AIR BALANCE SCHEDULE

		SUPPLY AIR	RETURN AIR	OUTSIDE AIR	EXHAUST AIR
AC 1		5,000	3,650	1350	
AC 2		5,000	3,750	1,250	
AC 3		5,000	3,800	1,200	
AC 4		5,000	3,900	1,100	
MUA 1	GREASE EXHAUST HOODS	3,350		3,350	
MUA 2	GREASE EXHAUST HOODS	7,840		7,840	
EF 1	HOOD #1 & #2				3,800
EF 2	HOOD #3				1,400
EF 3	HOOD #4				3,200
EF 4	HOOD #5				1,800
EF 5	HOOD #6				3,500
EF 6	HOOD #7				800
EF 7	RESTROOM				700
EF 8	STAFF R/R				100
	TOTALS	31,190	15,100	16,090	15,300

16,090 – 15,300 = 790 CFM POSITIVE BUILDING PRESSURE

DESIGN TEMPERATURES

2016 T-24 JOINT APPENDIX JA2
NEWARK, CA: CLIMATE ZONE 3

OUTDOOR
COOLING: 0.5% = 89° FDB, 67° FWB
HEATING: 0.6% = (+) 36 FDB

INDOOR
COOLING = 74° FDB/50% RH ± 10%
HEATING = 70° MINIMUM

PACKAGED AIR CONDITIONING UNIT SCHEDULE

MARK	SERVES	FAN LOCATION	MFG.	MODEL NO.	EER CAP	TOTAL COOLING CAP. AT ARI COND.	SENSIBLE COOLING CAP. AT ARI COND.	GAS HEATING CAP. INPUT BTUH	AFUE	CFM @ S.P.	EVAP. FAN BHP	MINIMUM VENTILATION AIR CFM	ELECTRICAL DATA VOLTS	PHASE	MCA	MOCP	OPER. WGT.	FILTERS	REMARKS
AC 1	KITCHEN	ROOF	CARRIER	48HCDD14A2A5	12.20	159,440 BTU	111,460 BTU	150,000 BTU	80%	5,000 @ 0.7"	2.30	1350	208	3ø	60	70	2,000 LBS	2" PLEATED MERV. 8	1, 2, 3, 5, 6
AC 2	BAR/DINING	ROOF	CARRIER	48HCDE14A2A5	12.20	155,160 BTU	113,930 BTU	150,000 BTU	80%	5,000 @ 0.7"	2.45	1250	208	3ø	60	70	2,500 LBS	2" PLEATED MERV. 8	1, 2, 3, 4, 5, 6
AC 3	INTERIOR DINING	ROOF	CARRIER	48HCDD14A2A5	12.20	155,160 BTU	113,930 BTU	150,000 BTU	80%	5,000 @ 0.7"	2.30	1200	208	3ø	60	70	2,000 LBS	2" PLEATED MERV. 8	1, 2, 3, 5, 6
AC 4	DINING	ROOF	CARRIER	48HCDD14A2A5	12.20	155,160 BTU	113,930 BTU	150,000 BTU	80%	5,000 @ 0.7"	2.30	1100	208	3ø	60	70	2,000 LBS	2" PLEATED MERV. 8	1, 2, 3, 5, 6

PROVIDE THE FOLLOWING ACCESSORIES:

1. FACTORY INSTALLED DIFFERENTIAL ENTHALPY ECONOMIZER.
2. SYSTEM SENSOR DUCT MOUNTED SMOKE DETECTOR LOCATED IN THE UNIT SUPPLY AIR DUCT TO BE WIRED FOR GLOBAL SHUTDOWN AND CONNECTED TO THE TO THE FIRE PANEL.
3. 14" HIGH ROOF CURB
4. PROVIDE WITH ADAPTIVE DEHUMIDIFICATION SYSTEM
5. BACNET COMMUNICATION CARD, SUPPLY AIR TEMPERATURE SENSOR AND FAILURE SWITCH
6. EQUIPMENT PURCHASED BY OWNER NATIONAL ACCOUNT AND INSTALLED BY THE MECHANICAL CONTRACTOR

EXHAUST FAN SCHEDULE

MARK	SERVES	FAN LOCATION	MFG.	MODEL NO.	CFM @ STATIC	FAN RPM	MOTOR HP	MOTOR VOLTS	MOTOR PHASE	FLA	OPER. WGT.	REMARKS
EF 1	HOOD #1 & #2	ROOF	CAPTIVE AIRE	NCA24HPFA	3800 CFM @ 1.75" S.P.	1015	3	208	3ø	9.5	309 LBS	1, 7, 8, 12, 14, 15
EF 2	HOOD #3	ROOF	CAPTIVE AIRE	NCA14FA	1400 CFM @ 0.75" S.P.	1000	0.5	208	3ø	1.9	154 LBS	1, 2, 3, 6, 12
EF 3	HOOD #4	ROOF	CAPTIVE AIRE	NCA24HPFA	3200 CFM @ 1.5" S.P.	920	2	208	3ø	5.9	294 LBS	1, 7, 9, 12, 14, 15
EF 4	HOOD #5	ROOF	CAPTIVE AIRE	NCA16FA	1800 CFM @ 1.25" S.P.	1120	1	208	3ø	3.4	163 LBS	1, 7, 9, 12, 14, 15
EF 5	HOOD #6	ROOF	CAPTIVE AIRE	NCA24HPFA	3500 CFM @ 1.75" S.P.	997	3	208	3ø	9.5	309 LBS	1, 7, 9, 12, 14, 15
EF 6	HOOD #7	ROOF	CAPTIVE AIRE	NCA14FA	800 CFM @ 1.0" S.P.	1223	0.5	208	3ø	1.9	130 LBS	1, 7, 8, 12, 14, 15
EF 7	RESTROOM	ROOF	LOREN COOK	ACEB-100	700 CFM @ 0.8" S.P.	1829	0.25	120	1ø	–	100 LBS	1, 2, 3, 4, 13
EF 8	STAFF RESTROOM	CEILING	LOREN COOK	GC-146	100 CFM @ 0.3" S.P.	900	35W	120	1ø	–	20 LBS	2, 4, 11, 13

FOR INFORMATION CONTACT CHRIS MARTIN @ TRI-MARK (949) 398-8619

1. FACTORY ROOF CURB PER DETAIL
2. PROVIDE BDD
3. PROVIDE BIRDSCREEN
4. SWITCH WITH LIGHTS
5. CONNECT W/T-STAT, SET POINT TO BE 85°F FOR ACTIVATION
6. INTERLOCK WITH DISH WASHING MACHINE
7. UL762 LISTED FAN
8. INTERLOCK WITH MUA-1
9. INTERLOCK WITH MUA-2
10. NOT USED
11. PROVIDE MANUFACTURER'S ROOF CAP.
12. CAPTIVEAIRE EQUIPMENT SUPPLIED AND DELIVERED BY KITCHEN EQUIPMENT CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR & ELECTRICAL CONTRACTOR
13. FAN PROVIDED AND INSTALLED BY MECHANICAL CONTRACTOR
14. REFER TO PLAN M1.1/DETAIL #4 FOR INSTALLATION DETAILS
15. FANS TO BE PROVIDED WITH FACTORY GREASE CATCH BASIN

MAKE UP AIR UNIT

MARK	SERVES	FAN LOCATION	MFG.	MODEL NO.	CFM @ STATIC	GAS FIRED MODULE INPUT BTU	GAS FIRED MODULE OUTPUT BTU	TR (TF)	FAN RPM	MOTOR HP	MOTOR VOLTS	MOTOR PHASE	FLA	OPER. WGT.	REMARKS
MUA 1	GREASE EXHAUST HOOD #1 & #2	ROOF	CAPTIVE AIRE	A2-0.500-G15	3,350 CFM @ 1.0" S.P.	141,574	130,248	36	1096	5	208	3ø	15.0	1,700 LBS	1, 2, 3, 4, 5, 6
MUA 2	GREASE EXHAUST HOODS #4, #5, #6 & #7	ROOF	CAPTIVE AIRE	A4-0.1000-920	7,840 CFM @ 1.0" S.P.	331,325	304,819	36	704	5	208	3ø	15.0	2,400 LBS	1, 2, 3, 4, 5, 6

FOR INFORMATION CONTACT CHRIS MARTIN @ TRI-MARK (949) 398-8619

1. DOWN SHOT CONFIGURATION
2. PROVIDE FACTORY ROOF CURB
3. INTAKE HOOD WITH EZ FILTERS
4. UL OR ETL LISTED
5. MECHANICAL CONTRACTOR TO CONTACT NATIONAL ACCOUNT SUPPLIER (TRI-MARK) AND COORDINATE EQUIPMENT DELIVERY
6. CAPTIVEAIRE EQUIPMENT SUPPLIED BY KITCHEN EQUIPMENT CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR & ELECTRICAL CONTRACTOR

UNIT HEATER

MARK	SERVES	LOCATION	MFG.	MODEL NO.	CFM	TR	VOLTAGE	KW	AMPS	BTUH	OPER. WGT.	REMARKS
UH 1	FIRE RISER ROOM	FIRE RISER ROOM	MODINE	VE-50	800	21° F	208V-3ø	5.0	14.5	17100	70 LBS	PROVIDE W/ FACTORY WALL STAT

REQUIRED SUBMITTALS LIST

THE FOLLOWING EQUIPMENT SUBMITTALS AND SUPPLEMENTS IS REQUIRED FOR APPROVAL. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE PREPARATION AND SUBMISSION OF ALL SUBMITALS SPECIFIED EVEN IF NOT LISTED HEREIN:

- PACKAGE AIR CONDITIONING UNIT(S) AND ACCESSORIES, INCLUDING THERMOSTATS, SENSORS AND CONTROL DIAGRAMS (PROVIDED BY CARRIER)
- EXHAUST FAN(S) (PROVIDED BY CAPTIVE AIR, DELIVERED BY TRIMARK)
- MAKE-UP AIR UNIT(S)
- AIR DISTRIBUTION DEVICES
- DUCTWORK SHOP DRAWINGS (CAD & PDF) (DUCT WORK LOCATIONS HAVE BEEN COORDINATED WITH INTERIORS AND LIGHT FIXTURES)

MECHANICAL INTERLOCK NOTES

SEE M1.3 FOR MECHANICAL EQUIPMENT INTERLOCKS

FAN COIL UNIT SCHEDULE

MARK	SERVES	LOCATION	MFG.	MODEL NO.	QTY.	CFM @ E.S.P.	VOLTAGE	ELECTRICAL DATA WATTS	MCA	MOCP	FLA	OPER. WGT.	REMARKS
FC 1	MANAGER'S OFFICE	CEILING	LG	ARNU243TTC4	1	470 CFM @ 0.1"	208/1/60	70	1	–	0.30	80 LBS.	1, 2, 3, 4, 5, 6

1. REFRIGERANT CHARGE IS R-410A.
2. DISCONNECT SWITCH BY ELECTRICAL CONTRACTOR.
3. PROVIDE NEW T-24 COMPLIANT THERMOSTAT.
4. UNIT SHALL BE CEILING MOUNTED.
5. FACTORY INSTALLED CONDENSATE DRAIN PUMP.
6. CONDENSATE PIPING BY PLUMBING CONTRACTOR.

CONDENSING UNIT SCHEDULE

MARK	SERVES	LOCATION	MFG.	MODEL NO.	QTY.	SEER	COOLING CAP. (BTUH)	HEATING CAP. (BTUH)	ELECTRICAL DATA MCA	MOCP	VOLTAGE	OPER. WGT.	REMARKS
CU 1	FC-1	ROOF	LG	ARUN024GSS4	1	15.2	24,000	27,000	19.6	30	208/1/60	190 LBS	1, 2, 3, 4, 5

1. DISCONNECT SWITCH BY ELECTRICAL CONTRACTOR
2. SYSTEM REFRIGERATION CHARGE R-410A
3. SEER RATINGS ARE BASED ON LATEST AHRI COMBINED RATINGS AT TIME OF DESIGN, PROVIDE LATEST EQUIPMENT MODEL IF SPECIFIED MODEL IS OBSOLETE
4. UNIT SHALL BE FLOOR MOUNTED UNIT.
5. PROVIDE SIGHT GLASS AND FILTER DRIER.

2

CAL GREEN BUILDING NOTES

SECTION 5.201.1: Energy efficiency compliance provided in accordance with minimum requirements

SECTION 5.408.3: General Contractor to coordinate construction material waste for targeted reduction and develop onsite recycling procedures for all trades. General Contractor to provide detailed plan for this compliance to building inspector(s) during initial and ongoing project construction, as requested

SECTION 5.410.4 Testing and adjusting. Testing and adjusting of systems shall be required for buildings less than 10,000 square feet. 5.410.4.2 Systems. Develop a written plan of procedures for testing and adjusting systems. Systems to be included for testing and adjusting shall include at a minimum, as applicable to the project: 1. HVAC systems and controls
2. Indoor and outdoor lighting and controls
3. Water heating systems
4. Renewable energy systems
5. Landscape irrigation systems
6. Water reuse systems.

SECTION 5.410.4.3 Procedures. Perform testing and adjusting procedures in accordance with industry best practices and applicable standards on each system as determined by the building official.

SECTION 5.410.4.3.1 HVAC balancing. In addition to testing and adjusting, before a new space conditioning system serving a building or space is operated for normal use, the system shall be balanced in accordance with the procedures defined by the Testing Adjusting and Balancing Bureau National Standards; the National Environmental Balancing Bureau Procedural Standards; or Associated Air Balance Council National Standards or as approved by the building official.

SECTION 5.410.4.4 Reporting. After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services. 5.410.4.5 Operation and maintenance (O & M) manual. Provide the building owner or representative with detailed operating and maintenance instructions and copies of guaranties/warranties for each system. O & M instructions shall be consistent with OSHA requirements in CCR, Title 8, Section 5142, and other related regulations.

SECTION 5.410.4.5.1 Inspections and reports. As required by the Enforcement Agency

SECTION 5.504.3 Covering of duct openings and protection of mechanica equipment during construction.I At the time of rough installation, or during storage on the construction site and until final startup of the heating and cooling equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheetmetal or other methods acceptable to the enforcing agency to reduce the amount of dust or debris which may collect in the system.

SECTION 504.5.3 Filters. In mechanically ventilated buildings, provide regularly occupied areas of the building with filtration media for outside and return air prior to occupancy that provides at least a Minimum Efficiency Reporting Value (MERV) of 8.

SECTION 5.505.1 Indoor moisture control. Buildings shall meet or exceed the California Building Code, CCR, Title 24, Part 2, Sections 1203 (Ventilation) and Chapter 14, (exterior Walls). When specified, HVAC equipment serving normally occupied areas shall be equipped with space humidistats set to monitor room relative humidity to between 50 and 60%%%, (adjustable), and remove excess humidity via the cooling coil apparatus. System re-heat will be provided as required

SECTION 5.506.1 Outside air delivery. For mechanically or naturally ventilated spaces in buildings, meet the minimum requirements of Section 121 (Requirements For Ventilation) of the California Energy Code, CCR, Title 24, Part 6, or the applicable local code, whichever is more stringent, and Chapter 4 of CCR, Title 8. Reference sheet M-1.0 for minimum outside air quantities as indicated in the building air balance chart. These same minimum outside air quantities are also provided in the energy compliance calculations, Form MECH 3C, attached herein.

SECTION 5.506.2 Carbon dioxide (CO2) monitoring. For buildings equipped with demand control ventilation, CO2 sensors and ventilation controls shall be specified and installed in accordance with with the requirements of the current edition of the California Energy Code, CCR, Title 24 6, Section 121(c). Demand Control is not required for this project.

SECTION 5.508.1 Ozone depletion and greenhouse gas reductions. Installations of HVAC, refrigeration and fire suppression equipment shall comply with Sections 5.508.1.1 and 5.508.1.2

SECTION 5.508.1.1 Chlorofluorocarbons (CFCs.) Install HVAC, refrigeration and fire suppression equipment that do not CFC's. (existing unit utilizes R-410)

SECTION 5.508.1.2 Halons. Install HVAC, refrigeration and fire suppression equipment that do not contain halons.

CONSTRUCTION NOTES

1. ALL MECHANICAL WORK SHALL BE IN ACCORDANCE WITH BUT NOT LIMITED TO THE 2016 CBC, 2016 CMC, 2016 T24 AND THE LATEST SMACNA STANDARDS.
2. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ADMINISTERING ALL WARRANTIES ON EQUIPMENT WHICH THEY FURNISH AND INSTALL.
3. PROVIDE WRITTEN WARRANTY TO REPLACE ALL FAULTY MATERIALS AND/OR LABOR, AT NO COST TO OWNER, FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE. PROVIDE 5 YEAR COMPRESSOR WARRANTY FOR AC UNITS. WARRANTIES SHALL BEGIN ON THE DATE OF SUBSTANTIAL ACOMPLETION.
4. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO PATCH AND REPAIR ALL EXISTING WALLS, FLOORS, CEILINGS OR OTHER SURFACES IDENTIFIED TO REMAIN THAT MAY BECOME DAMAGED DURING THE COURSE OF WORK
5. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL INTENT OR ARRANGEMENT OF SYSTEM(S). FURNISH & INSTALL ALL COMPONENTS NEEDED WHETHER INDICATED OR NOT TO PROVIDE A COMPLETE AND OPERATING SYSTEM.
6. CONTRACTOR TO VERIFY ALL DIMENSIONS, INCLUDING CLEARANCES REQUIRED BY OTHER TRADES, AND NOTIFY ARCHITECT OR GENERAL CONTRACTOR OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK. ALL DIMENSIONS ARE TO THE FACE OF THE FINISHED SURFACE UNLESS NOTED OTHERWISE. ALL DIMENSIONS TO BE TAKEN FROM FROM ACTUAL BUILDING DIMENSIONS.
7. THE MECHANICAL CONTRACTOR SHALL COORDINATE HVAC WORK WITH OTHER TRADES. THE ARCHITECTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER ALL OTHER DRAWINGS. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONED DIFFUSER LOCATIONS AND MOUNTING HEIGHTS WHERE EXPOSED.
8. COORDINATE LOCATION AND SIZE OF ACCESS PANELS SO THEY WILL PROVIDE USEFUL ACCESS TO SERVICE SYSTEM COMPONENTS. LOCATIONS SHALL BE REVIEWED WITH THE ARCHITECT PRIOR TO INSTALLATION.
9. ALL HEATING VENTILATION AND AIR CONDITIONING EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL COMPONENTS REQUIRED FOR COMPLETE WORKABLE INSTALLATION
10. ROOF CURBS FOR EXHAUST FAN SHALL BE FACTORY FABRICATED OF FULL WELDED STEEL CONSTRUCTION WITH WOOD NAILER, AND FURNISHED WITH THE HOOD AND FAN PACKAGE. VERIFY REQUIREMENTS FOR THE ROOF CURBS WITH THE EQUIPMENT SUPPLIER. THE GENERAL CONTRACTOR SHALL FLASH ROOF CURBS AND SHIM DEAD LEVEL. COORDINATE EXACT SIZE AND LOCATION OF ROOF OPENINGS WITH THE STRUCTURAL FRAMING. CUTTING OF STRUCTURAL MEMBERS IS NOT PERMITTED.
11. ALL ITEMS PROJECTING THROUGH THE ROOF SHALL BE FLASHED THROUGH CURBS OR PIPE SEALS A MINIMUM OF 12" ABOVE THE ROOF. THE PIPE CURBS AND SEALS SHALL BE INSTALLED BY THE ROOFING CONTRACTOR. ENSURE THAT AMPLE BOOT CLEARANCES ARE PROVIDED TO ACCOMMODATE ANY ELECTRICAL CONDUIT PENETRATIONS REQUIRED FOR POWER.
12. ALL HVAC SUPPLY AND RETURN OUTDOOR EXPOSED DUCTWORK SHALL BE INTERNALLY LINED WITH MINIMUM R-8.0, 2" INSULATION WITH VAPOR BARRIER PER 2013 CALIFORNIA MECHANICAL CODE. INSULATION SHALL HAVE MAXIMUM RATINGS OF 25 FLAME SPREAD, 50 SMOKE DEVELOPED. REFER TO ARCHITECTURAL DRAWINGS FOR DUCT PAINT OR COLOR SPECIFICATION
13. ALL HVAC SUPPLY AND RETURN CONCEALED DUCTWORK TO BE EXTERNALLY WRAPPED WITH MINIMUM R-8, 2.0" INSULATION WITH VAPOR BARRIER PER 2013 CALIFORNIA MECHANICAL CODE. INSULATION SHALL HAVE MAXIMUM RATINGS OF 25 FLAME SPREAD, 50 SMOKE DEVELOPED.
14. THE TOTAL SYSTEM AIR BALANCE SHALL BE PERFORMED BY AN INDEPENDENT AGENCY CERTIFIED BY THE AABC. THIS WORK SHALL CONFORM TO AABC SPECIFICATIONS AS REFERRED TO IN THE AABC NATIONAL STANDARDS. THE AIR BALANCE AGENCY SHALL BE A DIRECT SUB CONTRACTOR TO THE GENERAL CONTRACTOR.
15. PER 2013 MECHANICAL CODE WHEN REQUIRED, EACH SINGLE SYSTEM PROVIDING HEATING OR COOLING AIR IN EXCESS OF 2000 CUBIC FEET PER MINUTE SHALL BE EQUIPPED WITH AN AUTOMATIC SHUTOFF. AUTOMATIC SHUTOFF SHALL BE ACCOMPLISHED BY INTERRUPTING THE POWER SOURCE OF THE AIR MOVING EQUIPMENT DEVICES WHICH WILL DETECT PRODUCTS OF COMBUSTION OTHER THAN HEAT, AND WHICH COMPLY WITH THE CBC, SHALL BE LABELED BY AN APPROVED AGENCY FOR AIR DUCT INSTALLATION AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. SUCH DEVICES SHALL BE COMPATIBLE WITH THE OPERATING VELOCITIES, PRESSURES, TEMPERATURES AND HUMIDITIES OF THE SYSTEM WHERE FIRE DETECTION OR ALARM SYSTEMS ARE PROVIDED FOR THE BUILDING, SMOKE DETECTORS SHALL BE SUPERVISED BY SUCH SYSTEMS.
16. COORDINATE THE INSTALLATION AND FINISH OF ALL SUPPLY AND RETURN AIR DEVICES. AIR DEVICES LOCATED IN GUEST AREAS (INCLUDING DINING AND BAR) SHALL BE PAINTED PER THE ARCHITECTURAL DRAWINGS FINISH SCHEDULE.
17. REMOTE SENSOR A TEMPERATURE CONTROL SHALL BE TITLE-24 COMPLIANT AVAILABLE 24/7 AUTOMATIC CHANGEOVER TYPE TO SEQUENCE HEATING AND COOLING. SET POINT RANGE SHALL BE 10°F BETWEEN FULL HEATING AND FULL COOLING. ADJUSTABLE TEMPERATURE DIFFERENTIAL SHALL BE 1–1/2°F. THERMOSTAT CONTROL RANGE SHALL BE 55°F TO 85°F. CONTROLS SHALL HAVE CAPABILITY OF TERMINATING HEATING AT NO HIGHER THAN 70°F AND COOLING AT NO LOWER THAN 75°F.
18. PROVIDE FLASHING AND/OR COUNTER FLASHING OF ALL EXTERIOR PENETRATIONS TO PREVENT WATER INGRESS.
19. LOCATION OF ALL REGISTERS AND GRILLES SHALL BE IN STRICT ACCORDANCE W/ARCHITECTURAL REFLECTED CEILING PLAN
20. ALL OUTDOOR AIR INTAKE BY MECHANICAL EQUIPMENT SHALL HAVE A MINIMUM 10'-0" HORIZONTAL CLEARANCE FROM THE DISCHARGE OF ANY EXHAUST FAN, RTU GAS EXHAUST OR PLUMBING VENT.
21. SUPPLY, RETURN, RESTROOM EXHAUST, AND MAKEUP AIR DUCT CONSTRUCTION SHALL BE GALVANIZED STEEL GAUGES, SWAY BRACING AND SUSPENSION SHALL CONFORM TO 2013 CALIFORNIA MECHANICAL CODE. SEAL ALL SEAMS AND JOINTS AIR AND WATERTIGHT. FLEXIBLE ALUMINUM DUCTWORK OR FIBERGLASS DUCTBOARD IS NOT ALLOWED (UNO).
22. PROVIDE VIBRATION ISOLATION DEVICES AND FLEXIBLE DUCT/ PIPING CONNECTIONS TO ALL MOVING MACHINERY NOT INTERNALLY ISOLATED.
23. ALL DUCT DIMENSIONS SHOWN ON DRAWINGS ARE SHEET METAL SIZE.
24. NEW DUCTWORK AND EQUIPMENT SHALL NOT BE INSTALLED WHERE IT OBSTRUCTS ANY EXISTING OR NEW AREAS THAT REQUIRE ACCESS.
25. DURING CONSTRUCTION, ENDS OF DUCT OPENINGS ARE TO BE SEALED, AND MECHANICAL EQUIPMENT IS TO BE COVERED.
26. MECHANICAL CONTRACTOR TO FURNISH AND INSTALL 4" HIGH BLACK OVER WHITE LAMINATE NAMEPLATE WITH 2" LETTERS VISIBLE ADJACENT TO DISCONNECT SWITCH FOR HEAT PUMP UNITS AND CEILING/ ROOF MOUNTED FANS.
27. LINE VOLTAGE WIRING, ALL CONDUIT DISCONNECT SWITCHES AND FINAL CONNECTION BY ELECTRICAL CONTRACTOR. LOW VOLTAGE CONDUIT & WIRING AND FINAL CONNECTION BY MECHANICAL CONTRACTOR.
28. INSTALL TEMPERATURE CONTROL @ +48" (MAX) FOR "ADA". SEE PLAN FOR LOCATION OF REMOTE SENSORS. EXACT LOCATIONS SHALL BE FIELD COORDINATED TO AVOID INTERFERENCE WITH WALL–MOUNTED WORK
29. MECHANICALLY VENTILATED BUILDINGS SHALL PROVIDE REGULARLY OCCUPIED AREAS WITH AIR FILTRATION MEDIA FOR OUTSIDE AND RETURN AIR THAT PROVIDES AT LEAST A MINIMUM EFFICIENCY REPORTING VALUE (MERV) OF 8. 2" THICK MERV 8 THROW AWAY TYPE AIR FILTER FILTERS SHALL BE INSTALLED PRIOR TO OCCUPANCY.
30. PRIOR TO FINAL INSPECTION THE LICENSED CONTRACTOR, ARCHITECT OR ENGINEER IN RESPONSIBLE CHARGE OF THE OVERALL CONSTRUCTION MUST PROVIDE TO THE BUILDING DEPARTMENT OFFICIAL WRITTEN VERIFICATION THAT ALL APPLICABLE PROVISIONS FROM THE GREEN BUILDING STANDARDS CODE HAVE BEEN IMPLEMENTED AS PART OF THE CONSTRUCTION.
31. MECHANICAL CONTRACTOR SHALL VERIFY ALL EXISTING CONDITION BEFORE START ANY WORK.
32. SUBMIT FOR VERIFICATION BY THE BUILDING DEPARTMENT ANY AND ALL REQUIRED AIR BALANCE, AND/OR TEST REPORTS FOR MECHANICAL EQUIPMENT, AND HVAC INSTALLED.
33. MECHANICAL CONTRACTOR SHALL BE ON SITE AND PRESENT AT THE DATE OF STORE TURNOVER.
34. PITCH ALL HORIZONTAL GREASE AND CONDENSATE DUCTWORK UNIFORMLY BACK TOWARDS THE HOOD AT 1/4" PER FOOT (NOT TO EXCEED 50'–0")
35. ALL GREASE EXHAUST DUCT SHALL BE WRAPPED WITH UL LISTED FIRE WRAP/BLANKET. IF FIREWRAP IS NOT ALLOWED, PROVIDE TWO–HOUR RATED ENCLOSURE AROUND HOOD EXHAUST DUCT. ALL GREASE EXHAUST FAN ROOF CURB SHALL BE VENTED PER NFPA 96. PROVIDE ACCESS FOR CLEANING. EITHER INSTALLATION SHALL BE IN COMPLIANCE WITH UL. TESTED STANDARDS.
36. THE WALL MOUNTED CANOPY TYPE KITCHEN EXHAUST HOODS SHALL BE INSTALLED AT 6'–8" AFF (UNO). COORDINATE THE INSTALLATION AND PLACEMENT OF THE EXHAUST HOODS IN THE FIELD.
37. THE KITCHEN HOOD PACKAGE WILL BE PROVIDED WITH END CABINET(S) HOUSING THE FIRE SUPPRESSION TANKS, HOOD EXHAUST FAN SWITCHES, AND LIGHT SWITCHES. (BY KEC)
38. THE GREASE EXHAUST DUCT RISERS BETWEEN THE HOOD COLLARS AND EXHAUST FANS SHALL BE OF THE SAME SIZE AS THE RESPECTIVE HOOD COLLAR SIZE, UNO. REFER TO THE MANUFACTURER SHEETS IN THE KITCHEN EQUIPMENT DRAWING SET FOR THE HOOD COLLAR SIZES AS PROVIDED BY THE HOOD MANUFACTURER.
39. REFER TO MANUFACTURER SHEETS FOR THE HOOD CONTROL WIRING DIAGRAM FOR OPERATION OF THE KITCHEN HOOD EQUIPMENT.
40. PROVIDE INTERLOCKING CONNECTION BETWEEN ALL AC UNITS/ SUPPLY FANS AND EXHAUST FANS (INCLUDING RESTROOM FANS). WHEN EXHAUST SYSTEM IS ON, HEAT PUMP UNITS SHALL BE ENERGIZED. THIS PROCESS ENSURES BALANCING OF SUPPLY AIR AND EXHAUST AIR PER CODE. REFER TO ELECTRICAL DRAWINGS FOR SCHEMATIC.
41. TYPE I HOODS REQUIRE AIR BALANCE REPORT FOR FINAL INSPECTION. AIR BALANCE SHALL BE PERFORMED BY A CERTIFIED CONTRACTOR IN ACCORDANCE WITH AABC, NEBB & TABB PER CMC 511.2.2.
42. THE DEDICATED ELECTRICAL SPACE, WHICH EXTENDS THE FOOTPRINT OF THE SWITCHBOARD OR PANELBOARD FROM THE FLOOR TO A HEIGHT OF 6' ABOVE THE EQUIPMENT IS REQUIRED TO BE CLEAR OF PIPING, DUCTS, LEAK PROTECTION APPARATUS OR EQUIPMENT FOREIGN TO THE ELECTRICAL INSTALLATION. PLUMBING, HEATING, VENTILATION AND AIR CONDITIONING PIPING, DUCTS AND EQUIPMENT MUST NOT BE INSTALLED WITHIN THIS 6' ZONE ABOVE THE PANELBOARD OR SWITCHGEAR. BUSWAYS, CONDUITS, RACEWAYS AND CABLES ARE PERMITTED TO ENTER EQUIPMENT THROUGH THIS ZONE.

