

SYMBOLS (NOT ALL USED)		ABBREVIATIONS (NOT ALL USED)		GENERAL NOTES		MECHANICAL NOTES		CODES AND STANDARDS	
GENERAL		DUCT ACCESSORIES & CONTROLS INSTRUMENTATION							
	NORTH ARROW		T THERMOSTAT						
	DETAIL IDENTIFICATION NUMBER		RTS REMOTE TEMPERATURE SENSOR						
	SHEET ON WHICH DETAIL IS DRAWN		C CO2 SENSOR						
	SECTION OR ELEVATION IDENTIFICATION LETTER		H HUMIDITY SENSOR						
	SHEET ON WHICH SECTION OR ELEVATION IS DRAWN		PM ROOM PRESSURE MONITOR						
	EQUIPMENT ABBREVIATION (SEE ABBREVIATION LIST)		MM MULTITROOM PRESSURE MONITOR						
	EQUIPMENT NUMBER		M AUTOMATIC DAMPER (ELECTRIC)						
	REVISION CLOUD		PD AUTOMATIC DAMPER (PNEUMATIC)						
	KEYNOTE		FD FIRE DAMPER						
	REVISION		CFD COMBINATION FIRE SMOKE DAMPER (CSPD)						
	POINT OF CONNECTION (P.O.C.)		BD BACK DRAFT DAMPER						
	POINT OF DISCONNECTION (P.O.D.)		MD MANUAL VOLUME DAMPER						
	LINE TYPE		SD SMOKE DETECTOR						
	NEW WORK	PIPING							
	EXISTING WORK		SLOPE						
	WORK TO BE REMOVED		DIRECTION OF SLOPE DOWN						
	FUTURE		CHWR CHILLED WATER RETURN						
	EQUIPMENT AIR MOVING DEVICE & COMPONENTS		CHWS CHILLED WATER SUPPLY						
	CENTRIFUGAL FAN		CWR CONDENSER WATER RETURN						
	PROPELLER FAN		CWS CONDENSER WATER SUPPLY						
	ROOF VENTILATOR, INTAKE		HPC HIGH PRESSURE CONDENSATE						
	ROOF VENTILATOR, EXHAUST		HPS HIGH PRESSURE STEAM						
	DUCT SECTION, SUPPLY (POSITIVE)		MPC MEDIUM PRESSURE CONDENSATE						
	DUCT SECTION, RETURN (NEGATIVE)		MPS MEDIUM PRESSURE STEAM						
	DUCT SECTION, EXHAUST (NEGATIVE)		LPC LOW PRESSURE CONDENSATE						
	DIRECTION OF FLOW		LPS LOW PRESSURE STEAM						
	DUCT SIZE, WHERE FIRST DIMENSION IS VISIBLE DUCT		HHWR HEATING HOT WATER RETURN						
	CHANGE OF ELEVATION RISE (R) DROP (D)		HHWS HEATING HOT WATER SUPPLY						
	DUCTWORK, DOUBLE LINE		CV CHECK VALVE						
	ACOUSTICAL LINED DUCTWORK, DOUBLE LINE SIZE SHOWN INDICATES NET INSIDE DIMENSION		CVL CONTROL VALVE						
	FLEXIBLE DUCTWORK, FLEXIBLE EQUIPMENT CONNECTION, DOUBLE LINE		PRV PRESSURE REDUCING VALVE						
	DUCTWORK, SINGLE LINE		AVA AIR VENT AUTOMATIC						
	ACOUSTICAL LINED DUCTWORK, SINGLE LINE SIZE SHOWN INDICATES NET INSIDE DIMENSION		AVM AIR VENT MANUAL						
	FLEXIBLE DUCTWORK, FLEXIBLE EQUIPMENT CONNECTION, SINGLE LINE		BV BALL VALVE						
	TERMINAL UNIT, DUAL DUCT		BVFL BUTTERFLY VALVE						
	TERMINAL UNIT, SINGLE DUCT		PV PLUG VALVE						
	CEILING SUPPLY DIFFUSER WITH 4-WAY BLOW PATTERN		GAAV GATE/GLOBE ANGLE VALVE						
	CEILING SUPPLY DIFFUSER WITH 3-WAY BLOW PATTERN		GV GATE/GLOBE VALVE						
	CEILING RETURN REGISTER		TWV TWO WAY VALVE						
	CEILING EXHAUST GRILLE		TWV3 THREE WAY VALVE						
	DIFFUSER/REGISTER NUMBER		CV CHECK VALVE						
	AIR INLET/OUTLET IDENTIFICATION		CVL CONTROL VALVE						
	AIRFLOW		PRV PRESSURE REDUCING VALVE						
	UNDERCUT DOOR, 1 INCH, 100 CFM		AVA AIR VENT AUTOMATIC						
	HUMIDIFIER		AVM AIR VENT MANUAL						

