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MECHANICAL SYMBOLS LEGEND	
(T)	THERMOSTAT
(S)	TEMPERATURE SENSOR
(SD)	DUCT SMOKE DETECTOR
-w-	FLEXIBLE DUCT
—	VOLUME DAMPER
FD	FIRE DAMPER
⊕	CEILING SUPPLY AIR DIFFUSER
⊖	CEILING RETURN AIR GRILLE
—	SIDEWALL AIR DIFFUSER OR GRILLE
—	NEW DUCTWORK
—	EXISTING DUCTWORK
D	CONDENSATE DRAIN
→	PIPE TURNING DOWN
↗	PIPE TURNING UP
●	BALL VALVE
⊕	GATE VALVE
⊕	CONNECTION OF NEW TO EXISTING
—	CHECK VALVE
—	STRAINER
AFF	ABOVE FINISHED FLOOR
S1	AIR DEVICE #
100	CFM
S	SUPPLY
R	RETURN
E	EXHAUST

**MECHANICAL KEYED NOTES**

- 24 HR. 7 DAY PROGRAMMABLE, TITLE 24 COMPLIANT THERMOSTAT TO BE INSTALLED 48" ABOVE THE FLOOR.
- FURNISH AND INSTALL ROOFTOP UNIT (RTU-1,2) ON ROOF. ROUTE CONDENSATE PIPING TO NEAREST ROOF DRAIN, OR THROUGH ROOF TO INDIRECTLY DRAIN ABOVE MOP SINK WHERE REQUIRED BY LOCAL AHJ.
- FLEXIBLE AIR DUCTS SHALL BE TESTED IN ACCORDANCE WITH UL 181. SUCH DUCTS SHALL BE LISTED AND LABELED AS CLASS 0 OR CLASS 1 FLEXIBLE AIR DUCTS AND SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL MECHANICAL CODE.
- PROVIDE WALL-MOUNTED ELECTRIC AIR CURTAIN ABOVE DOOR/WINDOW. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
- 6"Ø EXHAUST DUCT OUT THROUGH ROOF. MAINTAIN MINIMUM OF 10 FEET FROM ANY OUTSIDE ARE INTAKES.
- INSTALL OWNER-PROVIDED WALK-IN COOLER CONDENSING UNIT ON ROOF. REFRIGERANT PIPING FROM COOLER TO REMOTE CONDENSER ON THE ROOF PROVIDED BY CONTRACTOR PER MANUFACTURER'S RECOMMENDATIONS. VERIFY EXACT ROUTING AND ROOF PENETRATION LOCATION IN FIELD.
- INSTALL OWNER-PROVIDED ICE MAKER CONDENSING UNIT ON ROOF. REFRIGERANT PIPING FROM ICE MAKER TO REMOTE CONDENSER ON THE ROOF PROVIDED BY CONTRACTOR PER MANUFACTURER'S RECOMMENDATIONS. VERIFY EXACT ROUTING AND ROOF PENETRATION LOCATION IN FIELD.
- CONNECT AIR DEVICE RUN-OUT, SIZED PER AIR DEVICE SCHEDULE THIS SHEET, TO BOTTOM OF PLENUMIZED CURB. SEE DETAILS ON SHEET M-2.0. ALL DUCTWORK SHALL HAVE MINIMUM R-8 INSULATION.
- UNDERCUT DOOR 1" FOR MAKEUP AIR.
- PROVIDE REMOTE TEMPERATURE SENSOR AND RELATED WIRING TO CONNECT TO THERMOSTAT FOR RTU-1. MOUNT IN CEILING AT LOCATION SHOWN. VERIFY EXACT LOCATION IN FIELD.
- PROVIDE REMOTE TEMPERATURE SENSOR AND RELATED WIRING TO CONNECT TO THERMOSTAT FOR RTU-2. MOUNT ON WALL AT 60" AFF. VERIFY EXACT LOCATION IN FIELD.
- PROVIDE DUCT SMOKE DETECTOR ON SUPPLY AIR PLENUM.

**GREEN BUILDING NOTES**

- 5.410.4 TESTING AND ADJUSTING OF NEW SYSTEMS INSTALLED TO SERVE AN ADDITION OR ALTERATION SUBJECT TO SECTION 5.410.4 SHALL BE REQUIRED.
- 5.504.1 TEMPORARY VENTILATION. IF THE HVAC SYSTEM IS USED DURING CONSTRUCTION, USE RETURN AIR FILTERS WITH A MERV OF 8, BASED ON ASHRAE 52.2-1999, OR AN AVERAGE EFFICIENCY OF 30% BASED ON ASHRAE 52.1-1192. REPLACE ALL FILTER IMMEDIATELY PRIOR TO OCCUPANCY.
- 5.504.3 AT THE TIME OF ROUGH INSTALLATION OR DURING STORAGE ON THE CONSTRUCTION SITE AND UNTIL START-UP OF THE HEATING AND COOLING EQUIPMENT, ALL DUCTS AND OTHER RELATED AIR DISTRIBUTION COMPONENT EQUIPMENT 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.
- 5.504.4.1 ADHESIVES, SEALANTS, AND CAULKS USED IN THE PROJECT SHALL MEET THE REQUIREMENTS OF THE FOLLOWING STANDARDS:
- ADHESIVES, ADHESIVE BONDING PRIMERS, ADHESIVE PRIMERS, SEALANTS, SEALANT PRIMERS AND CAULKS SHALL COMPLY WITH LOCAL OR REGIONAL AIR POLLUTION CONTROL OR AIR QUALITY MANAGEMENT DISTRICT RULES WHERE APPLICABLE OR SCAQMD RULE 116B VOC LIMITS, AS SHOWN IN TABLES 5.504.1 AND 5.504.2.
  - AEROSOL ADHESIVES AND SMALLER UNIT SIZES OF ADHESIVES AND SEALANT OR CAULKING COMPOUNDS (IN UNITS OF PRODUCT, LESS PACKAGING, WHICH DO NOT WEIGH MORE THAN ONE POUND AND DO NOT CONSIST OF MORE THAN 16 FLUID OUNCES) SHALL COMPLY WITH STATEWIDE VOC STANDARDS AND OTHER REQUIREMENTS, INCLUDING PROHIBITIONS ON USE OF CERTAIN TOXIC COMPOUNDS, OF CALIFORNIA CODE OF REGULATIONS, TITLE 17, COMMENCING WITH SECTION 94507.0

**NHP / NCA HVAC EQUIPMENT PACKAGE**  
**PLAN AND SPECIFICATIONS AS PER P.E. SEAL**

DUTCH BROS COFFEE HAS A NATIONAL ACCOUNT AGREEMENT WITH THE NCA GROUP. NCA SHALL VISIT THE SITE, AS AUTHORIZED, TO VERIFY ALL MATERIALS, EQUIPMENT, AND INSTALLATION ARE PER THE PROFESSIONAL ENGINEER SEAL.

FOR COMPLETE INFORMATION AND PRICING ON THE FOLLOWING PACKAGE OF EQUIPMENT AND ACCESSORIES CONTACT THE NCA GROUP MARKETING DEPARTMENT TOLL-FREE AT (877) 530-0078.

**HEATING COOLING EQUIPMENT PACKAGE**  
 INCLUDES ALL ROOFTOP (OR SPLIT SYSTEM) AIR CONDITIONING EQUIPMENT WITH ALL ACCESSORIES AS SPECIFIED ON THESE PLANS.

**FAN PACKAGE**  
 INCLUDES ALL FANS WITH ALL ACCESSORIES, INCLUDING CURBS, AS SPECIFIED ON THESE PLANS.

**AIR DEVICE PACKAGE**  
 INCLUDES ALL GRILLES, REGISTERS, AND DIFFUSERS PER PLANS. SQUARE TO ROUND TRANSITIONS PROVIDED WHERE REQUIRED.

**CURB PACKAGE**  
 INCLUDES ONE-PIECE, FULLY WELDED NCA PLENUMIZED ROOF CURBS FOR ALL ROOF MOUNTED HEATING/COOLING EQUIPMENT, AND ALL FAN CURBS. ALTERNATIVES TO NCA PLENUMIZED CURBS MAY NOT BE USED.

**CONTROLS PACKAGE**  
 INCLUDES PRESET DIGITAL THERMOSTATS, THERMOSTAT WIRE, LOCKING COVERS, AND SMOKE DETECTORS WITH AUDIBLE-VISUAL DEVICES AND INSPECTOR TEST STATIONS.

NOTE: "RE-ENGINEERING" DEVIATIONS FROM THE SHOWN DESIGN AND REQUIRED HVAC EQUIPMENT MUST BE APPROVED IN ADVANCE BY THE ARCHITECT AND PROFESSIONAL ENGINEER. UNAUTHORIZED SUBSTITUTIONS OR ALTERATIONS WILL VOID THE SIGNATURE AND SEAL OF THE PROFESSIONAL ENGINEER AND LEAVE VIOLATORS RESPONSIBLE FOR RESUBMISSION OF SIGNED AND SEALED DRAWINGS.

PACKAGED HVAC EQUIPMENT SCHEDULE															
DESIGNATION	MFR.	TONNAGE	SEER	MODEL	TOTAL AIRFLOW (CFM)	O.A. TOTAL AIRFLOW	TOTAL COOLING CAPACITY	SEVISEL COOLING CAPACITY	HSPF	HEATING CAPACITY / TYPE	SUPPLY FAN BHP	MCA	MOCP	ELECTRIC SERVICE	WEIGHT (RTU+CURB)
RTU-1,2	CARRIER	3	16.2	50GCCM04	1200	150	35.9	27.3	8.3	34.3 MBH / HEAT PUMP	0.5	36	40	208/3/60	600

- NOTES:**
- FURNISH AND INSTALL NEW ROOFTOP UNIT AND NCA PLENUMIZED CURB. TO ORDER CALL TOLL-FREE (877)-530-0078.
  - PROVIDE UNIT WITH HINGED ACCESS PANELS AND MINIMUM MERV-13 THROWAWAY FILTERS.
  - VERIFY ELECTRICAL REQUIREMENTS WITH ELECTRICAL CONTRACTOR PRIOR TO ORDERING EQUIPMENT.
  - PROVIDE AND INSTALL WITH 3.3KW AUXILIARY HEATER, CRHEATER323A00.
  - ELECTRICAL CONTRACTOR TO FURNISH AND PROVIDE CONVENIENCE OUTLET.
  - ELECTRICAL CONTRACTOR TO FURNISH AND PROVIDE DISCONNECT SWITCH.
  - PROVIDE WALL-MOUNTED THERMOSTAT.
  - PROVIDE DUCT SMOKE DETECTOR.
  - OUTSIDE AIR INTAKE HOOD WITH DAMPER.
  - MEDIUM STATIC PRESSURE.
  - PROVIDE CONDENSER HAIL GUARD.

ASHRAE 62.1 O.A. CALCULATIONS						
AREA	OCCUPANCY	CFM/PERSON	SUBTOTAL	SQUARE FEET	CFM/SQFT	SUBTOTAL
PRODUCTION	10	7.5	75.00	650	0.18	117.0
						TOTAL CFM
						192.0
						PROVIDED BY
						RTU-1,2

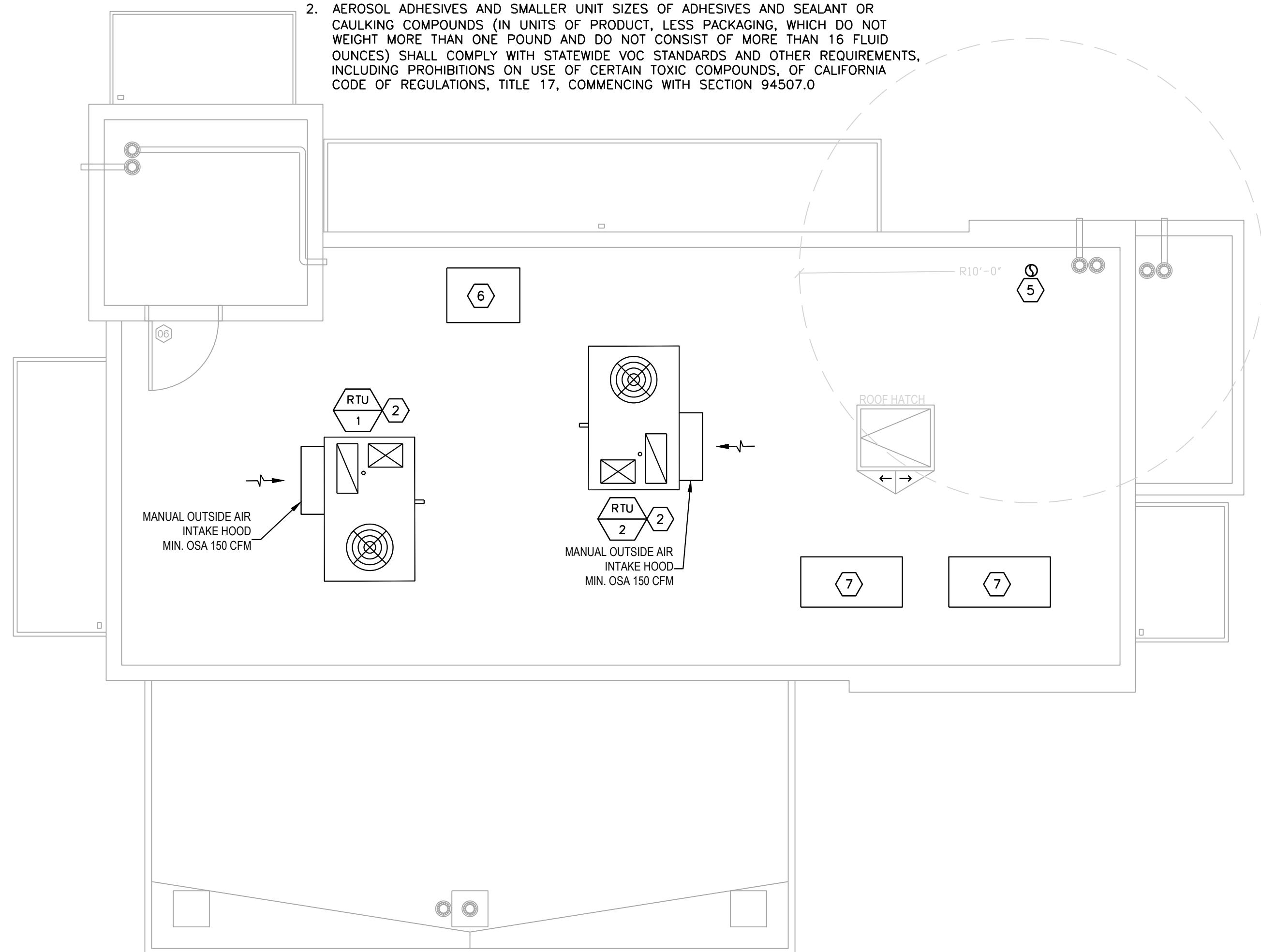
AIR BALANCE SCHEDULE					
EXHAUST UNIT	EXHAUST AIR FLOW (CFM)	PROVIDED BY	O.A. FLOW (CFM)	PROVIDED THRU	EXFILTRATION (CFM)
*EF-1	75	RTU-1	150	DOORS/WINDOWS	225
-	-	RTU-2	150		
<b>TOTAL EXHAUST</b>	<b>75</b>	<b>TOTAL O.A.</b>	<b>300</b>	<b>NET EXFILTRATION</b>	<b>225</b>

\* FAN TO BE INTERLOCKED WITH LIGHT SWITCH.