MECHANICAL SHEET INDEX

SHEET	TITLE	SCALE
M1.0	SCHEDULES, NOTES, LEGENDS LIST AND SPECIFICATIONS	NONE
M1.1	MECHANICAL DETAILS	NONE
M1.2	CONTROL DIAGRAM	NONE
M1.3a	HOOD CUT SHEETS	NONE
M1.3b	HOOD CUT SHEETS	NONE
M1.3c	HOOD CUT SHEETS	NONE
M1.4a	FANS AND MUA CUT SHEETS	NONE
M1.4b	FANS AND MUA CUT SHEETS	NONE
M1.4c	FANS AND MUA CUT SHEETS	NONE
M2.0	MECHANICAL FLOOR PLAN	1/4"=1'-0"
M3.0	MECHANICAL ROOF PLAN	1/4"=1'-0"
M4.0	ENERGY FORMS	NONE
M4.1	ENERGY FORMS	NONE
M5.0	SPECIFICATIONS	NONE

GENERAL MECHANICAL NOTES

A. COMPLIANCE WITH 2016 CMC REQUIREMENTS §608 (PREVIOUSLY §609) SHALL BE MET FOR AIR HANDLING UNITS (AHU)/ AIR MOVING SYSTEMS GLOBAL AGGREGATE SIMULTANEOUS SMOKE SHUTDOWN OF AREA SERVED PER CSMF INTERPRETATION #02–024 & 08–065 UPON ACTIVATION OF ANY SINGLE DUCT SMOKE DETECTOR.

B. ALL AHU/HVAC UNIT DUCT–SMOKE DETECTORS SHALL BE CONNECTED TO BUILDING FIRE ALARM PANEL TO INITIATE A SUPERVISORY SIGNAL UPON ACTIVATION, BE INTERCONNECTED AND SHALL SHUT DOWN SIMULTANEOUSLY UPON ACTIVATION OF ANY ONE SINGLE DETECTOR.

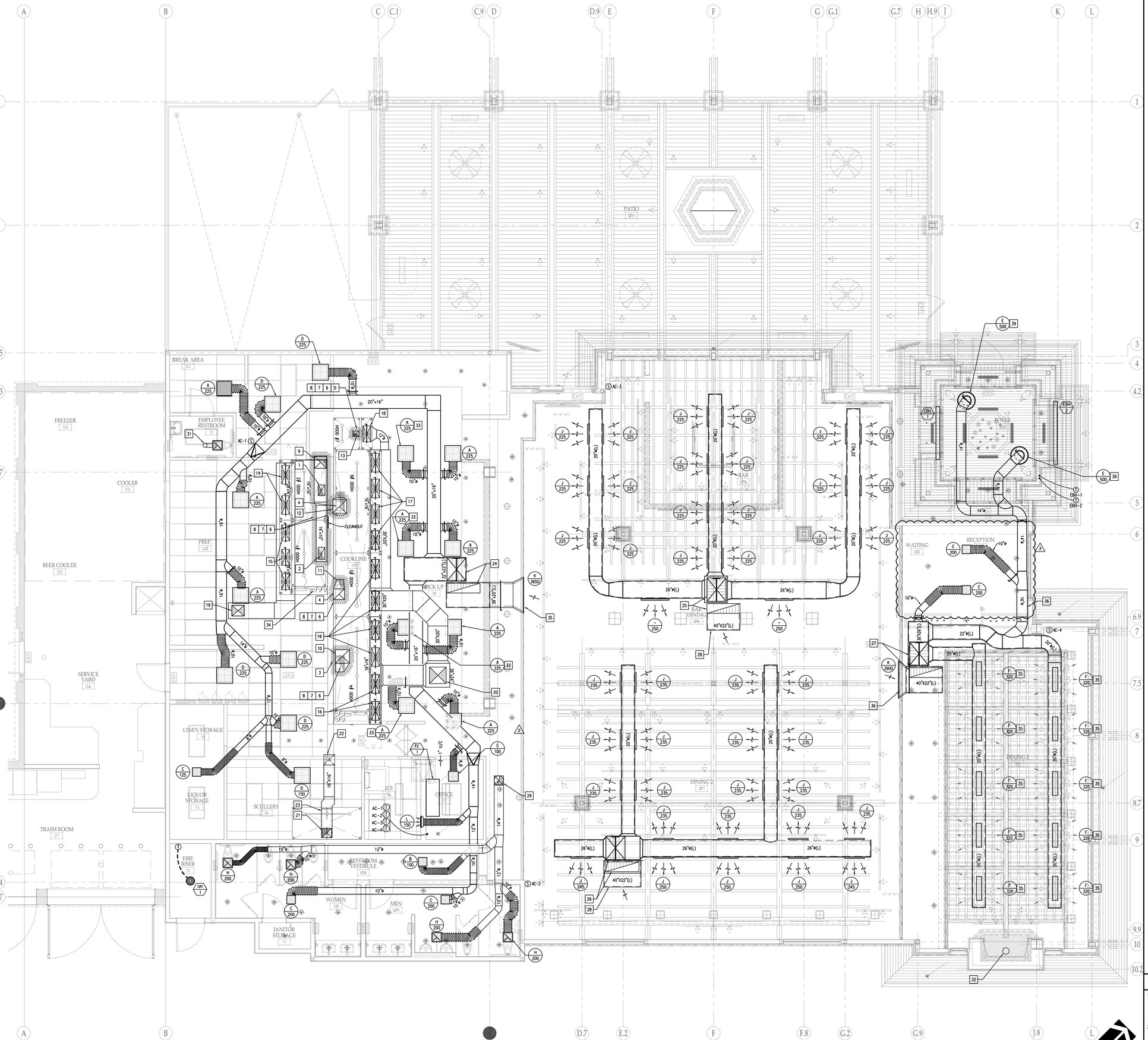
C. AN AHU/HVAC UNIT DUCT–SMOKE DETECTORS SHALL BE TESTED BY MANOMETER TO INSURE AIR VOLUME AND VELOCITY ARE WITHIN THE TOLERANCE SPECIFICATIONS OF THE RATINGS REQUIRED BY THE MANUFACTURER'S DATA ON EACH DUCT–SMOKE DETECTOR INSTALLED WITHIN THE UNIT/DUCTWORK.

LEGEND

SYMBOL	DESCRIPTION	ABBREV.
	SUPPLY DUCT	S.
	RETURN AIR DUCT	R.
	EXHAUST AIR DUCT	E.
	OUTSIDE AIR DUCT	O.S.A.
	LINED DUCT	(L)
	FLEXIBLE DUCT	
	CEILING DIFFUSER 1–2–3 OR 4 WAY THROW	C.D.
	CEILING REGISTER	C.R.
	SIDEWALL REGISTER	T.R.
	EXHAUST GRILLE	G
	ACCESS PANEL	A.P.
	BALANCING DAMPER	B.D.
	FIRE DAMPER	F.D.
	FLEXIBLE CONNECTOR	F.C.
	EXTRACTOR	
	SMOKE DETECTOR	S.D.
T	THERMOSTAT	
S	SENSOR	
	UNDERCUT DOOR 1/2"	U/C
	DOOR LOUVER	
	DIFFUSER NO. INDICATING TYPE & MFGR.	
	GENERAL CONTRACTOR	G.C.
	POINT OF CONNECTION TO EXISTING	POC
	CUBIC FEET PER MINUTE	CFM
	UP THRU ROOF	UTR
AA	ALARM ANNUNCIATOR	

GREASE DUCT FIRE PROTECTION WRAP

1. ALL GREASE EXHAUST DUCTWORK SHALL BE COVERED WITH 2–LAYERS OF FIRE MASTER FASTWRAP X.
2. GREASE EXHAUST DUCTWORK FIRE PROTECTION WRAP SHALL INCLUDE VERTICAL COLLAR CONNECTIONS TO THE TOP OF THE HOOD AND DUCTWORK CONNECTION TO THE UNDERSIDE OF ROOF MOUNTED FANS – SUCH AS CENTRAL FAN RE SERIES, OR TO THE TOP OF THE UNDERSIDE OF THE FLASHING FOR GREASE EXHAUST DUCTWORK THROUGH THE ROOF UTILITY SET FANS.
3. SHALL BE INSTALLED BY A THERMAL CERAMICS QUALIFIED INSTALLATION CONTRACTOR. THE INSTALLING CONTRACTOR SHALL PROVIDE A INSPECTION OF THE DUCT



PLAN NOTES

1. 10"x16" 16 GA. B.I. WELDED INTO HOOD, 1800 CFM, 1520 FPM
2. 10"x18" 16 GA. B.I. WELDED INTO HOOD, 2000 CFM, 1600 FPM
3. 12"x24" 16 GA. B.I. WELDED INTO HOOD, 3200 CFM, 1620 FPM
4. 12"x26" 16 GA. B.I. WELDED INTO HOOD, 1800 CFM, 1615 FPM
5. 9"X8" 16 GA. B.I. WELDED INTO HOOD, 800 CFM, 1600 FPM
6. (2)-LAYERS OF E-2336 COMPLIANT GREASE EXHAUST DUCT FIRE RATED WRAP. SEE SHEET M1.1 FOR DETAILS
7. PROVIDE CLEAN-OUT ACCESS DOORS AT EVERY 12'-0" O.C. AND AT EACH CHANGE OF DIRECTION OR INSPECTOR'S RECOMMENDATION FOR ALL HORIZONTAL GREASE DUCT.
8. THE SLOPE OF THE HORIZONTAL AIR DUCT SHALL NOT BE LESS THAN ¼" PER LINEAL FOOT TOWARD THE HOOD OR TOWARD THE APPROVED GREASE RESERVOIR
9. 18"x18" 16 GA. B.I. WELDED UTR TO EF-1, 3800 CFM, 1689 FPM
10. 16"x16" 16 GA. B.I. WELDED UTR TO EF-3, 3200 CFM, 1800 FPM
11. 12"x12" 16 GA. B.I. WELDED UTR TO EF-4, 1800 CFM, 1800 FPM
12. 16"x18" 16 GA. B.I. WELDED UTR TO EF-5, 3500 CFM, 1750 FPM
13. 9"X8" 16 GA. B.I. WELDED UTR TO EF-6, 800 CFM, 1600 FPM
14. 12"x28" MAKE-UP AIR (MUA) DUCT INTO HOOD W/MVD, 900 CFM
15. 12"x28" MAKE-UP AIR (MUA) DUCT INTO HOOD W/MVD, 667 CFM
16. 12"x28" MAKE-UP AIR (MUA) DUCT INTO HOOD W/MVD, 832 CFM
17. 12"x28" MAKE-UP AIR (MUA) DUCT INTO HOOD W/MVD, 875 CFM
18. 12"x24" MAKE-UP AIR (MUA) DUCT INTO HOOD W/MVD, 640 CFM
19. 26"x22"(L) MAKE-UP AIR (MUA) DUCT UTR TRANSITION TO 19"x22"(L) TO MUA-1, 3350 CFM
20. 36"x24"(L) MAKE-UP AIR (MUA) DUCT UTR TRANSITION TO 24"x24"(L) TO MUA-2, 7940 CFM
21. 14"x14" ALUMINUM DUCT TO DISHWASHER EXHAUST HOOD P.O.C., 1400 CFM
22. 16"x16" ALUMINUM DUCT UTR TO EF-2, 1400 CFM @ 788 FPM
23. ALL JOINTS AND SEAMS OF 20 GA. ALUMINUM DISHWASHER DUCT TO BE SEALED WITH SILICONE, DUCTWORK TO SLOPE BACK TOWARDS HOOD
24. 34"x26-3/4"(L) SUPPLY AND 46-7/8"x12-5/8"(L) RETURN AIR DUCT UTR TO AC-1
25. 34"x26-3/4"(L) SUPPLY AND 46-7/8"x12-5/8"(L) RETURN AIR DUCT UTR TO AC-3 TO BE OUTSIDE OF SOFFIT
26. 34"x26-3/4"(L) SUPPLY AND 46-7/8"x12-5/8"(L) RETURN AIR DUCT UTR TO AC-2
27. 34"x26-3/4"(L) SUPPLY AND 46-7/8"x12-5/8"(L) RETURN AIR DUCT UTR TO AC-4
28. 70"x20" (L) RETURN AIR DUCT, OPEN ON BOTH ENDS; SEE DETAIL #7 SHEET M1.1
29. 12"ø EXHAUST AIR DUCT UTR TO EF-7
30. THERMAL PLAQUE DIFFUSER SEPARATELY ADJUSTABLE SET POINT FOR VAV HEATING AND COOLING, SURFACE-MOUNTED W/TBPF
31. 6"ø EXHAUST AIR DUCT UTR
32. FIREPLACE VENT, TO TERMINATE OUTSIDE THE BUILDING; SHALL BE A MINIMUM 10'-0" CLEARANCE FROM OSA INTAKE OR OPENING INTO THE BUILDING (BY OTHERS)
33. RE-CONFIGURE CORE FOR 3-WAY PATTERN TO THROW AIR AWAY FROM THE HOOD
34. CAPTIVEAIRE UTILITY CABINET
35. SEE SHEET M1.1, DIFFUSER DETAIL #6; TO BE MOUNTED AS HIGH AS POSSIBLE
36. 38"x20"(L) RETURN AIR DUCT, OPEN ON END; SEE DETAIL #7 SHEET M1.1
37. AS HIGH AS POSSIBLE ,TIGHT TO UNDERSIDE OF STRUCTURE.
38. GRILLS LOCATED ON BOTTOM EDGE OF DUCT
39. BOTTOM OF GRILLE HEIGHT @ 17'-1" AFF. SEE DETAIL #5/M1.1
40. TIGHT TO UNDERSIDE OF STRUCTURE

GENERAL NOTES

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NORTH

MECHANICAL FLOOR PLAN — SCALE 1/4" = 1'-0" (1)

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Stamp and Signature



Sanya Phatcharakiti, License No.M35663
Expiration Date: 09/30/2019

Issuance

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01/15/2018	☒	PLAN CHECK SUBMITTAL
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Revision

Date	No.	Description
03/06/2018	1	BULLETIN 2 - BID ADDENDUM
04/26/2018	2	BULLETIN 3

Project Name and Location

NEWPARK MALL
3100 NEWPARK MALL
NEWARK, CA 94560

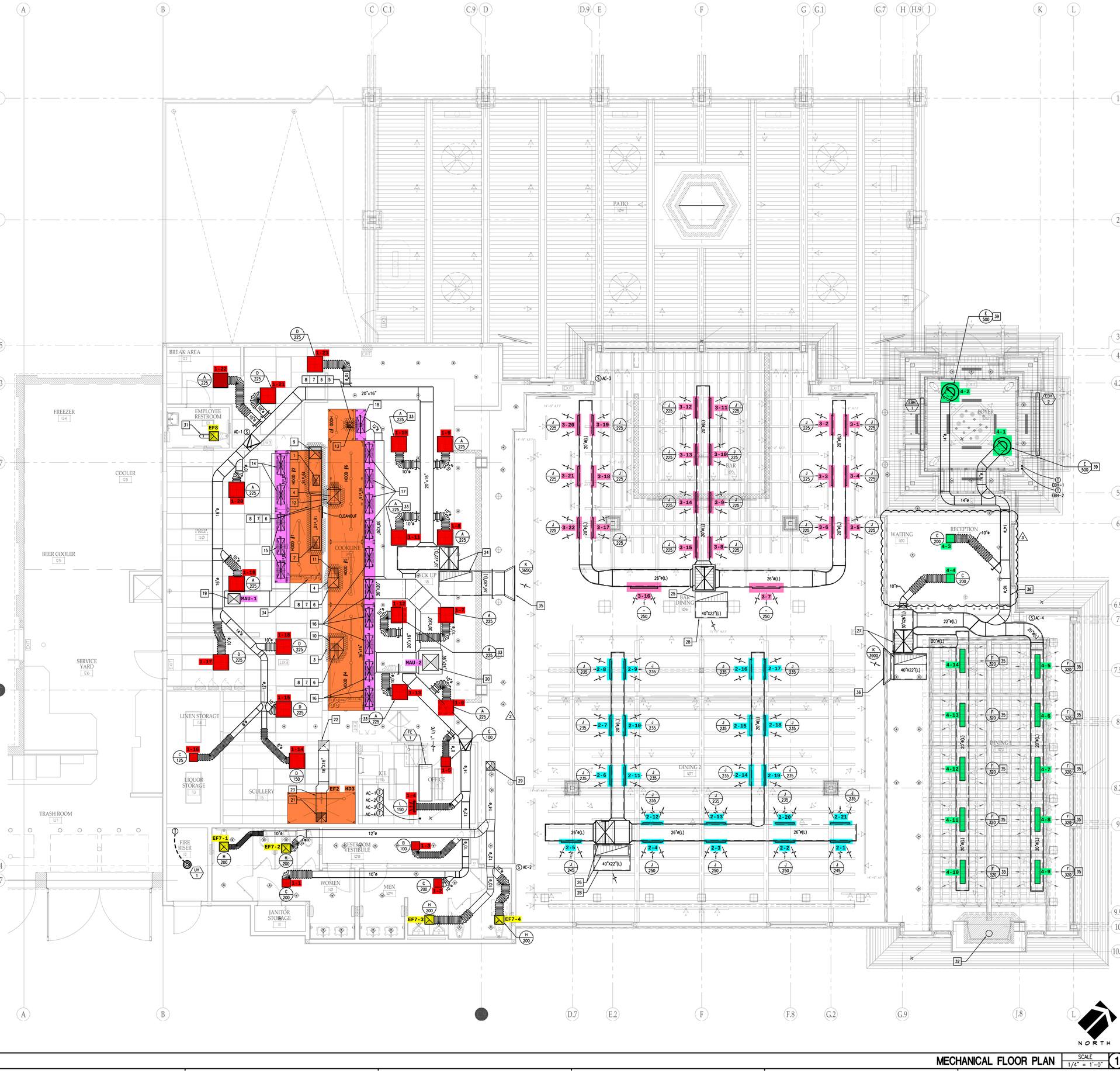
Sheet Title

MECHANICAL FLOOR PLAN

Project No.: 235-016 Sheet No.: M2.0

Print Date: April 26, 2018

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NORTH

MECHANICAL FLOOR PLAN — SCALE 1/4" = 1'-0" (1)

Consultant

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Stamp and Signature



Sanya Phatcharakitti, License No.M35663
Expiration Date: 09/30/2019

Issuance

Date		Description
	☐	COORDINATION SET
01/15/2018	☒	PLAN CHECK SUBMITTAL
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02/09/2018	☒	ISSUED FOR BID
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Revision

Date	No.	Description
03/06/2018	1	BULLETIN 2 - BID ADDENDUM
04/26/2018	2	BULLETIN 3

Project Name and Location

NEWPARK MALL
3100 NEWPARK MALL
NEWARK, CA 94560

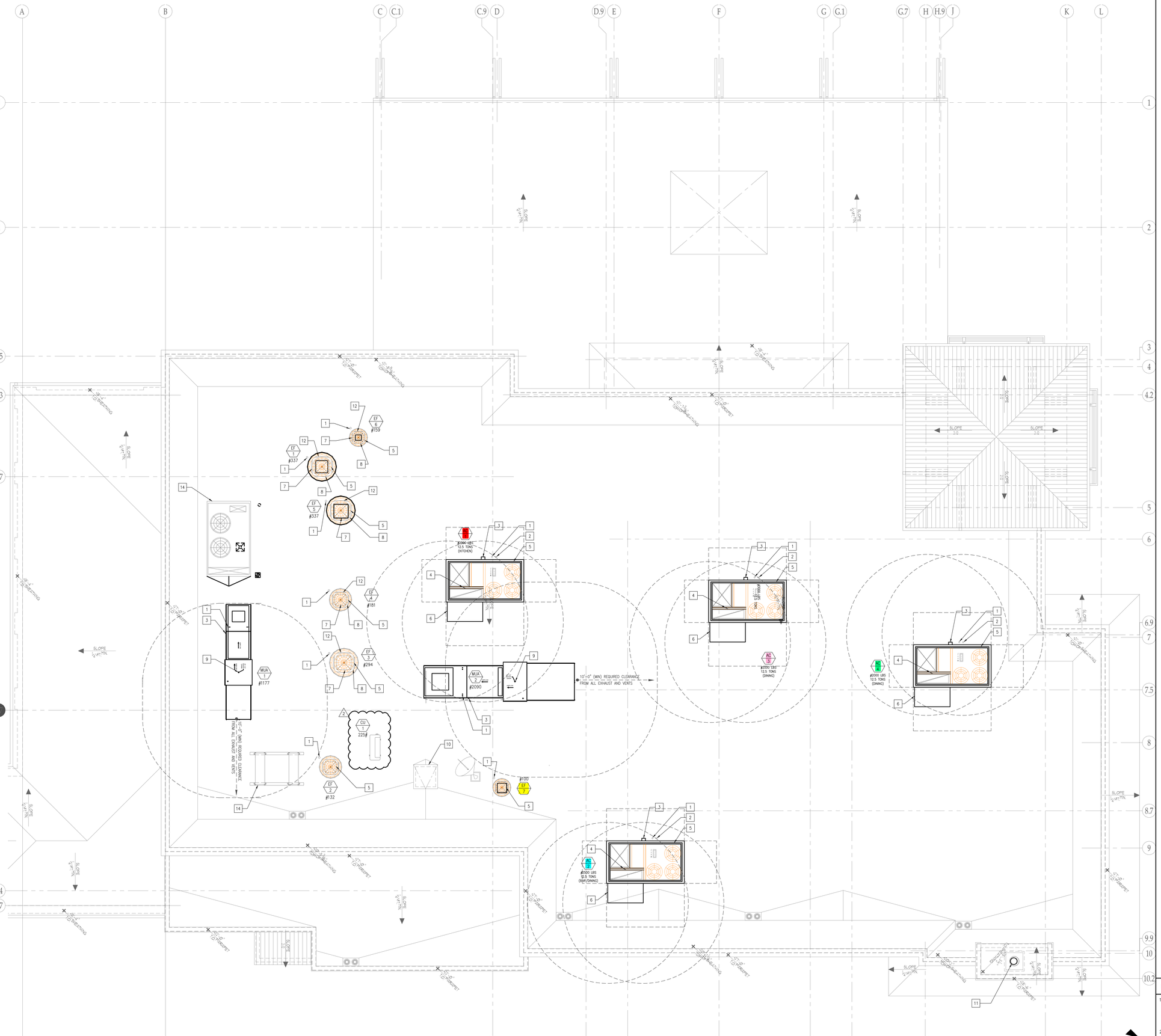
Sheet Title

MECHANICAL FLOOR PLAN

Project No.: 235-016 Sheet No.: M2.0

Print Date: April 26, 2018

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PLAN NOTES

1. LINE VOLTAGE CONDUIT AND WIRING CONNECTION TO EQUIPMENT BY ELECTRICAL CONTRACTOR.
2. LOW VOLTAGE CONDUIT AND WIRING CONNECTION TO EQUIPMENT BY ELECTRICAL CONTRACTOR.
3. GAS PIPING STUB-UP LOCATION AND CONNECTION TO EQUIPMENT BY THE PLUMBING CONTRACTOR COMPLETE WITH DIRT LEG AND SHUT-OFF VALVE.
4. 3/4" TRAPPED AND VENTED CONDENSATE DRAIN PIPE WITH DISCHARGE TO AN APPROVED RECEPTOR BY THE PLUMBING CONTRACTOR.
5. FACTORY CURB, FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR, LEVELED BY THE GENERAL CONTRACTOR, SEE DETAIL #2/M1.1.
6. INDICATES FACTORY ECONOMIZER OSA INTAKE OR MINIMUM OSA WEATHER HOOD WITH BACKDRAFT DAMPER, MANUAL VOLUME DAMPER AND BIRDSCREEN, AS APPLICABLE.
7. INDICATES "GREASE EXHAUST DUCT CLEAN-OUT" ACCESS.
8. INDICATES APPLICATION OF 2-LAYERS OF E-2336 COMPLIANT FIRE RATED GREASE EXHAUST DUCT "FIREWRAP", SEE SHEET M1.1.
9. 1-1/2" WATER DRAIN PIPE DISCHARGE TO VISIBLE LOCATION BY PLUMBING CONTRACTOR.
10. ROOF ACCESS.
11. FIREPLACE FLUE VENT, TERMINATE A MINIMUM 10'-0" CLEARANCE FROM OSA INTAKE OR OPENINGS INTO THE BUILDING (BY OTHERS).
12. GREASE CATCH BASIN, SEE DETAIL #4/SHEET M1.1.
13. 6"ø EXHAUST AIR DUCT FROM BELOW, TERMINATE WITH FACTORY ROOF CAP.
14. REFRIGERATION EQUIPMENT BY OTHERS.

