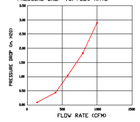
GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 85% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 1.0 INCHES OF WATER GAUGE.

THE CAPTRATE GREASE-STOP SOLID WAS TESTED TO ASTM STANDARD ASTM F2519-05 MANUFACTURER APPROVED FOR USE IN SOLID FUEL APPLICATIONS AS A SPARK ARRESTER.

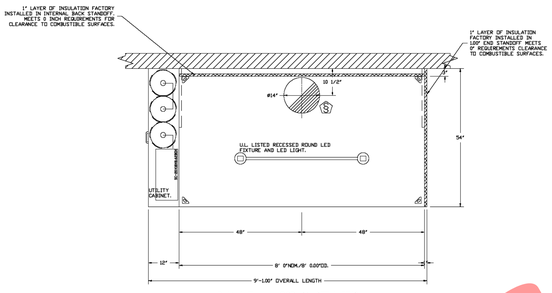
EFFICIENCY VS. PARTICLE DIAMETER



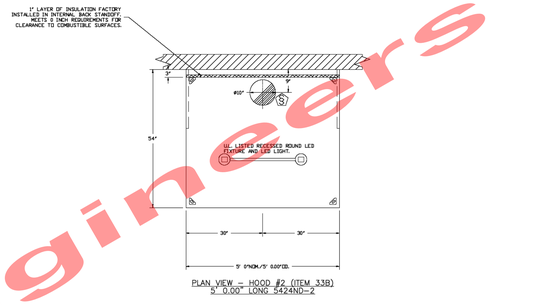
PRESSURE DROP VS. FLOW RATE



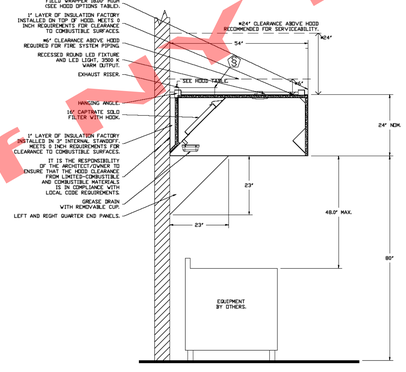
CAPTRATE FILTERS ARE BUILT IN COMPLIANCE WITH. NFPA #96. NSF STANDARD #2. UL STANDARD #1046. INT. MECH. CODE (IMC). ULC-S649.



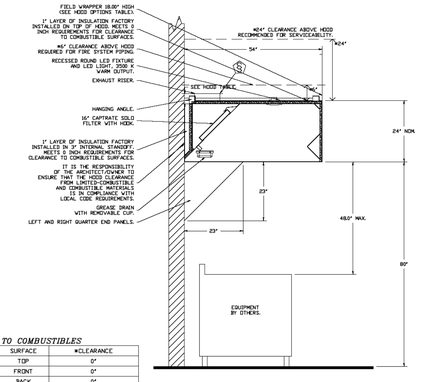
PLAN VIEW – HOOD #1 (ITEM 33A)
8' 0.00" LONG 5424ND-2



PLAN VIEW – HOOD #2 (ITEM 33B)
5' 0.00" LONG 5424ND-2



SECTION VIEW – MODEL 5424ND-2
HOOD – #1 (ITEM 33A)



SECTION VIEW – MODEL 5424ND-2
HOOD – #2 (ITEM 33B)

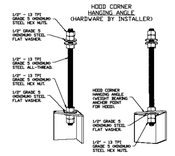
CLEARANCE TO COMBUSTIBLES

HOOD'S #	SURFACE	*CLEARANCE
1	TOP	0"
	FRONT	0"
	BACK	0"
	LEFT	0"
	RIGHT	0"
2	TOP	0"
	FRONT	0"
	BACK	0"
	LEFT	18"
	RIGHT	18"

- #0" CLEARANCE TO COMBUSTIBLES CONFORMS TO UL710 STANDARD.
- HOOD MOUNTED UTILITY CABENETS REQUIRE 36" SERVICE CLEARANCE.

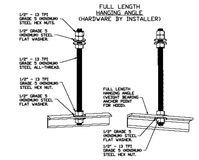
PATENT NUMBERS

EXHAUST HOODS ND-2/BD-2/SND-2 (CANADA) – CA PATENT 2520435 C.



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 BENEATH HOOD HANGING ANGLES AND ABOVE CEILING ANCHORS. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.



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 FULL LENGTH HANGING ANGLES. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.

FOR QUESTIONS, CALL THE:
KANSAS CITY REGIONAL OFFICE
1126 SWIFT STREET, KANSAS CITY, MO 64116
PHONE: (816) 221-8575
FAX: (816) 221-8311

CUSTOMER APPROVAL TO MANUFACTURE:

Approved as Noted ☐
Approved with NO Exception Taken ☐
Revise and Resubmit ☐

SIGNATURE _____
Your Title _____ Date _____

*** NOTE ***

ALL WALLS AND STRUCTURES THAT COME WITHIN 18" OF HOOD MUST BE METAL STUDS AND SHEETROCK. WOOD STUDS OR ANY OTHER COMBUSTIBLE MATERIAL WITHIN 18" OF HOOD NO ALLOWED.

*** NOTE ***

HOOD MANUFACTURER RECOMMENDS NO RETURNS OR 4-WAY DIFFUSERS WITHIN 10 FEET OF HOOD IN ALL DIRECTION.

*** NOTE ***

MAKEUP AIR SHALL BE DELIVERED INTO SPACE IN MANNER THAT WILL NOT DISRUPT HOODS ABILITY TO CAPTURE AND CONTAIN.

Property of Engineers

REVISIONS

DESCRIPTION	DATE:
△	
△	
△	
△	

CAPTIVE-AIRE
www.captiveaire.com
HBT Foodservice
104 W 9th St Suite 204, Kansas City, MO. 64105 PHONE: (816) 221-8575 FAX: (816) 221-8311 EMAIL: reg98@captiveaire.com

Freddy's Frozen Custard & Steakburgers
FREDDY'S FROZEN CUSTARD

DATE: 7/6/2026

DWG.#: 8678511

DRAWN BY: michael.co

SCALE: 1/2" = 1'-0"

MASTER DRAWING

SHEET NO. 1

MECHANICAL HOOD PLANS

M-300

CONSTRUCTION DOCUMENTS

FIRE SYSTEM INFORMATION – JOB#8678511

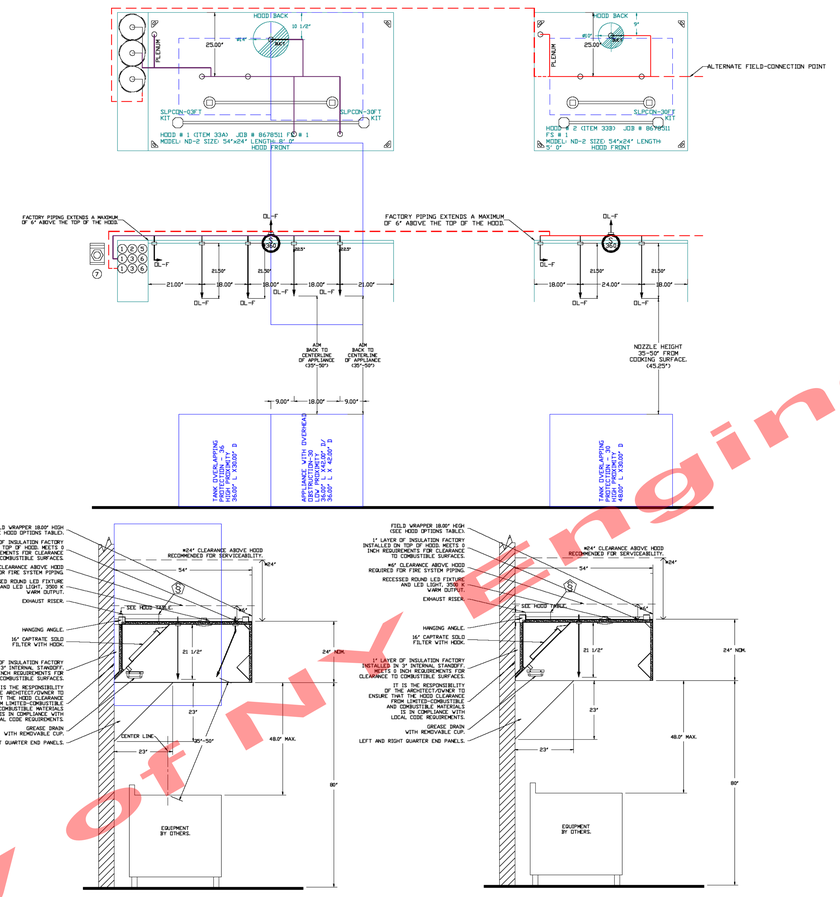
FIRE SYSTEM NO	TAG	TYPE	SIZE	MAX FP	DESIGN FP	INSTALLATION	
						SYSTEM	LOCATION ON HOOD
1	FS - 33A/B	TANK FS	4.0/4.0/4.0	60	42	FIRE CABINET LEFT	LEFT, HOOD 1

GAS VALVE(S)

FIRE SYSTEM NO	TAG	TYPE	SIZE	SUPPLIED BY
1	FS - 33A/B	SC ELECTRICAL	0.750	CAPTIVEAIRE SYSTEMS

FIRE SYSTEM PARTS LIST KEY

FIRE SYSTEM NO	TAG	KEY NUMBER – PART DESCRIPTION	QTY BY FACTORY	QTY BY DIST
1	FS - 33A/B	0 – 0 – 32–00002 – QUIK SEAL – 1/2" CUL'S.	2	0
		26 – 26 – QSA–3/8 – QUIK SEAL – 3/8" CUL'S	10	0
		16 – 16 – DL–F – NOZZLE – TANK PROTECTION APPLIANCE COVERAGE NOZZLE (INCLUDES METAL BLOW OFF CAP, LANYARD, USED WITH CHROME–PLATED PIPE).	10	0
		0 – 0 – C81–225 – CHROME PLATED PIPE FITTING 3/8" NPT 22.5 DEGREE ELBOW.	2	0
		0 – 0 – 9053459PC – PRO PRESS 1/2 PRESS X PRESS 90 ELBOW LD.	9	0
		0 – 0 – 9097200PC – PRO PRESS PC611 1/2 PRESS TEE LD.	9	0
		16 – 16 – 79210 – 1/2" X 3/8" NPT MALE ADAPTER, VIEGA.	10	0
		0 – 0 – B1145 – 3/8" BLACK IRON 90 ELL.	4	0
		0 – 0 – 36191 – 3/8" BRASS PLUG.	3	0
		0 – 0 – 79425 – 3/8" NPT FEMALE TO 1/2" MALE PROPRESS ADAPTER.	3	0
		0 – 0 – TANK STRAP – TANK STRAP – USED FOR TANK FIRE SUPPRESSION.	9	0
		0 – 0 – 1FS–UCTANKBRACKET – TANK BRACKET FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	3	0
		0 – 0 – 87–120045–001 – HOSE, SECONDARY ACTUATOR HOSE, 7.5" BRAIDED STAINLESS STEEL, TANK FIRE SUPPRESSION.	2	0
		0 – 0 – WK–283952–000 – DISCHARGE ADAPTER, TANK FIRE SUPPRESSION.	3	0
		0 – 0 – 87–300152–001 – HARDWARE, SVA BOLTS, TANK FIRE SUPPRESSION.	12	0
		PULL 0 – A0034330 – JUNCTION BOX FOR MANUAL PULL STATION. 15" DEEP BACK BOX, RED COLOR.	1	0
		34 – 34 – A0034331 – RED COLOR – 24VDC SINGLE ACTION MANUAL ACTUATION DEVICE (PUSH/PULL STATION) WITH PROTECTIVE COVER, ONE (1) NORMALLY OPEN CONTACT.	1	0
		0 – 0 – DATANKLOCK – DISCHARGE ADAPTER TANK LOCKING PLATE FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	3	0
		0 – 0 – 98694A115 – HARDWARE, DATANKLOCK LOCKING BRACKET SQUARE NUTS 5/16" ZINC, TANK FIRE SUPPRESSION.	6	0
		0 – 0 – – – TANK FIRE SUPPRESSION POST–DISCHARGE PROCEDURE UTILITY CABINET LABEL SHEET.	1	0
		0 – 0 – – – TANK FIRE SUPPRESSION MAINTENANCE GUIDE UTILITY CABINET LABEL SHEET.	1	0
		0 – 0 – 79580 – 1/2" X 1/2" PRO–PRESS TEE X 1/2" NPT FEMALE CONNECTION, VIEGA.	3	0
		0 – 0 – A31484 – 1/4" NPT SCHRADER VALVE AND CAP, JB INDUSTRIES. 1/4" FLARE X 1/4" MPT HALF UNION. USED ON TANK SERVICE PORT.	2	0
		0 – 0 – 79525 – 1/2" 90 PRO–PRESS ELBOW WITH 1/2" NPT FEMALE CONNECTION, VIEGA.	2	0
		0 – 0 – 4429K422 – 1/2" X 1/4" BRASS REDUCING BUSHING.	2	0
		0 – 0 – 4429K053 – 1/2" MALE NPT TO 1/2" FEMALE NPT ELBOW, BRASS.	3	0
		0 – 0 – 87–300030–001 – PRIMARY ACTUATOR KIT (PAK) – ACTUATOR AND RELEASE SOLENOID ASSEMBLY, ONE NEEDED PER FIRE SYSTEM, SUPERVISED, TANK FIRE SUPPRESSION.	1	0
		0 – 0 – 87–120062–001 – SECONDARY ACTUATOR VALVE (SVA) – SINGLE ACTUATOR, REQUIRES PRIMARY RELEASE ACTUATOR, TANK FIRE SUPPRESSION.	2	0
		0 – 0 – 87–300033–001 – DIN CONNECTOR, CANFIELD PART #5JS60–201–EUGA, TANK FIRE SUPPRESSION, SUBMINATURE SOLENOID CONNECTION (CED VENDOR 30377).	1	0
		0 – 0 – 87–300001–001 – TANK – PRESSURIZED TANK USED FOR TANK FIRE SUPPRESSION.	3	0
		0 – 0 – 12–F28021–32144–OT–360 – DUCT FIRE THERMOSTAT WITH 12 FOOT WIRE LEADS. NO, CLOSE ON TEMP RISE AT 360°F. (A603431D).	2	0
		0 – 0 – SLPCDN–03FT – SUPERVISED LOOP CONNECTION KIT. CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN END TO END HOODS WITH LESS THAN A 2" GAP. KIT CONTAINS 18 FEET OF BLACK MG WIRE, 5 FEET OF TAN MG WIRE, 3 FEET OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS.	1	0
		0 – 0 – SLPCDN–30FT – SUPERVISED LOOP CONNECTION KIT. CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN HOODS WITH UPTO 29' GAP. KIT CONTAINS 32 FEET OF BLACK MG WIRE, 32 FEET OF TAN MG WIRE, 30 FEET OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS.	2	0
		SC–EGVA3/4 – GAS VALVE – 3/4" ELECTRICAL SHUTOFF VALVE FOR USE WITH HMI RESET, 110V, 60HZ (#8B2142351). INCLUDES UPSTREAM STRAINER ASSEMBLY.	1	0



SECTION VIEW – MODEL 5424ND–2 HOOD – #1

SECTION VIEW – MODEL 5424ND–2 HOOD – #2

NOTES
- FIELD PIPE DROPS AS SHOWN
- PIPING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS.
- FIELD INSTALLED DROP FACTORY WILL PROVIDE QTY 2 .60IN LONG PIECES OF CHROME PLATED PIPING SHIPPED LOOSE TO BE FIELD–INSTALLED.
- SHIP LOOSE DROP: FACTORY WILL PROVIDE THE EXACT CHROME PIPE LENGTH NEEDED SHIPPED LOOSE TO BE FIELD–INSTALLED.
- RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVING, SALAMANDERS, ETC.
- OVERLAPPING COVERAGE SHALL NOT BE USED ON ANY APPLIANCE WITH AN OBSTRUCTION.
- IF APPLICABLE, EXTENDED PRE–PIPED DROPS ARE SHIPPED LOOSE.
- FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.

- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE SIZE, NOT THE OVERALL APPLIANCE SIZE.

- THIS PRE–ENGINEERED FIRE SYSTEM COMPLIES WITH U.L. 300 REQUIREMENTS.

- DL–F NOZZLE PART NUMBER REPLACES 3070–3/8H–10–SS

JOB #: 8678511
JOB NAME: FREDDY'S – CAPE GIRARDEAU, MO.

SYSTEM SIZE: TANK–SP–3 DESIGN FP: 42, MAXIMUM FP: 60.
HOOD # 1 8' 0.00" LONG x 54" WIDE x 24" HIGH.
RISER # 1 SIZE: 14" DIA.
HOOD # 1 METAL BLOW–OFF CAPS INCLUDED.
HOOD # 2 5' 0.00" LONG x 54" WIDE x 24" HIGH.
RISER # 1 SIZE: 10" DIA.
HOOD # 2 METAL BLOW–OFF CAPS INCLUDED.

- HEAVY–DUTY APPLIANCES (RATED 600°F) WILL REQUIRE AN ADDITIONAL DOWNSTREAM FIRESTAT IN THE EVENT THAT THE DUCTWORK CONTAINS ANY HORIZONTAL RUNS OVER 25 FT IN LENGTH.
- MEDIUM TO LIGHT–DUTY APPLIANCES (RATED 450°F) WILL NOT REQUIRE ANY ADDITIONAL DOWNSTREAM DETECTION.

AGENT DISTRIBUTION PIPING LIMITATIONS	
PIPE SECTION	MAX PIPE LENGTH (FT)
MAX SUPPLY LINE TO FIRST OVERLAPPING NOZZLE	42
OVERLAPPING NOZZLE APPLIANCE BRANCH	10
DEDICATED NOZZLE APPLIANCE BRANCH	10

LEGEND – FIRE CABINET TANK SYSTEM

1 4 GALLON TANK.
2 PRIMARY ACTUATOR RELEASE.
3 SECONDARY ACTUATOR RELEASE.
4 PRESSURE SUPERVISION SWITCH.
5 PRIMARY HOSE ASSEMBLY.
6 SECONDARY HOSE ASSEMBLY.
7 REMOTE MANUAL ACTUATION DEVICE.

INCLUDES FIELD INSTALLATION AND HOOKUP DURING NORMAL BUSINESS HOURS BY CERTIFIED INSTALLERS ONLY IN THE LOCATION NOTED ABOVE TWO SITE VISITS TOTAL ONLY (ONE FOR PIPING LOCATION & SYSTEM HOOKUP AND ONE VISIT FOR FINAL TEST). ADDITIONAL VISITS WILL BE ASSESSED IN ADDITIONAL CHARGES. ONE MECHANICAL OR ELECTRICAL GAS VALVE PER SYSTEM AT A MAXIMUM SIZE OF 2", PERMIT, AND SYSTEM TEST.
EXCLUDES: UNION LABOR & PREVAILING WAGE. G.ABOR & WAGES WILL BE ADDED IF APPLICABLE), GAS VALVE INSTALLATION, ELECTRICAL HOOKUP AND CONNECTIONS, HANGING OF FIRE CABINET, SHUNT TRIP, HANDHELD EXTINGUISHER(S), ON–SITE RE–PIPING DUE TO EQUIPMENT LAYOUT CHANGES.

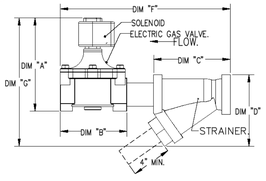
GAS VALVES AND STRAINERS

GAS VALVE SIZING						GAS VALVE DIMENSIONS					INSTALLATION	PART NUMBERS		
TYPE	SIZE	VOLTAGE	MINIMUM INLET PRESSURE	MAXIMUM INLET PRESSURE	FLOW AT 1 IN.W.C. DROP NATURAL GAS	FLOW AT 1 IN.W.C. DROP PROPANE	DIM "A"	DIM "B"	DIM "C"	DIM "D"	DIM "E"	PIPE ORIENTATION	GAS VALVE PART NUMBER	STRAINER PART NUMBER	GAS VALVE/STRAINER KIT
GAS VALVE FOR FS#:---- ELECTRICAL	3/4"	120 VAC	5 PSI (13 IN.W.C.)	5 PSI (138 IN.W.C.)	152,000 BTU/HR	240,873 BTU/HR	6–15/16"	3–15/16"	4"	4–1/2"	11–15/16"	3–7/8"	HORIZONTAL/VERTICAL	8214235	4470NA	(SCEGVA)3/4

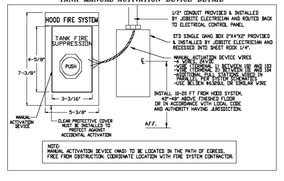
ELECTRIC GAS VALVES ONLY: SOLENOID ORIENTATION:
3/4"–2" USING GAS VALVES CAN BE MOUNTED WITH THE SOLENOID IN ANY POSITION UP OR ABOVE HORIZONTAL.
2 1/2"–3" USING GAS VALVES MUST BE MOUNTED WITH THE SOLENOID VERTICAL AND UPRIGHT.
2NRD GAS VALVES MUST BE MOUNTED WITH THE SOLENOID VERTICAL AND UPRIGHT.

ALL GAS VALVES/STRAINERS
PROPER CLEARANCE MUST BE PROVIDED IN ORDER TO SERVICE THE STRAINERS. A MINIMUM OF 4" CLEARANCE DISTANCE MUST BE PROVIDED AT THE BASE OF THE STRAINER. CUSTOMER MUST VERIFY BTU CONSUMPTION OF MODEL AS PRESSURE RATING.
SPECIFIC GRAVITY OF NATURAL GAS = 0.64, SPECIFIC GRAVITY OF LP = 1.52.

CALCULATIONS
TO CALCULATE GAS FLOW FOR OTHER THAN 1 IN.W.C. PRESSURE DROP:
NEW BTU/HR = (BTU/HR AT 1 IN.W.C. PRESSURE DROP) X NEW PRESSURE DROP$^{0.5}$
TO CALCULATE GAS FLOW FOR OTHER THAN 0.64 SPECIFIC GRAVITY:
NEW BTU/HR = (BTU/HR AT 0.64) X (0.64 / NEW SPECIFIC GRAVITY)$^{0.5}$.



TANK MANUAL ACTIVATION DEVICE DETAIL



Property of NY Engineering

REVISIONS

	DESCRIPTION	DATE:
△		
△		
△		
△		

CAPTIVEAIRE
www.captiveaire.com
HBT Foodservice
104 W 9th St Suite 204, Kansas City, MO. 64105 PHONE: (816) 221-8575 FAX: (816) 221-8311 EMAIL: reg9&@captiveaire.com

DATE: 7/6/2026
DWG.#: 8678511
DRAWN BY: michael.co
SCALE: 1/2" = 1'–0"
MASTER DRAWING
SHEET NO. 2

Freddy's Frozen Custard & Steakburgers
FREDDY'S FROZEN CUSTARD

MECHANICAL HOOD PLANS

M-301

CONSTRUCTION DOCUMENTS

EXHAUST FAN INFORMATION – JOB#8678511

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SONES
1	ITEM 741	1	CASREI80D	CAPTIVEAIRE	1600	1.400	1225	ODP,PREMIUM	1.000	0.9520	3	208	3.8	928 FPM	331	15.7
2	ITEM 742	1	DU50HFA	CAPTIVEAIRE	775	1.250	1471	TEAO-ECM	0.500	0.3990	1	115	6.3	295 FPM	138	15

DOAS/RTU FAN SCHEDULE – JOB#8678511

FAN INFORMATION										ELECTRICAL INFORMATION				COOLING INFORMATION								REHEAT INFORMATION				GAS HEAT INFORMATION					A2L MINIMUM ROOM VOLUME			
FAN UNIT NO	TAG	QTY	DOAS/RTU MODEL #	MANUFACTURER	BLOWER	TOTAL CFM	MAX OUTSIDE AIR CFM	RETURN AIR CFM	WEIGHT (LBS)	ESP	HP	PHASE	VOLT	MCA	MOCP	OUTSIDE AIR	MIXED AIR	LEAVING AIR		CAPACITY		IEER	ISMRE2	DISCHARGE	CAPACITY		MOISTURE REMOVAL RATE	GAS TYPE	INPUT BTUs	OUTPUT BTUs	TEMP RISE	REQUIRED INPUT GAS PRESSURE		ROOM AREA (FT2)	AIRFLOW (CFM)	HEIGHT (FT)	NOTES
																DB	WB	DB	WB	TOTAL	SENS.			DB	DESIRED	MAX										
3	DOAS-1	1	CAS-HVAC3-1250-18-17.5T	CAPTIVEAIRE	18P-3	2300	2300	0	2661	0.500	2.00	3	208	74.2A	80A	89.5°F	80.4°F	89.5°F	80.4°F	54.1°F	51.5°F	49.5°F	224.1 MBH	85.2 MBH	18.2	8.0	70.0°F	57.9°F	40.2 MBH	113.4 MBH	124.8 LBS/HR	NATURAL	232972	188707	69°F	7 IN. W.C. – 14 IN. W.C.		572.7	1031	7.2	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18

NOTES:
1. INVERTER SCROLL COMPRESSOR WITH INTEGRATED OIL SENSOR. DIGITAL OR STAGED SCROLL NOT AN APPROVED EQUAL
2. DIRECT DRIVE PLENUM BLOWER. BELT DRIVEN BLOWERS ARE NOT ACCEPTABLE
3. INTEGRATED MONITORING VIA CELLULAR CONNECTION BY MANUFACTURER
4. REFRIGERATION PRESSURE MONITORING ON HIGH AND LOW PRESSURE SIDE OF SYSTEM INCLUDED THROUGH DIGITAL INTERFACE
5. EC MOTOR CONDENSING FANS
6. ELECTRONIC EXPANSION VALVE. TXV NOT ACCEPTABLE
7. SUCTION LINE ACCUMULATOR
8. FACTORY COMMISSIONING WITH 5 YEAR PARTS WARRANTY, 25 YEAR WARRANTY ON STAINLESS STEEL HEAT EXCHANGER
9. AVERAGING INTAKE, EVAP AND DISCHARGE TEMPERATURE SENSORS (DISCHARGE SENSOR TO BE FACTORY MOUNTED WITHIN UNIT)
10. 2" EXTERIOR DUAL-WALL CONSTRUCTION W/ R-13 INSULATION-MINIMUM 20GA EXTERIOR W/ 14GA BASE
11. 81% EFFICIENT FURNACE, WITH MODULATING INDUCER TO MAINTAIN CONSTANT COMBUSTION EFFICIENCY ACROSS FIRING RANGE. 6:1 TURNDOWN WITH NG AND 5:1 TURNDOWN WITH LP
12. SUPPLY CFM MONITORING INTEGRAL TO UNIT WITH CFM MEASUREMENT INCLUDED THROUGH DIGITAL INTERFACE
13. FULLY MODULATING HOT GAS REHEAT
14. LOW AMBIENT COOLING OPERATION DOWN TO 0°F
15. HAIL GUARD FOR CONDENSING COIL
16. DOWN DISCHARGE/DOWN RETURN
17. MINIMUM ROOM AREA ASSUMED 7.2' SUPPLY DIFFUSER HEIGHT AND IS CALCULATED PER UL60335-2-40 4TH ED. VALUES BASED ON FACTORY CHARGE. ACTUAL SITE CHARGE MAY DIFFER.
18. SCCR RATING OF 10kAMP

FAN ACCESSORIES

FAN UNIT NO	TAG	EXHAUST			SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1	ITEM 741	YES						
2	ITEM 742	YES						

CURB ASSEMBLIES

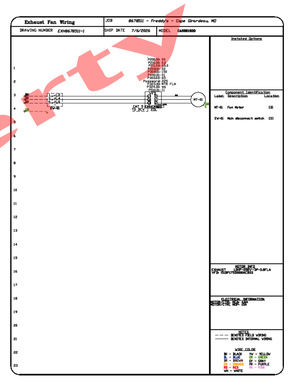
NO	ON FAN	TAG	R-VALUE	WEIGHT	ITEM	SIZE
1	# 1	ITEM 741		52 LBS	CURB	26.500"W X 26.500"L X 24.000"H VENTED HINGED.
2	# 2	ITEM 742		31 LBS	CURB	19.500"W X 19.500"L X 20.000"H VENTED HINGED.
3	# 3	DOAS-1	4.3	104 LBS	CURB	59.500"W X 91.000"L X 14.000"H INSULATED

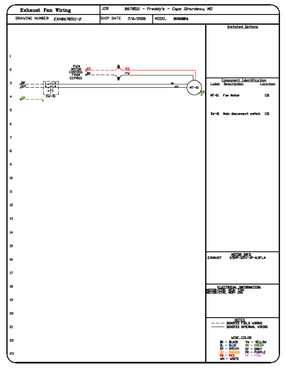
1" R4.3 FOIL FACED FIBERGLASS INSULATION. COMPLIES WITH UL/ULC,ASTM, & ASHRAE STANDARDS.

FAN OPTIONS

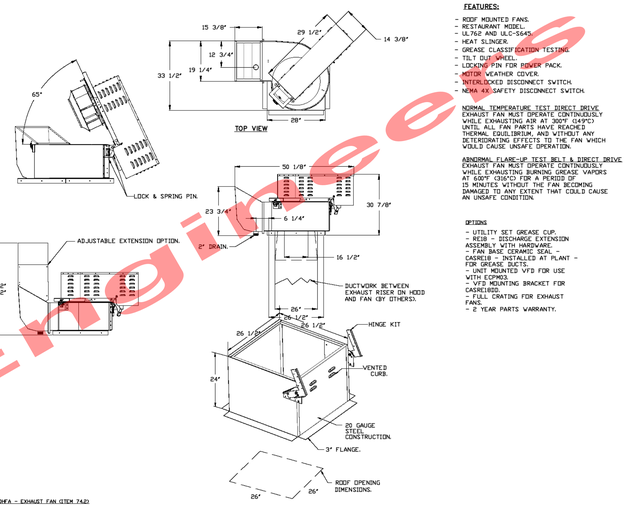
FAN UNIT NO	TAG	QTY	DESCRIPTION
1	ITEM 741	1	UTILITY SET GREASE CUP
		1	RE18 – DISCHARGE EXTENSION ASSEMBLY WITH HARDWARE
		1	FAN BASE CERAMIC SEAL – CASRE18 – INSTALLED AT PLANT – FOR GREASE DUCTS
		1	UNIT MOUNTED VFD FOR USE WITH ECPM03
		1	VFD MOUNTING BRACKET FOR CASRE18DD
		1	FULL CRATING FOR EXHAUST FANS
		1	2 YEAR PARTS WARRANTY
2	ITEM 742	1	GREASE BOX
		1	UPBLAST FAN WHEEL ACCESS PORT
		1	36" TALL STRAIGHT WIND BAND EXTENSION 13 (SHIPS LOOSE)
		1	GUY LINE EYE BOLTS – USED FOR 3 GUY LINE TIE OFF POINTS
		1	FAN BASE CERAMIC SEAL – DU/DR50HFA – INSTALLED AT PLANT – FOR GREASE DUCTS
		1	ECM WIRING PACKAGE – PWM SIGNAL FROM ECPM03 PREWIRE (TELCO MOTOR), CCW ROTATION
		1	FULL CRATING FOR EXHAUST FANS
		1	2 YEAR PARTS WARRANTY
3	DOAS-1	1	INLET PRESSURE GAUGE, 0-35"
		1	MANIFOLD PRESSURE GAUGE, 0 TO 10" WC, 1 FURNACE
		1	COOLING OVERRIDE
		1	SINGLE POINT ELECTRICAL CONNECTION FOR RTU. 750VA TRANSFORMER USED. IF A NON-DCV PREVIRE CONTROLS THIS UNIT, THE 828, 847, "MA", OR "E2" PREVIRE OPTION MUST BE SELECTED. DOES NOT PROVIDE SUPPLY STARTER IN PREVIRE.
		1	RTU BLOWER DOOR SWITCH
		1	RTU3 DOWN DISCHARGE
		1	2" MERV 13 FILTERS FOR RTU3 (QTY. 4)
		1	2" MERV 8 FILTERS FOR RTU3 (QTY. 4)
		1	OVERHEAT STAT
		1	TOTAL CFM MONITORING
		1	BLOWER STOP DELAY. ALLOWS RESIDUAL HEAT TO BE TRANSFERRED INTO THE SUPPLY AIR AFTER HEATING HAS STOPPED. FACTORY SET AT 90 SECS FOR 18", 30 SECS FOR 24"
		1	VFD FACTORY MOUNTED AND WIRED IN RTU COMMERCIAL CONTROL VESTIBULE
		1	17.5 TON MODULATING COOLING OPTION, 208/230V. R454B REFRIGERANT, VARIABLE SPEED COMPRESSOR. ECM CONDENSING FANS
		1	R454B LEAK DETECTOR OPTION FOR RTUS
		1	LOW AMBIENT COOLING OPERATION – DOWN TO 0F AMBIENT
		1	OCCUPIED SCHEDULING
		1	INTAKE FIRESTAT SET TO 135°F
		1	FREEZESTAT
		1	DISCHARGE FIRESTAT SET TO 240°F
		1	CASLINK BUILDING MONITORING SYSTEM – INTERNET OR CELLULAR CONNECTION REQUIRED
		1	17.5 TON MODULATING REHEAT OPTION – SPACE DEWPOINT CONTROL – R454B
		1	RTU3 CURB DUCT HANGER
		1	24VAC FIRE INPUT
		1	RTU INTAKE/RETURN DAMPER – MANUAL CONTROL VIA HMI
		1	RTU3 HAIL GUARD
		1	RTU3 DOWN RETURN
		1	2" METAL MESH FILTERS FOR RTU3 OUTDOOR INTAKE
		1	RTU RETURN MOUNTED SMOKE DETECTOR AND SAMPLING TUBE – FACTORY INSTALLED
		1	CLOGGED FILTER SWITCH – NOTIFICATION ON HMI
		1	VAV PACKAGE W/ 0-10VDC INPUT CONTROL (S7) VFD INCLUDED)
		1	5 YEAR ENTIRE UNIT PARTS WARRANTY, 10 YEAR ENTIRE UNIT PARTS WARRANTY WITH REMOTE MONITORING AND CAPTIVEAIRE SERVICE CONTRACT, 25 YEAR STAINLESS STEEL FURNACE PARTS WARRANTY (SEE ADDITIONAL DETAILS)
		1	EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET

HMI SCHEDULE				
UNIT NUMBER	HMI #	HMI LOCATION	TEMP AVERAGING	MODBUS ADDRESS
FAN #3	HMI #1 – UNIT	IN UNIT	NOT AVERAGED	55
FAN #3	HMI #2 – SPACE	KITCHEN	AVERAGED	56
FAN #3	HMI #3 – SPACE	OFFICE	AVERAGED	57





FAN #1 CASRE18DD – EXHAUST FAN (ITEM 741)



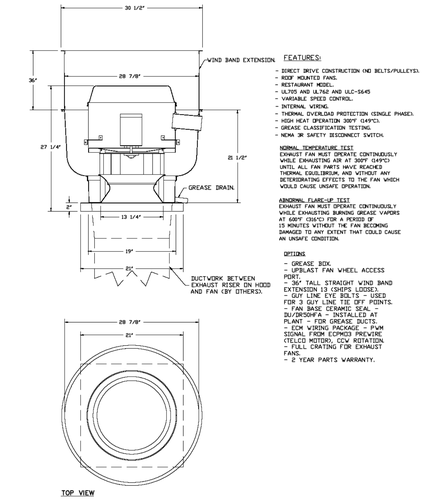
FEATURES:
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL762 AND ULC-S645.
- HEAT SLINGER.
- GREASE CLASSIFICATION TESTING.
- TILT DOWN WHEEL.
- LOCKING PIN FOR MOTOR PACK.
- MOTOR WEATHER COVER.
- INTERLOCKED DISCONNECT SWITCH.
- NEMA 4X SAFETY DISCONNECT SWITCH.

NORMAL TEMPERATURE TEST DIRECT DRIVE 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 BELT & DIRECT DRIVE 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
- UTILITY SET GREASE CUP.
- RE18 – DISCHARGE EXTENSION ASSEMBLY WITH HARDWARE.
- FAN BASE CERAMIC SEAL – CASRE18 – INSTALLED AT PLANT – FOR GREASE DUCTS.
- UNIT MOUNTED VFD FOR USE WITH ECPM03.
- VFD MOUNTING BRACKET FOR CASRE18DD.
- FULL CRATING FOR EXHAUST FANS.
- 2 YEAR PARTS WARRANTY.

FAN #2 DU50HFA – EXHAUST FAN (ITEM 742)

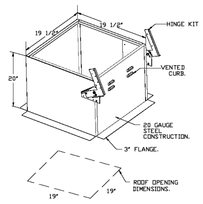


FEATURES:
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND ULC-S645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT SWITCH.

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.
- UPBLAST FAN WHEEL ACCESS PORT.
- 36" TALL STRAIGHT WIND BAND EXTENSION 13 (SHIPS LOOSE).
- GUY LINE EYE BOLTS – USED FOR 3 GUY LINE TIE OFF POINTS.
- FAN BASE CERAMIC SEAL – DU/DR50HFA – INSTALLED AT PLANT – FOR GREASE DUCTS.
- ECM WIRING PACKAGE – PWM SIGNAL FROM ECPM03 PREVIRE (TELCO MOTOR), CCW ROTATION.
- FULL CRATING FOR EXHAUST FANS.
- 2 YEAR PARTS WARRANTY.



Property of NYE Engineering

REVISIONS

	DESCRIPTION	DATE:
1		
2		
3		
4		

CAPTIVEAIRE
www.captiveaire.com
HBT Foodservice
104 W 9th St Suite 204, Kansas City, MO, 64105 PHONE: (816) 221-8575 FAX: (816) 221-8311 EMAIL: rep98@captiveaire.com

DATE: 7/6/2026

DWG.#: 8678511

DRAWN BY: michael.co

SCALE: 1/2" = 1'-0"

MASTER DRAWING

SHEET NO. 3

Freddy's Frozen Custard & Steakburgers
FREDDY'S FROZEN CUSTARD

MECHANICAL HOOD PLANS

M-302

CONSTRUCTION DOCUMENTS

FAN #3 CAS-HVAC3-I.250-18-17.5T - HEATER (DDAS-1)

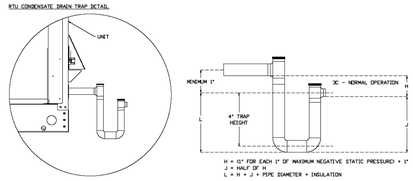
NOTES:
1. DO NOT OBSTRUCT OUTSIDE AIR INLET, OUTSIDE AIR COIL OR OUTSIDE AIR FAN.
2. ( ) DENOTES CORNER WEIGHT.
3. ROOF OPENING MUST BE 2" SMALLER THAN CURB DIMENSIONS IN BOTH DIRECTIONS.
4. CONNECTION FROM BREAKER TO UNITS SAFETY DISCONNECT SWITCH TO BE COPPER WIRE ONLY.
5. EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET.

