SECTION 15732 - PACKAGED ROOFTOP AIR-CONDITIONING UNITS
PART 1 - GENERAL
1.1 SECTION REQUIREMENTS
A. Submittals: Product Data and Shop Drawings.
B. Comply with ASHRAE 15.
C. EER: Equal to or greater than prescribed by the energy code adopted by the Authority Having Jurisdiction.
D. Warranties: Submit a written warranty, signed by the manufacturer, agreeing to the repair or replacement of components that fail within 5 years of Substantial Completion.
PART 2 - PRODUCTS
2.1 PACKAGED UNITS, 5 TO 20 TONS
A. Factory assembled and tested, consisting of compressors, condensers, evaporator coils, condenser and evaporator fans, refrigeration and temperature controls, filters, and dampers.
1. Refer to Rooftop Heating/Cooling Unit Schedule on drawing M600 for capacities, and manufacturers.
2. Evaporator Fans: Belt or direct driven, forward curved centrifugal.
3. Exhaust/Relief Fans: Direct drive, forward curved centrifugal or propeller.
4. Condenser Fans: Direct drive propeller.
5. Refrigerant Coils: Aluminum fins and copper coil.
6. Compressors: Serviceable hermetic or fully hermetic, with safety controls, hot gas bypass, and timed off controls.
7. Heat Exchangers: Gas fired, with gas controls, electronic ignition, high limit cutout, and forced draft proving switch.
8. Economizer controls (Comparative Enthalpy, 100% capacity).
9. Smoke Detectors: Photoelectric in supply and/or return as called for in schedule on sheet M600.
10. Operating Controls: Two stage heating and two stage cooling on units 7-1/2 tons and over.
11. Roof curb.
12. Control Wiring from T-stat to rooftop unit: Shall be 18ga / 7 conductor, rated for plenum applications.
13. Control Wiring from T-stat to remote sensor: Shall be a separate 18ga / 2 conductor shielded, rated for plenum applications.
PART 3 - EXECUTION
3.1 INSTALLATION
A. Install units level and plumb and firmly anchored.
B. Connect gas piping to burner with pipe same size as gas train inlet, and provide union with sufficient clearance for burner removal and service.
C. Install ducts to termination in roof mounting frames. Terminate ducts through roof structure.
D. Connect units to wiring systems and to ground.
END OF SECTION 15732

SECTION 15810 - DUCTS AND ACCESSORIES
PART 1 - GENERAL
1.1 SECTION REQUIREMENTS
A. Submittals: Product Data for fire and smoke dampers.
B. Comply with NFPA 90A for systems serving spaces more than 25,000 cu. ft. in volume or building Types II, IV, and V construction more than 3 stories in height.
C. Comply with NFPA 90B for systems serving spaces in 1 or 2 family dwellings or serving spaces less than 25,000 cu. ft..
D. Comply with NFPA 96, "Ventilation Control and Fire Protection of Commercial Cooking Operations," for kitchen hood ducts.
E. Comply with UL 181 and UL 181A for ducts and closures.
F. Testing, Adjusting, and Balancing Agency Qualifications: AABC certified (to be furnished by Tenant).
PART 2 - PRODUCTS
2.1 DUCTS
A. Spiral Duct: Spiral Lock Seam, without insulation, G90 galvanized finish, ASTM A-653/924
1. Basis of Design Manufacturers: Lindab SPIROsafe, alternates to the basis of design must be submitted for review.
2. Fittings: Factory produced standing seam construction with internal sealing. Fittings with a major axis of 36" or smaller shall be 20 gauge. Fittings with a major axis of 37"-48" shall be 18 gauge.
B. Galvanized Steel Sheet: Forming steel, ASTM A 653/653M, G90 coating designation.
C. Duct Liner: ASTM C 1071, Type II, with an airstream surface coated with a temperature resistant coating. Thickness: 1-1/2 inch. R-value : 8.
1. Adhesive: ASTM C 916, Type I.
2. Mechanical Fasteners: Galvanized steel pin, length as required to penetrate liner plus a 1/8 inch projection maximum into the airstream.
D. Joint and Seam Tape: Comply with UL 181A.
E. Joint and Seam Sealant: Comply with UL 181A.
F. Rectangular Metal Duct Fabrication: Comply with SMACNA's "HVAC Duct Construction Standard" for metal thickness, reinforcing types and intervals, tie rod applications, and joint types and intervals.
2.2 ACCESSORIES
A. Volume-Control Dampers: Factory fabricated volume control dampers, complete with required hardware and accessories. Single blade and multiple opposed blade, standard leakage rating, and suitable for horizontal or vertical applications.
B. Fire Dampers: Factory-fabricated fire dampers, complete with required hardware and accessories. UL labeled according to UL 555, "Fire Dampers".
C. Flexible Connectors: Flame retardant or noncombustible fabrics, coatings, and adhesives complying with UL 181, Class 1.
D. Flexible Ducts: Factory fabricated, insulated, round duct, with an outer jacket enclosing 2 inch thick, glass fiber insulation, R-value: 6.0, around a continuous inner liner.
PART 3 - EXECUTION
3.1 INSTALLATION
A. Duct System Pressure Class: Construct and install each duct system with 2 inch positive and negative duct pressure classifications.
B. Conceal ducts from view in finished and occupied spaces. Except where noted as exposed.
C. Avoid passing through electrical equipment spaces and enclosures.
D. Support and connect metal ducts according to SMACNA's "HVAC Duct Construction Standard".
E. Install duct accessories according to applicable portions of details of construction as shown in SMACNA standards.
F. Install liner and/or insulation on ductwork per the material schedule on sheet M010.
G. Install volume control dampers in lined duct with methods to avoid damage to liner and to avoid erosion of duct liner.
H. Install fire and smoke dampers according to manufacturer's UL approved written instructions.
I. Install fusible links in fire dampers.
J. Provide saddle taps at tees for exposed ductwork.
3.2 TESTING, ADJUSTING, AND BALANCING
A. The Tenant will supply an independent balance agent to to balance and adjust the HVAC installation. The balance agent will be responsible for any pulley or belt changes required.
B. The GC is to have trained staffed available during the balancing to correct issues noted by the balance agent.
C. The balance agent is to balance airflow within distribution systems, including submains, branches, and terminals to indicated quantities +/- 10%. The hood exhaust system shall be balanced to a tolerance of -0+10% and the make-up air system to a tolerance of -10+0%.
D. The balance agent is to supply a copy of the balance report to the Tenant, engineer and general contractor for review.
END OF SECTION 15810

SECTION 15855 - DIFFUSERS, REGISTERS, AND GRILLES
PART 1 - GENERAL
1.1 SECTION REQUIREMENTS
A. Submittals: None.
PART 2 - PRODUCTS
2.1 OUTLETS AND INLETS
A. All air terminal devices:
1. Refer to Grills, Registers, and Diffusers Schedule for equipment schedule
2. Manufacturer: As scheduled (NO SUBSTITUTIONS)
3. Material: As scheduled.
4. Finish: As scheduled.
5. Mounting: As scheduled.
PART 3 - EXECUTION
3.1 INSTALLATION
A. Coordinate location and installation with duct installation and installation of other ceiling and wall mounted items.
B. Locate ceiling diffusers, registers, and grilles, as indicated on the architectural "reflected ceiling plans." Unless otherwise indicated, locate units in center of acoustical ceiling panels.
END OF SECTION 15855