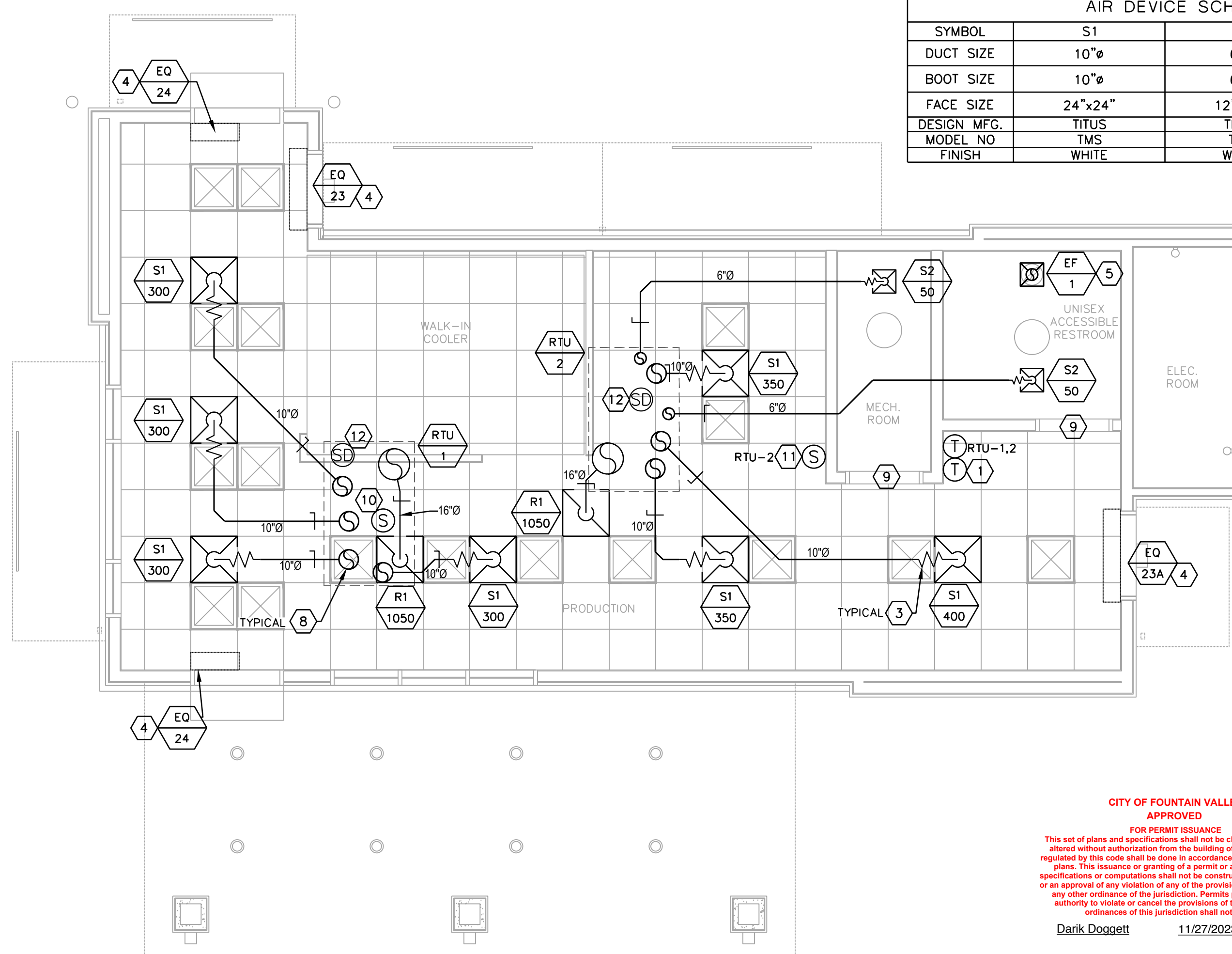
VENTILATION FAN SCHEDULE	
DESIGNATION	EF-1
APPLICATION	BATHROOM EXHAUST
MANUFACTURER	COOK
MODEL	GC-148
AIR FLOW (CFM)	75
STATIC PRESSURE	0.4
MOTOR (HP OR WATTS)	29W
WEIGHT	15
MCA	-
CONTROL NOTES	NOTES: PROVIDE SPEED CONTROL SWITCH AND MECHANICALLY ACTUATED, LOW LEAK BACKDRAFT DAMPER

AIR CURTAIN SCHEDULE			
DESIGNATION	EQ-23	EQ-23A	EQ-24
LENGTH	42"	48"	25"
MANUFACTURER	QUIKSERV	QUIKSERV	QUIKSERV
MODEL	SANITATION CERTIFIED LOW PROFILE 7 - 42"	SANITATION CERTIFIED LOW PROFILE 7 - 48"	OSK1025AA-BK
AIR FLOW (CFM)	1752	1882	645
VOLTAGE	120/1Ø	120/1Ø	120/1Ø
MOTOR (WATTS)	750	730	320
AMPS	7.5	7.5	3.4
WEIGHT	52	53	30
ACCESSORIES	PROVIDE FACTORY REMOTE CONTROL, 2-SPEED BLOWER MOTOR, AND FACTORY MOUNTING ACCESSORIES. PROVIDE ALL MANUFACTURER RECOMMENDED ACCESSORIES FOR A COMPLETE OPERATIONAL SYSTEM. VERIFY EXACT SPECIFICATION WITH OWNER PRIOR TO ORDERING.	PROVIDE FACTORY REMOTE CONTROL, 2-SPEED BLOWER MOTOR, AND FACTORY MOUNTING ACCESSORIES. PROVIDE ALL MANUFACTURER RECOMMENDED ACCESSORIES FOR A COMPLETE OPERATIONAL SYSTEM. VERIFY EXACT SPECIFICATION WITH OWNER PRIOR TO ORDERING.	PROVIDE FACTORY REMOTE CONTROL, 2-SPEED BLOWER MOTOR, AND FACTORY MOUNTING ACCESSORIES. PROVIDE ALL MANUFACTURER RECOMMENDED ACCESSORIES FOR A COMPLETE OPERATIONAL SYSTEM. VERIFY EXACT SPECIFICATION WITH OWNER PRIOR TO ORDERING.

AIR DEVICE SCHEDULE			
SYMBOL	S1	S2	R1
DUCT SIZE	10"Ø	6"Ø	16"Ø
BOOT SIZE	10"Ø	6"Ø	22"x22"
FACE SIZE	24"x24"	12"x12"	24"x24"
DESIGN MFG.	TITUS	TITUS	TITUS
MODEL NO	TMS	TMS	350RL
FINISH	WHITE	WHITE	WHITE



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



**MECHANICAL PLAN**  
 SCALE: 1/4" = 1'-0"

**CITY OF FOUNTAIN VALLEY**  
 APPROVED  
 FOR PERMIT ISSUANCE  
 This set of plans and specifications shall not be changed, modified or altered without authorization from the building official, and all work required by this code shall be done in accordance with these approved plans. This issuance or granting of a permit or approval of plans, specifications or computations shall not be construed to be a permit fee, or an approval of any violation of any of the provisions of this code or of any other ordinance of the jurisdiction. Permits requiring to give authority to violate or cancel the provisions of this code or other ordinance of this jurisdiction shall not be valid.  
 Darik Doggett 11/27/2023



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**Project No: CA5503**  
 Dutch Bros Coffee - New Freestanding Store  
 2550 - A1 PROTOTYPE  
 9065 WARNER AVE.  
 FOUNTAIN VALLEY, CA 92708  
 APN: 0143-301-39

DATE: 3/27/2023  
 REV: DATE DESCRIPTION:  
 07/18/23 PLAN CHECK #1

SHEET NAME:  
**MECHANICAL PLAN**

SHEET NUMBER:  
**M1.0**

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**CONTRACTORS NOTES:**

**HVAC CONTRACTOR**

- HVAC CONTRACTOR SHALL FURNISH AND INSTALL ROOF-TOP UNITS, EXHAUST FAN, DUCTWORK, INSULATION WRAP, DIFFUSERS, DUCT SMOKE DETECTORS, OCCUPIED/UNOCCUPIED PANEL, AND TEMPERATURE CONTROLS.
- THE HVAC CONTRACTOR SHALL VERIFY LOCATIONS FOR ALL HVAC EQUIPMENT ON SITE FROM MOST-RECENT KITCHEN EQUIPMENT PLANS. ALL FANS ARE TO BE UL LISTED.
- ALL HVAC EQUIPMENT CURBS SHALL BE SUPPLIED BY HVAC CONTRACTOR.
- ALL RTU CURBS SHALL BE FABRICATED FROM 18 GA. GALVANIZED METAL WITH WELDED CORNERS, WATER TIGHT AND INTERNALLY INSULATED. FACTORY CURB CONVERSION SHALL NOT BE ACCEPTED.
- SHIMS SHALL BE PROVIDED BY HVAC CONTRACTOR BETWEEN THE ROOF DECK AND THE CURB TO COMPENSATE FOR ROOF PITCH.
- ALL FLEX DUCT SHALL BE U.L. LISTED, R-8, FOIL-BACKED, CLASSIFIED AS A CLASS 1 AIR DUCT. MAXIMUM LENGTH IS TO BE 5' - 0" PER DROP OR PER LOCAL CODE.
- ALL METAL DUCT AND AIR DISTRIBUTION DEVICES SHALL BE INSULATED WITH R-8, 2" X .75 DENSITY FOIL-BACKED INSULATION, WITH FIRE AND SMOKE RATING [25]-[50].
- ALL DUCTWORK TO BE INDEPENDENTLY HUNG FROM STRUCTURAL MEMBERS.
- ALL DUCTWORK SHALL BE FABRICATED, INSTALLED, SEALED, AND EXTERNALLY INSULATED PER SMACNA LOW-VELOCITY DUCT MANUAL (LATEST ISSUE). INTERNALLY INSULATED DUCT IS NOT PERMITTED.
- UNLESS OTHERWISE NOTED, ALL SUPPLY TAKEOFFS SHALL HAVE A MANUAL VOLUME CONTROL DAMPER.
- THE HVAC CONTRACTOR SHALL COORDINATE DIFFUSER LOCATIONS ON SITE WITH THE MOST RECENT REFLECTED CEILING PLAN.
- THE HVAC CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE COVERING A ONE-YEAR PERIOD FOR ALL EQUIPMENT AND AN ADDITIONAL FOUR-YEAR PERIOD FOR THE COMPRESSORS IN THE RTUS. ALL FANS TO BE U.L. LISTED.
- UPON COMPLETION OF PROJECT THE HVAC CONTRACTOR IS TO HIRE AN AABC OR NEBB CERTIFIED, INDEPENDENT TEST & BALANCE COMPANY TO CONDUCT A COMPLETE, CERTIFIED TEST AND BALANCE OF ALL HVAC EQUIPMENT. PROVIDE A WRITTEN REPORT TO NCA CONSULTANTS. ALL CAPACITIES MUST BE SET TO AMOUNT INDICATED ON THE FLOOR PLANS AND SCHEDULES.
- THE HVAC CONTRACTOR IS TO MAKE ALL LOW-VOLTAGE WIRING FINAL CONNECTIONS FOR ALL HVAC EQUIPMENT INCLUDING TEMPERATURE CONTROLS, RTUS, AND SMOKE DETECTORS.

**GENERAL CONTRACTOR**

- IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO RECEIVE, OFFLOAD, AND STORE ALL HVAC MATERIALS WHICH ARRIVE AT THE JOB SITE. ALL MATERIAL MUST BE STORED INSIDE THE BUILDING.
- RTU ROOF OPENING SIZES AND ROOF CURBS ARE BASED ON EQUIPMENT SHOWN. IF OTHER EQUIPMENT IS USED, VERIFY ROOF OPENING REQUIREMENTS. MAKE PENETRATIONS AS NEEDED FOR INSTALLATION OF NEW CURB AND EQUIPMENT. COORDINATE ON SITE WITH HVAC CONTRACTOR. ENSURE THAT ROOFING MATERIAL DOES NOT COVER THE TOP OF ANY HVAC EQUIPMENT CURB.
- ALL ROOF, CEILING, WALL, AND STRUCTURAL FRAMING FOR UNIT, FAN, DUCT, DIFFUSER, AND ALL OTHER HVAC WORK SHALL BE BY THE G.C. COORDINATE ON SITE WITH HVAC CONTRACTOR. GENERAL CONTRACTOR IS TO PROVIDE ANY SCREENING, GUARD RAILS, ETC. FOR ROOF-MOUNTED HVAC EQUIPMENT PER LOCAL ADOPTED CODES. ANY REQUIRED PAINTING OF HVAC WORK IS TO BE BY THE GENERAL CONTRACTOR.
- IF NECESSARY, THE GENERAL CONTRACTOR IS TO REMOVE, REPLACE, AND/OR REPAIR CEILING GRID AND TILES IN ORDER FOR THE HVAC WORK TO BE PERFORMED.

**ELECTRICAL CONTRACTOR**

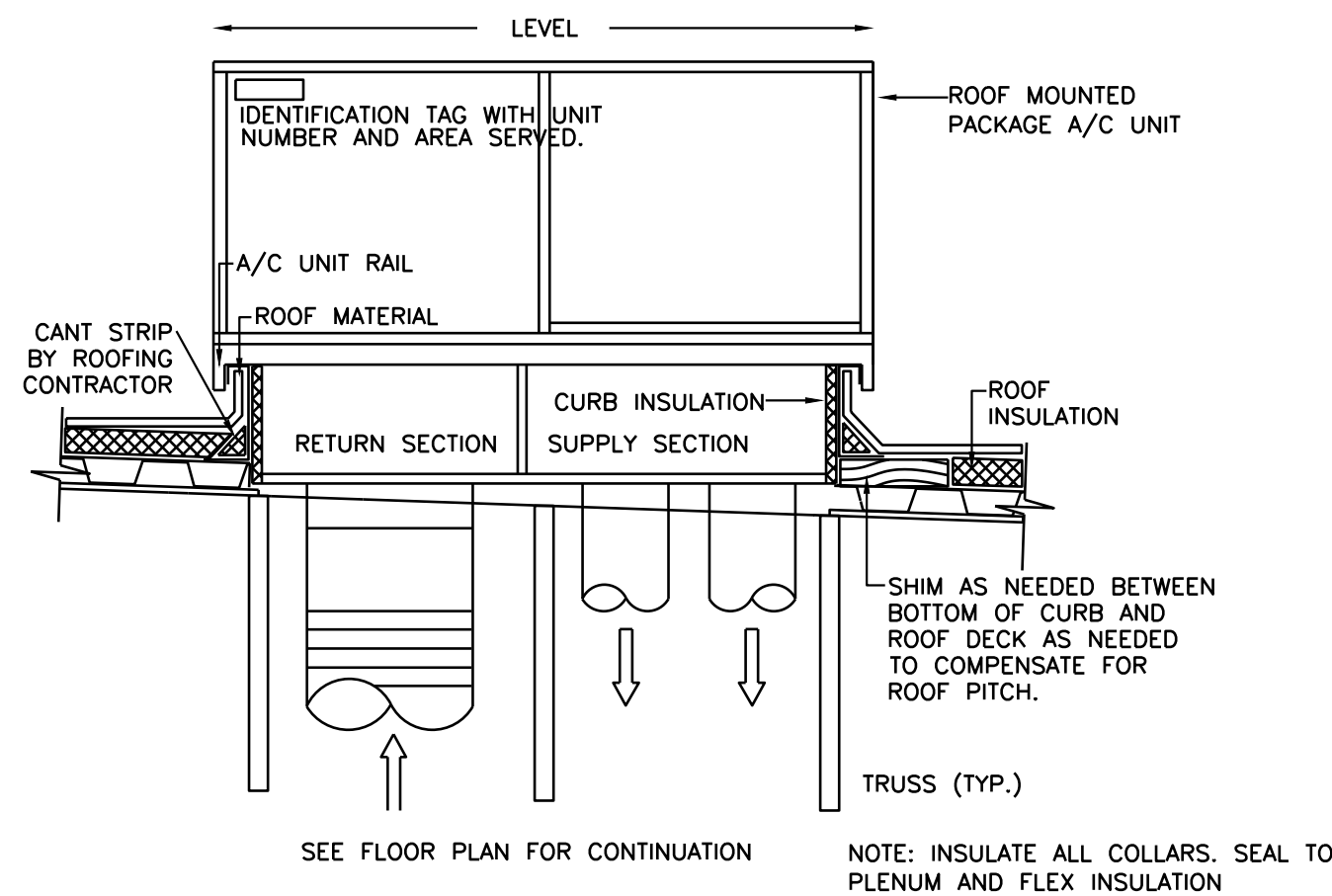
- THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL PITCH POCKETS FOR POWER AND CONTROL WIRING, AND IS TO MAINTAIN 12" MINIMUM CLEARANCE FROM BACK PANEL OF AIR CONDITIONING UNITS. DO NOT PENETRATE BOTTOM OF RTU CURB.
- THE ELECTRICAL CONTRACTOR SHALL INSTALL LOW-VOLTAGE CONTROL WIRING FOR ALL AIR CONDITIONING CONTROLS.
- THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL DISCONNECTS FOR RTUS AND INTERLOCK RESTROOM FAN TO RUN CONTINUOUSLY WHILE WORK AREA LIGHTS ARE ON.
- FOR EACH AIR CONDITIONING UNIT, THE ELECTRICAL CONTRACTOR IS TO PROVIDE ONE SINGLE-GANG RECEPTACLE TEST STATION FOR THE REMOTE SENSOR AND/OR T-STAT, AND ONE DOUBLE-GANG RECEPTACLE TEST STATION FOR THE ANNUNCIATOR, WITH GREEN AND RED LIGHT INDICATORS. THE FIRE AND MECHANICAL INSPECTORS WILL DETERMINE SUITABLE LOCATION FOR TEST STATIONS. ANNUNCIATORS AND TEST STATION WILL BE LOOPED IN THE CIRCUITRY OF THE SMOKE DETECTION DEVICES. WIRING WILL BE INSTALLED BY ELECTRICAL CONTRACTOR.