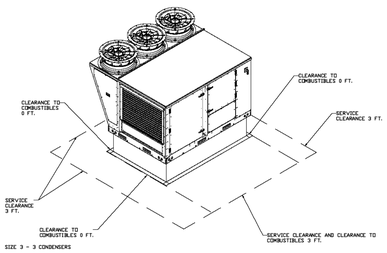
*NOTE: INTEGRAL CO2 MONITORING AND CONTROL CAPABILITIES FOR ALL SPACE MOUNTED THERMOSTATS.

***NOTE: THIS UNIT IS INTENDED TO SERVE IN PLACE OF THE KITCHEN HVAC ROOF TOP UNIT (RTU) IN ADDITION TO PROVIDING APPROPRIATE MAKE-UP AIR FOR THE KITCHEN HOOD(S). RTU AND ASSOCIATED DUCTWORK SHALL BE REMOVED FROM SCOPE UNLESS REQUIRED FOR INTERNAL LOAD ESTIMATES. FINAL DESIGN SHALL BE REVIEWED AND APPROVED BY THE ENGINEER OF RECORD.**

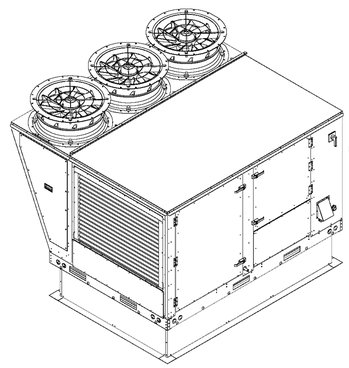
*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT.
SUGGESTED SUPPLY STRAIGHT DUCT SIZE IS 23" x 39".
SUGGESTED RETURN STRAIGHT DUCT SIZE IS 45-5/8" x 13-1/2".

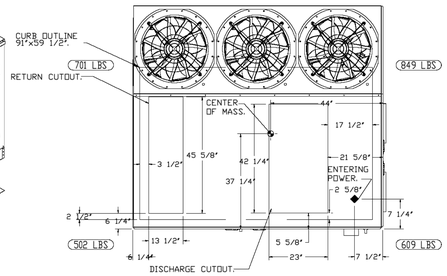
RTU CONDENSATE DRAIN TRAP DETAIL

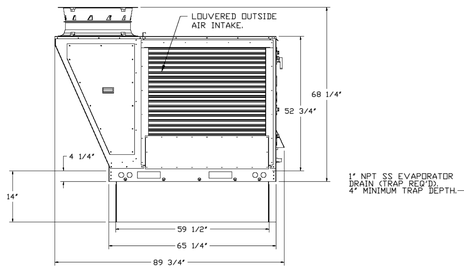


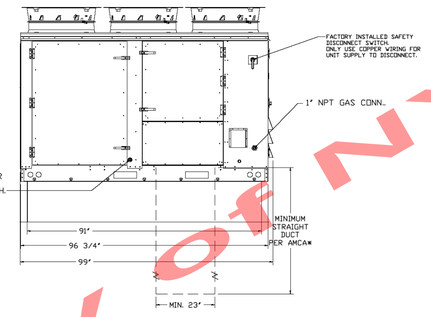


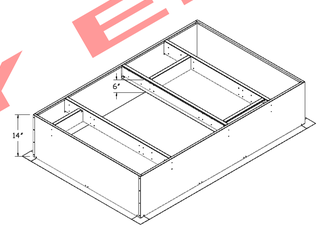
SIZE 3 - 3 CONDENSERS

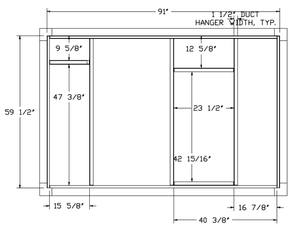


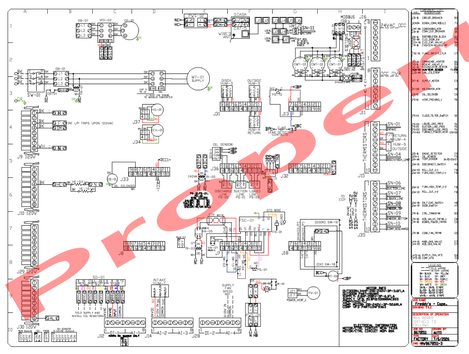


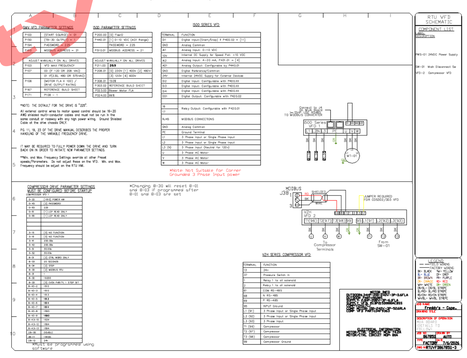


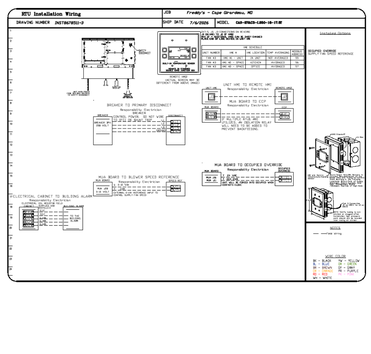












Property of NY Engineers

REVISIONS	
DESCRIPTION	DATE:

CAPTIVE AIRE
www.captiveaire.com
HBT Foodservice
104 W 9th St Suite 204, Kansas City, MO, 64105 PHONE: (816) 221-8575 FAX: (816) 221-8311 EMAIL: mg98@captiveaire.com

DATE: 7/6/2026

DWG.#: 8678511

DRAWN BY: michael.co

SCALE: 1/2" = 1'-0"

MASTER DRAWING

SHEET NO. 4

Freddy's Frozen Custard & Steakburgers
FREDDY'S FROZEN CUSTARD

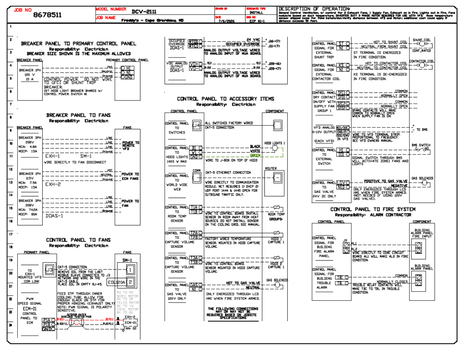
MECHANICAL HOOD PLANS

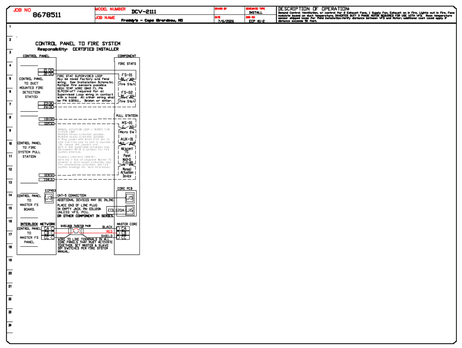
M-303

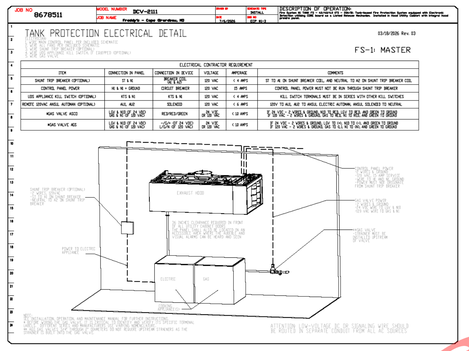
CONSTRUCTION DOCUMENTS

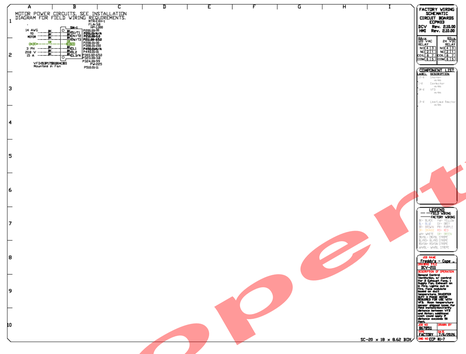
ELECTRICAL PACKAGE – JOB#8678511

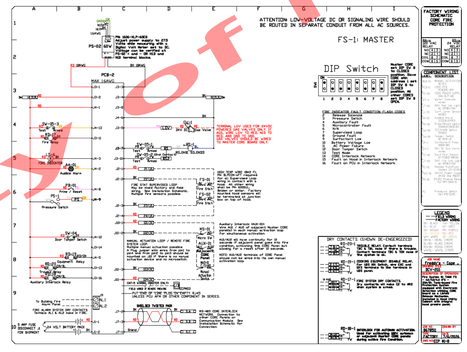
NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED				
				LOCATION	QUANTITY		FAN TAG	TYPE	#	HP	VOLT/ FLA
1	ECP-1	DCV-2111	UTILITY CABINET LEFT	UTILITY CABINET LEFT	1 LIGHT	SMART CONTROLS DCV	ITEM 7-1	EXHAUST	3	1.000	208 3.8
				HOOD # 1	1 FAN		ITEM 7-2	EXHAUST	1	0.500	115 6.3
							DOAS-1	SUPPLY	3	2.000	208 6.1

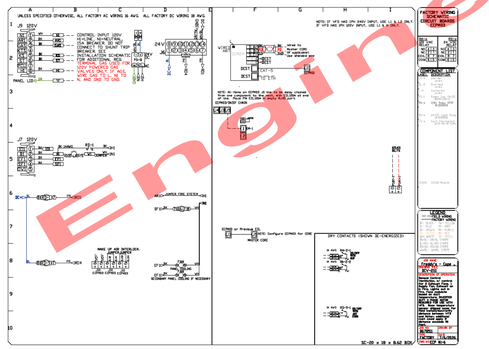






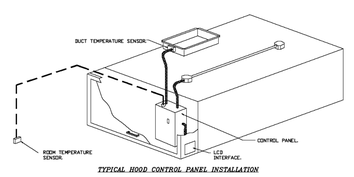






DEMAND CONTROL VENTILATION HOOD CONTROL PANEL SPECIFICATIONS:

- CONTROLS SHALL BE LISTED BY ETL (UL 508A) AND SHALL COMPLY WITH DEMAND VENTILATION SYSTEM TURNDOWN REQUIREMENTS OUTLINED IN IECC 403.7.5 (2021).
- 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 507.11.
- 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 403.7.5 (2021).
- 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).
- FIRE: UPON ACTIVATION OF THE HOOD FIRE SUPPRESSION SYSTEM, THE EXHAUST FAN WILL COME ON OR CONTINUE TO TO RUN, THE HOOD MAKEUP AIR WILL SHUTDOWN, AND A SIGNAL WILL BE SENT FOR ACTIVATING THE SHUNT TRIP BREAKER PROVIDED BY THE ELECTRICIAN. FUEL GAS WILL SHUT OFF VIA A MECHANICAL/ELECTRICAL GAS VALVE ACTUATED BY THE HOOD FIRE SUPPRESSION SYSTEM.

Property of NY Engineers

REVISIONS

	DESCRIPTION	DATE:
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CAPTIVE AIRE
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HBT Foodservice
104 W 9th St Suite 204, Kansas City, MO. 64105 PHONE: (816) 221-8311 EMAIL: mg98@captiveaire.com

DATE: 7/6/2026

DWG.#: 8678511

DRAWN BY: michaelco

SCALE: 1/2" = 1'-0"

MASTER DRAWING

SHEET NO. 5

Freddy's Frozen Custard & Steakburgers
FREDDY'S FROZEN CUSTARD

MECHANICAL HOOD PLANS

M-304

CONSTRUCTION DOCUMENTS

MECHANICAL/PLUMBING SPECIFICATIONS

1. GENERAL PROVISIONS:
   A. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, NECESSARY FOR THE COMPLETE INSTALLATION OF THE PLUMBING AND MECHANICAL SYSTEMS OUTLINED.
   B. OBTAIN ALL PERMITS, FEES, LICENSES, INSPECTIONS, AND CERTIFICATES OF COMPLIANCE OR APPROVAL AS REQUIRED BY THE AUTHORITIES.
   C. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS OF THE GOVERNMENTAL BODIES HAVING JURISDICTION OVER THE SITE.
   D. ALL TESTING REQUIRED BY AUTHORITIES SHALL BE CONSIDERED PART OF THIS WORK.
   E. DURING CONSTRUCTION, ALL FIXTURES, EQUIPMENT, PIPE, DUCT, ETC. SHALL BE COVERED, PLUGGED, OR CAPPED AS REQUIRED TO KEEP CLEAN AND UNDAMAGED. ALL DAMAGED ITEMS SHALL BE RESTORED TO ORIGINAL CONDITION OR REPLACED. ALL PROTECTIVE COVERING SHALL BE REMOVED BEFORE FINAL ACCEPTANCE.
   F. PROVIDE ALL NECESSARY CUTTING AND PATCHING OF WALLS, FLOORS, CEILINGS, AND ROOFS AS NECESSARY. PATCH AROUND ALL OPENINGS SHALL MATCH ADJACENT AREA. COORDINATE ALL ROOFING WORK WITH OWNER OR RESPONSIBLE PARTY, SO THAT THE EXISTING ROOFING WARRANTY WILL BE MAINTAINED.
   G. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE.
2. OPERATION AND MAINTENANCE MANUALS:
   A. DURING THE COURSE OF CONSTRUCTION, COLLECT AND COMPILE OPERATING INSTRUCTIONS, WIRING DIAGRAMS, CATALOG CUTS, LUBRICATION AND PREVENTIVE MAINTENANCE INSTRUCTIONS, PARTS LISTS, ETC. FOR ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT.
   B. ALL LITERATURE AND INSTRUCTIONS SHIPPED WITH THE EQUIPMENT SHALL BE SAVED FOR INCLUSION IN THE OPERATION AND MAINTENANCE MANUALS.
   C. ALL LITERATURE LISTED ABOVE AND ALL PAPERS LISTING WARRANTIES, ETC. SHALL BE BOUND IN A 3-RING BINDER AND LABELED WITH THE PROJECT NAME, ADDRESS, ARCHITECT, ENGINEER, CONTRACTORS, ETC.
3. MANUFACTURERS:
   A. MANUFACTURERS, MODEL NUMBERS, ETC. INDICATED OR SCHEDULED ON THE DRAWINGS SHALL BE INTERPRETED AS HAVING ESTABLISHED A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. ARTICLES, FIXTURES, ETC. OF EQUAL QUALITY BY MANUFACTURERS SHALL BE ACCEPTABLE, SUBJECT TO STRUCTURAL AND ELECTRICAL CONSTRAINTS OF THE PROJECT DESIGN, UNLESS NOTED OTHERWISE.
4. MOTORS:
   A. PROVIDE THERMAL OVERLOAD PROTECTION FOR EACH MOTOR PROVIDED BY THIS WORK.
5. TESTING, BALANCING, AND CLEANING:
   A. ALL PIPING SHALL BE TESTED FOR LEAKS BEFORE BEING CONCEALED IN WALL CONSTRUCTION OR COVERED WITH INSULATION.
   B. SEWER AND VENT PIPING SHALL BE HYDROSTATICALLY TESTED WITH NO LESS THAN 10 FEET OF HEAD FOR A PERIOD OF NOT LESS THAN 15 MINUTES, PER THE LOCAL PLUMBING CODE, WITH NO LEAKS.
   C. DOMESTIC WATER PIPING SHALL BE HYDROSTATICALLY TESTED AT A PRESSURE OF NOT LESS THAN 1-1/2 TIMES THE OPERATING PRESSURE, BUT NOT LESS THAN 60 PSI, FOR A PERIOD OF NOT LESS THAN 2 HOURS, WITH NO LEAKS.
   D. NATURAL GAS PIPING SHALL BE PNEUMATICALLY TESTED AT A PRESSURE OF NOT LESS THAN 1-1/2 TIMES THE OPERATING PRESSURE, BUT NOT LESS THAN 50 PSI, FOR A PERIOD OF NOT LESS THAN 4 HOURS, WITH NO LEAKS.
   E. DUCTWORK AND PIPING SHALL BE BALANCED BY QUALIFIED INDEPENDENT BALANCING PERSONNEL WHO HAVE PREVIOUS EXPERIENCE WITH BALANCING PROCEDURES AND ARE CERTIFIED BY THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB).
      1. BALANCING SHALL INCLUDE THE BALANCING OF THE EQUIPMENT AND AIR DISTRIBUTION SYSTEMS TO PROVIDE DESIGN QUANTITIES INDICATED AND VERIFICATION OF PERFORMANCE OF ALL EQUIPMENT AND AUTOMATIC CONTROLS.
      2. WITH IN 30 DAYS OF THE COMPLETION OF THE TESTING AND BALANCING WORK, SUBMIT THE TEST AND BALANCING REPORT BEARING THE SIGNATURE OF THE TEST AND BALANCE ENGINEER. THE REPORTS SHALL BE CERTIFIED PROOF THAT THE SYSTEMS HAVE BEEN TESTED, ADJUSTED, AND BALANCED IN ACCORDANCE WITH THE REFERENCED STANDARDS; ARE AN ACCURATE REPRESENTATION OF HOW THE SYSTEMS HAVE BEEN INSTALLED AND ARE OPERATING. REPORTS SHALL BE BOUND IN A VINYL BINDER AND THE BINDER LABELED OR MAY BE AN ELECTRONIC PDF SUBMITTAL.
   F. GREASE DUCT SHALL BE TESTED PRIOR TO USE OR CONCEALMENT OF ANY PORTION OF THE GREASE DUCT SYSTEM. DUCTS SHALL BE CONSIDERED TO BE CONCEALED WHEN INSTALLED IN SHAFTS OR COVERED BY DUCT WRAP INSULATION THAT PREVENTS THE DUCTWORK FROM BEING VISUALLY INSPECTED FROM ALL SIDES. THE PERMIT HOLDER SHALL BE RESPONSIBLE TO PROVIDE THE NECESSARY EQUIPMENT AND PERFORM THE GREASE DUCT LEAKAGE TEST PER NFPA 96 AND ALL LOCAL CODES.
   G. BEFORE DOMESTIC WATER PIPING IS PLACED IN SERVICE, ALL DOMESTIC WATER DISTRIBUTION SYSTEMS, INCLUDING THOSE FOR COLD WATER AND HOT WATER SYSTEMS, SHALL BE FLUSHED, STERILIZED AND CHLORINATED IN ACCORDANCE WITH HEALTH DEPARTMENT REGULATIONS. THE SYSTEMS SHALL BE THOROUGHLY FLUSHED OF ALL DIRT AND FOREIGN MATTER, THEN FILLED WITH WATER TREATED WITH 50 PPM OF CHLORINE. DURING THE FILLING PROCESS, VALVES AND FAUCETS SHALL BE OPENED SEVERAL TIMES TO ASSURE TREATMENT OF THE ENTIRE SYSTEM. THE TREATED WATER SHALL BE LEFT IN THE SYSTEM FOR 24 HOURS AFTER WHICH TIME THE SYSTEM SHALL BE FLUSHED; IF THE RESIDUAL CHLORINE IS NOT LESS THAN 10 PPM, THE FLUSHING SHALL BE REPEATED. AFTER STERILIZATION, SAMPLES OF WATER IN THE SYSTEM SHALL BE APPROVED BY THE BOARD OF HEALTH.
6. PLUMBING:
   A. PROVIDE AN APPROVED WATER HAMMER ARRESTOR FOR EACH PLUMBING FIXTURE SUPPLY AS REQUIRED BY FIXTURE MANUFACTURER.
   B. ALL EXPOSED WASTE PIPE SHALL BE CHROME PLATED BRASS PIPE, NO FERROUS PIPE.
   C. PROVIDE CLEANOUTS AT EACH CHANGE OF DIRECTION AND AT 100 FOOT INTERVALS IN STRAIGHT RUNS.
   D. PROVIDE ACCESS PANELS FOR ALL CONCEALED VALVES AND TRAPS.
   E. CLEANOUTS:
      1. VINYL TILE FLOOR: JR SMITH #4140, OR EQUAL.
      2. QUARRY TILE FLOOR: JR SMITH #4200, OR EQUAL.
      3. CARPETED FLOOR: JR SMITH #4020-Y, OR EQUAL.
      4. UNFINISHED FLOOR: JR SMITH #4020, OR EQUAL.
      5. WALL: JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR.
      6. WAREHOUSE FLOORS/FORK TRUCK AREAS: JR SMITH #4100, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND ROUND ADJUSTABLE SCORIATED EXTRA HEAVY DUTY NICKEL BRONZE TOP.
      7. GRADE: JR SMITH #4256, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER.
   F. PROVIDE DIELECTRIC UNIONS WITH APPROPRIATE END CONNECTIONS TO MATCH THE PIPE SYSTEM IN WHICH INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION TANKS.
   G. WATER HEATERS:
      1. EVERY WATER HEATER SHALL HAVE AN APPROVED MEANS INSTALLED ON THE COLD WATER SUPPLY LINE ABOVE THE EQUIPMENT TO PREVENT SIPHONING OF A STORAGE WATER HEATER OR TANK.
      2. BOTTOM FED WATER HEATERS AND TANKS CONNECT TO WATER HEATERS SHALL HAVE A VACCUM RELIEF VALVE INSTALLED. ANSI Z21.22.
      3. STORAGE HEATERS OPERATING ABOVE ATMOSPHERIC PRESSURE SHALL HAVE AN APPROVED PRESSURE RELIEF VALVE AND/OR TEMPERATURE RELIEF VALVE.
   H. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES.
      1. INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL.
      2. INSTALL 3" AND LARGER PIPE AT 1/8" PER FOOT FALL.
      3. INSTALL ALL GREASE WASTE PIPING AT 1/4" PER FOOT FALL.
   I. ALL SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES.
      1. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 2% SLOPE.
      2. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE.
7. PIPING:
   A. DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND).
      1. TYPE L HARD DRAWN COPPER TUBING, ASTM B-88.
         a. WROUGHT COPPER SOLDERED FITTINGS, ASTM B75 ALLOY C12200. ANSI B16.22. MSS SP-104.
         b. MECHANICAL PRESS COPPER FITTINGS FOR USE IN PLUMBING OR MECHANICAL APPLICATIONS. ASME B16.22, ASME B16.51, or ASME B16.18. MECHANICAL PRESS COPPER FITTINGS SHALL CONFORM TO IAPMO PS-1 OR ASME B16.51.
      2. PEX, HIGH-DENSITY CROSS-LINKED POLYETHYLENE TUBING SHALL BE MANUFACTURED TO THE REQUIREMENTS OF ASTM F876 AND MEET THE STANDARD GRADE HYDROSTATIC PRESSURE RATINGS FROM PLASTIC PIPE INSTITUTE IN ACCORDANCE WITH TR-4/03. (MUST BE INSTALLED PER THE MANUFACTURERS REQUIREMENTS FOR PLENUM USE)
         a. PEX-A AND PEX-B MEETING ANSI/NSF61 AND ANSI/NSF372 STANDARDS FOR POTABLE WATER SAFETY AND LEAD-FREE STANDARDS AND MUST BE MARKED WITH "PW-G", "NSF-61-G" OR OTHER NSF-APPROVED MARKING. ASTM TESTED WITH CHLORINATED WATER. (MUST BE INSTALLED PER THE MANUFACTURERS REQUIREMENTS FOR PLENUM USE)
         b. PEX MECHANICAL, CRIMP/INSERT OR EXPANSION FITTINGS INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. PIPE SIZES GIVEN ON THE DRAWINGS ARE NOMINAL COPPER PIPE SIZE, INCREASE PEX PIPING SIZE TO EQUAL OR EXCEED COPPER PIPE INSIDE DIAMETER FOR SUPPLY MAINS. (MUST BE INSTALLED PER THE MANUFACTURERS REQUIREMENTS FOR PLENUM USE)
      3. VALVES
         a. TO BE INSTALLED ON THE FIXTURE SUPPLY TO EACH PLUMBING FIXTURE.
         b. TO BE INSTALLED ON THE WATER SUPPLY SIDE TO EACH APPLIANCE OR MECHANICAL EQUIPMENT.
      c. TYPES:
         1. GATE VALVE: JOMAR T/S-301G OR EQUAL. LEAD-FREE NSF 61, ANSI B1.20.1.
         2. GLOBE VALVE: JOMAR TGG OR EQUAL.
         3. BALL VALVE: JOMAR JP100PxP OR EQUAL COMPACT LEAD FREE BRASS BALL VALVE. UL842, CSA 3371-12 & 3371-92, FM, CALIFORNIA CODE AB1953, NSF61 ANNEX G APPROVED.
         4. BALL VALVE: JOMAR T-100NE OR EQUAL. UL842, FM, CSA, NSF 61-8, MSS SP-110
   B. LEAD CONTENT OF WATER SUPPLY PIPE AND FITTINGS:
      1. PIPE AND PIPE FITTINGS, INCLUDING VALVES AND FAUCETS, UTILIZED IN THE WATER SUPPLY SYSTEM SHALL NOT HAVE MORE THAN 8% LEAD CONTENT.
      2. PIPE, PIPE FITTINGS, JOINTS, VALVES, FAUCETS, AND FIXTURE FITTINGS UTILIZED TO SUPPLY WATER FOR DRINKING OR COOKING PURPOSES SHALL COMPLY WITH NSF 372 AND SHALL HAVE A WEIGHTED AVERAGE LEAD CONTENT OF 0.25% OR LESS.
   C. STORM SEWER, SANITARY SEWER, GREASE WASTE, AND VENTS. (UNDERGROUND, INTERIOR TO THE BUILDING).
      1. ABS SCHEDULE 40 CELLULAR CORE (FOAM CORE) PIPE AND DWV FITTING SYSTEM: PIPE AND FITTINGS SHALL BE MANUFACTURED FROM ABS COMPOUND WITH A CELL CLASS OF 42222 FOR PIPE AND 32222 FOR FITTINGS AS PER ASTM D 3965 AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM F 628 FITTINGS SHALL CONFORM TO ASTM D 2661. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2235.
      2. PVC SCHEDULE 40 CELLULAR CORE (FOAM CORE) PIPE AND DWV FITTING SYSTEM: PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 11432 PER ASTM D 4396 FOR PIPE AND 12454 PER ASTM D 1784 FOR FITTINGS AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM F 891. INJECTION MOLDED FITTINGS SHALL CONFORM TO ASTM D 2665. FABRICATED FITTINGS SHALL CONFORM TO ASTM F 1866. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564.
      3. PVC SCHEDULE 40 SOLID WALL PIPE AND DWV FITTING SYSTEM: PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 12454 PER ASTM D 1784 AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM D 1785 AND ASTM D 2665. INJECTION MOLDED FITTINGS SHALL CONFORM TO ASTM D 2665. FABRICATED FITTINGS SHALL CONFORM TO ASTM F 1866. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564.
      4. HUBLESS CAST IRON SOIL PIPE AND FITTINGS: HUBLESS CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 888 AND CISPI STANDARD 301. HUBLESS COUPLINGS SHALL CONFORM TO CISPI STANDARD 310 AND BE CERTIFIED BY NSF ® INTERNATIONAL.
      5. HUB AND SPIGOT CAST IRON SOIL PIPE AND FITTINGS: HUB AND SPIGOT CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 74.
   D. STORM SEWER, SANITARY SEWER, GREASE WASTE, AND VENTS. (ABOVE GROUND, INTERIOR TO THE BUILDING).
      1. ABS SCHEDULE 40 CELLULAR CORE (FOAM CORE) PIPE AND DWV FITTING SYSTEM: PIPE AND FITTINGS SHALL BE MANUFACTURED FROM ABS COMPOUND WITH A CELL CLASS OF 42222 FOR PIPE AND 32222 FOR FITTINGS AS PER ASTM D 3965 AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM F 628 FITTINGS SHALL CONFORM TO ASTM D 2661. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2235. (NOT FOR USE IN A RETURN AIR PLENUM)
      2. PVC SCHEDULE 40 CELLULAR CORE (FOAM CORE) PIPE AND DWV FITTING SYSTEM PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 11432 PER ASTM D 4396 FOR PIPE AND 12454 PER ASTM D 1784 FOR FITTINGS AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM F 891. INJECTION MOLDED FITTINGS SHALL CONFORM TO ASTM D 2665. FABRICATED FITTINGS SHALL CONFORM TO ASTM F 1866. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564. (NOT FOR USE IN A RETURN AIR PLENUM)
      3. PVC SCHEDULE 40 SOLID WALL PIPE AND DWV FITTING SYSTEM: PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 12454 PER ASTM D 1784 AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM D 1785 AND ASTM D 2665. INJECTION MOLDED FITTINGS SHALL CONFORM TO ASTM D 2665. FABRICATED FITTINGS SHALL CONFORM TO ASTM F 1866. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564. (WHERE APPROVED BY LOCAL JURISDICTIONS) (NOT FOR USE IN A RETURN AIR PLENUM)
      4. HUBLESS CAST IRON SOIL PIPE AND FITTINGS: HUBLESS CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 888 AND CISPI STANDARD 301. HUBLESS COUPLINGS SHALL CONFORM TO CISPI STANDARD 310 AND BE CERTIFIED BY NSF ® INTERNATIONAL.
      5. HUB AND SPIGOT CAST IRON SOIL PIPE AND FITTINGS: HUB AND SPIGOT CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 74.
   E. STORM SEWER, SANITARY SEWER, GREASE WASTE, AND VENTS. (UNDERGROUND, EXTERIOR TO THE BUILDING).
      1. ABS SCHEDULE 40 CELLULAR CORE (FOAM CORE) PIPE AND DWV FITTING SYSTEM: PIPE AND FITTINGS SHALL BE MANUFACTURED FROM ABS COMPOUND WITH A CELL CLASS OF 42222 FOR PIPE AND 32222 FOR FITTINGS AS PER ASTM D 3965 AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM F 2680 FITTINGS SHALL CONFORM TO ASTM D 2680. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2235.
      2. PVC SCHEDULE 40 CELLULAR CORE (FOAM CORE) PIPE AND DWV FITTING SYSTEM: PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 11432 PER ASTM D 4396 FOR PIPE AND 12454 PER ASTM D 1784 FOR FITTINGS AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM F 891. INJECTION MOLDED FITTINGS SHALL CONFORM TO ASTM F 794. FABRICATED FITTINGS SHALL CONFORM TO ASTM F 1866. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564.
      3. PVC SCHEDULE 40 SOLID WALL PIPE AND DWV FITTING SYSTEM: PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 12454 PER ASTM D 1784 AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM D 1785 AND ASTM D 2665. INJECTION MOLDED FITTINGS SHALL CONFORM TO ASTM F 794. FITTINGS SHALL CONFORM TO ASTM F 794. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564.
      4. HUBLESS CAST IRON SOIL PIPE AND FITTINGS: HUBLESS CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 888 AND CISPI STANDARD 301. HUBLESS COUPLINGS SHALL CONFORM TO CISPI STANDARD 310 AND BE CERTIFIED BY NSF ® INTERNATIONAL.
      5. HUB AND SPIGOT CAST IRON SOIL PIPE AND FITTINGS: HUB AND SPIGOT CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 74.
      6. COPPER DWV: DRAINAGE TUBE SHALL CONFORM TO ASTM B306, WROUGHT COPPER FITTINGS, ANSI B-16.29.
      7. GALVANIZED STEEL PIPE: WITH MALLEABLE IRON, THREADED FITTINGS, DRAINAGE PATTERN FOR SEWERS SHALL CONFORM TO ASTM A 53.
   F. CONDENSATE DRAINS & INDIRECT WASTE (ABOVEGROUND).
      1. DWV, WROUGHT COPPER, ANSI B-16.29 (CONDENSATE INSIDE BUILDING).
      2. POLYVINYLCHLORIDE (PVC) DWV PIPE, SCHEDULE 40, SOLVENT JOINT (CONDENSATE ON ROOF).
      3. POLYVINYLCHLORIDE (PVC) DWV PIPE, SCHEDULE 40, SOLVENT JOINT (INDIRECT WASTE).
      4. DWV, WROUGHT COPPER, ANSI B-16.29 (WATER HEATER T&P , INDIRECT WASTE FROM DISHWASHER/SINKS).
   G. REFRIGERANT.
      1. ASTM B 280, TYPE ACR, HARD-DRAWN STRAIGHT LENGTHS, AND SOFT-ANNEALED COILS, SEAMLESS COPPER TUBING.
      2. WROUGHT COPPER, ANSI B16.22, STREAMLINED PATTERN, FITTINGS. BRAZED JOINTS, AWS A 5.8, CLASSIFICATION BAG-1 (SILVER).
      3. TUBING SHALL BE FACTORY CLEANED, READY FOR INSTALLATION, AND HAVE ENDS CAPPED TO PROTECT CLEANLINESS OF PIPE INTERIORS PRIOR TO SHIPPING.
      4. SIZE AND INSTALLATION OF PIPE SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
   H. NATURAL GAS.
      1. BLACK STEEL PIPE, SCHEDULE 40, ASTM A53.
         a. PIPE 3" AND SMALLER; 150 LB. MALLEABLE IRON, THREADED FITTINGS.
         b. PIPE 4" AND SMALLER; VIEGA MEGAPRESS G FOR WATER AND GAS .CSA LC4, TSSA/ASME B31 FOR USE WITH ASTM A53 SCHEDULE 40 BLACK IRON PIPE.
         c. PIPE 2-1/2" AND LARGER, WELDED.
         d. PLUG VALVE: ROCKWELL NORDSTROM FIGURE NO. 142 OR 143.
         e. BALL VALVE: JOMAR T-100NE. APPROVALS- UL842, FM, CSA, NSF 61-8, MSS SP-110
      2. GAS PIPING LABELING:
         a. ALL ELEVATED PRESSURE GAS PIPING SHALL BE LABELED EVERY 40 FEET WITH SIGNS INDICATING "ELEVATED PRESSURE".
      3. GAS PIPING PAINTING:
         a. ALL BLACK STEEL GAS PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE PRIMED AND PAINTED TO EITHER MATCH ADJACENT EXTERIOR WHERE LOCATED ON OR NEAR EXTERIOR WALL AND PAINTED SAFETY YELLOW WHERE LOCATED ON THE ROOF.
   I. ALL PIPE HANGERS AND SUPPORTS SHALL BE STANDARD PRODUCTS OF GRINNELL, FEE AND MASON, OR ELCEN. HANGER SPACING SHALL BE IN ACCORDANCE WITH MSS-SP-69.
   J. SLEEVES
      1. PROVIDE, SET, AND PROPERLY LOCATE PIPE SLEEVES AS REQUIRED FOR THIS WORK. ALL SLEEVES SHALL BE OF SUFFICIENT SIZE TO PERMIT PIPE MOVEMENT DUE TO EXPANSION AND CONTRACTION AND TO ACCOMMODATE PIPE INSULATION.
      2. INTERIOR PARTITIONS: 16 GAGE GALVANIZED STEEL, PACK BETWEEN PIPE AND SLEEVE WITH FIRE SAFING AND CAULK AT EACH END WITH FIRE RESISTANT SEALANT.
      3. ROOF: PROSET OR EQUAL, MANUFACTURED PVC SCHEDULE 40 PIPE SLEEVE WITH WATERPROOF SEAL. COORDINATE WITH ROOFING CONTRACTOR AND FLASH AS REQUIRED TO MAINTAIN ROOF WARRANTY.
      4. PROTECTION AGAINST CONTACT: METALLIC PIPING, EXCEPT FOR CAST IRON, DUCTILE IRON AND GALVANIZED STEEL SHALL NOT BE PLACED IN DIRECT CONTACT WITH STEEL FRAMING MEMBERS, CONCRETE, OR CINDER WALLS AND FLOORS OR OTHER MASONRY. METALLIC PIPING SHALL NOT BE PLACED IN DIRECT CONTACT WITH CORROSIVE SOIL. SHEATHING USED TO PREVENT DIRECT CONTACT SHALL HAVE A THICKNESS OF GREATER THAN .008; AND THE SHEATHING SHALL BE MADE OF PLASTIC. ANY PIPE THAT PASSES THROUGH A FOUNDATION WALL OR FOOTING SHALL BE PROVIDED WITH A RELIEVING ARCH, OR A PIPE SLEEVE SHALL BE BUILT INTO THE FOUNDATION WALL. THE SLEEVE SHALL BE TWO SIZES GREATER THAN THE PIPE PASSING THOUGH THE WALL OR FOOTING.
      5. PLUMBING VENTS: FLASH ROOF VENT INTO ROOFING SYSTEM AS REQUIRED BY THE ROOFING CONTRACTOR TO MAINTAIN EXISTING ROOF WARRANTY. ALL PLUMBING VENT TERMINALS SHALL TERMINATE A MINIMUM OF 12" ABOVE ROOF OR EQUAL TO HEIGHT OF PARAPET, WHICHEVER IS GREATER.
   K. PROVIDE CHROME PLATED ESCUTCHEONS ON ALL PIPE ENTERING FINISHED AREAS.
8. WATER HEATERS
   A. COMMERCIAL, HIGH EFFICIENCY, DIRECT-VENT, GAS-FIRED, STORAGE, DOMESTIC-WATER HEATERS:
      1. STANDARD: ANSI Z21.10.3/CSA 4.3.
      2. DESCRIPTION: MANUFACTURER'S PROPRIETARY DESIGN TO PROVIDE AT LEAST 95 PERCENT COMBUSTION EFFICIENCY AT OPTIMUM OPERATING CONDITIONS.STORAGE-TANK CONSTRUCTION: STEEL.
         a. PRESSURE RATING: 150 PSIG.
         b. INTERIOR FINISH: COMPLY WITH NSF 61 AND NSF 372 BARRIER MATERIALS FOR POTABLE-WATER TANK LININGS, INCLUDING EXTENDING LINING MATERIAL INTO TAPPINGS.
      3. FACTORY-INSTALLED STORAGE-TANK APPURTENANCES:
         a. ANODE ROD: REPLACEABLE MAGNESIUM.
         b. DIP TUBE: REQUIRED UNLESS COLD-WATER INLET IS NEAR BOTTOM OF TANK.
         c. DRAIN VALVE: CORROSION-RESISTANT METAL WITH HOSE-END CONNECTION.
         d. INSULATION: COMPLY WITH ASHRAE/IES 90.1
         e. JACKET: STEEL WITH ENAMELED FINISH
         f. HEAT-TRAP FITTINGS: INLET TYPE IN COLD-WATER INLET AND OUTLET TYPE IN HOT-WATER OUTLET.
         g. BURNER: FOR USE WITH DIRECT-VENT, GAS-FIRED, DOMESTIC-WATER HEATERS AND NATURAL-GAS FUEL.
         h. IGNITION: STANDING PILOT OR ANSI Z21.20/CSA C22.2 NO. 60730-2-5, ELECTRIC, AUTOMATIC, GAS-IGNITION SYSTEM.
         i. TEMPERATURE CONTROL: ADJUSTABLE THERMOSTAT.
         j. COMBINATION TEMPERATURE-AND-PRESSURE RELIEF VALVE: ANSI RELIEVING CAPACITY AT LEAST AS GREAT AS HEAT INPUT, AND INCLUDE PRESSURE SETTING LESS THAN WORKING-PRESSURE RATING OF DOMESTIC-WATER HEATER. SELECT RELIEF VALVE WITH SENSING ELEMENT THAT EXTENDS INTO STORAGE TANK.
      4. DIRECT-VENT SYSTEM: THROUGH-ROOF OR WALL, COAXIAL OR DOUBLE-CHANNEL VENT ASSEMBLY WITH DOMESTIC-WATER HEATER MANUFACTURERS' OUTSIDE INTAKE/EXHAUST SCREEN.
   B. DOMESTIC-WATER EXPANSION TANKS:
      1. DESCRIPTION: STEEL, PRESSURE-RATED TANK CONSTRUCTED WITH WELDED JOINTS AND FACTORY-INSTALLED, BUTYL-RUBBER DIAPHRAGM. INCLUDE AIR PRECHARGE TO MINIMUM SYSTEM-FILL OPERATING PRESSURE AT TANK.
      2. CONSTRUCTION:
         a. TAPPINGS: FACTORY-FABRICATED STEEL, WELDED TO TANK BEFORE TESTING AND LABELING. INCLUDE ASME B1.20.1 PIPE THREAD.
         b. INTERIOR FINISH: COMPLY WITH NSF 61 AND NSF 372 BARRIER MATERIALS FOR POTABLE-WATER TANK LININGS, INCLUDING EXTENDING FINISH INTO AND THROUGH TANK FITTINGS AND OUTLETS.
         c. AIR-CHARGING VALVE: FACTORY INSTALLED.
      3. CAPACITY AND CHARACTERISTICS:
         a. OPERATING-PRESSURE RATING: 150 PSIG .
9. INSULATION AND DUCT LINING.
   A. ALL INSULATIONS AND ACCESSORIES SHALL HAVE A FIRE HAZARD CLASSIFICATION WITH A FLAME SPREAD RATING OF NOT OVER 25, A FUEL CONTRIBUTION RATING OF NOT OVER 50, AND A SMOKE DEVELOPED RATING OF NOT OVER 50, IN ACCORDANCE WITH NFPA.
   B. PIPE INSULATION - ABOVE GRADE:
      1. THE PIPING INSULATION USED SHALL HAVE A THERMAL CONDUCTIVITY OF 0.27 Btu PER in/hr*sqft*° OR LESS.
      2. FIBERGLASS INSULATION WITH FACTORY APPLIED VAPOR BARRIER, ASJ JACKET, FACTORY APPLIED PRESSURE SEALING LONGITUDE LAP JOINT, NO STAPLES, ZESTON PREMOLDED PVC FITTING COVERS. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
      3. FLEXIBLE CLOSED CELL ELASTOMERIC THERMAL INSULATION, UNSLIT OR PRESLIT WITH PRESSURE SENSITIVE ADHESIVE SYSTEM FOR CLOSURE AND VAPOR SEALING, EQUAL TO ARMSTRONG AP ARMAFLEX OR ARMAFLEX 2000.
      4. FOR NON CIRCULATING SYSTEMS, THE FIRST 8 FEET OF INLET AND OUTLET PIPING BETWEEN THE TANK AND THE HEAT TRAP (INCLUDING THE HEAT TRAP) MUST BE INSULATED.
      5. FOR CIRCULATING SYSTEMS, ALL HOT WATER PIPING IN THE CIRCULATION LOOP MUST BE INSULATED AS SPECIFIED BELOW.
      6. INSULATION SCHEDULE:

a. DOMESTIC COLD WATER	1/2"
b. DOMESTIC HOT WATER	1" FOR PIPING UP TO 1-1/4"Ø, & 1-1/2" FOR PIPING 1-1/2"Ø AND LARGER
c. HOT WATER RECIRCULATING	1"
d. CONDENSATE DRAINS INSIDE BUILDING	1/2"
e. REFRIGERANT SUCTION	3/4" FOR PIPING UP TO 1-1/4"Ø, & 1" FOR PIPING 1-1/2"Ø AND LARGER
f. HORIZONTAL STORM PIPE	1/2"
g. HORIZONTAL STORM OVERFLOW PIPE	1/2"
h. ROOF DRAINS	1" INSULATION SHALL BE PROVIDED AT ROOF DRAIN BODY AND A MINIMUM OF 10' OF HORIZONTAL PIPING OR A MINIMUM OF 5' IF COMBINATION OF HORIZONTAL AND VERTICAL STORM PIPING DOWNSTREAM OF ROOF DRAIN BODY.