ABBREVIATIONS (NOT ALL USED)		GENERAL NOTES		MECHANICAL NOTES		CODES AND STANDARDS	
AFF	ABOVE FINISHED FLOOR	1.	ALL WORK, INSTALLATION, AND MATERIALS SHALL COMPLY WITH ALL CURRENT GOVERNING CODES, BUILDING STANDARDS, REGULATIONS, SPECIFICATIONS, AND ALL OTHER REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION. WHERE REQUIREMENTS BETWEEN THESE VARY, THE MOST STRINGENT SHALL APPLY.	1.	ALL DRAWINGS AND LAYOUTS ARE DIAGRAMMATIC TO SHOW DESIGN INTENT ONLY. LOCATIONS OF DUCTWORK, PIPING, AND EQUIPMENT ARE APPROXIMATE. DUCTPIPE OFFSETS, TRANSITIONS, SUPPORTS, AND HANGERS MAY NOT BE INDICATED. CONTRACTOR SHALL PROVIDE ALL TRANSITIONS AND FITTINGS NECESSARY FOR COMPLETE AND FUNCTIONING SYSTEMS. IF FIELD CONDITIONS DIFFER SIGNIFICANTLY FROM THOSE SHOWN ON THE DRAWINGS AND AFFECT MECHANICAL WORK, INFORM ENGINEER OF RECORD IMMEDIATELY AND CONFIRM FURTHER DIRECTION BEFORE PROCEEDING WITH THE WORK IN THAT AREA.	CODES	<ul style="list-style-type: none"> CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 19: STATE FIRE MARSHAL REGULATIONS TITLE 20: CALIFORNIA CODE OF REGULATIONS TITLE 24: CALIFORNIA BUILDING STANDARDS CODE PART 1: 2019 CALIFORNIA ADMINISTRATIVE CODE (CAC) PART 2: 2019 CALIFORNIA BUILDING CODE (CBC) PART 3: 2019 CALIFORNIA ELECTRICAL CODE (CEC) PART 4: 2019 CALIFORNIA MECHANICAL CODE (CMC) PART 5: 2019 CALIFORNIA PLUMBING CODE (CPC) PART 6: 2019 CALIFORNIA ENERGY CODE PART 9: 2019 CALIFORNIA FIRE CODE (FC) PART 12: 2019 CALIFORNIA REFERENCED STANDARDS
AHU	AIR HANDLING UNIT	2.	ALL WORK SHALL BE PERMITTED. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS, FEES, AND LICENSES, UNLESS OTHERWISE SPECIFIED BY OWNER.	2.	DUE TO STRUCTURAL CONDITIONS, DUCTWORK OR PIPING INTERFERENCE, EXISTING RESTRICTIONS, OR OTHER REASONS, CONTRACTOR MAY WANT TO INSTALL WORK IN A MANNER DIFFERENT FROM THAT SHOWN IN THE CONTRACT DOCUMENTS. SUCH CHANGES SHALL BE PRESENTED TO THE ENGINEER OF RECORD AND OWNER'S REPRESENTATIVE FOR APPROVAL BEFORE PROCEEDING WITH THE WORK. THE RECORD DRAWING SHALL BE ACCURATELY REVISED TO SHOW THE CHANGES AS COMPLETED.	STANDARDS	<ul style="list-style-type: none"> AMERICAN SOCIETY OF HEATING, REFRIGERATING & AIR CONDITIONING ENGINEERS (ASHRAE) HANDBOOKS AND STANDARDS ASHRAE 2019 HANDBOOK, HVAC APPLICATIONS ASHRAE 2020 HANDBOOK, HVAC SYSTEMS AND APPLICATIONS ASHRAE 2018 HANDBOOK, FUNDAMENTALS ASHRAE 2018 HANDBOOK, REFRIGERATION AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) STANDARDS SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA) STANDARDS NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CODES AND STANDARDS NFPA 13: STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS, 2019 NFPA 10: STANDARD FOR PORTABLE FIRE EXTINGUISHER, 2018 NFPA 25: STANDARD FOR THE INSPECTION, TESTING, AND MAINTENANCE OF WATER-BASED FIRE PROTECTION SYSTEMS, 2017 NFPA 70: NATIONAL ELECTRICAL CODE (NEC), 2017 NFPA 72: NATIONAL FIRE ALARM AND SIGNALING CODE, 2019 NFPA 101: LIFE SAFETY CODE, 2015 OCCUPATIONAL SAFETY AND HEALTH ASSOCIATION (OSHA) ENVIRONMENTAL PROTECTION AGENCY (EPA) AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) UNDERWRITERS LABORATORY (UL)
AL	ALUMINUM	3.	CONTRACTOR SHALL EXAMINE THE COMPLETE SET OF DRAWINGS AND SPECIFICATIONS FOR ALL TRADES PRIOR TO SUBMITTING BID AND START OF WORK.	3.	ALL DUCT DIMENSIONS SHOWN ON DRAWINGS ARE NET CLEAR INSIDE DIMENSIONS AFTER INSULATION HAS BEEN INSTALLED.		
AMB	AMBIENT	4.	CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID AND THOROUGHLY FAMILIARIZE THEMSELVES WITH THE EXISTING FIELD CONDITIONS, INCLUDING BUT NOT LIMITED TO DIMENSIONS, THE EXISTING INSTALLATIONS, POINTS OF DISCONNECTION, AND REQUIRED CLEARANCES. CONTRACTOR SHALL MAKE ANY MINOR ADJUSTMENTS NECESSARY TO AVOID CONFLICTS WITH THE BUILDING STRUCTURE AND THE WORK OF OTHER TRADES. THIS SHALL BE DONE PRIOR TO BID SUBMITTAL, START OF CONSTRUCTION, AND/OR FABRICATION OF MATERIALS. BY THE ACT OF SUBMITTING A BID, THE CONTRACTOR ACCEPTS THE GIVEN WORKING CONDITIONS.	4.	PIPING ANCHORAGE, SUPPORT, AND THERMAL EXPANSION DEVICES ARE TO BE PROVIDED BY THE CONTRACTOR TO MEET ALL CODE REQUIREMENTS. PIPING SUPPORTS AND THERMAL EXPANSION DEVICES SHALL BE INCORPORATED INTO THE SHOP DRAWINGS. SHOP DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR APPROVAL.		
ARCH	ARCHITECTURAL	5.	IF DISCREPANCIES ARE ENCOUNTERED BETWEEN THE DRAWINGS, BUILDING STANDARDS, SPECIFICATIONS, AND/OR CURRENT CONDITIONS, THE ENGINEER AND ARCHITECT SHALL BE NOTIFIED WITH A REQUEST FOR CLARIFICATION, AND THE OWNER SHALL BE NOTIFIED IN WRITING PRIOR TO COMMENCEMENT OF WORK. IF WORK IS DONE WITHOUT WRITTEN APPROVAL FROM OWNER REPRESENTATIVE, THE WORK SHALL BE CONSIDERED AT-RISK, AND A NON-COMFORTABLE INSTALLATION.	5.	ALL DUCTWORK AND PIPING SHALL BE ROUTED TIGHT TO STRUCTURE.		
BDD	BACKDRAFT DAMPER	6.	ALL DRAWINGS AND LAYOUTS ARE DIAGRAMMATIC TO SHOW DESIGN INTENT ONLY. CONTRACTOR SHALL COORDINATE NEW WORK WITH THE WORK OF ALL OTHER TRADES AND EXISTING CONDITIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSTALL ALL WORK IN SUCH A MANNER AS TO AVOID OBSTRUCTIONS, PRESERVE HEADROOM, KEEP OPENINGS AND PASSAGEWAYS CLEAR, AND MAKE ALL EQUIPMENT REQUIREMENTS, MAINTENANCE, AND REPAIR ACCESSIBLE WITHOUT EXTRA COST TO THE OWNER. NO CONSIDERATION SHALL BE GRANTED DUE TO LACK OF FAMILIARITY ON THE PART OF THE CONTRACTOR WITH ACTUAL PHYSICAL CONDITIONS, REQUIREMENTS, AND PRACTICES AT THE SITE.	6.	WHERE DEMOLITION DOES NOT ALLOW FOR MAINTAINING EXISTING HVAC SERVICE, CONTRACTOR SHALL PROVIDE TEMPORARY COOLING AND/OR HEATING WITH SUFFICIENT CAPACITY TO MAINTAIN COMFORT COOLING AND/OR HEATING, AT NO ADDITIONAL COST TO OWNER.		
BHP	BRAKE HORSEPOWER	7.	SUBMIT ELECTRONIC PDF COPIES OF SUBMITTAL DOCUMENTS WITH DESCRIPTIVE DATA AND PROJECT-SPECIFIC PERFORMANCE FOR ALL PRODUCTS AND MATERIALS PROPOSED FOR THE PROJECT. CLEARLY INDICATE EXACT MAKE/MODEL, INCLUDING ANY ACCESSORIES AND OPTIONS PROPOSED. CUP DRAWINGS AT THE SAME SCALE AS THE CONSTRUCTION DOCUMENTS OR LARGER SHALL BE INCLUDED WITH SUBMITTALS AS REQUIRED. HARD COPY SUBMITTALS WILL NOT BE ACCEPTED. ALLOW A MINIMUM OF FIVE (5) WORKING DAYS FOR ENGINEER TO REVIEW SUBMITTALS. SUBMITTALS SHALL BE FOR A COMPLETE SYSTEM AND NOT A PARTIAL REPRESENTATION OF A SYSTEM.	7.	DUCTWORK, PIPING, AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF THE WORKING PRESSURES INDICATED IN THE SPECIFICATIONS.		
BMS	BUILDING MANAGEMENT SYSTEM	8.	PREPARE COORDINATED SHOP DRAWINGS WITH ALL TRADES, INCLUDING BUT NOT LIMITED TO MECHANICAL, PLUMBING, ELECTRICAL, FIRE PROTECTION, STRUCTURAL, ETC. SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION OF NEW/RELOCATED COMPONENTS. CONTRACTOR SHALL NOT USE THE ENGINEERED CAD FILES AS SHOP DRAWINGS. SHOP DRAWINGS SHALL CONFORM TO ALL SECTIONS OF AS 201.	8.	ALL DUCTWORK SHALL BE CONSTRUCTED, ERECTED, AND TESTED IN ACCORDANCE WITH THE MOST RESTRICTIVE OF LOCAL REGULATIONS AND PROCEDURES ACCEPTABLE TO THE ENGINEERING AGENCY TO REDUCE THE AMOUNT OF DUST, WATER, AND DEBRIS WHICH MAY ENTER THE SYSTEM.		
BTU	BRITISH THERMAL UNIT	9.	CONTRACTOR SHALL COMPLY WITH ALL CONTRACT DOCUMENTS IN LAYING OUT AND INSTALLING THE CONTRACTOR SHALL OBTAIN AND FOLLOW ALL LANDLORD/OWNER REQUIREMENTS, GUIDELINES, RULES, AND PROCEDURES FOR CONSTRUCTION. CONTRACTOR SHALL PROVIDE INSURANCE IN ACCORDANCE WITH THE BUILDING'S CERTIFICATE OF INSURANCE REQUIREMENTS.	9.	SUPPORT ALL SUSPENDED MECHANICAL EQUIPMENT WITH FULLY THREADED RODS AND VIBRATION ISOLATORS PER THE ASHRAE HANDBOOK AND PROCEDURES ACCEPTABLE TO THE ENGINEERING AGENCY.		
BTUH	BTU PER HOUR	10.	IF ANY EQUIPMENT SUBMITTED BY THE CONTRACTOR IS DIFFERENT FROM THE BASIS OF DESIGN SPECIFIED, CHANGES SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR APPROVAL. SUBMITTALS SHALL INDICATE ANY RESULTING CREDIT, ADDED COST, AND/OR ADJUSTMENT IN LEAD TIME. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR PAYMENT OF ALL CHARGES RESULTING FROM ADDITIONS OR CHANGES IN THE WORK OF OTHER TRADES THAT ARE NECESSARY TO ACCOMMODATE THE REQUESTED SUBSTITUTION, UNLESS APPROVED BY OWNER. CONTRACTOR WILL PROCEED AT THEIR OWN RISK IF CHANGES OCCUR WITHOUT PRIOR APPROVAL.	10.	ALL SUSPENDED CEILING MECHANICAL FIXTURES SHALL BE SUPPORTED BY ADDITIONAL INDEPENDENT 1/2 GAGE WIRES ATTACHED TO EACH CORNER OF FIXTURES. (ASCE 7 SECTION 13.5.2.2, GISA)		
'C	DEGREE CENTIGRADE (CELCIUS)	11.	CONTRACTOR SHALL SECURE SITE WHILE WORK IS IN PROGRESS AND UNTIL THE WORK IS ACCEPTED BY OWNER'S REPRESENTATIVE.	11.	FIRE DAMPERS AND/OR SMOKE DAMPERS AND THE NECESSARY ACCESS PANELS SHALL BE PROVIDED FOR ALL DUCTS PENETRATING FIRE AND/OR SMOKE BARRIERS/PARTITIONS, AS REQUIRED BY CODE. SEE ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATIONS OF FIRE AND/OR SMOKE RATED BARRIERS/PARTITIONS.		
C	CONDENSER	12.	THE CONTRACTOR IS SOLELY RESPONSIBLE TO PROVIDE METHODS OF PROCEDURE AND PERFORM ALL CONSTRUCTION MEANS AND METHODS.	12.	SMOKE DETECTORS AND REMOTE ANNUNCIATOR ARE SUPPLIED BY MECHANICAL CONTRACTOR. SMOKE DETECTORS SHALL BE INSTALLED AND INTERLOCKED FOR SHUTDOWN IN ACCORDANCE WITH DIVISION 22. SEE SPECIFICATIONS.		
CB	CALIFORNIA BUILDING CODE	13.	CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE, CAUSED BY THE WORK, TO EXISTING CONDITIONS OR THE WORK OF OTHER TRADES.	13.	ALL PENETRATIONS OF DUCTWORK, PIPING, CONDUCITS, AND VENTS THROUGH FIRE, SMOKE, OR COMBINATION FIRE/SMOKE RATED BARRIERS SHALL HAVE FIRESTOP AND/OR SMOKE SEAL PROTECTION IN ACCORDANCE WITH THE STATE MINIMUM BUILDING CODE AND AUTHORITIES HAVING JURISDICTION. FIRESTOP AND SMOKE STOP PROTECTORS SHALL BE UL LISTED.		