**PLUMBING CONTRACTOR**

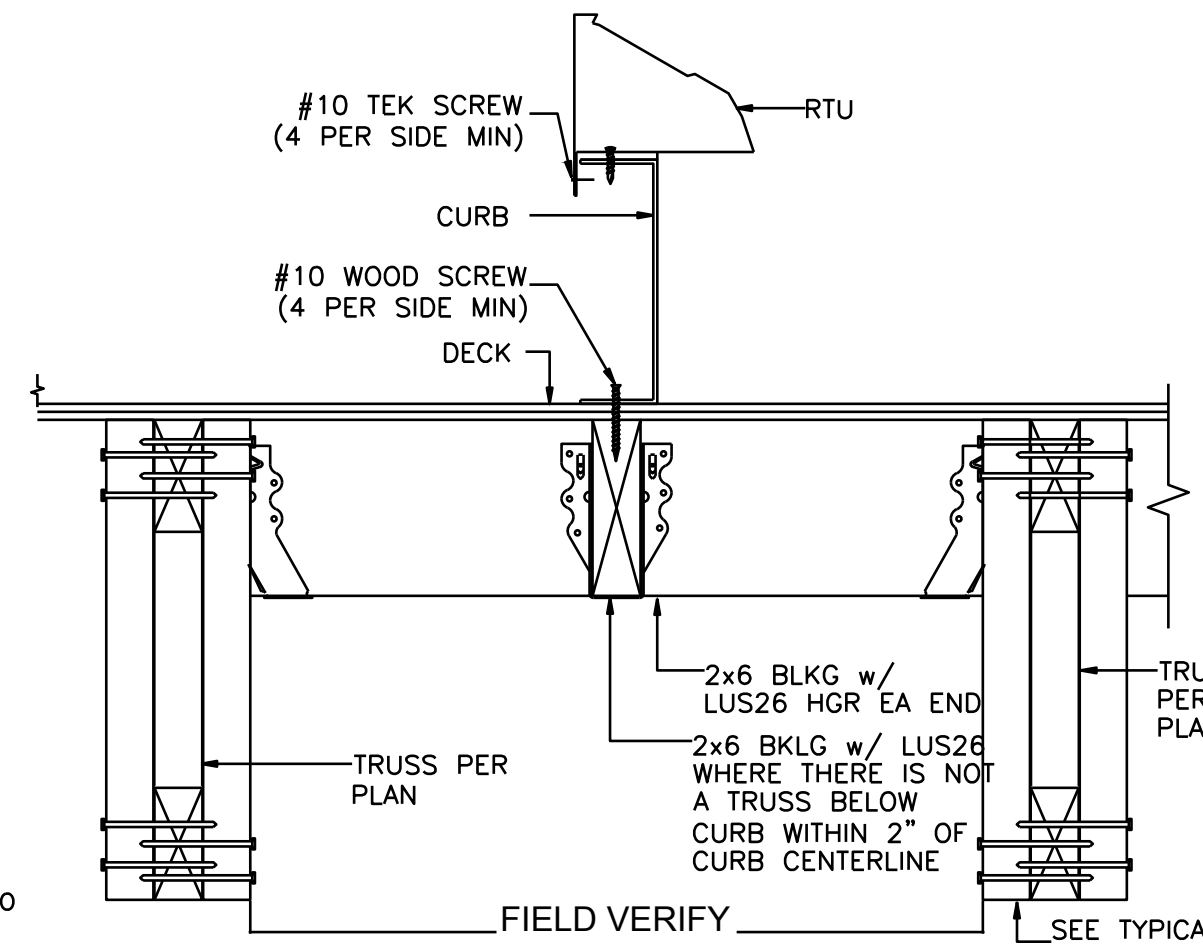
- THE PLUMBING CONTRACTOR TO PROVIDE AND INSTALL CONDENSATE DRAINS FOR ALL A/C UNITS, AND PITCH POCKETS FOR RTU CONNECTIONS. DO NOT PENETRATE BOTTOM OF RTU CURB.
- THE PLUMBING CONTRACTOR IS TO COORDINATE PLUMBING VENT STACKS WITH OUTSIDE AIR INTAKES OF A/C UNITS. 10'-0" MINIMUM CLEARANCE REQUIRED OR PER LOCAL CODE.

**PLENUMIZED CURB INSTALLATION NOTES**

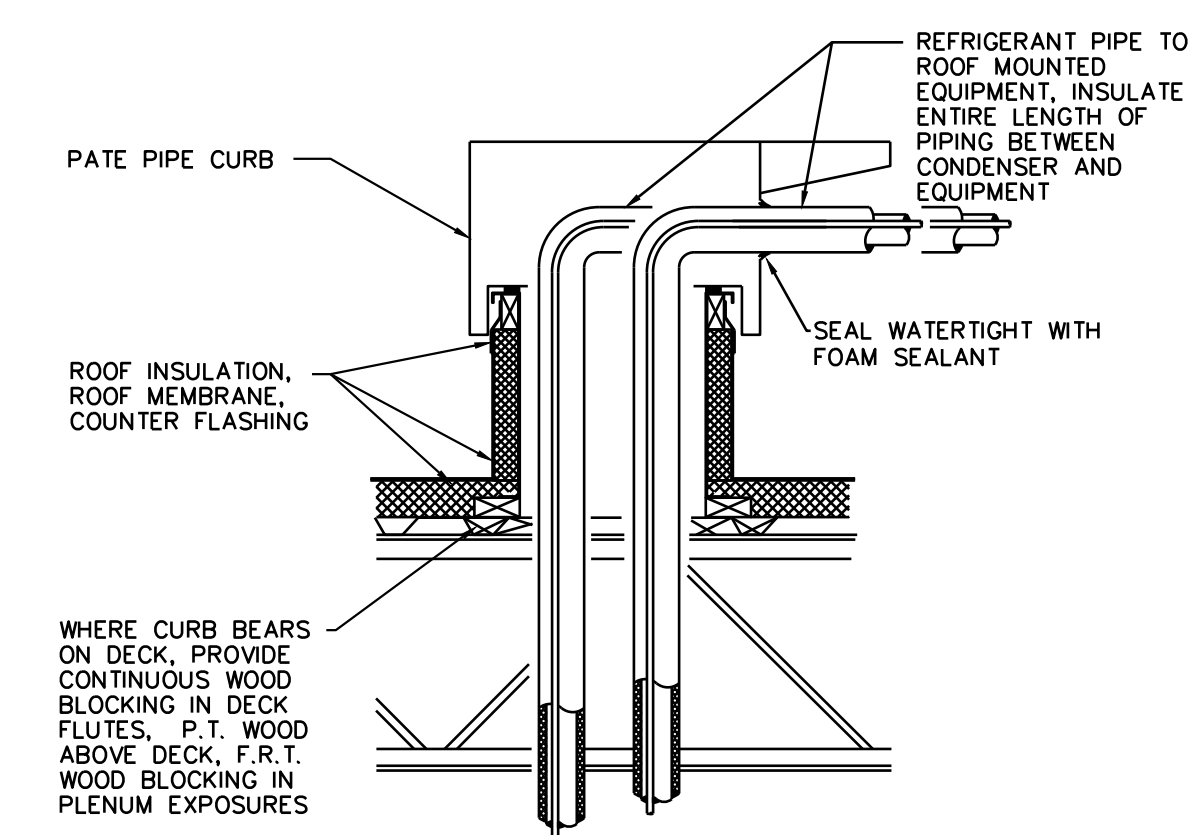
- CAREFULLY LOCATE AND MARK ROOF CURB LOCATIONS SO THAT DUCT WORK CAN BE INSTALLED IN THE APPROXIMATE LOCATIONS AS SHOWN BY THE FLOOR PLAN. PAY ATTENTION TO THE LOCATION OF THE ROOF STRUCTURE IN ORDER TO ACCOMMODATE THE DUCT DROPS.
- MARK THE EXACT LOCATION OF EACH ROOF CURB. LAY OUT ALL EQUIPMENT LOCATIONS IN ORDER TO MAINTAIN PROPER CLEARANCES FROM EXHAUST FANS AND VENTS AS WELL AS PROVIDING FOR PROPER SERVICE CLEARANCES.
- GENERAL CONTRACTOR SHALL CUT ROOF DECKING MATERIAL TAKING CARE TO AVOID CUTTING ANY STRUCTURAL COMPONENTS. GENERAL CONTRACTOR SHALL ALSO INSTALL ANY NECESSARY FRAMING OR BLOCKING AT OPENINGS.
- WITH ROOF CURB UPSIDE DOWN (SOLID METAL BOTTOM UP) MEASURE AND MARK THE LOCATION OF ANY JOISTS OR OTHER FRAMING MEMBERS THAT MUST BE AVOIDED. MEASURE AND MARK THE LOCATION OF ALL THE DUCT TAPS.
- CUT ALL DUCT TAPS INTO THE BOTTOM PANEL OF THE ROOF CURB. BE CAREFUL NOT TO DAMAGE THE ROOFING SURFACE WHILE MAKING THESE CUTS.
- INSTALL DUCT TAP FITTINGS AND MANUAL DAMPERS INTO THE OPENINGS PREVIOUSLY CUT. SEAL ALL CONNECTIONS ON BOTH THE BOTTOM AND THE TOP SIDES OF THE TAPS.
- TURN CURB RIGHT SIDE UP, LEVEL CURB BETWEEN BOTTOM OF CURB AND DECK, INSTALL IN ROOF OPENING. SECURE CURB TO ROOF FRAMING AS REQUIRED.
- GENERAL CONTRACTOR OR ROOFING CONTRACTOR SHALL FLASH AND ROOF IN THE CURB AS DETAILED ON THE DRAWINGS.
- DUCT RUNS SHALL BE INSTALLED FROM THE TAPS TO THE DIFFUSER LOCATIONS AS SHOWN ON THE PLANS.
- WRAP RIGID DUCT WORK AND DUCT TAPS WITH SPECIFIED DUCT INSULATION. SEAL AND TAPE INSULATION AROUND EACH DUCT TAP AND TO THE BOTTOM OF THE CURB.



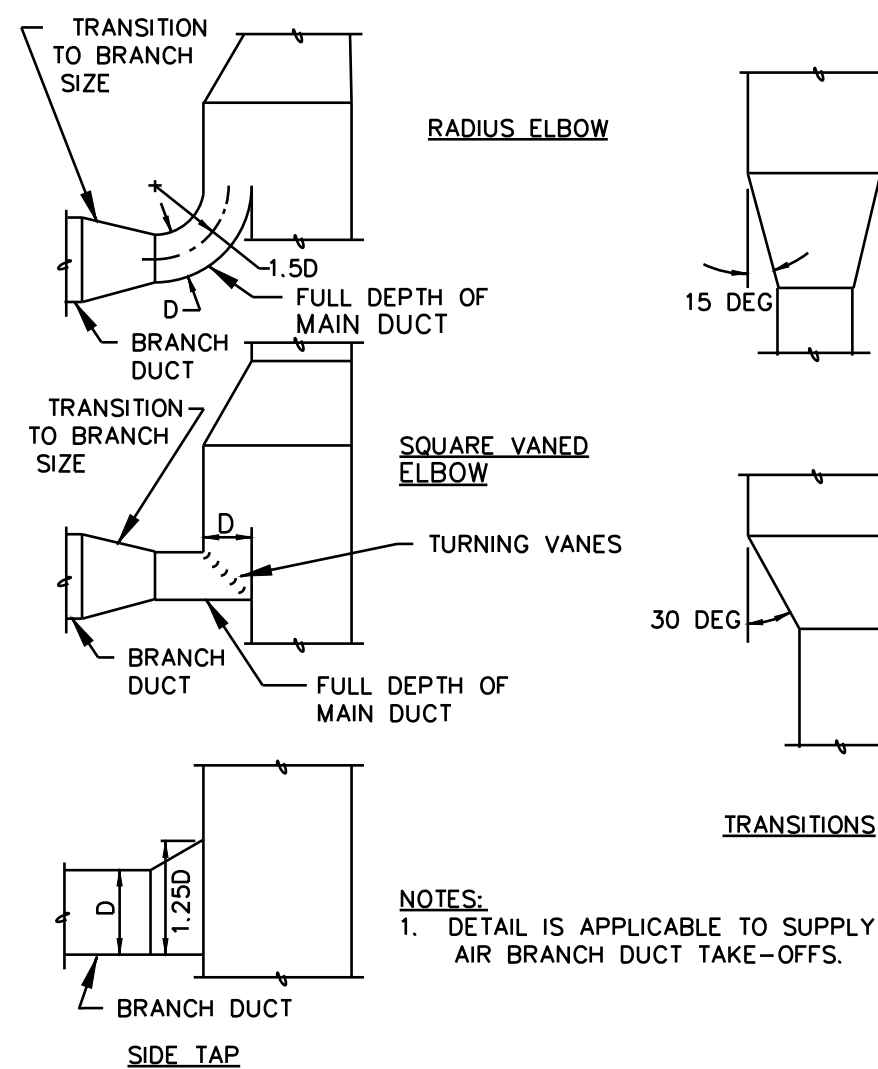
**DUCT RISER/LEVELING DETAIL**  
NOT TO SCALE