   C. EQUIPMENT INSULATION:
      1. FLEXIBLE FIBERGLASS: GLASS FIBER INSULATION, ASTM C 553, TYPE 1, CLASS B-4, SEMI-RIGID BOARD, FACTORY LAMINATED WITH ALL-SERVICE ALUMINUM FOIL (ALL SERVICE JACKET), VAPOR BARRIER, OWENS/CORNING PIPE AND TANK INSULATION.
   D. DUCTWORK: ACOUSTICAL INSULATION.
      1. DUCT LINING: AS TO THICKNESS as SCHEDULED, AIR STREAM SIDE COATED, INSTALL PER SMACNA STANDARDS.
         a. DUCT LINING SCHEDULE:
            1. RECTANGULAR SUPPLY DUCT — 1/2" ; THRO

Electrical Abbreviations

1P	1 Pole (2P, 3P, 4P, ETC.)	MCB	Main Circuit Breaker
A, Amp	Ampere	MCC	Motor Control Center
AC	Above Counter	MDC	Main Distribution Center
ACLG	Above Ceiling	MDP	Main Distribution Panel
ADO	Automatic Door Opener	MFR	Manufacturer
AF	Amp Frame	MFS	Main Fused Disconnect Switch
AFF	Above Finished Floor	MH	Manhole
AFG	Above Finished Grade	MIC	Microphone
AFI	Arc Fault Circuit Interrupter	MIN	Minimum
AHU	Air Handling Unit	MISC	Miscellaneous
AL	Aluminum	MLO	Main Lugs Only
ALT	Alternate	MMS	Manual Motor Starter
AMP	Ampere	MOA	Multioutlet Assembly
AMPL	Amplifier	MSP	Motor Starter Panelboard
ANNUN	Annunciator	MSBD	Main Switchboard
APPROX	Approximately	MSS	Motor Starter Switch
AQ-STAT	Aquastat	MT	Mount
ARCH	Architect, Architectural	MT.C	Empty Conduit
AS	Amp Switch	MTS	Manual Transfer Switch
AT	Amp Trip	MTR	Motor, Motorized
ATS	Automatic Transfer Switch	N.C.	Normally Closed
AUTO	Automatic	NEC	National Electrical Code
AUX	Auxiliary	NEMA	National Electrical Manufacturer's Association
AV	Audio Visual	NFDS	Non-Fused Safety Disconnect Switch
AWG	American Wire Gauge		
BATT	Battery	NIC	Not In Contract
BD	Board	NL	Night Light
BLDG	Building	N.O.	Normally Open
BMS	Building Management System	NPF	Normal Power Factor
C	Conduit	NTS	Not To Scale
CAB	Cabinet	OC	On Center
CAT	Catalog	OH	Overhead
CATV	Cable Television	OL	Overloads
CB	Circuit Breaker	PA	Public Address
CCTV	Closed Circuit Television	PB	Pull Box Or Pushbutton
CKT	Circuit	PE	Pneumatic Electric
CLG	Ceiling	PED	Pedestal
COMB	Combination	PF	Power Factor
CMPR	Compressor	PH	Phase
CONN	Connection	PIV	Post Indicating Valve
CONST	Construction	PNL	Panel
CONT	Continuation Or Continuous	PP	Power Pole
CONTR	Contractor	PR	Pair
CONV	Convector	PRI	Primary
CP	Circulating Pump	PROJ	Projection
CRT	Cathode-Ray Tube	PRV	Power Roof Ventilator
CT	Current Transformer	PT	Potential Transformer
CTR	Center	PVC	Polyvinyl Chloride (Conduit)
CU	Copper	PWR	Power
DCP	Domestic Water Circulating Pump	QUAN	Quantity
DEPT	Department	RCPT	Receptacle
DET	Detail	REQD	Required
DIA	Diameter	RM	Room
DISC	Disconnect	RSC	Rigid Steel Conduit
DIST	Distribution	RTU	Roof Top Unit
DN	Down	SC	Surface Conduit
DPR	Damper	SEC	Secondary
DS	Safety Disconnect Switch	SHT	Sheet
DT	Double Throw	SIM	Similar
DWG	Drawing	SLD	Single-Line Diagram
EC	Electrical Contractor	S/N	Solid Neutral
ELEC	Electric, Electrical	SPEC	Specification
ELEV	Elevator	SPKR	Speaker
ELU	Emergency Lighting Unit	SP	Spare
EM	Emergency	SPP	Single-Point Power
EMS	Energy Management System	SR	Surface Raceway
EMT	Electrical Metallic Tubing	SS	Stainless Steel
EP	Electric Pneumatic	SSW	Selector Switch
EQUIP	Equipment	S/S	Stop/Start Pushbuttons
EWC	Electric Water Cooler	STA	Station
EXIST	Existing	STD	Standard
EXH	Exhaust	SURF	Surface Mounted
EXP	Explosion Proof	SW	Switch
FA	Fire Alarm	SWBD	Switchboard
FABP	Fire Alarm Booster Power Supply Panel	SYM	Symmetrical
		SYS	System
FACP	Fire Alarm Control Panel	TEL	Telephone
FCU	Fan Coil Unit	TERM	Terminal
FIXT	Fixture	TL	Twist Lock
FLR	Floor	TR	Tamper Resistant
FLUOR	Fluorescent	T-STAT	Thermostat
FU	Fuse	TTC	Telephone Terminal Cabinet
FUDS	Fused Safety Disconnect Switch	TV	Television
GA	Gauge	TVTC	Television Terminal Cabinet
GAL	Gallon	TYP	Typical
GALV	Galvanized	UC	Under Counter
GC	General Contractor	UE	Underground Electrical
GEN	Generator	UG	Underground
GFI	Ground Fault Circuit Interrupter	UH	Unit Heater
GFP	Ground Fault Protector	UT	Underground Telephone
GND	Ground	UTIL	Utility
GRS	Galvanized Rigid Steel (Conduit)	UV	Ultraviolet
GYP BD	Gypsum Board	V	Volt
HOA	Hands-Off-Automatic Switch	VA	Volt-Amperes
HORIZ	Horizontal	VDT	Video Display Terminal
HP	Horsepower	VERT	Vertical
HPF	High Power Factor	VFD	Variable Frequency Drive
HT	Height	VOL	Volume
HTG	Heating	W	Watt
HTR	Heater	W/	With
HV	High Voltage	WG	Wire Guard
HVAC	Heating, Ventilating And Air Conditioning	WH	Water Heater
		W/O	Without
IC	Interrupting Capacity	WP	Weatherproof
IG	Isolated Ground	XFMR	Transformer
IMC	Intermediate Metal Conduit	XFR	Transfer
INCAND	Incandescent		
IR	Infrared		
IW	Interlock With		
J-BOX	Junction Box	∠	Angle
KV	Kilovolt	@	At
KVA	Kilovolt-Ampere	▲	Delta
KVAR	Kilovolt-Ampere Reactive	'	Feet
KW	Kilowatt	"	Inches
KWH	Kilowatt Hour	#	Number
LOC	Locate Or Location	Ø	Phase
LT	Light	℄	Center Line
LTG	Lighting	P	Plate
LTNG	Lightning		
LV	Low Voltage		
MAX	Maximum		
MAG.S	Magnetic Starter		
M/C	Momentary Contact		
MC	Mechanical Contractor		

Electrical Symbol Legend

Lighting Symbols

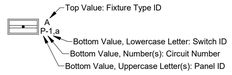
- Lighting Fixtures, Typical, Rectangular
- Lighting Fixtures, Typical, Round
- Wall-mounted fixtures, Typical (Various Symbols)
- Strip Fixture
- Directional Light, Track Light, Flood Light
- Linear Light, Tape Light
- Emergency Lighting Unit, Ceiling-Mounted, Integral Battery
- Emergency Lighting Unit, Ceiling-Mounted, Remote Battery
- Emergency Lighting Unit, Wall-Mounted, Integral Battery
- Emergency Lighting Unit, Wall-Mounted, Remote Battery
- Exit Light, Ceiling-Mounted. Shading and arrows indicate faces and directional chevrons.
- Exit Light, Wall-Mounted. Shading and arrows indicate faces and directional chevrons.
- Exit/ELU Combo
- Pole/Area Lights
- Post-Top Area Light
- Bollard Light
- Single-Pole Switch

Switch Modifiers:

2: 2-Pole	
3: 3-Way	OS: Occupancy Sensor
4: 4-Way	VS: Vacancy Sensor
K: Keyed	AC: Above-Counter
D: Dimming	LV: Low-Voltage
T: Timer	M: Motor-Rated

- Lighting Contactor
- LCP Lighting Control Panel
- OS Occupancy Sensor
- DL Daylight Harvesting Sensor
- RC Room Controller
- PP Power Pack
- PL Plug Load Controller
- Dr Driver

Lighting Tags



Absence of a switch designation on a lighting fixture indicates fixture is controlled by the only switch in the space.

Switch ID indicated by a lowercase letter. Switch IDs are unique per space. A switch with an ID "a" controls all devices within the space in which it is located tagged with "a". A switch without a tagged ID controls all lighting fixtures within a space. ID tags may be used on control devices other than switches, such as occupancy sensors or contactors.

Power Symbols

Wall / Ceiling / Floor

- Simplex Receptacle
- Duplex Receptacle
- Quadruplex Receptacle
- Special Receptacle, Type as Indicated

Receptacle Modifiers:
+XX": Height AFF to centerline
GFI: Ground-Fault Circuit Interrupter
WP: Weatherproof In-Use Cover
IG: Isolated Ground
USB: Duplex Receptacle with (1) USB Type A & (1) USB Type C Charging Port

- Half shading indicates split (typically switched)
- Outside shading indicates switched device
- Multioutlet Assembly. Filled squares indicate 120V outlet. Open squares indicate with USB
- Cord Reel, Device Varies
- Drop Cord, Device Varies
- Junction Box
- F1 Floor Box, see schedule for type
- Emergency Power Off
- DO Door Opener Push Plate
- M Power Meter
- Safety Switch, Fused
- Safety Switch, Unfused. A-30A, B-60A, C-100A
- Motor Starter
- Combination Starter/Disconnect
- Contactor
- CO2 Carbon Dioxide Sensor

Power Device and Equipment Tags

P-1.a — Electrical DeviceTags: Uppercase letter(s) indicates Panel ID and circuit number. Lowercase letter indicates designation of controlling switch (where applicable)

XX-1 / P-1.a — Equipment Tags: Equipment ID is indicated by an underlined tag adjacent to the equipment. Uppercase letter(s) indicates Panel ID and circuit number. Lowercase letter indicates designation of controlling switch (where applicable) Symbols/graphic appearance of equipment varies.

Wiring

Solid, arced lines connecting equipment, devices, or fixtures indicate unswitched power circuiting. Wires are only intended to indicate to what circuit devices are connected. Actual connections, circuit routing, installtion, junction boxes, etc. shall be field-determined by the contractor.

Home run to branch circuit panelboard. The equipment name and circuit number(s) are indicated, separated by a hyphen. Homeruns are only intended to indicate panel and circuit number. Actual homerun location shall be field-determined by the contractor.

Power Distribution Equipment



Hatched fill indicates distribution panel or switchboard. Solid fill indicates branch panel or load center. Dashed box indicates code-required clearance (width and depth). Door indicates front of recessed panel.

T1 — Transformer. Typically transformer names begin with or contain the letter "T". See Single-Line Diagram for description and requirements.

Telecom Symbols

PROVIDE MINIMUM 3/4" CONDUIT STUBBED UP TO ABOVE ACCESSIBLE CEILING. BOTTOM OF BOX AT 16", UNLESS NOTED OTHERWISE. PROVIDE WITH PULL STRING.

WHERE TELECOM SYMBOL IS SHOWN ADJACENT TO POWER DEVICE, TELECOM SHALL BE MOUNTED AT SAME HEIGHT UNLESS NOTED OTHERWISE.

Wall / Ceiling / Floor

- Data Outlet
- Telephone Outlet
- Data/Telephone Outlet

Outlet Modifiers:
+XX": Height AFF to centerline

- Wireless Access Point
- TV Outlet - PROVIDE (1) HUBBELL #HBL260 TWO GANG LARGE CAPACITY WALL BOX (UP TO 2" KNOCKOUT) W/ MUD RING AND COVERPLATE FOR DATA. PROVIDE 2"C WITH PULL STRING TO ABOVE ACCESSIBLE CEILING FOR DATA CABLES.
- VC VOLUME CONTROL

Construction Phasing
(Typical All Symbols and Equipment)

- (E) Existing to Remain
- Existing to Be Demolished
- New

Miscellaneous

- Area Not in Contract
- X Keynote
- Callout: Top Value: Detail Number on Sheet. Bottom Value: Sheet Number of Detail
- Room Name and Number (Room / 6)

Fire Alarm Symbols

- F Manual Pull Station
- H Horn, Wall
- H Horn, Ceiling
- Strobe, Wall, Candela as indicated
- Strobe, Ceiling, Candela as indicated
- Horn/Strobe, Wall, Candela as indicated
- Horn/Strobe, Ceiling, Candela as indicated
- Remote Indicator w/ Test Switch, Wall
- Remote Indicate w/ Test Switch, Ceiling
- SD Smoke Detector
- HD Heat Detector
- CO Carbon Monoxide Detector
- DD Duct Smoke Detector
- SD Smoke Damper
- DH Door Holder
- DCL Door Closer
- Fire Service Phone
- XX Addressible Module
  AIM: Addressible Input Module
  AOM:Addressible Output Control Module
  AIO: Addressible Input/Output Module
- XXXX Fire Alarm Control Unit
  EVAC: Voice Evacuation Control Panel
  FAA: Fire Alarm Annunciator
  FACP: Fire Alarm Control Panel
  FATC: Fire Alarm Terminal Cabinet
  NACP: Notification Appliance Circuit Panel
  FAMN: Fire Alarm Mass Notification Control Panel
- XX Supervisory or Interface Device
  PIV: Post Indicator Valve Supervisory
  PS: Pressure Switch
  R: Non-Addressible Relay
  VS: Valve Supervisory Switch
  WF: Water Flow Switch

GENERAL NOTES

1. LANDLORD REQUIRES TENANT TO HAVE A ADA PLAN REVIEW AND FINAL INSPECTION. OWNER AGENT DESIGNATIONS ARE NOT ALLOWED, LANDLORD MUST SIGN AS OWNER.
2. TENANT IS RESPONSIBLE FOR OBTAINING ALL PERMITS, INSPECTIONS AND APPROVALS FROM ALL JURISDICTIONS, INCLUDING BUT NOT LIMITED TO CITY OF CAPE GIRARDEAU. TENANT WILL BE RESPONSIBLE FOR ANY HEALTH DEPARTMENT PERMITS IF NEEDED.
3. COPIES OF PERMITS, FINAL INSPECTIONS, CERTIFICATES OF COMPLIANCE/OCCUPANCY SHALL BE FORWARDED TO LANDLORD UPON RECEIPT.
4. GC'S SUBCONTRACTORS SHOULD BE FAMILIAR WITH AND UNDERSTAND CONSTRUCTION RULES BEFORE BIDDING AND PRIOR TO ANY WORK COMMENCING,

REQUIREMENTS PRIOR TO COMMENCING CONSTRUCTION:

1. GC SHALL SCHEDULE PRE-CONSTRUCTION MEETING PRIOR TO STARTING CONSTRUCTION WITH LANDLORD.
2. GC SHALL PROVIDE LANDLORD WITH REQUIRED CERTIFICATE OF INSURANCE PRIOR TO COMMENCING CONSTRUCTION.
3. GC SHALL PROVIDE LANDLORD WITH SUBCONTRACTOR LIST AND CONTACT INFORMATION PRIOR TO STARTING CONSTRUCTION.
4. GC SHALL CONTACT LANDLORD FOR PRE-POUR INSPECTION PRIOR TO POURING CONCRETE.
5. GC SHALL CONTACT LANDLORD FOR COVER UP INSPECTION PRIOR TO SHEET ROCKING WALLS.
6. GC SHALL BE FAMILIAR WITH CONSTRUCTION RULES AND SHALL BID WORK BASED ON THESE RULES.

ELECTRICAL GENERAL NOTES

1. COORDINATE ALL WORK WITH OTHER TRADES AND SITE CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACES AVAILABLE, AND WITHOUT INTERFERENCES.
2. IT IS THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO PROPERLY BALANCE ALL BRANCH CIRCUITS BETWEEN THE PHASES OF THE SYSTEM REGARDLESS OF CIRCUITING INDICATED.
3. ALL EXPOSED RACEWAYS SHALL BE EMT CONDUIT, MC CABLE IS NOT PERMITTED IN EXPOSED AREAS.
4. ELECTRICAL CONTRACTOR TO COORDINATE MANUFACTURER ELECTRICAL REQUIREMENTS FOR HVAC EQUIPMENT BEING FURNISHED WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. EQUIPMENT DISCONNECTS TO BE PROVIDED BY ELECTRICAL CONTRACTOR UNLESS NOTED OTHERWISE IN MECHANICAL SCHEDULES.
5. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF LIGHT FIXTURES AND DEVICES.
6. ALL MATERIALS EXPOSED WITHIN PLENUMS SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84.
7. EACH BRANCH CIRCUIT SHALL HAVE A DEDICATED NEUTRAL PER NEC 210.4.
8. KITCHEN EQUIPMENT - VERIFY ALL ELECTRICAL REQUIREMENTS AND ROUGH-IN LOCATION PRIOR TO WORK.
9. ALL BRANCH CIRCUITS SHALL BE SIZED TO ALLOW FOR A MAXIMUM OF 3% VOLTAGE DROP. ALL FEEDERS SHALL BE SIZED TO ALLOW FOR A MAXIMUM OF 2% VOLTAGE DROP. ELECTRICAL CONTRACTOR SHALL VERIFY WIRING INDICATED IS SUFFICIENT AND INCREASE CONDUCTOR SIZE AS REQUIRED BASED OFF ACTUAL INSTALLED LENGTH OF CONDUCTORS.
10. ALL 120 VOLT 20 AMP RECEPTACLES IN KITCHEN SHALL BE GFCI PROTECTED PER NEC 210.8 (B)(2). (GFCI DEVICE OR GFCI BREAKER AS INDICATED ON PLANS)
11. ALL 120 VOLT THROUGH 250 VOLT RECEPTACLES SUPPLIED BY SINGLE PHASE BRANCH CIRCUIT RATED 150 VOLTS OR LESS TO GROUND, 50 AMPS OR LESS, AND THREE-PHASE BRANCH CIRCUITS 150 VOLTS OR LESS TO GROUND, 100 AMPS OR LESS, IN KITCHEN SHALL BE GFCI PROTECTED PER NEC 210.8(B)(2). (GFCI DEVICE OR GFCI BREAKER AS INDICATED ON PLANS)
12. PROVIDE SEAL-OFF FITTINGS AT ALL COOLER/FREEZER PENETRATIONS.
13. TYPE 1 HOOD FIRE SUPPRESSION SYSTEM TO BE INTERLOCKED WITH FIRE ALARM SYSTEM. UPON ACTIVATION OF HOOD FIRE SUPPRESSION SYSTEM SIGNAL SHALL BE SENT TO FIRE ALARM.

Electrical Sheet Schedule

E-000	ELECTRICAL TITLE SHEET
E-001	ELECTRICAL SPECIFICATIONS
E-100	POWER PLAN
E-101	ROOF POWER PLAN
E-200	LIGHTING PLAN
E-201	LIGHTING DETAILS & SCHEDULES
E-300	LOW VOLTAGE PLAN
E-301	LOW VOLTAGE SCHEDULES
E-400	ELECTRICAL RISER & PANEL SCHEDULES
E-500	GENERIC ELECTRICAL DETAILS
E-600	FOOD SERVICE ELECTRICAL ROUGH-IN PLAN

APPLICABLE CODES

2015 INTERNATIONAL BUILDING CODE,
2015 INTERNATIONAL FIRE CODE,
2015 INTERNATIONAL MECHANICAL CODE,
2015 INTERNATIONAL FUEL GAS CODE,
2015 INTERNATIONAL PLUMBING CODE,
2014 NATIONAL ELECTRICAL CODE,
2009 INTERNATIONAL ENERGY CONSERVATION CODE,
IN ADDITION TO OTHER APPLICABLE CITY OF CAPE GIRARDEAU ORDINANCES, AS APPROPRIATE.

CONTRACTOR TO COORDINATE WITH AHJ IF COMMISSIONING REPORT IS REQUIRED.