GENERAL NOTES

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MECHANICAL ROOF PLAN — SCALE 1/4" = 1'-0" — 1

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Revision

Date	No.	Description
03/06/2018	1	BULLETIN 2 - BID ADDENDUM

Project Name and Location

NEWPARK MALL
3100 NEWPARK MALL
NEWARK, CA 94560

Lazy Dog Cafe

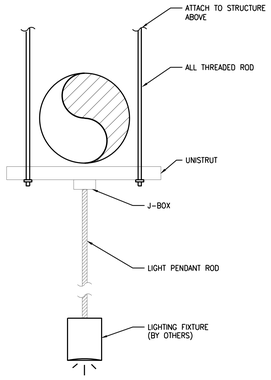
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MECHANICAL ROOF PLAN

Project No.: 235-016 — Sheet No.: M3.0

Print Date: March 6, 2018

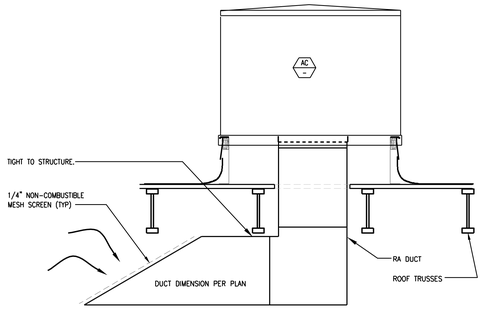
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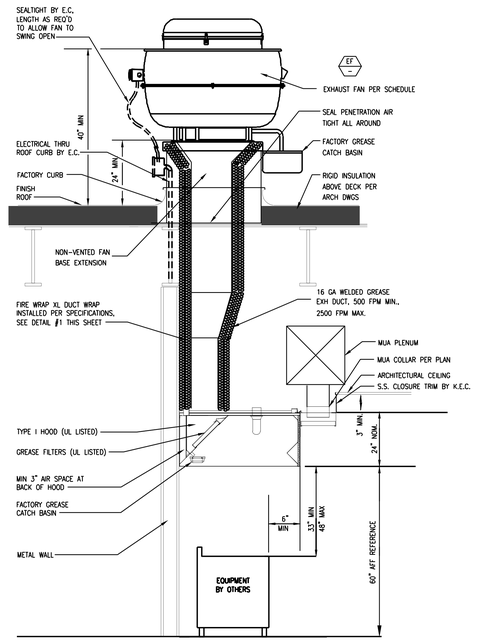
NOTE:

PLACEMENT OF DUCTWORK HAS BEEN COORDINATED WITH LIGHTING LAYOUT. IF DUCTWORK IS NOT INSTALLED PER PLAN AND IN CONFLICT WITH LIGHT FIXTURE, THIS PENDANT DETAIL CAN BE USED

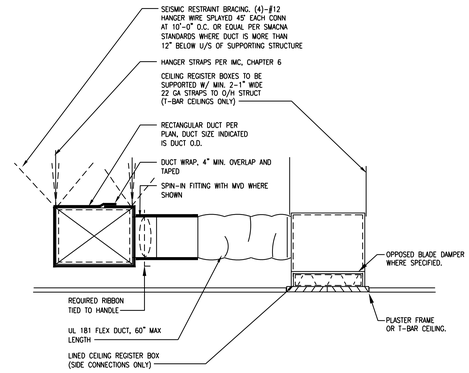
LIGHT PENDANT DETAIL | SCALE NONE | 9



RETURN DUCT PLENUM SUPPORT DETAIL | SCALE NONE | 7

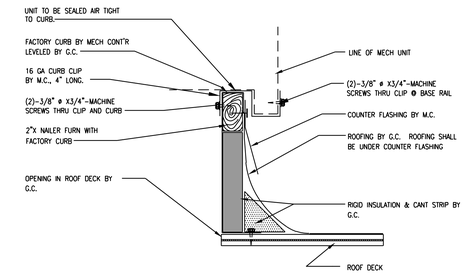


SECTION THROUGH GREASE EXHAUST HOOD | SCALE NONE | 4



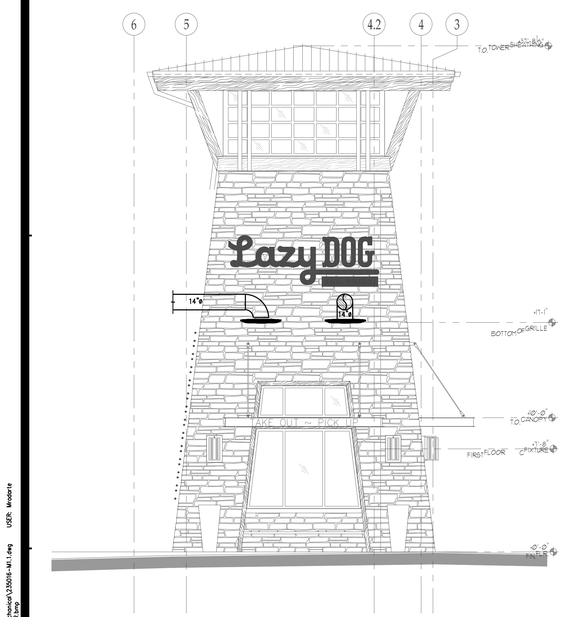
NOTES:
PROVIDE ELECTRONIC OR CABLE DAMPER ASSEMBLY FOR LOCATIONS OVER HARD-LID CEILINGS

DUCT/PLENUM SUPPORT DETAIL | SCALE NONE | 3

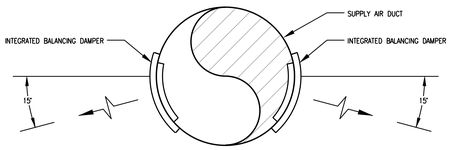


NOTE: PROVIDE 4 CURB CLIP ASSEMBLIES, ONE AT EACH CORNER.

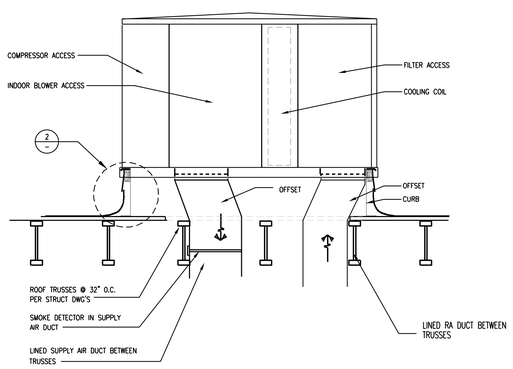
FACTORY ROOF CURB DETAIL | SCALE NONE | 2



BOTTOM OF GRILL SECTION @ FOYER | SCALE NONE | 8



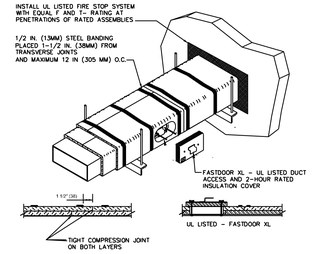
ROUND DIFFUSERS DETAIL | SCALE NONE | 6



DUCT PLENUM DETAIL | SCALE NONE | 5

FIRE RATED ENCLOSURE - GREASE DUCTS

1. THERMAL CERAMICS FIREMASTER FASTWRAP XL OR PYROSCAT XL IS TESTED TO ASTM E2336 AND UL LISTED PER HWKT.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 2215 OR ESR 2830.
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 18 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 SYSTEMS.
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.

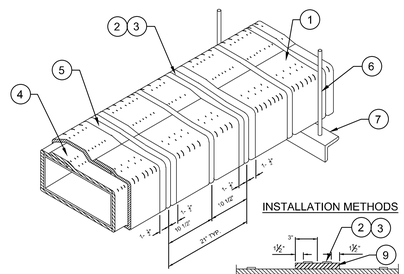


Thermal Ceramics

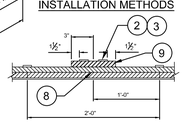
FireMaster® FastWrap XL

Commercial Kitchen Grease Duct System
1 or 2 Hr Shaft Alternative
Zero Clearance to Combustibles

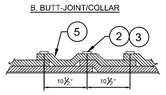
	LEGEND
1	Two Layers FireMaster FastWrap XL Blanket
2	Filament Tape
3	Steel Banding ½"Wide Min.
4	Min. 3"Perimeter Overlap
5	Min. 3"Longitudinal Overlap
6	Min. 3/8"Diameter Hanger Rod
7	1-1/2"X1-1/2"X1/8"Angle
8	Firmly Butted Joint
9	6"Wide Ductwrap XL Collar



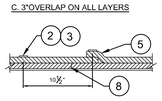
INSTALLATION METHODS



B. BUTT-JOINT/COLLAR



C. 3"OVERLAP ON ALL LAYERS



A. BUTT-JOINT/3"OVERLAP



Morgan ThermalCeramics

FireMaster® FastWrap® XL

Datasheet Code: US: 7-14-236 MSDS Code: US: 406

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Grease Duct Enclosure System
Air Ventilation Duct Enclosure System
Product Data & Installation Guide

1. Product Description

FireMaster® FastWrap XL is a flexible blanket composed of high temperature fibers classified for applications to 2192°F (1200°C) and fully encapsulated in a durable glass fiber reinforced foil facing for easy handling and installation. FastWrap XL is UL and ULC Listed for 1 and 2 hour fire resistance rated enclosures for horizontal and vertical kitchen exhaust ducts, electrical circuit protection, and as a component in UL firestop designs for fire resistance rated floors, ceilings, and walls. The core fibers in FastWrap XL are manufactured using Morgan Thermal Ceramics patented Supercwool® fiber which is an alkaline-earth silicate wool with low biopersistence and therefore increased safety for installers. FastWrap XL is uncer UL's Follow-Up Service Program to ensure the consistent quality essential to this life-safety application.

Product Features

- Thin and Lightweight at 1-1/2" (38mm) thick, 6 pcf (96 kg/m³) density
- Contours easily to complex duct designs
- Grease duct enclosure UL Listed with butt joints at all seams on both layers
- Fully foil encapsulated for fast and clean installation
- Contains 2192°F (1200°C) rated fibers
- GreenGuard Microbial Resistance Listing
- Good sound absorption
- Compliant to IMC, NFPA 96, UMC, CMC

2. Applications

- 1 and 2 hour enclosure and firestop system for kitchen exhaust ducts
- Zero clearance to combustibles for kitchen exhaust ducts
- 1 and 2 hour enclosure and firestop system for hazardous exhaust ducts, pressurization ducts, clothes dryer exhaust ducts, trash and linen chutes, and other fire rated HVAC ducts
- 1 hour electrical circuit integrity protection
- Engineered and tested solutions for fire protection of structural steel and storage vessels per ASTM E119, ISO 834, and UL1709

3. Specifications - Division 23 07 00 (or 15080)

CSI Spec and AutoCAD available online, www.ural.com/cl/clients/thermocer.html.

FireMaster FastWrap XL is a flexible high temperature insulation rated to 2192°F (1200C) that is fully encapsulated in FSP facing. The duct enclosure system shall be listed by UL per ASTM E 2336 and ISO 6944 for 1-, 2- and 3-hour rating and zero clearance to combustibles, and tested per ASTM E84 for a flamespread index of 25 and a SMOKE index. Insulation shall have a nominal thickness of 1.5 inches (38 mm) and density of 6 lbs/ft³ (96 kg/m³). Insulation shall have a R-Value of 7.3 at 75 F. Installation shall be in strict accordance to manufacturers published installation instructions, UL Listings, and shop drawings. FireMaster FastDoor XL shall be used for duct access where specified or as required by code.

CLASSIFIED UL ULC IC IES

UL CLAIMS MEMBER

"Commonly referred to test method UA Section 01350 is CGFI's Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers" Version 1.1, Feb 2010

www.morganthermalceramics.com

THERMAL CERAMICS FIREMASTER FASTWRAP DETAIL | SCALE NONE | 1

Consultant

CRO ENGINEERING GROUP, INC.
Mechanical | Electrical | Plumbing

18652 FLORIDA STREET, SUITE 100
HUNTINGTON BEACH, CA 92648
PHONE: 714-847-7100
FAX: 714-841-6000
WWW.CROEG.COM

DRAWINGS, SPECIFICATIONS, IDEAS, DESIGNS, AND ARRANGEMENTS REPRESENTED THEREIN ARE AND SHALL REMAIN THE PROPERTY OF THE ARCHITECT. NO PART THEREOF SHALL BE REPRODUCED, COPIED, ADAPTED, DISCLOSED, DISTRIBUTED, SOLD, PUBLISHED OR USED WITHOUT PRIOR WRITTEN CONSENT OF AND APPROPRIATE COMPENSATION TO THE ARCHITECT. VISUAL CONTACT WITH THE ABOVE DRAWINGS OR SPECIFICATIONS SHALL CONSTITUTE CONCLUSIVE EVIDENCE OF ACCEPTANCE OF THESE RESTRICTIONS.

Stamp and Signature



Sanya Phatcharokh, License No.M35663
Expiration Date: 09/30/2019

Issuance

Date		Description
	☐	COORDINATION SET
01/15/2018	☒	PLAN CHECK SUBMITTAL
	☐	HEALTH DEPARTMENT SUBMITTAL
	☐	ISSUED FOR BID
	☐	ISSUED FOR CONSTRUCTION

Revision

Date	No.	Description

Project Name and Location

NEWPARK MALL
3100 NEWPARK MALL
NEWARK, CA 94560

Sheet Title

MECHANICAL DETAILS

Project No.: 235-016 Sheet No.:

M1.1

Print Date: February 9, 2018

DWG: S:\cro\work\235-016_Lazy Dog\235-016_Lazy Dog_Newpark Mall_Newark, CA\Mechanical\235016-M1.1.dwg
DATE: Feb 09, 2018 - 2:52pm USER: Mcdonnell

ELECTRICAL PACKAGES – Job#3204055

NO.	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED				
				LOCATION	QUANTITY		FAN TAG	TYPE	ϕ	H.P.	VOLT	F.L.A
1		SC-311110FP-SEP	Utility Cabinet Right	04 - Utility Cabinet Right	1 Light	Smart Controls Thermostatic Control	EF-1	Exhaust	3	3.000	208	9.5
				Hood # 2	1 Fan		MUA-1	Supply	3	5.000	208	15.0
2		SC-341110FP-SEP	Utility Cabinet Left	03 - Utility Cabinet Left	1 Light	Smart Controls Thermostatic Control	EF-3	Exhaust	3	2.000	208	5.9
							EF-4	Exhaust	3	1.000	208	3.4
							EF-5	Exhaust	3	3.000	208	9.5
				Hood # 4	1 Fan		EF-6	Exhaust	3	0.500	208	1.9
							MUA-2	Supply	3	5.000	208	15.0

JOB NO 3204055 | MODEL NUMBER SC-311110FP-SEP | JOB NAME Lazy Dog Restaurant & Bar - N... | DRAWN BY | DATE 10/2/18 | ENGINEERING NOTE INSTALL | ISSUED FOR ECP #1-1

DESCRIPTION OF OPERATION:
3 Phase air cooled 54 t Exhaust Fan, 1 Supply Fan, Exhaust is in Fire, Lights out in Fire, Packs On/Off Thermostatically Controlled, Separate Breaker Input for each Fan. Room temperature sensor mounted knee for field installation. INVERTER DUTY 3 PHASE MOTOR REQUIRED FOR USE WITH VFD.

BREAKER PANEL TO PRIMARY CONTROL PANEL
Responsibility: Electrician
BREAKER SIZE SHOWN IS THE MAXIMUM ALLOWED

BREAKER PANEL — PRIMARY CONTROL PANEL

- BREAKER 1PH 120 V 15 A — CONTROL POWER. DO NOT WIRE TO SHUNT TRIP BREAKER. SET HOOD LIGHT BREAKER SHARED W/ CONTROL POWER, SWITCH #1
- BREAKER 3PH 208 V — MCA: 11.9 A, MOCP: 20 A — EF-1
- BREAKER 3PH 208 V — MCA: 19.8 A, MOCP: 30 A — MUA-1

CONTROL PANEL TO FANS
Responsibility: Electrician

PRIMARY PANEL — FANS

- Load Wiring ST-1 WIRE DIRECT TO STARTER — FAN: 03 — EF-3 — WIRE TO DISCONNECT
- Load Wiring ST-2 WIRE DIRECT TO STARTER — FAN: 07 — MUA-1 — WIRE TO FACTORY PROVIDED CONDUIT DROP

CONTROL PANEL TO ACCESSORY ITEMS
Responsibility: Electrician

CONTROL PANEL — COMPONENT

- CONTROL PANEL TO FIRE SYSTEM MICROSWITCH — WIRE RTN TO MICROSWITCH. WIRE ART TO NORMALLY CLOSED (2). C1 TO MS1 SHOULD HAVE CONTINUITY WHEN ARMED. — MICROSWITCH 1 — MS1 NO NC
- IF MORE THAN ONE FIRE SYSTEM MS IN SERIES AS SHOWN — MS2 NO NC
- CONTROL PANEL TO SWITCHES — ALL SWITCHES FACTORY WIRED. CAT-5 CONNECTION.
- CONTROL PANEL TO HOOD LIGHTS 1400 W MAX — WIRE TO J-BOX ON TOP OF HOOD — HOOD LIGHTS 1 — BLACK, WHITE, GREEN
- CONTROL PANEL TO KITCHEN TEMP SENSOR — WIRE TO CONTROL (CAT-5). SENSOR IN ROOM AWAY FROM HEAT SOURCES. DO NOT INSTALL SENSOR ON THE CEILING GRID. SEE MANUAL. — ROOM TEMP
- CONTROL PANEL TO DUCT SENSOR — FACTORY WIRED TEMPERATURE SENSOR, MOUNTED IN EXHAUST DUCT — HOOD 1 RISER 1
- CONTROL PANEL TO DUCT SENSOR — WIRE TO CONTROL (CAT-5). SENSOR MOUNTED IN EXHAUST DUCT — HOOD 2 RISER 1
- CONTROL PANEL TO CAPTURE VOLUME SENSOR — WIRE TO CONTROL (CAT-5). SENSOR MOUNTED IN HOOD CAPTURE VOLUME. — HOOD CAPTURE 1
- CONTROL PANEL TO GAS VALVE 120V ONLY — HOT TO GAS VALVE. RETURN FROM GAS VALVE. — GAS SOLENOID — ONLY ENERGIZED THROUGH LCD HMI WHEN FIRE SYSTEM ARMED.
- CONTROL PANEL SIGNAL FOR EXTERNAL SHUNT TRIP — HOT TO SHUNT COIL. RETURN FROM SHUNT COIL. — SHUNT COIL — ST TERMINAL IS ENERGIZED IN FIRE CONDITION.
- CONTROL PANEL SPARE FIRE SYSTEM DRY CONTACT — COMMON. NORMALLY OPEN. — SPARE DRY CONTACT WHICH CLOSES WHEN SYSTEM IS ARMED. THESE ARE USED TO DISABLE EQUIPMENT DURING A FIRE. THE FIRE ALARM BUILDING FIRE ALARM WHICH MUST BE WIRED DIRECT, TO THE AHJ'S ALARM INITIATING SWITCH LOCATED IN KNELL AUTOMAT. — BMS SWITCH
- CONTROL PANEL TO EXTERNAL SWITCH — SIGNAL SWITCH THROUGH BMS (FBL) ACTIVATE ZONE'S FANS AND LIGHTS

FROM CAPTIVE AIRE CONTROL PANEL NORMALLY OPEN CONTACTS CLOSE DURING HOOD OPERATIONS TURNING ON AC SUPPLY FANS MAINTAINING BUILDING PRESSURE.

JOB NO 3204055 | MODEL NUMBER SC-341110FP-SEP | JOB NAME Lazy Dog Restaurant & Bar - N... | DRAWN BY | DATE 10/2/18 | ENGINEERING NOTE INSTALL | ISSUED FOR ECP #2-1

DESCRIPTION OF OPERATION:
3 Phase air cooled 54 t Exhaust Fan, 1 Supply Fan, Exhaust is in Fire, Lights out in Fire, Packs On/Off Thermostatically Controlled, Separate Breaker Input for each Fan. Room temperature sensor mounted knee for field installation. INVERTER DUTY 3 PHASE MOTOR REQUIRED FOR USE WITH VFD.