GENERAL NOTES

1. GENERAL NOTES, SYMBOLS AND ABBREVIATION LISTS ARE COMPOSITE. ALL NOTES, SYMBOLS AND ABBREVIATIONS MIGHT NOT BE USED ON THIS PROJECT.
2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CURRENT EDITION OF ALL APPLICABLE CODES, INCLUDING THE 2019 CALIFORNIA BUILDING CODE, CALIFORNIA CODE OF REGULATIONS, TITLE 24, AND LOCAL CODES AS APPLIED BY THE AUTHORITY HAVING JURISDICTION.
3. THESE DRAWINGS ARE DIAGRAMMATIC AND SHOULD NOT BE SCALED TO ESTABLISH LOCATION OF WORK. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND MAKE ADJUSTMENTS TO DIMENSIONS AS NECESSARY TO COMPLETE THE WORK.
4. THE CONTRACTOR SHALL FULLY COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO THE START OF THE WORK TO ASSURE ALL WORK CAN BE PROPERLY INSTALLED WITHOUT INTERFERENCE OR DELAY.
5. THE CONTRACTOR'S WORK SCHEDULE SHALL BE SUBMITTED TO AND APPROVED BY THE OWNER.
6. CONTRACTOR SHALL THOROUGHLY EXAMINE PREMISES AND OBSERVE ALL CONDITIONS, INCLUDING SEWER INVERT ELEVATIONS AND WATER PRESSURE, AND CIRCUMSTANCES UNDER WHICH THE WORK SHALL BE PERFORMED. NO ALLOWANCES WILL BE MADE FOR ERRORS OR NEGLIGENCE IN THIS RESPECT.
7. PRIOR TO STARTING WORK, SUBMIT SHOP DRAWINGS FOR ALL MECHANICAL EQUIPMENT & DUCTWORK.
8. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND SHALL ARRANGE FOR ALL INSPECTIONS AS REQUIRED.
9. CLEAN UP ALL WASTE AND DEBRIS AT THE END OF EACH WORKING DAY AND AT THE COMPLETION OF THE JOB.
10. ALL SPECIFIED EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION AND THE STRICTEST OF APPLICABLE CODES.
11. PROVIDE ONE YEAR WARRANTY FOR ALL WORKMANSHIP AND MATERIALS AFTER THE DATE OF FINAL ACCEPTANCE.
12. ANY EQUIPMENT, DUCTWORK, OR PIPING INSTALLED MORE THAN 1 FT FROM THE LOCATION SHOWN ON THE DRAWINGS SHALL BE CLEARLY DOCUMENTED IN THE FIELD. CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS IN AUTOCAD-COMPATIBLE DIGITAL FORMAT TO CLEARLY SHOW THE LOCATION OF THE EQUIPMENT BEFORE COMPLETION OF THE PROJECT. ALL EXPENSE RELATING TO VERIFY THE AS-BUILT DRAWINGS BY THE CLIENT OR ITS REPRESENTATIVE(S) DUE TO INACCURATE OR INCOMPLETE RECORDS SHALL BE BORN BY THE CONTRACTOR. SIMPLE ATTACHMENTS INCLUDING MARKED-UP PLAN SHEETS OR REFERENCES TO CHANGE ORDERS, SHOP DRAWINGS, RFCs, OR RFIs ARE NOT ACCEPABLE.
13. ALL FIXTURES SHALL BE PROTECTED DURING CONSTRUCTION FROM ANY DAMAGE. REFINISHED FIXTURES WILL NOT BE ACCEPTABLE UNDER ANY CONDITIONS.
14. MAINTAIN CLEAR ACCESS TO SERVICE EQUIPMENT AND OTHER ACCESSORIES REQUIRING SERVICE, VISUAL INSPECTION OR HAND OPERATION. WHERE INDICATED OR REQUIRED, PROVIDE ACCESS PANELS OF THE TYPE SELECTED TO SUIT MATERIALS IN WHICH INSTALLED.
15. PENETRATIONS OF RATED ASSEMBLIES SHALL BE FIRE STOPPED. FIRE STOPPING SHALL BE AN APPROVED MATERIAL AS PRESCRIBED IN CSFM STANDARD 43-1 AND SHALL BE U.L. LISTED.
16. PROVIDE FLASHING AND/OR COUNTER FLASHING AT ALL EXTERIOR PENETRATIONS.
17. CUTTING, BORING, SAWCUTTING OR DRILLING THROUGH THE NEW OR EXISTING STRUCTURAL ELEMENTS TO BE DONE ONLY WHEN SO DETAILED IN THE DRAWINGS OR ACCEPTED AFTER SUBMITTAL FOR APPROVAL TO AOR & THE AHJ.
18. ALL OPENINGS IN WALLS, CEILINGS, AND FLOORS RESULTING FROM DEMOLITION SHALL BE CLOSED AND FINISHED TO MATCH THE SURROUNDING.
19. ALL CEILING AND WALL PENETRATIONS SHALL BE COORDINATED WITH STRUCTURAL JOISTS AND BEAMS. PROVIDE OFFSETS IN PIPES AND DUCTS TO AVOID CUTTING OF BEAMS AND JOISTS.
20. MAINTAIN MINIMUM SEPARATION BETWEEN OUTSIDE AIR INTAKES OR OTHER OPENINGS INTO THE BUILDING AND OTHER ELEMENTS AS REQUIRED AND AS FOLLOWS:
    20.1. ENVIRONMENTAL EXHAUST OUTLETS SHALL TERMINATE NO LESS THAN 3 FEET FROM PROPERTY LINE, 3 FEET FROM OPENINGS INTO THE BUILDING, AND 10 FEET FROM ANY FORCED AIR INTAKE.
    20.2. OUTSIDE AIR FOR A HEATING OR COOLING SYSTEM SHALL NOT BE TAKEN FROM LESS THAN 10 FEET IN DISTANCE FROM AN APPLIANCE VENT, A VENT OPENING OF A PLUMBING DRAINAGE SYSTEM, THE DISCHARGE OUTLET OF AN EXHAUST FAN, OR A MEDICAL SURGICAL VACUUM OUTLET UNLESS THE OUTLET IS 3 FEET ABOVE THE OUTSIDE AIR INLET.
    20.3. EXHAUST OUTLETS SERVING GREASE DUCT SYSTEMS SHALL TERMINATE ABOVE THE ROOF SURFACE, 10 FEET FROM THE PROPERTY LINE, 10 FEET FROM AIR INTAKE OPENINGS, AND 10 FEET ABOVE ADJOINING GRADE. BASE OF FAN SHALL BE 40 INCHES ABOVE ROOF SURFACE.
21. EXCEPT AS OTHERWISE NOTED, ALL DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED STEEL PER 2019 CALIFORNIA CHAPTER 6 AND "HVAC DUCT CONSTRUCTION STANDARDS" BY SMACNA, ANSI/SMACNA 006-2006.
    21.1. IN HIGH-HUMIDITY AREAS, INCLUDING SHOWER ROOMS, ALL DUCTWORK SHALL BE CONSTRUCTED OF ALUMINUM.
22. ROUTE ALL DUCTWORK AND PIPING AS HIGH AS POSSIBLE UNLESS OTHERWISE NOTED. PIPING SHALL BE ABOVE DUCTWORK WHEREVER FEASIBLE.
23. PROVIDE DUCT INSULATION FOR ALL NEW DUCTWORK AS REQUIRED BY 2019 CENC SECTION 120.4(A). ALL EXPOSED DUCTWORK REQUIRING INSULATION AT ANY R-VALUE SHALL BE INTERNALLY LINED UNLESS OTHERWISE NOTED. INSULATE ALL EXTERIOR DUCTWORK TO MINIMUM R-8 INSULATION VALUE. LINE ALL SUPPLY AIR DUCTS EXPOSED IN CONDITIONED, OCCUPIED SPACES WITH INTERNAL ACOUSTIC LINER TO MINIMUM R-4.2 FOR MINIMUM 15'-0" DISTANCE FROM EQUIPMENT SUPPLY AIR CONNECTION, OR AS INDICATED.
24. PROVIDE ALL TRANSITION PIECES AS REQUIRED AT CROSSOVERS AND TO ACCOMMODATE STRUCTURAL ELEMENTS AND EXISTING DUCTWORK AND PIPING, PROVIDING EQUIVALENT CROSS-SECTIONAL AREA TO THE DIMENSION INDICATED ON THE PLANS.
25. PROVIDE VOLUME DAMPERS AT EACH TERMINAL BRANCH FROM MAIN SUPPLY, RETURN, AND EXHAUST DUCT AND AS INDICATED.
26. DUCT SIZES INDICATED ON THESE PLANS ARE CLEAR INSIDE DIMENSIONS. CONTRACTOR SHALL MAKE ALLOWANCE FOR ANY REQUIRED INTERNAL LINING OR INSULATION PRIOR TO PURCHASING.
27. PROVIDE NEW THERMOSTATS WHERE INDICATED ON THE DRAWINGS. INSTALL BETWEEN 36" AND 48" ABOVE FINISHED FLOOR AND PER ADA REQUIREMENTS. ALL NEW THERMOSTATS SHALL BE 7-DAY PROGRAMMABLE TYPE WITH FILTER DIRTY INDICATOR UNLESS OTHERWISE INDICATED.
28. COORDINATE THE EXACT LOCATION OF ALL CEILING DIFFUSERS, REGISTERS, AND GRILLES WITH NEW AND EXISTING LIGHTING.
29. PROVIDE DIFFUSERS AND REGISTERS WITH 4-WAY BLOW PATTERN UNLESS OTHERWISE NOTED.
30. COORDINATE WITH PLUMBING AND ELECTRICAL CONTRACTORS TO ENSURE PROPER CLEARANCE ABOVE ELECTRICAL SWITCHBOARDS, SWITCHGEAR, PANELBOARDS, AND MOTOR CONTROL CENTERS WHERE REQUIRED BY CALIFORNIA ELECTRICAL CODE SECTION 110.26(E)(1) AND TO PROVIDE DRIP PANS OVER ELECTRICAL SERVICE EQUIPMENT, SWITCH GEAR, AND INDUSTRIAL CONTROL ASSEMBLIES WHERE REQUIRED BY CALIFORNIA ELECTRICAL CODE SECTION 110.34(F).

CALGREEN NOTES

NOTE TO CONTRACTORS: THE NOTES BELOW ARE COMPOSITE AND NOT ALL NOTES MAY APPLY TO THIS PROJECT.

1. DEVELOP A WRITTEN PLAN OF PROCEDURES FOR TESTING & ADJUSTING SYSTEMS. SYSTEMS TO BE INCLUDED FOR TESTING & ADJUSTING SHALL INCLUDE, AS APPLICABLE TO THE PROJECT:
    1.1. HVAC SYSTEM & CONTROLS
    1.2. INDOOR & OUTDOOR LIGHTING & CONTROLS
    1.3. WATER HEATING SYSTEMS
    1.4. RENEWABLE ENERGY SYSTEMS
    1.5. LANDSCAPE IRRIGATION SYSTEMS
    1.6. WATER REUSE SYSTEMS
2. PERFORM TESTING & ADJUSTING PROCEDURES IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS & APPLICABLE STANDARDS ON EACH SYSTEM.
3. BEFORE A NEW SPACE CONDITIONING SYSTEM SERVING A BUILDING OR SPACE IS OPERATED FOR NORMAL USE, THE SYSTEM SHOULD BE BALANCED IN ACCORDANCE WITH THE PROCEDURES DEFINED BY THE TESTING ADJUSTING AND BALANCING BUREAU NATIONAL STANDARDS, ETC.
4. AFTER COMPLETION OF TESTING, ADJUST, & BALANCING, PROVIDE A FINAL REPORT OF TESTING SIGNED BY THE INDIVIDUAL RESPONSIBLE FOR PERFORMING THESE SERVICES.
5. PROVIDE THE BUILDING OWNER OR REPRESENTATIVE WITH DETAILED OPERATING & MAINTENANCE INSTRUCTIONS & COPIES OF GUARANTEES/WARANTEES FOR EACH SYSTEM.
6. INCLUDE A COPY OF ALL INSPECTION VERIFICATIONS AND REPORTS REQUIRED BY THE ENFORCING AGENCY.
7. THE PERMANENT HVAC SYSTEM SHALL ONLY BE USED DURING CONSTRUCTION IF NECESSARY TO CONDITION THE BUILDING WITHIN THE REQUIRED TEMPERATURE RANGE FOR MATERIAL AND EQUIPMENT INSTALLATION. IF THE HVAC SYSTEM IS USED DURING CONSTRUCTION, USE RETURN AIR FILTERS WITH A MINIMUM EFFICIENCY REPORTING VALUE (MERV) OF 8, BASED ON ASHRAE 52.2-1999, OR AN AVERAGE EFFICIENCY OF 30 PERCENT BASED ON ASHRAE 52.1-1992. REPLACE ALL FILTERS IMMEDIATELY PRIOR TO OCCUPANCY OR AT CONCLUSION OF CONSTRUCTION.
8. IN MECHANICALLY VENTILATED BUILDINGS, PROVIDE REGULARLY OCCUPIED AREAS OF THE BUILDING WITH AIR FILTRATION MEDIA FOR OUTSIDE AND RETURN AIR PRIOR TO OCCUPANCY THAT PROVIDES AT LEAST A MERV OF 13.
9. FOR BUILDINGS EQUIPPED WITH DEMAND CONTROL VENTILATION, CO2 SENSORS & VENTILATION CONTROLS SHALL BE SPECIFIED & INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT EDITION OF THE 2019 CALIFORNIA ENERGY CODE, SEC. 120.1(d)4.
10. INSTALLATION OF HVAC, REFRIGERATION, & FIRE SUPPRESSION EQUIPMENT SHALL COMPLY WITH SEC. 5.508.1 AND 5.508.1.1 AND 5.508.1.2 OF THE 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE.
11. INSTALL HVAC, REFRIGERATION, & FIRE SUPRESSION EQUIPMENT THAT DO NOT CONTAIN CFCS.
12. INSTALL HVAC, REFRIGERATION, & FIRE SUPPRESSION EQUIPMENT THAT DO NOT CONTAIN HALONS.