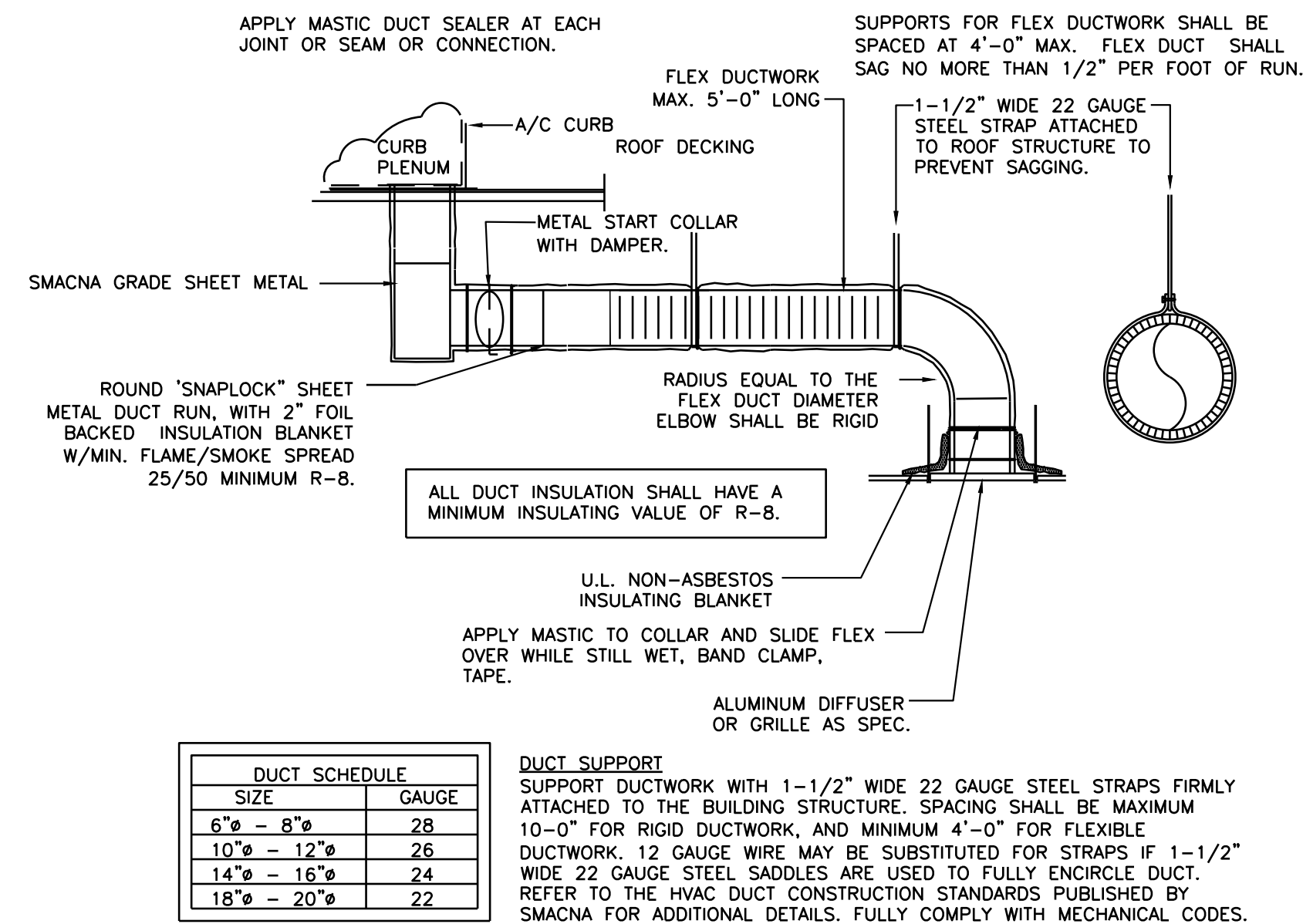
**ROOF CURB SECTION**  
NOT TO SCALE



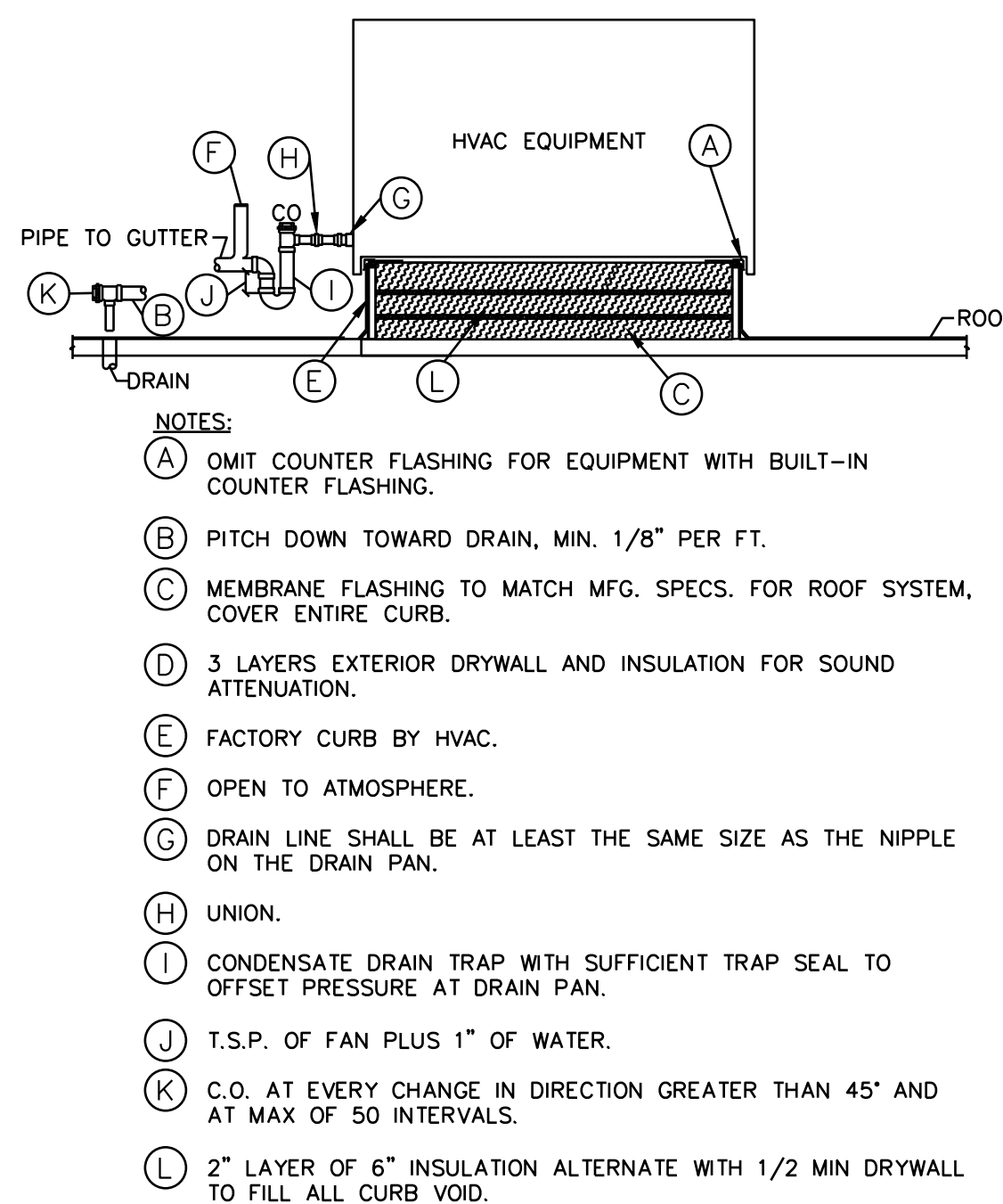
**REFRIGERANT PIPING DETAIL**  
NOT TO SCALE



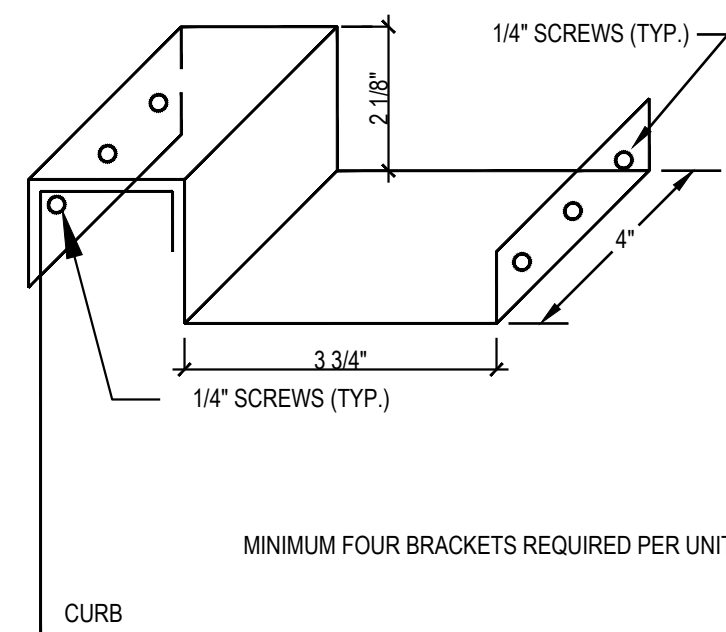
**BRANCH DUCT TAKEOFFS**  
NOT TO SCALE



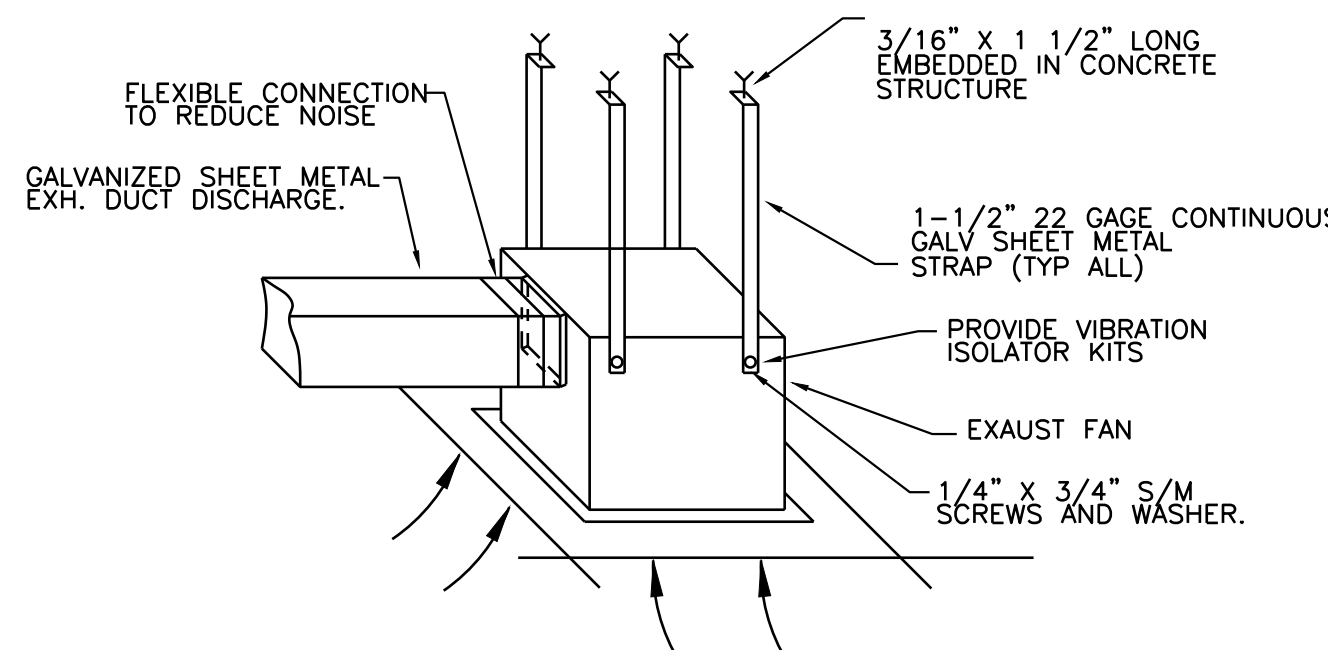
**RIGID/FLEXDUCT CONNECTION/INSTALL DETAIL**  
NOT TO SCALE



**RTU CURB AND PIPING DETAIL**  
NOT TO SCALE



**ROOF CURB SEISMIC BRACKET DETAIL**  
NOT TO SCALE



**BATHROOM FAN INSTALLATION DETAIL**  
NOT TO SCALE



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**ACIES**

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**Project No: CA5503**  
Dutch Bros Coffee - New Freestanding Store  
2550 - A1 PROTOTYPE  
9065 WARNER AVE.  
FOUNTAIN VALLEY, CA 92708  
APN: 0143-001-39

DATE: 3/27/2023  
REV: DATE DESCRIPTION:  
07/18/23 PLAN CHECK #1

SHEET NAME:  
**MECHANICAL DETAILS**

SHEET NUMBER:  
**M2.0**

## MECHANICAL SPECIFICATIONS

**WORK INCLUDED –**  
ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR THE INSTALLATION OF AN OPERATING HVAC SYSTEM INCLUDING HVAC EQUIPMENT, DUCTWORK, GRILLES, REGISTERS, CONTROL AND RELATED ITEMS AS REQUIRED OR SPECIFIED AND OBTAIN AND PAY FOR BUILDING PERMITS, FEES, TESTS, AND INSPECTIONS REQUIRED IN CONNECTION WITH WORK. ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH ALL GOVERNING CODES AND ORDINANCES. THE FINAL PRODUCT SHALL BE A COMPLETE WORKING SYSTEM.

**GENERAL –**  
ALL HVAC EQUIPMENT AND ACCESSORIES SHALL BE INSTALLED AS PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC, AND ARE INTENDED TO CONVEY SCOPE OF WORK AND TO INDICATE GENERAL ARRANGEMENT OF EQUIPMENT, DUCTS AND PIPING. THEY ARE NOT INTENDED TO SHOW EVERY OFFSET OR FITTINGS OR STRUCTURAL DIFFICULTY THAT MAY BE ENCOUNTERED DURING INSTALLATION OF WORK. DO NOT ATTEMPT TO CHANGE THE LOCATION OF ANY DUCTWORK, EQUIPMENT AND RELATED ITEMS. SHALL BE VERIFIED IN THE FIELD PRIOR TO FABRICATION OF THE EQUIPMENT AND DUCTWORK/DIFFUSER LOCATIONS AS SHOWN ARE ACCURATE TO THE BEST OF OUR KNOWLEDGE. HOWEVER, IN SOME INSTANCES, THE EQUIPMENT ITEM MAY VARY FROM WHAT IS SHOWN. VERIFY ALL CRITICAL DIMENSIONS AND ROUGH-IN REQUIREMENTS WITH THE EQUIPMENT SUPPLIER PRIOR TO CONSTRUCTION. FAILURE OF THE CONTRACTOR TO VERIFY THESE DIMENSIONS SHALL PLACE THE RESPONSIBILITY FOR ANY SUBSEQUENT RELOCATION'S DIRECTLY UPON THE CONTRACTOR.

**SUBSTITUTIONS –**  
IF THE CONTRACTOR DESIRES TO USE EQUIPMENT AND/OR MATERIAL OF EQUIPMENT QUALITY OTHER THAN THAT SPECIFIED, HE SHALL HAVE REQUESTED, IN WRITING, APPROVAL OF EACH SUCH SUBSTITUTION AND RECEIVED APPROVAL PRIOR TO BID OPENING. A CONTRACTOR OFFERING A SUBSTITUTION SHALL ACCEPT RESPONSIBILITY FOR ITS EFFECT ON THE WORK. THE CONTRACTOR WHO REQUESTED SUCH SUBSTITUTION SHALL PAY ALL COST AND CHANGES RESULTING FROM THE INCLUSION OF SUBSTITUTIONS.

**DISCREPANCIES –** IN THE EVENT THAT THE CONTRACTOR FINDS DISCREPANCIES OR OMISSIONS, OR IS IN DOUBT AS TO THE EXACT MEANING OF THE PLANS AND/OR SPECIFICATIONS, CONTRACTOR SHALL, BEFORE COMMENCING WORK, CONTACT THE ARCHITECT FOR CLARIFICATION.

**FIRE/DRAFT STOP SURVEY –**  
THE CONTRACTOR SHALL REVIEW THE ARCHITECTURAL DRAWINGS TO VERIFY THE LOCATION OF ALL FIRE AND/OR DRAFT BARRIERS IN THIS PROJECT PRIOR TO CONSTRUCTION. PROVIDE UL AND LOCAL CODE APPROVED FIRE/SMOKE DAMPERS AND MECHANICAL PIPING PENETRATION, CONSTRUCTION MATERIALS AND INSTALLATION METHODS FOR BARRIER RATING ENCOUNTERED. INCLUDE RATED ACCESS PANELS FOR EACH DAMPER. FAILURE OF THE CONTRACTOR TO VERIFY REQUIRED FIRE/DRAFT BARRIER REQUIREMENTS PRIOR TO BIDDING THESE DOCUMENTS SHALL PLACE THE RESPONSIBILITY FOR ANY SUBSEQUENT RELOCATIONS OR REVISIONS DIRECTLY ON THE CONTRACTOR.