BREAKER PANEL TO PRIMARY CONTROL PANEL
Responsibility: Electrician
BREAKER SIZE SHOWN IS THE MAXIMUM ALLOWED

BREAKER PANEL — PRIMARY CONTROL PANEL

- BREAKER 1PH 120 V 15 A — CONTROL POWER. DO NOT WIRE TO SHUNT TRIP BREAKER. SET HOOD LIGHT BREAKER SHARED W/ CONTROL POWER, SWITCH #1
- BREAKER 3PH 208 V — MCA: 7.4 A, MOCP: 15 A — EF-3
- BREAKER 3PH 208 V — MCA: 42 A, MOCP: 15 A — EF-4
- BREAKER 3PH 208 V — MCA: 11.9 A, MOCP: 20 A — EF-5
- BREAKER 3PH 208 V — MCA: 2.4 A, MOCP: 15 A — EF-6
- BREAKER 3PH 208 V — MCA: 19.8 A, MOCP: 30 A — MUA-2

CONTROL PANEL TO FANS
Responsibility: Electrician

PRIMARY PANEL — FANS

- Load Wiring ST-1 WIRE DIRECT TO STARTER — FAN: 03 — EF-3 — WIRE TO DISCONNECT
- Load Wiring ST-2 WIRE DIRECT TO STARTER — FAN: 04 — EF-4 — WIRE TO DISCONNECT
- Load Wiring ST-3 WIRE DIRECT TO STARTER — FAN: 05 — EF-5 — WIRE TO DISCONNECT
- Load Wiring ST-4 WIRE DIRECT TO STARTER — FAN: 06 — EF-6 — WIRE TO DISCONNECT
- Load Wiring ST-5 WIRE DIRECT TO STARTER — FAN: 08 — MUA-2 — WIRE TO FACTORY PROVIDED CONDUIT DROP

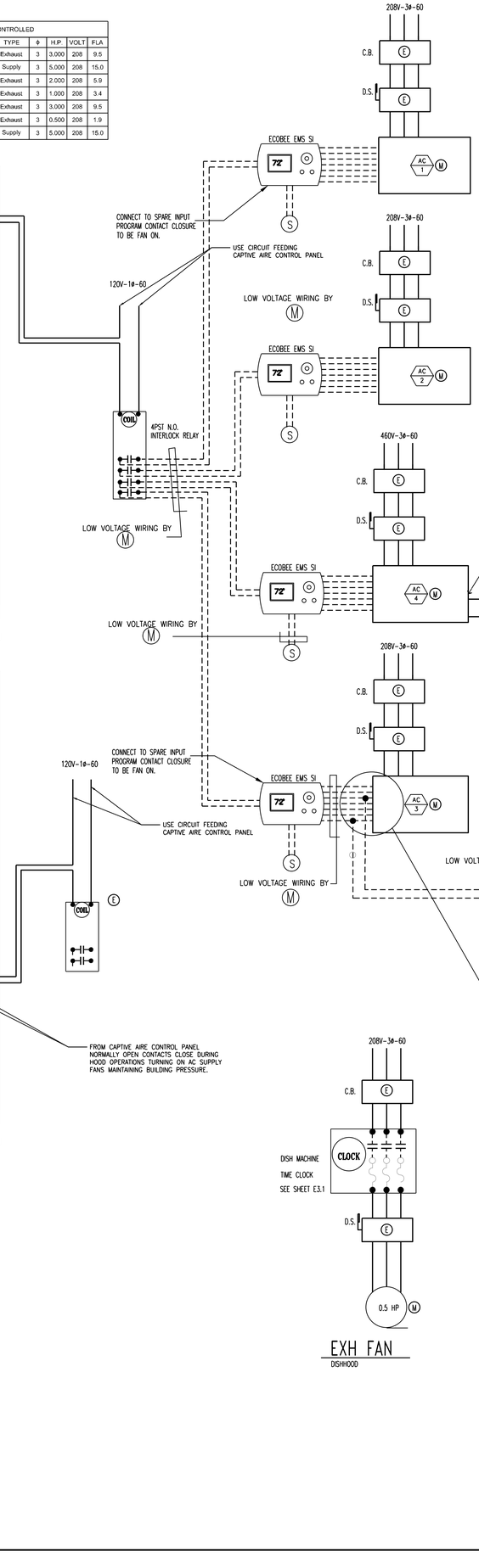
CONTROL PANEL TO ACCESSORY ITEMS
Responsibility: Electrician

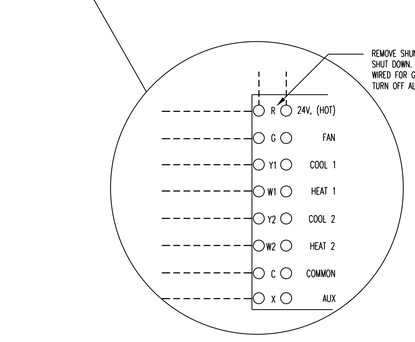
CONTROL PANEL — COMPONENT

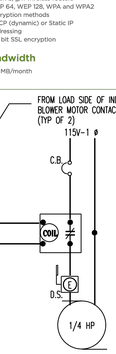
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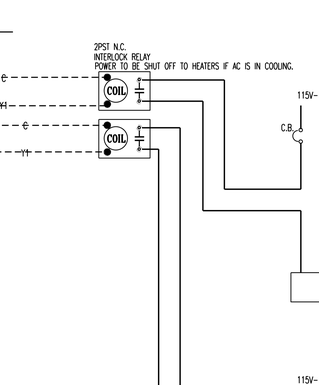
ELECTRICAL CONTRACTOR

1) SYMBOLS
   - ———— LINE VOLTAGE WIRING, IN CONDUIT (BY E.C.)
   - – – – – – LOW VOLTAGE WIRING, IN CONDUIT (BY M.C.)
   - (E) – ITEMS FURNISHED AND INSTALLED BY E.C.
   - (EM) – ITEMS FURNISHED & WIRED BY E.C. AND INSTALLED BY MECHANICAL CONTRACTOR
   - (M) – ITEMS FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR
2) FURNISH & INSTALL ALL LINE VOLTAGE CONDUIT AND LINE VOLTAGE WIRING INCLUDING FINAL CONNECTIONS
3) FURNISH & INSTALL ALL LOW VOLTAGE CONDUIT AND LOW VOLTAGE WIRING INCLUDING FINAL CONNECTIONS (M.C.) (LOW VOLTAGE DEFINED AS 24 VOLT CONTROL WIRING)
4) FURNISH & INSTALL ALL FUSES AND CIRCUIT BREAKERS
5) FURNISH & INSTALL ALL MAGNETIC STARTERS, TIMECLOCKS, CONTACTORS, LINE VOLTAGE STATS, RELAYS & SWITCHES.
6) THE WIRING DIAGRAMS ARE SCHEMATIC, INTENDED TO SHOW SEQUENCE AND METHOD OF OPERATION. ALL ELECTRICAL WORK TO COMPLY WITH ALL LOCAL AND STATE CODES.
7) THE FINAL CONNECTIONS TO EQUIPMENT TO BE RAN IN FLEXIBLE CONDUIT (SEALTITE OR EQUAL).
8) THERMOSTATS TO BE MOUNTED @ + 78" AFF, U.N.O., (VERTICAL BOX)
9) ALL LOW VOLTAGE WIRING TO BE #16 GA. STRANDED, U.N.O.
10) DISCONNECTS PROVIDED BY LAZY DOG











ecobee EMS Si

Tech specs

Compatibility
- Conventional (2H/2C) incl. 1-stage auxiliary heat
- Heat pump (3H/2C) incl. 1-stage auxiliary heat
- Gas, oil, electric
- Dual fuel

Wire terminals
- R2-
- R2+
- R1-
- R1+
- W2 AUX
- Y2
- C
- R+
- R-
- G
- W O/B
- Y

Powering method
24VAC (3VA minimum)

Power consumption
Less than 3.5VA

Connectivity & security
ecobee uses the latest encryption technologies to ensure that data is protected both in transmission and network access. The ecobee EMS Si is designed to support:
- 802.11 b/g/n wireless routers
- WEP 64, WEP 128, WPA and WPA2 encryption methods
- DHCP (dynamic) or Static IP addressing
- 168 bit SSL encryption

Bandwidth
15-20 MB/month

Green
- Recyclable packaging
- Mercury free
- Arsenic free
- PVC free
- ROHS compliant

Temperature range
Set point: 45° to 92°F (7°to 33°C)
Display: 40° to 100°F (5° to 37°C)
Sensitivity: +/- 1°F (+/- 0.5°C)
Operating: 32° to 130°F (0° to 55°C)

Humidity range
Display: 20% to 90% RH
Sensitivity: +/- 5% RH
Operating: 5% to 95% RH (non-condensing)

Automation
Two dry contact inputs and/or 10K resistive temp sensors that can be programmed to:
- Adjust the heat and or cool set temperatures
- Switch the system to occupied or unoccupied mode
- Shut down the compressor
- Shut down AC
- Turn fan on
- Disable auxiliary heat
- Disable all heat

Mechanical specifications
- Easy to access battery compartment
- Decorative trim plate included
- 94V0 (flame resistant) plastic

What's in the box
- ecobee EMS Si Thermostat
- Installation Manual

Additional features
- Fahrenheit or Celsius display
- 365 day scheduling
- Automatic daylight saving time adjustment
- Adjustable Auto change-over dead-band
- Installer programmable options including:
  - Heat and cool differential temperature
  - Minimum compressor off time
  - Heat and cool fan dissipation time
  - Display temperature offset
- Outdoor temperature detection (requires internet connection)
- Reminders & alerts on screen or via email

Product Dimensions
Height: 3.25 in / 82.5 mm
Width: 5.5 in / 139.5 mm
Depth: 1 in / 25 mm

Warranty
3-year warranty

Languages
English

Display
2.5" full-color LCD non-touch screen
320 x 240 pixel display

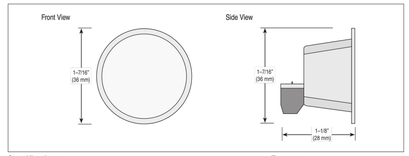
Learn more at ecobee.com.
support@ecobee.com | 1.877.932.6233

tekmar® Submittal
Indoor Sensor 084

Accessories | C084 01/11 | Replaces: New

Job _____ Designer _____ Contact _____

The Indoor Sensor 084 mounts flush or nearly flush to the wall to give an unobtrusive look and act as a hidden indoor sensor. Since the sensor material is corrosion resistant, drywall installers are able to mud over the sensor, or the 084 can be painted to match the existing wall color. The 084 can be connected to a tekmar thermostat for remote temperature sensing.



Specifications

Indoor Sensor 084	
Literature	D084
Packaged weight	0.1 lbs (50g)
Dimensions	1-7/16" OD x 1-1/8" D (36 OD x 28 mm D)
Enclosure	White PC-ABS plastic
Approvals	CSA C US
Operating range	Indoor use only, -60 to 140°F (-51 to 60°C), RH < 90% Non-condensing
Sensor	NTC thermistor, 10 kΩ @ 77°F (25°C ±0.2°C) B=3892
Warranty	Limited 3 Year (See D084 for full warranty)

Features
- 10K thermistor
- Hidden indoor sensing
- Compatible with tekmar thermostats that support auxiliary sensors

Temperature vs. Resistance

Temperature °F	Temperature °C	Resistance Ω	Temperature °F	Temperature °C	Resistance Ω	Temperature °F	Temperature °C	Resistance Ω	Temperature °F	Temperature °C	Resistance Ω
-40°	-40°	336,479	68°	20°	12,493	176°	80°	1,255	284°	140°	235
-31°	-35°	242,681	77°	25°	10,000	185°	85°	1,070	293°	145°	208
-22°	-30°	176,974	86°	30°	8,057	194°	90°	915	302°	150°	186
-13°	-25°	130,421	95°	35°	6,531	203°	95°	786	311°	155°	166
-4°	-20°	97,081	104°	40°	5,326	212°	100°	678	320°	160°	148
5°	-15°	72,957	113°	45°	4,368	221°	105°	587	329°	165.°	133
14°	-10°	55,329	122°	50°	3,602	230°	110°	510	338°	170°	119
23°	-5°	42,327	131°	55°	2,986	239°	115°	445	347°	175°	107
32°	0°	32,650	140°	60°	2,488	248°	120°	389	356°	180°	97
41°	5°	25,392	149°	65°	2,083	257°	125°	341	365°	185°	87
50°	10°	19,901	158°	70°	1,752	266°	130°	301	374°	190°	79
59°	15°	15,713	167°	75°	1,480	275°	135°	265	383°	195°	72

SPECIAL REQUIREMENTS
N / A

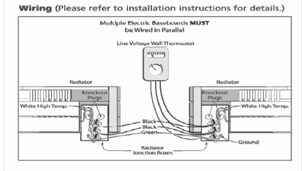
tekmar Control Systems
tekmar Control Systems Ltd., Canada, tekmar Control Systems, Inc., U.S.A. **Head Office: 5100 Silver Star Road, Vernon, B.C. Canada V1B 3K4, 250-545-7749, Fax. 250-545-0650 Web Site: www.tekmarcontrols.com**

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1 of 1

All specifications are subject to change without notice. Printed in Canada. C084 - 01/11.

Wiring (Please refer to installation instructions for details.)



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PROFESSIONAL ENGINEER — No. M35663 Exp. 09-30-19 — MECHANICAL — STATE OF CALIFORNIA

Sonya Pracharakiti, License No.M35663
Expiration Date: 09/30/2019

Issuance

Date		Description
	☐	COORDINATION SET
01/15/2018	☒	PLAN CHECK SUBMITTAL
	☐	HEALTH DEPARTMENT SUBMITTAL
	☐	ISSUED FOR BID
	☐	ISSUED FOR CONSTRUCTION

Revision

Date	No.	Description

Project Name and Location

NEWPARK MALL
3100 NEWPARK MALL
NEWARK, CA 94560

Sheet Title

CONTROL DIAGRAM

Project No.: 235-016 Sheet No.:

M1.2

Print Date: February 9, 2018

DWG: S:\Jobs\235-Lazy Dog\235-016-Lazy Dog_Newpark Mall, Newark, CA\Mechanical\235016-M1.2.dwg
Date: Feb 09, 2018 - 11:52am USER: Mcdonte

HOOD INFORMATION – Job#3204055

HOOD NO.	TAG	MODEL	LENGTH	MAX. COOKING TEMP.	EXHAUST PLENUM RISER(S) TOTAL EXH. CFM	WIDTH	LENG.	HEIGHT	DIA.	CFM	VEL.	S.P.	TOTAL SUPPLY CFM	HOOD CONSTRUCTION	HOOD CONFIG. END TO END	ROW
1	52	5424 ND-2-PSP-F	7' 6"	600 Deg.	1800	10"	16"	4"		1800	1620	-0.720"	1550	430 SS Where Exposed	LEFT	ALONE
2	52	5424 ND-2-PSP-F	8' 4"	600 Deg.	2000	10"	18"	4"		2000	1600	-0.726"	1800	430 SS Where Exposed	RIGHT	ALONE
3	77	4824 VHB-Q-ND-REM1	8' 8"	700 Deg.	1400	14"	14"	4"		1400	1029	-0.119"	0	304 SS 100%	ALONE	ALONE
4	97	5424 ND-2-PSP-F	11' 10"	600 Deg.	3200	12"	24"	4"		3200	1600	-1.008"	2800	430 SS Where Exposed	LEFT	ALONE
5	97	5424 ND-2-PSP-F	8' 0"	600 Deg.	1800	10"	16"	4"		1800	1620	-0.666"	1600	430 SS Where Exposed	MIDDLE	ALONE
6	97	5424 ND-2-PSP-F	11' 8"	600 Deg.	3500	12"	26"	4"		3500	1615	-1.136"	2800	430 SS Where Exposed	RIGHT	ALONE
7	127	4224 ND-2-PSP-B	4' 0"	600 Deg.	800	9"	8"	4"		800	1600	-0.461"	640	430 SS Where Exposed	ALONE	ALONE

HOOD INFORMATION

HOOD NO.	TAG	FILTER(S) TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	LIGHT(S) QTY	TYPE	WIRE GUARD	UTILITY CABINET(S) LOCATION	SIZE	FIRE SYSTEM TYPE	FIRE SYSTEM SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY	FIRE SYSTEM PIPING	HOOD HANGING WGHT
1	52	Captrate Solo Filter	5	20"	16"	85% See Filter Spec.	3	L55 Series E26	NO							YES	434 LBS
2	52	Captrate Solo Filter	6	20"	16"	85% See Filter Spec.	3	L55 Series E26	NO	Right	12"x54"x24"	Ansul R102	3.0/3.0/1.5	SC-311110FP-SEP	1 Light 1 Fan	YES	627 LBS
3	77						3	L55 Series E26	NO							NO	313 LBS
4	97	Captrate Solo Filter	8	20"	16"	85% See Filter Spec.	4	L55 Series E26	NO	Left	20"x54"x24"	Ansul R102	3.0/3.0/3.0/3.0	SC-341110FP-SEP	1 Light 1 Fan	YES	848 LBS
5	97	Captrate Solo Filter	5	20"	16"	85% Soo Filter Spec.	3	L55 Series E26	NO							YES	449 LBS
6	97	Captrate Solo Filter	8	20"	16"	85% See Filter Spec.	4	L55 Series E26	NO							YES	648 LBS
7	127	Captrate Solo Filter	2	20"	20"	85% See Filter Spec.	2	L55 Series E26	NO							YES	234 LBS

HOOD OPTIONS

HOOD NO.	TAG	OPTION
1	52	LEFT END STANDOFF (FINISHED) 1" Wide 54" Long Insulated
		LEFT WALL AS END PANEL
7	127	FINISHED BACK- ISL/REV INSTALL 48.00" Long
		RISER SENSOR INSTALL 6IN PLEN

PERFORATED SUPPLY PLENUM(S)

HOOD NO.	TAG	POS.	LENGTH	WIDTH	HEIGHT	RISER(S) TYPE	WIDTH	LENG.	DIA.	CFM	S.P.
1	52	Front	91"	18"	6"	MUA	12"	28"		775	0.224"
						MUA	12"	28"		775	0.224"
2	52	Front	112"	18"	6"	MUA	12"	24"		600	0.162"
						MUA	12"	24"		600	0.162"
						MUA	12"	24"		600	0.162"
4	97	Front	162"	18"	6"	MUA	12"	28"		700	0.185"
						MUA	12"	28"		700	0.185"
						MUA	12"	28"		700	0.185"
						MUA	12"	28"		700	0.185"
5	97	Front	96"	18"	6"	MUA	12"	28"		800	0.238"
						MUA	12"	28"		800	0.238"
6	97	Front	140"	18"	6"	MUA	12"	28"		700	0.185"
						MUA	12"	28"		700	0.185"
						MUA	12"	28"		700	0.185"
						MUA	12"	28"		700	0.185"
7	127	Back	48"	16"	6"	MUA	12"	24"		640	0.183"

PATENT NUMBERS

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

SPECIFICATION: CAPTRATE GREASE-STOP SOLO FILTER

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

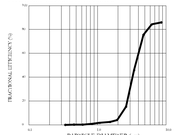
FILTER IS STAINLESS STEEL CONSTRUCTION, AND SIZED TO FIT INTO STANDARD 2-INCH DEEP HOOD CHANNEL(S).

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

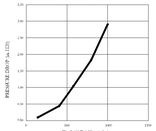
GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 85% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 1.0 INCHES OF WATER GAUGE.

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

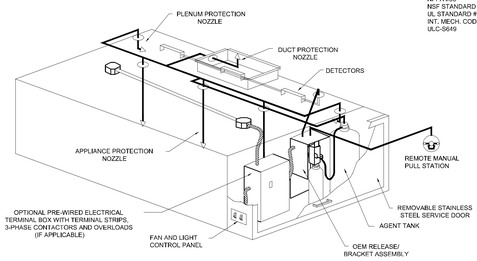
EFFICIENCY VS. PARTICLE DIAMETER



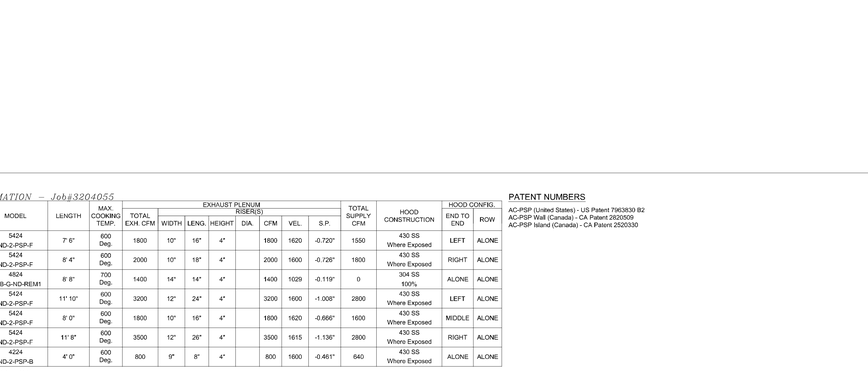
PRESSURE DROP VS. FLOW RATE



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

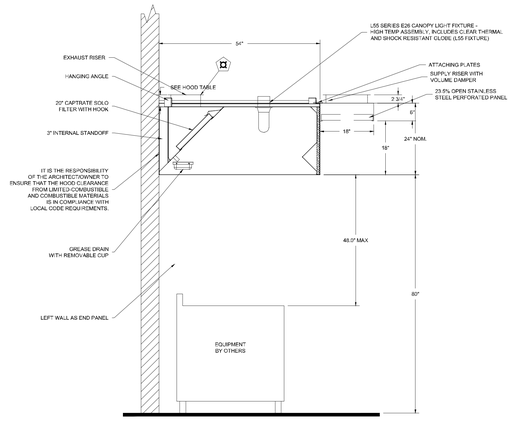


TYPICAL ANSUL R-102 SYSTEM LAYOUT



PLAN VIEW – Hood #1 (52)
7' 6.00" LONG 5424ND-2-PSP-F

PLAN VIEW – Hood #2 (52)
8' 4.00" LONG 5424ND-2-PSP-F



SECTION VIEW – MODEL 5424ND-2-PSP-F
HOOD – #1, #2 (52)

Fire System Information – Job#3204055

FIRE SYSTEM NO.	Tag	TYPE	SIZE	FLOW POINTS	INSTALLATION SYSTEM	INSTALLATION LOCATION ON HOOD
1	53	Ansul R102	3.0/3.0/1.5	21	Fire Cabinet Right	Right
2	98	Ansul R102	3.0/3.0/3.0/3.0	39	Fire Cabinet Left	Left

REVISIONS

	DESCRIPTION	DATE
1		
2		
3		
4		
5		

DATE: 1/3/2018
DWG.#: 3204055
DRAWN BY: AHJ-86
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 1

Consultant
CRO ENGINEERING GROUP, INC.
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www.captiveaire.com

Sonya Pratcharakith, License No.M35663
Expiration Date: 09/30/2019

Issuance

Date	Description
	☐ COORDINATION SET
01/15/2018	☒ PLAN CHECK SUBMITTAL
	☐ HEALTH DEPARTMENT SUBMITTAL
	☐ ISSUED FOR BID
	☐ ISSUED FOR CONSTRUCTION

Revision

Date	No.	Description
	1	
	2	
	3	
	4	
	5	
	6	
	7	
	8	
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	10	

Project Name and Location

Lazy Dog Restaurant & Bar - Newark CA
NEWARK, CA, 94560

NEWPARK MALL
3100 NEWPARK MALL
NEWARK, CA 94560

Sheet Title

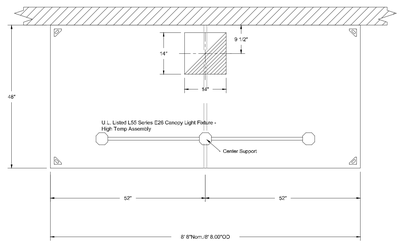
HOOD CUT SHEETS

Project No.: 235-016
Sheet No.:

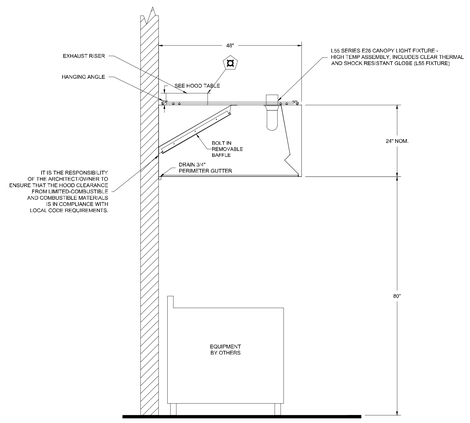
M1.3a

Print Date: February 9, 2018

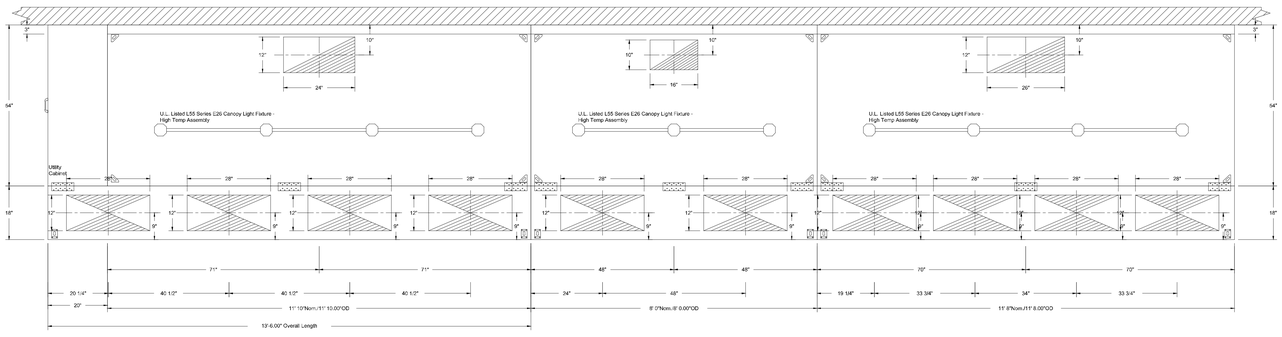
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DATE: 01/03/2018 2:20pm APPS: 235016 Title MASS Ad-Addenda



PLAN VIEW – Hood #3 (77)
8' 8.00" LONG 4824VHB-G-ND-REM1



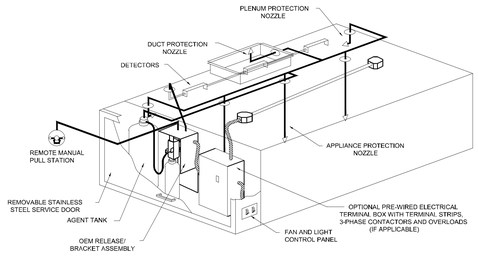
SECTION VIEW – MODEL 4824VHB-G-ND-REM1
HOOD – #3 (77)



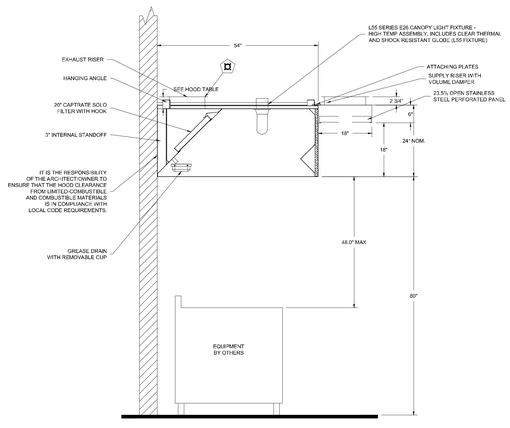
PLAN VIEW – Hood #4 (97)
11' 10.00" LONG 5424ND-2-PSP-F

PLAN VIEW – Hood #5 (97)
8' 0.00" LONG 5424ND-2-PSP-F

PLAN VIEW – Hood #6 (97)
11' 8.00" LONG 5424ND-2-PSP-F



TYPICAL ANSUL R-102 SYSTEM LAYOUT



SECTION VIEW – MODEL 5424ND-2-PSP-F
HOOD – #4, #5, #6 (97)

REVISIONS

	DESCRIPTION	DATE
△		
△		
△		
△		

CAPTIVE-AIRE

Southern California Office

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Lazy Dog Restaurant & Bar - Newark CA
NEWARK, CA, 94560

DATE:	1/3/2018
DWG.#:	3204055
DRAWN BY:	AHJ-86
SCALE:	3/4" = 1'-0"
MASTER DRAWING	

SHEET NO. 2

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Sanjaya Phatcharakith, License No.M35663
Expiration Date: 09/30/2019

Issuance Date		Description
	☐	COORDINATION SET
01/15/2018	☒	PLAN CHECK SUBMITTAL
	☐	HEALTH DEPARTMENT SUBMITTAL
	☐	ISSUED FOR BID
	☐	ISSUED FOR CONSTRUCTION

Revision Date	No.	Description
	△	
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Project Name and Location

NEWPARK MALL
3100 NEWPARK MALL
NEWARK, CA 94560

Sheet Title

HOOD CUT SHEETS

Project No.: 235-016 Sheet No.:

M1.3b

Print Date: February 9, 2018

DWG: S:\Current\235-Lazy Dog\235-016-Lazy Dog, Newpark Mall, Newark, CA\Mechanical\235016-M1.3abx.dwg
DATE: 02/09/2018 11:29pm USER: Modene

Consultant

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Mechanical | Electrical | Plumbing

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FAX: 714-841-6000
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01/15/2018 ☒	PLAN CHECK SUBMITTAL
☐	HEALTH DEPARTMENT SUBMITTAL
☐	ISSUED FOR BID
☐	ISSUED FOR CONSTRUCTION

Revision No.	Description
1	
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Project Name and Location

LAZY DOG RESTAURANT & BAR

3100 NEWPARK MALL
NEWARK, CA 94560

Sheet Title

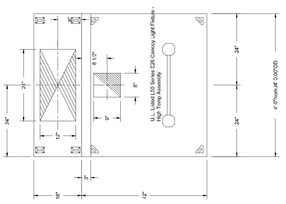
HOOD CUT SHEETS

Project No: 2264016

Sheet No.