Property of Engineer

Freddy's Frozen Custard & Steakburgers
FREDDY'S FROZEN CUSTARD

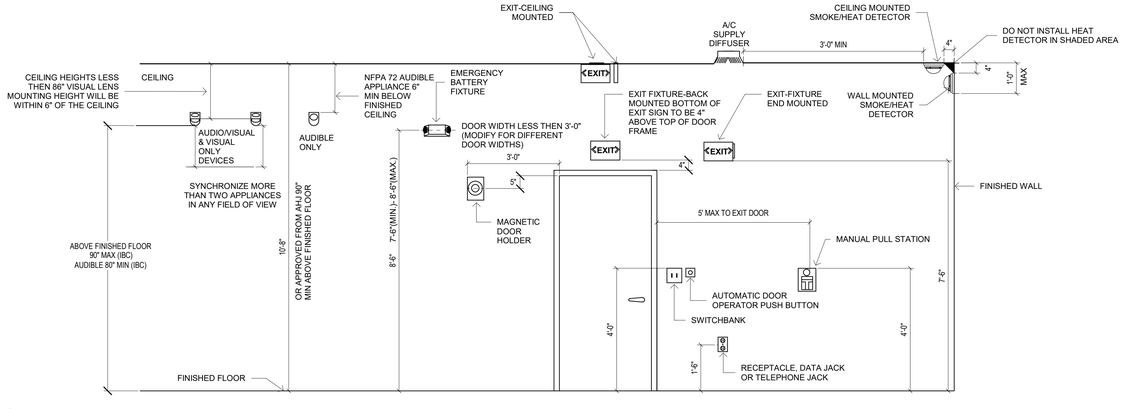
ELECTRICAL TITLE SHEET

E-000

CONSTRUCTION DOCUMENTS

ELECTRICAL SPECIFICATIONS

1. GENERAL PROVISIONS:
   A. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, NECESSARY FOR THE COMPLETE INSTALLATION OF THE ELECTRICAL SYSTEMS OUTLINED.
   B. OBTAIN ALL PERMITS, FEES, LICENSES, INSPECTIONS, AND CERTIFICATES OF COMPLIANCE OR APPROVAL AS REQUIRED BY THE AUTHORITIES.
   C. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST APPROVED EDITION OF THE NATIONAL ELECTRIC CODE (NEC), AND ALL APPLICABLE LAWS, CODES AND REGULATIONS OF THE GOVERNMENTAL BODIES HAVING JURISDICTION OVER THE SITE.
   D. ALL TESTING REQUIRED BY AUTHORITIES SHALL BE CONSIDERED PART OF THIS WORK.
   E. DURING CONSTRUCTION, ALL FIXTURES, EQUIPMENT, CONDUIT, ETC. SHALL BE COVERED, PLUGGED, OR CAPPED AS REQUIRED TO KEEP CLEAN AND UNDAMAGED. ALL DAMAGED ITEMS SHALL BE RESTORED TO ORIGINAL CONDITION OR REPLACED. ALL PROTECTIVE COVERING SHALL BE REMOVED BEFORE FINAL ACCEPTANCE.
   F. PROVIDE ALL NECESSARY CUTTING AND PATCHING OF WALLS, FLOORS, CEILINGS, AND ROOFS AS NECESSARY. PATCH AROUND ALL OPENINGS SHALL MATCH ADJACENT AREA. COORDINATE ALL ROOFING WORK WITH OWNER OR RESPONSIBLE PARTY, SO THAT THE EXISTING ROOFING WARRANTY WILL BE MAINTAINED.
   G. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE.
   H. CONTRACTOR SHALL PROVIDE ACCESS PANELS WHERE NECESSARY FOR CONCEALED ELECTRIAL COMPONENTS.
2. OPERATION AND MAINTENANCE MANUALS:
   A. DURING THE COURSE OF CONSTRUCTION, COLLECT AND COMPILE OPERATING INSTRUCTIONS, WIRING DIAGRAMS, CATALOG CUTS, LUBRICATION AND PREVENTIVE MAINTENANCE INSTRUCTIONS, PARTS LISTS, ETC. FOR ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT.
   B. ALL LITERATURE AND INSTRUCTIONS SHIPPED WITH THE EQUIPMENT SHALL BE SAVED FOR INCLUSION IN THE OPERATION AND MAINTENANCE MANUALS.
   C. ALL LITERATURE LISTED ABOVE AND ALL PAPERS LISTING WARRANTIES, ETC. SHALL BE COLLATED AND LABELED WITH THE PROJECT NAME, ADDRESS, ARCHITECT, ENGINEER, CONTRACTORS, ETC. CONTRACTORS, ETC. DOCUMENTS SHALL BE COMPILED AND BOUND IN DIGITAL FILE OR 3 RING BINDER.
3. MANUFACTURERS:
   A. MANUFACTURERS, MODEL NUMBERS, ETC. INDICATED OR SCHEDULED ON THE DRAWINGS SHALL BE INTERPRETED AS HAVING ESTABLISHED A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. ARTICLES, FIXTURES, ETC. OF EQUAL QUALITY BY MANUFACTURERS SHALL BE ACCEPTABLE, SUBJECT TO STRUCTURAL AND ELECTRICAL CONSTRAINTS OF THE PROJECT DESIGN, UNLESS NOTED OTHERWISE.
4. TESTING, AND BALANCING:
   A. ALL CIRCUITS SHALL BE TESTED FOR CONTINUITY, SHORTS, AND GROUNDS BEFORE CONNECTING TO THE PROPER PHASE AS DESIGNED TO BALANCE THE LOADING BETWEEN PHASES.
   B. POWER AND LIGHTING PANELS SHALL BE PROPERLY PHASED TO DISTRIBUTE THE LOAD AND SHALL BE CONNECTED AND ADJUSTED TO OPERATE AS SPECIFIED.
   C. ALL MOTORS AND SIMILAR EQUIPMENT SHALL BE CHECKED FOR PROPER PHASE ROTATION AND OPERATION.
5. RACEWAYS:
   A. CONDUIT INSIDE THE BUILDING SHALL BE METALLIC TUBING (EMT), BEARING THE UL LABEL, WITH COMPRESSION TYPE FITTINGS OR SCREW SET FITTINGS.
   B. CONDUIT EXPOSED TO THE WEATHER, INSTALLED UNDERGROUND, IN CONCRETE, OR USED FOR SERVICE ENTRANCE SHALL BE STANDARD RIGID CONDUIT (GALVANIZED) WITH THREADED FITTINGS.
   C. UNDERGROUND CONDUIT MAY BE POLYVINYL CHLORIDE WITH A DEFLECTION TEMPERATURE, UNDER LOAD AT 264 PSI, OF 78 DEGREES C, AND A TENSILE STRENGTH OF 5,200 PSI. JOINTS SHALL BE FLUSH SOLVENT WELDED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. CONDUIT SHALL BE EQUAL TO CARLON POWER AND COMMUNICATIONS DUCT TYPE DB (DIRECT BURIAL). CONDUIT AND FITTINGS SHALL BE PRODUCED BY THE SAME MANUFACTURER.
   D. FLEXIBLE METAL CONDUIT SHALL ONLY BE USED FOR CONNECTIONS TO MOTORS, TRANSFORMERS, AND LIGHT FIXTURES. MAXIMUM LENGTH SHALL BE 6'-0".
6. CONDUCTORS:
   A. WIRES SHALL BE CONTINUOUS WITHOUT SPLICES OR TAPS IN CONDUIT RUNS. ALL SPLICES SHALL BE MADE IN JUNCTION, PULL, OR OUTLET BOXES. ALL WIRE SHALL BE INSTALLED IN CONDUIT, WIREWAYS, OR OTHER PROTECTIVE COVER SANCTIONED BY CODES.
   B. CONDUCTORS FOR LIGHTING AND POWER SHALL BE COPPER, MINIMUM NO. 12 A.W.G., 600 VOLT.
   C. NO. 10 GAUGE AND SMALLER CONDUCTORS SHALL BE TYPE THWN (WET LOCATIONS) OR THHN (DRY LOCATIONS), SOLID CONDUCTOR, UNLESS OTHERWISE INDICATED.
   D. NO. 8 GAUGE AND LARGER CONDUCTORS SHALL BE TYPE THWN (WET LOCATIONS) OR THHN (DRY LOCATIONS), STRANDED, UNLESS OTHERWISE INDICATED.
   E. SERVICE ENTRANCE AND PANEL FEEDER CONDUCTORS, NO. 3 GAUGE AND LARGER SHALL BE TYPE XHHW-2 (WET LOCATIONS) OR THHN (DRY LOCATIONS), STRANDED COPPER, UNLESS OTHERWISE INDICATED.
7. MC CABLE:
   A. MC CABLE SHALL CONSIST OF INTERLOCK ARMORED CABLE MADE OF THREE OR FOUR-TYPE THHN SOLID (#8 AWG AND LARGER MAY BE STRANDED) COPPER CONDUCTORS RATED 90°C FOR DRY LOCATIONS, WITH NYLON OR EQUIVALENT UL LISTED JACKET, PER UL STANDARD 83 THE THREE CONDUCTORS SHALL BE TWISTED TOGETHER WITH THE COPPER GROUNDING CONDUCTOR, SUITABLE FILLERS, AND WRAPPED IN BINDER TAPE. THE ASSEMBLY SHALL BE ARMORED WITH SPIRALLY WRAPPED INTERLOCKED ARMOR OF ALUMINUM OR GALVANIZED STEEL.
   B. CABLES SHALL BE TESTED IN ACCORDANCE WITH UL STANDARD 1569 FOR TYPE MC CABLE AND RATED AT 600 VOLTS, 90 DEG. C FOR DRY LOCATIONS AND 75 DEG. C FOR WET LOCATIONS.
   C. MC CABLE INSTALLED IN PATIENT CARE AREAS SHALL BE "HCF" TYPE WITH GREEN INSULATED COPPER GROUNDING CONDUCTOR, BARE ALUMINUM GROUNDING/BONDING CONDUCTOR AND INTERLOCKED GREEN ALUMINUM ARMOR LISTED FOR USE AS AN EQUIPMENT GROUNDING CONDUCTOR IN CONJUNCTION WITH THE BARE ALUMINUM BONDING CONDUCTOR
      1. CABLES SHALL MEET ALL NEC REQUIREMENTS FOR ARTICLE 517 AND SHALL BE UL LISTED FOR USE IN HEALTH CARE FACILITIES.
      2. HCF CABLE SHALL NOT BE USED IN HAZARDOUS ANESTHETIZING AREAS.
8. WIRING DEVICES:
   A. WALL SWITCHES SHALL BE SPECIFICATION GRADE, QUIET TYPE, FLUSH TOGGLE SWITCH, RATED FOR 20 AMPS, WITH THERMOPLASTIC COVER PLATES.
      1. SINGLE POLE: HUBBELL #CS1221-X, OR EQUAL.
      2. THREE WAY: HUBBELL #CS1223-X, OR EQUAL.
      3. AS SPECIFIED ON PLANS
   B. RECEPTACLES SHALL BE SPECIFICATION GRADE, DUPLEX, GROUNDING, THREE-WIRE TYPE, RATED FOR 20 AMPS, WITH THERMOPLASTIC COVER PLATES. HUBBELL #CR5352-X, OR EQUAL.
   C. GROUND FAULT INTERRUPTER RECEPTACLES (GFI) SHALL BE HUBBELL #GF20-XL. DEVICE COVER PLATES SHALL BE AS HEREINBEFORE SPECIFIED.
   D. ISOLATED GROUND RECEPTACLES (IG) SHALL BE HUBBELL #CR5352IG, ORANGE COLOR. DEVICE COVER PLATES SHALL BE AS HEREINBEFORE SPECIFIED.
   E. RECEPTACLES OUTSIDE BUILDING AND WHERE NOTED AS WEATHERPROOF, SHALL BE LISTED 'WEATHER-RESISTANT' HUBBEL #GFTR20-X OR EQUAL AND SHALL BE INSTALLED IN A WEATHERPROOF ENCLOSURE WHICH SHALL BE INTERMATIC #WP1010MXD OR #WP1010HMXD DIECAST METAL WEATHERPROOF RECEPTACLE COVER. COVER SHALL BE WEATHER PROOF RATED WHILE IN USE.
   F. VERIFY DEVICES AND DEVICE COVERPLATES COLOR AND STYLE WITH ARCHITECT.
      a. DEVICES IN FRONT OF HOUSE SHALL BE WHITE WITH WHITE COVER PLATES.
      b. DEVICES IN BACK OF HOUSE NOT UNDER THE HOOD SHALL BE WHITE WITH WHITE COVER PLATES.
      c. DEVICES IN BACK OF HOUSE UNDER THE HOOD SHALL BE WHITE WITH STAINLESS STEEL COVERPLATES.
9. BOXES:
   A. HOT DIPPED GALVANIZED STEEL BOXES. PROVIDE TYPE TO SUIT CONDITIONS FOR INSTALLATION.
   B. ALL BOXES SHALL BE FLUSH MOUNTED, UNLESS INDICATED OTHERWISE.
10. PANELBOARDS:
   A. FURNISH AND INSTALL CIRCUIT BREAKER PANELBOARDS AS SHOWN ON THE DRAWINGS. PANELBOARDS SHALL BE LISTED BY UL AND SO LABELED, AND SHALL BE FULLY RATED FOR THE VOLTAGE AND CURRENT CAPACITY INDICATED ON THE PANEL SCHEDULE. PANELBOARDS SHALL BE EQUAL TO SQUARE D TYPE NQ OR NF WITH BOLT IN TYPE BREAKERS. PANELBOARD LUGS SHALL BE RATED AT 75°C.
      1. CIRCUIT BREAKER INTERRUPTING CAPACITIES SHALL MEET OR EXCEED THE AVAILABLE RMS SYMMETRICAL FAULT CURRENTS INDICATED AND AS REQUIRED TO MEET OR EXCEED THE AVAILABLE FAULT CURRENT FROM LOCAL UTILITY.
   B. CIRCUIT BREAKERS SHALL MEET APPLICABLE PORTIONS OF UL STANDARD 489 AND NEMA AB-L. CIRCUIT BREAKERS SHALL BE BOLT-ON, GROUP MOUNTED, AMBIENT MAGNETIC, WITH COMMON TRIP, UL RATED TO CARRY 80% OF NAMEPLATE RATING CONTINUOUSLY IN FREE AIR AT 40° C. CIRCUIT BREAKERS SHALL BE TRIP INDICATING AND FULLY INTERCHANGEABLE WITHOUT DISTURBING ADJACENT UNITS. WIRE TERMINALS SHALL BE RATED 75 DEGREES C. THE OPERATING MECHANISM SHALL BE TRIP-FREE SO THAT CONTACTS CANNOT BE HELD CLOSED AGAINST ANY ABNORMAL OVERCURRENT OR SHORT CIRCUIT CONDITION.
      a. BREAKERS SHALL MEET APPLICABLE NEMA AND/OR UL SPECIFICATIONS.
   C. PANELBOARD BOXES SHALL BE GALVANIZED SHEET STEEL WITH AMPLE WIRING GUTTER SPACE IN ACCORDANCE WITH NEC. FRONTS SHALL BE OF SHEET STEEL PAINTED LIGHT GREY OVER A SUITABLE RUST INHIBITOR PRIMER. PANELBOARDS SHALL BE EQUIPPED WITH ONE PIECE DOOR, CYLINDER TUMBLER TYPE LOCK, DIRECTORY CARD-HOLDER AND QUARTER-TURN ADJUSTABLE TRIM CLAMPS.
   D. PANELBOARD INTERIORS SHALL CONSIST OF REINFORCED GALVANIZED SHEET STEEL FRAMES WITH ALUMINUM BUS BARS AND CIRCUIT BREAKERS, PROPERLY SUPPORTED TO PREVENT VIBRATIONS AND BREAKAGE IN HANDLING. BUS BARS SHALL BE SEQUENCE PHASED. PANELBOARD SHALL HAVE A FULL SIZED SOLID ALUMINUM NEUTRAL AND GROUND BUS.
   E. BUS BAR BRACING SHALL BE UL LISTED AS INDICATED ON DRAWINGS. ADDITIONAL BRACING SHALL BE PROVIDED AS REQUIRED TO MEET OR EXCEED INDICATED AVAILABLE FAULT CURRENTS
   F. DIRECTORY CARDS SHALL BE COMPLETELY FILLED IN BY TYPEWRITER, LISTING CIRCUIT NUMBERS AND LOAD SERVED, INCLUDING EXISTING CIRCUITS. CIRCUIT BREAKERS SHALL BE IDENTIFIED BY CIRCUIT NUMBER LABELS AS HEREINBEFORE SPECIFIED.
11. LOAD CENTERS:
   A. FURNISH AND INSTALL CIRCUIT BREAKER LOAD CENTERS AS SHOWN ON THE DRAWINGS. LOAD CENTERS SHALL BE LISTED BY UL AND SO LABELED, AND SHALL BE FULLY RATED FOR THE VOLTAGE AND CURRENT CAPACITY INDICATED ON THE PANEL SCHEDULE. LOAD CENTERS SHALL BE EQUAL TO GENERAL ELECTRIC POWER MARK SERIES WITH PLUG IN TYPE BREAKERS.
   B. CIRCUIT BREAKERS SHALL MEET APPLICABLE PORTIONS OF UL STANDARD 489 AND NEMA AB-L. CIRCUIT BREAKERS SHALL BE PLUG-IN TYPE, WITH COMMON TRIP, UL RATED TO CARRY 100% OF NAMEPLATE RATING CONTINUOUSLY IN FREE AIR AT 25 DEGREE C. CIRCUIT BREAKERS SHALL BE TRIP INDICATING AND FULLY INTERCHANGEABLE WITHOUT DISTURBING ADJACENT UNITS. WIRE TERMINALS SHALL BE RATED 75 DEGREES C.
      1. BREAKERS SHALL MEET APPLICABLE NEMA AND/OR UL SPECIFICATIONS.
      2. ALL BREAKERS SHALL BE "HACR" RATED.
   C. PANELBOARD BOXES SHALL BE GALVANIZED SHEET STEEL WITH AMPLE WIRING GUTTER SPACE IN ACCORDANCE WITH NEC. FRONTS SHALL BE OF SHEET STEEL PAINTED LIGHT GREY OVER A SUITABLE RUST INHIBITOR PRIMER. PANELBOARDS SHALL BE EQUIPPED WITH ONE PIECE DOOR, SEMI-CONCEALED HINGES, DOOR LATCH, AND DIRECTORY CARD-HOLDER.
   D. PANELBOARD INTERIORS SHALL CONSIST OF REINFORCED GALVANIZED SHEET STEEL FRAMES WITH ALUMINUM BUS BARS AND CIRCUIT BREAKERS, PROPERLY SUPPORTED TO PREVENT VIBRATIONS AND BREAKAGE IN HANDLING. BUS BARS SHALL BE SEQUENCE PHASED. PANELBOARD SHALL HAVE A FULL SIZED SOLID ALUMINUM NEUTRAL AND GROUND BUS.
   E. BUS BAR BRACING SHALL BE UL LISTED AT 10,000 SYMMETRICAL AMPERES MINIMUM. ADDITIONAL BRACING SHALL BE PROVIDED AS REQUIRED TO MEET OR EXCEED INDICATED AVAILABLE FAULT CURRENTS.
   F. DIRECTORY CARDS SHALL BE COMPLETELY FILLED IN BY TYPEWRITER, LISTING CIRCUIT NUMBERS AND LOAD SERVED. CIRCUIT BREAKERS SHALL BE IDENTIFIED BY CIRCUIT NUMBER LABELS AS HEREINBEFORE SPECIFIED.
   G. LOAD CENTERS INSTALLED IN ACCESSIBLE DWELLING UNITS SHALL MEET ALL REQUIREMENTS OF ANSI A117.1. OPENING LATCH AND ALL BREAKERS SHALL BE MOUNTED BETWEEN 48" AND 15" AFF. CONTRACTOR SHALL VERIFY WITH ARCHITECT IF UNIT IS ACCESSIBLE PRIOR TO ROUGH IN.
12. DISTRIBUTION PANEL:
   A. THE DISTRIBUTION PANEL SHALL BE EQUAL TO SQUARE D I-LINE SERIES TYPE AND SHALL BE LOW VOLTAGE, CONFIGURED AN SHOWN ON THE DRAWINGS. THE MAIN SWITCH BOARD SHALL BE DESIGNED TO MEET UL AND NEMA STANDARDS. BUS BARS SHALL BE NONTAPERED, COPPER AND MOUNTED ON SUPPORTS OF HIGH IMPACT, NON-TRACKING INSULATING MATERIAL.
      1. A GROUND BUS SHALL BE FURNISHED. THE MAIN SWITCH BOARD SHALL HAVE A FULL SIZED SOLID COPPER NEUTRAL AND GROUND BUS. WIRE TERMINALS SHALL BE SOLDERLESS TYPE SUITABLE FOR COPPER CABLE OF THE SIZES INDICATED. MAIN DISTRIBUTION PANEL SHALL BE BRACED TO WITHSTAND MECHANICAL FORCES UP TO 65,000 AMPS SYM.
   B. DISTRIBUTION PANEL DEVICES:
      1. MOLDED CASE CIRCUIT BREAKERS SHALL BE THERMAL MAGNETIC CONSTRUCTION. (ALL CIRCUIT BREAKERS SHALL HAVE SUFFICIENT INTERRUPTED CAPACITY RATINGS TO PROPERLY CLOSE AGAINST AND INTERRUPT INSTANTANEOUSLY THE MAXIMUM SHORT-CIRCUIT CURRENT AVAILABLE AT THE CIRCUIT BREAKER.) INTERRUPTING CAPACITIES SHALL COMPLY WITH INDICATED AVAILABLE FAULT CURRENT. THE QUANTITY AND CONTINUOUS CURRENT RATINGS OF THE CIRCUIT BREAKERS SHALL BE AS INDICATED ON THE DRAWINGS.
      CIRCUIT BREAKERS SHALL MEET APPLICABLE PORTIONS OF UL STANDARD 489 AND NEMA PB-1. CIRCUIT BREAKERS SHALL BE BOLT-ON, GROUP MOUNTED, AMBIENT COMPENSATED, MOLDED CASE, QUICK-MAKE, QUICK-BREAK, THERMAL-MAGNETIC, WITH COMMON TRIP, UL RATED TO CARRY 80% OF NAMEPLATE RATING CONTINUOUSLY IN FREE AIR AT 25 DEGREES C. CIRCUIT BREAKERS SHALL BE TRIP INDICATING AND FULLY INTERCHANGEABLE WITHOUT DISTURBING ADJACENT UNITS. WIRE TERMINALS SHALL BE RATED 75 DEGREES C. THE OPERATING MECHANISM SHALL BE TRIP-FREE SO THAT CONTACTS CANNOT BE HELD CLOSED AGAINST ANY ABNORMAL OVERCURRENT OR SHORT CIRCUIT CONDITION.
      a. BREAKERS SHALL MEET APPLICABLE NEMA AND/OR UL SPECIFICATIONS.
   C. BUS BAR BRACING SHALL BE UL LISTED AT 65,000 SYMMETRICAL AMPERES MINIMUM. ADDITIONAL BRACING SHALL BE PROVIDED AS REQUIRED TO MEET OR EXCEED INDICATED AVAILABLE FAULT CURRENTS.
   D. THE DISTRIBUTION PANEL AND ALL LOW VOLTAGE PROTECTIVE DEVICES SHALL BE IDENTIFIED WITH PHENOLIC ENGRAVED NAME TAGS SHOWING DRAWINGS DESIGNATIONS AND LOADS BEING FED.
   E. THE PANEL SHALL BE SERVICE ENTRANCE RATED.
   F. THE PANEL SHALL BE EQUIPPED WITH MAIN BREAKER.
13. DISCONNECTS:
   A. DISCONNECTS SHALL BE EXTERNALLY OPERATED, QUICK-MAKE, QUICK-BREAK, SAFETY, WITH PROVISIONS FOR PAD LOCKING. FUSED AND NON-FUSED DISCONNECT SWITCHES SHALL BE PROVIDED AS INDICATED.
   B. INDOOR SWITCHES SHALL BE NEMA 1 AND OUTDOOR SWITCHES SHALL BE NEMA 3R, UNLESS INDICATED OTHERWISE.
14. FUSES:
   A. FUSES PROTECTING CIRCUIT BREAKER PANELS SHALL BE CURRENT LIMITING U.L. CLASS RK-1 FUSES WITH 200,000 AMPERES RMS SYM INTERRUPTING CAPACITY. FUSING ELEMENTS SHALL BE SILVER FOR RATINGS ABOVE 60 AMPERES.
   B. ALL OTHER FUSES SHALL BE U.L. CLASS RK-5, DUAL-ELEMENT WITH A MINIMUM TIME-DELAY OF 10 SECONDS AT 500% RATING. FUSES SHALL HAVE CURRENT-LIMITING SHORT-CIRCUIT LINKS AND 200,000 AMPERES RMS SYM INTERRUPTING CAPACITY. FUSING ELEMENTS SHALL BE COPPER.
15. LIGHT FIXTURES:
   A. WHERE LIGHT FIXTURES ARE MOUNTED IN A LAY-IN CEILING, PROVIDE A MINIMUM OF 2 SUPPORT WIRES ATTACHED DIRECTLY BETWEEN EACH LIGHT FIXTURE AND THE BUILDING STRUCTURE. SUPPORT WIRES SHALL BE A MINIMUM OF 12 GAUGE GALVANIZED STEEL WIRE, SOFT ANNEALED.
   B. FIXTURES ARE REQUIRED AT ALL LIGHTING OUTLETS SHOWN ON THE DRAWINGS. APPROVED LIGHTING FIXTURE WIRE IS REQUIRED IN ALL FIXTURES AND FIXTURE RACEWAYS. WEATHERPROOF WIRING IS REQUIRED FOR EXTERIOR FIXTURES. ALL PARTS OF FIXTURES AND WIRING SHALL BE IN ACCORDANCE WITH NEC REQUIREMENTS.
   C. ALL FIXTURES SHALL CARRY UL AND ETL LABELS.
16. SLEEVES:
   A. PROVIDE, SET, AND PROPERLY LOCATE PIPE SLEEVES AS REQUIRED FOR THIS WORK.
   B. INTERIOR PARTITIONS: 16 GAGE GALVANIZED STEEL, PACK BETWEEN CONDUIT AND SLEEVE WITH FIRE SAFING AND CAULK AT EACH END WITH FIRE RESISTANT SEALANT.
   C. ROOF: PROSET OR EQUAL, MANUFACTURED PVC SCHEDULE 40 PIPE SLEEVE WITH WEATHERPROOF SEAL. COORDINATE WITH ROOFING CONTRACTOR AND FLASH AS REQUIRED TO MAINTAIN ROOF WARRANTY.
17. GROUNDING:
   A. GROUND ALL ELECTRICAL APPARATUS IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC) 250, AND ANY LOCAL REQUIREMENTS. INSURE CONTINUOUS BOND WHERE FLEXIBLE CONDUIT IS USED. PROVIDE BONDING JUMPER INSIDE ALL FLEXIBLE CONDUIT.
   B. BOND METAL PIPING SYSTEMS IN COMPLIANCE WITH NEC 250.4(A)(4).
18. BOXES IN FIRE RATED ASSEMBLIES:
   A. OUTLET BOXES THAT DO NOT EXCEED 16 SQUARE INCHES AND INSTALLED IN FIRE RATED WALLS SHALL NOT BE INSTALLED CLOSER THAN 24" HORIZONTAL INCHES TO OTHER OUTLET BOXES.
   B. IF BOXES MUST BE INSTALLED WITHIN 24" OF EACH OTHER THAN BOTH OUTLET BOXES SHALL BE PROTECTED WITH LISTED PUTTY PADS, 3M FIRE BARRIER MOLDABLE PUTTY + OR EQUAL.



1 / E-001 TYPICAL MOUNTING HEIGHTS
1/2" = 1'-0"

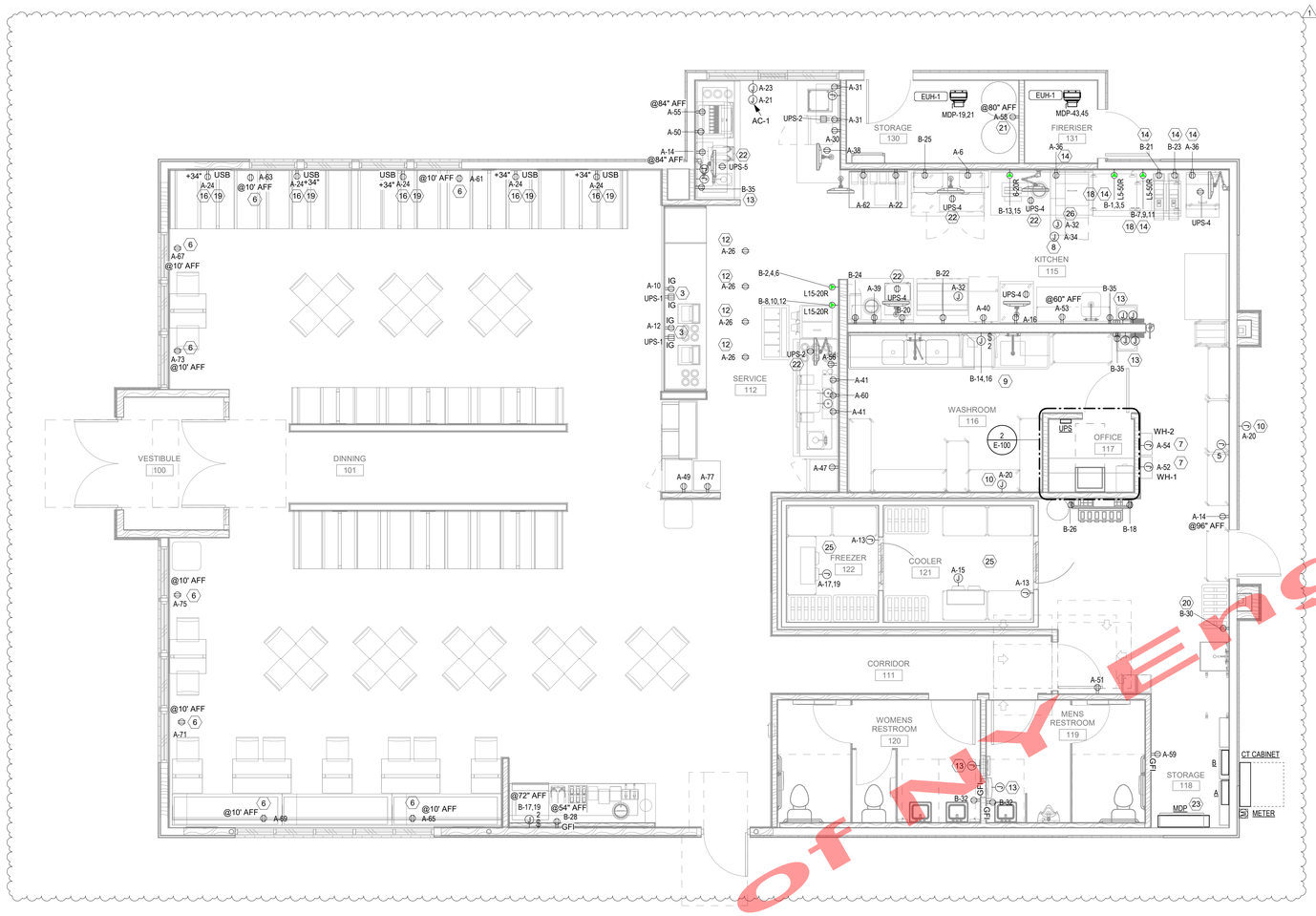
Property of NY Engineers

Freddy's Frozen Custard & Steakburgers
FREDDY'S FROZEN CUSTARD

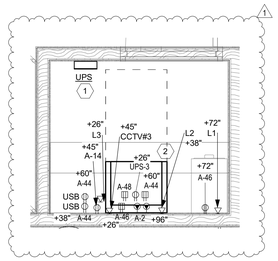
ELECTRICAL SPECIFICATIONS

E-001

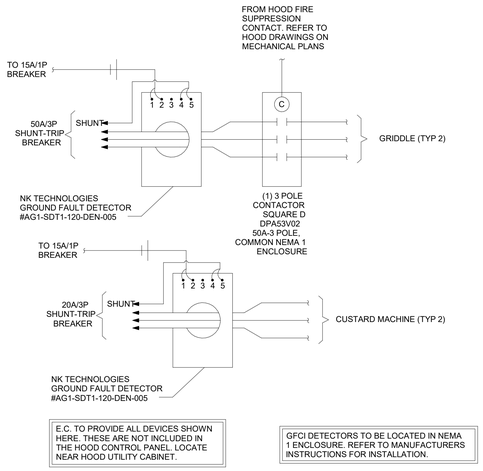
CONSTRUCTION DOCUMENTS



1 POWER PLAN
E-100 1/4" = 1'-0"



2 ENLARGED IT ROOM POWER PLAN2
E-100 1/2" = 1'-0"



3 3-Phase Ground Fault Protection Detail
E-100 NOT TO SCALE

ELECTRICAL POWER GENERAL NOTES

A. PROVIDE GFCI PROTECTION FOR PERSONNEL FOR ALL SINGLE PHASE RECEPTACLES RATED 50AMP OR LESS & THREE PHASE RECEPTACLES RATED 100AMP OR LESS INSTALLED IN KITCHEN AREA PER NEC 210.8(B)2. GFI PROTECTION SHALL BE PROVIDED AT BREAKER WHERE RECEPTACLES ARE NOT READILY ACCESSIBLE PER NEC 210.8 DUE TO STATIONARY KITCHEN EQUIPMENT.
B. REFER TO "KITCHEN EQUIPMENT SCHEDULE" FOR DESCRIPTION AND POWER REQUIREMENTS OF EACH DEVICE IN KITCHEN. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT OF ALL JUNCTION BOXES, RECEPTACLES, ETC. WITH KITCHEN EQUIPMENT VENDOR PRIOR TO ROUGH-IN.
C. E.C. SHALL MAKE ALL FINAL CONNECTIONS TO KITCHEN EQUIPMENT, FURNISH AND INSTALL ALL JUNCTION BOXES, RECEPTACLES, COVER PLATES, PULL BOXES, CONDUIT AND WIRING AS REQUIRED. COORDINATE WITH FOOD SERVICE DRAWINGS AND MANUFACTURER'S INSTRUCTIONS FOR LOCATION OF ALL EQUIPMENT CONNECTION LOCATIONS AND REQUIREMENTS.
D. E.C SHALL PROVIDE A LOCKABLE DISCONNECTING MEANS OR LOCKABLE CIRCUIT BREAKER FOR ALL JUNCTION BOXES AND APPLIANCES RATED OVER 300 WATTS WHERE THE SUPPLYING PANEL BOARD IS NOT WITHIN SIGHT, IN COMPLIANCE WITH N.E.C 422.31 AND 110.25. BASE BID ACCORDINGLY.

ELECTRICAL POWER PLAN KEYNOTES

1. REFER TO SHEET E-300 FOR ALL COMMUNICATIONS ROUGH-IN REQUIREMENTS. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT PLACEMENT OF DEVICES IN IT ROOM.
2. WALL MOUNTED DATA RACK. MOUNT ON WALL TIGHT TO LAY-IN CEILING. MODIFY RACK AS NEEDED TO ALLOW FOR REAR ENTRY OF ALL I.V CABLES AND ACCESS TO FLUSH MOUNTED QUAD RECEPTACLE INSIDE RACK ENCLOSURE. VERIFY ROUGH-IN LOCATIONS WITH ARCHITECTURAL ELEVATIONS. REFER TO SHEETS E-300 AND E-301 FOR ADDITIONAL RACK REQUIREMENTS AND INFORMATION.
3. DEVICES MOUNTED IN CASEWORK. RUN CONDUITS AND MOUNT DEVICES TIGHT TO BACK WALL OF INSIDE CABINET.
4. OWNER FURNISHED CUSTARD MACHINES. E.C. TO PROVIDE NEMA L15-20P PLUG AND NEMA L15-20R RECEPTACLE.
5. FOR HOOD FIRE SUPPRESSION SYSTEM PULL STATIONS. VERIFY MOUNTING HEIGHT AND EXACT LOCATION.
6. PROVIDE SHOW WINDOW RECEPTACLE AS PER NEC 210.62. E.C SHALL VERIFY THE EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN. BASE BID ACCORDINGLY.
7. CONNECT TO WATER HEATER CONTROLS PER MANUFACTURER'S INSTRUCTIONS.
8. E.C SHALL FIELD VERIFY THE EXACT LOCATION OF HOOD CONTROL PANEL. REFER TO MECHANICAL PLANS FOR MORE INFORMATION. COORDINATE THE EXISTING CONNECTIONS TO LIGHTS AND CONTROLS PER SUPPLIERS INSTRUCTIONS BEFORE COMMENCING ANY WORK. PROVIDE NEW IF FOUND INOPERABLE OR NOT FOUND. BASE BID ACCORDINGLY.
9. JUNCTION BOX WITH DISCONNECTING MEANS CAPABLE OF BEING LOCKED IN THE OPEN POSITION FOR CONNECTION TO DISHWASHER. SEE ARCHITECTURAL ELEVATIONS FOR LOCATION. VERIFY ELECTRICAL REQUIREMENTS PRIOR TO INSTALLATION.
10. PROVIDE NUTONE #BK24SLP OR EQUAL COMMERCIAL DOOR CHIME AND PUSHBUTTON. VERIFY LOCATION OF INDOOR CHIME UNIT WITH OWNER.
11. (2) JUNCTION BOXES AT DRIVE THROUGH WINDOW, ONE ABOVE WITH DISCONNECTING MEANS FOR AIR CURTAIN, ONE BELOW FOR POWERED MOTORIZED WINDOW OPERATOR. CONNECT TO AIR CURTAIN AND MOTOR PER MANUFACTURER'S INSTRUCTIONS. VERIFY EXACT LOCATION WITH EQUIPMENT SUPPLIER.
12. PROVIDE RECEPTACLE, IN COMBINATION POWER/DATA J-BOX EQUAL TO HUBBLE #HBL585 WALL BOX WITH #HBL989 LOW VOLTAGE PARTITION & RR154W FACE PLATE, IN MENUBOARD SOFFIT, 22" UP FROM THE BOTTOM FOR DIGITAL MENUBOARD. COORDINATE EXACT LOCATION IN FIELD PRIOR TO ROUGH-IN.
13. PAPER TOWEL DISPENSER/TRASH RECEPTACLE. INSTALL 24V AC CONVERSION KIT TO CONVERT UNIT FROM BATTERY POWERED TO HARDWIRED. PROVIDE A UL LISTED 24V TRANSFORMER, 10VA MINIMUM, AND DUPLEX RECEPTACLE ABOVE ACCESSIBLE CEILING FOR TRANSFORMER POWER. ROUTE TRANSFORMER OUTPUT CORD THROUGH WALL INTO DISPENSER +60" AFF. PROVIDE ADDITIONAL CORD LENGTH AS REQUIRED. REFERENCE MANUFACTURER'S INSTRUCTION FOR FURTHER INFORMATION. SEE ARCHITECTURAL DETAILS.
14. ROUTE CIRCUIT TO PANEL VIA HOOD FIRE SUPPRESSION CONTACTOR. E.C. SHALL VERIFY THE EXACT LOCATION PRIOR TO WORK. BASE BID ACCORDINGLY.
15. PROVIDE 1"C FROM SPEAKER POST(S) TO J-BOX AT DRIVE-THRU WINDOW FOR HEADSET RECEIVER/BASE.
16. BOOTH RECEPTACLES SHALL BE TAMPER RESISTANT WITH (2) INTEGRAL USB PORTS. MOUNT HORIZONTALLY. COORDINATE RECEPTACLE LOCATION WITH ARCHITECTURAL ELEVATIONS PRIOR TO ROUGH-IN. E.C SHALL VERIFY THE EXACT OUTLET/CHARGING STATIONS REQUIREMENT WITH OWNER BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.
17. (2) 1"C FOR LOW-VOLTAGE & CASEWORK POWER. ROUTE CONDUIT UNDER SLAB TO NEARBY WALL AND THEN UP TO ABOVE KITCHEN CEILING.
18. ROUTE CIRCUIT THROUGH GFCI DETECTOR TO PANEL INDICATED. REFER TO 3-PHASE GROUND FAULT PROTECTION DETAIL THIS SHEET.
19. ALL HOME RUNS IN FRONT OF HOUSE SHOULD BE RUN UNDERGROUND TO KEEP FRONT OF HOUSE EXPOSED CEILING SPACE CLEAR OF ELECTRICAL RUNS.
20. 1" CONDUIT DOWN IN WALL TO UNDERGROUND AND OUT INTO NEARBY LANDSCAPE AREA FOR IRRIGATION CONTROLS. VERIFY EXACT REQUIREMENTS WITH ARCHITECTGC.
21. CO2 SENSOR RECEPTACLE. PROVIDE CO2 SENSOR MACURCO #CD-6B OR EQUAL. COORDINATE WITH MECHANICAL PLANS. PROVIDE A 24V TRANSFORMER, 10VA MINUMUM, AND DUPLEX RECEPTACLE ABOVE ACCESSIBLE CEILING FOR TRANSFORMER POWER. REFERENCE MANUFACTURER'S INSTRUCTIONS FOR MORE INFORMATION.
22. CEILING MOUNTED RECEPTACLE FOR POLE MOUNTED KDS MONITOR. RECEPTACLE TO BE LOCATED IN THE CORNER OF THE GRID/TILE. ASSOCIATED DATA PORT(S) TO BE NEXT TO RECEPTACLE. SEE SHEET A-800 FOR EXACT LOCATION. ROUTE MONITOR CABLE SECURED DOWN POLE TO MONITOR.
23. E.C SHALL VERIFY/PERFORM THE INSTALLED/INSTALLATION OF ELECTRICAL METER AND PANELS IN COMPLIANCE WITH NEC ARTICLE 110.26(A) AND (B). E.C. SHALL FIELD VERIFY THAT THE PANELS ARE UNOBSTRUCTED AND THE AREA WHERE THE PANELS ARE PLACED SHALL NOT BE USED AS A STORAGE SPACE.
24. NOT USED.
25. EC TO COORDINATE WITH THE WALK-IN COOLER/FREEZER VENDOR FOR EXACT ELECTRICAL SPECIFICATION. POINT OF CONNECTION AND QUANTITY OF THE ASSOCIATED ACCESSORIES PRIOR TO BID/INSTALLATION. IF FOUND ANY DISCREPANCIES REPORT TO ENGINEER ON RECORD PRIOR TO BID/INSTALLATION.
26. LOCATION OF HOOD CONTROL PANEL. REFER TO MECHANICAL PLANS FOR MORE INFORMATION. CONNECT TO LIGHTS AND CONTROLS PER SUPPLIERS INSTRUCTIONS.

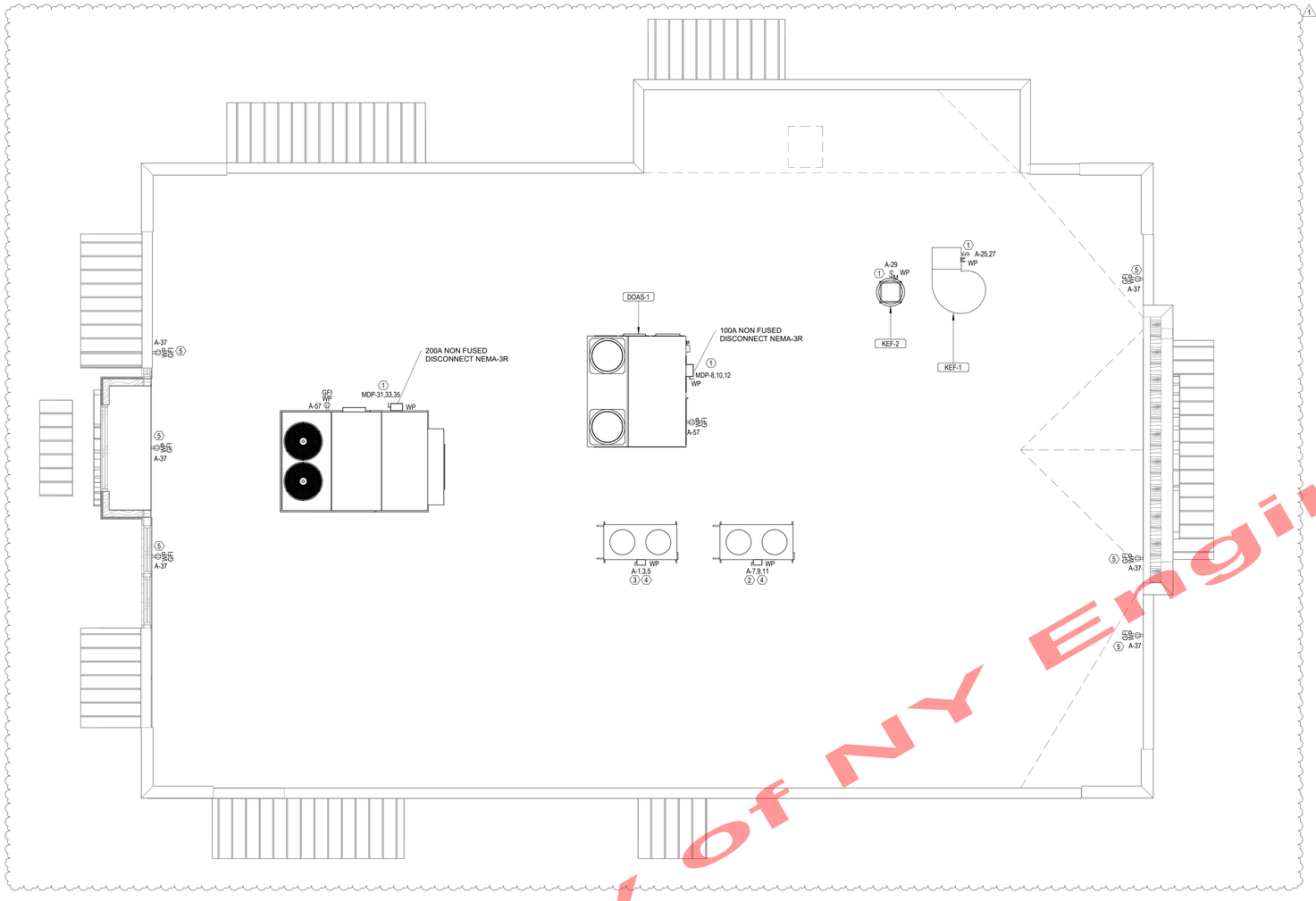
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Freddy's Frozen Custard & Steakburgers
FREDDY'S FROZEN CUSTARD

POWER PLAN

E-100

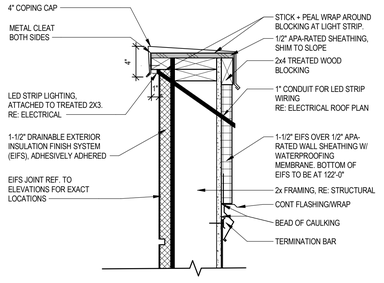
CONSTRUCTION DOCUMENTS



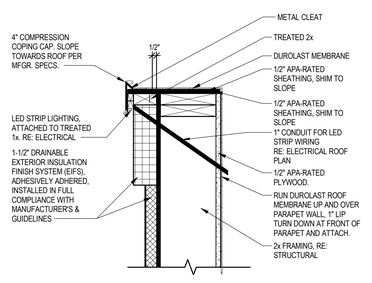
1 E-101 ROOF POWER PLAN
1/4" = 1'-0"

ELECTRICAL ROOF PLAN KEYNOTES

1. NEW MECHANICAL EQUIPMENTS. EC SHALL COORDINATE WITH HVAC CONTRACTOR/VENDOR/MANUFACTURER FOR EXACT LOCATION , ELECTRICAL SPECIFICATION AND POINT OF CONNECTION PRIOR TO BID/INSTALLATION. REPORT TO EOR IF ANY DISCREPANCIES FOUND PRIOR TO BID/INSTALLATION.
2. POWER PROVIDED FOR WALK IN COOLER CONDENSING UNIT. EC SHALL COORDINATE WITH HVAC CONTRACTOR/VENDOR/MANUFACTURER FOR EXACT LOCATION , ELECTRICAL SPECIFICATION AND POINT OF CONNECTION PRIOR TO BID/INSTALLATION. REPORT TO EOR IF ANY DISCREPANCIES FOUND PRIOR TO BID/INSTALLATION.
3. POWER PROVIDED FOR WALK IN FREEZER CONDENSING UNIT. EC SHALL COORDINATE WITH HVAC CONTRACTOR/VENDOR/MANUFACTURER FOR EXACT LOCATION , ELECTRICAL SPECIFICATION AND POINT OF CONNECTION PRIOR TO BID/INSTALLATION. REPORT TO EOR IF ANY DISCREPANCIES FOUND PRIOR TO BID/INSTALLATION.
4. EC SHALL COORDINATE WITH THE VENDOR/MANUFACTURER FOR EQUIPMENT SPECIFICATION AND THE EXTERNAL ACESSORIES PRIOR TO BID/INSTALLATION, PROVIDE ELECTRICAL PROVISION AND BASE BID ACCORDINGLY.
5. PROVIDE RECEPTACLE FOR BUILDING LED STRIPING DRIVER. REFER TO ARCHITECTURAL ELEVATIONS/SECTIONS FOR LOCATION AND MOUNTING. INSTALL DRIVERS AND CONNECT TO LED STRIPS PER MANUFACTURER'S INSTRUCTIONS. ROUTE CIRCUIT TO PANEL VIA EXTERIOR LIGHTING CONTROLLER, SEE CPI LIGHTING CONTROLLER SEQUENCE OF OPERATION ON SHEET E-201.