**ACCEPTABLE MANUFACTURERS –**  
THE FOLLOWING IS A LIST OF MANUFACTURERS WHOSE EQUIPMENT AND HVAC MATERIALS ARE ACCEPTABLE. SUBJECT TO CONFORMANCE WITH CONTRACT DOCUMENTS. VERIFY THAT THE EQUIPMENT WILL MEET ALL CAPACITIES, SPACE ALLOCATIONS, AND THAT THE WEIGHTS WILL NOT EXCEED STRUCTURAL DESIGN LOADS.  
FRAC EQUIPMENT, FRAME, CARRIER, FRYNIE, YORK, DAY & NIGHT, LENNOX, RUUD AND COP COMMERCIAL DUCT & PIPE INSTALLATION: KNAUF, OWENS-CORNING, ANNVILLE, CERTAIN-TIED AND PPG  
EVAPORATE COOLERS: ARVIN, GOETTL MASTER COOL, UNITED METAL PRODUCTS  
MAKE-UP AIR UNITS: ARIES, REZTOR, WESTERN AND STERLING  
HVAC CONTROL SYSTEMS: HONEYWELL, BARBERCO, ROBERTSHAW OR HVAC EQUIPMENT SUPPLIER FURNISHED GRILLES, REGISTERS, DIFFUSERS & LOUVERS: ANEMOSTAT, KRUEGER, METAL-AIRE, TITUS, RUSKIN AND PENN ACCESS DOORS: MILCOR, VENTGAB AND POTTER-ROEMER  
FLEXIBLE DUCT: GENFLEX, THERMAFLEX, OR EQUIVALENT  
EXHAUST FANS: GREENHECK, ACMC, IGL, LOREN COOK, PENN AND BROAN  
SMOKE & FIRE DAMPERS: RUSKIN, PHILLIPS AND AIR BALANCE

**AIR CONDITIONING UNITS –**  
SELF CONTAINED OR SPLIT SYSTEM: ELECTRIC/HEAT PUMP AIR CONDITIONING AND ELECTRIC RESISTANCE HEATING SECTION. TYPE, CAPABILITIES AND RATING INDICATED ON THE DRAWINGS, ARI, AND/OR AGA CERTIFIED, UL LISTED. INCLUDE FACTORY ACCESSORIES NECESSARY TO MAKE EQUIPMENT COMPLETELY OPERATIONAL.

**EVAPORATIVE COOLER UNITS –**  
FURNISH AND INSTALL EVAPORATIVE COOLERS. EACH UNIT SHALL BE COMPLETE WITH BLOWER AND MOTOR WITH FASTENERS. PROVIDE SNAP LOCK PAD FRAMES. UNDERCOATING OF RESERVOIR, STRAINER BASKET, FLOAT KIT, WATER CONTROL KIT, "AQUATROL" BLEED CONTROL PUMP, MODELS AND CAPACITIES AS INDICATED ON DRAWINGS. APPROVED UNITS SHALL BE CERTIFIED FOR AIR DELIVERY OR BE INCREASED IN SIZE TO MEET DESIGN STANDARDS. INCLUDE FACTORY ACCESSORIES NECESSARY TO MAKE EQUIPMENT COMPLETELY OPERATIONAL. COOLER SHALL BE CONNECTED TO A SYSTEM OF DRAINAGE TO FACILITATE THE DRAINING OF COOLER AND THE BLEED-OFF LINES. LINES SHALL BE TYPE "M" COPPER, TERMINATE DRAINAGE LINES AS INDICATED ON DRAWINGS. EVAPORATIVE COOLING EQUIPMENT SHALL BE U.L. LISTED AND MUST HAVE A PERMANENTLY ATTACHED LABEL.

**HVAC EQUIPMENT DRAINS –**  
TO BE INSTALLED AS INDICATED OR REQUIRED. USE TYPE "M" COPPER TUBING AND WROUGHT COPPER MECHANICAL FITTINGS. EXTEND DRAINS TO NEAREST CODE APPROVED RECEPTOR, LAVATORY TAILPIECE (FURNISHED BY PLUMBER) OR DRAIN OUTSIDE IN PLANTER AREA AT A MINIMUM OF 1/8" PER FT.  
NOTE: INSULATE DRAIN LINES ABOVE CEILING.  
NOTE: CONTRACTOR OPTION TO USE PVC WITH OWNERS APPROVAL. SCHEDULE 40 PVC ACCEPTABLE WHERE CONCEALED WITHIN STRUCTURE.  
NO PVC PIPING ABOVE ROOF OR AT EXTERIOR OF BUILDING.

**TEMPERATURE CONTROL SYSTEM –**  
AS INDICATED OR REQUIRED. PROVIDE THERMOSTAT AND SUB BASE, WITH HINGED AND LOCKABLE OPAQUE COVER(PUBLIC AREAS ONLY). CONTROLS SHALL BE FURNISHED AS RECOMMENDED BY HVAC EQUIPMENT SUPPLIER, SUITABLE FOR APPLICATION, UNLESS OTHERWISE INDICATED ON THE DRAWINGS. CONTRACTOR TO COORDINATE EXACT LOCATION AND MOUNTING WITH THE ARCHITECT/OWNER.  
NOTE: CONTRACTOR TO PROVIDE PROGRAMMABLE THERMOSTAT.  
NOTE: THERMOSTAT TO COMPLY WITH REQUIREMENTS OF 2022 BEES, SECTION 4.5. **HVAC SYSTEM CONTROLS.**

**EXHAUST FANS –**  
SIZE, CAPACITIES, AND TYPE AS INDICATED ON THE DRAWINGS. FURNISH COMPLETE WITH FACTORY CURBS/ROOF CAPS, BAROMETRIC DAMPER, SPEED CONTROL, DISCONNECT, STARTER (IF REQUIRED) AND BIRDSCREEN. FURNISH ROOF MOUNTED FANS WITH INSULATED ROOF CURB. PROVIDE CEILING MOUNTED FANS WITH WALL/ROOF CAP.  
NOTE: ALL EXHAUST SYSTEMS MUST HAVE DAMPERS THAT ARE AUTOMATICALLY CLOSED WHILE THE EQUIPMENT IS NOT OPERATING.

**GRILLES, DIFFUSERS AND REGISTERS –**  
SIZE, CAPACITIES, AND TYPE AS INDICATED ON THE DRAWINGS. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE ALUMINUM TYPE FOR EVAPORATIVE COOLERS AND AREAS SUBJECT TO MOISTURE. PROVIDE EXTRACTORS BEHIND ALL SUPPLY REGISTERS.  
NOTE: EACH SUPPLY AIR OUTLET OR DIFFUSER MUST HAVE ITS OWN BALANCING DEVICE. ACCEPTABLE BALANCING DEVICES INCLUDE ADJUSTABLE DAMPERS LOCATED WITHIN THE DUCTWORK, TERMINAL DEVICES AND SUPPLY AIR DIFFUSERS. EACH BALANCING DEVICE OR OTHER MEANS OF SUPPLY AIR ADJUSTMENT USED IN BALANCING SHALL BE PROVIDED WITH ACCESS.

**DUCTWORK –**  
ALL DUCTWORK INSTALLATIONS MUST CONFORM TO REQUIREMENTS OF THE LATEST EDITION OF THE 2022 CALIFORNIA MECHANICAL CODE. ALL LOW PRESSURE HEATING AND AIR CONDITIONING DUCTWORK SHALL BE FABRICATED FROM LOCK FORMING PRIME GRADE GALVANIZED STEEL SHEETS (MAKE-UP AIR DUCTWORK CONVEYING EVAPORATIVE COOLED AIR SHALL BE FABRICATED FROM ALUMINUM SHEETS), AND INSTALLED BY SKILLED MECHANICS IN STRICT CONFORMANCE WITH THE LATEST SMACNA MANUAL. CROSS BREAK ALL SIDES OF DUCTS. SUPPORT ALL DUCTWORK FROM OVERHEAD STRUCTURE WITH STRAP IRON OR ANGLES. ALL DUCT DIMENSIONS ARE NET FREE AREA AND DO NOT INCLUDE ALLOWANCE FOR INSULATION. ALL JOINTS, LONGITUDINAL AND TRANSVERSE SEAMS, AND CONNECTIONS IN DUCTWORK MUST BE SECURELY SEALED USING WELDMENTS, MECHANICAL FASTENERS WITH SEALS, GASKETS, OR MASTICS, MESH AND MASTIC SEALING SYSTEMS, OR TAPES. TAPES AND MASTICS MUST BE LISTED AND LABELED IN ACCORDANCE WITH U.L. 181A OR U.L. 181B.

**HORIZONTAL AND VERTICAL DUCT SUPPORTERS –**  
REFER TO 2022 CMC, SECTION 603 FOR DUCT SUPPORTS.

**DUCTWORK FABRICATION –**  
PROVIDE CONNECTIONS BETWEEN EQUIPMENT AND DUCTWORK (DURODYNE "GRIP LOCK" OR EQUAL). PROVIDE SHEET METAL SHIELDED OVER EXPOSED JOINTS. COVER ALL JOINTS, SEAMS AND LOCKS ON INTERIOR AND EXTERIOR DUCTWORK WITH 4 OZ. CANVAS SATURATED WITH VINYL ACRYLIC DUCT SEALANT (UL LISTED, FLAME SPREAD 0) TO MAKE AIR TIGHT; WHERE DUCTS PASS THROUGH THE WALLS OR ROOF, FLASH AND COUNTER FLASH TO LEAVE WATER TIGHT INSTALLATION. PAINT ALL EXPOSED DUCTWORK TO MATCH SURROUNDING CONSTRUCTION OR AS RECOMMENDED BY ARCHITECT. PROVIDE AIRFOIL TURNING VANES ON ALL RIGHT ANGLE ELBOWS. PROVIDE VOLUME AND SPUTTER DAMPERS WHERE SHOWN ON DRAWINGS AND AS REQUIRED. FLEXIBLE DUCTWORK SHALL BE OF FLEXIBLE WIRE REINFORCED FIBERGLASS DUCT (TYPE UL, CLASS 1), AND NYLON LINER AND COVER, CONNECTORS TO BE UL APPROVED. FLEXIBLE DUCTWORK SHALL BE LIMITED TO RUN-OUTS TO DIFFUSERS OF (5) FIVE FT. OR LESS, SUPPORTED WITH STRAP HANGERS.

**DUCTWORK INSULATION –**  
ALL ACOUSTIC LINER TO BE MINIMUM 1.5 PCF DENSITY, WITH NFPA 90A APPROVED LINER OR COATING. THERMAL INSULATION SHALL BE MINIMUM 3/4 PCF DENSITY, WITH A MAXIMUM "K" FACTOR OF 0.30 AT 75° F AND SHALL HAVE A FLAME RETARDANT FOIL-SKIMKRAFT VAPOR BARRIER (FSK), FASTENED TO DUCTWORK WITH 16 GA. WIRE Ø 12" O.C. ALL INSULATION SHALL HAVE A FLAME SPREAD RATINGS OF 25 OR LESS, AND A SMOKE DEVELOPED RATING OF 50 OR LESS. EXTERIOR HVAC DUCTWORK TO BE LINED WITH 2" DUCT LINER 1-1/2" PCF, K=0.28 AT 75° F, R=8.

**INTERIOR DUCTWORK BELOW CEILING INSULATION TO BE LINED WITH 1" DUCT LINER 1-1/2" PCF, K=0.28 AT 75° F, R=8 (MIN.) OR WRAP WITH 1-1/2" FIBERGLASS DUCT WRAP, 3/4 PCF, K=0.31 AT 75° F, R=5 (MIN.) AND FLAME RETARDANT FOIL-SKIMKRAFT VAPOR BARRIER (SKF). INTERIOR SHEET METAL DUCTWORK ABOVE CEILING INSULATION TO BE LINED WITH 2" DUCT LINER 1-1/2" PCF, K=0.28 AT 75° F, R=8 (MIN.) OR WRAP WITH FIBERGLASS DUCT WRAP, 3/4" PCF, K=0.31 AT 75° F, R=5 (MIN.). COMBINATION HEATING/COOLING MAKE-UP AIR DUCTWORK CONVEYING EVAPORATIVE COOLED AIR SHALL BE INSULATED ON THE EXTERIOR WITH 1-1/2" THICK GLASS FIBER RIGID BOARD WITH ALL SERVICE JACKET (MIN. 3 PCF DENSITY, K=0.23, R=8). RIGID INSULATION ON OUTDOOR DUCTWORK SHALL BE COVERED WITH A LAYER OF OPEN WEAVE GLASS CLOTH EMBEDDED BETWEEN TWO COATS OF WEATHERPROOF MASTIC OF NOT LESS THAN 1/8" TOTAL THICKNESS. DUCTWORK CONVEYING EVAPORATIVE COOLED AIR ONLY SHALL NOT BE INSULATED**

**DUCTWORK ISULATION SHALL COMPLY WITH REQUIREMENTS OF 2022 BEES AND SHALL BE INSTALLED BY LICENSED INSULATION CONTRACTOR, IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. ALL AIR DUCTS MUST BE INSULATED TO THE FOLLOWING LEVELS:  
SUPPLY AND RETURN AIR DUCTS FOR CONDITIONED AIR LOCATED IN UNCONDITIONED SPACES (SPACES NEITHER HEATED NOR COOLED) MUST BE INSULATED WITH A MINIMUM OF R-5. UNCONDITIONED SPACES INCLUDE ATTICS, CRAWL SPACES, UNHEATED BASEMENTS AND UNHEATED GARAGES.  
SUPPLY AND RETURN AIR DUCTS AND PLENUMS MUST BE INSULATED TO A MINIMUM OF R-8 WHEN LOCATED OUTSIDE THE BUILDING.  
WHEN DUCTS ARE LOCATED WITHIN EXTERIOR COMPONENTS (E.G. FLOORS OR ROOFS), MINIMUM R-8 INSULATION IS REQUIRED ONLY BETWEEN THE DUCT AND THE BUILDING EXTERIOR.**

**DUCTWORK INSULATION –**  
ALL ACOUSTIC LINER TO BE MINIMUM 1.5 PCF DENSITY, WITH NFPA 90A APPROVED LINER OR COATING. THERMAL INSULATION SHALL BE MINIMUM 3/4 PCF DENSITY, WITH A MAXIMUM "K" FACTOR OF 0.30 AT 75° F AND SHALL HAVE A FLAME RETARDANT FOIL-SKIMKRAFT VAPOR BARRIER (FSK), FASTENED TO DUCTWORK WITH 16 GA. WIRE Ø 12" O.C. ALL INSULATION SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS, AND A SMOKE DEVELOPED RATING OF 50 OR LESS. EXTERIOR HVAC DUCTWORK TO BE LINED WITH 2" DUCT LINER 1-1/2" PCF, K=0.28 AT 75° F, R=8.

