

HVAC CONTROLS

- THERMOSTATS AND SENSORS**
1. THERMOSTATS SHALL BE HONEYWELL 1751F OR LENOX COSTA2024EL DIGITAL 7 DAY PROGRAMMABLE WITH 4 MODES PER DAY AND AT LEAST THE SAME NUMBER OF CAPACITY STAGES AS THE RTU.
 2. REMOTE SENSORS SHALL BE FURISH/MOUNT OR "BUTTON" TYPE WITH NO VISUAL DISPLAYS OR ADJUSTMENT KNOBS OF ANY KIND AND SHALL BE MOUNTED 48"±0" AFF. COORDINATE EXACT HEIGHT WITH GENERAL CONTRACTOR.
 3. THERMOSTATS SHALL BE LOCATED IN THE OFFICE AS SHOWN ON THE PLANS. REMOTE SENSORS LOCATED IN THE SPACES AS SHOWN ON THE PLAN.
 4. PROVIDE DUCT MOUNTED HUMIDITY SENSORS FOR RTU-1 AND RTU-2. HUMIDITY SENSING SHALL BE USED FOR DEFERRED RESET CONTROL.
 5. TEMPERATURE AND HUMIDITY SENSORS SHALL BE BY LENOX OR HONEYWELL.

- RTU CONTROLS**
- THE FOLLOWING HIGHLIGHT SEVERAL KEY POINTS WHICH ARE DEPICTED IN THE "HOOD INTERLOCK DIAGRAM" AND "CONTROL WIRING DIAGRAM"
- WHEN THE HOODS ARE "ON" THE RTU FANS RUN CONTINUOUSLY.
 - WHEN THE HOODS ARE "ON" THE MAKEUP AIR DAMPER ARE FORCED OPEN BY ENERGIZING THE "OCCUPIED" TERMINAL ON THE RTU. THE FACTORY WIRING WITHIN THE RTU, THEN OPENS THE DAMPER TO A POSITION SET BY THE TEST AND BALANCE CONTRACTOR.
 - WHEN THE HOODS ARE "OFF", THE THERMOSTAT CONTROLS THE FAN OPERATIONS.
 - AT ALL TIMES, THE THERMOSTAT CONTROLS THE STAGING OF THE COOLING AND HEATING TO MEET THE SETPOINT.
 - THE ONLY USE FOR THE THERMOSTAT PROGRAMMING WILL BE TO ESTABLISH TEMPERATURE SETPOINTS FOR VARIOUS TIMES DURING THE DAY. IT IS VERY IMPORTANT TO NOTE THAT THE "OCCUPIED/UNOCCUPIED" STATUS OF THE THERMOSTAT WILL HAVE NO BEARING ON THE OUTSIDE AIR DAMPER POSITION. THE ONLY CONNECTION TO THE "OCCUPIED" TERMINAL ON THE ROOFTOP SHALL AS SHOWN IN THE "CONTROL WIRING DIAGRAM".

- HOOD AND FAN CONTROLS**
11. THE HOOD MANUFACTURER SHALL PROVIDE A FACTORY MOUNTED CONTROL SYSTEM FOR ENERGIZING THE HOOD EXHAUST FANS AND MAKEUP FAN.
 - THERE SHALL BE ON CONTROL PANEL FOR THE HOODS.
 - FACTORY SWITCHES SHALL BE PROVIDED ON THE FRONT OF THE HOOD.
 - THE HOOD SHALL ALSO HAVE FACTORY WIRED SENSORS IN THE EXHAUST COLLARS THAT SHALL AUTOMATICALLY ENERGIZE THE FANS UPON THE SENSING OF HEAT FROM COOKING OPERATIONS.
 12. THE HOOD CONTROL PANEL SHALL HAVE A LOW VOLTAGE DRY CONTACT TO INTERLOCK WITH THE BUILDING HVAC SYSTEM AS SHOWN IN THE "HOOD INTERLOCK DIAGRAM" AND THE "CONTROL WIRING DIAGRAM". THE PURPOSE OF THIS INTERLOCK IS TO ENSURE POSITIVE BUILDING AIR BALANCE WHEN THE HOOD FANS ARE RUNNING.
 13. GREASE EXHAUST SHALL RUN SHALL RUN WHENEVER THE CORRESPONDING HOOD FIRE EXTINGUISHING SYSTEM IS ACTIVATED. (THE FAN SHALL START IF THE HOOD IS NOT IN OPERATION, AND THE FAN SHALL CONTINUE TO RUN IF THE HOOD IS IN OPERATION). THE MAKE-UP AIR UNIT SHALL SHUT DOWN WHENEVER THE HOOD FIRE EXTINGUISHING SYSTEM IS ACTIVATED.