CC	CEILING	14.	CONTRACTOR SHALL COORDINATE MOVEMENT AND STORAGE OF EQUIPMENT AND ALL OTHER COMPONENTS, INCLUDING TAKING ALL NECESSARY PRECAUTIONS TO COVER ALL EQUIPMENT COMPONENTS TO PROTECT THEM FROM EXPOSURE TO OUTDOOR ELEMENTS, CONDITIONS OUTSIDE OF MANUFACTURER'S STORAGE CONDITIONS, AND CONSTRUCTION DEBRIS, WHETHER OR NOT EQUIPMENT IS POWERED OR IN USE.	14.	ALL PENETRATIONS OF DUCTWORK, PIPING, CONDUCITS, AND VENTS THROUGH NON-RATED MATERIAL SHALL BE PROPERLY AND GENEROUSLY CAULKED WITH SOUND-RESISTANT AND NON-HARDENING MATERIAL, SUCH AS SILICONE.		
CD	CEILING DIFFUSER	15.	CONTRACTOR SHALL MAINTAIN RED-LINED AS-BUILT DRAWINGS DURING CONSTRUCTION TO DOCUMENT ALL CHANGES AND MODIFICATIONS TO THE CONTRACT DOCUMENTS. CONTRACTOR SHALL SUBMIT COMPLETE RED-LINED AS-BUILT DRAWINGS, UPON COMPLETION OF THE WORK, FOR REVIEW BY THE ARCHITECT/ENGINEER.	15.	COORDINATE WITH OWNERS ROOFING CONTRACTOR PRIOR TO MAKING ANY PENETRATIONS THROUGH ROOF. ROOF WARRANTY SHALL BE MAINTAINED.		
CD	CONDENSATE DRAIN	16.	FURNISH FINAL CERTIFICATE OF INSPECTION OR WRITTEN EVIDENCE OF ACCEPTANCE BY INSPECTION AUTHORITIES FOR ALL WORK INSTALLED.	16.	FLASHING, COUNTER-FLASHING, AND ROOF MEMBRANE PATCHES AT ALL ROOF OPENINGS SHALL MATCH AND BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE EXISTING ROOFING SYSTEM.		
CFC	CALIFORNIA FIRE CODE	17.	CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A CLEAN AND SAFE WORK ENVIRONMENT THROUGHOUT THE DURATION OF CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL CONSTRUCTION DEBRIS, WITH ALL COSTS FOR DISPOSAL BORNE BY CONTRACTOR. UPON COMPLETION OF WORK, AREA(S) OF WORK SHALL BE LEFT IN A CLEAN CONDITION, ACCEPTABLE TO OWNER.	17.	PROVIDE GENERAL CONTRACTOR WITH FINAL SIZES AND LOCATIONS OF ALL WALL, FLOOR, AND ROOF PENETRATIONS TO COORDINATE REQUIRED STRUCTURAL FRAMING MEMBERS.		
CFC	CUBIC FOOT/FEET PER MINUTE	18.	ALL CONSTRUCTION DEBRIS SHALL BE DISPOSED OF IN AN ENVIRONMENTALLY RESPONSIBLE FASHION. RECYCLABLE MATERIAL SHALL BE PROPERLY RECYCLED, AND HAZARDOUS MATERIALS SHALL BE DISPOSED OF WITH PROPER CHAIN OF CUSTODY.	18.	COORDINATE ALL CUTTING, DRILLING, PATCHING, AND REINFORCING REQUIRED FOR WORK WITH THE GENERAL CONTRACTOR.		
CFSD	COMBINATION FIRE/SMOKE DAMPER	19.	ALL PLANS APPROVED BY GOVERNING AGENCIES SHALL BE KEPT IN A SECURE PLACE AND SHALL NOT BE USED BY WORKERS. CONTRACTOR SHALL FURNISH ALL SUBCONTRACTORS CONSTRUCTION SETS REFLECTING THE APPROVED PLANS. CONTRACTOR SHALL ALSO MAINTAIN, IN GOOD CONDITION, ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA, AND CHANGE ORDERS. THIS COMPLETE SET SHALL REMAIN ON PREMISES AT ALL TIMES, UNDER CARE OF THE JOB SUPERINTENDENT.	19.	PROVIDE ACCESS PANELS/DOORS FOR ALL EQUIPMENT LOCATED IN INACCESSIBLE AREAS, SUCH AS ABOVE HARD LID CEILING OR BEHIND WALLS. ALL ACCESS PANEL/DOOR LOCATIONS SHALL BE COORDINATED WITH ARCHITECT.		
CG	CEILING GRILLE	20.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	20.	REQUIRED ACCESS AND WORKING SPACE CLEARANCES FOR ALL EQUIPMENT AND CONTROL DEVICES MUST BE MAINTAINED TO ALLOW READY AND SAFE OPERATION, EXAMINATION, AND MAINTENANCE. REQUIRED CLEARANCES SHALL BE PER MANUFACTURER'S RECOMMENDATION AND GOVERNING CODES.		
CHWP	CHILLED WATER PUMP	21.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	21.	CONTRACTOR SHALL SECURE SITE WHILE WORK IS IN PROGRESS AND UNTIL THE WORK IS ACCEPTED BY OWNER'S REPRESENTATIVE.		
CHWR	CHILLED WATER RETURN	22.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	22.	THE CONTRACTOR IS SOLELY RESPONSIBLE TO PROVIDE METHODS OF PROCEDURE AND PERFORM ALL CONSTRUCTION MEANS AND METHODS.		
CHWS	CHILLED WATER SUPPLY	23.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	23.	CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE, CAUSED BY THE WORK, TO EXISTING CONDITIONS OR THE WORK OF OTHER TRADES.		
CHWS	CONDENSER WATER RETURN	24.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	24.	CONTRACTOR SHALL COORDINATE MOVEMENT AND STORAGE OF EQUIPMENT AND ALL OTHER COMPONENTS, INCLUDING TAKING ALL NECESSARY PRECAUTIONS TO COVER ALL EQUIPMENT COMPONENTS TO PROTECT THEM FROM EXPOSURE TO OUTDOOR ELEMENTS, CONDITIONS OUTSIDE OF MANUFACTURER'S STORAGE CONDITIONS, AND CONSTRUCTION DEBRIS, WHETHER OR NOT EQUIPMENT IS POWERED OR IN USE.		
CWS	CONDENSER WATER SUPPLY	25.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	25.	ALL MATERIALS SHALL BE NEW, BEAR THE UNDERWRITERS LABORATORIES (UL) OR EQUIVALENT TESTING AGENCY LABEL, AND BE APPROVED BY THE AUTHORITIES HAVING JURISDICTION.		
HPC	HIGH PRESSURE CONDENSATE	26.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	26.	CONTRACTOR SHALL MAINTAIN RED-LINED AS-BUILT DRAWINGS DURING CONSTRUCTION TO DOCUMENT ALL CHANGES AND MODIFICATIONS TO THE CONTRACT DOCUMENTS. CONTRACTOR SHALL SUBMIT COMPLETE RED-LINED AS-BUILT DRAWINGS, UPON COMPLETION OF THE WORK, FOR REVIEW BY THE ARCHITECT/ENGINEER.		
HPS	HIGH PRESSURE STEAM	27.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	27.	FURNISH FINAL CERTIFICATE OF INSPECTION OR WRITTEN EVIDENCE OF ACCEPTANCE BY INSPECTION AUTHORITIES FOR ALL WORK INSTALLED.		
MPC	MEDIUM PRESSURE CONDENSATE	28.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	28.	CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A CLEAN AND SAFE WORK ENVIRONMENT THROUGHOUT THE DURATION OF CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL CONSTRUCTION DEBRIS, WITH ALL COSTS FOR DISPOSAL BORNE BY CONTRACTOR. UPON COMPLETION OF WORK, AREA(S) OF WORK SHALL BE LEFT IN A CLEAN CONDITION, ACCEPTABLE TO OWNER.		
MPS	MEDIUM PRESSURE STEAM	29.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	29.	ALL CONSTRUCTION DEBRIS SHALL BE DISPOSED OF IN AN ENVIRONMENTALLY RESPONSIBLE FASHION. RECYCLABLE MATERIAL SHALL BE PROPERLY RECYCLED, AND HAZARDOUS MATERIALS SHALL BE DISPOSED OF WITH PROPER CHAIN OF CUSTODY.		
LPC	LOW PRESSURE CONDENSATE	30.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	30.	ALL PLANS APPROVED BY GOVERNING AGENCIES SHALL BE KEPT IN A SECURE PLACE AND SHALL NOT BE USED BY WORKERS. CONTRACTOR SHALL FURNISH ALL SUBCONTRACTORS CONSTRUCTION SETS REFLECTING THE APPROVED PLANS. CONTRACTOR SHALL ALSO MAINTAIN, IN GOOD CONDITION, ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA, AND CHANGE ORDERS. THIS COMPLETE SET SHALL REMAIN ON PREMISES AT ALL TIMES, UNDER CARE OF THE JOB SUPERINTENDENT.		
LPS	LOW PRESSURE STEAM	31.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	31.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.		
HHWR	HEATING HOT WATER RETURN	32.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	32.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.		
HHWS	HEATING HOT WATER SUPPLY	33.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	33.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.		
PC	PUMP CONDENSATE	34.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	34.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.		
CD	CONDENSATE	35.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	35.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.		
RL	REFRIGERANT LIQUID	36.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	36.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.		
RS	REFRIGERANT SUCTION	37.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	37.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.		
		38.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	38.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.		
		39.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	39.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.		
		40.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	40.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.		
		41.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	41.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.		
		42.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	42.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.		
		43.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	43.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.		
		44.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	44.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.		
		45.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	45.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.		
		46.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	46.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.		
		47.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	47.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.		
		48.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	48.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.		
		49.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	49.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.		
		50.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	50.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.		
		51.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	51.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.		
		52.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.	52.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.		
		53.	CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR.				