**INTERIOR DUCTWORK BELOW CEILING INSULATION TO BE LINED WITH 1" DUCT LINER 1-1/2" PCF, K=0.28 AT 75° F, R=8 (MIN.) OR WRAP WITH 1-1/2" FIBERGLASS DUCT WRAP, 3/4 PCF, K=0.31 AT 75° F, R=5 (MIN.) AND FLAME RETARDANT FOIL-SKIMKRAFT VAPOR BARRIER (SKF). INTERIOR SHEET METAL DUCTWORK ABOVE CEILING INSULATION TO BE LINED WITH 2" DUCT LINER 1-1/2" PCF, K=0.28 AT 75° F, R=8 (MIN.) OR WRAP WITH FIBERGLASS DUCT WRAP, 3/4" PCF, K=0.31 AT 75° F, R=5 (MIN.). COMBINATION HEATING/COOLING MAKE-UP AIR DUCTWORK CONVEYING EVAPORATIVE COOLED AIR SHALL BE INSULATED ON THE EXTERIOR WITH 1-1/2" THICK GLASS FIBER RIGID BOARD WITH ALL SERVICE JACKET (MIN. 3 PCF DENSITY, K=0.23, R=8). RIGID INSULATION ON OUTDOOR DUCTWORK SHALL BE COVERED WITH A LAYER OF OPEN WEAVE GLASS CLOTH EMBEDDED BETWEEN TWO COATS OF WEATHERPROOF MASTIC OF NOT LESS THAN 1/8" TOTAL THICKNESS. DUCTWORK CONVEYING EVAPORATIVE COOLED AIR ONLY SHALL NOT BE INSULATED.**

**NOTE: DUCTWORK INSULATION SHALL COMPLY WITH REQUIREMENTS OF 2022 BEES AND SHALL BE INSTALLED BY LICENSED INSULATION CONTRACTOR, IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. ALL AIR DUCTS MUST BE INSULATED TO THE FOLLOWING LEVELS:  
A. SUPPLY AND RETURN AIR DUCTS FOR CONDITIONED AIR LOCATED IN UNCONDITIONED SPACES (SPACES NEITHER HEATED NOR COOLED) MUST BE INSULATED WITH A MINIMUM OF R-5. UNCONDITIONED SPACES INCLUDE ATTICS, CRAWL SPACES, UNHEATED BASEMENTS AND UNHEATED GARAGES.  
B. SUPPLY AND RETURN AIR DUCTS AND PLENUMS MUST BE INSULATED TO A MINIMUM OF R-8 WHEN LOCATED OUTSIDE THE BUILDING.  
C. WHEN DUCTS ARE LOCATED WITHIN EXTERIOR COMPONENTS (E.G. FLOORS OR ROOFS), MINIMUM R-8 INSULATION IS REQUIRED ONLY BETWEEN THE DUCT AND THE BUILDING EXTERIOR.  
EXCEPTION: DUCT INSULATION IS NOT REQUIRED ON DUCTS LOCATED WITHIN THE EQUIPMENT JACKET (MIN. 3 PCF DENSITY, K=0.23, R=8). RIGID INSULATION ON OUTDOOR DUCTWORK SHALL BE COVERED WITH THE INTERIOR AND EXTERIOR OF THE DUCT OR PLENUM DOES NOT EXCEED 15' F.  
D. MECHANICAL FASTENERS AND SEALS, MASTICS, OR GASKETS MUST BE USED WHEN CONNECTING DUCTS TO FANS AND OTHER AIR HANDLING EQUIPMENT, INCLUDING MULTIPLE ZONE AIR HANDLING UNITS.  
E. ALL JOINTS, LONGITUDINAL AND TRANSVERSE SEAMS, AND CONNECTIONS IN DUCTWORK MUST BE SECURELY SEALED USING WELDMENTS; MECHANICAL FASTENERS WITH SEALS, GASKETS, OR MASTICS; MESH AND MASTIC SEALING SYSTEMS; OR TAPES. TAPES AND MASTICS MUST BE LISTED AND LABELED IN ACCORDANCE WITH U.L. 181A OR U.L. 181B. ALL SHALL BE MARKED "181A-M" FOR PRESSURE-SENSITIVE TAPE, "181A-M" FOR MASTIC OR "181A-U" FOR HEAT-SENSITIVE TAPE. TAPES AND MASTICS USED TO SEAL FLEXIBLE AIR DUCTS AND FLEXIBLE AIR CONNECTORS SHALL COMPLY WITH U.L. 181B AND SHALL BE MARKED "181B-FX" FOR PRESSURE-SENSITIVE TAPE OR "181B-M" FOR MASTIC. UNLISTED DUCT TAPE IS NOT PERMITTED AS A SEALANT ON ANY METAL DUCTS.**

**LOW PRESSURE HVAC DUCTWORK –**  
(2" W.G. OR LESS): CONSTRUCT PARTITION FORMING PLENUMS OR SEAM CONNECTIONS OF #18 GAUGE WITH 1-1/2" x 1-1/2" x 3/16" GALVANIZED IRON ANGLES AND RIVETS FOR SUCT CONNECTIONS AND STIFFENING. ALL SUPPLY, RETURN AND EXHAUST DUCTS (AS NOTED) SHALL BE PRIME STEEL SHEETS HOT-DIPPED GALVANIZED OF THE FOLLOWING GAUGES:  
UP TO 12" WIDE OR DIAMETER – #26  
13" UP TO 30" WIDE OR DIAMETER – #24  
31" UP TO 45" WIDE OR DIAMETER – #22  
ALL EXHAUST DUCTWORK SHALL BE – #24

**HVAC INTERLOCKS/ SMOKE DETECTORS –**  
PROVIDE ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED TO INTERLOCK HVAC SUPPLY AND EXHAUST SYSTEMS SPECIFIED ON THE DRAWINGS AS REQUIRED BY THE 2022 EDITION OF THE CALIFORNIA MECHANICAL CODE. FURNISH, INSTALL AND CONNECT SMOKE DETECTORS (APPROVED BY REGULATING AGENCY) ON THE RETURN SIDE OF ALL HVAC FANS EXCEEDING 2000 CFM OR AS REQUIRED PER LOCAL REGULATIONS TO SHUT DOWN FAN IF SMOKE IS DETECTED IN DUCTWORK.

**SMOKE DETECTOR SHALL BE MOUNTED IN SUPPLY AIR DUCT. AUTOMATIC SHUT-OFF SHALL BE ACCOMPLISHED BY INTERRUPTING THE POWER SOURCE OF THE MECHANICAL UNIT UPON DETECTION OF SMOKE IN THE MAIN SUPPLY AIR DUCT. ACTIVATION OF ANY DETECTOR SHALL SHUT DOWN ALL UNITS WITHIN THE SYSTEM. SMOKE DETECTOR 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 OPERATION VELOCITIES, PRESSURES, TEMPERATURE AND HUMIDITY OF THE SYSTEM. DETECTOR SHALL BE 120 V/1Ø (OR AS DIRECTED BY THE ELECTRICAL CONTRACTOR) AND U.L. LISTED. COORDINATE AS REQUIRED PRIOR TO ORDERING AND INSTALLING. DETECTOR SHALL BE PROVIDED BY THE CONTRACTOR.  
NOTE: IF A FIRE ALARM SYSTEM IS AVAILABLE, THE DUCT SMOKE DETECTOR(S) SHALL BE CONNECTED TO THE FIRE ALARM SYSTEM 2022 CMC 608.1. IF A FIRE ALARM SYSTEM IS NOT AVAILABLE, PROVIDE A VISIBLE AND AUDIBLE SUPERVISORY SIGNAL AT A CONSTANTLY SUPERVISED LOCATION TRIGGERED BY THE ACTIVATION OF A DUCT SMOKE DETECTOR. INCLUDE THE AIR DUCT DETECTOR/TROUBLE INDICATOR (LED AT THE CEILING BELOW THE DUCT DETECTOR).**

**NOTE: SMOKE DETECTORS ASSOCIATED WITH SMOKE DAMPERS AND HVAC SHUTOFFS SHALL BE TESTED BY AN APPROVED TESTING AGENCY OR A QUALIFIED THIRD PARTY SPECIAL INSPECTOR. THE SPECIAL INSPECTOR/TESTING AGENCY SHALL BE AN INDEPENDENT THIRD PARTY INDIVIDUAL OR FIRM WHO SHALL NOT BE THE INSTALLING CONTRACTOR. A PROFESSIONAL ENGINEER SHALL SUBMIT A FINAL SIGNED AND SEALED REPORT TO THE MECHANICAL INSPECTOR PRIOR TO CITY ISSUANCE OF FINAL INSPECTION APPROVAL OR OCCUPANCY APPROVAL, INCLUDING CONDITIONAL OCCUPANCY APPROVAL.  
NOTE: IF A COMPLETE FIRE ALARM DETECTION SYSTEM IS INSTALLED IN THE BUILDING THEN SMOKE DUCT DETECTORS ARE NOT REQUIRED PER 2022 CMC, AS LONG AS THE FIRE ALARM SYSTEM IS INTERCONNECTED TO THE MECHANICAL UNITS TO SHUT DOWN IN THE EVENT OF FIRE ALARM ACTIVATION IN ACCORDANCE WITH 2022 CMC.**

**ELECTRICAL WORK –**  
MECHANICAL DIVISION SHALL FURNISH ALL MOTOR STARTERS REQUIRED FOR MECHANICAL EQUIPMENT, UNLESS INCLUDED AS AN INTEGRAL PART OF THE HVAC EQUIPMENT. PROVIDE SUITABLE ENCLOSURE PER NEMA STANDARDS. ALL LOW VOLTAGE (24V) CONTROL WIRING OR THERMOSTATS AND OTHER CONTROL REQUIREMENTS TO BE THE RESPONSIBILITY OF MECHANICAL CONTRACTOR. ALL LINE VOLTAGE WIRING AND CONDUIT INCLUDING LOW VOLTAGE CONTROL CONDUIT TO BE INSTALLED BY ELECTRICAL CONTRACTOR. SMOKE DETECTORS TO BE WIRED BY THE ELECTRICAL CONTRACTOR.

**OUTSIDE AIR REQUIREMENTS –**  
LOCATE ALL OUTSIDE AIR/INTAKE AIR OPENINGS A MINIMUM OF 10'-0" FROM PLUMBING VENTS AND/OR EXHAUST FANS. PROVIDE OUTSIDE AIR GRILLE (FILTER IF REQUIRED) AND OBD. 2022 CMC, SECTION 403.  
NOTE: MINIMUM OSA REQUIRED TO COMPLY WITH:

A. CONTRACTOR TO BALANCE OUTSIDE AIR TO CFM SHOWN ON OUTSIDE AIR SCHEDULE.  
B. CONTRACTOR SHALL PROVIDE A COPY OF AIR BALANCE TEST REPORT TO FIELD INSPECTOR PRIOR TO FINAL INSPECTION.

C. VENTILATION SYSTEMS SHALL BE BALANCED BY AN APPROVED METHOD. A BALANCE REPORT SHALL VERIFY THAT THE VENTILATION SYSTEM IS CAPABLE OF SUPPLYING AIR FLOW RATES REQUIRED BY 2022 CMC, SECTION 403.

**SYSTEM START-UP/AIR BALANCE –**  
BEFORE FINAL ACCEPTANCE, CONTRACTOR SHALL DEMONSTRATE THAT ALL APPARATUS IS FUNCTIONING PROPERLY IN ACCORDANCE WITH FACTORY START-UP RECOMMENDATIONS. AIR QUANTITIES SHALL BE BALANCED FOR EVEN TEMPERATURES THROUGHOUT CONTROLS AND/OR INTERLOCKS/SMOKE DETECTORS ADJUSTED, AND THE SYSTEM PLACED INTO OPERATION. AIR BALANCE WORK SHALL BE PERFORMED BY QUALIFIED PERSONNEL LISTED WITH NEBB OR AABC. PROVIDE THE FOLLOWING START-UP BALANCE INFORMATION IN TWO (2) COPIES TO THE OWNER/ARCHITECT FOR REVIEW PRIOR TO PROJECT CLOSE: SUPPLY/EXHAUST CFM AT EACH DIFFUSER/REGISTER (USING FLOW HOOD), OUTSIDE AIR QUANTITY TO EACH HVAC UNIT, DISCHARGE/RETURN AIR TEMPERATURES AT THE HVAC UNIT (FOR BOTH HEATING AND COOLING MODE), AND THE HVAC MOTOR AMP DRAW. PROVIDE OWNER WITH WRITTEN CERTIFICATION FROM THE HVAC EQUIPMENT SUPPLIER(S) THAT ALL EQUIPMENT HAS BEEN INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. INCLUDE THE COST OF ANY ADDITIONAL OPPOSED BLADE VOLUME DAMPERS, MOTOR SHAVES, ETC. NECESSARY TO ACHIEVE AIR QUANTITIES LISTED. INCLUDE AN EXTENDED 90 DAY WARRANTY, DURING WHICH TIME THE ENGINEER MAY REQUEST A RECHECK OR RESETTING OF ANY AIR QUALITY, OR NOT MORE THAN TWO CHANGES OF NON-ADJUSTABLE SEAVES TO OBTAIN DESIRED AIR QUANTITIES. CONTRACTOR SHALL MAKE ANY CHANGES IN PULLEYS, BELTS, OR ADDITIONAL DAMPERS REQUIRED FOR CORRECTED AIR BALANCE AS REQUIRED BY BALANCE AGENCY AT NO ADDITIONAL COST TO THE OWNER.

**INSTRUCTIONS/O & M MANUAL –**  
THE CONTRACTOR SHALL INSTRUCT THE OWNER IN THE PROPER OPERATION AND MAINTENANCE OF ALL INSTALLED HVAC EQUIPMENT. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF TWO (2) BOUND OPERATING AND MAINTENANCE MANUALS TO THE OWNER AT THE COMPLETION OF THE PROJECT. THE MANUAL SHALL INCLUDE: EQUIPMENT CAPACITY (INPUT AND OUTPUT), CONTROL AND/OR INTERLOCK WIRING DIAGRAMS, SEQUENCE OF OPERATION, PREVENTATIVE MAINTENANCE SCHEDULE, NAME, ADDRESS AND PHONE NUMBER OF THE LOCAL PRODUCT REPRESENTATIVE.  
GUARANTEE  
ALL LABOR AND MATERIALS FURNISHED OR INSTALLED UNDER THIS SECTION SHALL CARRY A WRITTEN ONE (1) YEAR GUARANTEE BY THE MECHANICAL CONTRACTOR TO THE OWNER, COVERING MATERIALS AND WORKMANSHIP IN FULL. PROVIDE EXTENDED FIVE (5) YEARS FACTORY PARTS AND LABOR WARRANTY ON ALL AIR CONDITIONING COMPRESSORS. EXISTING HVAC EQUIPMENT, DUCTWORK AND/OR HVAC COMPONENTS REUSED IN THE JOB ARE NOT COVERED UNDER THIS WARRANTY.

## MECHANICAL GENERAL NOTES

1. PRIOR TO THE CONTRACTOR ORDERING OR SETTING ANY AIR CONDITIONING EQUIPMENT, DUCTWORK OR AIR DEVICE, HE SHALL VERIFY LOCATION OF PLACEMENT WITH STRUCTURAL DRAWINGS AND CONFIRM WEIGHTS, DISCHARGE CONFIGURATION, SIZES, ELECTRICAL CHARACTERISTICS AND ANY OTHER DIMENSIONAL DATA WHICH MIGHT AFFECT THE SUCCESSFUL INSTALLATION OF THE MECHANICAL SYSTEM.

2. PROVIDE CLEARANCES AS PER MANUFACTURER'S RECOMMENDATIONS.

3. PROVIDE EQUIPMENT IDENTIFICATION AS TO THE SPACE OR AREA SERVED.

4. REFER TO ARCHITECTURAL DRAWINGS FOR ACCESS TO ROOF INSTALLED MECHANICAL EQUIPMENT.

5. PRIOR TO PENETRATION AND/OR INSTALLATION OF ANY ROOF TOP EQUIPMENT, CONTRACTOR IS TO CHECK IN WITH LANDLORD ROOF MONITOR. ALL ROOF WORK TO BE PERFORMED BY LANDLORD ROOF MONITOR CONTRACTOR. CONTRACTOR SHALL COORDINATE WITH ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO COMMENCING WORK.

6. FIELD COORDINATE SIZE AND PLACEMENT OF DRAIN LINES REQUIRED FOR ROOFTOP HEAT PUMPS, EVAPORATIVE COOLERS, FURNACES, HUMIDIFIERS, ETC., WITH PLUMBING CONTRACTOR TO ROUGH-IN.

7. PROVIDE VIBRATION ISOLATORS FOR ALL MECHANICAL EQUIPMENT SUPPORTED FROM STRUCTURE.

8. NOTIFY GENERAL CONTRACTOR AND/OR ARCHITECT OF ANY DISCREPANCIES PRIOR TO ROUGH-IN.

9. ALL HVAC EQUIPMENT, INCLUDING EVAPORATIVE COOLERS, SHALL BE UL, ETL AND/OR AGA LISTED.

10. PROVIDE ALL EXHAUST AIR DUCTS WITH BACKDRIFT DAMPER.

11. PROVIDE AN ELECTRICAL INTERLOCK FOR MAKE-UP AIR UNITS AND ASSOCIATED EXHAUST FANS AS REQUIRED. SEE SCHEDULES.

12. KITCHEN HOOD AND EXHAUST DUCTWORK TO CONFORM TO NFPA-96 STANDARDS AND 2022 CMC SECTION 505 FOR DOMESTIC AND SECTION 506 FOR COMMERCIAL KITCHENS.