- STANDARD CONTROLS**
10. THE FOLLOWING CONTROLS ARE NOT PART OF HOOD CONTROL SYSTEM
 - EF-8 SHALL BE INTERLOCKED WITH THE DISHWASHER.
 - EF-8 SHALL BE INTERLOCKED WITH THE LIGHTS IN THE EMPLOYEE RESTROOM.

- SMOKE DETECTORS**
11. THE MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL DUCT MOUNTED SMOKE DETECTORS IN THE SUPPLY DUCT OF EACH RTU.
 12. THE SMOKE DETECTORS SHALL BE COORDINATED WITH THE FIRE ALARM CONTRACTOR TO ENSURE COMPATIBILITY.
 13. IF A FIRE ALARM SYSTEM IS PROVIDED, ALL INTERCONNECTS WIRING BETWEEN THE SMOKE DETECTORS AND THE FIRE ALARM PANEL SHALL BE BY THE FIRE ALARM CONTRACTOR.

- STARTERS AND DISCONNECTS**
14. ALL RTU DISCONNECTS ARE FACTORY INSTALLED.
 15. ALL FAN DISCONNECTS ARE FACTORY INSTALLED.
 16. DISCONNECTS FOR ALL OTHER EQUIPMENT SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
 17. STARTERS FOR THE HOOD EXHAUST AND MAKEUP UNIT SHALL BE PROVIDED BY THE HOOD MANUFACTURER, AND LOCATED IN THE HOOD'S UTILITY CABINET.

- MISCELLANEOUS**
18. PROVIDE A LAMINATE PLACARD WITH THE EQUIPMENT TAG FOR EACH PIECE OF SCHEDULED EQUIPMENT AND FOR EACH THERMOSTAT (IN MANAGER'S OFFICE). ALTERNATELY EQUIPMENT MAY BE STENCILED. EACH THERMOSTAT PLACARD SHALL ALSO INDICATE THE AREA OF THE BUILDING SERVED.
 19. LOCATE A LAMINATED COPY OF THE "HOOD INTERLOCK DIAGRAM", THE "CONTROL WIRING DIAGRAM" & THE CONTROLS NOTES ON THE INSIDE OF THE CONTROLS ACCESS PANEL OF EACH RTU. DOCUMENT ALL AS BUILT MODIFICATIONS AND/OR SPECIFIC UNIT CONFIGURATION NOTES AS NECESSARY.
 20. LOW VOLTAGE (24V) CONTROL WIRING SHALL BE PROVIDED BY THE MECHANICAL SUBCONTRACTOR WHERE REQUIRED. THE ELECTRICAL SUBCONTRACTOR SHALL PROVIDE CONDUIT FOR ALL CONTROL WIRING AS COORDINATED WITH THE MECHANICAL SUBCONTRACTOR. ALL CONDUIT SHALL BE RUN SQUARE WITH BUILDING LINES.
 21. LINE VOLTAGE (120V AND HIGHER) CONTROL AND POWER WIRING AND CONDUIT SHALL BE PROVIDED BY THE ELECTRICAL SUBCONTRACTOR.

GENERAL NOTES:

1. ALL RECTANGULAR, ROUND AND FLEXIBLE DUCTS SHALL BE SIZED AS SHOWN ON THESE DRAWINGS. MINIMUM INTERNAL DIMENSIONS ARE GIVEN.
2. ALL SUPPLY, RETURN AND OUTSIDE AIR DUCTS ARE SIZED FOR AIR VOLUME AND STATIC PRESSURE DROP WITHOUT INTERIOR INSULATION. SHOULD INTERIOR INSULATION BE USED, THE CONTRACTOR SHALL INCREASE THE DUCT SIZE ACCORDINGLY.
3. ALL SUPPLY, RETURN AND OUTSIDE AIR DUCTS SHALL BE INSULATED.
4. ALL FLEXIBLE DUCTS SHALL BE CONNECTED TO TRUNK OR BRANCH DUCTS WITH A MINIMUM OF THREE SHEET METAL SCREWS AT EACH CONNECTION AND TAPED TO PROVIDE AN AIR TIGHT SEAL.
5. INSTALL TURNING VANES IN ALL 90° DUCT ELBOWS AND AT ALL DUCT "TEES".
6. INSTALL ADJUSTABLE AIR VOLUME EXTRACTORS AT ALL BRANCH TO MAIN DUCT CONNECTIONS.
7. HOOD FIRE PROTECTION SYSTEMS SHALL BE BY A LICENSED FIRE PROTECTION CONTRACTOR (REFER TO KITCHEN HOOD GENERAL NOTES).
8. ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED ACCORDING TO REFERENCED MECHANICAL CODE AND SMACNA STANDARDS. REFER TO THE MP GENERAL NOTES ON SHEET MP202.
9. MANUFACTURERS MINIMUM CLEARANCE RECOMMENDATIONS SHALL BE MAINTAINED ON ALL EQUIPMENT AND DUCTWORK.
10. THE CONTRACTOR SHALL CAREFULLY COORDINATE THE LOCATION OF ALL DUCTS, GRILLES, DIFFUSERS, ETC WITH THE CEILING GRIDS AND THE PLUMBING AND FRAMING CONTRACTORS.
11. ALL KITCHEN RETURN AIR GRILLES SHALL BE EASILY REMOVABLE FOR CLEANING.
12. ALL CONTROL WIRING SHALL BE BY THE HVAC CONTRACTOR. CONTROL WIRING SHALL BE SHIELDED CABLE TO PREVENT ANY ELECTRICAL INTERFERENCE.
13. ALL POWER WIRING SHALL BE BY THE ELECTRICAL CONTRACTOR.
14. THE CONTRACTOR SHALL CAREFULLY COORDINATE ALL THERMOSTAT LOCATIONS WITH INTERIOR FINISHES.
15. THE CONTRACTOR SHALL COORDINATE FULLY WITH ALL OTHER TRADES.
16. THE CONTRACTOR SHALL SUPPLY FOR APPROVAL SIX (6) COPIES OF SHOP DRAWINGS TO COMPLETELY IDENTIFY THE QUALITY OF MATERIALS AND/OR EQUIPMENT INTENDED FOR INSTALLATION. THERE WILL BE NO DRAW UNTIL SHOP DRAWINGS HAVE BEEN SUBMITTED AND REVIEWED BY ARCHITECT/ENGINEER.
17. THE SUBMISSION OF A BID OR PROPOSAL WILL BE CONSIDERED AS EVIDENCE THAT THE CONTRACTOR HAS REVIEWED THE PLANS AND ALL BUILDING CODES. ANY CLAIMS MADE SUBSEQUENT TO THE PROPOSAL FOR MATERIALS AND/OR LABOR DUE TO DIFFICULTIES ENCOUNTERED WILL NOT BE RECOGNIZED, UNLESS THE DIFFICULTIES COULD NOT HAVE BEEN FORESEEN BY THOROUGH PROPER EXAMINATION HAD BEEN MADE.
18. ALL ROUND TAKE-OFFS FROM RECTANGULAR DUCTS SHALL BE A DAMPERS EXPRESS COMMERCIAL AIR TIE SPIN IN MODEL ATCS2 W/ DAMPER OR APPROVED EQUAL.
19. DEFINITIONS: "FURNISH" SHALL MEAN TO PURCHASE AND LOCATE AN ITEM ON THE JOBSITE. "INSTALL" SHALL MEAN TO PHYSICALLY INSTALL AN ITEM AND TO CONNECT ALL REQUIRED SERVICES TO MAKE THAT ITEM FULLY FUNCTIONAL. "PROVIDE" SHALL MEAN TO BOTH FURNISH AND INSTALL ITEM.
20. PROVIDE ACCESS OPENINGS TO ALL FIRE DAMPERS. EACH ACCESS OPENING TO MAINTAIN FIRE DAMPERS SHALL BE IDENTIFIED WITH A LABEL OR SIGN. THE SIGN SHALL HAVE LETTERS 1/2" HIGH HIGH READING FIRE DAMPER.
21. AIR DUCT SYSTEM SMOKE DETECTORS SHALL BE ACCESSIBLE FOR CLEANING AND SHALL BE MOUNTED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. ACCESS DOORS OR PANELS SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 72 STANDARD FOR THE INSTALLATION OF AIR CONDITIONING AND VENTILATING SYSTEMS. THE LOCATION OF ALL DETECTORS IN AN AIR DUCT SYSTEM SHALL BE PERMANENTLY AND CLEARLY IDENTIFIED AND RECORDED. DUCT MOUNTED SMOKE DETECTORS SHALL BE BY THE FIRE ALARM CONTRACTOR WHERE NOT FURNISHED BY THE EQUIPMENT.
22. ALL EXHAUST DUCTWORK FOR THE HOODS SHALL BE PER MECHANICAL CODE. MIN. U.A. DUCT SHALL BE PER THE TESTS AND SHALL BE IDENTIFIED WITH A LABEL OR SIGN. REFER TO THE MP GENERAL NOTES ON SHEET MP202.
23. ALL ROOF CURBS FOR FANS ETC. SHALL BE A MINIMUM 2" HIGH. KITCHEN HOOD FAN CURBS MAY NEED TO BE HIGHER TO MAINTAIN CORRECT CLEARANCE HEIGHT FOR FAN PER THE REVERSE ENGINEERING MECHANICAL CODE. REFER TO THE MP GENERAL NOTES ON SHEET MP202.
24. DESIGNER EXHAUST SYSTEM SHALL BE WATER TIGHT, STAINLESS STEEL WITH WELDED JOINTS.
25. SHEAVE & PULLEY COMBINATION FOR RTU'S SHALL BE SIZED FOR DESIGN FAN P.M.
26. ALL KITCHEN HOOD EXHAUST DUCTWORK WELDS SHALL COMPLY WITH THE LATEST APPLICABLE AWS STANDARD.
27. PROPERLY SECURE ALL FANS TO CURBS & DUCTWORK. PROVIDE NECESSARY GASKET CURBS TO PREVENT WATER PENETRATION.
28. IDENTIFY AND PAINT (5" H) IDENTIFICATION ON ALL RTU'S, FANS & CONDENSING UNITS. IDENTIFICATION SHALL INCLUDE DEVICE NUMBER (E.G. RTU-1-OUTBACK STEAKHOUSE - DINING) AND AREA SERVED.
29. KITCHEN HOOD FIRE SUPPRESSION CONTRACTOR MUST SUBMIT PLANS AND OBTAIN PERMIT FROM FIRE MARSHAL. FIRE INSPECTOR TO WITNESS TEST PRIOR TO CERTIFICATE OF OCCUPANCY.
30. UNITS SHALL BE CLEANED. ALL SCRATCHES SHALL BE PAINTED OVER WITH FACTORY PAINT TO MATCH UNIT. ALL CONDENSER COILS SHALL BE COMBED OUT, AND ALL PANELS AND SCREWS SHALL BE REINSTALLED AT COMPLETION OF THE PROJECT.
31. EACH SUPPLY AIR OUTLET AND EXHAUST GRILLE SHALL BE EQUIPPED WITH A MEANS FOR AIR BALANCING IN ACCORDANCE WITH THE CODE INDICATED ON SHEET MP202.
32. HVAC TEST AND BALANCE REPORT SHALL BE PAID FOR BY OUTBACK WITH ACTUAL PROCEDURE COORDINATED BY THE MC AND GC THROUGH AIR SOLUTIONS AND BALANCING. CONTACT STEVE BULTERMAN AT (803) 262-5922 EXT. 709 OR EMAIL AT sbulterman@airbalancing.com. ANY ADJUSTMENTS TO THE SYSTEM AS DETERMINED BY THE REPORT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.