3 E-101 EIFS FINISH W/O TRIM - 4" COPING
NOT TO SCALE



2 E-101 EIFS FINISH W- TRIM - 4" COMP CAP
NOT TO SCALE

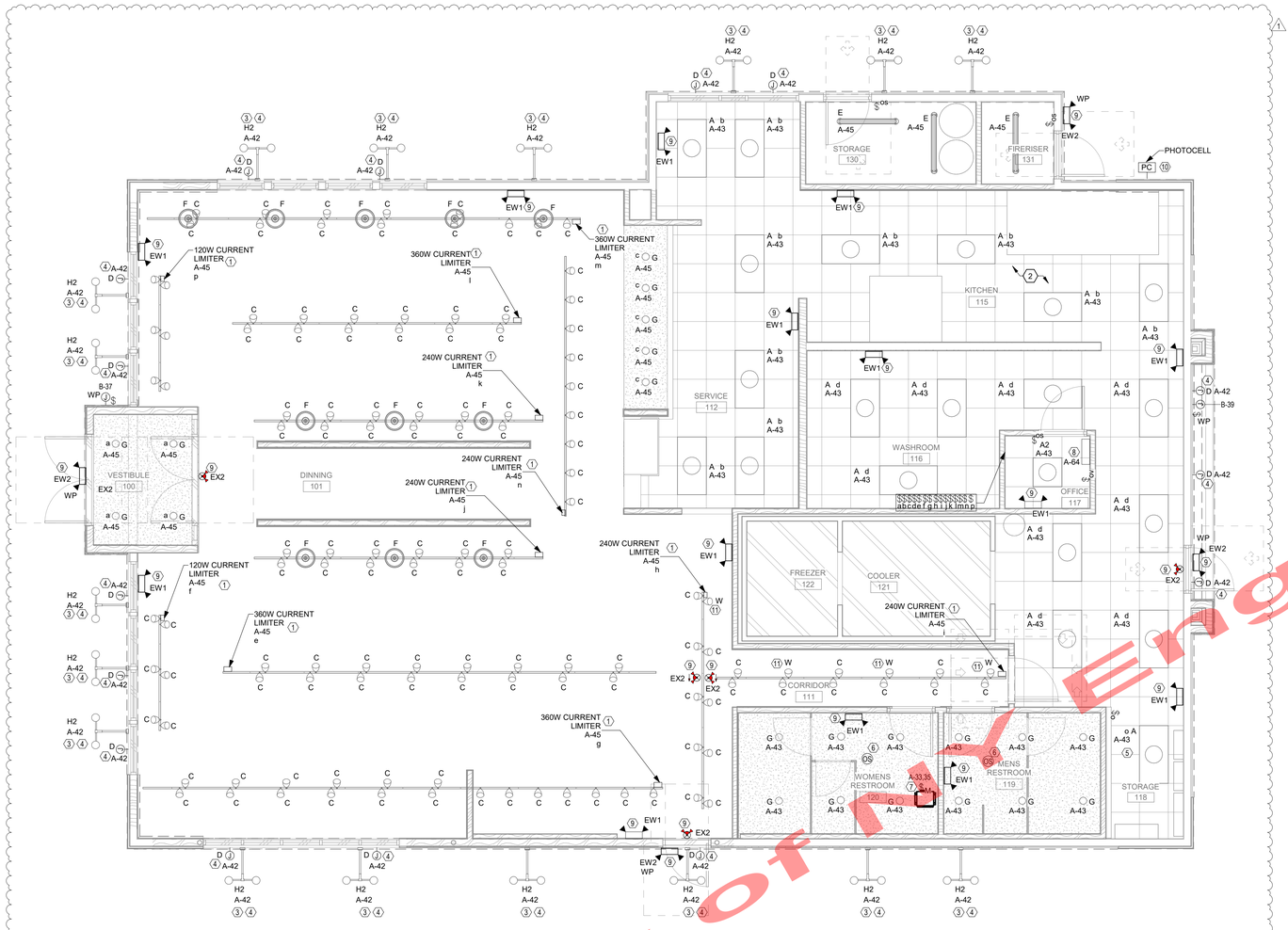
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ROOF POWER PLAN

E-101

CONSTRUCTION DOCUMENTS



1 E-200 LIGHTING PLAN
1/4" = 1'-0"

ELECTRICAL LIGHTING PLAN GENERAL NOTES

A. CONTRACTOR IS ADVISED TO UPDATE THE EMERGENCY LIGHT FIXTURES LOCATIONS/QUANTITY PER SITE REQUIREMENT UP ON FINAL INSPECTION OR PER LOCAL AHJ REQUIREMENT. ONE FOOTCANDLE OF EMERGENCY ILLUMINATION SHALL BE PROVIDED ALONG ALL EGRESS PATHWAYS AND EMERGENCY SIGN SHALL BE INSTALLED AT ALL INTERSECTIONS, EXIT CORRIDORS, PATHWAYS AND EXIT EGRESS OPENINGS IN ACCORDANCE WITH THE IBC 1008.3.1 MEANS OF EGRESS ILLUMINATION THE EMERGENCY POWER SYSTEM SHALL PROVIDE POWER FOR A DURATION OF 90MINUITES AND SHALL CONSIST OF STORAGE BATTERIES.
B. SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT FIXTURE LOCATIONS AND ORIENTATIONS.
C. REFER TO ARCHITECTURAL ELEVATIONS AND SECTIONS FOR ADDITIONAL LIGHTING FIXTURE MOUNTING DETAILS AND INFORMATION.
D. LIGHTS SHALL BE SHIELDED, COATED, OR OTHERWISE SHATTER-RESISTANT IN AREAS WHERE THERE IS EXPOSED FOOD; CLEAN EQUIPMENT, UTENSILS, AND LINENS; OR UNWRAPPED SINGLE-SERVICE.

ELECTRICAL LIGHTING PLAN KEYNOTES

1. ROUTE LIGHTING CIRCUIT THROUGH MANUAL LIGHT SWITCHES AND THEN TO LIGHTING CONTACTOR. ROUTE SWITCH LEG OF CIRCUIT THROUGH TIMECLOCK FOR AUTOMATIC SHUTOFF PER ENERGY CODE REQUIREMENTS. PROVIDE UNSWITCHED "HOT" CONDUCTOR ROUTED AHEAD OF LIGHTING CONTROLS FOR EXIT, EMERGENCY AND NIGHT-LIGHTS. REFER TO LIGHTING CONTROLLER SEQUENCE OF OPERATIONS ON SHEET E-201.
2. KITCHEN LIGHTING WIRED FOR 50% LIGHTING REDUCTION VIA EVERY OTHER FIXTURE SWITCHING IN CHECKERBOARD PATTERN, AS INDICATED BY (i) AND (f).
3. REFER TO ARCHITECTURAL ELEVATIONS FOR EXTERIOR LIGHTING LOCATIONS. ALL EXTERIOR BUILDING LIGHT FIXTURE BASES NEED TO BE CAULKED TO PREVENT MOISTURE PENETRATION. ROUTE LIGHTING CIRCUIT THROUGH LIGHTING CONTACTOR. REFER TO LIGHTING CONTROLLER SEQUENCE OF OPERATION ON SHEET E-201.
4. CIRCUIT FIXTURE TO SEPARATE EM LIGHTING INVERTER. ROUTE LIGHTING CIRCUIT THROUGH EXTERIOR LIGHTING CONTACTOR FOR CONTROL UNDER NORMAL CONDITIONS. PROVIDE UNSWITCHED "HOT" CONDUCTOR ROUTED AHEAD OF LIGHTING CONTROLS FOR EMERGENCY INVERTER PER INVERTER MANUFACTURER'S INSTRUCTIONS. INVERTER TO BE LOCATED IN ACCESSIBLE AREA HIGH UP ON INTERIOR WALL OF DINING AREA.
5. LIGHTING NEAR ELECTRICAL PANELS SHALL NOT BE CONTROLLED BY ANY AUTOMATIC MEANS AND SHALL BE COMPILED AS PER NATIONAL ELECTRICAL CODE 110.26(D).
6. WATTSTOPPER #DT-355 OR EQUAL OCCUPANCY SENSOR. LOCATE MINIMUM 4' AWAY FROM SUPPLY AIR DIFFUSERS - COORDINATE EXACT PLACEMENT WITH MECHANICAL CONTRACTOR.
7. E.C SHALL COORDINATE FOR EXACT LOCATION AND CONTROLS OF MECHANICAL EQUIPMENTS WITH MECHANICAL DRAWINGS BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY
8. E.C SHALL COORDINATE FOR EXACT LOCATION OF LIGHTING CONTROL PANEL AND OVERRIDE SWITCH WITH ARCHITECT/OWNER BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.
9. CONNECT ALL EMERGENCY EGRESS FIXTURES TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING AND CONTROLS PER LOCAL CODES.
10. EC TO INTERLOCK THE CONTROL OF PHOTOCELL WITH TIME-CLOCK FOR CONTROLLING OF EXTERNAL SIGNAGE. EC TO COORDINATE WITH VENDOR/MANUFACTURER PRIOR TO BID/INSTALLATION.
11. FIXTURE TO ILLUMINATE FEATURE SIGN ON WALL. COORDINATE EXACT LOCATION WITH OWNER/ARCHITECT.

LIGHTING CONTROL DEVICE SCHEDULE

IDENTIFY TYPE MARK	MANUFACTURER	MODEL NUMBER	TYPE COMMENTS
$LV	ACUITY NLIGHT OR EQUAL	NPODMA-X	ONE CHANNEL MOMENTARY SWITCH, TOP OF BOX AT 48" AFF
$OS	ACUITY NLIGHT OR EQUAL	NWSX-PDT-LV	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR SWITCH
OS	ACUITY NLIGHT OR EQUAL	NCM PDT-9-RJB	LOW VOLTAGE DUAL TECHNOLOGY CEILING MOUNT OCCUPANCY SENSOR
PL	ACUITY NLIGHT OR EQUAL	NPP 20-PL	PLUG LOAD CONTROL POWER PACK
PP	ACUITY NLIGHT OR EQUAL	NPP16-EFP	0-10V DIMMING POWER PACK, PROVIDE CAT5E CABLE TO DAYLIGHT SENSORS, NLIGHT DIMMER SWITCHES, OCCUPANCY SENSORS, LOW VOLTAGE SWITCHES, AND PLUGLOAD CONTROL POWER PACKS. REFER TO MANUFACTURERS DATA FOR MORE INFORMATION.
US	ACUITY NLIGHT OR EQUAL	CMR-PDT-9	LINE VOLTAGE DUAL TECHNOLOGY CEILING MOUNT OCCUPANCY SENSOR

NOTES:

A. ALL NEW LIGHTING CONTROLS ARE TO BE PROVIDED BY OWNER THROUGH ACCENT LIGHTING. CONTACT PAUL GRAF @316-636-1278 WITH QUESTIONS.

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FREDDY'S FROZEN CUSTARD

LIGHTING PLAN

E-200

CONSTRUCTION DOCUMENTS

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	MFR.	MODEL NUMBER	LUMEN OUTPUT	CCT	VOLTAGE	WATTS	NOTES
A	2'X4' LED GRID BASKET TROFFER WITH OPAL LENS. 5,300 LUMENS, 4000K	TRACE-LITE	CBLQ-24-CP	5300lm	4000K	120 V	42 W	--
A2	2'X2' LED GRID BASKET TROFFER WITH OPAL LENS. 3900 LUMENS, 4100K	TRACE-LITE	CBLQ-22-CP	4400lm	4000K	120 V	35 W	--
B	TRACK MOUNTED GIMBAL-RING LAMP HOLDER WITH TRIM RING FOR (1) 14W PAR30 LED LAMP MOUNTED ON SINGLE CIRCUIT TRACK, LENGTH AS INDICATED ON PLANS. PROVIDE ALL NECESSARY ENDS, FEEDS, ETC FOR COMPLETE INSTALLATION. VERIFY FINISH WITH ARCHITECT.	JUNO	R532-WH ON TX-WH SREIES TRACK	900lm	3500K	120 V	14 W	--
C	TRACK MOUNTED GIMBAL-RING LAMP HOLDER WITH TRIM RING FOR (1) 14W PAR30 LED LAMP MOUNTED ON SINGLE CIRCUIT TRACK, LENGTH AS INDICATED ON PLANS. PROVIDE ALL NECESSARY ENDS, FEEDS, ETC FOR COMPLETE INSTALLATION. VERIFY FINISH WITH ARCHITECT.	JUNO	R532-WH ON TX-WH SREIES TRACK	900lm	3500K	120 V	14 W	--
CT	LIGHTING TRACK, SINGLE CIRCUIT, WHITE	JUNO	T XFT WH	-	-	120 V	varies	--
D	WALL SCONCE	AFX	ELMW0704LAJD2BK	2200 lm	4000 K	120 V	19 W	--
ECS1	CEILING MOUNTED EMERGENCY LIGHT WITH TWIN ADJUSTABLE LED HEADS AND SEALED NICAD BATTERY	EXITRONIX	LED-90	1100lm	5000K	120 V	3 W	--
EW1	EMERGENCY LIGHT WITH TWIN ADJUSTABLE LED HEADS AND SEALED NICAD BATTERY, MOUNT AT 10'-6" TO CLEAR OBSTACLES.	EXITRONIX	LED-90	1100lm	6500K	120 V	3 W	--
EW2	WEATHERPROOF REMOTE 2 HEAD EMERGENCY	EXITRONIX	MLED2-G-WP	440lm	6500K	120 V	4 W	--
EX1	COMBO EMERGENCY/EXIT LIGHT WITH LED LAMPS, RED LETTERS ON WHITE BACKGROUND, UNIVERSAL MOUNT, BATTERY BACKUP AND TWIN EMERGENCY HEADS	EXITRONIX	VLED-U-WH-EL90	1045lm	4000K	120 V	4 W	--
EX2	COMBO EMERGENCY/EXIT LIGHT WITH LED LAMPS, RED LETTERS ON WHITE BACKGROUND, UNIVERSAL MOUNT, BATTERY BACKUP AND TWIN EMERGENCY HEADS AND HIGH CAPACITY BATTERY FOR REMOTE HEADS	EXITRONIX	VLED-U-WH-EL90	1045lm	4000K	120 V	4 W	--
F	16" RLM SHADE FOR (1) 7.5W SILVER-BOWL MEDIUM BASE LED LAMP. MOUNT AT 60" AFF ABOVE BOOTHS AND 72" AFF ABOVE HIGH TOP TABLES OR AS NOTED ON PLANS	ACCENT LIGHTING	142-W516-43-BLC W/ JUNO TRACK ADAPTER	700lm	3500K	120 V	14 W	--
G	6" RECESSED DOWNLIGHT WITH BLACK BAFFLE FOR (1) 12W LED LIGHT ENGINE	EXITRONIX	IC22LED-G4-09LM-35K-90CRI-MVOLT EZ10 W/ 24WWH	900lm	3500K	120 V	12 W	--
H2	ANGLED SHADE ACCENT LIGHT DUAL (12W) LED HEAD WITH RED FINISH	BASELITE	A812/43/E18A/LWTM/ LED12W/3K/120/277V	3030lm	3000K	120 V	24 W	--
LPS1	22' SQUARE STRAIGHT STEEL POLE, ON 3' BASE PER PARKING LOT POLE DETAILS	LITHONIA	SSS 22' 4C X X DDBXD	0 lm	0 K	0 V	0 W	MOUNTING AND OPTIONS AS REQUIRED. TOTAL 25' AFG.
E	4' SUSPENDED STRIP LIGHT	TBD	TBD	TBD	TBD	120 V	32 W	VERFIY WITH ARCHITECT/OWNER
R	NEON SIDE BENDING RED LED LIGHT STRIP IP65 WET LISTED. CORD AND PLUG DRIVER AND CHANNEL FOR COMPLETE INSTALLATION. REFER TO ROOF PLAN FOR LOCATION, LENGTH AND DRIVER WATTAGES	DIODELED	DI-24V-SE-NBL2-RD-##-CHN-ELV	21lm	0K	120 V	4 W	2.44W/LF, REFER TO PLANS FOR PREASSEMBLED SECTION ID AND LENGTH (X.X'-#"). DRIVERS ARE LABELED ON PLANS WITH WATTAGE AND CORRESPONDING SECTIONS.
S3	POLE MOUNTED AREA LIGHT WITH INTEGRAL LED LIGHT ENGINE AND DRIVER - TYPE 3 DISTRIBUTION. MOUNT ON 22' POLE WITH 3' HIGH CONCRETE BASE (25' TOTAL MOUNTING HEIGHT). BRONZE FINISH	LITHONIA	RSX2 LED P4 40K R3 MVOLT SPA DDBXD	25002 lm	4000 K	120 V	187 W	--
W	TRACK MOUNTED WALL WASH FLOOD MOUNTED ON SINGLE CIRCUIT TRACK, LENGTH AS INDICATED ON PLANS. PROVIDE ALL NECESSARY ENDS, FEEDS, ETC FOR COMPLETE INSTALLATION. VERIFY FINISH WITH ARCHITECT.	JUNO	T258L G2 30K 90CRI PDIM WH	2000 lm	3000 K	120 V	20 W	--

NOTES:

A. ALL NEW LIGHT FIXTURES ARE TO BE PROVIDED BY OWNER THROUGH ACCENT LIGHTING. CONTACT PAUL GRAF @316-636-1278 WITH QUESTIONS. ALL LAMPS TO BE SUPPLIED BY OWNER.

B. TYPE R FIXTURES COME FACTORY ASSEMBLED TO LENGTH INDICATED WITH LV CABLE FOR CONNECTION TO DRIVER. NO CUTTING WILL BE NEEDED. DRIVERS WILL HAVE 6FT 120V CORD AND PLUG FOR CONNECTION TO WP RECEPTACLE. 120W/200W DRIVERS HAVE (2) LV CABLES FOR CONNECTION OF MULTIPLE SECTIONS. 96W DRIVER WILL HAVE ONLY (1) LV CABLE FOR CONNECTION TO SINGLE SECTION.

C. E.C SHALL COORDINATE WITH ARCHITECT/OWNER FOR EXACT MAKE, MODEL AND WATTAGES OF ALL LIGHTING FIXTURES PRIOR TO WORK. BASE BID ACCORDINGLY.

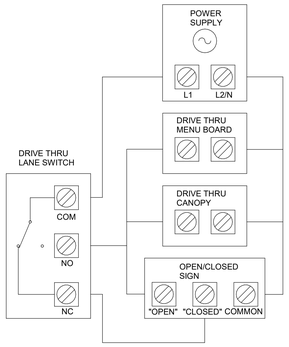
D. E.C SHALL COORDINATE WITH LIGHT FIXTURE VENDOR/MANUFACTURER FOR EXACT COMPATIBILITY OF THE ALL CONTROLS REQUIRED FOR RESPECTIVE LIGHT FIXTURE PRIOR TO BID.

LIGHTING CONTROLLER SEQUENCE OF OPERATION

CONTACT NAME:	Bryan Stryker
CONTACT NUMBER:	(704) 364-9029
CONTACT E-MAIL:	bryans@cpipanels.com

RELAY NO.	CIRCUIT NO.	CONTROLLED AREA	ON TIME	OFF TIME
1	B-37	SIGN #1	30 MINUTES BEFORE SUNSET	10:15PM SU-TH 11:15PM FR-SA
	B-39	SIGN #2		
	- (1)	SIGN #3		
	-	DIRECTIONAL SIGN		
2	-	BUILDING LED STRIPE	30 MINUTES BEFORE SUNSET	10:15PM SU-TH 11:15PM FR-SA
	A-53 (1)	DRIVE THRU MENU 1		
	-	DRIVE THRU MENU 2		
	B-27	MONUMENT SIGN		
3	-	SITE LIGHTING	30 MINUTES BEFORE SUNSET OR PHOTO CELL OVERRIDE	12:00AM SU-TH 1:00AM FOLLOWING DAY FR-SA
	-			
	-	SPARE		
	-	SPARE		
4	A-43 (1)	KITCHEN LIGHTING	8:00AM	11:00PM SU-TH 12:00AM FR-SA
	A-13	WALK-IN COOLER/ FREEZER LIGHTING		
	A-45	DINING LIGHTING (G)		
	A-45	DINING LIGHTING (B,C,F)		
5	A-26	MENUBOARDS	8:00AM	11:00PM SU-TH 12:00AM FR-SA
	-	SPARE		
	-	SPARE		
	-	SPARE		
6	A-42 (1)	BUILDING EXTERIOR LIGHTING	30 MINUTES BEFORE SUNSET	11:00PM SU-TH 12:00AM FR-SA
	-	SPARE		
	-	SPARE		
	-	SPARE		

CONTROLLER AND CONTACTOR PROVIDED AS PER REQUIREMENTS. E.C SHALL VERIFY THE EXACT LOCATION PRIOR TO ROUGH-IN. BASE BID ACCORDINGLY.

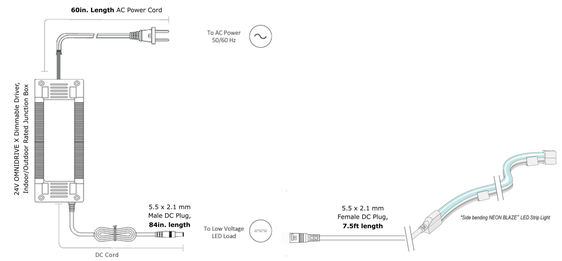


CONNECT TO SINGLE POLE DOUBLE THROW SWITCH, PROVIDED AS PER REQUIREMENT, FOR DRIVE THRU LANE TO CONTROL DRIVE-THRU CANOPY OPEN/CLOSED SIGN. WHEN OPEN CANOPY LIGHTS AND MENU BOARD LIGHT TO COME ON. WHEN CLOSED MENUBOARD AND CANOPY LIGHT TO TURN OFF WITH CLOSED SIGN STILL POWERED. REFERENCE ABOVE WIRING DIAGRAM. PROVIDE PERMANENT LABEL WITH OPEN AND CLOSED POSITION FOR EACH SWITCH.

2 E-201 LIGHTING CONTACTOR DETAIL
NOT TO SCALE

Installation Diagram -

- Plug-in Omnidrive X Power Supply with Male DC quick-connect
- Neon Blaze RED, with extended length Female DC Lead Wire



3 E-201 BLAZE LED STRIP INSTALLATION DETAIL
1/8" = 1'-0"

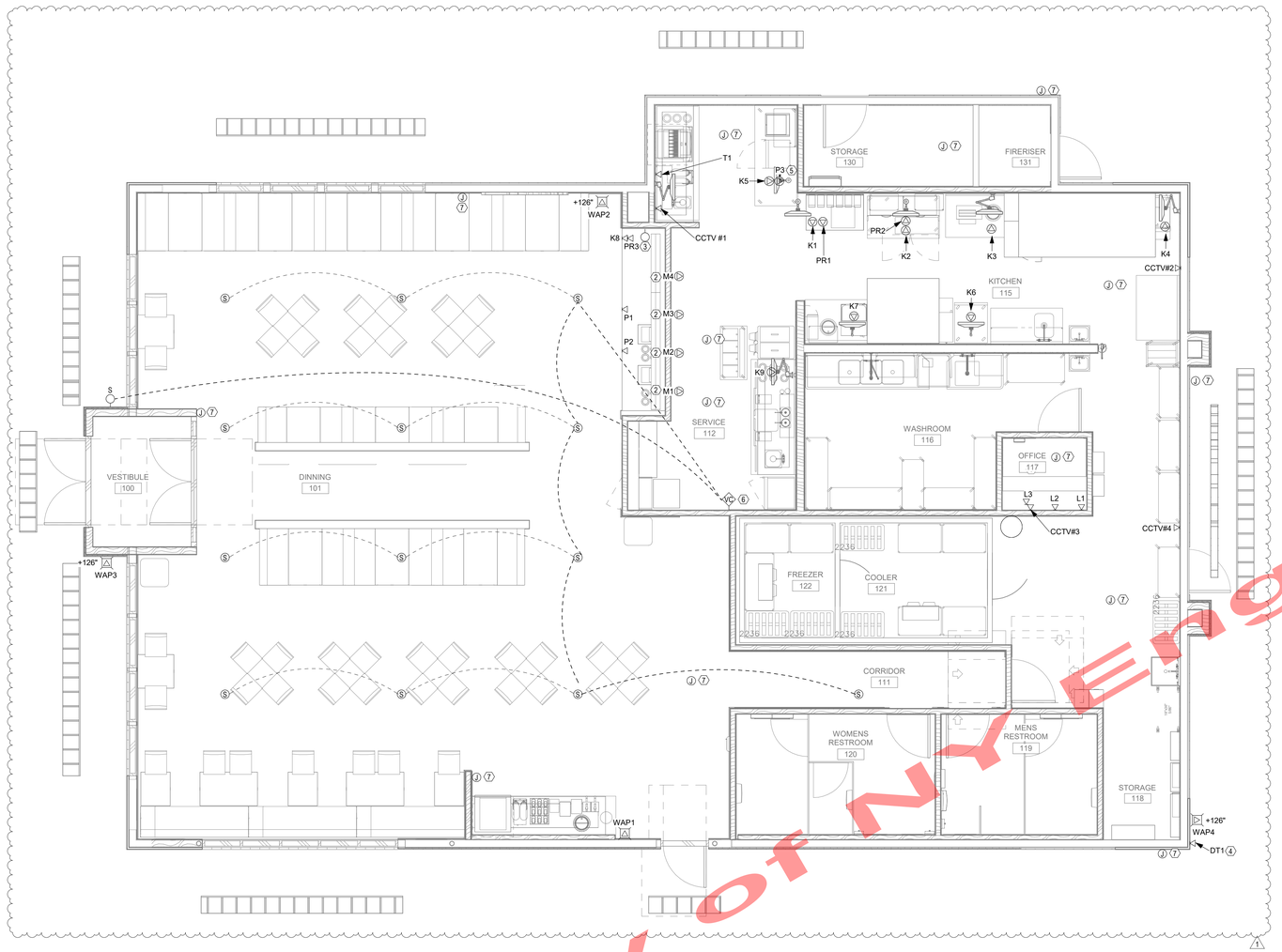
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FREDDY'S FROZEN CUSTARD

LIGHTING DETAILS & SCHEDULES

E-201

CONSTRUCTION DOCUMENTS



1 E-300 LOW VOLTAGE PLAN
1/4" = 1'-0"

ELECTRICAL LOW VOLTAGE PLAN KEYNOTES

1. REFER TO IT ROOM ELEVATION ON ARCHITECTURAL SHEETS FOR EXACT PLACEMENT OF DEVICES IN THE IT ROOM.
2. MENUBOARD DATA OUTLET, MOUNT 22" FROM BOTTOM OF SOFFIT TO CENTER OF DEVICE. REFER TO SYSTEM WIRING SCHEDULE FOR ADDITIONAL DETAILS.
3. PROVIDE J-BOX INSIDE PICKUP COUNTER CABINET FOR MICROPHONE. PROVIDE 3/4" W/ PULL STRING FROM J-BOX TO ABOVE ACCESSIBLE CEILING. TERMINATE WITH NYLON BUSHINGS.
4. DEVICES LOCATED AT DRIVE THRU MENUBOARD. E.C. SHALL VERIFY THE LOCATION PRIOR TO ROUGH-IN. PROVIDE ACCORDINGLY.
5. POLE MOUNTED POS, PROVIDE CONDUIT IN WALL FROM BEHIND POS TO BELOW COUNTER FOR CONNECTION TO CASH DRAWER.
6. PROVIDE (2) 100LVC-DW WALL MOUNTED VOLUME CONTROLS. ONE CONTROLS DINING AREA SPEAKERS AND ONE CONTROLS PATIO AREA SPEAKERS.
7. ROUTE COAX CABLE FROM SERVER RACK IN OFFICE TO J-BOX FOR FUTURE CCTV CAMERA. VERIFY EXACT LOCATION. PROVIDE SLACK AT BOTH ENDS FOR CONNECTIONS BY OTHERS. J-BOXES ON WALLS SHALL BE AT +120" AFF.

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FREDDY'S FROZEN CUSTARD

LOW VOLTAGE PLAN

E-300

CONSTRUCTION DOCUMENTS

DATA DEVICE SCHEDULE

DROP ID	DESCRIPTION	LABEL	DEVICE CONNECTION	ORIGIN - TERMINATION	WIRE TYPE	NOTES
CCTV #1	DRIVE THRU #1 - CCTV-1	CCTV-1	WALL PLATE - COAX	DATA RACK - COAX WHIP	COAX	1,5,11
CCTV #2	DRIVE THRU CCTV	CCTV-2	WALL PLATE - COAX	DATA RACK - COAX WHIP	COAX	1,5,11
CCTV #3	CCTV IT ROOM MONITOR	CCTV-3	WALL PLATE - COAX	DATA RACK - COAX WHIP	COAX	1,5,11
CCTV #4	REAR EXIT CCTV	CCTV-4	WALL PLATE - COAX	DATA RACK - COAX WHIP	COAX	1,5,11
DT1	DRIVE THRU #1 MENUBOARD	DT-1A	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	6
DT1	DRIVE THRU #1 MENUBOARD	DT-1B	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	6
DT1	DRIVE THRU #1 MENUBOARD	DT-1C	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	6
DT1	DRIVE THRU #1 SPARE	DT-1D	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	6
K1	BAGGING STATION KDS	K1-PP	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	2,4,5,7
K2	MAKE STATION KDS	K2-PP	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	2,4,5,7
K3	GRILL #2 KDS	K3-PP	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	2,4,5,7
K4	GRILL #1 KDS	K4-PP	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	2,4,5,7
K5	DTW #2 KDS	K5-PP	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	2,4,5,7
K6	DTW #1 KDS	K6-PP	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	2,4,5,7
K7	FRYER KDS	K7-PP	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	2,4,5,7
K8	PICK UP KDS	K8-PP	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	3,4,5,8
K9	CUSTARD KDS	K9-PP	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	2,4,5,7
L1	IT ROOM PRINTER	LN-1	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 6	4,5,9
L2	GENERAL IT ROOM	LN-2	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 6	4,5,9
L3	IT ROOM COMPUTER	LN-3	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 6	4,5,9
M1	MENU BOARD #1	M-1	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	1,4,5,9
M2	MENU BOARD #2	M-2	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	1,4,5,9
M3	MENU BOARD #3	M-3	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	1,4,5,9
M4	MENU BOARD #4	M-4	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	1,4,5,9
P1	POS #1 REGISTER	P1-A	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	4,5,8
P1	POS #1 PIN PAD	P1-B	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	4,5,8
P2	POS #2 REGISTER	P2-A	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	4,5,8
P2	POS #2 PIN PAD	P2-B	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	4,5,8
P3	POS #3 REGISTER	P3-A	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	4,5,7
P3	POS #3 PIN PAD	P3-B	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	4,5,7
P4	POS #4 REGISTER	P4-A	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	4,5,7
P4	POS #4 PIN PAD	P4-B	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	4,5,7
PR1	BAG TAG PRINTER	PR-1	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	4,5,7
PR2	MAKE STATION PRINTER	PR-2	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	4,5,7
PR3	CUSTARD PRINTER	PR-3	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	4,5,8
T1	DRIVE THRU TABLET #1	T1-A	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	4,5,9
T2	DRIVE THRU TABLET #2	T2-A	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	4,5,9
T3	DRIVE THRU TABLET #3	T3-A	RJ45 KEYSTONE	PATCH PANEL - RJ45 CONNECTOR	CAT 5	4,5,9
WAP1	DINING WIFI ACCESS POINT	WAP-1		PATCH PANEL - RJ45 CONNECTOR	CAT 5	4,10
WAP2	DINING WIFI ACCESS POINT	WAP-2		PATCH PANEL - RJ45 CONNECTOR	CAT 5	4,10
WAP3	EXTERIOR WIFI ACCESS POINT	WAP-3		PATCH PANEL - RJ45 CONNECTOR	CAT 5	4,10
WAP4	PATIO WIFI ACCESS POINT	WAP-4		PATCH PANEL - RJ45 CONNECTOR	CAT 5	4,10

NOTES:

1. WALL MOUNTED MONITOR, REFER TO ARCHITECTURAL ELEVATIONS FOR MOUNTING LOCATION.
2. POLE MOUNTED MONITOR, REFER TO ARCHITECTURAL PLANS FOR LOCATION.
3. MILLWORK MOUNTED MONITOR, REFER TO ARCHITECTURAL ELEVATIONS FOR MOUNTING LOCATION.
4. INSTALLER TO TEST ALL COMPLETED RUNS & PROVIDE A REPORT TO GC & OWNER CERTIFYING FUNCTIONALITY.
5. COIL 1'-0" OF WIRE SLACK AT J-BOX AT DEVICE AND 3'-0" OF WIRE SLACK OUTSIDE THE WALL IN THE IT ROOM, BEHIND THE SERVER RACK/PATCH PANEL. SEE DETAILS A2, A3, AND A4 ON SHEET A-800.
6. PROVIDE (4) CAT 5 CABLES IN CONDUIT FROM EXTERIOR MENU BOARD ASSEMBLY TO PATCH PANEL. SEE SHEETS AS-100, AS-200, AND E-500. COIL 2'-0" OF WIRE SLACK AT J-BOX AT DEVICE AND 3'-0" OF WIRE SLACK OUTSIDE THE WALL IN THE IT ROOM, BEHIND THE SERVER RACK/PATCH PANEL. CABLE TO BE RAN THROUGH CONDUIT/SLEEVE IN THE WALL BEHIND THE PATCH PANEL.
7. INSTALL J-BOX NEXT TO RECEPTACLE IN CEILING TILE/GRID. PROVIDE CAT 5 CABLE TO PATCH PANEL. CABLE TO BE RAN THROUGH CONDUIT/SLEEVE IN THE WALL BEHIND THE PATCH PANEL.
8. INSTALL J-BOX NEXT TO RECEPTACLE INSIDE MILLWORK WHERE DESIGNATED ON SHEETS A-800, E-200 AND E-300. PROVIDE CAT 5 TO PATCH PANEL. CABLE TO BE RAN THROUGH CONDUIT/SLEEVE IN THE WALL BEHIND THE PATCH PANEL.
9. INSTALL J-BOX NEXT TO RECEPTACLE WHERE DESIGNATED ON SHEETS A-800, E-200 AND E-300. PROVIDE CAT 5 TO PATCH PANEL. CABLE TO BE RAN THROUGH CONDUIT/SLEEVE IN THE WALL BEHIND THE PATCH PANEL
10. INSTALL J-BOX WHERE DESIGNATED ON SHEETS A-800 AND E-300. PROVIDE CAT 5 TO PATCH PANEL. CABLE TO BE RAN THROUGH CONDUIT/SLEEVE IN THE WALL BEHIND THE PATCH PANEL.
11. INSTALL J-BOX NEXT TO RECEPTACLE WHERE DESIGNATED ON SHEETS A-800, E-200 AND E-300. PROVIDE CCTV CABLING PER OWNER REQUIREMENTS. RUN COAX FROM J-BOX TO PATCH PANEL. CABLE TO BE RAN THROUGH CONDUIT/SLEEVE IN THE WALL BEHIND THE PATCH PANEL

VENDOR SUPPLIED DATA RACK SPECIFICATION

TRIPP SRW18USDP 18UWALL MOUNT RACK ENCLOSURE — **NO SUBSTITUTION**

U#	U QTY	DESCRIPTION	SPECIFICATION	SUPPLIED BY	INSTALLED BY	NOTE/COMMENTS
S	1U	SPARE				
S	1U	SPARE				
1	1U	12 PORT SURGE PROTECTOR	CYBERPOWER CPS1215RMS RACKMOUNT SURGE PROTECTOR, 120V/15A, 12 OUTLETS, 15 FT POWER CORD	GC	GC/EC	NOT TO BE CONNECTED TO VERTIV BBU REFER TO MANUFACTURER'S TECHNICAL SPECIFICATIONS FOR DETAILED PRODUCT INFO
2	3U	DVR FOR CCTV	OWNER SELECTED	OWNER	OWNER	GC/EC TO COORDINATE/COOPERATE WITH OWNER'S CCTV/SECURITY SYSTEM PROVIDER
3						
4						
5		POS SWITCH	CISCO MERAKI - MS210-24P	RDS	RDS	SEE NOTES 1 & 2
6	2U	48 PORT PATCH PANEL	48 PORT, RACK MOUNT RJ45 JACKS COMPATIBLE WITH CAT5E WIRING	RDS	RDS	MUST BE MOUNTED BETWEEN THE TWO NETWORK SWITCHES
7						SEE NOTE 2
8		NON-POS SWITCH	CISCO MERAKI - MS210-24P	OWNER	RDS	SEE NOTES 1 & 2
9		MX	CISCO MERAKI - MX68-HW	RDS	RDS	SEE NOTES 1 & 2
10	2U	BATTERY BACK-UP UNIT	VERTIV - GXT5-3000LVRT2UXLN	RDS	RDS	TO POWER POS TERMINALS AND KDS POWER ONLY. EC MUST CLEARLY LABEL ALL DEVICES POWERED FROM BBU.
11						
12		MEDIA PLAYER	MEDIA PLAYER - MEDIA PLAYER	OWNER	GC/EC	INSTALL WITH RACK MOUNTED CLIP/ADAPTER
13	2U	SOUND SYSTEM	TOA ELECTRONICS - BG-2120, MOUNTED ON LOWELL 2U VENTED UTILITY SHELF - USV-110 2U RACKMOUNT	OWNER	GC/EC	GC/EC TO INSTALL COMPLETE SOUND SYSTEM. EQUIPMENT & WIRING PROVIDED BY OWNER.
14						
S	1U	SPARE				
S	1U	SPARE				

NOTE 1 - MERAKI EQUIPMENT, OWNER WILL RECEIVE AN INVOICE FROM FREDDY'S CORPORATE FOR THESE PIECES. RDS HOLDS THE HARDWARE IN INVENTORY AS PART OF THE POS INSTALLATION.
NOTE 2 - POWER DIRECTLY FROM VERTIV BBU (U# 10/11)

SOUND SYSTEM SPECIFICATION

MFG	STOCK #	LOCATION DESCRIPTION	DESCRIPTION
ASTATIC	119L-19	COUNTER MICS	CARDIOID GOOSENECK MIC, 19", SILVER MIC, LESS SWITCH
LOWELL	100LVC-DW	IN-WALL 2G TOTAL FOR PATIO AND DINING VOLUME CONTROL	ATTENUATOR-100W, 70V/25V, 1-GANG DECORA, WHITE
MOOD	TECCMIT325274401	RACK MOUNT KIT FOR MOOD MIX MUSIC PLAYER (1RU)	CUSTOM FABRICATED RACK MOUNT KIT FOR MOOD MIX MUSIC PLAYERS
OWI	P5278P-B	PATIO SPEAKERS	OWI SURFACE MOUNT SPEAKER, EXTERIOR RATED, BLACK
SES	ACO TS21R NO SCREEN	PAGING MIC UNDER-COUNTER PUSHBUTONS	SINGLE GANG MUSHROOM PUSHBUTON NO SCREEN PRINTING
SHURE	A13HD	PAGING MIC BASE	MOUNTING FLANGE, HEAVY DUTY, MATTE SILVER
SOUNDTUBE	RS31-EZ-T-BK	DINING SPEAKERS	SOUNDTUBE SM PENDANT SPEAKER, BLACK
SPI	214426	DINING SPEAKER BACKBOX	BACKBOX FOR SOUNDTUBE SPEAKERS
TOA	BG-2120 CU	MIXER/AMPLIFIER	5-INPUT MIXER/AMP 120W (4 OHM/25V/70V)
TOA	M-01S	2ND MIC INPUT FOR MIXER/AMPLIFIER	TOA MICROPHONE MODULE
TOA	MB-1000	RACK MOUNT BRACKET FOR MIXER/AMPLIFIER (2RU)	RACK MOUNT KIT - BG-2000 SERIES
WIRE	WIRE224-P	SPEAKER WIRE	WIRE 18/2 1PR US PLENUM
WIRE	WIRE291-P	MICROPHONE WIRE	WIRE 22/2 1PR SHLD PLENUM

Property of NY Engineers

Freddy's Frozen Custard & Steakburgers
FREDDY'S FROZEN CUSTARD

LOW VOLTAGE SCHEDULES

E-301

CONSTRUCTION DOCUMENTS

BRANCH FEEDER SCHEDULE

UP TO BREAKER	COPPER CONDUCTORS Ø & N	GND	ALUMINUM CONDUCTORS Ø & N	GND
20	#12	#12		
30	#10	#10		
40	#8	#10		
60	#6	#10		
70	#4	#8		
100	#3	#8	#1	#6
125	#1	#6	#1/0	#6
150	#1/0	#6	#3/0	#6
175	#2/0	#6	#4/0	#4
200	#3/0	#6	250 kCM	#4
225	#4/0	#4	300 kCM	#2
250	250 kCM	#4	350 kCM	#2
300	350 kCM	#3	500 kCM	#2
350	400 kCM	#3	(2) #4/0	(2) #2
400	500 kCM	#3	(2) 250 kCM	(2) #1
500	(2) 250 kCM	(2) #1	(2) 350 kCM	(2) #1/0
600	(2) 350 kCM	(2) #1	(2) 500 kCM	(2) #2/0
800	(2) 500 kCM	(2) #1/0	(2) 750 kCM	(2) #3/0
1000	(3) 400 kCM	(3) #2/0	(4) 350 kCM	(4) #4/0
1200	(4) 350 kCM	(4) #3/0	(4) 500 kCM	(4) 250 kCM
1600	(5) 400 kCM	(5) #4/0	(6) 400 kCM	(6) 350 kCM
2000	(6) 400 kCM	(6) 250 kCM	(6) 600 kCM	(6) 400 kCM
2500	(8) 350 kCM	(8) 350 kCM	(8) 500 kCM	(8) 600 kCM
3000	(8) 500 kCM	(8) 400 kCM	(8) 750 kCM	(8) 600 kCM

GENERAL NOTES:

A. THE ABOVE FEEDER SCHEDULE IS A SCHEDULE OF TYPICAL FEEDERS AND SOME SIZES MAY NOT BE UTILIZED. WHERE FEEDER SIZES ON DRAWINGS ON DIAGRAMS DIFFER FROM SCHEDULE ABOVE, THE SIZE ON THE DRAWING OR DETAIL SHALL TAKE PRECEDENCE OVER THIS SCHEDULE.