HVAC GENERAL NOTES

A GENERAL NOTES APPLY TO HVAC SHEETS.
B WORK SHALL COMPLY WITH STATE AND LOCAL CODE REQUIREMENTS AS APPROVED AND AMENDED BY THE AUTHORITY HAVING JURISDICTION, INCLUDING APPLICABLE SECTIONS OF NFPA, THE MECHANICAL CODE, AND ANY INTERIM AMENDMENTS AT THE TIME OF THE PROPOSAL PURCHASE PERMITS ASSOCIATED WITH THE WORK. OBTAIN INSPECTIONS REQUIRED BY CODE. SEE ARCHITECTURAL SHEETS FOR THE PREVAILING CODES.
C CONTRACTOR AND SUBCONTRACTORS SHALL REVIEW A COMPLETE SET OF THE CONSTRUCTION DOCUMENTS.
D COORDINATE WORK WITH THE WORK OF OTHER TRADES, EQUIPMENT FURNISHED BY OTHERS, REQUIREMENTS OF THE OWNER, AND OF THE EXISTING CONDITIONS AT THE PROJECT SITE.
E DRAWINGS FOR THE MECHANICAL WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED. THE DRAWING SHALL NOT BE SCALED FOR EXACT MEASUREMENTS. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS. REFER TO MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS. PROVIDE DUCTWORK, CONNECTIONS, OFFSETS, ACCESSORIES, AND MATERIALS NECESSARY FOR A COMPLETE SYSTEM.
F DUCT DIMENSIONS ON PLANS INDICATE DIMENSIONS OF INTERNAL FREE AREA.
G PERFORATED CEILING DIFFUSERS SHALL BE 4-WAY UNLESS NOTED OTHERWISE.
H COORDINATE ROOF WORK WITH THE OWNER'S CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION.
I UNLESS NOTED OTHERWISE RECTANGULAR DUCT ELBOWS GREATER THAN 45° SHALL BE MITERED ELBOWS WITH DOUBLE-THICKNESS TURNING VANES AND RECTANGULAR DUCT ELBOWS 45° OR LESS SHALL BE RADIUSED ELBOWS WITH AN INSIDE RADIUS OF AT LEAST 1/2 THE WIDTH OF THE DUCT.
J REPLACE AIR FILTERS WITH NEW, CLEAN MERV 8 AIR FILTERS AT TURNOVER.
K THE TERM "FURNISH" MEANS SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS. THE TERM "INSTALL" DESCRIBES THE OPERATIONS AT THE PROJECT SITE INCLUDING THE ACTUAL UNLOADING, UNPACKING, ASSEMBLY, ERECTING, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS. THE TERM "PROVIDE" MEANS TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE.
L PROVIDE LABELING CALLED FOR IN THE HVAC DRAWINGS USING ENGRAVED PHENOLIC PLATES.
M PROVIDE P3000 12 GA. UNISTRUT WITH PG FINISH FOR DUCT SUPPORTS AND OTHER UNISTRUT IN AREAS EXPOSED TO VIEW. SLOTTED UNISTRUT AND OTHER UNISTRUT WITH HOLES IS NOT ACCEPTABLE.
N ALL DUCTS, DIFFUSERS, ETC. VISIBLE TO THE GENERAL PUBLIC SHALL BE PAINTED BLACK.

HVAC MATERIAL SCHEDULE

CATEGORY	APPLICATION	ALLOWABLE MATERIAL
DUCT	CONCEALED, GENERAL EXHAUST	RECT. OR ROUND AS SHOWN
	CONCEALED, RETURN	RECT. OR ROUND AS SHOWN, LINED OR INSULATED
	CONCEALED, SUPPLY	RECT. OR ROUND AS SHOWN, LINED OR INSULATED
	CONCEALED, TYPE I HOOD EXHAUST	RECTANGULAR 16 GA. BLACK IRON W/ WRAP OR UL 1978 FACTORY-MANUFACTURED DUCT W/ WRAP (SUBMIT SHOP DRAWINGS FOR FACTORY-MANUFACTURED DUCT PRIOR TO ORDERING FOR APPROAL)
	EXPOSED GENERAL EXHAUST	RECTANGULAR, NO EXPOSED DUCT-SEALING MASTIC
	EXPOSED RETURN	RECTANGULAR, NO EXPOSED DUCT-SEALING MASTIC
	EXPOSED SUPPLY	RECT. LINED OR ROUND AS SHOWN, NO EXPOSED DUCT-SEALING MASTIC

HVAC ABBREVIATIONS

(E)	EXISTING
ABV	ABOVE
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
BFF	BELOW FINISHED FLOOR
BFG	BELOW FINISHED GRADE
BOH	BACK OF HOUSE
CLG	CEILING
CTE	CONNECT TO EXISTING
DN	DOWN
EXTG	EXISTING
FLR	FLOOR
FOH	FRONT OF HOUSE
GYP	GYPSUM BOARD
NTS	NOT TO SCALE
O/H	OVERHEAD
OBD	OPPOSED BLADE DAMPER
TYP	TYPICAL
U/G	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
VFD	VARIABLE FREQUENCY DRIVE
VSC	VARIABLE SPEED CONTROLLER
W/	WITH
WIC	WALK-IN COOLER
C02AS	TENANT'S C02 ALARM SUPPLIER
GC	GENERAL CONTRACTOR
HES	TENANT'S HVAC EQUIPMENT SUPPLIER
HS	TENANT'S HOOD SUPPLIER
KES	TENANT'S KITCHEN EQUIPMENT SUPPLIER
LL	LANDLORD
TAB	TENANT'S TEST AND BALANCE VENDOR
TCC	TENANT'S CABLING CONTRACTOR
TDC	TENANT'S DUCT CLEANER
TEMS	TENANT'S ENERGY MANAGEMENT SYSTEM SUPPLIER
TLS	TENANT'S LIGHT/LAMP SUPPLIER
TMB	TENANT'S MENU BOARD SUPPLIER
TMS	TENANT'S MILLWORK SUPPLIER
TP	TENANT'S PHONE SUPPLIER
TRS	TENANT'S RAILING SUPPLIER
TSV	TENANT'S SIGN VENDOR
TUV	TENANT'S UV SANITIZER SUPPLIER
WCS	TENANT'S WALK-IN COOLER SUPPLIER
WHS	TENANT'S WATER HEATER SUPPLIER

HVAC SYMBOLS

CEILING DIFFUSER
CEILING-MOUNTED RETURN OR EXHAUST REGISTER
SUPPLY REGISTER
RETURN GRILLE
FLEXIBLE DUCT
MITERED CORNER WITH TURNING VANES
DUCTWORK INTERNAL FREE DIMENSIONS (WIDTH/HEIGHT)
RECTANGULAR TO ROUND DUCT TRANSITION
DUCT-MOUNTED SMOKE DETECTOR
MOTOR-OPERATED DAMPER
MANUAL VOLUME DAMPER
GREASE DUCT CLEANOUT
MITERED CORNER WITHOUT TURNING VANES
GRIDPOINT THERMOSTAT
GRIDPOINT ZONE SENSOR MODULE
GRIDPOINT SUPPLY PROBE
PLAN NOTE: SEE PLAN NOTES LISTED ON THE SAME SHEET FOR NOTE MEANING
CONNECT TO EXISTING
EQUIPMENT TAG: SEE EQUIPMENT SCHEDULE ON SHEET M600 FOR EQUIPMENT INFORMATION
AUDIO/VISUAL REMOTE SMOKE DETECTOR ANNUNCIATOR WITH REMOTE KEY OPERATED RESET
GRILL, REGISTER, OR DIFFUSER TAG

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REGISTERED PROFESSIONAL ENGINEER
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Exp. 09/30/2022
MECHANICAL
STATE OF CALIFORNIA

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Project No. 81-0472

Contents:
HVAC SPECIFICATIONS

M010

STATE OF CALIFORNIA
Mechanical Systems
NRCC-MCH-E
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE **NRCC-MCH-E**

This document is used to demonstrate compliance for mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.6, or §141.0(b)2 for alterations.