CERTIFICATE OF COMPLIANCE
Project Name: Shake Shack - Torrance Report Page: (Page 1 of 14)
Project Address: 2022-10-25T13:24:34-04:00 Date Prepared:

Table A: GENERAL INFORMATION. Columns: 01 Project Location (City), 02 Climate Zone, 03 Occupancy Types Within Project, 04 Total Conditioned Floor Area, 05 Total Unconditioned Floor Area, 06 # of Stories (Habitable Above Grade), 07 # of Stories (Habitable Below Grade), 08 Occupancy Type, 09 Other (Write In).

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 §140.5, or §141.0(b)2 for alterations.

Table B: PROJECT SCOPE. Columns: 01 Air System(s), 02 Wet System Components, 03 Dry System Components. Includes checkboxes for Heating Air System, Cooling Air System, Mechanical Controls, etc.

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
Generated Date/Time: Report Version: 2019.1.003
Documentation Software: Energy Code Ace
Compliance ID: 54588
Report Generated: 2022-10-25 10:24:37

CERTIFICATE OF COMPLIANCE
Project Name: Shake Shack - Torrance Report Page: (Page 4 of 14)
Project Address: 2022-10-25T13:24:34-04:00 Date Prepared:

Table F: HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS). Columns: 01 Name or Item Tag, 02 Size Category, 03 Rating Condition, 04 Efficiency Unit, 05 Minimum Efficiency, 06 Design Efficiency, 07 Efficiency Unit, 08 Minimum Efficiency, 09 Design Efficiency.

G. PUMPS
This section does not apply to this project.

H. FAN SYSTEMS & AIR ECONOMIZERS
This table is used to demonstrate compliance with prescriptive requirements found in §140.4(c), §140.4(c), and §140.4(m) for fan systems.

Table H: FAN SYSTEMS & AIR ECONOMIZERS. Columns: 01 System Name, 02 RTU-1, 03 Economizer, 04 Differential Temperature, 05 Economizer Controls, 06 Designed per §140.4(e), 07 System Fan Type, 08 Constant Volume.