B. ALL CONDUCTOR AMPACITIES ARE BASED ON TABLE 310-15(b)(16) OF THE NEC.

C. FEEDER SIZES SHOWN ON THE RISER DIAGRAM INDICATE FEEDER AMPACITIES AND DO NOT NECESSARILY CORRESPOND TO CIRCUIT BREAKER AMPACITIES. CERTAIN FEEDERS MAY BE SIZED FOR THE DERATION FACTORS REQUIRED BY CODE AND/OR ARE OVERSIZED FOR VOLTAGE DROP.

D. WHERE MULTIPLE PARALLEL RUNS ARE INDICATED FOR A SINGLE FEEDER, EACH CONDUIT SHALL CONTAIN 1 SET OF PARALLEL PHASE CONDUCTORS, 1 FULL SIZE NEUTRAL, AND 1 FULL SIZE GROUND.

E. ALUMINUM CONDUCTORS ARE NOT PERMITTED FOR FEEDERS UNDER 100 AMPS.

2 E-400 CONDUIT AND WIRE SCHEDULE
1/8" = 1'-0"

Panelboard: A

Location: INTERIOR STORAGE AREA
Supply: MDP
Mounting: Surface
Enclosure: NEMA 1

Voltage: 208 V, 3Ø, 4W
Bus Rating: 225 A
Neutral: 100%
Feed-Thru Lugs: Yes
Features & Modifications: -

Mains Type: MLO
Mains Rating: 200 A
Mains FN/Note: -
SERIES RATED SCCR: 22 kA

Ckt	Description	Trip (A)	Poles	Notes	A		B		C		Notes	Poles	Trip (A)	Description	Ckt
1					1320	3000						1	20	UPS	2
3	WALK-IN FREEZER COND/EVAP	30	3				1320	0				1	20	SPARE	4
5									1320	348	GF	1	20	BUN WARMER	6
7					1801	0						1	20	SPARE	8
9	WALK-IN COOLER COND/EVAP	15	3				1801	180			GF,IG	1	20	SERVICE POS	10
11									1801	180	GF,IG	1	20	SERVICE POS	12
13	WALK-IN LIGHTING AND ACC.	20	1		300	1080					GF	1	20	CCTV MONITOR	14
15	WALK-IN COOLER EVAPORATOR	20	1				192	1015			GF	1	20	FREEZER, REACH IN	16
17									1123	0		1	20	SPARE	18
19	WALK-IN FREEEZER EVAPORATOR	20	2		1123	460					LO	1	20	DOOR CHIME	20
21	AIR CURTAIN (AC-1)	20	1				288	252			GF	1	20	HEATED SHELF	22
23	DRIVE-THRU WINDOW	20	1	LO					360	900		1	20	DINING RECEPTACLES	24
25	KEF-1	15	2		499	720						1	20	RECEPTACLE - MENUBOARD	26
27							499	0				1	20	SPARE	28
29	KEF-2	15	1						948	240	GF	1	20	COUNTERTOP FREEZER	30
31	DRIVE-THRU HEADSET	20	1	GF	612	1220					LO	1	20	HOOD LIGHTING	32
33	EF-1	20	2				39	300			LO	1	20	HOOD CONTROL	34
35									39	576	GF,HC	1	20	REFRIGERATED PREP TABLE *	36
37	LED STRIP LIGHTING	20	1		240	1920					GF,IG	1	20	POS STATION	38
39	INDUCTION RETHERMALIZER	20	1	GF			804	240			GF	1	20	WORKTOP REFRIGERATOR	40
41	BLENDERS	20	1	GF					504	650		1	20	EXTERIOR BUILDING LIGHTING	42
43	KITCHEN LIGHTING	20	1		1067	1080						1	20	IT ROOM RECEPTS	44
45	DINING LIGHTING	20	1				1600	920				1	20	IT ROOM DESK RECEPTS	46
47	REFRIGERATED GLASS DOOR	20	1	GF					648	360		1	20	DATA RACK GENERAL POWER	48
49	FREEZER GLASS DOOR	20	1	GF	648	1800					GF	1	20	SODA MACHINE	50
51	IPAD CHARGING	20	1				540	200				1	20	WATER HEATER-1	52
53	BAG TAG PRINTER	20	1						1015	200		1	20	WATER HEATER-2	54
55	ICE MAKER	20	1		1800	960					GF	1	20	DIPPING CABINET	56
57	RECEPTACLE -ROOF	20	1	GF			360	180			GF	1	20	CO2 SENSOR	58
59	RECEPTACLE- MAINTENANCE	20	1						180	996	GF	1	20	FOOD TOPPING WARMER	60
61	SHOW WINDOW #10	20	1		1460	1800					GF	1	20	BURGER SLIDE	62
63	SHOW WINDOW #8	20	1				1460	200				1	20	LIGHTING CONTROL PANEL	64
65	SHOW WINDOW #1	20	1						1370	0		1	20	SPARE	66
67	SHOW WINDOW #6	20	1		1100	0						1	20	SPARE	68
69	SHOW WINDOW #2	20	1				1370	0				1	20	SPARE	70
71	SHOW WINDOW #7	20	1						1490	0		1	20	SPARE	72
73	SHOW WINDOW #5	20	1		1100	0						1	20	SPARE	74
75	SHOW WINDOW #4	20	1				1490	0				1	20	SPARE	76
77	FREEZER GLASS DOOR	20	1	GF					648	0		1	20	SPARE	78
79					1	0						1	20	SPARE	80
81	SURGE PROTECTION	30	3				1	0				1	20	SPARE	82
83									1	0		1	20	SPARE	84
				Connected Load:	27 kVA		15 kVA		16 kVA						
				Connected Current:	227 A		127 A		133 A						

Load Classification	Connected	Factor	Demand
KITCHEN EQUIPMENT	14546 VA	65.00%	9455 VA
LIGHTING	13507 VA	125.00%	16884 VA
Motor	1026 VA	123.10%	1263 VA
Other	19977 VA	100.00%	19977 VA
RECEPTACLE	9200 VA	100.00%	9200 VA
Spare	3 VA	100.00%	3 VA

EXISTING

Panel Totals	
Connected Load:	58 kVA
Demand Load:	56782 VA
DemandCurrent:	157.6 A
Less HEAT/COOL NC Load:	0.0 A
Total Demand Current:	157.6 A

Notes:
GF = GFCI BREAKER, IG = ISOLATED GROUND, HC = ROUTE THRU HOOD CONTACTOR, LO = LOCK-OFF BREAKER, * = EQUIPPED WITH SHUNT TRIP PROTECTION

Panelboard: B

Location: INTERIOR STORAGE AREA
Supply: MDP
Mounting: Surface
Enclosure: NEMA 1

Voltage: 208 V, 3Ø, 4W
Bus Rating: 225 A
Neutral: 100%
Feed-Thru... Yes
Features & Modifications: -

Mains Type: MLO
Mains Rating: 200 A
Mains FN/Note: -
SCCR: 22 kA

Ckt	Description	Trip (A)	Poles	FN/Note	Phase A Load (VA)	Phase B Load (VA)	Phase C Load (VA)	FN/Note	Poles	Trip (A)	Description	Ckt
1					4747 2160							2
3	GRIDDLE ELECTRIC, COUNTERTOP*	50	3	GF,HC		4747 2160		GF	3	25	BATCH FREEZER #1	4
5							4747 2160					6
7					4747 2160							8
9	GRIDDLE ELECTRIC, COUNTERTOP*	50	3	GF,HC		4747 2160		GF	3	25	BATCH FREEZER #2	10
11							4747 2160					12
13	TOASTER	20	2	GF	1300 2808			GF	2	20	DISHWASHER	14
15						1300 2808						16
17	ICE MACHINE	20	2	LO			1654 370	GF	1	20	WATER FILTER,SYS./KITCHEN	18
19					1654 1200			GF	1	20	FRY HOLDING STATION	20
21	BURGER SMASHER *	20	1	GF,HC		1680 264		GF	1	20	FRYER BATTERY, GAS	22
23	BURGER SMASHER *	20	1	GF,HC			1680 204	GF	1	20	CHEESE WARMER	24
25	PIZZA PREPARATION...	20	1	GF	480 1800			GF	1	20	BAG-N-BOX	26
27	MONUMENT SIGN	20	1			1200 1728		GF	1	20	TEA BREWER	28
29	DRIVE THRU MENU	20	1				1200 180	GF	1	20	IRRIGATION CONTROLLER	30
31	SPARE	20	1		0 360				1	20	RESTROOM RECEPTACLE	32
33	SPARE	20	1			0 600			2	20	SITE LIGHTING	34
35	TOWEL DISPENSERS	20	1	GF			540 600					36
37	SIGNAGE	20	1		1200 1				3	30	SURGE PROTECTION	38
39	SIGNAGE	20	1			1200 1						40
41	DIRECTIONAL SIGNAGE	20	1				1200 1					42
				Connected Load:	25 kVA	25 kVA	21 kVA					
				Connected...	209 A	209 A	179 A					

Load Classification	Connected	Factor	Demand
KITCHEN EQUIPMENT	51721 VA	65.00%	33619 VA
LIGHTING	6000 VA	125.00%	7500 VA
Other	10123 VA	100.00%	10123 VA
RECEPTACLE	2808 VA	100.00%	2808 VA
Spare	3 VA	100.00%	3 VA
LITES	0 VA	0.00%	0 VA

Panel Totals	
Connected Load:	71 kVA
Demand Load:	54053 VA
DemandCurrent:	150.0 A
Less HEAT/COOL NC...	0.0 A
Total Demand Current:	150.0 A

Notes:
GF = GFCI BREAKER, IG = ISOLATED GROUND, HC = ROUTE THRU HOOD CONTACTOR, LO = LOCK-OFF BREAKER, * = EQUIPPED WITH SHUNT TRIP PROTECTION

Panelboard: MDP (1)(2)

Location: INTERIOR WALL STORAGE 118
Supply: EXIST. SUPPLY FROM DISTR.
Mounting: Surface
Enclosure: NEMA 1

Voltage: 208 V, 3Ø, 4W
Bus Rating: 800 A
Neutral: 100%
Feed-Thru... Yes
Features & Modifications: -

Mains Type: MCB
Mains Rating: 800 A
Mains FN/Note: -
SCCR: EXISTING

Ckt	Description	Trip (A)	Poles	FN/Note	A	B	C	FN/Note	Poles	Trip (A)	Description	Ckt
1					0 0							2
3	SPARE	30	3			0 0			3	30	SPARE	4
5							0 0					6
7					0 8904							8
9	SPARE	50	3			0 8904			3	80	DOAS-1	10
11							0 8904					12
13					0 --				1	--	SPACE	14
15	SPARE	50	3			0 --			1	--	SPACE	16
17							0 --		1	--	SPACE	18
19	EUH-1	30	2		2500 0							20
21						2500 0			3	60	SPARE	22
23	SPACE	--	1				-- 0					24
25	SPACE	--	1		-- --				1	--	SPACE	26
27	SPACE	--	1			-- --			1	--	SPACE	28
29	SPACE	--	1				-- --		1	--	SPACE	30
31					12120 24617							32
33	RTU-1(N)	125	3			12120 24595			3	200	PANEL - B (3)	34
35							12120 21443					36
37	SPARE	125	3		0 0							38
39						0 0			3	100	SPARE	40
41							0 0					42
43	EUH-1	30	2		2500 27111							44
45						2500 15251			3	200	PANEL -A (4)	46
47							15897					48
				Connected Load:	78 kVA	66 kVA	58 kVA	(Includes load connected via feed-thru lugs.)				
				Connected Current:	658 A	559 A	486 A					

Load Classification	Connected	Factor	Demand
KITCHEN EQUIPMENT	66267 VA	65.00%	43074 VA
LIGHTING	19507 VA	125.00%	24384 VA
Motor	1026 VA	123.10%	1263 VA
Other	40100 VA	100.00%	40100 VA
RECEPTACLE	12008 VA	91.64%	11004 VA
Spare	6 VA	100.00%	6 VA
HVAC	63072 VA	125.00%	78840 VA
LITES	0 VA	0.00%	0 VA

Panel Totals	
Connected Load:	202 kVA
Demand Load:	198670 VA
DemandCurrent:	551.5 A
Less HEAT/COOL NC...	0.0 A
Total Demand Current:	551.5 A

Notes:
SERIES RATE BREAKERS WITH BRANCH CIRCUIT BREAKERS IN PANELS K1, K2 & LP-1. PROVIDE SERIES RATING LABELS AS REQUIRED.

Load Center: UPS

Location:
Supply:
Mounting: Surface
Enclosure: NEMA 1
Features & Modifications: -

Voltage: 120 V, 1Ø, 2W
Bus Rating: 100 A
Neutral: 100%
Mains Type: MLO
Mains Rating: 30 A
Mains FN/Note: -
SCCR: 10 kA

Ckt	Description	Trip (A)	Poles	Notes	Phase A Load (VA)
1	SERVICE POS	20	1	GF, IG	250
2	KDS MONITOR	20	1	GF, IG	250
3	IT ROOM COMPUTER	20	1	IG	400
4	KDS MONITORS/TAG PRINTER	20	1	GF, IG	250
5	DRIVE THRU POS	20	1	GF, IG	50
				Connected Load:	1 kVA
				Connected Current:	10 A

Load Classification	Connected	Factor	Demand
LIGHTING	50 VA	125.00%	63 VA
RECEPTACLE	1150 VA	100.00%	1150 VA

Panel Totals	
Connected...	1 kVA
Demand Load:	1213 VA
Demand...	10.1 A
Less...	0.0 A
Total Demand...	10.1 A

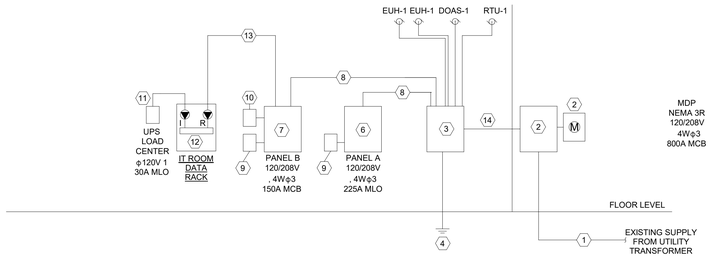
Notes:
GF = GFCI BREAKER, IG = ISOLATED GROUND

PANEL SCHEDULE GENERAL NOTES:

A. E.C SHALL VERIFY THE EXACT INCOMING FEEDER SIZE.

(X) PANEL SCHEDULE KEY NOTES:

1. E.C SHALL VERIFY OPERABLE CONDITION OF EXISTING FEEDERS FEEDING EXISTING LOADS IN FIELD. PROVIDE NEW FEEDER, CIRCUIT BREAKER AND ALL OTHER ACCESSORIES IF FOUND INOPERABLE. INFORM ENGINEER ON RECORD FOR ANY DISCREPANCY PRIOR TO ROUGH-IN. BASE BID ACCORDINGLY.
2. ALL CIRCUITING SHOWN ON PANEL SCHEDULE MPD(E), A(N), & B(N) ARE FOR REFERENCE ONLY. THE ELECTRICAL CONTRACTOR (E.C.) SHALL FIELD-VERIFY EXISTING CONDITIONS, CONFIRM THE ACTUAL ARRANGEMENT OF CIRCUIT BREAKERS IN THE EXISTING PANEL, AND RE-ARRANGE CIRCUITING AS REQUIRED PRIOR TO COMMENCING ANY WORK. ANY NEW BREAKERS REQUIRED, BASED ON THE EXISTING ARRANGEMENT, SHALL BE INCLUDED IN THE BID. THE E.C. SHALL VERIFY THE EXACT SIZE OF THE EXISTING PANEL AND NOTIFY THE ENGINEER OF RECORD OF ANY DISCREPANCIES. THE E.C. SHALL ALSO ENSURE THAT ALL NEW BREAKERS ARE COMPATIBLE WITH THE EXISTING PANELS AND THAT THE PANEL SCHEDULE BREAKER RATINGS ARE MATCHED FOR BIDDING PURPOSES. BASE BID ACCORDINGLY.
3. PROVIDE (1) 200A/3P BREAKER IN PLACE OF (1) 125A/3P BREAKER. BASE BID ACCORDINGLY.
4. PROVIDE (1) 200A/3P BREAKER IN PLACE OF (1) 400A/3P BREAKER. BASE BID ACCORDINGLY.



SERVICE ENTRANCE AND PANEL FEEDER CONDUCTORS, NO. 3 GAUGE AND LARGER SHALL BE TYPE XHHW-2 (WET LOCATIONS) OR THHN (DRY LOCATIONS)

1 E-400 ELECTRICAL RISER DIAGRAM
NOT TO SCALE

RISER DIAGRAM KEYNOTES:

1. EXISTING 800A, 120/208V, 3-PHASE, 4-WIRE ELECTRICAL INCOMING SERVICE FOR THE PROJECT SPACE FROM UTILITY TRANSFORMER SHALL REMAIN. E.C. SHALL COORDINATE WITH THE BASE BUILDING/LANDLORD/OWNER FOR EXACT POWER DISTRIBUTION. REPORT TO ENGINEER ON RECORD. BASE BID ACCORDINGLY.
2. EXISTING 800A,120/208V, 3-PHASE, 4-WIRE ELECTRICAL METER, & C.T. CABINET SHALL REMAIN FOR THE PROJECT SPACE. E.C SHALL COORDINATE WITH OWNER/ BASE BUILDING FOR EXACT RATING, LOCATION OF THE ELECTRICAL METER IN THE FIELD. E.C TO FIELD VERIFY OPERABLE CONDITION OF THE METER & DISCONNECT AND PROVIDE NEW IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
3. EXISTING 800A (M.C.B), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "MDP". E.C SHALL FIELD VERIFY EXACT SIZE, LOCATION & OPERABLE CONDITION OF THE PANEL ALONG WITH FEEDERS. REPLACE WITH NEW IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
4. EXISTING GROUNDING CONDUCTOR SHALL REMAIN. E.C TO VERIFY OPERABLE CONDITION OF THE FEEDER IN FIELD AND PROVIDE NEW IF FOUND INOPERABLE AS PER NEC 250.52. BASE BID ACCORDINGLY.
5. EXISTING 125A (M.C.B), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "K2". E.C SHALL FIELD VERIFY EXACT SIZE, LOCATION & OPERABLE CONDITION OF THE PANEL ALONG WITH FEEDERS. REPLACE WITH NEW IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
6. NEW 200A (M.C.B), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "A" FOR PROJECT SPACE. E.C SHALL COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER. BASE BID ACCORDINGLY.
7. NEW 200A (M.C.B), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "B" FOR PROJECT SPACE. E.C SHALL COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER. BASE BID ACCORDINGLY.
8. 4#3/0, 1#6G, 2" C.
9. PREWIRED INTERMATIC SURGE PROTECTOR #IH20S23Y1DG2 (OR EQUAL)
10. E.C. SHALL VERIFY THE EXACT LOCATION OF LIGHTING CONTROL PANEL PRIOR TO ROUGH-IN. BASE BID ACCORDINGLY.
11. E.C. SHALL VERIFY THE EXACT LOCATION OF UPS PRIOR TO ROUGH-IN. BASE BID ACCORDINGLY.
12. 3KVA RACK MOUNTED UPS. INSIDE THE DATA RACK, FOR CONNECTION OF UPS, PROVIDE (1) 30A NEMA L5-30R RECEPTACLE CIRCUITED TO PANEL A WITH #10 WIRE AND (1) 30A NEMA L5-30P INLET FEEDING LOAD CENTER UPS. REFER TO SHEET E-301 FOR DETAILS.
13. 2#10, 1#10G, 3/4"C
14. EXISTING FEEDERS SHALL REMAIN. E.C TO VERIFY OPERABLE CONDITION OF ALL THE FEEDERS IN FIELD AND PROVIDE NEW IF FOUND INOPERABLE. BASE BID ACCORDINGLY

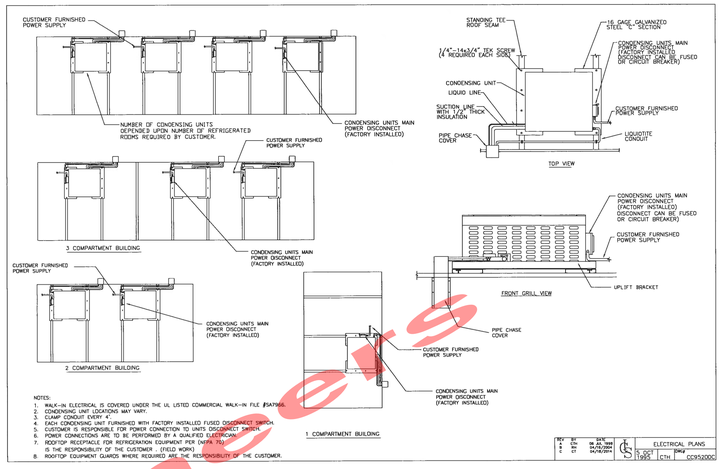
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Freddy's Frozen Custard & Steakburgers
FREDDY'S FROZEN CUSTARD

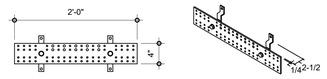
ELECTRICAL RISER & PANEL SCHEDULES

E-400

CONSTRUCTION DOCUMENTS



1 E-500 WALK-IN REFRIGERATOR/FREEZER INSTALLATION DETAIL
NO SCALE



PROVIDE TGB (TELECOMMUNICATIONS GROUND BAR KIT) HARGER #TGBI14424TMGBKT OR EQUAL

2 E-500 TELECOMMUNICATION GROUND BAR KIT - 24"
NOT TO SCALE

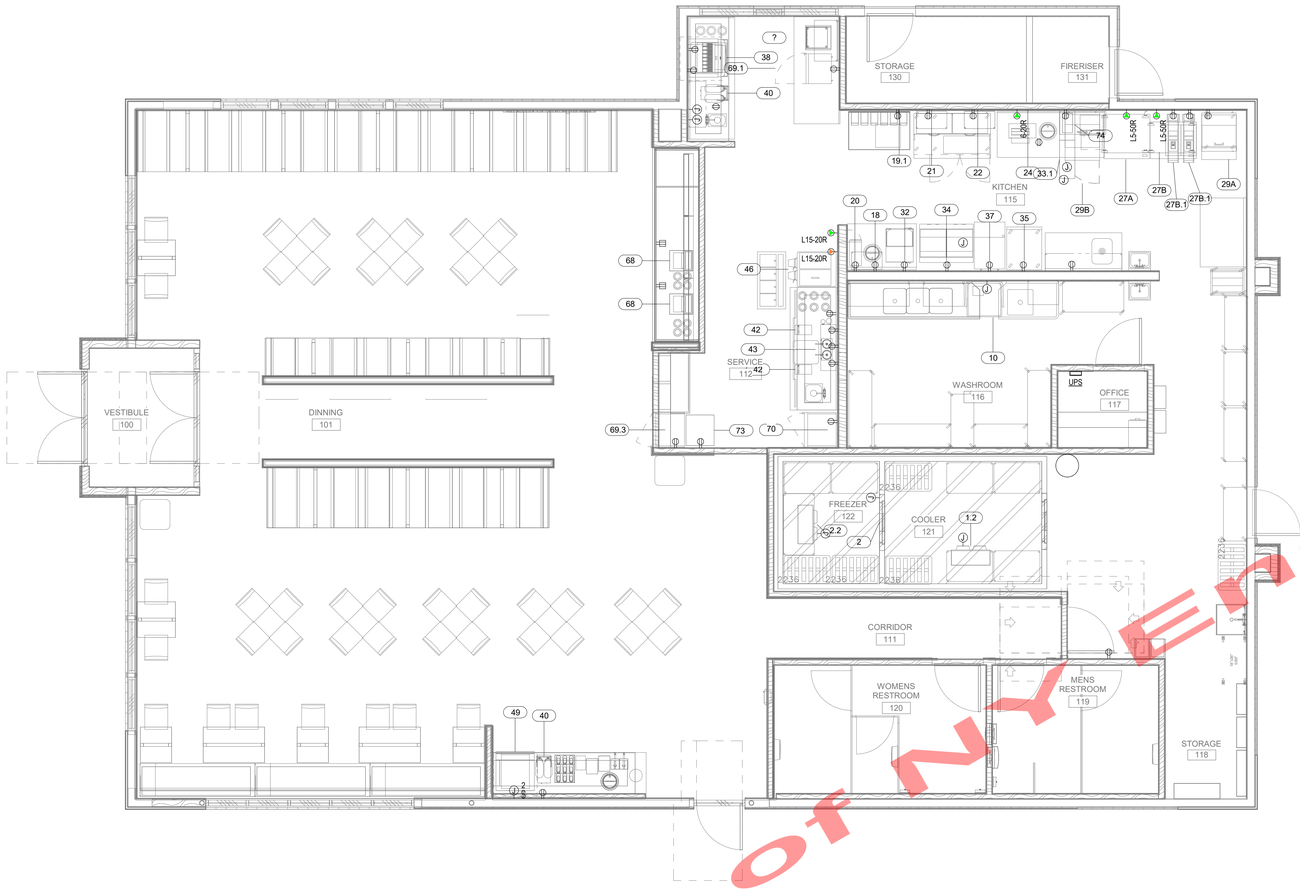
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Freddy's Frozen Custard & Steakburgers
FREDDY'S FROZEN CUSTARD

GENERIC ELECTRICAL DETAILS

E-500

CONSTRUCTION DOCUMENTS



1 / E-600 ELECTRICAL ROUGH-IN PLAN
1/4" = 1'-0"

ELECTRICAL GENERAL NOTES

1	THESE DRAWINGS ARE TO BE USED AS AN INSTRUMENT OF REFERENCE BY ALL OTHER TRADES AND CONTRACTORS. ALL TRADES SHALL VERIFY THE INFORMATION AS INDICATED ON THESE PLANS.
2	DIMENSIONS AND REQUIREMENTS FOR ALL EQUIPMENT THAT IS LISTED AS EXISTING, PROVIDED BY OTHERS OR PROVIDED BY OWNER, MUST BE VERIFIED WITH THE APPROPRIATE PARTIES.
3	ALL LOCAL, STATE AND NATIONAL CODES SHALL APPLY.
4	THESE UTILITY REQUIREMENT DRAWINGS INDICATE THE UTILITY AND LOCATION OF REQUIREMENTS BASED ON THE EQUIPMENT SPECIFIED.
5	ALL EQUIPMENT SHALL BE WIRED IN STRICT CONFORMANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND/OR SHOP DRAWINGS.
6	UNLESS OTHERWISE NOTED, ALL DIMENSIONS SHOWN ON THIS PLAN ARE FROM THE FINISHED FLOOR, CEILING, WALLS OR COLUMN CENTERLINES TO THE CENTERLINE OF THE ROUGH-INS.
7	ALL ELECTRICAL CONNECTIONS ARE TO BE EXTENDED AND INTERCONNECTED TO CONNECTION POINTS ON THE EQUIPMENT BY OTHERS. UNLESS SPECIFIED, ALL HARDWARE REQUIRED FOR THESE CONNECTIONS SHALL BE SUPPLIED BY THE ELECTRICAL CONTRACTOR.
8	SURFACE MOUNTED WIRE AND CONDUIT WILL NOT BE ALLOWED. ALL ELECTRICAL LINES AND CONDUIT SHALL BE EXTENDED THROUGH AND OUT OF BUILDING WALLS WHERE POSSIBLE. WHERE SURFACE MOUNTED CONDUIT IS UNAVOIDABLE, IT MUST BE COORDINATED WITH KITCHEN EQUIPMENT SUPPLIER.
9	ROUGH-INS OUT OF FLOOR SHOULD BE STUBBED UP 4" ABOVE FINISHED FLOOR AND BROUGHT TO THE REQUIRED HEIGHT AFTER EQUIPMENT IS SET IN PLACE.
10	ALL 120 VOLT UTILITY OUTLETS TO BE G.F.C.I. OUTLETS.
11	ALL NECESSARY ELECTRICAL DISCONNECTS, SHUNT TRIP BREAKERS AND STARTERS ARE TO BE FURNISHED AND INSTALLED BY OTHERS, UNLESS PROVIDED AS A STANDARD OR SPECIFIED EQUIPMENT COMPONENT OF THE EQUIPMENT MANUFACTURER. THIS SHALL INCLUDE ELECTRICAL DISCONNECTS FOR ALL REMOTE COMPRESSORS, BOOSTER HEATERS AND OTHER ITEMS REQUIRED BY CODE.
12	ALL ELECTRICAL ITEMS SUPPLIED UNDER COOKING LINE EXHAUST HOOD ARE TO SHUT DOWN WITH SHUNT TRIP BREAKERS (BY OTHERS) CONNECTED TO FIRE SYSTEM. ELECTRICAL ENGINEER TO CONFIRM COMPLIANCE TO ALL CODES.
13	ALL OUTLETS, JUNCTION BOXES, DISCONNECTS, ETC. SHALL BE INSTALLED SO AS NOT TO INTERFERE WITH THE PERFORMANCE, FUNCTION, OR PLACEMENT OF THE EQUIPMENT.
14	STARTERS, RELAYS, HEATERS AND SWITCHES REQUIRED FOR EXHAUST AND SUPPLY FANS ARE TO BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
15	DISHMACHINES: A.ELECTRICAL CONTRACTOR SHALL INTERCONNECT DISHMACHINE WITH DISHMACHINE EXHAUST FAN. INTERCONNECTION SHALL LINK OPERATION OF EXHAUST FAN AND DISHMACHINE SO THAT BOTH UNITS RUN SIMULTANEOUSLY AT ALL TIMES. B.ELECTRICAL CONTRACTOR SHALL INTERCONNECT TABLE LIMIT SWITCH AT END OF CLEAN DISHTABLE WITH CONVEYOR TYPE DISHMACHINES. LIMIT SWITCH SHALL TERMINATE DISHMACHINE OPERATION WHEN DEPRESSED.
16	WALK-IN COOLER/FREEZER BOXES & REMOTE COMPRESSORS: A.INTERCONNECT TO BLOWER COIL IN FREEZER. B.INTERCONNECT BETWEEN TIMER & CONTACTOR. C.INTERCONNECT BETWEEN TIMER & PRESSURE CONTROL SOLENOID. D.INTERCONNECT BETWEEN CONTACTOR AND COMPRESSOR FAN. E.INTERCONNECT BETWEEN TERMINAL AND CONTACTOR TO BLOWER COIL IN FREEZERS. F.CONNECT DRAIN LINE HEATER TO RECEPTACLE IN FREEZER. G.CONNECT PAN HEATER TO TERMINAL STRIP IN FREEZERS. CONNECT DOOR HEATER TO TERMINAL STRIP IN FREEZERS.
17	ALL ELECTRICAL CONDUIT TO BE RUN ON TOP (EXTERIOR) OF WALK-IN COOLER/FREEZER BOX WHERE POSSIBLE.
18	UNLESS PROVIDED BY THE MANUFACTURER, ALL LIGHT BULBS FOR FOODSERVICE EQUIPMENT TO BE PROVIDED BY OTHERS.

FOODSERVICE ELECTRICAL SCHEDULE

ITEM NO.	QTY	DESCRIPTION	ELECTRICAL VOL...	PH	AMPS	ROUGH-IN / CONNECTION TYPE	HGT AFF	REMARKS
1	1	WALK-IN COOLER	120	1	16.00	JB		JB DOWN FROM ABOVE. SINGLE POINT CONNECTION FOR LIGHTS & ACCESSORIES. REMOTE COMPRESSOR; VERIFY ALL ROUGH-IN REQUIREMENTS WITH MANUFACTURER'S SHOP DRAWINGS.
1.1	1	WALK-IN COOLER CONDENSER	208	3	5.90	JB		EXISTING DISCONNECT SWITCH/JB. VERIFY ALL ROUGH-IN REQUIREMENTS WITH MANUFACTURER'S SHOP DRAWINGS - ELECTRICAL LOADS WILL VARY BY LOCATION.
1.2	1	WALK-IN COOLER EVAPORATOR COIL	208	1	9.80	JB		VERIFY ROUGH IN REQUIREMENTS WITH MANUFACTURER'S SHOP DRAWINGS. ELECTRICAL LOADS WILL VARY BY LOCATION.
2	1	WALK-IN FREEZER	120	1	16.00	JB		30 AMP CIRCUIT. JB DOWN FROM ABOVE. SINGLE POINT CONNECTION FOR LIGHTS & ACCESSORIES. REMOTE COMPRESSOR; VERIFY ALL ROUGH-IN REQUIREMENTS WITH MANUFACTURER'S SHOP DRAWINGS.
2.1	1	WALK-IN FREEZER CONDENSER	208	3	12.60	JB		EXISTING DISCONNECT SWITCH/JB. VERIFY ALL ROUGH-IN REQUIREMENTS WITH MANUFACTURER'S SHOP DRAWINGS - ELECTRICAL LOADS WILL VARY BY LOCATION.
2.2	1	WALK-IN FREEZER EVAPORATOR COIL	208	1	9.80	JB		EXISTING DISCONNECT SWITCH/JB. VERIFY ALL ROUGH-IN REQUIREMENTS WITH MANUFACTURER'S SHOP DRAWINGS - ELECTRICAL LOADS WILL VARY BY LOCATION.
2.3	1	WALK-IN FREEZER - (HEAT TAPE)	120	1	20.00	SR	24"	20 AMP CIRCUIT; EC TO WIRE HEAT TAPE AND CONNECT TO OUTLET.
10	1	DISH MACHINE - LOW TEMP - BY OTHERS	208	1	27.00	JB	24"	BY OTHERS; VERIFY ELECTRICAL AND ROUGH-IN REQUIREMENTS.
17	1	BAG-N-BOX SYSTEM - BY OTHERS	120	1	15.00	DR	60"	BY OTHERS; VERIFY ROUGH-IN REQUIREMENTS.
18	1	INDUCTION RETHERMALIZER	120	1	6.70	DR	48"	-
19.1	1	HEATED SHELF	120	1	2.10	DR	48"	-
20	1	CHEESE WARMER - BY OTHERS	120	1	1.70	DR	48"	BY OTHERS; VERIFY ROUGH-IN REQUIREMENTS.
21	1	HEATED SHELF FOOD WARMER	120	1	2.90	DR	48"	-
22	1	PIZZA PREPARATION REFRIGERATOR	120	1	4.00	SR	24"	-
24	1	VERTICAL CONTACT TOASTER	208	1	12.50	SR	48"	-
25	1	HOT DOG STEAMER	120	1	8.30	SR	72"	-
26	1	WORK TABLE WITH PREP SINK	120	1	15.00	DR	48"	UTILITY OUTLET
27A	1	GRIDDLE, ELECTRIC - 36X24	208	3	39.56	SR	24"	-
27B	1	FLEX PRO GRIDDLE, ELECTRIC - 36X24	208	3	39.56	SR	24"	-
27B.1	1	FLEX PRO GRIDDLE - (ARM-1)	120	1	14.00	SR	24"	-
29A	1	SANDWICH/SALAD PREP REFRIGERATOR	120	1	2.40	SR	24"	-
32	1	FRENCH FRY WARMER	120	1	10.00	SR	48"	-
34	1	FRYER BATTERY, GAS	120	1	2.20	SR	24"	-
35	1	FREEZER, REACH IN	120	1	8.46	SR	72"	-
37	1	REFRIGERATED WORK TOP	120	1	2.00	SR	24"	-
38	1	ICE BEVERAGE DISPENSER	120	1	15.00	DR	24"	BY OTHERS; VERIFY ROUGH-IN REQUIREMENTS.
40	1	TEA BREWER - BY OTHERS	120	1	14.00	DR	44"	BY OTHERS; VERIFY ROUGH-IN REQUIREMENTS.
42	1	BLENDER	120	1	2.10	DR	48"	-
43	1	FOOD TOPPING WARMER	120	1	8.30	DR	48"	MOUNT HORIZONTAL
45	1	DIPPING CABINET - (FOUR BARREL)	120	1	8.00	SR	24"	-

FOODSERVICE ELECTRICAL SCHEDULE

ITEM NO.	QTY	DESCRIPTION	ELECTRICAL VOLTS	PH	AMPS	ROUGH-IN / CONNECTION TYPE	HG...	REMARKS
46	1	BATCH FREEZER	208	3	18.00	SR	24"	LEFT BARREL; EC TO PROVIDE PLUG AND RECEPTACLE. VERIFY MAKE AND MODEL SPECIFICATIONS WITH MANUFACTURER AND/OR KEC. (ALTERNATE SPECIFICATION A)
46.1	1	BATCH FREEZER	208	3	18.00	SR	24"	RIGHT BARREL; EC TO PROVIDE PLUG AND RECEPTACLE. VERIFY MAKE AND MODEL SPECIFICATIONS WITH MANUFACTURER AND/OR KEC. (ALTERNATE SPECIFICATION A)
49	1	ICE MACHINE (F-1501)	208	1	15.90	JB	96"	-
67	1	FOOD PAN WARMER	120	1	4.20	SR	72"	-
68	2	POS STATION - BY OTHERS	120	1	16.00	QR	24"	20 AMP CIRCUIT. BY OTHERS; VERIFY ROUGH-IN REQUIREMENTS.
69.1	2	FREEZER, REACH-IN, 1 SECTION	120	1	2.00	SR	24"	-
69.3	1	FREEZER, PASS-THRU, GLASS DOOR	120	1	2.00	DR	24"	-
70	1	FREEZER	120	1	2.00	SR	24"	-
73	1	FREEZER, PASS-THRU, GLASS DOOR	120	1	2.00	SR	24"	-
74	1	FAN CONTROL PANEL	120	1	16.00	JB		JB DOWN FROM ABOVE. EC TO INTERCONNECT WITH LIGHTS AND SENSORS, FIRE SUPPRESSION, FAN, AND MAKE-UP AIR UNIT. VERIFY ALL ROUGH-IN REQUIREMENTS.
75	1	ULTRAFILTRATION SYSTEM	120	1	0.08	DR	96"	-
99.1	1	CONVENIENCE OUTLET	120	1	16.00	DR	48"	-
100	1	OIL STORAGE TANK - BY OTHERS	120	1	25.00	SR	48"	25 AMP CIRCUIT, BY OTHERS; VERIFY ROUGH-IN REQUIREMENTS.