13. SLOPE ALL HORIZONTAL EXHAUST DUCTS AT 1/4" PER FOOT TOWARDS HOOD INTAKE.

14. PROVIDE CLEAN-OUT ACCESS PANELS AS SHOWN HAVING A FIRE RESISTIVE RATING EQUAL TO SHAFT ENCLOSURE.

15. EXTERNAL WELD ALL JOINTS AND SEAMS OF ALL KITCHEN EXHAUST DUCTS.

16. MECHANICAL CONTRACTOR TO COORDINATE EXACT KITCHEN HOOD OPENINGS WITH KITCHEN CONTRACTOR PRIOR TO ANY CONSTRUCTION.

17. PROVIDE FIRE DAMPERS AT ALL PENETRATIONS THROUGH FIRE RATED WALLS, CEILINGS AND FLOOR. FIRE DAMPER AND FIRE DAMPER INSTALLATION SHALL CONFORM TO LOCAL BUILDING AND MECHANICAL CODE REQUIREMENTS AND SMACNA STANDARDS. PROVIDE WITH ACCESS DOOR AS REQUIRED.

19. ALL TEMPERATURE CONTROLS ARE TO BE TESTED, ADJUSTED AND CALIBRATED FOR PROPER OPERATION.

20. MOUNT ALL THERMOSTATS AT 48" THROUGH 54" ABOVE FINISHED FLOOR. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH THE ARCHITECT/OWNER. PROVIDE WITH LOCKING COVER AS REQUIRED BY THE ARCHITECT AND/OR OWNER. PROVIDE WITH PROGRAMMABLE THERMOSTAT.

21. INSTALL CLEANOUTS AT EVERY 90° TURN ON AIR CONDITIONING CONDENSATE DRAIN LINES.

22. KEEP ALL VENTS THROUGH ROOF AND EXHAUST DUCTS A MINIMUM OF 10'-0" FROM OUTSIDE AIR INTAKES OR WINDOWS AND FROM ALL VERTICAL PORTIONS OF THE BUILDING.

25. CONTRACTOR SHALL BALANCE AIR DISTRIBUTION TO WITHIN 10% OF VALUES LISTED ON DRAWINGS. CONTRACTOR SHALL PROVIDE TENANT WITH A COPY OF FINAL HVAC AIR TEST AND BALANCE REPORT FROM INDEPENDENT NEBB ORABC CERTIFIED CONTRACTOR.

26. LIGHTING LOCATIONS TAKE PRECEDENCE OVER DIFFUSER LOCATION. CONTRACTOR SHALL MAKE NECESSARY ADJUSTMENTS TO DIFFUSERS TO AVOID ANY CONFLICT WITH LIGHTING LAYOUT. EXACT PLACEMENT OF DIFFUSERS AND REGISTERS TO BE COORDINATED WITH ARCHITECT AND CONTRACTORS.

27. UNDERCUT ALL DOORS TO ROOMS WHERE A SUPPLY DIFFUSER EXISTS BUT NO RETURN GRILLE IS PRESENT BY A MINIMUM OF 1". THIS WILL ALLOW FOR FREE MIGRATION OF RETURN AIR.

28. COORDINATE OPENINGS FOR GRILLES, REGISTERS, DIFFUSERS, AND DUCTWORK WITH FRAMING CONTRACTOR PRIOR TO ROUGH-IN.

29. PROVIDE RADIUS ELBOWS, TURNING VANES, AND SPLITTER DAMPERS IN BRANCHES AND EXTRACTORS WHERE APPLICABLE. TURNING VANES SHALL BE INSTALLED IN ALL MITERED ELBOWS.

30. INSULATE FIRST TEN FEET (10') OF DUCTWORK WITH 1" THICK INTERNAL ACOUSTICAL INSULATION. INSULATE ALL SUPPLY AND RETURN AIR DUCTWORK, ALL EXTERIOR DUCTWORK AND OTHER DUCTWORK NOT WITHIN THE ENVELOPE OF THE AIR CONDITIONED SPACE.

31. ALL DUCTWORK SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH "ASHRAE GUIDE" AND "SMACNA STANDARDS" AND IN CONFORMANCE WITH REQUIREMENTS OF LOCAL BUILDING AND MECHANICAL CODES. WHERE MORE THAN ONE REGULATION OR CODE APPLIES, THE MORE STRINGENT REQUIREMENT SHALL GOVERN.

32. FLEXIBLE DUCTWORK SHALL COMPLY WITH THE CLASS 1 REQUIREMENTS OF THE NFPA BULLETIN NO. 90A AND SHALL BE INSULATED WITH 1" FIBERGLASS, SUPPORTED BY HELICALLY WOUND STEEL WIRE WITH REINFORCED METALIZED OUTER JACKET RATED FOR USE IN PLENUMS. ATTACHMENT SHALL BE WITH WORM DRIVE CLAMPS. LENGTH SHALL EXCEED 5'-0" PROVIDE RIGID ROUND DUCTWORK FOR RUNS EXCEEDING 5'-0" IN TOTAL LENGTH.  
NOTE: FLEXIBLE DUCTWORK NOT ALLOWED AT EXPOSED LOCATIONS.

33. TAPE ALL DUCT JOINTS WITH CANVAS AND ARABOL ADHESIVE.

34. DUCTWORK CONSTRUCTION AND INSTALLATION INCLUDING SHEET METAL GAUGES, REINFORCEMENT, JOINT SEALING, AIR LEAKAGE AND DETAILS NOT SPECIFICALLY SHOWN ON DRAWINGS SHALL BE IN ACCORDANCE WITH THE 2022 EDITION OF THE CMC FOR LOW VELOCITY DUCT CONSTRUCTION STANDARDS.

35. ALL DUCT DIMENSIONS SHOWN ARE CLEAR DIMENSIONS INSIDE DUCT LINER.

36. TAKE-OFF FITTINGS SHALL BE BELL MOUTH SPIN-IN TYPE WITH QUADRANT DAMPER. PROVIDE VOLUME DAMPER AT EACH AND EVERY SUPPLY AIR BRANCH DUCT TAKE-OFF.

37. IF ABOVE CEILING DUCTWORK IS FABRICATED OF SHEET METAL, HANGERS SHALL BE INSTALLED AS REQUIRED BY THE 2022 EDITION OF THE CMC.

38. MECHANICAL CONTRACTOR TO VERIFY THAT ALL DUCTWORK WILL FIT WHERE INDICATED WITHOUT INTERFERENCES.

39. DUCTS SHALL CONFORM TO DIMENSIONS ON THE DRAWINGS UNLESS LOCATION OF STRUCTURAL MEMBERS PROHIBIT. IN CASE OF A CHANGE IN DIMENSIONS, CROSS SECTIONAL AREAS SHALL BE MAINTAINED, AND A MAXIMUM OF 1:4 RATIO FOR RECTANGULAR DUCTS SHALL ALSO BE MAINTAINED DUCT SIZES SHOWN ARE "CLEAR INSIDE" DIMENSIONS.

NOTE: CONTRACTOR OPTION TO USE ROUND DUCT WITH THE SAME CUBIC INCH VOLUME.

40. EXHAUST DUCTS SHALL BE 26 GAUGE GALVANIZED STEEL. SEE MECHANICAL EQUIPMENT SCHEDULE OR FLOOR PLAN FOR SIZES AND TERMINATION POINT.

41. ALL "FACTORY MADE" DUCTS MUST BE CLASS "0" OR CLASS "1".

42. AIR CONDITIONING UNITS SERVING EVAPORATIVE COOLERS/MAKE-UP AIR UNITS SHALL BE FABRICATED FROM ALUMINUM SHEETS AND HAVE NO DUCT LINER.

43. ALL PENETRATIONS THROUGH DRAFT-STOPS TO BE SEALED.

44. FURNISH ALL LABOR, MATERIALS, TOOLS EQUIPMENT, TRANSPORTATION COSTS, RIGGING, FEES, PERMITS, CERTIFICATES OF INSPECTION, ETC., NECESSARY OR REASONABLE, AS REQUIRED FOR THE COMPLETE INSTALLATION OF ALL AIR CONDITIONING WORK. THE WORK SHALL BE IN STRICT ACCORDANCE WITH ASHRAE GUIDE, AND ALL LOCAL AND STATE CODES, ORDINANCES AND REGULATIONS.

45. UPON COMPLETION AND TESTING OF AIR CONDITIONING EQUIPMENT, THE CONTRACTOR SHALL REPLACE ALL CONSTRUCTION AIR FILTERS WITH NEW FILTERS OF THE SIZED SPECIFIED BY THE MANUFACTURER.

46. THE MECHANICAL CONTRACTOR SHALL ADEQUATELY SUPPORT, ERECT AND BALANCE ALL MATERIALS AND EQUIPMENT IN CONFORMANCE WITH LOCAL CODES AND HIGH STANDARDS OF CONSTRUCTION PRINCIPLES AND PRACTICES.

47. THE CONTRACTOR SHALL DO ALL THE NECESSARY CUTTING OF WALLS AND CEILING. NO STRUCTURAL MEMBER SHALL BE CUT WITHOUT PERMISSION FROM THE ARCHITECT AND THE ENGINEER. PATCH AROUND ALL INSULATION MATERIALS TO MATCH EXISTING CONSTRUCTION. THE GENERAL CONTRACTOR SHALL BRING ALL SURFACES (FLOOR, WALLS AND CEILINGS) BACK TO ORIGINAL CONDITION AFTER MODIFICATIONS HAVE BEEN MADE.

48. INSTALL A COMPLETE AND WORKING MECHANICAL SYSTEM IN STRICT ACCORDANCE WITH THE 2022 CALIFORNIA MECHANICAL CODE AND SMACNA STANDARDS.

49. COORDINATE EXACT LOCATION OF MECHANICAL EQUIPMENT, AIR DEVICES, PIPING, DUCTWORK, ETC., WITH PLUMBING, ELECTRICAL, STRUCTURAL, ARCHITECTURAL AND GENERAL CONTRACTOR'S DRAWINGS.

50. WORKMANSHIP: ALL EQUIPMENT APPURTENANCES, DEVICES AND PIPING SHALL BE INSTALLED IN CONFORMANCE WITH THE PROVISIONS AND INTENT OF THE 2022 CALIFORNIA MECHANICAL CODE.

51. CONTRACTOR SHALL CHECK FOR PROPER OPERATION AND INSTALLATION, AND SHALL THOROUGHLY EXAMINE, CLEAN AND INSPECT ALL EXISTING EQUIPMENT PRIOR TO COMMENCING WORK. NOTIFY BUILDING OWNER OF ANY DISFUNCTIONAL EQUIPMENT IMMEDIATELY.

52. CONTRACTOR SHALL INSURE THAT ALL EXISTING MECHANICAL EQUIPMENT IS IN SATISFACTORY WORKING CONDITION SO HE MAY MAKE PROVISIONS IN HIS BID TO ACCOMMODATE ANY REPAIRS AND/OR REPLACEMENTS REQUIRED.

53. CONTRACTOR MAY, AT HIS DISCRETION REUSE ANY/ALL EXISTING EQUIPMENT NOT SPECIFICALLY NOTED TO BE REMOVED OR ABANDON AS LONG AS SUCH EQUIPMENT SATISFACTORILY MEETS THE DESIGN REQUIREMENTS SET FORTH IN THESE DOCUMENTS.

54. SIZES SHOWN ON AIR DEVICES ARE MIN. SIZE REQUIRED. CONTRACTOR SHALL VERIFY ALL AIR DEVICE SIZES AND REPLACE WITH NEW SIZE AS NECESSARY. BALANCE ALL AIR DEVICES TO CFM NOTED OR AS REQUIRED TO PROVIDE EVEN TEMPERATURES.

55. VERIFY EXACT SIZE, LOCATION, ROUTING, ETC., OF ALL EXISTING MECHANICAL EQUIPMENT, DUCTWORK, AIR DEVICES, THERMOSTATS, SENSORS, PIPING, ETC., WHICH ARE TO BE REMOVED, REPLACED, ABANDONED, REWORKED, ETC., AS REQUIRED AND AS SHOWN ON DRAWINGS.

56. ALL SALVAGEABLE ITEMS SHALL BE RETURNED TO THE OWNER. MECHANICAL CONTRACTOR SHALL RETURN ALL HVAC EQUIPMENT NOTED TO BE REMOVED UNDER THIS CONTRACT TO BUILDING OWNER.

57. PROJECT INVOLVES WORK IN AN EXISTING FACILITY. LAYOUT OF DRAWINGS IS DIAGRAMMATIC AND IS NOT INTENDED TO SHOW EVERY OFFSET AND FITTING, NOR EVERY STRUCTURAL DIFFICULTY THAT WILL BE ENCOUNTERED DURING DEMOLITION/CONSTRUCTION WORK.

58. ALL PATCHING AND/OR REPAIRING OF THE EXISTING WALLS, FLOORS, CEILINGS, ETC. DAMAGED DUE TO REMOVAL OF EXISTING EQUIPMENT OR INSTALLATION OF NEW EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.

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CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD				NRCC-PRF-E			
Nonresidential Performance Compliance Method				(Page 1 of 16)			
Project Name:		Dutch Bros. Fountain Valley CAS503		Date Prepared:		2023-04-28	
<b>A. General Information</b>							
1	Project Name	Dutch Bros. Fountain Valley CAS503					
2	Run Title	Title 24 Analysis					
3	Project Location	9065 Warner Ave.					
4	City	Fountain Valley	5	Standards Version	Compliance 2022		
6	Zip code	92708	7	Compliance Software (version)	EnergyPro 9.1		
8	Climate Zone	6	9	Building Orientation (deg)	0		
10	Building Type(s)	• Nonresidential					
11	Weather File	TORRANCE-MUNI-AP_STYP20.epw					
12	Project Scope	• New envelope and mechanical					
13	Number of Dwelling Units	0					
14	Total Conditioned Floor Area in Scope (ft <sup>2</sup> )	950	15	Total # of hotel/motel rooms	0		
16	Total Unconditioned Floor Area (ft <sup>2</sup> )	0	17	Fuel Type	Natural gas		
18	Nonresidential Conditioned Floor Area	950	19	Total # of Stories (Habitable Above Grade)	1		
20	Residential Conditioned Floor Area	0					

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CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD				NRCC-PRF-E			
Nonresidential Performance Compliance Method				(Page 4 of 16)			
<b>C2. TDV ENERGY COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS (Annual TDV Energy Use, kWh/ft<sup>2</sup> - yr)</b>							
COMPLIES <sup>2</sup>							
Energy Component	Standard Design (TDV)	Proposed Design (TDV)	Compliance Margin (TDV) <sup>1</sup>				
Space Heating	5.49	12.49	-7				
Space Cooling	239.72	164.2	75.52				
Indoor Fans	289.37	42.85	246.52				
Heat Rejection	0	0	0				
Pumps & Misc.	0	0	0				
Domestic Hot Water	121.57	296.19	-174.62				
Indoor Lighting	60.76	60.76	0				
Flexibility	---	---	---				
<b>EFFICIENCY COMPLIANCE TOTAL</b>	<b>716.91</b>	<b>576.49</b>	<b>140.42 (19.6%)</b>				
Photovoltaics	-107.83	---	-107.83				
Batteries	---	---	---				
<b>TOTAL COMPLIANCE</b>	<b>609.08</b>	<b>576.49</b>	<b>32.59 (5.4%)</b>				

<sup>1</sup> Notes: This number in parenthesis following the Compliance Margin in column 4, represents the Percent Better than Standard.