M1.3c

Print Date: February 9, 2018


24"
24"
24"
24"
6" (Nominal) Ø DUCTS
U.L. Listed LSS Series 23K Canopy Light Fixture - Hog Trough Assembly
8 1/2"
8"
5"
12"
6"
6"
6

EXHAUST FAN INFORMATION – Job#3204055

FAN UNIT NO.	TAG	FAN UNIT MODEL #	CFM	ESP.	RPM	H.P.	B.H.P.	Ø	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS.)	SONES
1	EF-1	NCA24HPFA	3800	1.750	1015	3.000	1.8620	3	208	9.5	864 FPM	289	20
2	EF-2	NCA14FA	1400	0.750	1000	0.500	0.3270	3	208	1.9	443 FPM	111	8.8
3	EF-3	NCA24HPFA	3200	1.500	920	2.000	1.3690	3	208	5.9	727 FPM	246	17.8
4	EF-4	NCA16HPFA	1800	1.250	1120	1.000	0.6770	3	208	3.4	416 FPM	147	10.1
5	EF-5	NCA24HPFA	3500	1.750	997	3.000	1.7360	3	208	9.5	795 FPM	289	21
6	EF-6	NCA14HPFA	800	1.000	1223	0.500	0.3990	3	208	1.9	253 FPM	118	10.4

MUA FAN INFORMATION – Job#3204055

FAN UNIT NO.	TAG	FAN UNIT MODEL #	BLOWER	HOUSING	DESIGN CFM		ESP.	RPM	H.P.	B.H.P.	Ø	VOLT	FLA	EVAP COOLER ENTERING DB TEMP.	EVAP COOLER ENTERING WB TEMP.	EVAP COOLER LEAVING DB TEMP.	EVAP COOLER LEAVING WB TEMP.	WEIGHT (LBS.)	SONES	BURNER EFFICIENCY(%)
					MIN	MAX														
7	MUA-1	A2-D.500-G15	G15-PB	A2-D.500	2000	3350	1.000	1096	5.000	2.6770	3	208	15.0	90.0¡F	65.0¡F	71.0¡F	65.0¡F	1101	21	92
8	MUA-2	A4-D.1000-920	920	A4-D.1000	6000	7840	1.000	704	5.000	4.0660	3	208	15.0	90.0¡F	65.0¡F	71.0¡F	65.0¡F	2032	23	92

GAS FIRED MAKE-UP AIR UNIT(S)

FAN UNIT NO.	TAG	INPUT BTUs	OUTPUT BTUs	TEMP. RISE	REQUIRED INPUT GAS PRESSURE	GAS TYPE
7	MUA-1	141574	130248	36 deg F	7 in. w.c. - 14 in. w.c.	Natural
8	MUA-2	331325	304819	36 deg F	7 in. w.c. - 14 in. w.c.	Natural

FAN OPTIONS

FAN UNIT NO.	TAG	OPTION (Qty. - Descr.)
1	EF-1	1 - Grease Box
3	EF-3	1 - Grease Box
4	EF-4	1 - Grease Box
5	EF-5	1 - Grease Box
6	EF-6	1 - Grease Box
7	MUA-1	1 - AC Interlock Relay - 24VAC Coil
		1 - Motorized Backdraft Damper for A2-D Housing
		1 - Low Fire Start
		1 - Inlet Pressure Gauge, 0-35"
		1 - Manifold Pressure Gauge, -5 to 15" wc
		1 - VAV Package w/ Manual Control (VFD Included)
		1 - Size 2 Direct Fired Heater Low CFM Profile Package. Used on Heaters under 2500 cfm.
		1 - VFD factory mounted and wired in commercial control vestibule for tempered supply fan.
8	MUA-2	1 - AC Interlock Relay - 24VAC Coil
		1 - Motorized Backdraft Damper for A4-D Housing
		1 - Low Fire Start
		1 - Inlet Pressure Gauge, 0-35"
		1 - Manifold Pressure Gauge, -5 to 15" wc
		1 - VAV Package w/ Manual Control (VFD Included)
		1 - VFD factory mounted and wired in commercial control vestibule for tempered supply fan.

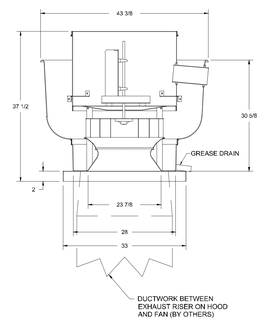
FAN ACCESSORIES

FAN UNIT NO.	TAG	EXHAUST			SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1	EF-1	YES						
2	EF-2							
3	EF-3	YES						
4	EF-4	YES						
5	EF-5	YES						
6	EF-6	YES						
7	MUA-1						YES	
8	MUA-2						YES	

CURB ASSEMBLIES

NO.	ON FAN	WEIGHT	ITEM	SIZE
1	# 1	48 LBS	Curb	31.500"W x 31.500"L x 22.000"H Vented Hinged
2	# 2	21 LBS	Curb	23.000"W x 23.000"L x 12.000"H
3	# 3	48 LBS	Curb	31.500"W x 31.500"L x 22.000"H Vented Hinged
4	# 4	34 LBS	Curb	26.500"W x 26.500"L x 22.000"H Vented Hinged
5	# 5	48 LBS	Curb	31.500"W x 31.500"L x 22.000"H Vented Hinged
6	# 6	41 LBS	Curb	23.000"W x 23.000"L x 22.000"H Vented Hinged
7	# 7	76 LBS	Curb	31.000"W x 79.000"L x 20.000"H Insulated
	# 7		Rail	4.000"W x 4.000"L x 35.000"H
8	# 8	58 LBS	Curb	42.000"W x 42.000"L x 20.000"H Insulated
	# 8		Rail	6.000"W x 42.000"L x 20.000"H
	# 8		Rail	4.000"W x 4.000"L x 35.000"H

FANS #1 (EF-1), #3 (EF-3), #5 (EF-5) - NCA24HPFA EXHAUST FAN



FEATURES:

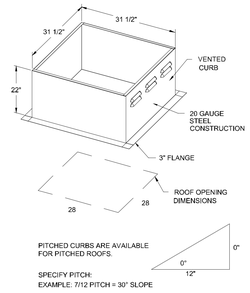
- ROOF MOUNTED FANS
- RESTAURANT MODEL
- UL705 AND UL762
- AMCA SOUND AND AIR CERTIFIED
- WIRING FROM MOTOR TO DISCONNECT SWITCH
- WEATHERPROOF DISCONNECT
- HIGH HEAT OPERATION 300°F (149°C)
- GREASE CLASSIFICATION TESTING

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

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

OPTIONS

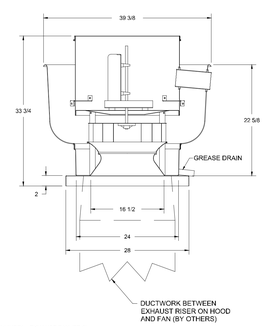
GREASE BOX



PITCHED CURBS ARE AVAILABLE FOR PITCHED ROOFS.

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

FAN #4 NCA16HPFA - EXHAUST FAN (EF-4)



FEATURES:

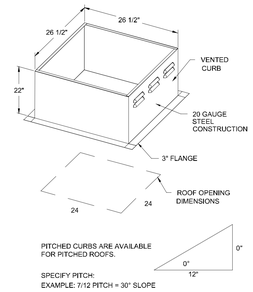
- ROOF MOUNTED FANS
- RESTAURANT MODEL
- UL705 AND UL762
- AMCA SOUND AND AIR CERTIFIED
- WIRING FROM MOTOR TO DISCONNECT SWITCH
- WEATHERPROOF DISCONNECT
- HIGH HEAT OPERATION 300°F (149°C)
- GREASE CLASSIFICATION TESTING

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

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

OPTIONS

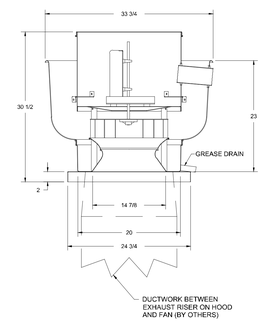
GREASE BOX



PITCHED CURBS ARE AVAILABLE FOR PITCHED ROOFS.

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

FAN #6 NCA14HPFA - EXHAUST FAN (EF-6)



FEATURES:

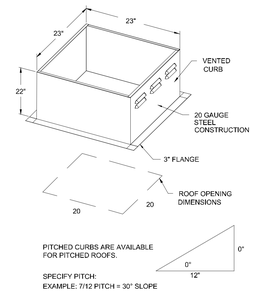
- ROOF MOUNTED FANS
- RESTAURANT MODEL
- UL705 AND UL762
- AMCA SOUND AND AIR CERTIFIED
- WIRING FROM MOTOR TO DISCONNECT SWITCH
- WEATHERPROOF DISCONNECT
- HIGH HEAT OPERATION 300°F (149°C)
- GREASE CLASSIFICATION TESTING

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

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

OPTIONS

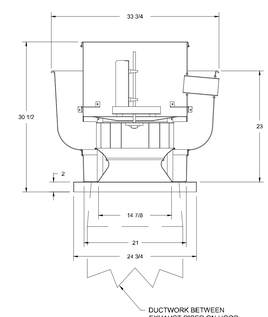
GREASE BOX



PITCHED CURBS ARE AVAILABLE FOR PITCHED ROOFS.

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

FAN #2 NCA14FA - EXHAUST FAN (EF-2)

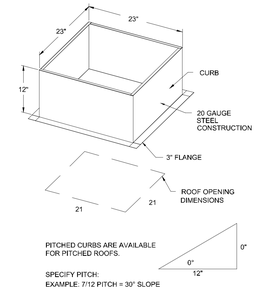


FEATURES:

- ROOF MOUNTED FANS
- RESTAURANT MODEL
- UL705 AND UL762
- AMCA SOUND AND AIR CERTIFIED
- WIRING FROM MOTOR TO DISCONNECT SWITCH
- WEATHERPROOF DISCONNECT
- HIGH HEAT OPERATION 300°F (149°C)
- GREASE CLASSIFICATION TESTING

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

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



PITCHED CURBS ARE AVAILABLE FOR PITCHED ROOFS.

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

DISCLAIMER NOTE:

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REVISIONS

	DESCRIPTION	DATE
1		
2		
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4		

CAPTIVEAIRE

Southern California Office
3002 Dow Ave., Suite 410, Tustin, CA, 92780 PHONE: (714) 957-1500 FAX: (619) 227-5975 EMAIL: rep9k@captiveaire.com
www.captiveaire.com

Lazy Dog Restaurant & Bar - Newark CA
NEWARK, CA, 94560

DATE: 12/8/2017

DWG.#: 3204055

DRAWN BY: AHJ-86

SCALE: 3/4" = 1'-0"

MASTER DRAWING

SHEET NO. 1

Consultant

CRO ENGINEERING GROUP, INC.
Mechanical | Electrical | Plumbing
18652 FLORIDA STREET, SUITE 100
HUNTINGTON BEACH, CA 92648
PHONE: 714-847-7100
FAX: 714-841-6000
WWW.CROEG.COM

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Stamp and Signature



Sonya Pratcharakith, License No.M35663
Expiration Date: 09/30/2019

Issuance

Date		Description
	☐	COORDINATION SET
01/15/2018	☒	PLAN CHECK SUBMITTAL
	☐	HEALTH DEPARTMENT SUBMITTAL
	☐	ISSUED FOR BID
	☐	ISSUED FOR CONSTRUCTION

Revision

Date	No.	Description
	1	
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Project Name and Location

NEWPARK MALL
3100 NEWPARK MALL
NEWARK, CA 94560

Sheet Title

FANS AND MUA CUT SHEETS

Project No.: 235-016 Sheet No.:

M1.4a

Print Date: February 9, 2018

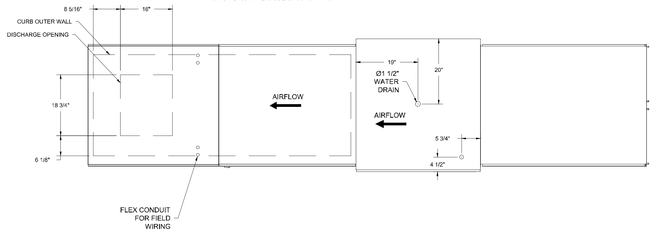
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Date: 1/8/2018 3:13:27pm XREFS: 235016-M1 Model.dwg, 235016-M1 Sheet.dwg

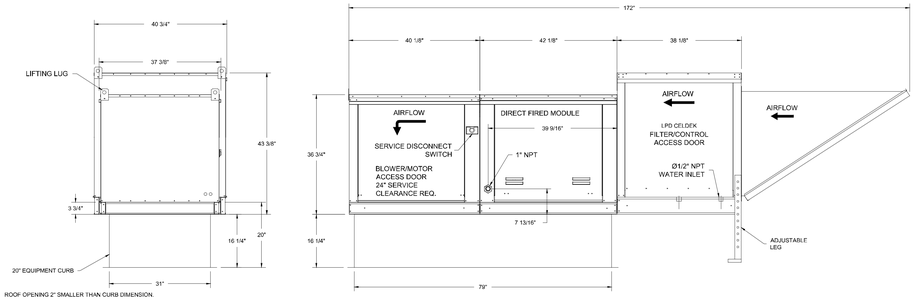
FAN #7 A2-D,500-G15 - HEATER (MUA-1)
1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 15" BLOWER
2. EVAP COOLER (UPD CELDEK) W/ MINTAKE HOOD W/E2 FILTERS
3. DOWN DISCHARGE . AIR FLOW RIGHT -> LEFT.
4. COOLING INTERLOCK RELAY. 24VAC COIL. 120V CONTACTS. LOCKS OUT BURNER CIRCUIT WHEN AC IS ENERGIZED.
5. MOTORIZED BACK DRAFT DAMPER 22.75" X 24" FOR SIZE 2 STANDARD & MODULAR HEATER UNITS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE. LF120S ACTUATOR INCLUDED
6. LOW FIRE START. ALLOWS THE BURNER CIRCUIT TO ENERGIZE WHEN THE MODULATION CONTROL IS IN A LOW FIRE POSITION.
7. GAS PRESSURE GAUGE, 0 TO 15 INCHES W.C., 1.5" DIAMETER, 1/4" THREAD SIZE.
8. GAS PRESSURE GAUGE, 0 TO 40 INCHES W.C., 1.5" DIAMETER, 1/4" THREAD SIZE.
9. VAV (VARIABLE AIR VOLUME) WIRING PACKAGE FOR COMMERCIAL FANS.
MANUAL SPEED CONTROL VARIABLE FREQUENCY DRIVE INCLUDED.
10. PROFILE PLATE CONFIGURATION FOR SIZE 2 DIRECT FIRED UNIT FOR LOW CFM APPLICATIONS.
11. VFD FACTORY MOUNTED AND WIRED ON UNIT CONTROL PANEL.

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

SUPPLY SIDE HEATER INFORMATION:

WINTER TEMPERATURE = 39°F . TEMP. RISE = 36°F.
BTUs CALCULATED OFF STANDARD AIR DENSITY
OUTPUT BTUs AT ALTITUDE OF 0.0 ft. = 130248
INPUT BTUs AT ALTITUDE OF 0.0 ft. = 141574





ROOF OPENING 2" SMALLER THAN CURB DIMENSION.

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CAPTIVE-AIRE
Southern California Office
3002 Dow Ave., Suite 410, Tustin, CA, 92780 PHONE: (714) 957-1500 FAX: (619) 222-5975 EMAIL: regSB@captiveaire.com
www.captiveaire.com

Lazy Dog Restaurant & Bar - Newark CA
NEWARK, CA, 94560

DATE: 12/8/2017
DWG.#: 3204055
DRAWN BY: AHJ-86
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 2

Consultant
cro
ENGINEERING GROUP, INC.
Mechanical | Electrical | Plumbing
18652 FLORIDA STREET, SUITE 100
HUNTINGTON BEACH, CA 92648
PHONE: 714-847-7100
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Stamp and Signature



Sanjay Phatcharakith, License No.M35663
Expiration Date: 09/30/2019

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	☐ COORDINATION SET
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Date	No.	Description
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Project Name and Location

NEWPARK MALL
3100 NEWPARK MALL
NEWARK, CA 94560

lazy dog RESTAURANT & BAR

Sheet Title

FANS AND MUA CUT SHEETS

Project No.: 235-016 Sheet No.:

M1.4b

Print Date: February 9, 2018

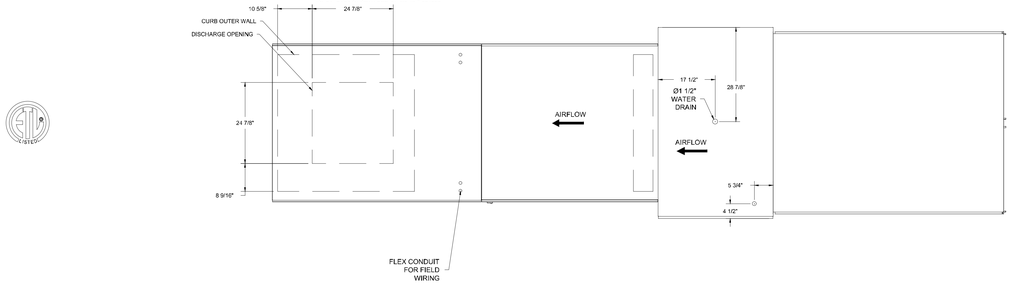
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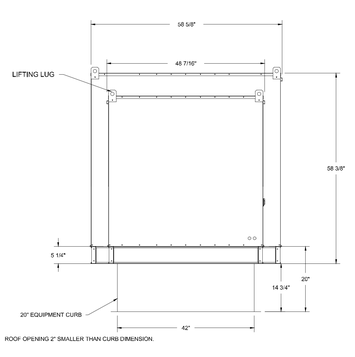
FAN #6 A4-D 1000-920 - HEATER (MUA-2)
1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 20" BLOWER AND 24" BURNER.
2. EVAP COOLER (LPD CELDEK) D WINTAKE HOOD W/EZ FILTERS
3. DOWN DISCHARGE - AIR FLOW RIGHT -> LEFT
4. COOLING INTERLOCK RELAY. 24VAC COIL. 120V CONTACTS. LOCKS OUT BURNER CIRCUIT WHEN AC IS ENERGIZED.
5. MOTORIZED BACK DRAFT DAMPER 34" X 30" FOR SIZE 4 STANDARD & MODULAR HEATER UNITS W/EXTENDED SHAFT. STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE. NFBUP-S ACTUATOR INCLUDED
6. LOW FIRE START - ALLOWS THE BURNER CIRCUIT TO ENERGIZE WHEN THE MODULATION CONTROL IS IN A LOW FIRE POSITION.
7. GAS PRESSURE GAUGE, 0-35", 2.5" DIAMETER, 1/4" THREAD SIZE
8. GAS PRESSURE GAUGE, -5 TO +15 INCHES WC., 2.5" DIAMETER, 1/4" THREAD SIZE
9. VAV (VARIABLE-AIR-VOLUME) WIRING PACKAGE FOR COMMERCIAL FANS.
MANUAL SPEED CONTROL VARIABLE FREQUENCY DRIVE INCLUDED
10. VFD FACTORY MOUNTED AND WIRED ON UNIT CONTROL PANEL.

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

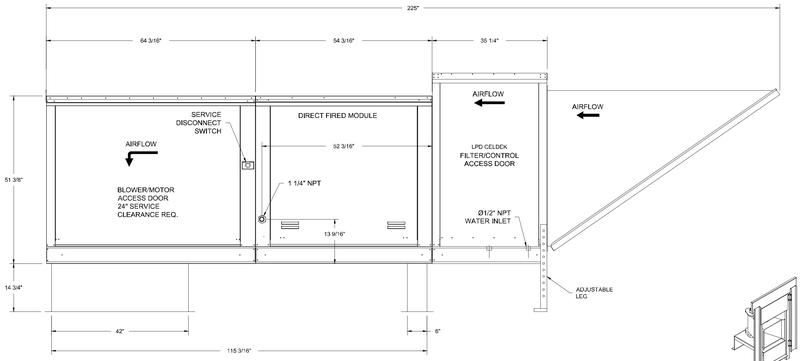
SUPPLY SIDE HEATER INFORMATION:

WINTER TEMPERATURE = 39°F , TEMP. RISE = 36°F.
BTUs CALCULATED OFF STANDARD AIR DENSITY
OUTPUT BTUs AT ALTITUDE OF 0.0 ft. = 304819
INPUT BTUs AT ALTITUDE OF 0.0 ft. = 331325





ROOF OPENING 2" SMALLER THAN CURB DIMENSION.





Direct Fired (DF) Profile Plate Assembly

Direct Fired Profile Plate Specifications:
Description:
Direct fired burners shall have patented (US Patent No.: US6629523B2), self-adjusting profile plates designed to ensure proper air velocity and pressure drop across the burner. Profile plates shall allow burners to achieve clean combustion by limiting byproduct levels to a maximum of 50ppm of carbon monoxide (CO), and 0.5ppm of nitrogen dioxide (NO2).

Application:
Spring-loaded burner profile plates are engineered to automatically react to the momentum of a flame at blower, without the need for any motors or actuators to mechanically adjust them. All CAPTIVE-AIRE units are designed for pressure control ventilation (DCV) requirements.

Certification:
All profile plate assemblies shall be included in the DF unit's ETL listing and comply with combined safety standards ANSI Z83.4 and CSA 3.7 (non-recirculating DF heaters) and ANSI Z83.18 (recirculating DF heaters).

General Construction:
-Profile plates shall be formed from 20GI galvanized steel.
-Profile plates shall be 14 3/4" x 20" in size.
-Profile plates shall be mounted along the same plane as the discharge of the burner.
-Design shall incorporate properly secured, permanently mounted spring hinges.
-Spring hinges shall be made from plated steel.

DISCLAIMER NOTE:

HOOD CUT-SHEETS ON THIS SHEET INTENDED FOR REFERENCE PURPOSES ONLY. HOOD PACKAGE IS NOT PART OF THE MECHANICAL CONTRACTOR'S CONTRACT. ALL HOOD (CAPTIVEAIRE) EQUIPMENT IS PROVIDED AND INSTALLED BY KITCHEN EQUIPMENT CONTRACTOR. VERIFY SCALE BEFORE TAKING ANY MEASUREMENTS OR DIMENSIONS FROM THIS PLAN.

REVISIONS

	DESCRIPTION	DATE
1		
2		
3		
4		

CAPTIVE-AIRE
Southern California Office
3002 Dow Ave., Suite 410, Tustin, CA. 92780 PHONE: (714) 957-1500 FAX: (919) 227-5975 EMAIL: regr86@captiveaire.com
www.captiveaire.com

Lazy Dog Restaurant & Bar - Newark CA
NEWARK, CA, 94560

DATE: 12/8/2017
DWG.#: 3204055
DRAWN BY: AHJ-86
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 3

Consultant
cro
ENGINEERING GROUP, INC.
Mechanical | Electrical | Plumbing
18652 FLORIDA STREET, SUITE 100
HUNTINGTON BEACH, CA 92648
PHONE: 714-847-7100
FAX: 714-847-6000
WWW.CROEG.COM

DRAWINGS, SPECIFICATIONS, IDEAS, DESIGNS, AND ARRANGEMENTS REPRESENTED THEREBY ARE AND SHALL REMAIN THE PROPERTY OF THE ARCHITECT. NO PART THEREOF SHALL BE REPRODUCED, COPIED, ADAPTED, DISCLOSED, DISTRIBUTED SOLD, PUBLISHED OR USED WITHOUT PRIOR WRITTEN CONSENT OF AND APPROPRIATE COMPENSATION TO THE ARCHITECT. VISUAL CONTACT WITH THE ABOVE DRAWINGS OR SPECIFICATIONS SHALL CONSTITUTE CONCLUSIVE EVIDENCE OF ACCEPTANCE OF THESE RESTRICTIONS.

Stamp and Signature



Sonya Pharchanakitti, License No.M35663
Expiration Date: 09/30/2019

Issuance

Date		Description
	☐	COORDINATION SET
01/15/2018	☒	PLAN CHECK SUBMITTAL
	☐	HEALTH DEPARTMENT SUBMITTAL
	☐	ISSUED FOR BID
	☐	ISSUED FOR CONSTRUCTION

Revision

Date	No.	Description
	1	
	2	
	3	
	4	
	5	
	6	
	7	
	8	
	9	
	10	
	11	
	12	

Project Name and Location

NEWPARK MALL
3100 NEWPARK MALL
NEWARK, CA 94560

Sheet Title

FANS AND MUA CUT SHEETS

Project No.: 235-016 Sheet No.:

M1.4c

Print Date: February 9, 2018

DWG: S:\Users\235-Lazy Dog\235-016-Lazy Dog, Newark Mall, Newark, CA\Mechanical\235016-M1.4a3x3.dwg USER: kradofe
PLOT: 09:36:38 | Layout: ANSI C (22.00 x 17.00 Inches) | Plotter: HP DesignJet T1700dr PS

Project Name:	Lazy Dog Eat. Drink.	NRCC-PRF-01-E	Page 1 of 22
Project Address:	3100 Newpark Mall Newark 94560	Calculation Date/Time:	13:19, Fri, Jan 12, 2018
Compliance Scope:	NewComplete	Input File Name:	LD - Newpark Mall - Newark, Ca T24.cibd16x

A. PROJECT GENERAL INFORMATION

1.	Project Location (city)	Newark	**8.**	Standards Version	Compliance2016
2.	CA Zip Code	94560	**9.**	Compliance Software (version)	EnergyPro 7.1
3.	Climate Zone	3	**10.**	Weather File	SAN-CARLOS_724938_CZ2010.epw
4.	Total Conditioned Floor Area in Scope	8,120 ft²	**11.**	Building Orientation (deg)	(N) 0 deg
5.	Total Unconditioned Floor Area	0 ft²	**12.**	Permitted Scope of Work	NewComplete
6.	Total # of Stories (Habitable Above Grade)	1	13	Building Type(s)	Nonresidential
7.	Total # of dwelling units	0	14	Gas Type	NaturalGas

B. COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS (Annual TDV Energy Use, kBtu/ft² -yr) | **§ 140.1**

BUILDING COMPLIES

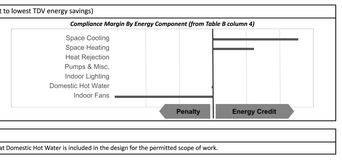
1. Energy Component	2. Standard Design (TDV)	3. Proposed Design (TDV)	4. Compliance Margin (TDV)	5. Percent Better than Standard
Space Heating	9.09	0.65	8.44	92.8%
Space Cooling	143.51	125.83	17.68	12.3%
Indoor Fans	239.60	259.99	-20.39	-8.5%
Heat Rejection	--	--	--	--
Pumps & Misc.	--	--	--	--
Domestic Hot Water	49.82	49.98	-0.16	-0.3%
Indoor Lighting	112.66	112.66	--	0.0%
COMPLIANCE TOTAL	**554.68**	**549.11**	**5.57**	**1.0%**
Receptacle	136.49	136.49	0.0	0.0%
Process	483.67	483.67	0.0	0.0%
Other Ltg	--	--	--	--
TOTAL	**1,174.84**	**1,169.27**	**5.6**	**0.5%**

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C. PRIORITY PLAN CHECK/ INSPECTION ITEMS (in order of highest to lowest TDV energy savings)

1st	Space Cooling: Check envelope and mechanical
2nd	Space Heating: Check envelope and mechanical
3rd	Heat Rejection: Check envelope and mechanical
4th	Pumps & Misc.: Check mechanical
5th	Indoor Lighting: Check lighting
6th	Domestic Hot Water: Check mechanical
7th	Indoor Fans: Check envelope and mechanical

Compliance Margin By Energy Component (from Table B column 4)



D. EXCEPTIONAL CONDITIONS

This project includes Domestic Hot Water in the analysis. Please verify that Domestic Hot Water is included in the design for the permitted scope of work.