Project Name: Chipotle - Wildomar CA #4597 **Report Page:** **(Page 1 of 8)**
Project Address: 24032 Clinton Keith Rd, Wildomar, CA 92595 **Date Prepared:** 2022-09-08T17:26:52-04:00

A. GENERAL INFORMATION

01	Project Location (city)	Wildomar, CA	04	Total Conditioned Floor Area	2235
02	Climate Zone	14	05	Total Unconditioned Floor Area	0
03	Occupancy Types Within Project:		06	# of Stories (Habitable Above Grade)	1
☐	Office (B)	☐ Retail (M)	☐	Non-refrigerated Warehouse (S)	
☐	Hotel/ Motel Guest Rooms (R-1)	☐ School (E)	☐	Healthcare Facility (I)	
☐	High-Rise Residential (R-2/R-3)	☐ Relocatable Class Bldg (E)	☒	Other (Write In)	Restaurant

B. PROJECT SCOPE

This table includes mechanical systems or components that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.6, or §141.0(b)2 for alterations.

01 Air System(s)	02 Wet System Components		03 Dry System Components	
☒	Heating Air System	☐ Water Economizer	☐	Air Economizer
☒	Cooling Air System	☐ Pumps	☐	Electric Resistance Heat
	Mechanical Controls	☐ System Piping	☐	Fan Systems
☐	Mechanical Controls (existing to remain, altered or new)	☐ Cooling Towers	☒	Ductwork (existing to remain, altered or new)
		☐ Chillers	☐	Ventilation
		☐ Boilers	☐	Zonal Systems/ Terminal Boxes

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CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Compliance ID: 70749 Report Generated: 2022-09-08 14:26:56

STATE OF CALIFORNIA
Mechanical Systems
NRCC-MCH-E
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE **NRCC-MCH-E**
Project Name: Chipotle - Wildomar CA #4597 **Report Page:** **(Page 2 of 8)**
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C. COMPLIANCE RESULTS

Table C will indicate if the project data input into the compliance document is compliant with mechanical requirements. This table is not editable by the user. If this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D., or the table indicated as not compliant for guidance.

01		02		03		04		05		06		07		08		09
System Summary §110.1, §110.2, §140.4	AND	Pumps §140.4(k)	AND	Fans/ Economizers §140.4(c), §140.4(e)	AND	System Controls §110.2, §120.2, §140.4(f)	AND	Ventilation §120.1	AND	Terminal Box Controls §140.4(d)	AND	Distribution §120.3, §140.4(l)	AND	Cooling Towers §110.2(e)2		Compliance Results
(See Table F)		(See Table G)		(See Table H)		(See Table I)		(See Table J)		(See Table K)		(See Table L)		(See Table M)		
Yes	AND		AND		AND	Yes	AND		AND		AND	Yes	AND		AND	COMPLIES
Mandatory Measures Compliance (See Table Q for Details)														COMPLIES		

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

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STATE OF CALIFORNIA
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F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

This table is used to demonstrate compliance for mechanical equipment with mandatory requirements found in §110.1 and §110.2(a) and prescriptive requirements found in §140.4(a), §140.4(b) and §140.4(k) or §141.0(b)2 for alterations.

Dry System Equipment Sizing (includes air conditioners, condensers, heat pumps, VRF, furnaces and unit heaters)

01	02	03	04	05	06	07	08	09	10	11
				Equipment Sizing per Mechanical Schedule (kBtu/h) §140.4 (a&b)						
					Heating Output[2,3]		Cooling Output[2,3]		Load Calculations[3,4]	
Name or Item Tag	Equipment Category per Tables 110.2	Equipment Type per Tables 110.2 / Title 20	Smallest Size Available[1] §140.4(a)	Per Design (kBtu/h)	Rated (kBtu/h)	Supp. Heating Output (kBtu/h)	Sensible Per Design (kBtu/h)	Rated (kBtu/h)	Total Heating Load (kBtu/h)	Total Sensible Cooling Load (kBtu/h)
RTU-01	Unitary AC/ Condensers	AC, air-cooled pkg (3 phase)	Yes				98	98		98
RTU-02	Unitary AC/ Condensers	AC, air-cooled pkg (3 phase)	Yes				122	122		122

[1]FOOTNOTES: Equipment shall be the smallest size, within the available options of the desired equipment line, necessary to meet the design heating and cooling loads of the building per §140.4(a). Healthcare facilities are excepted.
[2]It is common practice to show rated output capacity on the equipment schedule. Sensible cooling output comes from specification sheet tables.
[3] If equipment is heating only, leave cooling output and load blank. If equipment is cooling only, leave heating output and load blank.
[4] Authority Having Jurisdiction may ask for load calculations used for compliance per §140.4(b).

Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP))

01	02	03	04	05	06	07	08	09
		Heating Mode				Cooling Mode		
Name or Item Tag	Size Category (Btu/h)	Rating Condition (°F)	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency
RTU-01	>=65,000 and <135,000					EER IEER	11.2 12.9	13 15.2

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F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP))

01	02	03	04	05	06	07	08	09
		Heating Mode				Cooling Mode		
Name or Item Tag	Size Category (Btu/h)	Rating Condition (°F)	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency
RTU-02	>=135,000 and <240,000					EER IEER	11 12.4	12.1 15

G. PUMPS

This section does not apply to this project.

H. FAN SYSTEMS & AIR ECONOMIZERS

This section does not apply to this project.

I. SYSTEM CONTROLS

This table is used to demonstrate compliance with mandatory controls in §110.2 and §120.2 and prescriptive controls in §140.4(f) and (n) or requirements in §141.0(b)2E for altered space conditioning systems.

01	02	03	04	05	06	07	08	09
System Name	System Zoning	Conditioned Floor Area Being Served (ft²)	Thermostats §110.2(b) & (c)[1], §120.2(a)iv, §141.0(b)2E	Shut-Off Controls §120.2(e)	Isolation Zone Controls §120.2(e)	Demand Response §110.12 and §120.2(b)	Supply Air Temp. Reset §140.4(f)	Window Interlocks per §140.4(n)
Energy Management System	Single zone	<= 25,000 ft²	EMCS	EMCS	EMCS	EMCS	NA: Single Zone	NA: No operable windows

[1]FOOTNOTES: Gravity gas wall heaters, gravity floor heaters, gravity room heaters, non-central electric heaters, fireplaces or decorative gas appliances, wood stoves are not required to have setback thermostats.

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I. SYSTEM CONTROLS

*Notes: Controls with a * require a note in the space below explaining how compliance is achieved. EX: system 1: SA Temp Reset: Exempt because zones compliant with §140.4(d) ; EXCEPTION 1 to §140.4(f)*

J. VENTILATION AND INDOOR AIR QUALITY

This section does not apply to this project.

K. TERMINAL BOX CONTROLS

This section does not apply to this project.

L. DISTRIBUTION (DUCTWORK and PIPING)

This table is used to show compliance with mandatory pipe insulation requirements found in §120.3 and prescriptive requirements found in §140.4(l) for duct leakage testing.

Duct Leakage Sealing

The answers to the questions below apply to the following duct systems: | Duct system | Duct leakage testing triggered for these systems? | No

11	No	The scope of the project includes only duct systems serving healthcare facilities
12	Yes	Duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system.
13	Yes	The space conditioning system serves less than 5,000 ft² of conditioned floor area.
14	No	The combined surface area of the ducts in the following locations is more than 25% of the total surface area of the entire duct system:
		☐ Outdoors
		☐ In a space directly under a roof that has a U-factor greater than the u-factor of the ceiling, or if the roof does not meet the requirements of §140.3(a)1B or if the roof has fixed vents or openings to the outside/ unconditioned spaces
		☐ In an unconditioned crawl space
		☐ In other unconditioned spaces
15	No	The scope of the project includes extending an existing duct system, which is constructed, insulated or sealed with asbestos.
16	No	The scope of the project includes an existing duct system that is documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Reference Nonresidential Appendix NA2.
17		Duct system shall be sealed in accordance with the California Mechanical Code

M. COOLING TOWERS

This section does not apply to this project.

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N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

Form/Title
NRCI-MCH-01-E - Must be submitted for all buildings

O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCA/

Form/Title	Systems/Spaces To Be Field Verified
NRCA-MCH-18-A Energy Management Control Systems	Energy Management System

P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

There are no NRCV forms required for this project.

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Q. MANDATORY MEASURES DOCUMENTATION LOCATION

This table is used to indicate where mandatory measures are documented in the plan set or construction documentation.

01		02
Compliance with Mandatory Measures documented through MCH Mandatory Measures Note Block	No	
03		**04**
Mandatory Measure		**Plan sheet or construction document location**
Heating Equipment Efficiency per §110.1		M600
Cooling Equipment Efficiency per §110.1		M600
Furnace Standby Loss Control per §110.2(d)		M600
Duct Insulation per §120.4		M100
Heat Pump with Supplemental electric Resistance Heater Controls per §110.2(b)		N/A
The air duct and plenum system is designed per §120.4(a) -(f)		M100

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Paul D. Haslach	Documentation Author Signature:
Company: Gausman & Moore, a Division of Ayres Associates	Signature Date: 09/08/2022
Address: 1700 Highway 36 West	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: St. Paul, MN 55113	Phone: 651-604-3131

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: Paul D. Haslach	Responsible Designer Signature:
Company: Gausman & Moore, a Division of Ayres Associates	Date Signed: 09/08/2022
Address: 1700 Highway 36 West	License:
City/State/Zip: St. Paul, MN 55113	Phone: 651-604-3131

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Consultant:
Gausman &Moore
A Division of
AYRES
Mechanical and Electrical Engineers
1700 West Highway 36 - Suite 700
Roseville, Minnesota 55113
(651) 639-9606 Fax (651) 639-9618
Project No. 81-0472

REGISTERED PROFESSIONAL ENGINEER
PAUL D. HASLACH
No. M32114
Exp. 09/30/2022
MECHANICAL
STATE OF CALIFORNIA

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24032 CLINTON KEITH RD.
WILDOMAR, CA 92595