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
Generated Date/Time: Report Version: 2019.1.003
Documentation Software: Energy Code Ace
Compliance ID: 54588
Report Generated: 2022-10-25 10:24:37

CERTIFICATE OF COMPLIANCE
Project Name: Shake Shack - Torrance Report Page: (Page 7 of 14)
Project Address: 2022-10-25T13:24:34-04:00 Date Prepared:

Table J: VENTILATION AND INDOOR AIR QUALITY. Columns: 04 System Name, 05 System Design OA CFM, 06 System Design Transfer Air CFM, 07 Air Filtration per §120.1(c) and §141.0(b)2, 08 Space Name, 09 Occupancy Type, 10 Conditioned Floor Area, 11 # of Shower heads/toilets, 12 # of people, 13 Required Min OA CFM, 14 Required Min CFM, 15 Provided per Design CFM, 16 DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3.

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
Generated Date/Time: Report Version: 2019.1.003
Documentation Software: Energy Code Ace
Compliance ID: 54588
Report Generated: 2022-10-25 10:24:37

CERTIFICATE OF COMPLIANCE
Project Name: Shake Shack - Torrance Report Page: (Page 2 of 14)
Project Address: 2022-10-25T13:24:34-04:00 Date Prepared:

Table C: COMPLIANCE RESULTS. Table with columns 01-09 for various mechanical components and a final 'COMPLIES' status.

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

Transfer air is being used in at least one zone to meet minimum ventilation requirements. See Table J for details. Transfer air must be designed per §120.1(i) for air classification and recirculation limitations and be documented within construction documents.

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

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
Generated Date/Time: Report Version: 2019.1.003
Documentation Software: Energy Code Ace
Compliance ID: 54588
Report Generated: 2022-10-25 10:24:37

CERTIFICATE OF COMPLIANCE
Project Name: Shake Shack - Torrance Report Page: (Page 5 of 14)
Project Address: 2022-10-25T13:24:34-04:00 Date Prepared:

Table H: FAN SYSTEMS & AIR ECONOMIZERS. Columns: 01 System Name, 02 RTU-2, 03 Economizer, 04 Differential Temperature, 05 Economizer Controls, 06 Designed per §140.4(c) and (m), 07 System Fan Type, 08 Constant Volume.

1 FOOTNOTES: Computer room economizers must meet requirements of §140.9(a) and will be documented on the NRCC-PRC-E document.
2 The unit used for HP must be consistent for all fans within a system.

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
Generated Date/Time: Report Version: 2019.1.003
Documentation Software: Energy Code Ace
Compliance ID: 54588
Report Generated: 2022-10-25 10:24:37

CERTIFICATE OF COMPLIANCE
Project Name: Shake Shack - Torrance Report Page: (Page 8 of 14)
Project Address: 2022-10-25T13:24:34-04:00 Date Prepared:

Table J: VENTILATION AND INDOOR AIR QUALITY. Columns: 04 System Name, 05 System Design OA CFM, 06 System Design Transfer Air CFM, 07 Air Filtration per §120.1(c) and §141.0(b)2, 08 Space Name, 09 Occupancy Type, 10 Conditioned Floor Area, 11 # of Shower heads/toilets, 12 # of people, 13 Required Min OA CFM, 14 Required Min CFM, 15 Provided per Design CFM, 16 DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3.

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
Generated Date/Time: Report Version: 2019.1.003
Documentation Software: Energy Code Ace
Compliance ID: 54588
Report Generated: 2022-10-25 10:24:37

CERTIFICATE OF COMPLIANCE
Project Name: Shake Shack - Torrance Report Page: (Page 3 of 14)
Project Address: 2022-10-25T13:24:34-04:00 Date Prepared:

Table F: HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS). Columns: 01 Name or Item Tag, 02 Equipment Category, 03 Equipment Type, 04 Smallest Size Available, 05 Heating Output, 06 Cooling Output, 07 Sensible Per Design, 08 Latent Per Design, 09 Total Heating Load, 10 Sensible Cooling Load, 11 Total Cooling Load.

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 exempt.
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).

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
Generated Date/Time: Report Version: 2019.1.003
Documentation Software: Energy Code Ace
Compliance ID: 54588
Report Generated: 2022-10-25 10:24:37

CERTIFICATE OF COMPLIANCE
Project Name: Shake Shack - Torrance Report Page: (Page 6 of 14)
Project Address: 2022-10-25T13:24:34-04:00 Date Prepared:

Table I: SYSTEM CONTROLS. Columns: 01 System Name, 02 System Zoning, 03 Conditioned Floor Area Being Served, 04 Thermostats, 05 Shut-Off Controls, 06 Isolation Zone Controls, 07 Demand Response, 08 Supply Air Temp. Reset, 09 Window Interlocks per §140.4(i).

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.
2 Notes: Controls with * 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(i); EXCEPTION 1 to §140.4(i).

J. VENTILATION AND INDOOR AIR QUALITY
This table is used to demonstrate compliance with mandatory ventilation requirements in §120.1 and §120.2(c)3B for all nonresidential, high-rise residential and hotel/motel occupancies.

Table J: VENTILATION AND INDOOR AIR QUALITY. Columns: 01 System Name, 02 System Zoning, 03 Conditioned Floor Area, 04 Thermostats, 05 Shut-Off Controls, 06 Isolation Zone Controls, 07 Demand Response, 08 Supply Air Temp. Reset, 09 Window Interlocks per §140.4(i).

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.
2 Notes: Controls with * 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(i); EXCEPTION 1 to §140.4(i).

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
Generated Date/Time: Report Version: 2019.1.003
Documentation Software: Energy Code Ace
Compliance ID: 54588
Report Generated: 2022-10-25 10:24:37

CERTIFICATE OF COMPLIANCE
Project Name: Shake Shack - Torrance Report Page: (Page 9 of 14)
Project Address: 2022-10-25T13:24:34-04:00 Date Prepared:

Table J: VENTILATION AND INDOOR AIR QUALITY. Columns: 04 System Name, 05 System Design OA CFM, 06 System Design Transfer Air CFM, 07 Air Filtration per §120.1(c) and §141.0(b)2, 08 Space Name, 09 Occupancy Type, 10 Conditioned Floor Area, 11 # of Shower heads/toilets, 12 # of people, 13 Required Min OA CFM, 14 Required Min CFM, 15 Provided per Design CFM, 16 DCV or Sensor Controls per §120.1(d)3, §120.1(d)5, and §120.1(e)3.

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
Generated Date/Time: Report Version: 2019.1.003
Documentation Software: Energy Code Ace
Compliance ID: 54588
Report Generated: 2022-10-25 10:24:37

K. TERMINAL BOX CONTROLS
This section does not apply to this project.

Table L: DISTRIBUTION (DUCTWORK AND PIPING). Columns: 11 The answers to the questions below apply to the following duct systems, 12 RTU-1, 13 Duct leakage testing triggered for these systems?, 14 No.

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
Generated Date/Time: Report Version: 2019.1.003
Documentation Software: Energy Code Ace
Compliance ID: 54588
Report Generated: 2022-10-25 10:24:37



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STRUCTURAL
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Claudia Walker
Tel: 213.310.8495
CIVIL
CONTACT:
Douglas Conlon
Tel: 213.418.0201

Date Description

1/11/2022 ISSUE FOR PERMIT/BD

Seal / Signature



Project Name

SHAKE SHACK

Project Number

005.3688.000

Description

MECHANICAL T24 FORMS

Scale

M002

CERTIFICATE OF COMPLIANCE		Shake Shack - Torrance		Report Page:	NRCC-MCH-E (Page 10 of 14)
Project Name:		Shake Shack - Torrance		Date Prepared:	2022-10-25T13:24:34-04:00

L. DISTRIBUTION (DUCTWORK AND PIPING)		
	<input type="checkbox"/>	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)(1)(B) or if the roof has fixed vents or openings to the outside/ unconditioned spaces
	<input type="checkbox"/>	In an unconditioned crawl space
	<input type="checkbox"/>	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
The answers to the questions below apply to the following duct systems: RTU-2 Duct leakage testing triggered for these systems? Yes		
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 ft ² of conditioned floor area.
14	Yes	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:
	<input type="checkbox"/>	Outdoors
	<input checked="" type="checkbox"/>	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)(1)(B) or if the roof has fixed vents or openings to the outside/ unconditioned spaces
	<input type="checkbox"/>	In an unconditioned crawl space
	<input type="checkbox"/>	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
The answers to the questions below apply to the following duct systems: FCU-1 Duct leakage testing triggered for these systems? Yes		
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 ft ² of conditioned floor area.
14	Yes	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:
	<input type="checkbox"/>	Outdoors