COMMISSIONING PLAN

- PROVIDE A COMMISSIONING PLAN DEVELOPED BY AN APPROVED AGENCY PER FBC - ECC CASE 2 AND SHALL INCLUDE THE FOLLOWING:
1. A NARRATIVE DESCRIPTION OF THE ACTIVITIES THAT WILL BE ACCOMPLISHED DURING EACH PHASE OF COMMISSIONING, INCLUDING THE PERSONNEL INTENDED TO ACCOMPLISH EACH OF THE ACTIVITIES.
 2. A LISTING OF THE SPECIFIC EQUIPMENT, APPLIANCES OR SYSTEMS TO BE TESTED AND A DESCRIPTION OF THE TESTS TO BE PERFORMED.
 3. FUNCTIONS TO BE TESTED, INCLUDING, BUT NOT LIMITED TO CALIBRATIONS AND ECONOMIZER CONTROLS.
 4. CONDITIONS UNDER WHICH THE TEST WILL BE PERFORMED, AT A MINIMUM TESTING SHALL OCCUR WINTER AND SUMMER DESIGN CONDITIONS AND ALL OUTSIDE AIR CONDITIONS.
 5. MEASURABLE CRITERIA FOR PERFORMANCE.

PRELIMINARY COMMISSIONING REPORT

- PROVIDE A PRELIMINARY COMMISSIONING REPORT SHALL BE COMPLETED AND CERTIFIED BY AN APPROVED AGENCY PER FBC - ECC CASE 2 AND SHALL INCLUDE THE FOLLOWING:
1. ITEMIZATION OF DEFICIENCIES FOUND DURING TESTING BY ECC SECTION CASE SYSTEM COMMISSIONING THAT HAVE NOT BEEN CORRECTED AT THE TIME OF REPORT PREPARATION.
 2. DEFERRED TESTS THAT CANNOT BE PERFORMED AT THE TIME OF REPORT PREPARATION DUE TO CLIMATE CONDITIONS.
 3. CLIMATIC CONDITIONS REQUIRED FOR PERFORMANCE OF THE DEFERRED TESTS.

FINAL COMMISSIONING REPORT

- PROVIDE A FINAL COMMISSIONING REPORT SHALL BE COMPLETED AND CERTIFIED BY AN APPROVED AGENCY PER FBC - ECC CASE 2 AND SHALL BE DELIVERED TO THE OWNER AND SHALL INCLUDE THE FOLLOWING:
1. RESULTS OF FUNCTIONAL PERFORMANCE TESTS.
 2. DISPOSITION OF DEFICIENCIES FOUND DURING TESTING, INCLUDING DETAILS OF CORRECTIVE MEASURES USED OR PROPOSED.
 3. FUNCTIONAL PERFORMANCE TEST PROCEDURES USED DURING THE COMMISSIONING REPORTS INCLUDING MEASURABLE CRITERIA FOR TEST ACCEPTANCE, PROVIDED HEREIN FOR REPEATABILITY.