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CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD				NRCC-PRF-E			
Nonresidential Performance Compliance Method				(Page 7 of 16)			
<b>C5. SOURCE ENERGY RESULTS FOR NON-REGULATED COMPONENTS<sup>1</sup></b>							
Non-Regulated Energy Component	Standard Design (SOURCE)	Proposed Design (SOURCE)	Compliance Margin (SOURCE) <sup>1</sup>				
Receptacle	6.63	6.63	---				
Process	65.79	65.79	---				
Other Ltg	---	---	---				
Process Motors	---	---	---				
<b>TOTAL (TOTAL COMPLIANCE + NON-REGULATED COMPONENTS)</b>	<b>166.2</b>	<b>124.38</b>	<b>41.82 (25.2%)</b>				

<sup>1</sup> Notes: This table is not used for Energy Code Compliance.

C6. ABOVE CODE QUALIFICATIONS	
<input type="checkbox"/> This project is pursuing CalGreen Tier 1	<input type="checkbox"/> This project is pursuing CalGreen Tier 2

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CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD						NRCC-PRF-E					
Nonresidential Performance Compliance Method						(Page 2 of 16)					
<b>B. PROJECT SUMMARY</b>											
Table B shows which building components are included in the performance calculation. If indicated as not included, the project must show compliance prescriptively if within the permit application.											
<b>Building Components Complying via Performance</b>						<b>Building Components Complying Prescriptively</b>					
Envelope (See Table G)	Nonres MultiFam	Performance Not Included	Solar Thermal Water Heating (See Table I)	<input type="checkbox"/> Performance <input checked="" type="checkbox"/> Not Included	The following building components are ONLY eligible for prescriptive compliance and should be documented on the NRCC form listed if within the scope of the permit application (i.e. compliance will not be shown on the NRCC-PRF-E).	Indoor Lighting (Unconditioned) 140.6 & 170.2(e)	<input type="checkbox"/> Performance <input checked="" type="checkbox"/> Not Included	NRCC-LTI-E is required			
Mechanical (See Table H)	Nonres MultiFam	Performance Not Included	Covered Process: Commercial Kitchens (see Table J)	<input type="checkbox"/> Performance <input checked="" type="checkbox"/> Not Included		Outdoor Lighting 140.7 & 170.2(e)	<input type="checkbox"/> Performance <input checked="" type="checkbox"/> Not Included	NRCC-LTO-E is required			
Domestic Hot Water (See Table I)	Nonres MultiFam	Performance Not Included	Covered Process: Laboratory Exhaust (see Table J)	<input type="checkbox"/> Performance <input checked="" type="checkbox"/> Not Included		Sign Lighting 140.8 & 170.2(e)	<input type="checkbox"/> Performance <input checked="" type="checkbox"/> Not Included	NRCC-LTS-E is required			
Lighting (Indoor Conditioned, see Table K)	Nonres MultiFam	Performance Not Included	Photovoltaics (see Table F)	<input type="checkbox"/> Performance <input checked="" type="checkbox"/> Not Included	<b>Building Components Complying with Mandatory Measures</b> Electrical power systems, commissioning, solar ready, elevator and escalator requirements are mandatory and should be documented on the NRCC form listed if applicable (i.e. compliance will not be shown on the NRCC-PRF-E).	Electrical Power Distribution 110.11	<input type="checkbox"/> Performance <input checked="" type="checkbox"/> Not Included	NRCC-ELC-E is required			
			Battery (see Table F)	<input type="checkbox"/> Performance <input checked="" type="checkbox"/> Not Included		Commissioning 120.8	<input type="checkbox"/> Performance <input checked="" type="checkbox"/> Not Included	NRCC-CXR-E is required			
						Solar and Battery 110.10	<input type="checkbox"/> Performance <input checked="" type="checkbox"/> Not Included	NRCC-SAB-E is required			

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CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD				NRCC-PRF-E			
Nonresidential Performance Compliance Method				(Page 5 of 16)			
<b>C3. TDV ENERGY RESULTS FOR NON-REGULATED COMPONENTS<sup>1</sup></b>							
Non-Regulated Energy Component	Standard Design (TDV)	Proposed Design (TDV)	Compliance Margin (TDV) <sup>1</sup>				
Receptacle	71.7	71.7	---				
Process	700.72	700.72	---				
Other Ltg	---	---	---				
Process Motors	---	---	---				
<b>TOTAL (TOTAL COMPLIANCE + NON-REGULATED COMPONENTS)</b>	<b>1381.5</b>	<b>1348.91</b>	<b>32.59 (2.4%)</b>				

<sup>1</sup> Notes: This table is not used for Energy Code Compliance.

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CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD							NRCC-PRF-E						
Nonresidential Performance Compliance Method							(Page 8 of 16)						
<b>C7. ENERGY USE SUMMARY</b>													
Energy Component	Standard Design Site (MWh)	Proposed Design Site (MWh)	Margin (MWh)	Standard Design Site (MBtu)	Proposed Design Site (MBtu)	Margin (MBtu)							
Space Heating	---	0.4	---	1.8	---	---							
Space Cooling	7.3	4.9	2.4	---	---	---							
Indoor Fans	9.8	1.5	8.3	---	---	---							
Heat Rejection	---	---	---	---	---	---							
Pumps & Misc.	---	---	---	---	---	---							
Domestic Hot Water	---	9.7	---	45.3	---	---							
Indoor Lighting	2	2	0	---	---	---							
Flexibility	---	---	---	---	---	---							
<b>EFFICIENCY TOTAL</b>	<b>19.1</b>	<b>18.5</b>	<b>0.6</b>	<b>47.1</b>	<b>0</b>	<b>47.1</b>							
Photovoltaics	-5	---	---	---	---	---							
Batteries	---	---	---	---	---	---							
<b>ENERGY USE SUBTOTAL</b>	<b>14.1</b>	<b>18.5</b>	<b>-4.4</b>	<b>47.1</b>	<b>0</b>	<b>47.1</b>							
Receptacle	2.4	2.4	0	---	---	---							
Process	23.5	23.5	0	---	---	---							
Other Ltg	---	---	---	---	---	---							
Process Motors	---	---	---	---	---	---							
<b>ENERGY USE TOTAL</b>	<b>40</b>	<b>44.4</b>	<b>-4.4</b>	<b>47.1</b>	<b>0</b>	<b>47.1</b>							

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CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD				NRCC-PRF-E			
Nonresidential Performance Compliance Method				(Page 3 of 16)			
<b>C1. COMPLIANCE SUMMARY</b>							
COMPLIES <sup>3</sup>							
		Time Dependent Valuation (TDV)			Source Energy Use		
		Efficiency (kbtu/ft <sup>2</sup> - yr)	Total <sup>2</sup> (kbtu/ft <sup>2</sup> - yr)	Total <sup>2</sup> (kbtu/ft <sup>2</sup> - yr)			
Standard Design		716.91	609.08	93.78			
Proposed Design		576.49	576.49	51.96			
<b>Compliance Margins</b>		<b>140.42</b>	<b>32.59</b>	<b>41.82</b>			
		<b>Pass</b>	<b>Pass</b>	<b>Pass</b>			

<sup>1</sup> Efficiency measures include improvements like a better building envelope and more efficient equipment  
<sup>2</sup> Compliance Totals include efficiency, photovoltaics and batteries  
<sup>3</sup> Building complies when efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded

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CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD				NRCC-PRF-E			
Nonresidential Performance Compliance Method				(Page 6 of 16)			
<b>C4. SOURCE ENERGY COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS (Annual SOURCE Energy Use, kbtu/ft<sup>2</sup> / yr)</b>							
COMPLIES <sup>3</sup>							
Energy Component	Standard Design (SOURCE)	Proposed Design (SOURCE)	Compliance Margin (SOURCE) <sup>1</sup>				
Space Heating	1.78	1.91	-0.13				
Space Cooling	17.19	10.74	6.45				
Indoor Fans	29.73	4.26	25.47				
Heat Rejection	0	0	0				
Pumps & Misc.	0	0	0				
Domestic Hot Water	43.79	29.42	14.37				
Indoor Lighting	5.63	5.63	0				
Flexibility	---	---	---				
<b>EFFICIENCY COMPLIANCE TOTAL</b>	<b>98.12</b>	<b>51.96</b>	<b>46.16 (47%)</b>				
Photovoltaics	-4.34	---	-4.34				
Batteries	---	---	---				
<b>TOTAL COMPLIANCE</b>	<b>93.78</b>	<b>51.96</b>	<b>41.82 (44.6%)</b>				

<sup>1</sup> Notes: This number in parenthesis following the Compliance Margin in column 4, represents the Percent Better than Standard.

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CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD				NRCC-PRF-E			
Nonresidential Performance Compliance Method				(Page 9 of 16)			
<b>C8. ENERGY USE INTENSITY (EUI)</b>							
	Standard Design (kbtu/ft <sup>2</sup> / yr)	Proposed Design (kbtu/ft <sup>2</sup> / yr)	Margin (kbtu/ft <sup>2</sup> / yr)	Margin Percentage			
GROSS EUI <sup>1</sup>	211.2	159.47	51.73	24.49			
NET EUI <sup>1</sup>	193.24	159.47	33.77	17.48			

<sup>1</sup> Notes: Gross EUI is Energy Use Total (not including PV)/Total Building Area. Net EUI is Energy Use Total (including PV)/Total Building Area.

D1. EXCEPTIONAL CONDITIONS											
• The project uses the Simplified Geometry Performance Modeling Approach which is not capable of modeling daylighting controls and assumes the prescriptive Secondary Daylit Control requirements are met. PRESCRIPTIVE COMPLIANCE documentation (form NRCC-LTI-02-E) for the requirements of section 140.6(d) Automatic Daylighting Controls in Secondary Daylit Zones is required.											

F1. REQUIRED PV SYSTEMS											
01	02	03	04	05	06	07	08	09	10	11	12
DC System Size (kWdc)	Exception <sup>1</sup>	Module Type	Array Type	Power Electronics	CFI	Altitude (deg)	Tilt Input	Array Angle (deg)	Tilt: (x in 12)	Inverter Eff. (%)	Annual Solar Access (%)

<sup>1</sup> See Table D1 for any PV exceptions used.

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Project No: CA5503  
Dutch Bros Coffee - New Freestanding Store  
2550 - A1 PROTOTYPE  
9065 WARNER AVE.  
FOUNTAIN VALLEY, CA 92708  
APN: 0143-301-39

DATE: 3/27/2023  
REV: DATE: 07/18/23 DESCRIPTION: PLAN CHECK #1

SHEET NUMBER:  
TITLE 24 ENERGY COMPLIANCE

SHEET NUMBER:  
M4.1

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CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD  
Nonresidential Performance Compliance Method (Page 10 of 16)

Table with 3 columns: Building Occupancy Type, Conditioned Floor Area (ft²), and Unconditioned Floor Area (ft²). Rows include Grocery, High-Rise Multifamily, Office, Financial Institutions, Unleased Tenant Space, Retail, School, Warehouse, Auditorium, Convention Center, Hotel/Motel, Library, Medical Office Building/Clinic, Restaurant, Theater, and None.

Table with 4 columns: Opaque Surfaces & Orientation, Total Gross Surface Area (ft²), Total Fenestration Area (ft²), and Window to Wall Ratio (%). Rows include North-Facing, East-Facing, South-Facing, West-Facing, Total, and Roof.

Notes: 1 North-Facing is oriented to within 45 degrees of true north, including 45 00'00" east of north (NE), but excluding 45 00'00" west of north (NW). 2 East-Facing is oriented to within 45 degrees of true east, including 45 00'00" south of east (SE), but excluding 45 00'00" north of east (NE). 3 South-Facing is oriented to within 45 degrees of true south, including 45 00'00" west of south (SW), but excluding 45 00'00" east of south (SE). 4 West-Facing is oriented to within 45 degrees of true west, including 45 00'00" north of west (NW), but excluding 45 00'00" south of west (SW).

CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Report Generated: 2023-04-28 16:04:38 Schema Version: rev 20220601 Compliance ID: EnergyPro-5387-0423-0096

CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD  
Nonresidential Performance Compliance Method (Page 13 of 16)

Table with 13 columns: Name or Item Tag, Qty, Design OA CFM, CFM, Power, Power Units, Control, Fan Type, Return / Relief Fan, CFM, Power, Power Units, Control, Status. Includes RTU-1 RTU-2.

Table with 4 columns: System Name, Equipment Type, Interlocks per 140.4(n)1, and Other Special Features and Controls. Includes Storage Water Heater and Service Hot Water.

Table with 7 columns: Zone Name, Ventilation Function, # of People/# of People, Supply OA CFM, Exhaust CFM, Conditioned Area (sf), and DCV or Occupant Sensor Controls, or Both. Includes 1-Kitchen.

CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Report Generated: 2023-04-28 16:04:38 Schema Version: rev 20220601 Compliance ID: EnergyPro-5387-0423-0096

CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD  
Nonresidential Performance Compliance Method (Page 16 of 16)

Documentation Author's Declaration Statement: I certify that this Certificate of Compliance documentation is accurate and complete. Documentation Author Name: Keith Huen, Signature: Keith Huen, Date: 2023-04-28.

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).

Responsible Designer Name: Keith Huen, Signature: Keith Huen, Date Signed: 2023-04-28, License #: M39192. Address: 400 N. McCarthy Blvd., Milpitas, CA 95035.

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CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD  
Nonresidential Performance Compliance Method (Page 11 of 16)

Table with 2 columns: Building Story Name, Air Barrier. Includes Com-Floor-1 and No air barrier.

Table with 10 columns: Surface Name, Construction Type, Area (ft²), Framing Type, Cavity R-Value, Continuous R-Value, Units, Value, Description of Assembly Layers, Status. Includes R-38 Roof No Attic, R-21 Wall10, and Slab On Grade22.

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CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD  
Nonresidential Performance Compliance Method (Page 14 of 16)

Table with 12 columns: System ID, System Type, Qty, Rated Capacity (kBtu/h), Airflow (cfm), Heating, Cooling, Design, Min., Min. Ratio, Power, Fan, Power Units, Cycles, VSD. Includes 1-Kitchen-Trm.

Table with 14 columns: Name, Heater Element Type, Tank Type, Qty, Tank Vol (gal), Rated Input, Efficiency, Efficiency Unit, Tank Insulation R-value Int/Ext, Standby Loss Fraction, 1st Hr. Rating or Flow Rate (gal), Heat Pump Type, Tank Location or Ambient Condition. Includes AD Smith DEN-522.

Table with 2 columns: Building Component, Form/Title. Includes Envelope, Mechanical, and Plumbing systems.

CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Report Generated: 2023-04-28 16:04:38 Schema Version: rev 20220601 Compliance ID: EnergyPro-5387-0423-0096

CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD  
Nonresidential Performance Compliance Method (Page 12 of 16)

Table with 4 columns: Assembly Name, Area (ft²), Overall U-factor, Status. Includes Metal Door12.

Table with 9 columns: Fenestration Assembly Name, Fenestration Type/Product Type/Frame Type, Certification Method, Assembly Method, Area (ft²), Overall U-factor, Overall SHGC, Overall VT, Status. Includes Double Metal Clear.

Table with 12 columns: Equipment Name, Equipment Type, Qty, Total Heating Output (kBtu/h), Supp Heat Output (kBtu/h), Efficiency Unit, Efficiency, Total Cooling Output (kBtu/h), Efficiency Unit, Efficiency, Economizer Type (if present), Status. Includes RTU-1 RTU-2.

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CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD  
Nonresidential Performance Compliance Method (Page 15 of 16)

Table with 2 columns: Building Component, Form/Title. Includes Envelope, Mechanical, and Mechanical systems.

There are no Certificates of Verification applicable to this project.

CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Report Generated: 2023-04-28 16:04:38 Schema Version: rev 20220601 Compliance ID: EnergyPro-5387-0423-0096



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Project No: CA5503 Dutch Bros Coffee - New Freestanding Store 2550 - A1 PROTOTYPE 9065 WARNER AVE. FOUNTAIN VALLEY, CA 92708 APN: 0143-301-39

DATE: 3/27/2023 REV: DATE: 07/18/23 DESCRIPTION: PLAN CHECK #1

SHEET NAME:

TITLE 24 ENERGY COMPLIANCE

SHEET NUMBER: M4.2

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