Issue Record:

09/08/22	PERMIT ISSUE

Revisions:

Drawn: LAO | Checked: JDM

Project No. 81-0472

Contents:
MECHANICAL TITLE 24

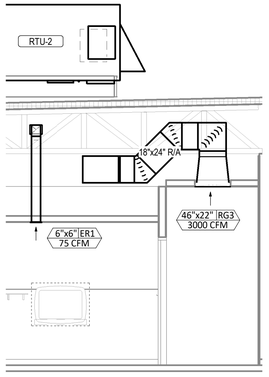
M020

HVAC PLAN NOTES

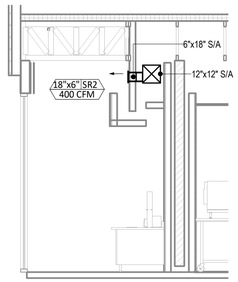
1 SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR CEILING MOUNTED EQUIPMENT LOCATION. TYPICAL.
2 PAINT DUCTWORK VISIBLE THROUGH DINING ROOM SUPPLY REGISTERS BLACK. TYPICAL.
3 PENETRATIONS THROUGH SHEAR WALL SHALL BE LIMITED TO 10" DIAMETER (OR A GROUP OF PENETRATIONS ALL CONTAINED WITHIN 10" DIAMETER). IF LARGER PENETRATIONS OR GROUPS OF PENETRATIONS ARE REQUIRED COORDINATE WITH STRUCTURAL ENGINEER FOR APPROPRIATE BRACING.
4 DUCT UP FOR TRANSITION TO RTU-1 RETURN CONNECTION IN ROOF CURB. RTU-1 SHALL HAVE AN INTEGRAL SMOKE DETECTOR MOUNTED IN THE RETURN AIR STREAM. INTERLOCK SMOKE DETECTOR TO RTU-1 OPERATION.
5 DUCT UP THROUGH ROOF TO RETURN DUCT ON ROOF. RETURN DUCT SHALL HAVE AN INTEGRAL SMOKE DETECTOR MOUNTED IN THE RETURN AIR STREAM. INTERLOCK SMOKE DETECTOR TO RTU-2 OPERATION.
6 DUCT UP FROM BUILDING SUPPLY THROUGH ROOF. TRANSITION TO RTU-1 SUPPLY CONNECTION IN ROOF CURB.
7 DUCT UP FROM BUILDING SUPPLY THROUGH ROOF TO SUPPLY DUCT LOCATED ON ROOF.
8 DUCT UP THROUGH ROOF TO MAKEUP AIR DUCT LOCATED ON ROOF
9 10/15 DUCTS UP FROM HOOD TO DUCT THROUGH ROOF TO EF-1 COMPLIANT WITH NFPA 96. PROVIDE RADIUSED ELBOWS WITH AN INSIDE RADIUS OF 0.5W AT ELBOWS IN GREASE DUCT.
10 8/6 DUCT UP THROUGH ROOF TO EF-2.
11 15/10 DUCT DOWN TO MAKEUP AIR PSP DUCT CONNECTION. TRANSITION TO SUPPLY PLENUM OPENING SIZE. TYPICAL FOR 3.
12 8" DIA. DUCT DOWN TO AC PSP DUCT CONNECTION. TRANSITION TO SUPPLY PLENUM OPENING SIZE. TYPICAL. CAP UNUSED DUCT CONNECTIONS.
13 INSTALL GRIDPOINT THERMOSTATS FURNISHED BY TEMS FOR RTU-1 AND RTU-2 AT THIS LOCATION AT 48" AFF. COORDINATE WITH ELECTRICAL SWITCHING IN THIS AREA. PROVIDE WIRING AS SHOWN IN DETAIL 8/E710.
14 INSTALL GRIDPOINT ZONE SENSOR MODULE FURNISHED BY TEMS FOR RTU-1 AT THIS LOCATION 60" AFF DIRECTLY TO WALL (NO JUNCTION BOX). COORDINATE LOCATION WITH EQUIPMENT. PROVIDE WIRING AS SHOWN IN DETAIL 8/E710.
15 INSTALL GRIDPOINT ZONE SENSOR MODULE FURNISHED BY TEMS FOR RTU-2 AT THIS LOCATION 66" AFF DIRECTLY TO WALL (NO JUNCTION BOX). COORDINATE LOCATION WITH EQUIPMENT. PROVIDE WIRING AS SHOWN IN DETAIL 8/E710.
16 INSTALL GRIDPOINT SUPPLY PROBE FURNISHED BY TEMS FOR RTU-1 IN THE SUPPLY DUCTWORK UPSTREAM FROM THE FIRST BRANCH CONNECTION. PROVIDE WIRING AS SHOWN IN DETAIL 8/E710.
17 INSTALL GRIDPOINT SUPPLY PROBE FURNISHED BY TEMS FOR RTU-2 IN THE SUPPLY DUCTWORK UPSTREAM FROM THE FIRST BRANCH CONNECTION. PROVIDE WIRING AS SHOWN IN DETAIL 8/E710.
18 INSTALL REMOTE TEMPERATURE SENSOR FOR HOOD HD-1 AT THIS LOCATION 66" AFF. COORDINATE LOCATION WITH EQUIPMENT. PROVIDE (2) #18 G. THERMISTOR CABLE FROM TEMPERATURE SENSOR TO HOOD CONTROL PANEL.
19 INSTALL KITCHEN HOOD, HD-1. SUPPORT HOOD PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. INSTALL HOOD ACCORDING TO THE REQUIREMENTS OF ITS LISTING, IN COMPLIANCE WITH NFPA 96, THE BUILDING CODE, AND AUTHORITIES HAVING JURISDICTION. HOOD SHALL HAVE AN INTEGRAL DUCT COLLAR TEMPERATURE SENSOR TO AUTOMATICALLY ENERGIZE THE EXHAUST AND MAKEUP AIR FANS IF COOKING TEMPERATURES ARE DETECTED. EXHAUST DUCT SYSTEM TO BE WELDED OR FACTORY-MANUFACTURED WATER AND AIR TIGHT. INSTALL CLEANOUTS PER CODE AND AS SHOWN. INSTALL HOOD PER DETAILS 2 AND 4/M700. CHIPOTLE WILL PROVIDE AN INDEPENDENT TESTING AGENCY FOR TESTING THE INTEGRITY OF THE GREASE DUCT SYSTEM.

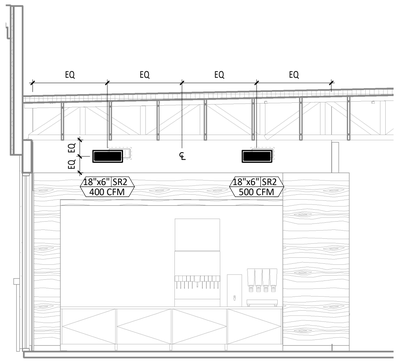
HVAC PLAN NOTES

20 INSTALL REMOTE CONDENSING UNIT FOR WALK-IN COOLER ON ROOF AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. INSTALL REFRIGERANT LINE SET, THERMOSTATIC EXPANSION VALVE, SOLENOID VALVE, TEMPERATURE CONTROL, SIGHT GLASS, FILTER DRIER, PRESSURE CONTROL, LOW AMBIENT CONTROLS, AND WEATHERPROOF HOUSING. TRAP AND SLOPE REFRIGERANT LINES PER MANUFACTURER'S RECOMMENDATIONS. INSTALLATION SHALL COMPLY WITH ASHRAE/ANSI STANDARD 15. INSTALL THE REFRIGERANT LINE SET UNDER THE ROOF DECK TO WITHIN 3' OF THE CONDENSING UNIT. CUT 2-1/2" HOLE IN WALK-IN COOLER ROOF FOR REFRIGERANT LINE SET AND SEAL PER THE COOLER MANUFACTURER'S INSTALLATION INSTRUCTIONS AFTER LINE SET IS INSTALLED.
21 INSTALL REMOTE CONDENSER FOR ICE MACHINE ON ROOF AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. INSTALL REFRIGERANT LINE SET, THERMOSTATIC EXPANSION VALVE, SOLENOID VALVE, TEMPERATURE CONTROL, SIGHT GLASS, FILTER DRIER, PRESSURE CONTROL, LOW AMBIENT CONTROLS, AND WEATHERPROOF HOUSING. TRAP AND SLOPE REFRIGERANT LINES PER MANUFACTURER'S RECOMMENDATIONS. SEAL PIPING PENETRATIONS THROUGH ROOF. INSTALLATION SHALL COMPLY WITH ASHRAE/ANSI STANDARD 15. INSTALL THE REFRIGERANT LINE SET UNDER THE ROOF DECK TO WITHIN 3' OF THE REMOTE CONDENSER. IF REFRIGERANT PIPING TO ICE MAKER IS EXPOSED TO PUBLIC VIEW CONCEAL WITHIN A STAINLESS STEEL SHROUD AS SHOWN IN THE ARCHITECTURAL DRAWINGS.
22 INSTALL ROOFTOP EQUIPMENT PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
23 INSTALL EXHAUST FAN EF-1 PER DETAIL 5/M700 AND AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. INSTALL GREASE VIROGUARD SYSTEM FURNISHED BY CHIPOTLE ON EXHAUST FAN, EF-1.
24 PROVIDE SUPPLY DIFFUSER CONNECTION TO SUPPLY SYSTEM PER DETAIL 1/M700. TYPICAL.
25 PROVIDE AUDIO/VISUAL REMOTE SMOKE DETECTOR ANNUNCIATOR WITH REMOTE KEY OPERATED RESET. WIRE A UNIT BACK TO EACH SMOKE DETECTOR. MOUNT UNIT 60" AFF. TYPICAL.
26 INSTALL REME HALO AIR PURIFIER FURNISHED BY TUV IN RTU PER DETAIL 6/M700. SEE ELECTRICAL DRAWINGS FOR POWER CONNECTION INFORMATION. INSTALL UV WARNING STICKERS ON FACE OF ENCLOSURE PER DETAIL AND ON ANY RTU ACCESS DOOR(S) THROUGH WHICH THE REME HALO WOULD BE VISIBLE IF OPENED.
27 MAINTAIN 10' CLEARANCE BETWEEN WATER HEATER FLUE TERMINATION AND OUTSIDE AIR INTAKES. MAINTAIN 10' CLEARANCE BETWEEN WATER HEATER COMBUSTION AIR INTAKE AND EXHAUST FAN EF-1 DISCHARGE. SEE PLUMBING DRAWINGS FOR MORE INFORMATION ON WATER HEATER FLUE AND COMBUSTION AIR TERMINATIONS.