ELECTRICAL LEGEND

- DUPLEX RECEPTACLE
- WP — WEATHERPROOF RECEPTACLE
- SINGLE RECEPTACLE
- SPECIAL PURPOSE RECEPTACLE
- QUAD RECEPTACLE
- FLUSH FLOOR MOUNT RECEPTACLE
- JUNCTION BOX - FLOOR/CLG MOUNTED
- JUNCTION BOX - WALL MOUNTED
- S — SWITCH
- DATA CONNECTION
- MANUAL FIRE PULL STATION
- DROP CORD MOUNTED FROM CEILING
- CLG — DROP CORD MOUNTED FROM CEILING
- CONDUIT STUB LOCATION
- DEFROST TIME CLOCK
- DISCONNECT
- LIGHT - RECTANGULAR
- LIGHT - ROUND
- MOTOR
- SNSR — EXHAUST HOOD SENSOR
- TEMP — TEMPERATURE SENSOR
- PLUG MOLD

FOODSERVICE DRAWINGS INDICATE ELECTRICAL ROUGH-IN/CONNECTION POINTS ONLY FOR EQUIPMENT SPECIFIED UNDER THE KITCHEN EQUIPMENT (SECTION 114000) CONTRACT. ANY ADDITIONAL ELECTRICAL REQUIREMENTS ARE NOT INDICATED ON FOODSERVICE DRAWINGS.

PRELIMINARY DRAWING
NOT TO BE USED FOR CONSTRUCTION

ALT (STOELTING) SPEC
ITEM 46: 208/60/3, 15 AMP CIRCUIT EACH, TWO LOCATIONS, VERIFY ALL REQUIREMENTS WITH MANUFACTURER

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Freddy's Frozen Custard & Steakburgers
FREDDY'S FROZEN CUSTARD

FOOD SERVICE ELECTRICAL ROUGH-IN PLAN

E-600

CONSTRUCTION DOCUMENTS

GENERAL MECHANICAL SYMBOLS

- REVISION NUMBER - SHOWN ON PLANS
- POINT WHERE NEW CONNECTS TO EXISTING
- NUMBER OF DETAIL ON SHEET / NUMBER OF SHEET WHERE DETAIL APPEARS
- KEYNOTE
- CONTINUATION SYMBOL
- Room 4 — ROOM NAME AND NUMBER
- ITEM TO BE DEMOLISHED
- AREA NOT IN CONTRACT
- 2" — PIPE SIZE TAG (DIAMETER)
- ABOVE GROUND PIPING
- 1/8" / 12" SLOPE — PIPE SLOPE TAG
- BELOW GROUND PIPING
- INVERT: -105'-1" — PIPE INVERT ELEVATION TAG
- (E) — EXISTING PIPE TAG
- PIPING BEING DEMOLISHED

ABBREVIATIONS

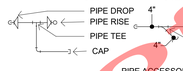
Ø	ROUND	LVR	LOUVER
ABV	ABOVE	LWT	LEAVING WATER TEMPERATURE
AC	AIR CONDITIONING	M/A	MIXED AIR
AD	AREA DRAIN	MAX	MAXIMUM
ADD	ADDENDUM	MBH	ONE THOUSAND BTU PER HOUR
AFF	ABOVE FINISHED FLOOR	MCF	ONE THOUSAND CUBIC FEET
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY	MD	MOTORIZED DAMPER
ALT	ALTERNATE	MECH	MECHANICAL
AP	ACCESS PANEL	MFR	MANUFACTURER
ARCH	ARCHITECT/ARCHITECTURAL	MIN	MINIMUM
BFF	BELOW FINISHED FLOOR	MISC	MISCELLANEOUS
BLW	BELOW	MTR	MOTOR
BTU	BRITISH THERMAL UNITS	MU/A	MAKE-UP/AIR
BTUH	BRITISH THERMAL UNITS PER HOUR	MV	MIXING VALVE
CAP	CAPACITY	NC	NOISE CRITERIA
CB	CATCH BASIN	NC	NORMALLY CLOSED
CFM	CUBIC FEET PER MINUTE	NIC	NOT IN CONTRACT
CLG	CEILING	NO	NUMBER
CO	CLEAN OUT	NO	NORMALLY OPEN
CW	COLD WATER	NTS	NOT TO SCALE
D	DEGREE	O	OXYGEN
DB	DRY BULB	O/A	OUTSIDE AIR
DIA	DIAMETER	ORD	OVERFLOW ROOF DRAIN
DN	DOWN	OW	OIL WASTE
DS	DOWNSPOUT	PD	PRESSURE DROP
DW	DISTILLED WATER	PIV	POST INDICATOR VALVE
EA	EACH	PLBG	PLUMBING
EAT	ENTERING AIR TEMPERATURE	PRESS	PRESSURE
ELEC	ELECTRICAL	PRV	PRESSURE REDUCING VALVE
EQUIP	EQUIPMENT	PSI	POUNDS PER SQUARE INCH
EWC	ELECTRIC WATER COOLER	PSIG	POUNDS PER SQUARE INCH GAUGE
EWT	ENTERING WATER TEMPERATURE	PWR	POWER
E/A	EXHAUST AIR	R	DUCT RISER
EXIST	EXISTING	R/A	RETURN AIR
F	DEGREES FAHRENHEIT	RCP	RADIANT CEILING PANEL
FCO	FLOOR CLEAN OUT	RD	ROOF DRAIN
FD	FLOOR DRAIN	REC	RECESSED
FDC	FIRE DEPARTMENT CONNECTION	RED	REDUCER
FL	FLOOR	RH	RELATIVE HUMIDITY
FO	FUEL OIL	RL/A	RELIEF AIR
FOV	FUEL OIL VENT	RM	ROOM
FOR	FUEL OIL RETURN	RPM	REVOLUTIONS PER MINUTE
FOS	FUEL OIL SUPPLY	RW	RAIN WATER
FPM	FEET PER MINUTE	RPZ	REDUCE PRESSURE ZONE ASSEMBLY
FS	FLOOR SINK	SF	SQUARE FOOT
FT	FOOT/FEET	S/A	SUPPLY AIR
FTR	FIN TUBE RADIATION	SAN	SANITARY
GAL	GALLON	SF	SQUARE FOOT
GCO	GRADE CLEANOUT	SD	STORM DRAIN
GF	GAS-FIRED	SM	SURFACE MOUNT
GC	GENERAL CONTRACTOR	SP	STANDPIPE
GPM	GALLONS PER MINUTE	SP	STATIC PRESSURE
GW	GREASE WASTE	STM	STEAM
HB	HOSE BIB	T	THERMOSTAT
HP	HORSE POWER	TD	TEMPERATURE DROP
HTG	HEATING	TDR	TRENCH DRAIN
HTR	HEATER	TEMP	TEMPERATURE
HW	HOT WATER	TYP	TYPICAL
HYD	HYDRANT	UG	UNDERGROUND
ID	INDIRECT	VAC	VACUUM
IM	ICE MACHINE	V	VENT
IN	INCH	VAV	VARIABLE AIR VOLUME
INV	INVERT	VENT	VENTILATION
LB	POUND	VTR	VENT THROUGH ROOF
LB/HR	POUNDS PER HOUR	W	WASTE
LAT	LEAVING AIR TEMPERATURE	WB	WET BULB
LP	LOW PRESSURE	WCO	WALL CLEAN OUT
LPG	LIQUEFIED PETROLEUM GAS	WH	WALL HYDRANT

EQUIPMENT ABBREVIATIONS

AC	AIR CONDITIONING UNIT	FCU	FAN COIL UNIT
ACCU	AIR COOLING CONDENSING UNIT	FP	FIRE PUMP
AHU	AIR HANDLING UNIT	GI	GREASE INTERCEPTOR
AS	AIR SEPARATOR	GRV	GRAVITY ROOF VENTILATOR
B	BOILER	HWP	HEATING WATER PUMP
CH	CHILLER	HRU	HEAT RECOVERY UNIT
CT	COOLING TOWER	HS	HAND SINK
CUH	CABINET UNIT HEATER	HWC	WATER CLOSET
CHWP	CHILLED WATER PUMP	L	LAVATORY
DBP	DOMESTIC WATER BOOSTER PUMP	MB	MOP BASIN
DC	DUCT MOUNTED COIL	PRV	POWER ROOF VENTILATOR
DCP	DOMESTIC WATER CIRCULATING PUMP	RE	RETURN/EXHAUST FAN
EF	EXHAUST FAN	RTU	ROOFTOP UNIT
EDC	ELECTRIC DUCT COIL	SP	SUMP PUMP
ET	EXPANSION TANK	UH	UNIT HEATER
EWH	ELECTRIC WATER HEATER	WH	WATER HEATER

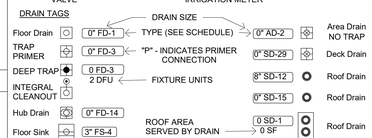
PLUMBING AND PIPING SYMBOLS

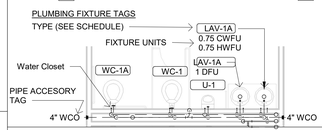
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CD	CONDENSATE DRAINAGE
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
GWR	GEOTHERMAL WATER RETURN
GWS	GEOTHERMAL WATER SUPPLY
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
G	NATURAL GAS
PG	PROPANE GAS
REF-L	REFRIGERANT-LIQUID
REF-S	REFRIGERANT-SUCTION
REF-HG	REFRIGERANT-HOT GAS
STM	STEAM
CDR	CONDENSATE RETURN
CWV	COMBINATION WASTE & VENT
CA	COMPRESSED AIR
CW	DOMESTIC COLD WATER
H-CW	HARD COLD WATER
S-CW	SOFT COLD WATER
F-CW	FILTERED COLD WATER
RO	REVERSE OSMOSIS WATER
HW	HOT WATER
HW 140°	HOT WATER 140°
HW-R	HOT WATER RECIRCULATION
HW-R 140°	HOT WATER RECIRCULATION 140°
GV	GREASE VENT
GW	GREASE WASTE
IW	INDIRECT WASTE
OV	OIL VENT
OW	OIL WASTE
PD	PUMP DISCHARGE
V	SANITARY VENT
SS	SANITARY SEWER
SHWR	SOLAR HOT WATER RETURN
SHWS	SOLAR HOT WATER SUPPLY
SD	STORM DRAINAGE
OSD	OVERFLOW STORM DRAINAGE



PIPE ACCESSORY TAGS

- 4" FCO CLEANOUT
- 2" BACKWATER SWING CHECK
- 2" CHECK CHECK VALVE
- (ALTERNATE CHECK VALVE SYMBOL)
- 2" BALANCE BALANCING VALVE
- 2" CIRC CIRCUIT SETTER
- T/P — 1" RCV RECIRC. VALVE
- 2" GATE GATE VALVE
- 2" QUICK QUICK OPENING VALVE
- 2" SHUTOFF BALL VALVE
- 2" STRAINER
- T/P — 1/2" PRIMER TRAP PRIMER
- M — 2" M-CNTRL ELEC. CONTROL VALVE
- T/P — TMV-XXT/P Mixing Valve
- EM — 1/2" TMV-TMV-XX EMERGENCY MIXER
- 2" PRV DOM. PRV
- W — 2" DOM. WM DOM. WATER METER
- IR — 1 1/2" DOM. WM IRRIGATION METER
- S — 1" GAS-CNTRL EMERGENCY GAS
- 1" PLUG PLUG VALVE
- 1" GAS COCK GAS SHUTOFF COCK
- 1" REG GAS REGULATOR
- DOUBLE CHECK VALVE
- REDUCED PRESSURE ZONE





* NOTE *

ALL OF GENERAL NOTES ON THIS SHEET ARE TO BE APPLIED TO ALL OTHER DRAWINGS IN THIS SET.THE SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET MAY OR MAY NOT BE USED IN THIS SET OF DRAWINGS.

PLUMBING GENERAL NOTES

A INSTALL ALL PIPE, ETC, AS HIGH AS POSSIBLE.
B COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACES AVAILABLE.
C REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS FOR FIXTURES.
D FIELD VERIFY LOCATION AND INVERTS OF SITE UTILITIES PRIOR TO INSTALLATION.
E REFER TO ARCHITECTURAL & STRUCTURAL DRAWINGS FOR REQUIREMENTS FOR SUPPORTING PIPING, EQUIPMENT, ETC. FROM THE STRUCTURE. PROVIDE ADDITIONAL STEEL AS REQUIRED TO PROPERLY SUPPORT SYSTEMS FROM THE STRUCTURE.
F PROVIDE 1" SCHEDULE 40 PVC CONDENSATE DRAIN PIPE FOR EACH ROOFTOP/DOAS UNIT LAID DIRECTLY ON ROOF TO NEAREST ROOF DRAIN. PROVIDE WATER TRAP AND CLEAN OUTS AS DETAILED. SECURE PVC PIPE TO DRAIN WITH NYLON STRAP.
G NO PIPING SHALL BE ROUTED OVER THE TOP OF ELECTRICAL PANELS.

PLUMBING SHEET SCHEDULE

P-000	PLUMBING TITLE SHEET
P-100	PLUMBING WASTE & VENT FLOOR PLAN
P-200	PLUMBING WATER & GAS FLOOR PLAN
P-300	WASTE & VENT RISER DIAGRAMS
P-301	WATER RISER DIAGRAM
P-302	PLUMBING FIXTURE SCHEDULE
P-400	FOOD SERVICE PLUMBING ROUGH-IN PLAN

APPLICABLE CODES
2015 INTERNATIONAL BUILDING CODE, 2015 INTERNATIONAL FIRE CODE, 2015 INTERNATIONAL MECHANICAL CODE, 2015 INTERNATIONAL FUEL GAS CODE, 2015 INTERNATIONAL PLUMBING CODE, 2014 NATIONAL ELECTRICAL CODE, 2009 INTERNATIONAL ENERGY CONSERVATION CODE, IN ADDITION TO OTHER APPLICABLE CITY OF CAPE GIRARDEAU ORDINANCES, AS APPROPRIATE.

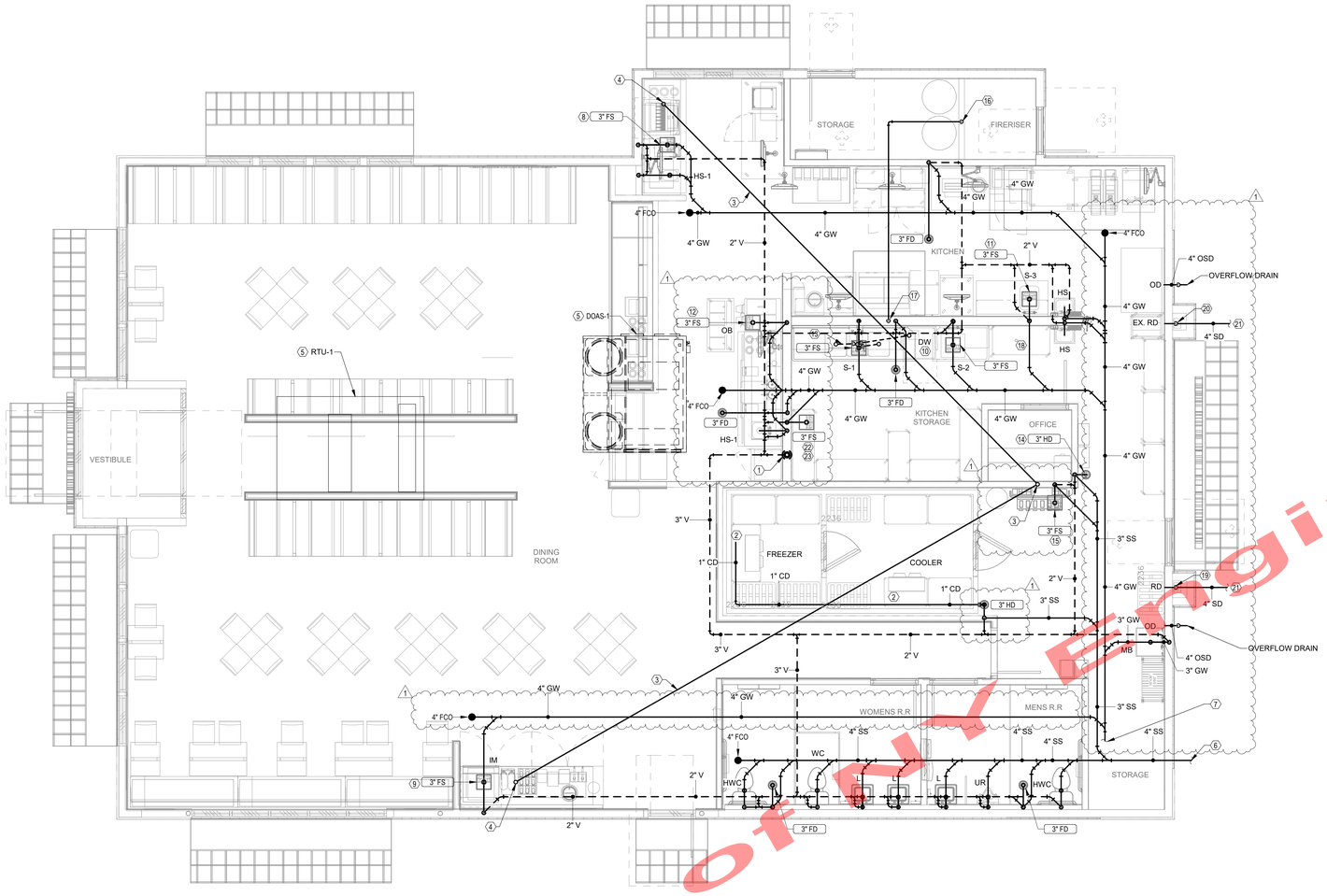
Property of NY Engineers

Freddy's Frozen Custard & Steakburgers
FREDDY'S FROZEN CUSTARD

PLUMBING TITLE SHEET

P-000

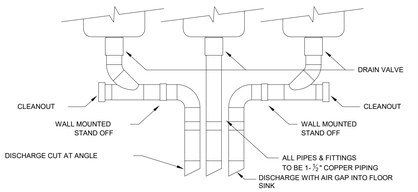
CONSTRUCTION DOCUMENTS



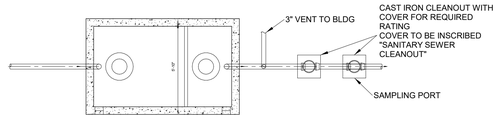
1 P-100 PLUMBING WASTE AND VENT FLOOR PLAN
1/4" = 1'-0"

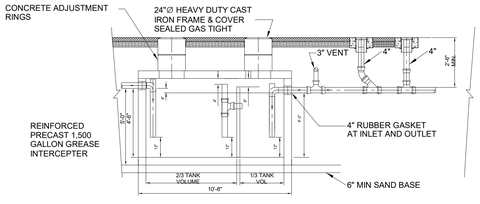
PLUMBING WASTE & VENT PLAN NOTES

1. PROVIDE VENT THROUGH ROOF. EXTEND UP TO PARAPET HEIGHT. FLASH AS REQUIRED TO SEAL PENETRATION WEATHER TIGHT. VERIFY 10'-0" CLEARANCE FROM ALL OUTDOOR AIR INTAKES
2. PROVIDE 1" COPPER CONDENSATE DRAIN WITH AIR GAP FROM WALK-IN COOLER/FREEZER COIL TO HUB DRAIN AS REQUIRED BY WALK-IN COOLER/FREEZER MANUFACTURER. COORDINATE WITH E.C. FOR HEAT TRACING.
3. 6" SCHEDULE 40 PVC PIPE BELOW FLOOR FOR THE SODA LINES. PROVIDE LONG-SWEEP ELBOWS WITH 24" RADIUS. REFER TO KEP PLANS FOR MORE DETAIL.
4. COORDINATE LOCATION OF PVC SODA CHASE STUB OUT WITH KITCHEN CABINET/COUNTER AS REQUIRED.
5. PROVIDE 1" CONDENSATE DRAIN FOR RTU/DOAS AS DETAILED.
6. CONNECT NEW 4" SANITARY LINE TO EXISTING 4" SANITARY LINE IN SPACE. CONTRACTOR TO FIELD VERIFY THE EXACT LOCATION AND INVERT OF EXISTING SANITARY LINE ON SITE AND MAKE NECESSARY CHANGES IF REQUIRED.
7. CONNECT NEW 4" GREASE WASTE LINE TO EXISTING 4" GREASE WASTE LINE IN SPACE WITH NEW 1500 GALLONS GREASE INTERCEPTOR . CONTRACTOR TO FIELD VERIFY THE EXACT LOCATION AND INVERT OF EXISTING GREASE WASTE LINE AND VERIFY THE CAPACITY AND LOCATION OF EXISTING GREASE INTERCEPTOR ON SITE AND MAKE NECESSARY CHANGES IF REQUIRED.
8. 1 " DRAIN FROM DRINK STATION TO FLOOR SINK AND DISCHARGE WITH AIR GAP. FLOOR SINK TO BE INSTALLED FLUSH WITH FLOOR.
9. ROUTE DRAIN FROM ICE MACHINE TO FLOOR SINK WITH AN AIR GAP, AND PER MANUFACTURER'S REQUIREMENTS.
10. ROUTE DISHWASHER DISCHARGE PIPING TO NEARBY FLOOR SINK AND DISCHARGE WITH AIR GAP AS REQUIRED.
11. ROUTE 2" DRAIN FROM PRE SINK TO FLOOR SINK AND DISCHARGE WITH AIR GAP AS REQUIRED.
12. CONNECT DRAIN TO DIPPER WELL/COLD WELL AND ROUTE TO FLOOR SINK WITH AN AIR GAP.
13. CONNECT (3) 1-1/2" COPPER DRAINS FROM 3-COMPARTMENT SINK AND ROUTE INDIVIDUALLY TO FLOOR SINK WITH AN AIR GAP. LOCATE FLOOR SINK IN ACCESSIBLE LOCATION.
14. ROUTE DRAIN FROM WATER HEATERS TO HUB DRAIN WITH AN AIR GAP AS REQUIRED.
15. ROUTE DRAIN FROM WATER FILTER TO FLOOR SINK WITH AN AIR GAP AS REQUIRED.
16. ROUTE 3/4" GALVANIZED PIPE DOWN FROM CEILING SPACE AND STUB 12" BELOW CEILING FOR OIL RECOVERY TANK. COORDINATE CONNECTION WITH EQUIPMENT MANUFACTURER.
17. ROUTE 3/4" GALVANIZED PIPE DOWN WALL AND STUB 12" AFF FOR FRYER. COORDINATE CONNECTION WITH EQUIPMENT MANUFACTURER. ROUTE PIPING WITH SLOPE DOWN TOWARD OIL RECOVERY TANK. COORDINATE WITH ROUTING OF GREASE DUCTWORK.
18. ROUTE 2" DRAIN FROM SOILED TABLE SINK TO FLOOR SINK AND DISCHARGE WITH AIR GAP AS REQUIRED.
19. ROUTE STORM DRAIN DOWN WALL AS SHOWN. PROVIDE WALL CLEANOUT AT BASE OF RISER. ROUTED DOWN THROUGH FLOOR AND FOOTINGS TO BELOW GRADE.
20. EXISTING STORM DRAIN TO REMAIN. PROVIDE WALL CLEANOUT AT BASE OF RISER IF THERE IS NO EXISTING.
21. CONTRACTOR TO COORDINATE WITH THE CIVIL / ARCHITECT / SITE ENGINEER FOR THE FACILITY STORM WATER MANAGEMENT AND DRAINAGE.
22. ROUTE 2" DRAIN FROM DUMP SINK TO FLOOR SINK THROUGH WALL AND DISCHARGE WITH AIR GAP AS REQUIRED.
23. ROUTE INDIRECT DRAIN FROM WATER SOFTENER TO FLOOR SINK WITH AIR GAP AS REQUIRED.



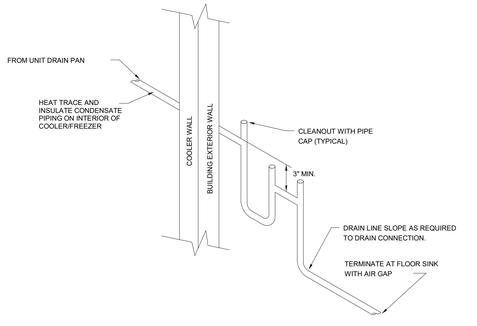
2 P-100 3-COMPARTMENT SINK DRAINAGE DETAIL
NOT TO SCALE



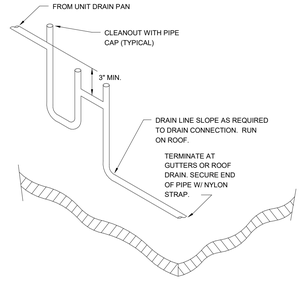


NOTE:	
REMOVE EXISTING GREASE TRAP AND REPLACE WITH THE UNIT SPECIFIED IN THE FIXTURE SCHEDULE	ALL JOINTS AT THE FRAME & COVER, CONCRETE ADJUSTMENT RINGS AND THE LID OF THE INTERCEPTOR SHALL BE SEALED WITH A MINIMUM OF TWO (2) ROWS OF 3/4 TO 1 INCH PREFORMED BUTYL JOINT SEALER AND A 6" BUTYL JOINT WRAP AROUND SLEEVE (EZ WRAP). THE ENDS OF THE 6" EZ WRAP SHALL OVERLAP BY 12".

3 P-100 1,500 GALLON GREASE INTERCEPTOR DETAIL
NOT TO SCALE



5 P-100 COOLER/FREEEZER CONDENSATE DRAIN DETAIL
NOT TO SCALE



4 P-100 ROOF CONDENSATE DRAIN DETAIL
NOT TO SCALE

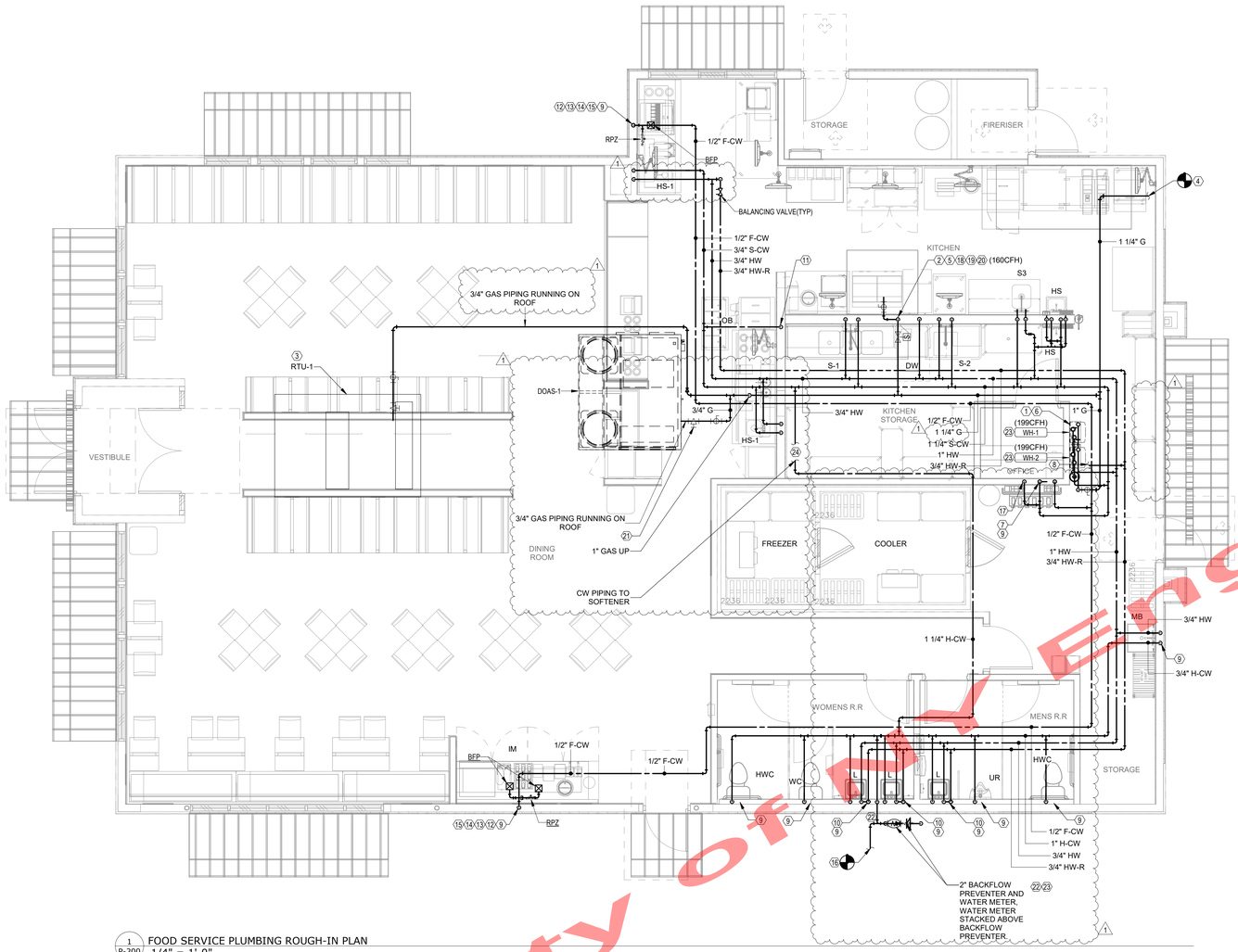
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Freddy's Frozen Custard & Steakburgers
FREDDY'S FROZEN CUSTARD

PLUMBING WASTE & VENT FLOOR PLAN

P-100

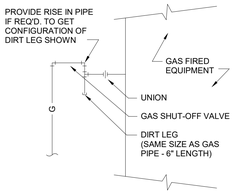
CONSTRUCTION DOCUMENTS



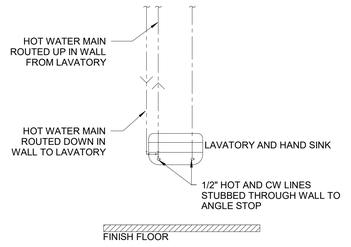
1 P-200 FOOD SERVICE PLUMBING ROUGH-IN PLAN
1/4" = 1'-0"

PLUMBING WATER & GAS PLAN NOTES

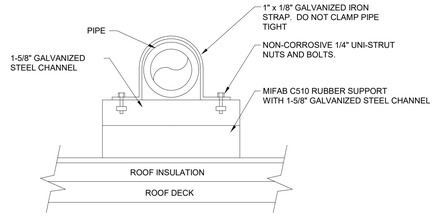
1. CONNECT GAS PIPING TO EQUIPMENT AS DETAILED AND PER THE MANUFACTURER'S INSTRUCTIONS.
2. CONNECT NEW 3/4" (LESS THAN 2 PSI) GAS LINE TO FRYER MANIFOLD. WITH SHUT-OFF VALVE AND DIRT LEG.
3. 3/4" GAS (LESS THAN 2 PSI) WITH SHUT-OFF VALVE AND DIRT LEG PRIOR TO PRESSURE REGULATOR ON ROOF. CONNECT TO ROOF TOP UNIT AS DETAILED AND AS REQUIRED.
4. CONNECT NEW 1-1/4" (LESS THAN 2 PSI, 6 IN W.C.) GAS LINE TO EXISTING GAS LINE. CONTRACTOR TO FIELD VERIFY THE SIZE, CONDITION AND LOCATION OF EXISTING LINE ON SITE AND MAKE NECESSARY CHANGES IF REQUIRED. CONNECT 3/4" GAS PIPING TO EACH WATER HEATER PER THE MANUFACTURER'S REQUIREMENTS.
5. ALL APPLIANCE CONNECTIONS SHALL BE MADE WITH UL LISTED FLEXIBLE APPLIANCE CONNECTOR. FLEX CONNECTORS SHALL BE PROVIDED BY TENANT. CONTRACTOR SHALL PROVIDE SAFETY LOCK AND CHAIN AT ALL GAS APPLIANCES ON WHEELS. PROVIDE PIPING REDUCERS AND INCREASERS AS REQUIRED TO MATE HARD PIPING TO FLEX CONNECTORS.
6. SEE RISER DIAGRAM FOR WATER HEATER PIPING DIAGRAM. REFER TO MANUFACTURERS INSTRUCTIONS FOR EXACT REQUIREMENTS. SET WATER HEATER THERMOSTAT TO 140°F.
7. CONNECT 3/4" CW TO WATER FILTER WITH BYPASS PER THE MANUFACTURER'S REQUIREMENTS. REFER ARCHITECTURAL SHEET A-800 FOR KITCHEN ELEVATION. PLUMBING CONTRACTOR TO LOCATE WATER FILTER SUPPLY LINE ACCORDINGLY.
8. CONNECT RECIRCULATION PIPING TO WATER HEATER AS DETAILED IN THE RISER DIAGRAM.
9. ROUTE PIPING ON INTERIOR SIDE OF INSULATION TO PROTECT FROM FREEZING IN COLD CLIMATES.
10. PLUMBING HOT WATER RECIRCULATION LINE DOWN WALL TO BEHIND FIXTURE PER IECC REQUIREMENT.
11. PROVIDE (1) 1/2" CW CONNECTION TO OUTLET BOX FOR CUSTARD MACHINE.
12. PROVIDE 1/2" FILTERED CW TO BEVERAGE DISPENSER AND SODA DISPENSERS WITH SHUT-OFF VALVE AND BFP PRIOR TO CONNECTION.
13. PROVIDE 1/2" FILTERED CW TO ICE MACHINE WITH SHUT-OFF VALVE. PROVIDE BFP PRIOR TO CONNECTION TO WATER FILLER, LOCATED AT 72" AFF.
14. PROVIDE 1/2" FILTERED CW TO TEA BREWER WITH SHUT-OFF VALVE. PROVIDE BFP PRIOR TO CONNECTION.
15. PROVIDE 1/2" FILTERED CW TO CARBONATOR BENEATH BEVERAGE DISPENSER. PROVIDE SHUT-OFF VALVE AND RPZ BACKFLOW PREVENTOR AS APPROVED BY WATER DEPARTMENT. NO COPPER PIPE DOWNSTREAM OF RPZ. ROUTE DRAIN FROM RPZ, BFP TO FLOOR SINK WITH AIR GAP AS REQUIRED.
16. PROVIDE NEW 2" WATER METER AND BACKFLOW PREVENTER. CONTRACTOR TO FIELD VERIFY LOCATION ON SITE AND MAKE NECESSARY CHANGES IF REQUIRED.
17. CONNECT NEW 1/2" COLD WATER LINE TO BAG IN BOX.
18. COORDINATE ELECTRONIC GAS VALVE BETWEEN ALL TRADES.
19. CONCEALED GAS PIPE FITTINGS TO BE WELDED OR LISTED FOR CONCEALED INSTALLATION.
20. CONTRACTOR TO PROVIDE AUTOMATIC GAS SHUT OFF VALVE IN ACCESSIBLE LOCATION ABOVE CEILING AS REQUIRED.
21. CONNECT NEW 3/4" (LESS THAN 2 PSI) GAS LINE TO DOAS. WITH SHUT-OFF VALVE AND DIRT LEG.
22. CONTRACTOR TO PROVIDE HEAT TRACING (MAKE: HEATIT, MODEL: JHSF1 OR EQUIVALENT) FOR ALL WATER PIPES EXPOSED OUTSIDE BUILDING AND COORDINATE WITH ELECTRICAL CONTRACTOR FOR EXACT ELECTRICAL REQUIREMENTS.
23. PROVIDE HEAT TRACING, INSULATION, AND WEATHERPROOF, THERMOSTATICALLY CONTROLLED HEATED ENCLOSURE FOR BACKFLOW PREVENTER (BFP) AND ASSOCIATED PIPING.
24. PROVIDE AND INSTALL COMMERCIAL WATER SOFTENER; ROUTE SOFT WATER TO KITCHEN FIXTURES AND WATER HEATERS.