THE EXCEPTION WILL BE DEFERRED TESTS WHICH CANNOT BE PERFORMED AT THE TIME OF THE REPORT PREPARATION DUE TO CLIMATE CONDITIONS.

DUCTWORK NOTES

- SHEET METAL WORK**
1. EXCEPT AS OTHERWISE SHOWN OR NOTED, ALL SUPPLY AND RETURN AIR DUCTWORK AND OTHER SHEET METAL WORK SHALL BE 24 GA. GALVANIZED SHEET STEEL AND SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF SMACNA (SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC.) DUCT CONSTRUCTION STANDARDS.
 2. ALL DUCTWORK SHALL BE SEALED TO COMPLY WITH THE LATEST EDITION OF THE REFERENCED ENERGY CONSERVATION AND MECHANICAL CODES. PRESSURE CLASSIFICATION 2 N.W.G. SEAL CLASS B REFER TO SMACNA FOR SEAL CLASS DETAILS. REFER TO THE MP GENERAL NOTES ON SHEET MP202.
 3. DUCTWORK IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISERS OF RUNS. THE CONTRACTOR SHALL ALLOW FOR PROPER ROUTING OF DUCTWORK TO AVOID OBSTRUCTIONS. EXACT LOCATIONS ARE SUBJECT TO APPROVAL OF ARCHITECT. COORDINATION WITH OTHER TRADES IS REQUIRED.
 4. ALL DUCT SIZES SHOWN ARE INSIDE FREE AREA DIMENSIONS REQUIRED FOR PROPER AIRFLOW, UNLESS SPECIFICALLY INDICATED. ALL DUCT TRANSITIONS SHALL BE SMOOTH AND GRADUAL WITH MAXIMUM PERCENT ANGLE OF 14°.
 5. ALL SHEET METAL DUCTWORK WITHIN 10' OF THE AIR HANDLING UNIT SHALL BE LINED WITH DUCT LINER. APPLY LINER IN ACCORDANCE WITH MANUFACTURERS AND SMACNA RECOMMENDATIONS. ALL TRANSVERSE EDGES OR ANY EDGES EXPOSED TO CEILING SHALL BE PROTECTED WITH PROTECTIVE PRODUCTS. JOINTS SHALL BE NEATLY BUTTED AND THERE SHALL BE NO INTERRUPTIONS OR GAP.
 6. EXPOSED DUCT AND FITTINGS SHALL BE PROVIDED WITH A MILL FINISH ("PAINT GRIP", "ZINC GRIP" OR SIMILAR ETC) TREATMENT TO ALLOW THE DUCTWORK TO BE PAINTED.
 7. PROVIDE TURNING VANES IN ALL SQUARE ELBOWS OF SUPPLY DUCTWORK.
 8. ALL FLEXIBLE DUCTWORK SHALL BE STRETCHED AND SUSPENDED IN ACCORDANCE WITH LOCAL CODE. SUPPORT EVERY 7' WITH 1" WIDE GALVANIZED STEEL BANDS (MAX SAG 1/2" BETWEEN SUPPORTS). MAXIMUM LENGTH OF DUCT SHALL BE SIX (6) FEET.
 9. ALL DUCTWORK SHALL BE INSTALLED AS HIGH AS POSSIBLE AND TIGHT TO STRUCTURE, UNLESS NOTED OTHERWISE.
 10. COORDINATE BRANCH DUCT LOCATIONS WITH TRUSS WEBS AND ROOF SCREEN POSTS.
 11. SUPPORT ALL DUCTWORK FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING TO THE BUILDING STRUCTURE. FURNISH ADDITIONAL FRAMING TO CONNECTING TO THE BOTTOM OF MAIN TRUSS.
 12. PROVIDE VOLUME DAMPERS AT CONNECTION OF DIFFUSER BRANCH DUCTS TO THE MAIN DUCT.
 13. NO FLEXIBLE DUCTWORK SHALL BE ALLOWED WHERE ACCESSIBLE CEILING.
 14. EXPOSED ROUND DUCTWORK HANGING AND BURNING SHALL BE SINGLE WALL SPIRAL DUCT. REFER TO DRAWING CONSTRUCTION STANDARDS.