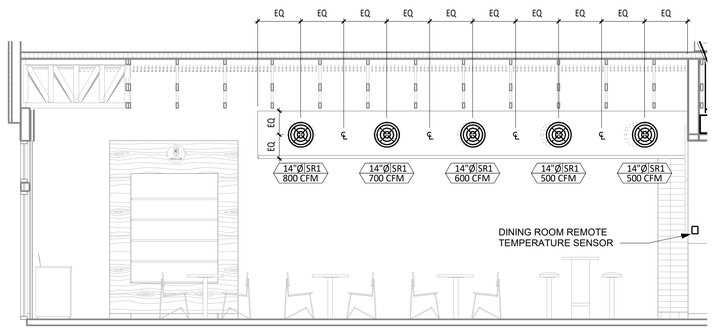
6 M100 HVAC DINING ROOM RETURN SECTION
1/4" = 1'-0"



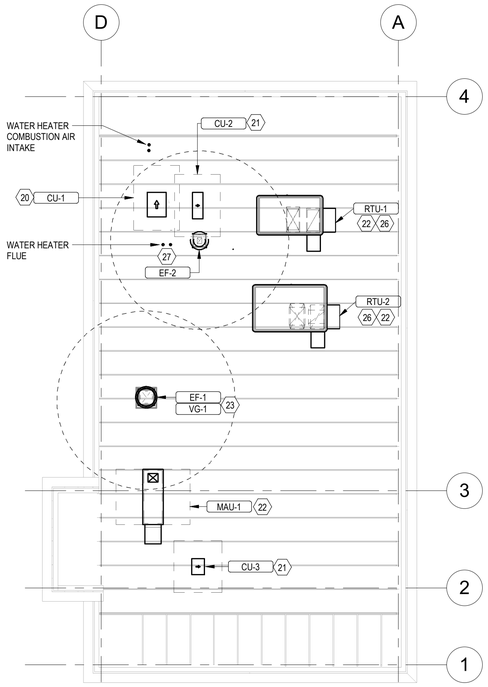


5 M100 HVAC DINING ROOM SECTION
1/4" = 1'-0"

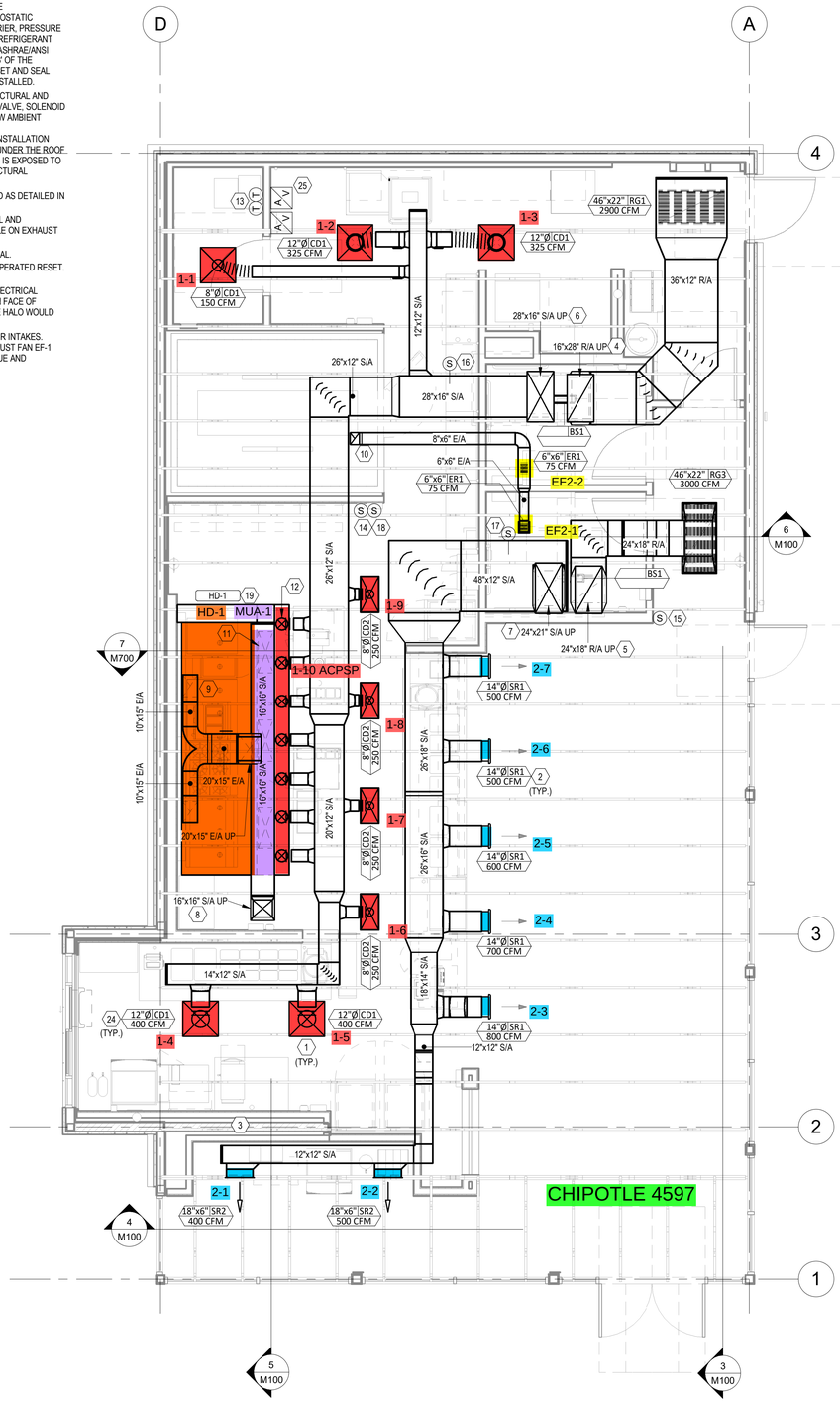
4 M100 HVAC DINING ROOM SECTION
1/4" = 1'-0"



3 M100 HVAC DINING ROOM SECTION
1/4" = 1'-0"



2 M100 ROOF MECHANICAL PLAN
1/8" = 1'-0"



1 M100 HVAC PLAN
1/4" = 1'-0"

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Project No. 81-0472

REGISTERED PROFESSIONAL ENGINEER
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No. M32114
Exp. 09/30/2022
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STATE OF CALIFORNIA

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Contents:

HVAC PLAN

M100

AIR BALANCE SCHEDULE

TAG	SUPPLY FLOW	RETURN FLOW	EXHAUST FLOW	SUBTOTAL
EF-1	0 CFM	0 CFM	3,200 CFM	-3,200 CFM
EF-2	0 CFM	0 CFM	150 CFM	-150 CFM
MAU-1	1,950 CFM	0 CFM	0 CFM	1,950 CFM
RTU-1	4,000 CFM	3,500 CFM	0 CFM	500 CFM
RTU-2	4,000 CFM	3,000 CFM	0 CFM	1,000 CFM
NET PRESSURIZATION				100 CFM

AIR TERMINAL SCHEDULE

TAG	DESCRIPTION	FACE SIZE	MATERIAL	FINISH	MOUNTING	FURNISHED BY	INSTALLED BY	BASIS FOR DESIGN		NOTES
								MANUFACTURER	MODEL	
BS1	BATHROOM AIR PURIFICATION UNIT		STAINLESS STEEL	STAINLESS STEEL	SURFACE MOUNT	TUV	GC	RGF ENVIRONMENTAL GROUP	BRU ASSEMBLY	SEE ELECTRICAL SHEETS FOR CONNECTION INFORMATION
CD1	PERFORATED CEILING DIFFUSER	24" X 24"	ALUMINUM	WHITE	LAY-IN CEILING	GC	GC	NAILOR	4320A TYPE L	PROVIDE WITH INTEGRAL OBD
CD2	PERFORATED CEILING DIFFUSER	24" X 12"	ALUMINUM	WHITE	LAY-IN CEILING	GC	GC	NAILOR	4320A TYPE L	PROVIDE WITH INTEGRAL OBD, REMOVE 4 -WAY DEFLECTORS
ER1	PERFORATED CEILING EXHAUST	12" X 12"	ALUMINUM	WHITE	SURFACE MOUNT	GC	CG	NAILOR	4330R TYPE S	PROVIDE INTEGRAL OBD
RG1	PERFORATED CEILING RETURN	48" X 24"	ALUMINUM	WHITE	LAY-IN CEILING	GC	GC	NAILOR	4330R TYPE L	
RG3	PERFORATED CEILING RETURN	48" X 24"	ALUMINUM	WHITE	SURFACE MOUNT	GC	GC	NAILOR	4330R TYPE S	
SR1	ADJUSTABLE TURBO NOZZLE	SEE NECK SIZE	ALUMINUM	WHITE	WALL	GC	GC	AIR CONCEPTS	ANR-14	PROVIDE WITH CONCEALED MOUNTING AND FACE-ACCESSIBLE OBD
SR2	DOUBLE DEFLECTION SUPPLY REGISTER	SEE NECK SIZE	ALUMINUM	WHITE	WALL	GC	GC	NAILOR	51DH	PROVIDE WITH INTEGRAL OBD