E. HERS VERIFICATION

This Section Does Not Apply

F. ADDITIONAL REMARKS

None Provided

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G. COMPLIANCE PATH & CERTIFICATE OF COMPLIANCE SUMMARY

Identify which building components use the performance or prescriptive path for compliance. "NA"= not in project

For components that utilize the performance path, indicate the sheet number that includes mandatory notes on plans.

Building Component	Compliance Path	Compliance Forms *(required for submittal)*	Location of Mandatory Notes on Plans
Envelope	☒ Performance	NRCC-PRF-ENV-DETAILS (section of the NRCC-PRF-01-E)	
	☐ Prescriptive	NRCC-ENV-01 / 02 / 03 / 04 / 05 / 06-E	
	☐ NA		
Mechanical	☒ Performance	NRCC-PRF-MCH-DETAILS (section of the NRCC-PRF-01-E)	
	☐ Prescriptive	NRCC-MCH-01 / 02 / 03 / 04 / 05 / 06 / 07-E	
	☐ NA		
Domestic Hot Water	☒ Performance	NRCC-PRF-PLB-DETAILS (section of the NRCC-PRF-01-E)	
	☐ Prescriptive	NRCC-PLB-01-E	
	☐ NA		
Lighting (Indoor Conditioned)	☒ Performance	NRCC-PRF-LTI-DETAILS (section of the NRCC-PRF-01-E)	
	☐ Prescriptive	NRCC-LTI-01 / 02 / 03 / 04 / 05-E	
	☐ NA		
Covered Process: Commercial Kitchens	☒ Performance	S2 (section of the NRCC-PRF-01-E)	
	☐ Prescriptive	NRCC-PRC-01/ 03-E	
	☐ NA		
Covered Process: Computer Rooms	☐ Performance	S3 (section of the NRCC-PRF-01-E)	
	☐ Prescriptive	NRCC-PRC-01/ 04-E	
	☒ NA		
Covered Process: Laboratory Exhaust	☐ Performance	S4 (section of the NRCC-PRF-01-E)	
	☐ Prescriptive	NRCC-PRC-01/ 09-E	
	☒ NA		

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G. COMPLIANCE PATH & CERTIFICATE OF COMPLIANCE SUMMARY

The following building components are only eligible for prescriptive compliance. Indicate which are relevant to the project.

The following building components may have mandatory requirements per Part 6. Indicate which are relevant to the project.

Yes	NA	Prescriptive Requirement	Compliance Forms	Yes	NA	Mandatory Requirement	Compliance Forms
☐	☒	Lighting (Indoor Unconditioned) §140.6	NRCC-LTI-01 / 02 / 03 / 04 / 05-E	☐	☒	Commissioning: §120.8 Simple Systems	NRCC-CXR-01 / 02 / 03 / 05-E
				☐	☒	Complex Systems	NRCC-CXR-01 / 02 / 04 / 05-E
☐	☒	Lighting (Outdoor) §140.7	NRCC-LTI-01 / 02 / 03-E	☐	☒	Electrical: §130.5	NRCC-ELC-01-E
☐	☒	Lighting (Sign) §140.8	NRCC-LTS-01-E	☐	☒	Solar Ready: §110.10	NRCC-SRA-01 / 02-E
☐	☒	Solar Thermal Water Heating: §140.5	NRCC-STH-01-E	☐	☒	Covered Process: §120.6 Parking Garage	NRCC-PRC-01-E
				☐	☒	Commercial Refrigeration	NRCC-PRC-05-E
				☐	☒	Warehouse Refrigeration	NRCC-PRC-06/07/08-E
				☐	☒	Compressed Air	NRCC-PRC-10-E
				☐	☒	Process Boilers	NRCC-PRC-11-E

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H. CERTIFICATE OF INSTALLATION, CERTIFICATE OF ACCEPTANCE & CERTIFICATE OF VERIFICATION SUMMARY (NRCI/NRCA/NRCV) – Documentation Author to indicate which Certificates must be submitted for the features to be recognized for compliance (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify). See Tables G. and H. in MCH and LTI Details Sections for Acceptance Tests and forms by equipment.

Building Component	Compliance Forms *(required for submittal)*	Confirmed Pass	Confirmed Fail
Envelope	☒ NRCI-ENV-01-E - For all buildings	☐	☐
	☒ NRCA-ENV-02-F- NFRC label verification for fenestration	☐	☐
Mechanical	☒ NRCI-MCH-01-E - For all buildings with Mechanical Systems	☐	☐
	☒ NRCA-MCH-02-A- Outdoor Air	☐	☐
	☒ NRCA-MCH-03-A – Constant Volume Single Zone HVAC	☐	☐
	☐ NRCA-MCH-04-H- Air Distribution Duct Leakage	☐	☐
	☒ NRCA-MCH-05-A- Air Economizer Controls	☐	☐
	☒ NRCA-MCH-06-A- Demand Control Ventilation	☐	☐
	☐ NRCA-MCH-07-A – Supply Fan Variable Flow Controls	☐	☐
	☐ NRCA-MCH-08-A- Valve Leakage Test	☐	☐
	☒ NRCA-MCH-09-A – Supply Water Temp Reset Controls	☐	☐
	☐ NRCA-MCH-10-A- Hydronic System Variable Flow Controls	☐	☐
	☐ NRCA-MCH-11-A – Auto Demand Shed Controls	☐	☐
	☒ NRCA-MCH-12-A- Packaged Direct Expansion Units	☐	☐
	☐ NRCA-MCH-13-A- Air Handling Units and Zone Terminal Units	☐	☐
	☐ NRCA-MCH-14-A- Distributed Energy Storage	☐	☐
	☐ NRCA-MCH-15-A – Thermal Energy Storage	☐	☐
	☐ NRCA-MCH-16-A- Supply Air Temp Reset Controls	☐	☐
	☐ NRCA-MCH-17-A – Condensate Water Temp Reset Controls	☐	☐
	☐ NRCA-MCH-18-A- Energy Management Controls Systems	☐	☐
	☐ NRCV-MCH-04-H- Duct Leakage Test	☐	☐

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Building Component	Compliance Forms *(required for submittal)*	Confirmed Pass	Confirmed Fail
Plumbing	☒ NRCI-PLB-01-E - For all buildings with Plumbing Systems	☐	☐
	☐ NRCI-PLB-02-E - required on central systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCI-PLB-03-E - Single dwelling unit systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCI-PLB-21-E - HERS verified central systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCI-PLB-22-E - HERS verified single dwelling unit systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCV-PLB-21-H- HERS verified central systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCV-PLB-22-H - HERS verified single dwelling unit systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCI-STH-01-E - Any solar water heating	☐	☐
Indoor Lighting	☒ NRCI-LTI-01-E - For all buildings	☐	☐
	☐ NRCI-LTI-02-E - Lighting control system, or for an Energy Management Control System (EMCS)	☐	☐
	☐ NRCI-LTI-03-E - Line-voltage track lighting integral current limiter, or for a supplementary overcurrent protection panel used to energize only line-voltage track lighting	☐	☐
	☐ NRCI-LTI-04-E - Two interlocked systems serving an auditorium, a convention center, a conference room, or a theater	☐	☐
	☐ NRCI-LTI-05-E - Lighting Control Credit Power Adjustment Factor (PAF)	☐	☐
	☐ NRCI-LTI-06-E - Additional wattage installed in a video conferencing studio	☐	☐
	☐ NRCA-LTI-02-A - Occupancy sensors and automatic time switch controls.	☐	☐
	☐ NRCA-LTI-03-A - Automatic daylighting controls	☐	☐
	☐ NRCA-LTI-04-A - Demand responsive lighting controls	☐	☐
Outdoor Lighting	☐ NRCI-LTO-01-E – Outdoor Lighting	☐	☐
	☐ NRCI-LTO-02-E- EMCS Lighting Control System	☐	☐
	☐ NRCA-LTO-02-A - Outdoor Lighting Control	☐	☐
Sign Lighting	☐ NRCI-LTS-01-E – Sign Lighting	☐	☐
Electrical	☐ NRCI-ELC-01-E - Electrical Power Distribution	☐	☐
Photovoltaic	☐ NRCI-SPV-01-E Photovoltaic Systems	☐	☐

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H. CERTIFICATE OF INSTALLATION, CERTIFICATE OF ACCEPTANCE & CERTIFICATE OF VERIFICATION SUMMARY (NRCI/NRCA/NRCV) – Documentation Author to indicate which Certificates must be submitted for the features to be recognized for compliance (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify). See Tables G. and H. in MCH and LTI Details Sections for Acceptance Tests and forms by equipment.

Building Component	Compliance Forms *(required for submittal)*	Confirmed Pass	Confirmed Fail
Covered Process	☐ NRCI-PRC-01-E Refrigerated Warehouse	☐	☐
	☐ NRCA-PRC-01-F- Compressed Air Systems	☐	☐
	☒ NRCA-PRC-02-F- Kitchen Exhaust	☐	☐
	☐ NRCA-PRC-03-F- Garage Exhaust	☐	☐
	☐ NRCA-PRC-04-F- Refrigerated Warehouse- Evaporator Fan Motor Controls	☐	☐
	☐ NRCA-PRC-05-F- Refrigerated Warehouse- Evaporative Condenser Controls	☐	☐
	☐ NRCA-PRC-06-F- Refrigerated Warehouse- Air Cooled Condenser Controls	☐	☐
	☐ NRCA-PRC-07F- Refrigerated Warehouse- Variable Speed Compressor	☐	☐
	☐ NRCA-PRC-08-F- Electrical Resistance Underslab Heating System	☐	☐

I. ENVELOPE GENERAL INFORMATION (See NRCC-PRF-ENV-DETAILS for more information)

						Confirmed Pass	Confirmed Fail
1.	Total Conditioned Floor Area	8,120 ft²	**5.**	Number of Floors Above Grade	1		
2.	Total Unconditioned Floor Area	0 ft²	**6.**	Number of Floors Below Grade	0		
3.	Addition Conditioned Floor Area	0 ft²					
4.	Addition Unconditioned Floor Area	0 ft²					

7. Opaque Surfaces & Orientation	**8. Total Gross Surface Area**	**9. Total Fenestration Area**	**10. Window to Wall Ratio**	Pass	Fail
North Wall	1,261 ft²	429 ft²	34.0%	☐	☐
East Wall	1,621 ft²	90 ft²	05.5%	☐	☐
South Wall	201 ft²	52 ft²	25.9%	☐	☐
West Wall	1,538 ft²	389 ft²	25.3%	☐	☐
Total	**4,625 ft²**	**960 ft²**	**20.8%**	☐	☐
Roof	8,035 ft²	0 ft²	00.0%	☐	☐

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J. FENESTRATION ASSEMBLY SUMMARY | **§ 110.6** | **Confirmed**

1. Fenestration Assembly Name / Tag or I.D.	2. Fenestration Type / Product Type / Frame Type	3. Certification Method[1]	4. Assembly Method	5. Area ft²	6. Overall U-factor	7. Overall SHGC	8. Overall VT	9. Assembly Status[2]	Pass	Fail
Double Metal Clear	VerticalFenestration FixedWindow N/A	NFRC Rated	SiteBuilt	871	0.87	0.70	0.50	N	☐	☐
Double Metal Clear Door	VerticalFenestration GlazedDoor N/A	NFRC Rated	SiteBuilt	89	0.87	0.70	0.50	N	☐	☐

[1] Newly installed fenestration shall have a certified NFRC Label Certificate or use the CEC default tables found in Table 110.6-A and Table 110.6-B. Center of Glass (COG) values are for the glass only, determined by the manufacturer, and are shown for ease of verification. Site-built fenestration values are calculated per Nonresidential Appendix NA6 and are used in the analysis.

[2] Status: N - New, A – Altered, E – Existing

Taking compliance credit for fenestration shading devices? (if "Yes", see NRCC-PRF-ENV-DETAILS for more information) | No

K. OPAQUE SURFACE ASSEMBLY SUMMARY | **§ 120.7/ § 140.3** | **Confirmed**

1. Surface Name	2. Surface Type	3. Area (ft²)	4. Framing Type	5. Cavity R-Value	6. Continuous R-Value	7. U-Factor / F-Factor / C-Factor	8. Assembly Status[1]	Pass	Fail
R-19 Wall6	ExteriorWall	3751	Wood	19	NA	U-Factor: 0.072	N	☐	☐
Slab On Grade10	UndergroundFloor	8035	NA	0	NA	F-Factor: 0.730	N	☐	☐
R-30 Roof Attic12	Roof	8035	Wood	30	NA	U-Factor: 0.038	N	☐	☐
6 CMU Wall37	ExteriorWall	874	NA	0	NA	U-Factor: 0.293	N	☐	☐

[1] Status: N - New, A – Altered, E – Existing

L. ROOFING PRODUCT SUMMARY | **§ 140.3** | **Confirmed**

1. Product Type	2. Product Density (lb/ft³)	3. Aged Solar Reflectance	4. Thermal Emittance	5. SRI	6. Cool Roof Credit	7. Roofing Product Description	Pass	Fail
R-30 Roof Attic12	4.65104	0.08	0.75	NA	No	NA	☐	☐

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M. HVAC SYSTEM SUMMARY (see NRCC-PRF-MCH-DETAILS for more information) | **§ 110.1 / § 110.2**

Dry System Equipment [1] (Fan & Economizer info included below in Table N) — **Confirmed**

1. Equip Name	2. Equip Type	3. System Type (Simple [2] or Complex [3])	4. Qty	5. Total Heating Output (kBtu/h)	6. Supp Heat Source (Y/N)	7. Supp Heat Output (kBtuh)	8. Total Cooling Output (kBtu/h)	9. Efficiency: Cooling	9. Efficiency: Heating	10. Acceptance Testing Required? (Y/N) [4]	11. Status[5]	Pass	Fail
12.5-Ton AC-4	SZAC (Packaged3Phase)	Simple	1	150	No	0	155	EER-12.2	AFUE-80.0	Yes	N	☐	☐
12.5-Ton AC-3	SZAC (Packaged3Phase)	Simple	1	150	No	0	155	EER-12.2	AFUE-80.0	Yes	N	☐	☐
12.5-Ton AC-2	SZAC (Packaged3Phase)	Simple	1	150	No	0	155	EER-12.2	AFUE-80.0	Yes	N	☐	☐
12.5Ton AC-1	SZAC (Packaged3Phase)	Simple	1	150	No	0	159	EER-12.2	AFUE-80.0	Yes	N	☐	☐
BOH35	Exhaust ((null))	Simple	1	0	No	0	0	NA	NA	No	N	☐	☐

[1] Dry System Equipment includes furnaces, air handling units, heat pumps, etc.
[2] Simple Systems must complete NRCC-CXR-03-E commissioning design review form
[3] Complex Systems must complete NRCC-CXR-04-E commissioning design review form
[4] A summary of which acceptance tests are applicable is provided in NRCC-PRF-MCH-DETAILS
[5] Status: N - New, A – Altered, E – Existing

	Wet System Equipment [1]						Pumps					Confirmed	
12. Equip Name	13. Equip Type	14. Qty	15. Vol (gal)	16. Rated Capacity (kBtu/h)	17. Efficiency	18. Standby Loss	19. Tank Ext. R Value	20. Qty	21. GPM	22. HP	23. VSD (Y/N)	24. Status[2]	Pass	Fail
A O Smith Water Products2	Storage	2	85	310	Thrml. Eff.: 0.820	0.0291	NA	NA	NA	NA	No	N	☐	☐

[1] Wet System Equipment includes boilers, chillers, cooling towers, water heaters, etc.
[2] Status: N - New, A – Altered, E – Existing

Discrepancy between modeled and designed equipment sizing? (if "Yes", see Table F. "Additional Remarks" for an explanation) | No

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N. ECONOMIZER & FAN SYSTEMS SUMMARY[1] | **§ 140.4** | **Confirmed**

1. Equip Name	2. Outside Air	3. Supply Fan: CFM	3. Supply Fan: CFM	3. Supply Fan: HP	3. Supply Fan: BHP	3. Supply Fan: TSP (inch WC)	3. Supply Fan: Control	4. Return Fan: CFM	4. Return Fan: HP	4. Return Fan: BHP	4. Return Fan: TSP (inch WC)	4. Return Fan: Control	5. Economizer Type (if present)	Pass	Fail
12.5-Ton AC-4	1328	5000	2.300	2.300	1.75	ConstantVolume	NA	NA	NA	NA	NA	DifferentialDryBulb		☐	☐
12.5-Ton AC-3	1212	5000	2.300	2.300	1.75	ConstantVolume	NA	NA	NA	NA	NA	DifferentialDryBulb		☐	☐
12.5-Ton AC-2	856	5000	2.300	2.300	1.75	ConstantVolume	NA	NA	NA	NA	NA	DifferentialDryBulb		☐	☐
12.5Ton AC-1	429	5000	2.450	2.450	1.87	ConstantVolume	NA	NA	NA	NA	NA	DifferentialDryBulb		☐	☐

[1] Mechanical ventilation calculations and exhaust fans are included in the NRCC-PRF-MCH-DETAILS section

O. EQUIPMENT CONTROLS | **§ 120.2** | **Confirmed**

1. Equip Name	2. Equip Type	3. Controls	Pass	Fail
12.5-Ton AC-4	SZAC	1 Zones With CO2Sensor Vent. Control Differential DryBulb Economizer No Supply Air Temp. Control No Optimum Start No Evaporative Cooler	☐	☐
12.5-Ton AC-3	SZAC	1 Zones With CO2Sensor Vent. Control Differential DryBulb Economizer No Supply Air Temp. Control No Optimum Start No Evaporative Cooler	☐	☐
12.5-Ton AC-2	SZAC	1 Zones With CO2Sensor Vent. Control Differential DryBulb Economizer No Supply Air Temp. Control No Optimum Start No Evaporative Cooler	☐	☐
12.5Ton AC-1	SZAC	No DCV Controls Differential DryBulb Economizer No Supply Air Temp. Control No Optimum Start No Evaporative Cooler	☐	☐

Project Name:	Lazy Dog Eat. Drink.	NRCC-PRF-01-E	Page 11 of 22
Project Address:	3100 Newpark Mall Newark 94560	Calculation Date/Time:	13:19, Fri, Jan 12, 2018
Compliance Scope:	NewComplete	Input File Name:	LD - Newpark Mall - Newark, Ca T24.cibd16x

O. EQUIPMENT CONTROLS | **§ 120.2** | **Confirmed**

1. Equip Name	2. Equip Type	3. Controls	Pass	Fail
BOH35	Exhaust	No DCV Controls Economizer type not properly specified No Supply Air Temp. Control No Optimum Start No Evaporative Cooler	☐	☐
Plant1 - SHW	Service Hot Water, Primary Only	Fixed Temperature Control, No DDC	☐	☐

P. SYSTEM DISTRIBUTION SUMMARY | **§ 120.4/ § 140.4(l)**

		Dry System Distribution				Confirmed	
1. Equip Name	2. Equip Type	3. Duct Leakage and Sealing Required per 140.4(l)	4. Duct Leakage will be verified per NA1 and NA2	5. Ducts: Insulation R-Value	5. Ducts: Location	Pass	Fail
12.5-Ton AC-4	SZAC	No	No	8	Unconditioned	☐	☐
12.5-Ton AC-3	SZAC	No	No	8	Unconditioned	☐	☐
12.5-Ton AC-2	SZAC	No	No	8	Unconditioned	☐	☐
12.5Ton AC-1	SZAC	No	No	8	Unconditioned	☐	☐

Does the Project Include Zonal Systems? (if "Yes", see NRCC-PRF-MCH-DETAILS for system information)	No
Does the Project Include a Solar Hot Water System? (if "Yes", see NRCC-PRF-MCH-DETAILS for system information)	No
Multifamily or Hotel/ Motel Occupancy? (if "Yes", see NRCC-PRF-MCH-DETAILS for DHW system information)	No

Project Name:	Lazy Dog Eat. Drink.	NRCC-PRF-01-E	Page 12 of 22
Project Address:	3100 Newpark Mall Newark 94560	Calculation Date/Time:	13:19, Fri, Jan 12, 2018
Compliance Scope:	NewComplete	Input File Name:	LD - Newpark Mall - Newark, Ca T24.cibd16x

Q. INDOOR CONDITIONED LIGHTING GENERAL INFO (see NRCC-PRF-LTI-DETAILS for more info)[1] | **§ 140.6** | **Confirmed**

1. Occupancy Type [1,4]	2. Conditioned Floor Area [2] (ft²)	3. Installed Lighting Power (Watts)	4. Lighting Control Credits (Watts)	5. Additional (Custom) Allowance: Area Category Footnotes (Watts)	5. Additional (Custom) Allowance: Tailored Method (Watts)	Pass	Fail
Bar, Cocktail Lounge and Casino Areas	1,712	1,883	0	0	0	☐	☐
Corridors, Restrooms, Stairs, and Support Areas	847	508	0	0	0	☐	☐
Dining Area	3,129	3,129	0	0	0	☐	☐
Kitchen, Commercial Food Preparation	2,432	2,918	0	0	0	☐	☐
Building Totals:	**8,120**	**8,438**	**0**	**0**	**0**		

[1] See Table 140.6-C
[2] See NRCC-LTI-01-E for unconditioned spaces
[3] Lighting information for existing spaces modeled is not included in the table
[4] Multiple entries for an Occupancy Type may be listed in the table as those have been aggregated for Building Stories that have the same floor multiplier.

R. INDOOR CONDITIONED LIGHTING SCHEDULE (Adapted from NRCC-LTI-01-E)[1] | **§ 130.0**

This Section Does Not Apply

[1] If lighting power densities were used in the compliance model Building Departments will need to check prescriptive forms for Luminaire Schedule details.