GREASE DUCT TESTING

- PERFORM THE FOLLOWING TESTS FOR THE REFERENCED MECHANICAL CODE; REFER TO THE MP GENERAL NOTES ON SHEET MP202.
- GREASE DUCT TESTING - PRIOR TO TEST, USE OR CONCEALMENT OF ANY PORTION OF A GREASE DUCT SYSTEM, ALEB PERFORMED DUCTS SHALL BE CONSIDERED TO BE UNTESTED WHERE INSTALLED IN SHIRTS OR COVERED BY CONTAINERS OR IN ANY MANNER THAT PREVENTS THE DUCTWORK FROM BEING VISUALLY INSPECTED ON ALL PORTIONS. THE PERMIT HOLDER SHALL BE RESPONSIBLE TO PROVIDE THE NECESSARY EQUIPMENT AND PERFORM THE GREASE DUCT LEAKAGE TEST. A LIGHT TEST SHALL BE PERFORMED TO DETERMINE THAT ALL WELDED AND BRAZED JOINTS ARE LIQUID TIGHT.
- LIGHT TEST SHALL BE PERFORMED BY PASSING A LAMP HAVING A POWER RATING OF NOT LESS THAN 150 WATTS THROUGH THE ENTIRE SECTION OF DUCTWORK TO BE TESTED. THE LAMP SHALL BE OPEN SO AS TO EMIT LIGHT EQUALLY IN ALL DIRECTIONS. REFER TO THE MP GENERAL NOTES ON SHEET MP202 FOR THE TEST PROCEDURE FOR THE ENTIRE DUCT SYSTEM, INCLUDING THE HOOD-TO-DOCT CONNECTION. THE DUCT WORK SHALL BE PERMITTED TO BE TESTED IN SECTIONS, PROVIDED THAT EVERY JOINT IS TESTED. FOR LISTED FACTORY-BUILT GREASE DUCTS, THIS TEST SHALL BE LIMITED TO DUCT JOINTS ASSEMBLED IN THE FIELD AND SHALL EXCLUDE FACTORY WELDS.
- PERFORMANCE TEST - A PERFORMANCE TEST SHALL BE CONDUCTED UPON COMPLETION AND BEFORE FINAL APPROVAL OF THE INSTALLATION OF A VENTILATION SYSTEM SERVING COMMERCIAL COOKING APPLIANCES. THE TEST SHALL VERIFY THE RATE OF EXHAUST AIRFLOW REQUIRED BY SECTION 507 MAKEUP AIRFLOW REQUIRED BY SECTION 508 AND PROCEED OPERATION SPECIFIED IN THIS CHAPTER. THE PERMIT HOLDER SHALL FURNISH THE NECESSARY TEST EQUIPMENT AND DEVICES REQUIRED TO PERFORM THE TESTS.
- CAPTURE AND CONTAINMENT TEST - THE PERMIT HOLDER SHALL VERIFY CAPTURE AND CONTAINMENT PERFORMANCE OF THE EXHAUST SYSTEM. THIS FIELD TEST SHALL BE CONDUCTED WITH ALL APPLIANCES UNDER THE HOOD AT OPERATING TEMPERATURES. WITH ALL SOURCES OF OUTDOOR AIR PROVIDING MAKEUP AIR FOR THE HOOD OPERATING AND WITH ALL SOURCES OF RECIRCULATED AIR PROVIDING CONDITIONING FOR THE SPACE IN WHICH THE HOOD IS LOCATED OPERATING. CAPTURE AND CONTAINMENT SHALL BE VERIFIED VISUALLY BY OBSERVING SMOKE OR STEAM PRODUCED BY ACTUAL OR SIMULATED COOKING, SUCH AS WITH SMOKE CANDLES, SMOKE PUFFERS, ETC.