FAN SCHEDULE

TAG	DESCRIPTION	AIRFLOW	ESP	WEIGHT	ELECTRICAL			FURNISHED BY	INSTALLED BY	BASIS FOR DESIGN		REMARKS
					MOTOR POWER	VOLT	PH			MANUFACTURER	MODEL NO.	
EF-1	UPBLAST UL762 EXHAUST FAN	3200 CFM	1.20 in-wg	400 lb	3.00 hp	208 V	3	HS	GC	CAPTIVE-AIRE	DU240HFA	DIRECT DRIVE UL762 UPBLAST EXHAUST FAN FURNISHED WITH WEATHERPROOF DISCONNECT AND VENTED ROOF CURB
EF-2	DOWNBLAST RESTROOM EXHAUST FAN	150 CFM	0.60 in-wg	100 lb	0.25 hp	120 V	1	HS	GC	CAPTIVE-AIRE	DR12HFA	DIRECT DRIVE DOWNBLAST RESTROOM EXHAUST FAN FURNISHED WITH INTEGRAL DISCONNECT, SPEED CONTROL, BACKDRAFT DAMPER, AND CURB

VIROGUARD

TAG	COUNT	DESCRIPTION	DUCT CONNECTION SIZE	FAN	FURNISHED BY	INSTALLED BY	BASIS FOR DESIGN MANUFACTURER
VG-1	1	VIROGUARD HOOD EXHAUST FAN ROOFTOP CONTAINMENT SYSTEM	18" x 18"	CAPTIVE-AIRE DU240HFA	TDC	TDC	ENVIROMATIC

CONDENSING UNIT SCHEDULE

TAG	DESCRIPTION	NUMBER OF		REFRIGERANT		WEIGHT	ELECTRICAL				FURNISHED BY	INSTALLED BY	BASIS FOR DESIGN		REMARKS
		COMPRESSORS	CIRCUITS	TYPE	CHARGE		MOCP	FLA	VOLT	PH			MANUFACTURER	MODEL NO.	
CU-1	CONDENSING UNIT - WALK-IN COOLER	1	1	R-404A	10.40 lb	250 lb	15 A	9 A	208 V	3	WCS	GC	HARFORD	KPCL99MZOP-3E	FURNISHED WITH WALK-IN COOLER
CU-2	REMOTE CONDENSER - LOW CAPACITY ICE MAKER	0	1	R-404A	11.46 lb	100 lb	0 A	0 A	120 V	1	KES	GC	HOSHIZAKI	URC-9F	FURNISHED WITH ICE MAKER
CU-3	REMOTE CONDENSER - SODA MACHINE ICE MAKER	0	1	R-404A	3.86 lb	100 lb	0 A	0 A	120 V	1	KES	GC	HOSHIZAKI	URC-5F	FURNISHED WITH ICE MAKER

MAKEUP AIR UNIT SCHEDULE

TAG	DESCRIPTION	AIRFLOW	ESP	HEATING			WEIGHT	ELECTRICAL			FURNISHED BY	INSTALLED BY	BASIS FOR DESIGN		REMARKS
				INPUT	OUTPUT	EAT(db)		MOTOR POWER	VOLT	PH			MANUFACTURER	MODEL NO.	
MAU-1	DIRECT-FIRED MAKEUP AIR UNIT	1950 CFM	0.80 in-wg	225000 Btu/h	220000 Btu/h	31.5 °F	650 lb	2.00 hp	208 V	3	HS	GC	CAPTIVE-AIRE	A1-D.250-15D	12.5:1 MAX TURNDOWN. FURNISHED WITH DISCONNECT, ROOF CURB, SCREEN INTAKE, AND WASHABLE ALUMINUM FILTERS.

KITCHEN HOOD SCHEDULE

TAG	DESCRIPTION	MAX COOKING TEMP	EXHAUST PLENUM							PERFORATED SUPPLY PLENUMS										NO. OF LIGHT FIXTURES	WEIGHT	FURNISHED BY	INSTALLED BY	BASIS FOR DESIGN		REMARKS
			AIRFLOW	ESP	DUCT COLLARS					LENGTH	WIDTH	MAU PLENUM				AC PLENUM								MANUFACTURER	MODEL NO.	
					NO.	WIDTH	LENGTH	LENGTH	WIDTH			AIRFLOW	DUCT COLLARS			AIRFLOW	DUCT COLLARS									
													NO.	WIDTH	LENGTH		NO.	DIAMETER								
HD-1	TYPE I CANOPY HOOD WITH PERFORATED MAU AND AC SUPPLY PLENUMS	600.0 °F	3200 CFM	0.86 in-wg	2	10"	1' - 3"	14' - 3"	4' - 3"	15' - 3"	1' - 10"	1,950 CFM	3	10"	2' - 4"	800 CFM	7	8"	10	1200 lb	HS	GC	CAPTIVE-AIRE	5424 ND-2-ACPSP-F	MAT'L: 18 GA. TYPE 430 SS. FURNISHED WITH VAPORPROOF INCANDESCENT LIGHT FIXTURES, 16" TALL HE SS FILTERS, INTEGRAL UTILITY CABINET, ANSUL SYSTEM, DUCT COLLAR TEMPERATURE SENSOR, PREWIRE PACKAGE, SPARE FIRE SYSTEM DRY CONTANCT, AND 4-POLE 20A CONTACTOR.

ROOFTOP UNIT SCHEDULE

TAG	DESCRIPTION	NOMINAL CAPACITY	EER	AIRFLOW			NET COOLING CAPACITY					HEATING CAPACITY			NUMBER OF		REFRIGERANT		WEIGHT	ELECTRICAL				FURNISHED BY	INSTALLED BY	BASIS FOR DESIGN		REMARKS
				TOTAL	OA	ESP	TOTAL	SENSIBLE	EAT(db)	EAT(wb)	COND. EAT	INPUT	CAP	EAT(db)	COMPRESSORS	CIRCUITS	TYPE	CHARGE		MOCP	FLA	VOLT	PH			MANUFACTURER	MODEL NO.	
RTU-1	ROOFTOP UNIT	8.5 ton	11	3400 CFM	500 CFM	0.80 in-wg	88320 Btu/h	81890 Btu/h	78.9 °F	63.3 °F	105 °F	120000 Btu/h	97200 Btu/h	64.3 °F	2	2	R-410A	9.5/4.9	1350 lb	60 A	48 A	208 V	3	HES	GC	TRANE	YSJ 102	FURNISHED WITH COMP. ENTHALPY ECON., BAROMETRIC RELIEF, RET. SMOKE DETECTOR W/ REMOTE KEYED ANNUNCIATOR/RESET, M.O.D., MERV-8 FILTERS, CURB, HAIL GUARD, TOOLLESS HINGED ACCESS PANELS, DISCONNECT, & UNIT-MOUNTED CONVENIENCE RECEPTACLE
RTU-2	KITCHEN ROOFTOP UNIT	10.0 ton	11	4000 CFM	1000 CFM	0.80 in-wg	103530 Btu/h	103530 Btu/h	81.6 °F	63.8 °F	105 °F	150000 Btu/h	120000 Btu/h	60.4 °F	2	2	R-410A	10.1/5.0	1350 lb	70 A	54 A	208 V	3	HES	GC	TRANE	YSJ 120	FURNISHED WITH COMP. ENTHALPY ECON., BAROMETRIC RELIEF, RET. SMOKE DETECTOR W/ REMOTE KEYED ANNUNCIATOR/RESET, M.O.D., MERV-8 FILTERS, CURB, HAIL GUARD, TOOLLESS HINGED ACCESS PANELS, DISCONNECT, & UNIT-MOUNTED CONVENIENCE RECEPTACLE

CONTROL FUNCTIONS

A. THE MAIN COOKING EXHAUST FAN AND MAKE-UP AIR UNIT SHALL BE INTERLOCKED TO OPERATE TOGETHER. THIS CONTROL CIRCUIT IS ACTIVATED BY A SWITCH AND INCLUDES A FIRE PROTECTION OVERRIDE.

B. THE TEMPERATURE IN EACH ZONE IS CONTROLLED BY SPACE TEMPERATURE SENSORS CONNECTED TO THE THERMOSTATS LOCATED IN THE OFFICE. ALL ZONES SHALL OPERATE WITH CONTINUOUS FAN OPERATION DURING OCCUPIED TIMES AND INTERMITTENTLY AS NEEDED TO MAINTAIN SET POINTS DURING UNOCCUPIED TIMES. OUTSIDE AIR DAMPERS SHALL BE OPEN CONTINUOUSLY WHEN EITHER IN OCCUPIED MODE OR WHEN THE HOOD SYSTEM IS ON AND SHALL BE CLOSED DURING UNOCCUPIED PERIODS.

C. THE THERMOSTATS SHALL DETERMINE OCCUPIED/UNOCCUPIED STATUS BASED ON THE SCHEDULE IN THE ENERGY MANAGEMENT SYSTEM.

Consultant:

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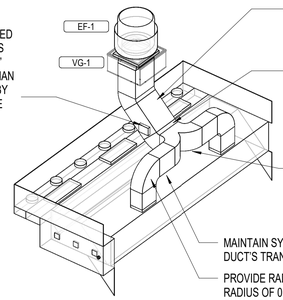
M600

GREASE DUCT CLEANOUTS SHALL BE UL-LISTED DUCTMATE PREINSULATED CLEANOUT DOORS MODEL D128ULWSBI FOR DUCTS AT LEAST 17" TALL AND DW128ULWSBI FOR DUCTS LESS THAN 17" TALL. CLEANOUTS SHALL BE FURNISHED BY THE TENANT. COORDINATE NUMBER AND SIZE REQUIRED WITH ENVIROMATIC. INSTALL AS SHOWN IN THE HVAC FLOOR PLAN.



PROVIDE FIRE RESISTANT INSULATION ON TYPE I HOOD EXHAUST DUCT FROM CONNECTION TO HOOD TO CONNECTION TO EXHAUST FAN PER DETAIL 3/M700.