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
 Generated Date/Time: Report Version: 2019.1.003
 Documentation Software: Energy Code Ace
 Schema Version: rev 20200601
 Compliance ID: 54588
 Report Generated: 2022-10-25 10:24:37

CERTIFICATE OF COMPLIANCE		Shake Shack - Torrance		Report Page:	NRCC-MCH-E (Page 11 of 14)
Project Name:		Shake Shack - Torrance		Date Prepared:	2022-10-25T13:24:34-04:00

L. DISTRIBUTION (DUCTWORK AND PIPING)		
	<input checked="" type="checkbox"/>	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)(1)(B) or if the roof has fixed vents or openings to the outside/ unconditioned spaces
	<input type="checkbox"/>	In an unconditioned crawl space
	<input type="checkbox"/>	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
The answers to the questions below apply to the following duct systems: RTU-2 Duct leakage testing triggered for these systems? Yes		
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 ft ² of conditioned floor area.
14	Yes	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:
	<input type="checkbox"/>	Outdoors
	<input checked="" type="checkbox"/>	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)(1)(B) or if the roof has fixed vents or openings to the outside/ unconditioned spaces
	<input type="checkbox"/>	In an unconditioned crawl space
	<input type="checkbox"/>	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
The answers to the questions below apply to the following duct systems: FCU-1 Duct leakage testing triggered for these systems? Yes		
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 ft ² of conditioned floor area.
14	Yes	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:
	<input type="checkbox"/>	Outdoors

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
 Generated Date/Time: Report Version: 2019.1.003
 Documentation Software: Energy Code Ace
 Schema Version: rev 20200601
 Compliance ID: 54588
 Report Generated: 2022-10-25 10:24:37

CERTIFICATE OF COMPLIANCE		Shake Shack - Torrance		Report Page:	NRCC-MCH-E (Page 13 of 14)
Project Name:		Shake Shack - Torrance		Date Prepared:	2022-10-25T13:24:34-04:00

Q. MANDATORY MEASURES DOCUMENTATION LOCATION		
This table is used to indicate where mandatory measures are documented in the plan set or construction documentation.		
01	No	02
Compliance with Mandatory Measures documented through MCH Mandatory Measures Note Block		
03		04
Mandatory Measure		Plan sheet or construction document location
Heating Equipment Efficiency per §110.1		M701
Cooling Equipment Efficiency per §110.1		M701
Furnace Standby Loss Control per §110.2(d)		N/A
Duct Insulation per §120.4		M002
Heat Pump with Supplemental electric Resistance Heater Controls per §110.2(b)		N/A
The air duct and plenum system is designed per §120.3(a)-(f)		M002
Kitchen range hoods shall be rated for sound in accordance with Section 7.2 of ASHRAE 62.2		M801

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
 Generated Date/Time: Report Version: 2019.1.003
 Documentation Software: Energy Code Ace
 Schema Version: rev 20200601
 Compliance ID: 54588
 Report Generated: 2022-10-25 10:24:37

CERTIFICATE OF COMPLIANCE		Shake Shack - Torrance		Report Page:	NRCC-MCH-E (Page 12 of 14)
Project Name:		Shake Shack - Torrance		Date Prepared:	2022-10-25T13:24:34-04:00

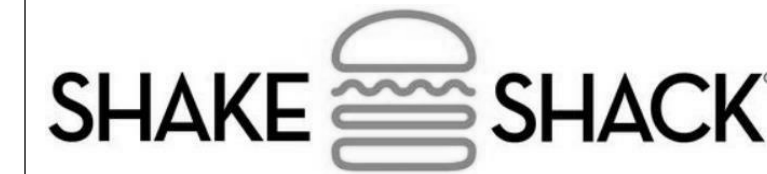
O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE	
Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during 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-02-A - Outdoor Air must be submitted for all newly installed HVAC units. Note: MCH-02-A can be performed in conjunction with MCH-07-A Supply Fan VFD Acceptance (if applicable) since testing activities overlap.	RTU-1; RTU-2; FCU-1
NRCA-MCH-04-A - Air Distribution Duct Leakage	RTU-2; FCU-1
NRCA-MCH-05-A - Air Economizer Controls	RTU-1; RTU-2
P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION	
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 completed by a HERS Rater and provided to the building inspector during construction. The final documents must be created by a HERS Provider's registry, but drafts can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCV/	
Form/Title	Systems/Spaces To Be Field Verified
NRCV-MCH-04-H Duct Leakage Test NOTE: Must be completed by a HERS Rater	RTU-2; FCU-1

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
 Generated Date/Time: Report Version: 2019.1.003
 Documentation Software: Energy Code Ace
 Schema Version: rev 20200601
 Compliance ID: 54588
 Report Generated: 2022-10-25 10:24:37

CERTIFICATE OF COMPLIANCE		Shake Shack - Torrance		Report Page:	NRCC-MCH-E (Page 14 of 14)
Project Name:		Shake Shack - Torrance		Date Prepared:	2022-10-25T13:24:34-04:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Alexander Machter	Documentation Author Signature:
Company: INFRASTRUCTURE FACTOR CONSULTING, INC.	Signature Date: 10/28/2022
Address: 2361 ROSECRANS AVE., SUITE 368	City/State/Zip: EL SEGUNDO, CA 90245
City/State/Zip: EL SEGUNDO, CA 90245	Phone: 310-220-2721
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
I certify the following under penalty of perjury, under the laws of the State of California:	
<ol style="list-style-type: none"> The information provided on this Certificate of Compliance is true and correct. 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). 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 3 and Part 6 of the California Code of Regulations. 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. 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: Alexander Machter	Responsible Designer Signature:
Company: ifactor	Date Signed: 10/28/2022
Address: 2361 ROSECRANS AVE., SUITE 368	License: M40400
City/State/Zip: EL SEGUNDO, CA 90245	Phone: 310-220-2721

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
 Generated Date/Time: Report Version: 2019.1.003
 Documentation Software: Energy Code Ace
 Schema Version: rev 20200601
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 Report Generated: 2022-10-25 10:24:37



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Date	Description
11/11/2022	ISSUE FOR PERMIT/BD

Seal / Signature



Project Name
SHAKE SHACK

Project Number
005.3688.000

Description
MECHANICAL T24 FORMS

Scale

M003

STATE OF CALIFORNIA
Process Systems
NRC-C-PRC-E CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE NRC-C-PRC-E
This document demonstrates compliance for process systems that are within the scope of the permit application and are regulated by mandatory requirements in §120.6 or prescriptive requirements in §140.9. This compliance document is used for newly constructed, addition and alteration projects.

Project Name: Shake Shack - Torrance Report Page: (Page 1 of 6)
Project Address: Date Prepared: 2022-10-20T17:11:07-04:00

A. GENERAL INFORMATION

01 Project Location (city)	Torrance	04 Total Conditioned Floor Area	3300
02 Climate Zone	6	05 Total Unconditioned Floor Area	1000
03 Occupancy Types Within Project:		06 # of Stories (Habitable Above Grade)	1
<input type="checkbox"/> Office	<input type="checkbox"/> Retail	<input type="checkbox"/> Non-refrigerated Warehouse	
<input type="checkbox"/> Hotel/ Motel	<input type="checkbox"/> School	<input type="checkbox"/> Healthcare Facility	
<input type="checkbox"/> High-Rise Residential	<input type="checkbox"/> Relocatable Class Bldg	<input checked="" type="checkbox"/> Other (write in)	Restaurant

B. PROJECT SCOPE
This table includes process systems that are within the scope of the permit application and are demonstrating compliance with mandatory requirements in §120.6 or prescriptive requirements in §140.9.