KITCHEN HOOD GENERAL NOTES

- KITCHEN HOOD AND FIRE SUPPRESSION INFORMATION IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. KITCHEN EQUIPMENT SUPPLIER TO PROVIDE KITCHEN HOODS, FIRE SUPPRESSION SYSTEMS, KITCHEN HOOD EXHAUST AND SUPPLY FANS. GENERAL CONTRACTOR IS RESPONSIBLE FOR INSTALLING SUPPLIED KITCHEN EQUIPMENT. COORDINATE WITH KITCHEN EQUIPMENT SUPPLIER.
- ROOM SENSOR INSTALLATION: A ROOM TEMPERATURE SENSOR IS PROVIDED WITH THE HOOD STARTER PANEL. INSTALL IN A SAFE LOCATION, FREE OF INFLUENCE FROM EXTERNAL HEAT SOURCES. LOCATION SHALL BE INDICATIVE OF THE AVERAGE KITCHEN TEMPERATURE AWAY FROM APPLIANCES. THE SENSOR SHALL BE WIRED BACK TO THE HOOD STARTER PACKAGE AS SHOWN ON THE STARTER PACKAGE WIRING DIAGRAM IN THE HOOD DRAWINGS, WITH WIRE PROVIDED WITH THE STARTER PACKAGE.
- DUCT SENSOR INSTALLATION: ONE DUCT SENSOR IS FURNISHED PER HOOD EXHAUST RISER. THE SENSORS ARE SHIPPED FACTORY INSTALLED IN FACTORY ASSEMBLED HOOD RISERS. A 2-WIRE PLENUM RATED THERMISTOR CABLE (18 GAUGE TYPICAL) PLUM IN CONDUIT, SHOULD BE USED TO WIRE THE SENSORS BACK TO THE CONTROLLER AND LANDED ON CONNECTOR J10 AS INDICATED ON THE INSTALLATION SCHEMATIC IN THE HOOD DRAWINGS. PLENUM WIRE IS TYPICALLY SUPPLIED WITH THE STARTER PACKAGE.
- KITCHEN HOOD FIRE SUPPRESSION: KITCHEN HOOD FIRE SUPPRESSION PROVIDED BY GREASEMASTER. THE HOOD FIRE SUPPRESSION SHOP DRAWINGS SUBMIT THE HOOD FIRE SUPPRESSION SHOP DRAWINGS SHALL BE SUBMITTED TO AGENCY HAVING JURISDICTION FOR APPROVAL & PERMIT PRIOR TO INSTALLATION AS REQUIRED.
- SYSTEM DESCRIPTION: PROVIDE A PRE-ENGINEERED, WET CHEMICAL CARTRIDGE OPERATED TYPE FIRE SUPPRESSION SYSTEM. IT SHALL BE A FIXED NOZZLE AGENT DISTRIBUTION NETWORK AND SHALL BE LISTED. (UL95). THE SYSTEM SHALL BE CAPABLE OF AUTOMATIC DETECTION AND REMOTE ACTUATION. THE SYSTEM SHALL BE IN ACCORDANCE WITH NFPA 96 AND AUTHORITY HAVING JURISDICTION. DISCHARGE NOZZLES WILL PROVIDE COVERAGE OF, BUT NOT LIMITED TO, THE HOOD AREA & EXHAUST DUCT. FURNISH ELECTRIC OPERATED SHUT OFF VALVE.
- COORDINATE GAS VALVE AND SHUNT TRIP INSTALLATION WITH PLUMBING AND ELECTRICAL DESIGN AND INSTALLATION.

MECHANICAL ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	GC	GENERAL CONTRACTOR
AHJ	AUTHORITY HAVING JURISDICTION	MC	MECHANICAL CONTRACTOR
CD	CONDENSATE DRAIN	MIN	MINIMUM
CFM	CUBIC FEET PER MINUTE	M/A	MAKE-UP AIR
CLG	CELLING	NTB	NOT TO SCALE
CO	CARBON MONOXIDE	OA	OUTSIDE AIR
CO2	CARBON DIOXIDE	PC	PLUMBING CONTRACTOR
EC	ELECTRICAL CONTRACTOR	REF	REFERENCE
EF	EXHAUST FAN	RTU	ROOFTOP UNIT
G	GAS	SP	STATIC PRESSURE
GA	GAUGE	SS	STAINLESS STEEL
		TYP	TYPICAL

HVAC UNIT SPECIFICATIONS

UNITS FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR SHALL BE LENOX. ALL UNITS SHALL BE SINGLE PACKAGE TYPE, COMBINATION AIR TO AIR COOLING AND ELECTRIC HEATING. EACH UNIT SHALL BE MOUNTED ON A FULL PERIMETER ROOF CURB. FILTERS IN ALL HVAC UNITS SHALL BE 2" THICK THROWAWAY TYPE. UNITS SHALL BE INSTALLED ON MOUNTING CURB WITH ALL DUCTWORK PENETRATING INSIDE PERIMETER OF CURB. UNITS SHALL BE FURNISHED WITH INTEGRAL STARTERS.

SEQUENCE OF OPERATION

THE MECHANICAL CONTRACTOR SHALL FURNISH ALL REQUIRED COMPONENTS FOR THE FOLLOWING SEQUENCE OF OPERATION FOR EACH HVAC UNIT. DISCONNECTS SHALL BE FURNISHED AND INSTALLED BY THE UNIT MANUFACTURER.

- UNIT SHALL BE STARTED AND STOPPED THROUGH ITS RESPECTIVE THERMOSTAT AND REMOTE TEMPERATURE/HUMIDITY SENSORS FOR RTU-1, 2 & 3. THERMOSTAT & REMOTE TEMPERATURE SENSORS FOR RTU-4 & 5.
- THERMOSTATS W/ REMOTE TEMPERATURE/ HUMIDITY SENSORS SHALL ENERGIZE COOLING, HEATING AND DE-HUMIDIFICATION SYSTEMS TO MAINTAIN DESIRED SPACE TEMPERATURE AND HUMIDITY.
- PROVIDE SMOKE DETECTOR IN THE RETURN AIR SIDE OF EACH UNIT. IN THE AIR STREAM AHEAD OF ALL FANS, COILS, ETC. WHICH SHALL COMPLETELY COVER THE UNIT WHEN SMOKE IS DETECTED. PROVIDE REMOTE TESTING. REFER TO THE REFERENCED BUILDING AND MECHANICAL CODES. REFER TO THE MP GENERAL NOTES ON SHEET MP202.
- MC SHALL HOLD (3) TRAINING SESSIONS (SUMMER, WINTER, SPRING) TO MANAGE TO INSURE THEIR KNOWLEDGE OF PROPERLY USING THE CONTROLS.