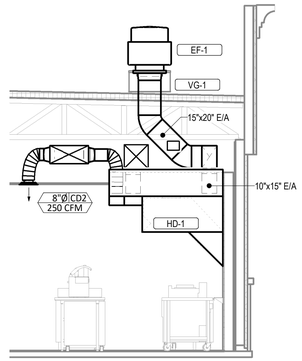
SLOPE HORIZONTAL GREASE DUCT A MINIMUM OF ¼" PER FOOT DOWN TOWARD THE CONNECTION TO THE HOOD.

PROVIDE TEE FITTING WITH RADIUSED BACK AND RADIUSED THROAT WHERE INDIVIDUAL EXHAUST RISERS CONVERGE AS SHOWN. THE CENTERLINE OF THE RADII SHALL BE EQUAL TO THE DUCT DIMENSION.

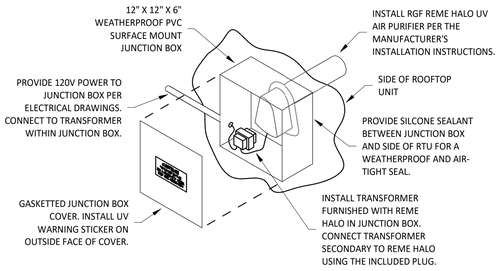
MAINTAIN SYMMETRY IN GREASE EXHAUST DUCT'S TRANSITION TO THE EXHAUST RISER.

PROVIDE RADIUSED ELBOWS WITH AN INSIDE RADIUS OF 0.5 X THE DUCT DIMENSION AT ALL CHANGES OF DIRECTION IN THE TYPE I HOOD EXHAUST DUCT.

8 M700 HOOD EXHAUST ISOMETRIC
NOT TO SCALE



7 M700 DUCT SECTION AT HOOD
NOT TO SCALE



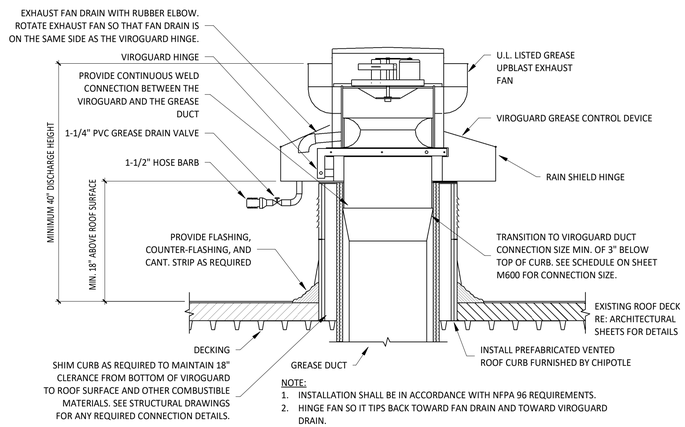
INSTALLATION LOCATION

INSTALL AIR PURIFIER WITH JUNCTION BOX ON OUTSIDE FACE OF ROOFTOP UNIT AND WITH UV LAMP TUBE EXTENDING INTO THE INTERIOR OF THE ROOFTOP UNIT. FIELD VERIFY EXACT LOCATION TO AVOID DAMAGING, TOUCHING, OR INTERFERING WITH ANY RTU INTERIOR COMPONENTS. INSTALLATION LOCATION SHALL BE AS FOLLOWS:

TRANE: INSTALL INTO THE SUPPLY AIR STREAM THROUGH THE REMOVABLE PANEL COVERING THE HORIZONTAL DISCHARGE SUPPLY AIR OPENING.

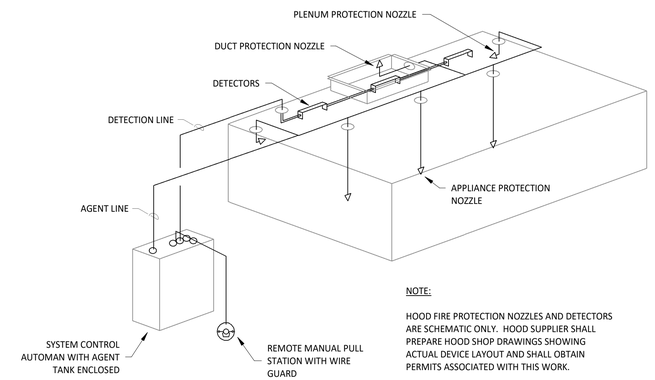
YORK: INSTALL INTO THE SUPPLY AIR PLENUM FROM THE BACK SIDE OF THE UNIT JUST ABOVE THE HEAT EXCHANGER.

6 M700 UV AIR PURIFIER INSTALLATION
NOT TO SCALE



NOTE:
1. INSTALLATION SHALL BE IN ACCORDANCE WITH NFPA 96 REQUIREMENTS.
2. HINGE FAN SO IT TIPS BACK TOWARD FAN DRAIN AND TOWARD VIROGUARD DRAIN.

5 M700 GREASE EXHAUST FAN
NOT TO SCALE



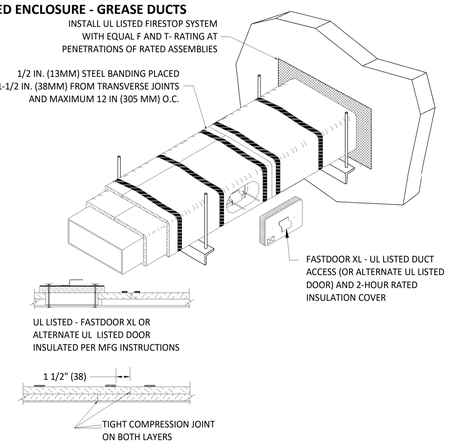
NOTE:

HOOD FIRE PROTECTION NOZZLES AND DETECTORS ARE SCHEMATIC ONLY. HOOD SUPPLIER SHALL PREPARE HOOD SHOP DRAWINGS SHOWING ACTUAL DEVICE LAYOUT AND SHALL OBTAIN PERMITS ASSOCIATED WITH THIS WORK.

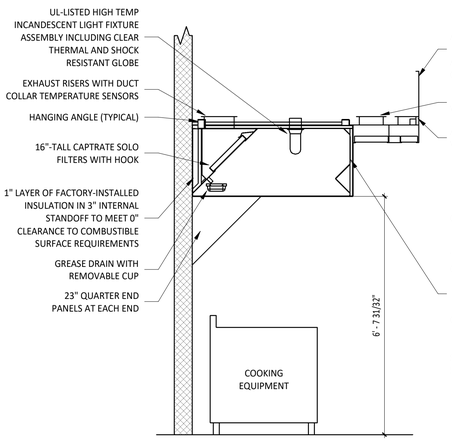
4 M700 FIRE SUPPRESSION SYSTEM SCHEMATIC
NOT TO SCALE

FIRE RATED ENCLOSURE - GREASE DUCTS

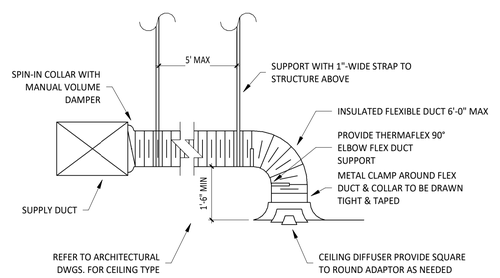
1. THERMAL CERAMICS FIREMASTER FASTWRAP XL IS TESTED TO ASTM E2336 AND UL LISTED PER HNKT.G18 TO PROVIDE ZERO CLEARANCE TO COMBUSTIBLES AND TO PROVIDE A 1- OR 2-HOUR ENCLOSURE. THROUGH PENETRATIONS FIRESTOP SYSTEMS ARE TESTED IN ACCORDANCE WITH ASTM E 814 (UL 1479). ICC CODE EVALUATION PER REPORT UL ER 14229-01.
2. COMPLIANT TO THE FOLLOWING CODES:
   - NFPA 96
   - INTERNATIONAL MECHANICAL CODES
   - UNIFORM MECHANICAL CODE.
   - CALIFORNIA MECHANICAL CODE
3. INSULATION APPLIED IN TWO LAYERS WITH TIGHT COMPRESSION JOINT ON BOTH LAYERS AT ALL JOINTS.
4. MINIMUM 16 GAUGE CARBON STEEL (OR 18 GAGE STAINLESS STEEL) RECTANGULAR OR ROUND GREASE EXHAUST DUCT
5. INSTALL UL LISTED AND LIQUID TIGHT THERMAL CERAMICS FASTDOOR XL ACCESS DOORS, OR ALTERNATE DOOR UL LISTED PER UL1978, AT ALL CHANGES IN DIRECTION AND AT MINIMUM EVERY 20 FT ON HORIZONTAL RUNS.
6. SUPPORT HANGER SYSTEMS DO NOT NEED TO BE WRAPPED PROVIDED THE HANGER RODS ARE MINIMUM OF 3/8 IN. DIAMETER AND SUPPORTS ARE MINIMUM 2 X 2 X 1/8 IN. STEEL ANGLE OR SMACNA EQUIVALENT SUPPORT SYSTEM.
7. THERMAL CERAMICS DUCT WRAP SHALL BE INSTALLED DIRECTLY ONTO THE DUCT AND APPLIED FROM THE HOOD CONNECTION TO THE CONNECTION TO THE FAN.
8. THERMAL CERAMICS DUCT ENCLOSURE SYSTEM SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS AND UL LISTINGS.



3 M700 FIREMASTER DUCT WRAP - UL HNKT-G18
NOT TO SCALE



2 M700 HOOD SECTION VIEW
NOT TO SCALE



NOTE:
1. METHOD OF INSTALLATION FOR AIRTIGHT SEAL IS TYPICAL FOR ALL FLEX CONNECTIONS TO AIR DISTRIBUTION DEVICES.

1 M700 DIFFUSER CONNECTION
NOT TO SCALE

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