My project consists of: (check all that apply):

01	02
<input checked="" type="checkbox"/> Refrigerated Spaces <3,000 ft ² Total (no Title 24, Part 6 requirements)	<input type="checkbox"/> Elevator Lighting & Ventilation Controls (mandatory §120.6(f))
<input type="checkbox"/> Refrigerated Spaces >=3,000 ft ² Total (mandatory §120.6(a))	<input type="checkbox"/> Escalator & Moving Walkway Speed Controls (mandatory §120.6(d))
<input type="checkbox"/> Food Stores >8,000 ft ² c/a (mandatory §120.6(b))	<input type="checkbox"/> Computer Rooms >20 W/ ft ² Power Density (prescriptive §140.9(a)) ¹
<input type="checkbox"/> Enclosed Parking Garage Exhaust >=10,000 cfm (mandatory §120.6(c))	<input checked="" type="checkbox"/> Commercial Kitchen Ventilation/Exhaust (prescriptive §140.9(b)) ¹
<input type="checkbox"/> Newly Installed Process Boilers (mandatory §120.6(d))	<input type="checkbox"/> Laboratory Exhaust/Factory Exhaust & Fume Hood (prescriptive §140.9(c)) ¹
<input type="checkbox"/> Compressed Air Systems Combined HP >= 25 (mandatory §120.6(e))	

¹ FOOTNOTES: These building features can comply using the performance method. If using the performance method for these features, compliance should be demonstrated on the NRCC-PRF-E.

Alert! Refrigerated Warehouses and refrigerated spaces that are less than 3,000 square feet do not have requirements under Title 24, Part 6 and therefore are not documented on the NRCC-PRC-E. Systems serving these spaces shall meet the requirements of the Appliance Efficiency Regulations for walk-in coolers or freezers contained in the Appliance Efficiency Regulations (California Code of Regulations, Title 20, Sections 1601 through 1608).

Registration Number: Generated Date/Time: Documentation Software: Energy Code Ace
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance Report Version: 2019.1.003 Compliance ID: 54588
Schema Version: rev 20200601 Report Generated: 2022-10-20 14:11:11

STATE OF CALIFORNIA
Process Systems
NRC-C-PRC-E CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE NRC-C-PRC-E
Project Name: Shake Shack - Torrance Report Page: (Page 4 of 6)
Project Address: Date Prepared: 2022-10-20T17:11:07-04:00

N. COMMERCIAL KITCHEN EXHAUST AND VENTILATION
Kitchen Exhaust: Airflow Rate §140.9(b)18

01	Kitchen Name or Item Tag	04	05	06	07	08
Name or Item Tag	Hood Type ¹	Hood Style	Hood Length (ft)	Equipment Duty	Design Hood Exhaust Rate CFM	Max Hood Exhaust Rate Allowed CFM
KEH-1	Type I				700	
KEH-2	Type I				700	
KEH-3	Type I				642	
KEH-4	Type I				642	

¹ FOOTNOTES: Type II hoods do not have a max hood exhaust air rate per §140.9(b)18

O. LABORATORY AND FACTORY EXHAUST AND FUME HOODS
This section does not apply to this project.

P. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION
Selections have been made based on information provided in this document. If any selection have been changed by permit applicant, an explanation should be included 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/NRCC/

Form/Title
NRCC-PRC-01-E - Covered Process

Registration Number: Generated Date/Time: Documentation Software: Energy Code Ace
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance Report Version: 2019.1.003 Compliance ID: 54588
Schema Version: rev 20200601 Report Generated: 2022-10-20 14:11:11

STATE OF CALIFORNIA
Process Systems
NRC-C-PRC-E CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE NRC-C-PRC-E
Project Name: Shake Shack - Torrance Report Page: (Page 2 of 6)
Project Address: Date Prepared: 2022-10-20T17:11:07-04:00

C. COMPLIANCE RESULTS
Results in this table are automatically calculated from data input and calculations in Tables F through O. Note: If any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D. Exceptional Conditions for guidance or see applicable Table referenced below.

01	02	03	04	05	06	07	08	09	10	11
Refrigerated Warehouse/ Space §120.6(a)	Commercial Refrigeration §120.6(b)	Parking Garage Exhaust §120.6(c)	Process Boilers §120.6(d)	Compressed Air Systems §120.6(e)	Elevators §120.6(f)	Escalators & Moving Walkways §120.6(g)	Computer Rooms §140.9(a)	Commercial Kitchens §140.9(b)	Laboratory/Factory Exhaust §140.9(c)	Compliance Results
								Yes		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.

F. REFRIGERATED WAREHOUSES/SPACES
This section does not apply to this project.

G. COMMERCIAL REFRIGERATION
This section does not apply to this project.

H. ENCLOSED PARKING GARAGE EXHAUST
This section does not apply to this project.

I. PROCESS BOILER
This section does not apply to this project.

J. COMPRESSED AIR SYSTEMS
This section does not apply to this project.

Registration Number: Generated Date/Time: Documentation Software: Energy Code Ace
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance Report Version: 2019.1.003 Compliance ID: 54588
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STATE OF CALIFORNIA
Process Systems
NRC-C-PRC-E CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE NRC-C-PRC-E
Project Name: Shake Shack - Torrance Report Page: (Page 5 of 6)
Project Address: Date Prepared: 2022-10-20T17:11:07-04:00

Q. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE
Selections have been made based on information provided in this document. If any selection have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

Form/Title	Systems/Spaces To Be Field Verified
NRCA-PRC-02-F Kitchen Exhaust	104 Cookline

Registration Number: Generated Date/Time: Documentation Software: Energy Code Ace
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance Report Version: 2019.1.003 Compliance ID: 54588
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STATE OF CALIFORNIA
Process Systems
NRC-C-PRC-E CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE NRC-C-PRC-E
Project Name: Shake Shack - Torrance Report Page: (Page 3 of 6)
Project Address: Date Prepared: 2022-10-20T17:11:07-04:00

K. ELEVATOR LIGHTING AND VENTILATION
This section does not apply to this project.

L. ESCALATORS AND MOVING WALKWAYS SPEED CONTROLS
This section does not apply to this project.

M. COMPUTER ROOM SYSTEM SUMMARY
This section does not apply to this project.

N. COMMERCIAL KITCHEN EXHAUST AND VENTILATION
This table contains all new and replacement hoods being installed within the scope of the permit application. Table N is used to demonstrate compliance with prescriptive requirements found in §140.9(b).

Kitchen Ventilation §140.9(b)2

01	02	03	04	05
<input type="checkbox"/>	Existing kitchen hoods not being replaced as part of an addition or alteration (do not need to meet requirements)			
	Requirements			
02	Replacement Air to Hood Compliance Method §140.9(b)1A			
	Not providing replacement air directly to the hood(s)			
03	Mechanically cooled or heated makeup air delivered to any space with a kitchen hood is designed per 140.9(b)2A to not exceed the greater of:			
	The supply flow required to meet the space heating and cooling load			
04	Location that is supplying transfer air:			
05	The kitchen/ dining facility has a total Type I and Type II kitchen hood exhaust airflow > 5000 cfm and is designed to have one of the following per 140.9(b)2B: NA: Not a kitchen/ dining facility having a total Type I and Type II kitchen hood exhaust airflow rate > 5,000 cfm			

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STATE OF CALIFORNIA
Process Systems
NRC-C-PRC-E CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE NRC-C-PRC-E
Project Name: Shake Shack - Torrance Report Page: (Page 6 of 6)
Project Address: Date Prepared: 2022-10-20T17:11:07-04:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Alexander Mächer
Signature Date: 09/26/2022
Company: INFRASTRUCTURE FACTOR CONSULTING, INC.
Address: 2361 ROSENCRANS AVENUE, SUITE 368 EL SEGUNDO, CA 90245
City/State/Zip: EL SEGUNDO, CA 90245