S1. COVERED PROCESS SUMMARY – ENCLOSED PARKING GARAGES | **§ 140.9**

This Section Does Not Apply

Project Name:	Lazy Dog Eat. Drink.	NRCC-PRF-01-E	Page 13 of 22
Project Address:	3100 Newpark Mall Newark 94560	Calculation Date/Time:	13:19, Fri, Jan 12, 2018
Compliance Scope:	NewComplete	Input File Name:	LD - Newpark Mall - Newark, Ca T24.cibd16x

S2. COVERED PROCESS SUMMARY – COMMERCIAL KITCHENS | **§ 140.9**

Space Name	Exhaust Hood Style	Exhaust Hood Duty	Exhaust Length (ft)	Exhaust Flow Rate (cfm)	Confirmed Pass	Confirmed Fail
S-5-BOH	Eyebrow	Medium	69.0476	14,500	☐	☐
	None	Light			☐	☐
		Light			☐	☐
		Light			☐	☐
		Light			☐	☐

S3. COVERED PROCESS SUMMARY – COMPUTER ROOMS | **§ 140.9**

This Section Does Not Apply

S4. COVERED PROCESS SUMMARY – LABORATORY EXHAUSTS | **§ 140.9**

This Section Does Not Apply

T. UNMET LOAD HOURS

This Section Does Not Apply

U. ENERGY USE SUMMARY

Energy Component	Standard Design Site (MWh)	Proposed Design Site (MWh)	Margin (MWh)	Standard Design Site (MBtu)	Proposed Design Site (MBtu)	Margin (MBtu)
Space Heating	--

NRCC-PRF-MCH-DETAILS -SECTION START-

A. MECHANICAL VENTILATION AND REHEAT *(Adapted from 2016-NRCC-MCH-03-E)* — Confirmed: Pass ☐ Fail ☐

CONDITIONED ZONE NAME	1. DESIGN AIR FLOWS: HEATING/COOLING SYSTEM ID	DESIGN PRIMARY AIR FLOW (CFM)	DESIGN PRIMARY MINIMUM AIR FLOW (CFM)	DESIGN PRIMARY MINIMUM PRIMARY AIR FLOW FRACTION	MAXIMUM HEATING AIR FLOW (CFM)	MAXIMUM HEATING AIR FLOW FRACTION	DDC CONTROL (Y/N)	2. VENTILATION (§ 120.1): VENT SYSTEM ID	CONDITIONED AREA (ft2)	MIN. VENT RATE (CFM)	DESIGN NUM. OF PEOPLE	MIN. VENT RATE PER PERSON (CFM/person)	REQ'D VENT AIR FLOW (CFM)	DESIGN VENT AIR FLOW (CFM)	TRANSFER AIRFLOW (CFM)	ECV (Y/N)	Operable Window Interlocks § 120.1(c)1 (Y/N)	Pass	Fail
1-Dining 1	12.5-Ton AC-4	3,760	NA	NA	NA	NA	N	12.5-Ton AC-4	1,265	NA	84	15.0	1,265	1,265	NA	Y	NA	☐	☐
2-Reception / Foyer	12.5-Ton AC-4	1,240	NA	NA	NA	NA	N	12.5-Ton AC-4	417	NA	2	30.0	63	63	NA	N	NA	☐	☐
3-Dining 2	12.5-Ton AC-3	5,000	NA	NA	NA	NA	N	12.5-Ton AC-3	1,864	NA	81	15.0	1,212	1,212	NA	Y	NA	☐	☐
4-Bar	12.5-Ton AC-2	5,000	NA	NA	NA	NA	N	12.5-Ton AC-2	1,712	NA	57	15.0	856	856	NA	Y	NA	☐	☐
5-BOH	12.5Ton AC-1	4,249	NA	NA	NA	NA	N	12.5Ton AC-1	2,432	NA	12	30.0	365	365	NA	N	NA	☐	☐
6-Restroom	12.5Ton AC-1	751	NA	NA	NA	NA	N	12.5Ton AC-1	430	NA	2	30.0	65	65	NA	N	NA	☐	☐
								TOTAL	8,120			NA	NA	NA				☐	☐

B. ZONAL SYSTEM AND TERMINAL UNIT SUMMARY — § 140.4

1. System ID	2. System Type	3. Qty	4. Rated Capacity (kBtuh) Heating	4. Rated Capacity (kBtuh) Cooling	5. Economizer	6. Zone Name	7. Airflow (cfm) Design	7. Airflow (cfm) Min.	7. Airflow (cfm) Min. Ratio	8. Fan BHP	8. Fan Cycles	8. Fan ECM Motor	Confirmed Pass	Confirmed Fail
2-Reception / Foyer-Trm	Uncontrolled	1	NA	NA	NA	2-Reception / Foyer	1240	NA	NA	NA	NA	☐	☐	☐
1-Dining 1-Trm	Uncontrolled	1	NA	NA	NA	1-Dining 1	3760	NA	NA	NA	NA	☐	☐	☐
3-Dining 2-Trm	Uncontrolled	1	NA	NA	NA	3-Dining 2	5000	NA	NA	NA	NA	☐	☐	☐
4-Bar-Trm	Uncontrolled	1	NA	NA	NA	4-Bar	5000	NA	NA	NA	NA	☐	☐	☐
6-Restroom-Trm	Uncontrolled	1	NA	NA	NA	6-Restroom	751	NA	NA	NA	NA	☐	☐	☐
5-BOH-Trm	Uncontrolled	1	NA	NA	NA	5-BOH	4249	NA	NA	NA	NA	☐	☐	☐

C. EXHAUST FAN SUMMARY — Confirmed: Pass ☐ Fail ☐

1. System ID	2. Zone Name	3. Qty	4. CFM	5. Motor BHP	6. Total Static Pressure (in H20)
BOH35	5-BOH	1	14500	10.000	2.63

D. DHW EQUIPMENT SUMMARY – *(Adapted from NRCC-PLB-01)* — § 110.3 — Confirmed: Pass ☐ Fail ☐

1. DHW Name	2. Heater Element Type	3. Tank Type	4. Qty	5. Tank Vol (gal)	6. Rated Input (kBtu/h)	7. Efficiency	8. Tank Insulation R-value (int/Ext)	9. Pilot Energy (Btu/h)	10. Standby Loss	11. Heat Pump Type	12. Tank Location or Ambient Condition
A O Smith Water Products2	Gas	Storage	2	170	620	Thrml. Eff.: 0.820	NA		0.0291	NA	NA

E. MULTI-FAMILY CENTRAL DHW SYSTEM DETAILS

This Section Does Not Apply

F. SOLAR HOT WATER HEATING SUMMARY (Adapted from NRCC-STH-01)

This Section Does Not Apply

G. MECHANICAL HVAC ACCEPTANCE TESTS & FORMS *(Adapted from 2016-NRCC-MCH-01-E)* — § RA4

Declaration of Required Acceptance Certificates (NRCA) – Acceptance Certificates that may be submitted. (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify).

Test Description: Equipment Requiring Testing or Verification	# of units	MCH-02A Outdoor Air	MCH-03A Single Zone Unitary	MCH-04A Air Dist. Ducts	MCH-06A Economizer Controls	MCH-07A DCV	MCH-08A Supply Fan kW	MCH-09A Valve leakage	MCH-09A Supply Water Temp. Reset	MCH-10A Hyd. Control Valve	MCH-11A Auto Demand Shed Controls	MCH-12A FDD for DX Units	MCH-13A Auto FDD for AC & Zone	MCH-14A Dist. Energy Storage DX AC	MCH-15A TES Systems	MCH-16A Supply Air Temp. Reset	MCH-17A Condenser Water Reset Controls	MCH-18A ECMS	Confirmed Pass	Confirmed Fail
Plant1 - SHW	1	--	--	--	--	--	--	--	X	--	--	--	--	--	--	--	--	--	☐	☐
12.5-Ton AC-4	1	X	X	--	X	X	--	--	--	--	--	X	--	--	--	--	--	--	☐	☐
12.5-Ton AC-3	1	X	X	--	X	X	--	--	--	--	--	X	--	--	--	--	--	--	☐	☐
12.5-Ton AC-2	1	X	X	--	X	X	--	--	--	--	--	X	--	--	--	--	--	--	☐	☐
12.5Ton AC-1	1	X	X	--	X	--	--	--	--	--	--	X	--	--	--	--	--	--	☐	☐
BOH35	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	☐	☐

H. EVAPORATIVE COOLER SUMMARY

This Section Does Not Apply

NRCC-PRF-LTI-DETAILS -SECTION START-

A. INDOOR CONDITIONED LIGHTING CONTROL CREDITS (Adapted from NRCC-LTI-02-E) — § 140.6

This Section Does Not Apply

B. INDOOR CONDITIONED LIGHTING MANDATORY LIGHTING CONTROLS (Adapted from NRCC-LTI-02-E) — § 130.1

This Section Does Not Apply

§130.1(a) = Manual area controls; §130.1(b) = Multi Level; §130.1(c) = Auto Shut-Off; §130.1(d) = Mandatory Daylight; §130.1(e) = Demand Responsive

C. TAILORED METHOD CONDITIONED LIGHTING POWER ALLOWANCE SUMMARY AND CHECKLIST (Adapted from NRCC-LTI-04-E) — § 140.6

General lighting power (see Table D)	0
General lighting power from special function areas (see Table E)	NA
Additional "use it or lose it" (See Table G)	0
Total watts	0

D. GENERAL LIGHTING POWER (Adapted from NRCC-LTI-04-E) — § 140.6-D

This Section Does Not Apply

E. GENERAL LIGHTING FROM SPECIAL FUNCTION AREAS (Adapted from NRCC-LTI-04-E) — § 140.6(c) 3H

Room Number	Primary Function Area	Illuminance Value (LUX)	Room Cavity Ratio (Table G)	Allowed LPD	Floor Area (ft²)	Allowed Watts	Confirmed Pass	Confirmed Fail
NA	NA	NA	NA	NA	NA	NA	☐	☐

Note: Tailored Method for Special Function Areas is not currently implemented

F. ROOM CAVITY RATIO (Adapted from NRCC-LTI-04-E)

Rectangular Spaces: Room Number	Task/Activity Description	Room Length (ft)	Room Width (ft)	Room Cavity Height (ft)	RCR	Confirmed Pass	Confirmed Fail
NA	NA	NA	NA	NA	NA	☐	☐

Non-Rectangular Spaces

This Section Does Not Apply

Note: All applicable spaces are listed under the Non-Rectangular Spaces table

G. ADDITIONAL "USE IT OR LOSE IT" (Adapted from NRCC-LTI-04-E)

1. Wall Display	2. Combined Floor Display and Task Lighting	3. Combined Ornamental and Special Effects Lighting	4. Very Valuable Merchandise	Allowed Watts	Confirmed Pass	Confirmed Fail
0	0	0	0	**0**	☐	☐

5. Wall Display

This Section Does Not Apply

6. Floor Display and Task Lighting

This Section Does Not Apply

7. Combined Ornamental and Special Effects Lighting

This Section Does Not Apply

8. Very Valuable Merchandise

This Section Does Not Apply

H. INDOOR & OUTDOOR LIGHTING ACCEPTANCE TESTS & FORMS (Adapted from NRCC-LTI-01-E and NRCC-LTO-01-E) — § 130.4

Declaration of Required Acceptance Certificates (NRCA) –Acceptance Certificates that must be verified in the field. (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify).

Test Description: Equipment Requiring Testing or Verification	# of units	Indoor NRCA-LTI-02-A Occ Sensors / Auto Time Switch	Indoor NRCA-LTI-03-A Auto Daylight	Indoor NRCA-LTI-04-A Demand Responsive	Outdoor NRCA-LTO-02-A Outdoor Controls	Confirmed Pass	Confirmed Fail
Occupant Sensors	0	☐	☐	☐	☐	☐	☐
Automatic Time Switch	0	☐	☐	☐	☐	☐	☐
Automatic Daylighting	0	☐	☐	☐	☐	☐	☐
Demand Responsive	0	☐	☐	☐	☐	☐	☐
Outdoor Controls	0	☐	☐	☐	☐	☐	☐

ENVELOPE MANDATORY MEASURES: NONRESIDENTIAL — ENV-MM

Project Name: *Lazy Dog Eat. Drink.* Date: *1/12/2018*

DESCRIPTION

Building Envelope Measures:

§110.8(a):	Installed insulating material shall have been certified by the manufacturer to comply with the California Quality Standards for insulating material, Title 20 Chapter 4, Article 3.
§110.8(c):	All Insulating Materials shall be installed in compliance with the flame spread rating and smoke density requirements of Sections 2602 and 707 of Title 24, Part 2.
§110.8(g):	Heated slab floors shall be insulated according to the requirements in Table 110.8-A.
§110.7(a):	All Exterior Joints and openings in the building that are observable sources of air leakage shall be caulked, gasketed, weatherstripped or otherwise sealed.
§110.6(a):	Manufactured fenestration products and exterior doors shall have air infiltration rates not exceeding 0.3 cfm/ft ² of window area, 0.3 cfm/ft ² of door area for residential doors, 0.3 cfm/ft ² of door area for nonresidential single doors (swinging and sliding), and 1.0 cfm/ft ² for nonresidential double doors (swinging).
§110.6(a):	Fenestration U-factor shall be rated in accordance with NFRC 100, or the applicable default U-factor.
§110.6(a) :	Fenestration SHGC shall be rated in accordance with NFRC 200, or NFRC 100 for site-built fenestration, or the applicable default SHGC.
§110.6(b):	Site Constructed Doors, Windows and Skylights shall be caulked between the unit and the building, and shall be weatherstripped (except for unframed glass doors and fire doors).
§120.7(a):	The opaque portions of the roof/ceiling that separates conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-Factor requirements as follows: **Metal Building-** The weighted average U-factor of the roof assembly shall not exceed 0.098. **Wood Framed and Others-** The weighted average U-factor of the roof assembly shall not exceed 0.075.
§120.7(b):	The opaque portions of walls that separate conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-factor as follows: **Metal Building-** The weighted average U-factor of the wall assembly shall not exceed 0.113. **Metal Framed-** The weighted average U-factor of the wall assembly shall not exceed 0.151. **Light Mass Walls-** A 6 inch or greater Hollow Core Concrete Masonry Unit shall have a U-factor not to exceed 0.440. **Heavy Mass Walls-** An 8 inch or greater Hollow Core Concrete Masonry Unit shall have a U-factor not to exceed 0.690. **Wood Framed and Others-** The weighted average U-factor of the wall assembly shall not exceed 0.110. **Spandrel Panels and Opaque Curtain Wall-** The weighted average U-factor of the spandrel panels and opaque curtain wall assembly shall not exceed 0.280. **Demising Walls-**. The opaque portions of framed demising walls shall meet the requirements of Item A or B below: A. Wood framed walls shall be insulated to meet a U-factor not greater than 0.099. B. Metal Framed walls shall be insulated to meet a U-factor not greater than 0.151.
§120.7(c):	The opaque portions of floors and soffits that separate conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-Factor requirements as follows: **Raised Mass Floors-** Shall have a minimum of 3 inches of lightweight concrete over a metal deck or the weighted average U-factor of the floor assembly shall not exceed 0.269. **Other Floors-**The weighted average U-factor of the floor assembly shall not exceed 0.071.

STATE OF CALIFORNIA
COMMERCIAL KITCHEN REQUIREMENTS
CEC-NRCC-PRC-03-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-PRC-03-E
Commercial Kitchen Requirements — (Page 1 of 2)
Project Name: Lazy Dog Eat. Drink. Date Prepared: 1/12/2018

KITCHEN ROOM NUMBER:	LD Newark Kitchen
TOTAL INSTALLED TYPE I and II KITCHEN HOOD EXHAUST (CFM):	14,500
TOTAL BYPASS HOOD MUA (CFM):	11,190
TOTAL TRANSFER AIR AIRFLOW (CFM):	3,310
TOTAL MECHANICALLY HEATED OR COOLED MAKE UP AIR (CFM):	0
TOTAL AIR NEEDED FOR HEATING OR COOLING (CFM):	0
TOTAL EXHAUST AIR WITH DEMAND VENTILATION SYSTEMS:	0

Equipment Tags and System Description		EF-4	EF-5	EF-6
PRESCRIPTIVE MEASURES	***T-24 Sections***	***Reference to the Requirements in the Contract Documents[9]***		
Bypass Hood Exhaust and MUA	140.9(b)1A	M1.0 - M4.1	M1.0 - M4.1	M1.0 - M4.1
Type I/II Hood Exhaust	140.9(b)1B, Table 140.9-A	M1.0 - M4.1	M1.0 - M4.1	M1.0 - M4.1
Mechanically Heated or Cooled Make Up Air	140.9(b)2Ai and ii	M1.0 - M4.1	M1.0 - M4.1	M1.0 - M4.1
Replacement Air/Transfer Air Exhaust	140.9(b)2Bi	M1.0 - M4.1	M1.0 - M4.1	M1.0 - M4.1
Demand Ventilation Systems	140.9(b)2Bii	M1.0 - M4.1	M1.0 - M4.1	M1.0 - M4.1
Energy Recovery Systems	140.9(b)2Biii	M1.0 - M4.1	M1.0 - M4.1	M1.0 - M4.1
Tempered/Non Mechanical Cooling Air Systems	140.9(b)2Biv	M1.0 - M4.1	M1.0 - M4.1	M1.0 - M4.1

STATE OF CALIFORNIA
COMMERCIAL KITCHEN REQUIREMENTS
CEC-NRCC-PRC-03-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-PRC-03-E
Commercial Kitchen Requirements — (Page 2 of 2)
Project Name: Lazy Dog Eat. Drink. Date Prepared: 1/12/2018

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Nathan Rueda	Documentation Author Signature: *Nathan Rueda*
Company: CRO ENGINEERING GROUP, INC.	Signature Date: 1/12/2018
Address:	CEA/HERS Certification Identification (if applicable):
City/State/Zip:	Phone:

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Sanya Patcha	Responsible Designer Signature:
Company: CRO Engineering Group, Inc	Date Signed: 1/12/18
Address: 18652 Florida St	License: No. M35663
City/State/Zip: Huntington Beach, Ca 92648	Phone: 714 847-7100

Consultant

CRO ENGINEERING GROUP, INC.
Mechanical | Electrical | Plumbing

18652 FLORIDA STREET, SUITE 100
HUNTINGTON BEACH, CA 92648
PHONE: 714-847-7100
FAX: 714-841-6000
WWW.CROEG.COM

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Stamp and Signature



Sanya Pharcharakitti, License No.M35663
Expiration Date: 09/30/2019

Issuance

Date	Description
	☐ COORDINATION SET
01/15/2018	☒ PLAN CHECK SUBMITTAL
	☐ HEALTH DEPARTMENT SUBMITTAL
	☐ ISSUED FOR BID
	☐ ISSUED FOR CONSTRUCTION

Revision

Date	No.	Description

Project Name and Location

NEWPARK MALL
3100 NEWPARK MALL
NEWARK, CA 94560

Sheet Title

ENERGY FORMS

Project No.: 235-016 Sheet No.:

M4.1

Print Date: February 9, 2018

DWG: S:\project\235 - Lazy Dog\235-016 - Lazy Dog - Newpark Mall, Newark, CA\Submission\235016-M4.0.dwg
PLOT: Feb 09, 2018 - 11:52am USER: Mirdorita

DIVISION 15 – MECHANICAL

SECTION 15000
MECHANICAL GENERAL PROVISIONS

A. GENERAL CONDITIONS

1. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND ALL OTHER SPECIFICATION SECTIONS ARE A PART OF THIS CONTRACT AND APPLY TO THIS AND THE OTHER SECTIONS OF DIVISION 15.

2. THE CONTRACTOR FOR THIS WORK IS REQUIRED TO READ THE ENTIRE SPECIFICATIONS AND REVIEW DRAWINGS FOR ALL OTHER TRADES.

3. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS SUBCONTRACTORS WITH A FULL SET OF BID SET DOCUMENTS (INCLUDING SPECIFICATIONS) AND THE COORDINATION OF HIS WORK AND INSPECTIONS AND THE WORK AND INSPECTIONS OF HIS SUBCONTRACTORS WITH ALL OTHER TRADES ON SITE CONFORMING TO THE GENERAL CONTRACTOR'S TIME SCHEDULE.

4. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING HIS BID TO DETERMINE CONDITIONS AFFECTING THE WORK. BIDS SHALL SERVE AS EVIDENCE OF KNOWLEDGE OF EXISTING CONDITIONS AND ANY MODIFICATIONS WHICH ARE REQUIRED TO MEET THE INTENT OF THE DRAWINGS AND SPECIFICATIONS. FAILURE TO VISIT THE SITE DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY IN PERFORMANCE OF WORK.

5. WHEN USED, THE TERM "PROVIDED BY CONTRACTOR" SHALL BE INTERPRETED AS MEANING "FURNISHED AND INSTALLED" WITH THE EXCEPTION WHERE ITEMS ARE "PROVIDED BY TENANT" WHICH MEANS "FURNISHED ONLY" (INSTALLED BY CONTRACTOR), EXCEPT AS SPECIFICALLY NOTED OTHERWISE.

B. GENERAL REQUIREMENTS

1. THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, SERVICES, TOOLS, TRANSPORTATION AND FACILITIES NECESSARY FOR REASONABLY IMPLIED OR INCIDENTAL WORK TO PROVIDE A COMPLETE AND FULLY FUNCTIONAL MECHANICAL SYSTEM AS SHOWN ON THE DRAWINGS, CALLED FOR IN THE SPECIFICATIONS AND AS REQUIRED BY JOB CONDITIONS. ALL WORK NOT SPECIFICALLY NOTED AS BEING BY THE LANDLORD SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR. CLOSELY COORDINATE THE ENTIRE INSTALLATION WITH THE LANDLORD. AS REQUIRED, FIELD VERIFY THE EXACT TYPE, SIZE AND LOCATION, ETC. OF EXISTING PIPE AND DUCTS IN THE TENANT SPACE PRIOR TO BID.

2. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT EACH OTHER AND ANY MATERIAL OR LABOR CALLED FOR IN ONE SHALL BE PROVIDED EVEN THOUGH NOT SPECIFICALLY MENTIONED IN BOTH. ANY MATERIAL OR LABOR WHICH IS NEITHER SHOWN ON THE DRAWINGS NOR CALLED FOR IN THE SPECIFICATIONS, BUT WHICH IS OBVIOUSLY NECESSARY TO COMPLETE THE WORK, AND/OR USUALLY FURNISHED WITH WORK OF SIMILAR CHARACTER, SHALL BE PROVIDED AS PART OF CONTRACT.

3. WHERE THE DRAWINGS OR SPECIFICATIONS CALL FOR ITEMS WHICH EXCEED CODES OR THE LANDLORD'S TENANT CRITERIA, THE CONTRACTOR IS STILL RESPONSIBLE FOR PROVIDING THE SYSTEM AS DESIGNED AND DESCRIBED ON THESE DRAWINGS, UNLESS SPECIFICALLY NOTED OTHERWISE.

4. ALL MECHANICAL WORK SHALL BE INSTALLED SO AS TO BE READILY ACCESSIBLE FOR OPERATING, SERVICING, MAINTAINING, AND REPAIRING. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SUFFICIENT ACCESS TO ALL EQUIPMENT FOR SERVICING.

5. THE CONTRACTOR SHALL DO ALL CUTTING, CORE DRILLING, CHASING OR CHANNELING AND PATCHING REQUIRED FOR ANY WORK UNDER THIS DIVISION. CUTTING SHALL HAVE PRIOR APPROVAL BY THE TENANT'S CONSTRUCTION MANAGER AND THE LANDLORD. PATCHING SHALL MATCH, FINISH OF SURROUNDING AREA.

C. CODES

1. ALL WORK SHALL BE PERFORMED IN A NEAT PROFESSIONAL MANNER USING GOOD TRADE PRACTICES. ALL WORK SHALL CONFORM TO THE LANDLORD'S CRITERIA, THE STATE'S, COUNTY'S, CITY'S AND LOCAL CODES AND ORDINANCES, SAFETY AND HEALTH CODES, NFPA CODES, ENERGY CODES AND ALL OTHER APPLICABLE CODES AND REQUIREMENTS. THE CONTRACTOR SHALL INQUIRE INTO AND COMPLY WITH ALL APPLICABLE CODES, ORDINANCES AND REGULATIONS. AFTER CONTRACT IS ISSUED, NO ADDITIONAL COST DUE TO CODES ISSUED SHALL BE REIMBURSED BY THE TENANT TO THE CONTRACTOR.

D. LICENSES, PERMITS, INSPECTIONS & FEES

1. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL LICENSES, PERMITS, INSPECTIONS, APPROVALS AND FEES REQUIRED OR RELATED TO HIS WORK.

2. FURNISH TO THE TENANT'S CONSTRUCTION MANAGER ALL CERTIFICATES OF INSPECTION AND FINAL INSPECTION APPROVAL AT SUBSTANTIAL COMPLETION DATE OF PROJECT.

E DRAWINGS

1. DRAWINGS (PLANS, SPECIFICATIONS, AND DETAILS) ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION AND INTENT OF THE MECHANICAL SYSTEMS. BECAUSE OF THE SMALL SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL DUCT OFFSETS, FITTINGS AND ACCESSORIES THAT MAY BE REQUIRED.

2. THE LAYOUT SHOWN ON THE DRAWINGS IS BASED ON A PARTICULAR MAKE OF EQUIPMENT. IF ANOTHER MAKE OF EQUIPMENT IS USED WHICH REQUIRES MODIFICATION OR CHANGE OF ANY DESCRIPTION FROM THE DRAWINGS OR SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE AS PART OF THIS WORK, FOR MAKING ALL SUCH MODIFICATIONS AND CHANGES, INCLUDING THOSE INVOLVING OTHER TRADES WITH THE COST THEREOF INCLUDED IN HIS BID. IN SUCH CASE, CONTRACTOR SHALL SUBMIT DRAWINGS AND SPECIFICATIONS PRIOR TO STARTING WORK SHOWING ALL SUCH MODIFICATIONS AND CHANGES. HIS PROPOSAL SHALL BE SUBJECT TO THE APPROVAL OF THE TENANT'S CONSTRUCTION MANAGER.

F. EXISTING SHELL SPACE CONDITIONS

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF THE DEMOLITION OF EXISTING MECHANICAL WORK SHOWN ON THE MECHANICAL DRAWINGS AND THE MECHANICAL DEMOLITION SHOWN ON THE ARCHITECTURAL DRAWINGS.

2. THE CONTRACTOR SHALL INCLUDE, AND WILL BE HELD RESPONSIBLE FOR, THE REMOVAL OF ALL EXISTING FIRE PROTECTION, PLUMBING FIXTURES, PIPING, HVAC UNITS, REFRIGERANT RECAPTURE, EXHAUST FANS, ETC. AND ASSOCIATED ROOF CURBS, ETC. CONTRACTOR ON HIS OWN INITIATIVE AND LANDLORD ALLY TO DETERMINE WHICH CONTRACTOR MUST SPECIFY WITH THEIR BID ALL PRESENTLY INSTALLED EQUIPMENT, WORK AND EQUIPMENT PRIOR TO REMOVAL. ROOF CURBS SHALL BE REMOVED AND THE ROOF PATCHED UNLESS NOTED FOR REUSE OR RECONFIGURATION ON PLANS. ROOF PATCHING SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE BY A ROOFING CONTRACTOR APPROVED BY THE LANDLORD. ALL EXTRANEOUS ITEMS IN THE SPACE OR ON THE ROOF (ABOVE THIS SPACE) NOT APPLICABLE TO THE NEW WORK OR PART OF THE LANDLORD'S OR ANOTHER TENANT'S ACTIVE SYSTEM MUST BE REMOVED AND ROOF/WALL/FLOOR PATCHED/REPAIRED TO MATCH EXISTING STRUCTURE. EXISTING ABANDONED PIPES, DUCTS OR EQUIPMENT IN THE FLOOR, EMBEDDED IN CONCRETE OR OTHERWISE INACCESSIBLE ARE TO BE CUT OFF AND SEALED BELOW OR WITHIN FLOOR OR WALL LEVEL WHEN THEY ARE NOT TO BE REUSED IN THIS PROJECT. IF REQUIRED BY LANDLORD OR CODES, ABANDONED PIPING AND/OR DUCTWORK MUST BE REMOVED TO POINT OF ORIGIN. CONFIRM THE EXTENT OF DEMOLITION PRIOR TO BID AND INCLUDE IN BID PROPOSAL.

3. ACTIVE LANDLORD OR OTHER TENANT SERVICES ENCOUNTERED IN WORK SHALL BE PROTECTED AND SUPPORTED. IF EXISTING SERVICES NOT ANTICIPATED REQUIRE RELOCATION, CONTACT THE TENANT'S CONSTRUCTION MANAGER IMMEDIATELY. ALL COSTS FOR REPAIR OF DAMAGES TO ACTIVE LANDLORD OR OTHER TENANT SERVICES DURING CONSTRUCTION SHALL BE PAID FOR BY THE CONTRACTOR CAUSING THE DAMAGE.