ROOFTOP UNIT NATIONAL ACCOUNT

THE ROOFTOP UNIT ACCESSORIES SHALL BE PURCHASED THROUGH LENOX NATIONAL ACCOUNTS. THE SUCCESSFUL CONTRACTOR SHALL CONTACT LENOX NATIONAL ACCOUNTS FOR PRICING & PURCHASING INFORMATION FOR SCHEDULING AND DELIVERY, CONTACT TERRY BUCHANAN AT (813) 262-5922.

KITCHEN HOOD FIRE PROTECTION

KITCHEN HOOD FIRE PROTECTION SHALL BE AS INDICATED ON HOOD FIRE PROTECTION AND SUPPLY FANS. THE SUCCESSFUL CONTRACTOR SHALL CONTACT LENOX NATIONAL ACCOUNTS FOR PRICING & PURCHASING INFORMATION FOR SCHEDULING AND DELIVERY, CONTACT TERRY BUCHANAN AT (813) 262-5922.

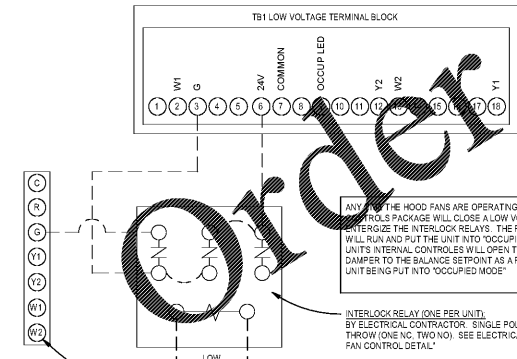
O & M MANUALS

THE CONTRACTOR SHALL PROVIDE OPERATIONS AND MAINTENANCE MANUALS TO THE OWNER WITHIN 90 DAYS OF SYSTEM ACCEPTANCE.

MECHANICAL SYMBOLS LEGEND

— CD —	CONDENSATE DRAIN PIPING
— AUX —	AUXILIARY DRAIN PIPING
— P —	PIPING DOWN
— U —	PIPING UP -OR- PIPING UP & DOWN
—] —	CAP ON END OF PPE
— V —	VOLUME DAMPER
FD	FIRE DAMPER (FUSIBLE LINK)
S.D.	SMOKE DAMPER
S.F.	SMOKE/FIRE DAMPER
M	MOTORIZED DAMPER
20x16	DUCT DIMENSION, CLEAR INSIDE
[]	LINED DUCTWORK
[]	RECTANGULAR ELBOW WITH TURNING VANES
[]	90 DEGREE ELBOW DOWN
[]	90 DEGREE ELBOW UP
[]	DUCT SIZE TRANSITION
[]	DIFFUSER OF TYPE & CFM INDICATED
[]	BLANK OFF AIR FLOW IN THIS DIRECTION
[]	DIFFUSER WITH INTEGRAL DAMPER
[]	RETURN/EXHAUST GRILLE
[]	FLEXIBLE DUCT CONNECTION
[]	RETURN/EXHAUST AIR DUCT RISER
[]	SUPPLY DUCT RISER
[]	UNDERCUT DOOR 1/2" FOR EXHAUST/MAKE-UP
[]	BACKDRAFT DAMPER
[]	OPPOSED BLADE DAMPER
[]	CARBON MONOXIDE DETECTOR
[]	CARBON DIOXIDE DETECTOR
[]	OUTSIDE AIR FLOW MEASUREMENT
SD	SMOKE DETECTOR
[]	THERMOSTAT
[]	REMOTE TEMPERATURE SENSOR
[]	REMOTE TEMPERATURE/HUMIDITY SENSOR
[]	ANSUL SYSTEM REMOTE PULL STATION
[]	REMOTE TEST/RESET
[]	SPLITTER DAMPER

NOTE: NOT ALL SYMBOLS MAY APPEAR ON PLANS.



CONFIGURATION NOTE: CONSULT LENOX FOR ANY CHANGES TO RTU CONTROL CONFIGURATIONS.

ROOM THERMOSTAT NOTE: NEITHER STANDARD HEATING / COOLING CONTROL WIRING NOR REMOTE SENSOR WIRING SHOWN FOR CLARITY.



BLOOMING BRANDS
HIALEAH, FL - OUTBACK STEAKHOUSE
1751 W 49TH STREET
HIALEAH, FLORIDA 33012

SHEET ISSUE
OUT TO PERMIT: 03/21/19

PRINCIPAL IN CHARGE: JC
PROJECT ARCHITECT: MS
DRAWN BY: TH

SHEET TITLE
MECHANICAL GENERAL NOTES

SHEET NO. PROJ. NO. 20182129

M401