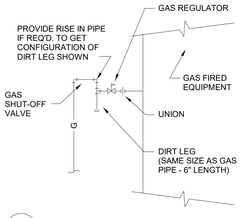
2 P-200 GAS CONNECTION DETAIL
NOT TO SCALE



3 P-200 LAVATORY AND HAND SINK HOT WATER DETAIL
NOT TO SCALE



4 P-200 ROOF PIPE SUPPORT DETAIL
NOT TO SCALE



5 P-200 GAS CONNECTION WITH REGULATOR DETAIL
NOT TO SCALE

ENERGY CONSERVATION NOTES

1. AS PER 2009 INTERNATIONAL ENERGY CONSERVATION CODE 504.2, WATER-HEATING EQUIPMENT SHALL MEET THE MINIMUM EFFICIENCY REQUIREMENTS OF TABLE 504.2
2. AS PER 2009 INTERNATIONAL ENERGY CONSERVATION CODE 504.4, WATER-HEATING EQUIPMENT NOT SUPPLIED WITH INTEGRAL HEAT TRAPS AND SERVING NON-CIRCULATING SYSTEMS SHALL BE PROVIDED WITH HEAT TRAPS ON THE SUPPLY AND DISCHARGE PIPING ASSOCIATED WITH THE EQUIPMENT.
3. AS PER 2009 INTERNATIONAL ENERGY CONSERVATION CODE 504.5, FOR AUTOMATIC-CIRCULATING HOT WATER SYSTEMS, PIPING SHALL BE INSULATED WITH 1 INCH OF INSULATION HAVING A CONDUCTIVITY NOT EXCEEDING 0.27 BTU PER INCH/H/FT² × °F. THE FIRST 8 FEET OF PIPING IN NON-CIRCULATING SYSTEMS SERVED BY EQUIPMENT WITHOUT INTEGRAL HEAT TRAPS SHALL BE INSULATED WITH 0.5 INCH OF MATERIAL HAVING A CONDUCTIVITY NOT EXCEEDING 0.27 BTU PER INCH/H/FT² × °F.
4. AS PER 2009 INTERNATIONAL ENERGY CONSERVATION CODE 504.3, SERVICE WATER-HEATING EQUIPMENT SHALL BE PROVIDED WITH CONTROLS TO ALLOW A SETPOINT OF 110°F (43°C) FOR EQUIPMENT SERVING DWELLING UNITS AND 90°F (32°C) FOR EQUIPMENT SERVING OTHER OCCUPANCIES. THE OUTLET TEMPERATURE OF LAVATORIES IN PUBLIC FACILITY RESTROOMS SHALL BE LIMITED TO 110°F (43°C).
5. AS PER 2009 INTERNATIONAL ENERGY CONSERVATION CODE 504.6, HOT WATER SYSTEM CONTROLS AUTOMATIC-CIRCULATING HOT WATER SYSTEM PUMPS OR HEAT TRACE SHALL BE ARRANGED TO BE CONVENIENTLY TURNED OFF AUTOMATICALLY OR MANUALLY WHEN THE HOT WATER SYSTEM IS NOT IN OPERATION.

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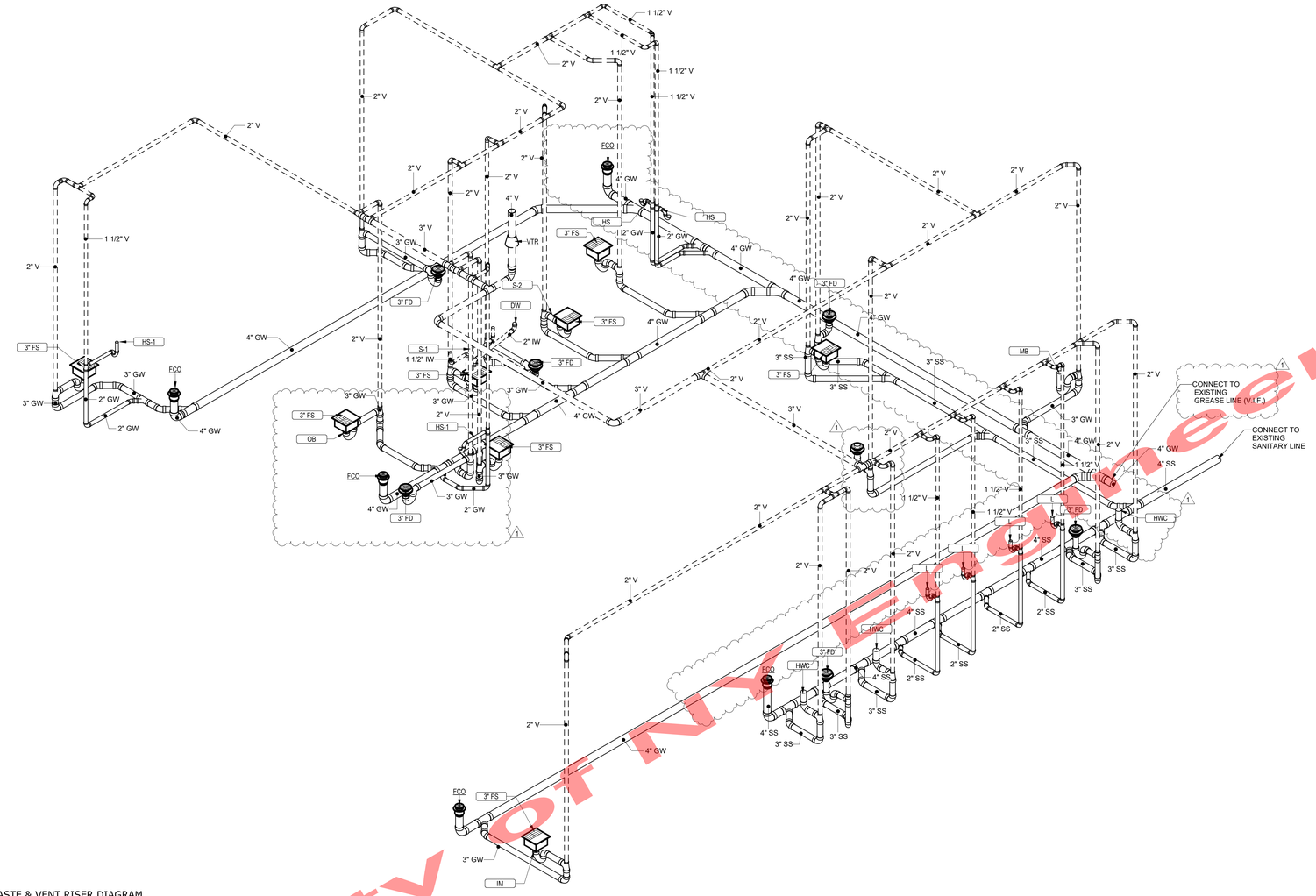
PLUMBING WATER & GAS FLOOR PLAN

P-200

CONSTRUCTION DOCUMENTS

PLUMBING WASTE AND VENT GENERAL NOTES

1. CONDENSATE NEEDS TO TIE INTO SANITARY SEWER AND NOT RUN ON ROOF.
2. SEWER VENT PIPES SHOULD EXTEND AT LEAST 36" ABOVE ROOF HEIGHT AND NOT BE PLACED WITHIN 10 FT OF EXISTING MECHANICAL UNITS.



1 / P-300 WASTE & VENT RISER DIAGRAM
NOT TO SCALE

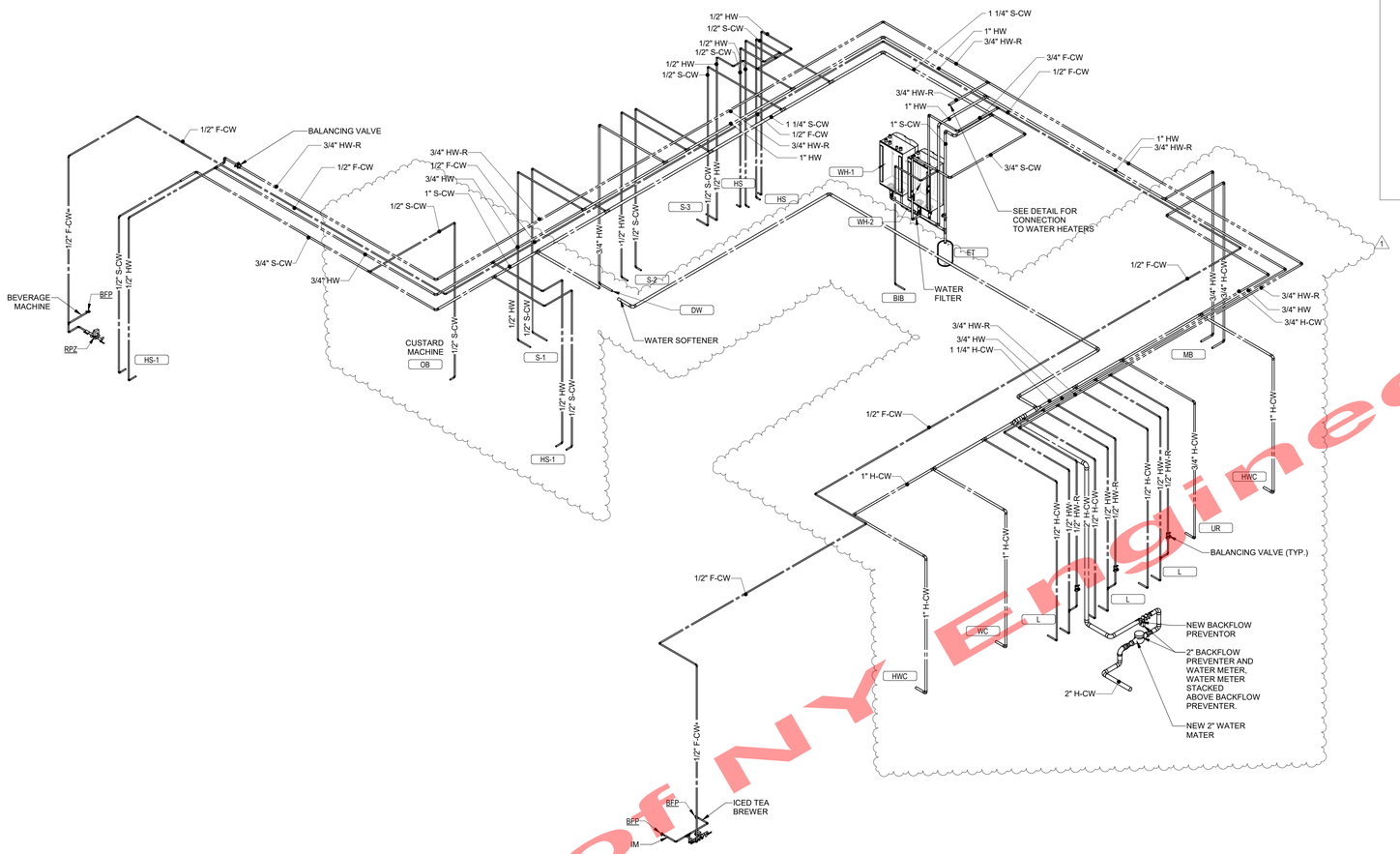
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FREDDY'S FROZEN CUSTARD

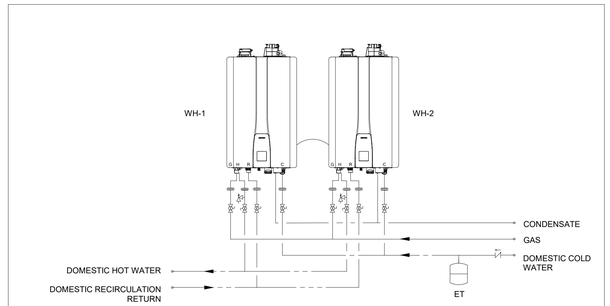
WASTE & VENT RISER DIAGRAMS

P-300

CONSTRUCTION DOCUMENTS



1 P-301 WATER RISER DIAGRAM
NOT TO SCALE



2 P-301 WATER HEATER PIPING DETAIL
NOT TO SCALE

PEX PIPING REQUIREMENTS

PIPE SIZES GIVEN ON THE DRAWINGS ARE NOMINAL COPPER PIPE SIZE. IF PEX PIPING IS USED, INCREASE PEX PIPING ONE SIZE ABOVE LISTED SIZES AS REQUIRED TO EQUAL OR EXCEED COPPER PIPE INSIDE DIAMETER.

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FREDDY'S FROZEN CUSTARD

WATER RISER DIAGRAM

P-301

CONSTRUCTION DOCUMENTS

EXPANSION TANK SCHEDULE

Identity Mark	Manufacturer	Model	Description
ET	Amtrol	ST-SC-DD	2 GALLON EXPANSION TANK WITH DIAPHRAM

BACKFLOW PREVENTER

Identity Type Mark	Manufacturer	Model	Description
BFP	WATTS	SD-3	DUAL CHECK VALVE WITH ATMOSPHERIC PORT & STRAINER.
RPZ	WATTS	LF009	LEAD FREE BRONZE BODY CONSTRUCTION, TWO IN-LINE INDEPENDENT CHECK VALVES, REPLACEABLE CHECK SEATS WITH AN INTERMEDIATE RELIEF VALVE, AND BALL VALVE TEST COCKS.

MIXING VALVE SCHEDULE

Identity Type Mark	Manufacturer	Model	Description
MV	Watts	LFUSG-B	THERMOSTATIC MIXING VALVE, LEAD FREE BRONZE BODY, LOCKED TEMPERATURE ADJUSTMENT CAP (VANDAL RESISTANT), COPPER ENCAPSULATED THERMOSTAT ASSEMBLY WITH BRASS SHUTTLE, STAINLESS STEEL SPRINGS, INTEGRAL CHECK VALVES ON HOT AND COLD INLETS. (SET TO 110 DEGREES F). ASSE #1070 LISTED.

WATER HEATER SCHEDULE

Identity	Manufacturer	Model	Product Type	Gas Heat	Gas Heat Input			Fuel Type	Electrical	Notes
					Input Size	Output Rating	Rated Efficiency			
WH-1	NAVIEN	NPE-240-A2	Tankless	Yes	199000 Btu/h	195020 Btu/h	98.0%	NG	120 V, 1Φ, 200W	PROVIDE WITH INTERNAL RECIRCULATION PUMP, NAVIEN READY LINK COMMUNICATION CABLE, REMOTE CONTROLLER, NAVIEN PLUMB EASY VALVE SET, PRESSURE RELIEF VALVE, CONDENSATE DRAIN HOSE, CONDENSATE NEUTRALIZER, VENT TERMINATORS. SET AT 140 DEGREES F.
WH-2	NAVIEN	NPE-240-A2	Tankless	Yes	199000 Btu/h	195020 Btu/h	98.0%	NG	120 V, 1Φ, 200W	PROVIDE WITH INTERNAL RECIRCULATION PUMP, NAVIEN READY LINK COMMUNICATION CABLE, REMOTE CONTROLLER, NAVIEN PLUMB EASY VALVE SET, PRESSURE RELIEF VALVE, CONDENSATE DRAIN HOSE, CONDENSATE NEUTRALIZER, VENT TERMINATORS. SET AT 140 DEGREES F.

KITCHEN EQUIPMENT SCHEDULE

ID	DESCRIPTION	MANUFACTURER	MODEL	REMARKS
DW	DW	By Others	By Others	OWNER FURNISHED, CONTRACTOR INSTALLED. CONNECT TO HW AND DRAIN PIPING AS REQUIRED. PROVIDE ALL PIPING AND ACCESSORIES AS REQUIRED TO MAKE CONNECTIONS.
HS	Hand Sink	ADVANCE TABCO	7-PS-EC-SPNF-X	PROVIDED BY KITCHEN EQUIPMENT SUPPLIER. PROVIDE GRID DRAIN WITH 1-1/2" TAILPIECE, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT. CHROME PLATED ANGLE STOPS AND RISERS, CONCEALED ARM FLOOR MOUNTED LAVATORY CARRIER.
HS-1	Hand Sink	By Others	By Others	PROVIDED BY KITCHEN EQUIPMENT SUPPLIER. PROVIDE GRID DRAIN WITH 1-1/2" TAILPIECE, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT, CHROME PLATED ANGLE STOPS AND RISERS.
S-1	Commercial Sink	ADVANCE TABCO	DTC-3-1620-96L	PROVIDED BY KITCHEN EQUIPMENT SUPPLIER. INSTALLED BY GENERAL CONTRACOTR. PROVIDE (3) 1-1/2" TAILPIECES, WASTE MANIFOLD PIPING, CHROME PLATED ANGLE STOPS AND RISERS.
S-2	Soiled dish table	ADVANCE TABCO	DTS-S70-48R-X	PROVIDED BY KITCHEN EQUIPMENT SUPPLIER, INSTALLED BY GENERAL CONTRACTOR. PROVIDE 2" TAILPIECE, WASTE PIPING, CHROME PLATED ANGLE STOPS AND RISERS.
S-3	Prep Sink	ADVANCE TABCO	FMG-205	PROVIDED BY KITCHEN EQUIPMENT SUPPLIER, INSTALLED BY GENERAL CONTRACTOR. PROVIDE 2" TAILPIECE, WASTE PIPING, CHROME PLATED ANGLE STOPS AND RISERS.
WATER FILTER	Water Filtration+	ANTUNES	VZN-541H-T5	INDIRECT WASTE TO FLOOR SINK BY PLUMBING CONTRACTOR. PROVIDED BY KITCHEN EQUIPMENT SUPPLIER, INSTALLED BY GENERAL CONTRACTOR. 1

DOMESTIC FIXTURE SCHEDULE

ID	Description	Manufacturer	Model	Product Type	Installation Type	Material Description	Finish	Trim Manufacturer M/N	Product Specification
HWC	Water Closet	AMERICAN STANDARD	MADERA FLOWISE	FLUSH VALVE ADA	Floor Set	White Vitreous China	White		1.6 GALLON FLUSH, 15" HIGH ELONGATED BOWL, FLOOR MOUNTED, FLOOR OUTLET, FLUSH VALVE, VITREOUS CHINA, OPEN FRONT SEAT WITH CHECK HINGE AND LESS COVER, CHROME PLATED ANGLE STOP AND RISER. HANDLE ON WIDE SIDE OF FIXTURE, PROVIDE ELECTRONIC VALVE, BATTERY.
L-1	Lavatory	AMERICAN STANDARD	MURRO 0059020EC	Wall Hung ADA	Wall Mount	White Vitreous China	White	TOTO TEL101 ECOPOWER FAUCET	WALL HUNG, VITREOUS CHINA, ASSE 1070 APPROVED THERMAL MIXING FAUCET, 20 SECOND DISCHARGE WHEN ACTIVATED, 0.5 GPM, FLOW AERATOR, OFF-SET GRID DRAIN WITH 1-1/4" TAILPIECE, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT (MOUNTED PARALLEL TO WALL), CHROME PLATED ANGLE STOPS AND RISERS, FLOOR MOUNTED CONCEALED ARM LAVATORY SUPPORT. INSULATE EXPOSED DRAIN, WATER SUPPLIES, AND VALVES WITH PROWRAP SEAMLESS MOLDED CLOSED CELL VINYL INSULATION.
MB	Mop Basin	FIAT	MSB-2424	Janitor	Floor Set	Molded Stone	White	STERN WILLIAMS #T-10-VB FAUCET	2" DRAIN, 24"X24" BASIN, VINYL BUMPER GUARD, STERN WILLIAMS #T-10-VB FAUCET, SPRING CHECKS, VACUUM BREAKER, INTEGRAL STOPS, WALL BRACE & PAIL HOOK, WALL BRACKET WITH 30" HOSE.
OB	Outlet Box	Guy Gray	SSIB1	Ice Maker Outlet Box	Wall Rough In	Stainless Steel			ICE MAKER OUTLET BOX WITH QUARTER TURN SWEAT VALVES, 1/2" SUPPLY
UR	Urinal	TOTO	TUT446U01	URINAL ADA	Wall Mount	White Vitreous China	White		0.125 GALLON FLUSH URINAL, WALL MOUNTED, VITREOUS CHINA, WALL CARRIER, CHROME PLATED ANGLE STOP AND RISER. PROVIDE TOTO ECO POWER 3/4" FLUSH VALVE.

ROOF/FLOOR DRAIN SCHEDULE

Identity Type Mark	Manufacturer	Model	Description	Product Specification
FD	ZURN	EZ	Floor Drain	PVC FLOOR DRAIN WITH ADJUSTABLE TOP AND NICKEL-BRONZE STRAINER. PROVIDE ZURN ZSHIELD TRAP GUARD.
HD	ZURN	Z1870	Hub Drain	ZURN Z1870 TYPE 304 STAINLESS STEEL, HUB DRAIN.
FS	Sioux Chief	861	Floor Sink	SQUARE PVC FLOOR SINK WITH STAINLESS STEEL MESH DEBRIS SCREEN, PVC HALF OPEN STRAINER.

GREASE INTERCEPTOR SCHEDULE

Identity Mark	Manufacturer	Model	Description
GI	JENSEN	JP-1500-EE-G	1,500 GALLON PRECAST GREASE INTERCEPTOR WITH BAFFLES, INTERIOR PIPING, (2) 24" DIAMETER MANHOLE RISERS AND RINGS WITH GAS TIGHT COVERS, AND ASSOCIATED PIPING PER LOCAL CODE REQUIREMENTS.

PLUMBING FIXTURE CALCULATIONS (BASED ON 2015 IPC)

PLUMBING FIXTURE	QUANTITY	CW WSFU	CW WSFU TOTAL	HW WSFU	HW WSFU TOTAL	COMBINED WSFU	COMBINED WSFU TOTAL	DFU	DFU TOTAL
WATER CLOSET (FLUSH VALVE)	3.0	10.0	30.0	0	0.0	10.0	30.0	4	12.0
LAVATORY	3.0	1.5	4.5	1.5	4.5	2.0	6.0	1.0	3.0
URINAL	1	5.0	5.0	0	0.0	5.0	5.0	2.0	2.0
HAND SINK	4.0	1.5	6.0	1.5	6.0	2	8.0	1.0	4.0
DISHWASHER*	1.0	2.0	2.0	2.0	2.0	2.5	2.5	0.0	0.0
PRE-RINSE SINK*	1.0	3.0	3.0	3.0	3.0	4.0	4.0	0.0	0.0
3-COMP SINK*	1.0	3.0	3.0	3.0	3.0	4.0	4.0	0.0	0.0
FLOOR DRAIN / HUB DRAIN 3"	7.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	35.0
FLOOR SINK (3" TRAP)	8.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	40.0
MOP BASIN	1.0	2.25	2.25	2.25	2.25	3.0	3.0	5.0	5.0
SUPPLY BOX	1.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0
TOTAL			56.75		20.75		63.5		101

PROBABLE DEMANDS: COLD WATER: 63.5 FU = 55.4 GPM; DRAIN: 101 DFU

PROVIDE 2" CW SERVICE, USE 4" SANITARY (MIN)

PIPE SIZING REQUIREMENTS: BASED ON 2015 IPC.
*FIXTURE HAS INDIRECT WASTE TO FLOOR SINK

GREASE INTERCEPTOR SIZING: IPC 2015

FIXTURE	QUANTITY	DFU (EA.)	TOTAL DFU	EQUIVALENT GPM
FLOOR SINK	7	5	35	17.5
FLOOR DRAIN	3	5	15	7.5
HAND SINK	4	1	4	2
MOP SINK	1	5	5	2.5
TOTAL			59	29.5

*PER 2015 IPC SECTION 709.3 DRAINAGE FIXTURE UNIT VALUES FOR CONTINUOUS OR SEMI-CONTINUOUS FLOW INTO A DRAINAGE SYSTEM SHALL BE COMPUTED ON THE BASIS THAT 1 GPM OF FLOW IS EQUAL TO 2 FIXTURE UNITS.

*PER THE 2015 IPC SECTION 1003.3.7 THE REQUIRED CAPACITY OF GRAVITY GREASE INTERCEPTORS SHALL BE DETERMINED BY THE PEAK FLOW IN GPM MULTIPLIED BY 30 MINUTES RETENTION TIME.

29.5 GPM PEAK FLOW * 30 MIN = 885 GALLONS MINIMUM VOLUME.

GAS DEMAND SCHEDULE

EQUIPMENT MARK	EQUIPMENT ITEM	GAS INPUT BTUH
RTU-1	ROOFTOP UNIT	220,000 @ EACH
DOAS	DEDICATED OUTDOOR AIR UNIT	232972 @ EACH
FRYER	DUAL FRYER	160,000
WH-1 / WH-2	(2) INSTANTANEOUS WATER HEATERS	399,800
TOTAL BTUH		1012772
TOTAL BTUH		1012772
MAXIMUM DEVELOPMENT LENGTH		150

NOTE: GAS LINE SIZED AS PER 2015 IFGC TABLE 402.4(4) FOR PRESSURE LESS THAN 2 PSI AND 6 IN W.C.

PLUMB BRANCH PIPING SCHEDULE

FIXTURE	WASTE	VENT	CW	HW
WATER CLOSET	3"	2"	1"	- -
LAVATORY	2"	1-1/2"	1/2"	1/2"
URINAL	2"	1-1/2"	3/4"	- -
HAND SINK / PREP SINK	2"	1-1/2"	1/2"	1/2"
FLOOR DRAIN	3"	2"	- -	- -
FLOOR SINK	3"	2"	- -	- -
MOP BASIN	3"	2"	3/4"	3/4"

NOTE: INDIVIDUAL VENTS FOR FIXTURES ON PLANS AND RISER DIAGRAMS HAVE BEEN INCREASED WHERE HORIZONTAL VENT LENGTH IS IN EXCESS OF THE MAXIMUM DISTANCE INDICATED BY THE CODE.

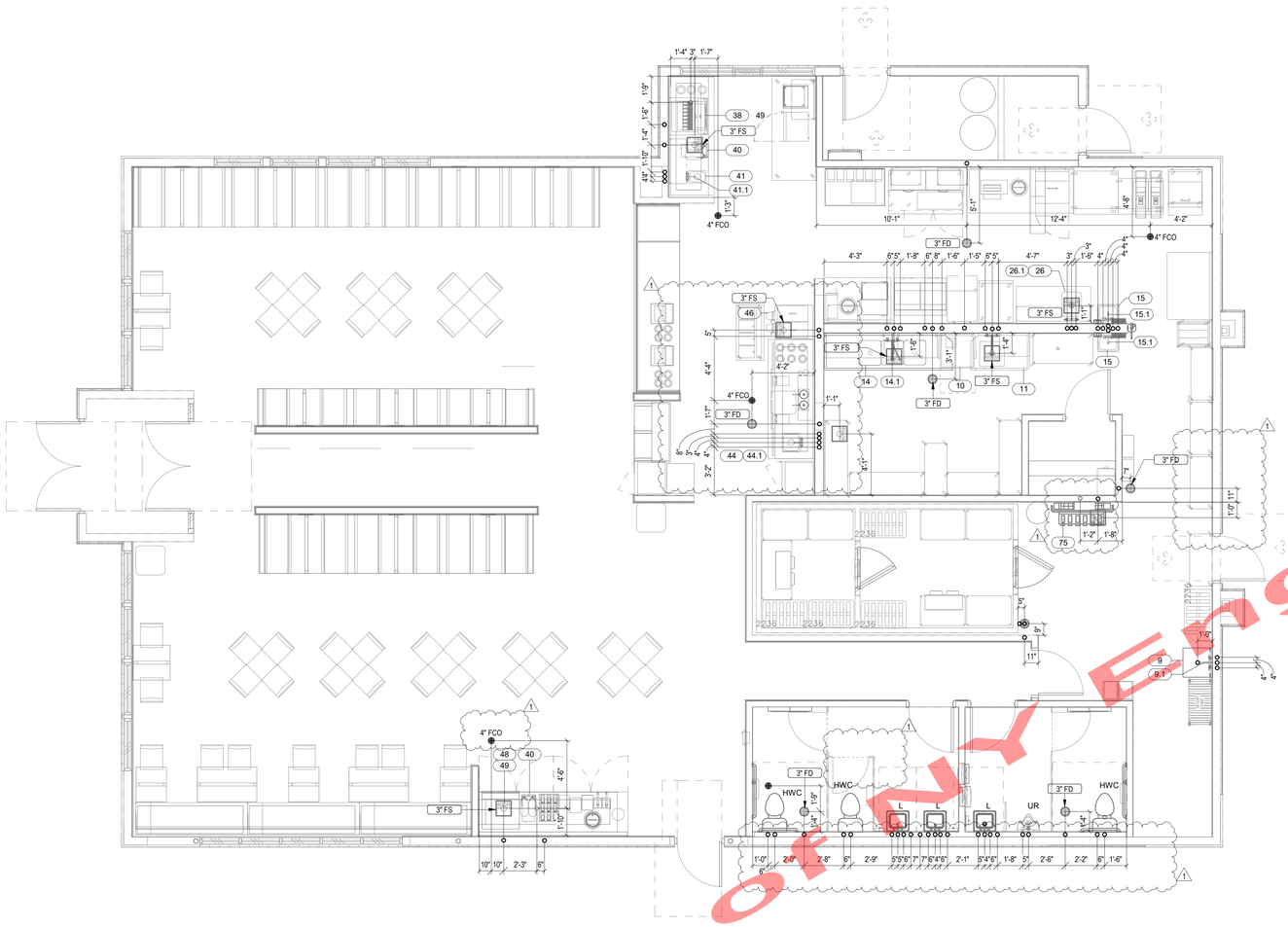
Property of Ly Engineering

Freddy's Frozen Custard & Steakburgers
FREDDY'S FROZEN CUSTARD

PLUMBING FIXTURE SCHEDULE

P-302

CONSTRUCTION DOCUMENTS



1 P-400 FOOD SERVICE PLUMBING ROUGH-IN PLAN
1/4" = 1'-0"

PLUMBING NOTES

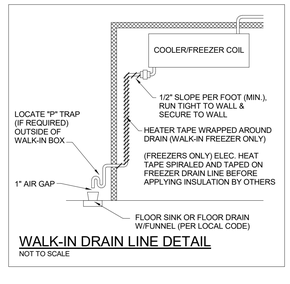
1	THESE DRAWINGS ARE TO BE USED AS AN INSTRUMENT OF REFERENCE BY ALL OTHER TRADES AND CONTRACTORS. ALL TRADES SHALL VERIFY THE INFORMATION AS INDICATED ON THESE PLANS.
2	DIMENSIONS AND REQUIREMENTS FOR ALL EQUIPMENT THAT IS LISTED AS EXISTING, PROVIDED BY OTHERS OR PROVIDED BY OWNER, MUST BE VERIFIED WITH THE APPROPRIATE PARTIES.
3	ALL LOCAL, STATE AND NATIONAL CODES SHALL APPLY.
4	THESE UTILITY REQUIREMENT DRAWINGS INDICATE THE UTILITY AND LOCATION OF REQUIREMENTS BASED ON THE EQUIPMENT SPECIFIED.
5	ALL EQUIPMENT SHALL BE PLUMBED IN STRICT CONFORMANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND/OR SHOP DRAWINGS.
6	UNLESS OTHERWISE NOTED, ALL DIMENSIONS SHOWN ON THIS PLAN ARE FROM THE FINISHED FLOOR, CEILING, WALLS OR COLUMN CENTERLINES TO THE CENTERLINE OF THE ROUGH-INS.
7	ALL PLUMBING CONNECTIONS SHALL BE EXTENDED AND INTERCONNECTED TO CONNECTION POINTS ON THE EQUIPMENT BY OTHERS. UNLESS SPECIFIED, ALL HARDWARE REQUIRED FOR THESE CONNECTIONS SHALL BE SUPPLIED BY THE PLUMBING CONTRACTOR.
8	SURFACE MOUNTED PIPING WILL NOT BE ALLOWED. ALL PIPING SHALL BE EXTENDED THROUGH AND OUT OF BUILDING WALLS WHERE POSSIBLE. WHERE SURFACE MOUNTED PLUMBING IS UNAVOIDABLE, IT MUST BE COORDINATED WITH HOCKENBERGS.
9	ROUGH-INS OUT OF FLOOR SHOULD BE STUBBED UP 4" ABOVE FINISHED FLOOR AND BROUGHT TO THE REQUIRED HEIGHT AFTER EQUIPMENT IS SET IN PLACE.
10	ONLY COMPONENTS SUPPLIED STANDARD BY THE MANUFACTURER ARE INCLUDED. ALL HARDWARE REQUIRED FOR CONNECTIONS SHALL BE SUPPLIED BY THE PLUMBING CONTRACTOR. SUCH COMPONENTS INCLUDE BUT ARE NOT LIMITED TO, SHUT-OFFS, PRESSURE REGULATORS, VACUUM BREAKERS, P-TRAPS, BACKFLOW PREVENTERS, ETC.
11	PLUMBING CONTRACTOR TO VERIFY THAT ALL APPLIANCES ARE SUPPLIED WITH APPROPRIATE GAS PRESSURE AND THAT ANY VARIANCES IN GAS PRESSURE BE CLEARLY IDENTIFIED AND BROUGHT TO THE IMMEDIATE ATTENTION OF HOCKENBERGS.
12	ALL INDIRECT WASTE AND CONDENSATE DRAIN LINES SHALL BE EXTENDED FROM EQUIPMENT FITTINGS TO APPROPRIATE DRAINS AS CODES REQUIRE, BY OTHERS.
13	UNLESS OTHERWISE SPECIFIED, HOT WATER SUPPLIED TO BOOSTER HEATER SHALL BE A MINIMUM TEMPERATURE OF 140° F.
14	PLUMBING CONTRACTOR TO VERIFY WATER TEMPERATURE REQUIREMENTS FOR EACH PIECE OF EQUIPMENT. ANY DISCREPANCY BETWEEN MANUFACTURER'S REQUIREMENTS AND TEMPERATURES PROVIDED SHALL BE CLEARLY IDENTIFIED AND BROUGHT TO THE IMMEDIATE ATTENTION OF HOCKENBERGS.
15	PLUMBING CONTRACTOR TO PROVIDE INSULATED HOT WATER CONNECTIONS BETWEEN BOOSTER HEATER AND DISHMACHINE.
16	UNLESS OTHERWISE SPECIFIED BY CODE, ALL DRAIN LINES FOR DISPOSERS SHALL BY-PASS GREASE INTERCEPTORS.
17	NO GENERAL PURPOSE FLOOR DRAINS ARE SHOWN ON THESE PLANS. THE SPECIFICATION OF THOSE DRAINS, AS WELL AS THE DESIGN FOR REQUIRED SLOPES IN THE FLOOR TO THOSE DRAINS, SHALL BE THE RESPONSIBILITY OF THE ARCHITECT AND/OR ENGINEERS.

PLUMBING LEGEND

- HOT WATER
- SOFTENED HOT WATER
- COLD WATER
- SOFTENED COLD WATER
- FILTERED WATER
- DIRECT WASTE
- FLOOR DRAIN
- FLOOR SINK - THREE-QUARTER GRATE
- FLOOR SINK - PARTIAL GRATE
- FLOOR SINK - NO GRATE
- FUNNEL FLOOR DRAIN
- HUB FLOOR DRAIN
- AREA FLOOR DRAIN - SLOPED PER CODE
- GAS DROP FROM MANIFOLD
- FIRE SUPPRESSION GAS SHUT-OFF VALVE
- CHILLED WATER
- CHILLED WATER RETURN
- STEAM SUPPLY
- CONDENSATE RETURN

FOOD SERVICE PLUMBING SCHEDULE

ITEM NO.	QTY	DESCRIPTION	WATER HOT SIZE	WATER HOT AFF	WATER COLD SIZE	WATER COLD AFF	WATER FILTERED SIZE	WATER FILTERED AFF	WASTE DIRECT SIZE	WASTE DIRECT AFF	GAS SIZE	GAS MBTU	GAS AFF	REMARKS
1	1	WALK-IN COOLER EVAPORATOR COIL												
2	1	WALK-IN FREEZER EVAPORATOR COIL												
9	1	MOP SINK							3"					STUB UP
9.1	1	MOP SINK FAUCET	3/4"	36"	3/4"	36"								
10	1	DISH MACHINE, LOW TEMP	3/4"	60"										BY OTHERS; VERIFY ROUGH-IN REQUIREMENTS; IW: PC TO EXTEND INDIRECT WASTE TO FLOOR SINK
11	1	SOILED DISH TABLE												I.W: PC TO EXTEND WASTE LINE TO FLOOR SINK
11.1	1	PRE-RINSE FAUCET	1/2"	14"	1/2"	14"								
14	1	3 COMP SOILED DISHTABLE												I.W: PC TO EXTEND WASTE LINE TO FLOOR SINK
14.1	1	PRE-RINSE W/ ADD-A-FAUCET	1/2"	14"	1/2"	14"								
15	2	HAND SINK							1 1/2"	16"				
15.1	2	HAND SINK FAUCET	1/2"	14"	14"	14"								
17	1	BAG-IN-BOX SYSTEM					1/2"	60"						BY OTHERS; VERIFY ROUGH-IN REQUIREMENTS
26	1	WORK TABLE W/ PREP SINK												I.W: PC TO EXTEND WASTE LINE TO FLOOR SINK
26.1	1	FAUCET	1/2"	14"	1/2"	14"								
29A	1	MEGA TOP SANDWICH/SALAD...					1/2"	66"						IW: PC TO EXTEND INDIRECT WASTE FROM ICE MACHINE AND BIN TO FLOOR SINK
34	1	GAS FRYER, BATTERY									1"	160	12"	
38	1	SODA MACHINE W/ ICE BIN												I.W: PC TO RUN INDIRECT WASTE FROM SODA MACHINE TO FLOOR SINK, BY OTHERS; VERIFY ROUGH-IN REQUIREMENTS
40	1	TEA BREWER					1/2"	44"						BY OTHERS; VERIFY ROUGH-IN REQUIREMENTS
41	1	HAND SINK							1 1/2"	16"				
41.1	1	DECK MOUNT FAUCET	1/2"	14"	1/2"	14"								
44	1	HAND SINK							1 1/2"	16"				
44.1	1	DECK MOUNT FAUCET	1/2"	14"	1/2"	14"								
46	1	BATCH FREEZER			1/2"	24"								
48	1	SODA MACHINE												I.W: PC TO RUN INDIRECT WASTE FROM SODA MACHINE TO FLOOR SINK, BY OTHERS; VERIFY ROUGH-IN REQUIREMENTS
49	1	ICE MACHINE					1/2"	84"						IW: PC TO EXTEND INDIRECT WASTE FROM ICE MACHINE AND BIN TO FLOOR SINK
75	1	ULTRAFILTRATION SYSTEM			3/4"	96"								



WALK-IN DRAIN LINE DETAIL
NOT TO SCALE

Property of NYC Engineers

Freddy's Frozen Custard & Steakburgers
FREDDY'S FROZEN CUSTARD

FOOD SERVICE PLUMBING ROUGH-IN PLAN

P-400

CONSTRUCTION DOCUMENTS