4. TIE-INS AND MODIFICATIONS TO EXISTING LANDLORD SERVICES MUST BE DONE WITH MINIMUM INTERRUPTION OF LANDLORD OPERATIONS AND DURING HOURS SPECIFIED BY THE LANDLORD. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING EXACT WORKING HOURS OF THIS WORK WITH THE LANDLORD PRIOR TO SUBMITTING HIS BID. THE CONTRACTOR SHALL INCLUDE IN HIS BID ALL PREMIUM TIME REQUIRED TO PERFORM MECHANICAL WORK OUTSIDE OTHER PLAN NORMAL WORKING HOURS. ALL SUCH WORK MUST BE COORDINATED WITH THE LANDLORD.

G. DISCREPANCIES IN DOCUMENTS

1. DRAWINGS (PLANS, SPECIFICATIONS, AND DETAILS) ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION AND INTENT OF THE MECHANICAL SYSTEMS. WHERE DRAWINGS, EXISTING SITE CONDITIONS, SPECIFICATIONS OR OTHER TRADES CONFLICT OR ARE UNCLEAR, ADVISE THE GENERAL CONTRACTOR IN WRITING, PRIOR TO SUBMITTAL OF BID. THE GENERAL CONTRACTOR IS RESPONSIBLE TO ADVISE THE TENANT'S CONSTRUCTION MANAGER, IN WRITING, OF VARIATIONS TO CONTRACT DOCUMENTS PRIOR TO SUBMISSION OF BID. OTHERWISE TENANT'S CONSTRUCTION MANAGER'S INTERPRETATION OF CONTRACT DOCUMENTS OR CONDITIONS SHALL BE FINAL WITH NO ADDITIONAL COMPENSATION PERMITTED.

H. TRADE NAMES AND MANUFACTURERS

1. WHERE TRADE NAMES AND MANUFACTURERS ARE USED ON THE DRAWINGS OR IN THE SPECIFICATIONS, THE TYPE EQUIPMENT SHALL BE USED AS A MINIMUM STANDARD FOR THE BASE BID. MANUFACTURERS CONSIDERED AS AN EQUAL OR BETTER IN ALL ASPECTS TO THAT SPECIFIED WILL BE SUBJECT TO APPROVAL IN WRITING BY THE TENANT'S CONSTRUCTION MANAGER PRIOR TO ACCEPTANCE. THE USE OF ANY UNAUTHORIZED EQUIPMENT SHALL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.

I. SHOP DRAWINGS

1. SUBMIT SIX COPIES OF MATERIAL LISTS AND SHOP DRAWINGS FOR ALL EQUIPMENT AND DUCT FABRICATION DRAWINGS TO THE TENANT'S CONSTRUCTION MANAGER FOR APPROVAL PRIOR TO ORDERING EQUIPMENT. SUBMISSIONS MUST BE EARLY ENOUGH TO ALLOW THE TENANT'S CONSTRUCTION MANAGER EIGHT WORKING DAYS FOR REVIEW WITHOUT CAUSING DELAYS OR CONFLICTS TO THE JOB'S PROGRESS. SUBMITTALS SHALL BE IN ACCORDANCE WITH THE GENERAL CONDITIONS USING THE MANUFACTURER'S LISTED ON THE DRAWINGS. SHOP DRAWINGS SHALL INCLUDE ALL DATA THAT PERTAINS TO THE REQUIREMENTS SET FORTH ON THE DRAWINGS AND IN THE SPECIFICATIONS. THE SUBMITTAL SHALL INCLUDE BUT NOT LIMITED TO CUTS OR CATALOGS INCLUDING DESCRIPTIVE LITERATURE AND CHARACTERISTICS OF EQUIPMENT SHALL SHOW MAJOR DIMENSIONS, ROUGHING-IN DATA, CAPACITY, CURVES, PRESSURE DROP, CODE COMPLIANCE, MOTOR AND DRIVE DATA AND ELECTRICAL DATA. OBSERVE SPECIAL INSTRUCTIONS WHEN REQUIRED. SUBMITTALS SHALL BEAR THE STAMP OF THE GENERAL AND SUBCONTRACTOR SHOWING THAT HE HAS REVIEWED AND CONFIRMED THAT THEY ARE IN CONFORMANCE WITH THE CONTRACT DRAWINGS AND SPECIFICATIONS OR INDICATE WHERE EXCEPTIONS TAKE PLACE. LACK OF SUCH CONTRACTOR'S REVIEW AND APPROVAL WILL BE CAUSE FOR REJECTION WITHOUT REVIEW BY TENANT'S CONSTRUCTION MANAGER. ALL SHOP DRAWINGS MUST APPEAR IN THE OPERATION AND MAINTENANCE MANUALS LEFT ON SITE AT JOB COMPLETION.

2. TENANT'S CONSTRUCTION MANAGER'S REVIEW OF SHOP DRAWINGS OR SCHEDULES SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS, OR OMISSIONS OR OTHER DEFICIENCIES OR DEVIATIONS IN THE SHOP DRAWING FROM THE CONTRACT DRAWINGS AND SPECIFICATIONS. J. RECORD DRAWINGS

1. THE CONTRACTOR SHALL MAINTAIN ONE COPY OF DRAWINGS AND SPECIFICATIONS ON THE JOB SITE TO RECORD DEVIATIONS FROM CONTRACT DRAWINGS, SUCH AS:
   A. LOCATION OF CONCEALED PIPING VALVES AND DUCTS.
   B. REVISIONS, ADDENDUMS, AND CHANGE ORDERS.
   C. SIGNIFICANT DEVIATIONS MADE NECESSARY BY FIELD CONDITIONS, APPROVED EQUIPMENT SUBSTITUTIONS, AND CONTRACTOR'S COORDINATION WITH OTHER TRADES.
   D. EXACT ROUTING OF ALL SANITARY AND DOMESTIC WATER PIPING UNDER FLOOR.

2. AT COMPLETION OF THE PROJECT AND BEFORE FINAL APPROVAL, THE CONTRACTOR SHALL MAKE ANY FINAL CORRECTIONS TO DRAWINGS AND CERTIFY THE ACCURACY OF EACH PRINT BY SIGNATURE THEREON. THE DRAWINGS ARE TO BE TURNED OVER TO THE TENANT.

K. GUARANTEE

1. THE CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORK UNDER HIS CONTRACT AND SHALL MAKE GOOD, REPAIR OR REPLACE, AT HIS OWN EXPENSE, ANY DEFECTIVE WORK, MATERIAL OR EQUIPMENT WHICH MAY BE DISCOVERED WITHIN A PERIOD OF 12 MONTHS FROM THE DATE OF ACCEPTANCE ON WRITING OF THE INSTALLATION BY THE TENANT'S CONSTRUCTION MANAGER. PROVIDE EXTENDED WARRANTIES AS SPECIFIED WITH INDIVIDUAL EQUIPMENT, IN CASES OF REPLACEMENT OR REPAIR OF EQUIPMENT DUE TO FAILURE WITHIN GUARANTEE PERIOD, GUARANTEE ON THAT PORTION OF WORK SHALL BE EXTENDED FOR A PERIOD OF ONE (1) YEAR FROM DATE OF SUCH REPLACEMENT OR REPAIR.

L. OPERATIONS MANUALS

1. ONE COPY OF EACH OPERATION AND MAINTENANCE MANUAL FOR ALL EQUIPMENT FURNISHED ON JOB SHALL BE COLLECTED AND INSERTED IN A 3" THREE RING BINDER NEATLY LABELED OVER ALL TRADES. EACH NOTEBOOK SHALL INCLUDE, BUT NOT BE LIMITED TO, INSTALLATION, MAINTENANCE AND OPERATING INSTRUCTIONS, PAMPHLETS OR BULLETINS, APPROVED SHOP DRAWINGS AND WARRANTIES OBTAINED FROM EACH MANUFACTURER OF PRINCIPAL ITEMS OF EQUIPMENT.

M. SLEEVES

1. THE CONTRACTOR SHALL PROVIDE SLEEVES TO PROTECT EQUIPMENT OR FACILITIES IN THE INSTALLATION. EACH SLEEVE SHALL EXTEND THROUGH IT'S RESPECTIVE FLOOR, WALL OR PARTITION AND SHALL BE CUT FLUSH WITH EACH SURFACE EXCEPT SLEEVES THAT PENETRATE THE FLOOR, WHICH SHALL EXTEND 2" ABOVE THE FLOOR.

2. ALL SLEEVES AND OPENINGS THROUGH FIRE RATED WALLS AND/OR FLOORS SHALL BE FIRE SEALED WITH CALCIUM SILICATE SILICONE "RTV" FOAM, 3M FIRE BARRIER SEALANT OR EQUAL. SEAL SHALL BE AS CLOSE AS POSSIBLE TO THE FLOOR OR WALL. CONFORM TO U.L. ASSEMBLY RATING OF FLOOR OR WALL.

3. SLEEVES IN BEARING AND MASONRY WALLS, FLOORS, AND PARTITIONS SHALL BE SCHEDULE 40 BLACK STEEL PIPE FINISHED WITH SMOOTH ENDS. FOR OTHER THAN MASONRY PARTITIONS, THROUGH SUSPENDED CEILINGS, OR FOR CONCENTRIC VERTICAL PIPING, SLEEVES SHALL BE NO. 22 U.S.G. GALVANIZED STEEL MINIMUM.

4. DUCT SLEEVES TO BE MINIMUM 14 GAUGE STEEL.

N. HANGERS

1. HANGERS SHALL INCLUDE ALL MISCELLANEOUS STEEL SUCH AS ANGLE IRON, BANDS, U-CLAMPS, BOLTS, HOOKS, CLIPS, CHANNELS, INSERTS, ETC., NECESSARY FOR THE INSTALLATION OF WORK.

2. HANGERS SHALL BE FASTENED TO BUILDING STEEL, CONCRETE, OR MASONRY, BUT NOT TO ROOF DECKING. HANGING FROM METAL DECK IS NOT PERMITTED. HANGERS MUST BE ATTACHED TO UPPER CHORD WORK OR JOIST, WHERE FEASIBLE. WHERE IT IS NOT FEASIBLE TO SUPPORT FROM OR ON JOIST, HANGERS SHALL BE ATTACHED TO BUILDING STEEL AT PANEL POINTS WHICH SHALL BE LOCATED WHERE THEY DO NOT INTERFERE WITH ACCESS TO FIRE DAMPERS, VALVES, ACCESS DOORS AND OTHER EQUIPMENT SERVICE REQUIREMENTS AND/OR OTHER TRADES. HANGER TYPES AND INSTALLATION METHODS ARE SUBJECT TO LANDLORD CRITERIA.

3. HANGERS FOR ALL INSULATED PIPING SHALL BE SIZED AND INSTALLED FOR THE OUTER DIAMETER OF INSULATION. INSTALL 6" LONG SPLIT CIRCLE GALVANIZED SADDLE BETWEEN THE HANGER AND THE PIPE INSULATION.

4. HANGERS AND PIPING OF DISSIMILAR METALS SHALL BE DI-ELECTRICALLY SEPARATED FROM ONE ANOTHER.

O. ACCESS DOORS

1. FURNISH STEEL ACCESS DOORS AND FRAMES, MIN. 16" X 20" OR AS SHOWN ON DRAWINGS, WHERE WORK SHALL CONFORM TO THE FOLLOWING AND WHERE NECESSARY TO PROVIDE ACCESS TO CONCEALED VALVES, AND OTHER EQUIPMENT REQUIRING ACCESS FOR INSPECTION. LOCATION, TYPE, SIZE AND NUMBER AS DETERMINED BY CONTRACTOR AND APPROVED BY TENANT CONSTRUCTION MANAGER TO SUIT EQUIPMENT REQUIREMENTS. GENERAL CONTRACTOR WILL INSTALL ACCESS DOORS AND FRAMES.

2. ACCESS DOORS LOCATED IN FIRE-RATED WALLS, FLOORS, CEILING-FLOOR OR CEILING-ROOF ASSEMBLIES SHALL BE RATED, UNDERWRITER'S LABORATORIES, INC., LISTED AND LABELED.

3. ACCESS DOORS SHALL BE FLUSH TYPE, MANUFACTURED FROM NO. 14 GAUGE STEEL, EXCEPT FOR LARGER TYPE FRAMES MANUFACTURED FROM NO. 16 GAUGE STEEL, PROVIDED WITH ANCHORS. ACCESS DOORS SHALL BE SUITABLE FOR INSTALLATION IN WALL OR CEILING MATERIALS SHOWN IN ROOM FINISH SCHEDULES.

P. ELECTRICAL MOTORS

1. FURNISH, INSTALL AND ALIGN ALL MOTORS REQUIRED FOR THIS EQUIPMENT. UNLESS THEY ARE FACTORY INSTALLED ON THE UNIT. ALL STARTERS WITH ASSOCIATED WIRING AND SAFETY SWITCHES FOR SUCH MOTORS SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. STARTERS SHALL MEET ALL REQUIREMENTS AS DEFINED IN THE ELECTRICAL DIVISION OF THESE SPECIFICATIONS.

2. DESIGN, CONSTRUCTION AND PERFORMANCE CHARACTERISTICS OF MOTORS SHALL CONFORM TO ALL APPLICABLE PROVISIONS OF LATEST NEMA, ANSI, ISEE STANDARDS PUBLICATIONS AND CHANGES, INCLUDING ALL MOTORS SHALL BE SUITABLE FOR OPERATION ON VOLTAGE VARIATION OF PLUS OR MINUS 10%, 40 DEGREES AMBIENT TEMPERATURE, AND HAVE A SERVICE FACTOR OF NOT LESS THAN 1.15.

Q. LOW VOLTAGE (24 VOLT) WIRING

1. THE CONTRACTOR IS TO INSTALL ALL LOW VOLTAGE WIRING REQUIRED FOR HIS EQUIPMENT. THIS WORK INCLUDES ALL TRANSFORMERS AND DEVICES TO MAKE THIS A COMPLETE FUNCTIONAL SYSTEM.

2. ALL WORK IS TO CONFORM TO THE LATEST ADDITION N.E.C. AND TO DIVISION 16 ELECTRICAL SPECIFICATIONS.

3. ANY CONDUIT REQUIRED BY CODE OR THE LANDLORD WILL BE INSTALLED BY THE ELECTRICAL SUBCONTRACTOR.

DIVISION 15 – MECHANICAL

SECTION 15500
HEATING, VENTILATION, AND AIR CONDITIONING

A. SCOPE OF WORK

1. THE HVAC CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, SERVICES, TOOLS, TRANSPORTATION AND FACILITIES NECESSARY FOR REASONABLY IMPLIED OR INCIDENTAL WORK TO PROVIDE A COMPLETE AND FULLY FUNCTIONAL SYSTEM OF ALL THE WORK FOR THE MECHANICAL SYSTEMS AS SHOWN ON THE DRAWINGS, CALLED FOR IN THE SPECIFICATIONS, AND AS REQUIRED BY JOB CONDITIONS TO INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:(REFER TO RESPONSIBILITY SCHEDULE FOR EXACT RESPONSIBILITY AND ACCORDANCE WITH

A. HVAC UNITS, EQUIPMENT, AND APPURTENANCES.
B. DUCTWORK, FITTINGS, DAMPERS, AND INSULATION.
C. HYDRONIC PIPING AND INSULATION (AS APPLICABLE REFER TO PLANS).
D. REFRIGERANT PIPING (AS APPLICABLE, REFER TO PLANS).
E. DIFFUSERS, GRILLES, AND REGISTERS.
F. CURBS AND STEEL FRAMING FOR SUPPORT (AS APPLICABLE, REFER TO PLANS).
G. TESTING, ADJUSTING AND BALANCING.
H. OPERATIONS MANUALS.
I. TEMPERATURE CONTROLS AND RELATED DIAGRAMS.
J. SEQUENCES OF OPERATION.
K. COMMUNICATION WITH LANDLORD ENERGY MANAGEMENT SYSTEM.

3. BEFORE STARTING WORK, THIS CONTRACTOR SHALL EXAMINE THE ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL PLANS AND SPECIFICATIONS TO SEQUENCE, COORDINATE, AND INTEGRATE THE ELEMENTS OF THE HVAC SYSTEM, MATERIALS, AND EQUIPMENT WITH OTHER CONTRACTORS TO AVOID INTERFERENCES AND CONFRONTATIONS.

B. HVAC EQUIPMENT

1. PRIMARY HEATING, VENTILATION AND AIR CONDITIONING UNITS.
A. PRIMARY HEATING, VENTILATION, AND AIR CONDITIONING UNITS ARE TO BE AS SCHEDULED. ALL COMPRESSORS ARE TO INCLUDE A 5-YEAR EXTENDED WARRANTY.
B. EQUALS EQUIPMENT AS MANUFACTURED BY CARRIER, TRANE OR YORKS ACCEPTABLE.
C. ALL EQUIPMENT SHALL BE COMPLETE IN EVERY RESPECT WITH ALL DEVICES, APPURTENANCES AND ACCESSORIES NECESSARY TO MEET THE DESIGN INTENT AND OPERATING CHARACTERISTICS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN.
D. EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. ALL AIR CONDITIONING EQUIPMENT MUST HAVE A CERTIFICATE OF RATING ISSUED IN ACCORDANCE WITH MANUFACTURERS DATA. SEE SCHEDULE FOR ADDITIONAL CRITERIA.
E. SECONDARY DRAIN PANS ARE REQUIRED TO BE INSTALLED BENEATH ALL INDOOR AIR CONDITIONING EQUIPMENT WITH THE EXCEPTION OF VAV BOXES. SECONDARY PANS ARE TO PROTECT ENTIRE UNIT. PROVIDE CONDENSATE PUMPS AS REQUIRED. CONDENSATE SHALL BE DIRECTED TO MOP SINK OR AS SPECIFIED ON PLANS.

2. VARIABLE AIR VOLUME BOXES (VAV).
A. WHERE SHOWN ON DRAWINGS, PROVIDE VAV BOXES COMPLETE WITH CONTROLS, HEATING COILS (FANS AS REQUIRED). ALL DUCT CONNECTIONS FLEXIBLE DUCT/PIPE CONNECTIONS SHALL BE PROVIDED BY THE CONTRACTOR.

3. TOILET EXHAUST FANS
A. WHERE SHOWN ON DRAWINGS, PROVIDE A TOILET EXHAUST FAN UNIT COMPLETE WITH GRAVITY BACK DRAFT DAMPERS. ALL DUCTWORK, ROOF OPENINGS AND CAPS NECESSARY TO PROVIDE A COMPLETE EXHAUST SYSTEM SHALL BE PROVIDED BY THE CONTRACTOR. REFER TO PLANS FOR APPLICABILITY.

4. BASEBOARD, CABINET, AND UNIT HEATERS
A. WHERE SHOWN ON DRAWINGS, PROVIDE ELECTRIC HEATERS COMPLETE WITH ELECTRIC HEATING COIL, CONTROLS, AND INTEGRAL THERMOSTAT.

5. INLINE PUMPS
A. WHERE SHOWN ON DRAWINGS PROVIDE AN INLINE CLOSE COUPLED PUMP(S), BRONZE FITTED. PUMPS SHALL BE FURNISHED WITH BRONZE CASE, WEARING RINGS, BRONZE SHAFT SLEEVE AND MECHANICAL SHAFT SEAL RATED FOR PUMPS TO BE SO CONSTRUCTED THAT THEY MAY BE MOUNTED IN A HORIZONTAL OR VERTICAL PIPE LINE. MOTOR TO BE 1750 RPM UNLESS NOTED OTHERWISE.

6. VIBRATION ISOLATION DEVICES
A. VIBRATION ISOLATION DEVICES SHALL BE PROVIDED IN ALL SUPPORTS BETWEEN VIBRATING EQUIPMENT (FANS, ROOFTOP UNITS, AIR HANDLERS, FAN POWERED VAV BOXES, ETC.) AND STRUCTURE.
B. VIBRATING EQUIPMENT HUNG FROM STRUCTURE SHALL BE ISOLATED WITH RUBBER AND SPRING DEVICES. VIBRATING EQUIPMENT SUPPORTED FROM FLOOR OR DECK SHALL BE ISOLATED WITH HOUSED SPRING MOUNT DEVICES.
C. EXAMINE DEAD LOAD AND OPERATING LOAD CONDITIONS WHEN SELECTING DEVICES. ADJUST FOR PROPER ALIGNMENT AND CLEARANCE. AVOID "GROUNDING" THE ISOLATOR.
D. CHECK HANGER ROD SIZE FOR ALLOWABLE LOADS AT THE ISOLATING DEVICE AND AT THE UPPER AND LOWER ATTACHMENTS TO STRUCTURES, DUCTS, EQUIPMENT, ETC.
E. CONSULT MANUFACTURER FOR APPLICATION DATA.

7. CURBS AND STEEL FRAMING FOR SUPPORT
A. WHERE CONTRACTOR WILL PROVIDE NECESSARY CURBS AND STEEL FRAMING REQUIRED TO INSTALL ALL HVAC EQUIPMENT AS DESCRIBED OR IMPLIED ON THE DRAWINGS. CURBS SHALL BE A MINIMUM OF 14" HIGH OF THE SAME MANUFACTURER OF THE EQUIPMENT SUPPORTED. INSULATE UNDER THE COMPRESSOR SECTION TO PREVENT CONDENSATION. ALL CURBS MUST BE INSTALLED SO THAT TOP OF CURBS ARE "DEAD" LEVEL. ALL PENETRATIONS OF EXISTING STRUCTURE SHALL BE DONE IN ACCORDANCE TO THE LANDLORD'S GUIDELINES AT THIS CONTRACTOR'S EXPENSE.

E. METAL DUCTWORK – NO FIBERGLASS DUCT ALLOWED

1. NO DUCTWORK SHALL BE FABRICATED PRIOR TO APPROVAL BY THE TENANT'S CONSTRUCTION MANAGER. SIGNIFICANT DEVIATIONS FROM DESIGN MUST BE APPROVED BY TENANT'S CONSTRUCTION MANAGER PRIOR TO FABRICATION OR INSTALLATION. ALL DUCT MAINS ARE TO BE RECTANGULAR UNLESS NOTES OTHERWISE. ALL DUCT BRANCHES TO DIFFUSERS ARE TO BE ROUND RIGID DUCT. FLEXIBLE DUCT CONNECTIONS TO THE DIFFUSER ARE NOT ALLOWED ON THE SALES FLOOR)

2. EXCEPT AS OTHERWISE INDICATED, FABRICATE AND INSTALL RECTANGULAR DUCTS WITH GALVANIZED SHEET STEEL, IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS" OF THE LATEST EDITION. CONFORM TO THE REQUIREMENTS IN THE REFERENCED STANDARD FOR METAL THICKNESS, REINFORCING TYPES AND INTERVALS, TIE ROD APPLICATIONS, AND JOINT TYPES AND INTERVALS.

3. EXCEPT WHERE OTHERWISE INDICATED, CONSTRUCT DUCT SYSTEMS TO THE FOLLOWING PRESSURE CLASSIFICATIONS: (VERIFY WHETHER RETURN OR EXHAUST DUCT IS POSITIVE OR NEGATIVE PRESSURE).
A. SUPPLY DUCTS: 2 INCHES WATER GAUGE, POSITIVE PRESSURE.
B. RETURN AND EXHAUST DUCTS: 2 INCHES WATER GAUGE, NEGATIVE PRESSURE.
PRESSURE TEST DUCTS FOR LEAKAGE. REMAKE LEAKING JOINTS AND APPLY SEALANTS AS REQUIRED TO FABRICATE A SYSTEM THAT DOES NOT EXCEED 5% LEAKAGE OR LESS AS STATED BY PRESSURE CLASS RATINGS IN SMACNA STANDARDS.

4. AS A MINIMUM, CROSSBREAK ALL FLAT SURFACES OR REINFORCE WITH A BEAD APPROXIMATELY 3/8" WIDE X 3/16" DEEP ON 12" CENTERS TO PREVENT VIBRATIONS.

5. INSTALL DOUBLE THICKNESS TURNING VANES IN ALL RIGHT ANGLE ELBOWS.

6. INSTALL RIGID ROUND AND RECTANGULAR METAL DUCT WITH SUPPORT SYSTEMS INDICATED IN SMACNA STANDARDS. SUPPORT HORIZONTAL DUCTS WITHIN 2 FEET OF EACH ELBOW AND WITHIN 4 FEET OF EACH BRANCH INTERSECTION USING DOUBLE STRAP HANGERS ON EACH SIDE OF FITTING. SUPPORT VERTICAL DUCTS AT A MAXIMUM INTERVAL OF 16 FEET AND AT EACH FLOOR. NO WOOD SHALL BE USED TO SUPPORT OR BRACE DUCTS. PROVIDE SWAY AND SEISMIC BRACING AS REQUIRED BY STATE AND LOCAL CODES OR BY LANDLORD.

7. WHERE DUCTS PASS THROUGH ROOFS AND FLOORS, PROVIDE AS MINIMUM 1-1/2"X1-1/2"X1/8" STEEL ANGLE FRAMES AT EACH SIDE OF OPENING. THE ANNULAR SPACE BETWEEN DUCT AND ANGLE FRAMES SHALL BE CAULKED WITH SILICONE SEALANT OR FIREPROOFED AS REQUIRED BY ASSEMBLY FIRE RATING.

8. ALL TRAVERSE JOINTS AND SEAMS IN SUPPLY AIR DUCT SHALL BE SEALED AIR TIGHT WITH OAF OMC DUCT SEALER. JOINTS ALSO SHALL BE RIVETED OR CONNECTED WITH SHEET METAL SCREWS.

9. SOFT ELASTOMER BUTYL GASKET WITH ADHESIVE BACKING SHALL BE USED TO SEAL FLANGED JOINTS.

10. DUCT TRANSITIONS SHALL NOT EXCEED 30 DEGREES SLOPE EXCEPT AS SPECIFICALLY NOTED OTHERWISE.

11. PROVIDE ACCESS TO ALL MOTORIZED DAMPERS, FIRE DAMPERS, CONTROLS, AND OTHER ITEMS IN DUCTWORK THAT REQUIRE SERVICE OR INSPECTION. IF THE ACCESS PANEL LOCATION IS EXPOSED TO THE SALES AREA, IT MUST BE APPROVED BY THE TENANT'S CONSTRUCTION MANAGER PRIOR TO INSTALLATION. FLUSH SUPPLY AND RETURN AIR DIFFUSERS, GRILLES AND REGISTERS WITH PLASTER FRAMES MAY BE USED AS ACCESS LOCATIONS.

12. FLEXIBLE CONNECTIONS
A. FLEXIBLE COLLARS SHALL BE PROVIDED IN ALL CONNECTIONS BETWEEN VIBRATING EQUIPMENT (FANS, ROOFTOP UNITS, AIR HANDLERS, FAN POWERED VAV BO