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: Alexander Mächer
Signature Date: 09/26/2022
Company: INFRASTRUCTURE FACTOR CONSULTING, INC.
Address: 2361 ROSENCRANS AVENUE, SUITE 368 EL SEGUNDO, CA 90245
City/State/Zip: EL SEGUNDO, CA 90245

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CIVIL
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Date	Description
11/11/2022	ISSUE FOR PERMIT/BD

Seal / Signature



Project Name
SHAKE SHACK

Project Number
005.3688.000

Description
MECHANICAL T24 FORMS

Scale

M004

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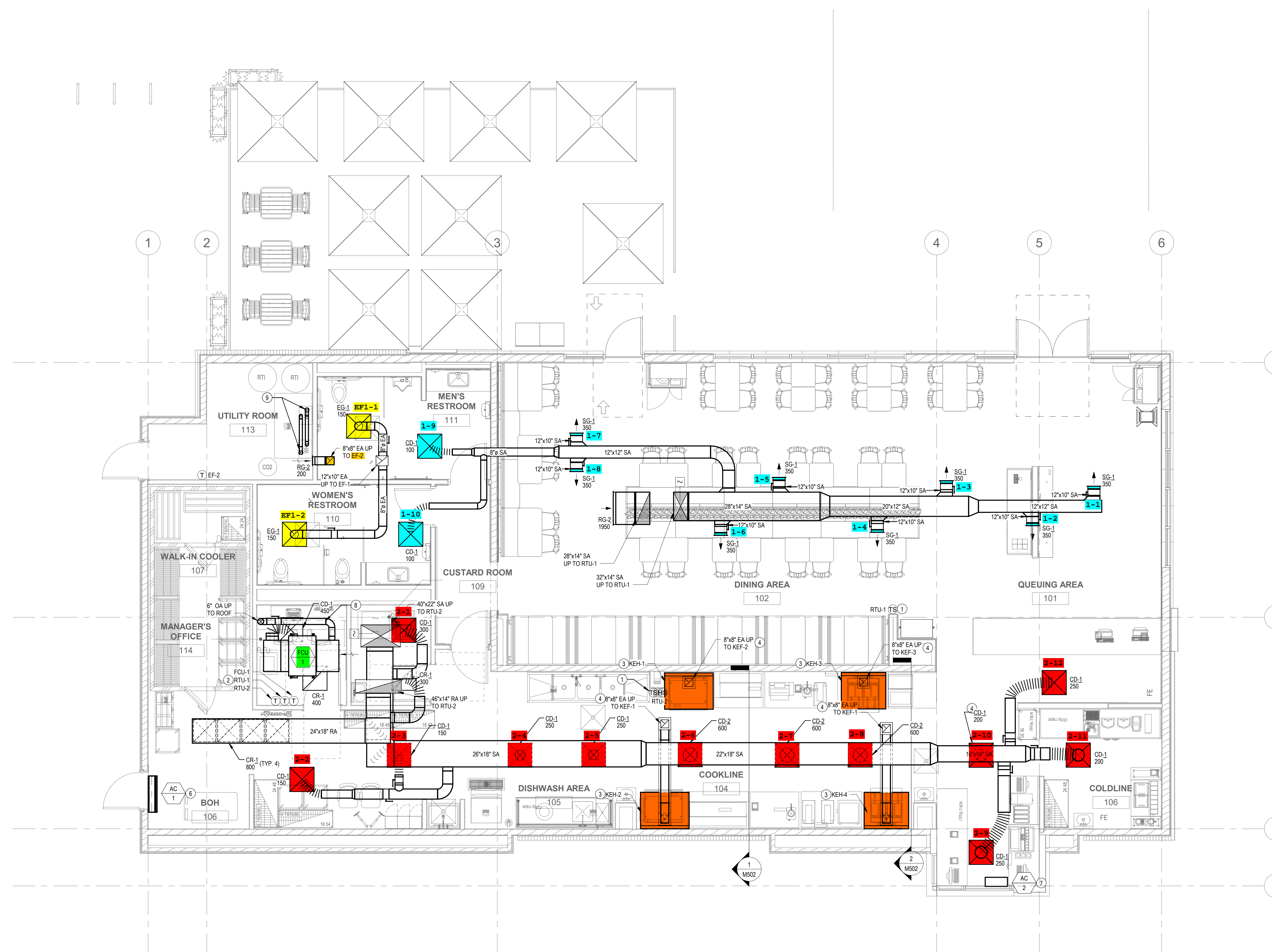
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SHEET NOTES

- 1 MOUNT REMOTE TEMPERATURE AND HUMIDITY SENSOR AT 48" ABOVE FINISHED FLOOR.
- 2 MOUNT THERMOSTAT CONTROLLER AT 48" ABOVE FINISHED FLOOR.
- 3 KITCHEN HOOD AND HOOD FIRE SUPPRESSION SYSTEM FURNISHED BY CAPTIVEAIR AND INSTALLED BY CONTRACTOR. REFER TO KITCHEN EQUIPMENT DRAWINGS FOR ADDITIONAL INFORMATION. HOOD FIRE ALARM CONNECTIONS INSTALLED BY FIRE ALARM CONTRACTOR. COORDINATE WITH FIRE PROTECTION CONTRACTOR PRIOR TO INSTALLATION FOR REQUIREMENTS. THE PERMIT HOLDER SHALL VERIFY CAPTURE AND PERFORMANCE OF THE HOOD PER CMC.
- 4 TYPE 1 GREASE EXHAUST DUCT FROM KITCHEN EXHAUST HOOD TO KITCHEN EXHAUST FAN. DUCT TO BE FIRE WRAPPED TO MAINTAIN 1' CLEARANCE TO COMBUSTIBLES.
- 5 PROVIDE AIR CURTAIN MOUNTED ABOVE DELIVERY DOOR.
- 6 PROVIDE AIR CURTAIN MOUNTED ABOVE TAKE-OUT WINDOW.
- 7 PROVIDE BACKDRAFT DAMPER ON OA DUCT.
- 8 WATER HEATERS COMBUSTION AIR INTAKE AND FLUE EXHAUST UP TO ROOF.



Date	Description
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Project Name
SHAKE SHACK

Project Number
005.3688.000

Description
MECHANICAL FLOOR PLAN

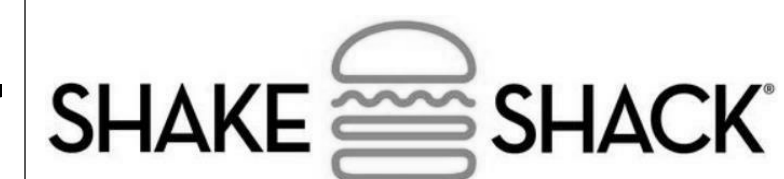
Scale
1/4" = 1'-0"

M111

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

SHEET NOTES

- 11 RTU UNIT SERVING DINING FURNISHED BY CAPTIVEAIRE AND INSTALLED BY MECHANICAL CONTRACTOR.
- 12 RTU UNIT SERVING KITCHEN FURNISHED BY CAPTIVEAIRE AND INSTALLED BY MECHANICAL CONTRACTOR.
- 13 RESTROOM EXHAUST FAN.
- 14 KITCHEN EXHAUST FAN FURNISHED BY CAPTIVEAIRE AND INSTALLED BY MECHANICAL CONTRACTOR.
- 15 FCU-1 AIR INTAKE. TERMINATE ON ROOF WITH RAINCAP.
- 16 COOLER/FREEZER CONDENSING UNITS BY OTHERS.
- 17 CUSTARD MACHINE CONDENSING UNIT BY OTHERS.
- 18 FIELD COORDINATE REFRIGERANT PIPING EXACT LOCATION AND ROUTING.
- 19 WATER HEATERS COMBUSTION AIR INTAKE AND FLUE EXHAUST TERMINATION. INSTALL PER MANUFACTURERS RECOMMENDATION.



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Project Name

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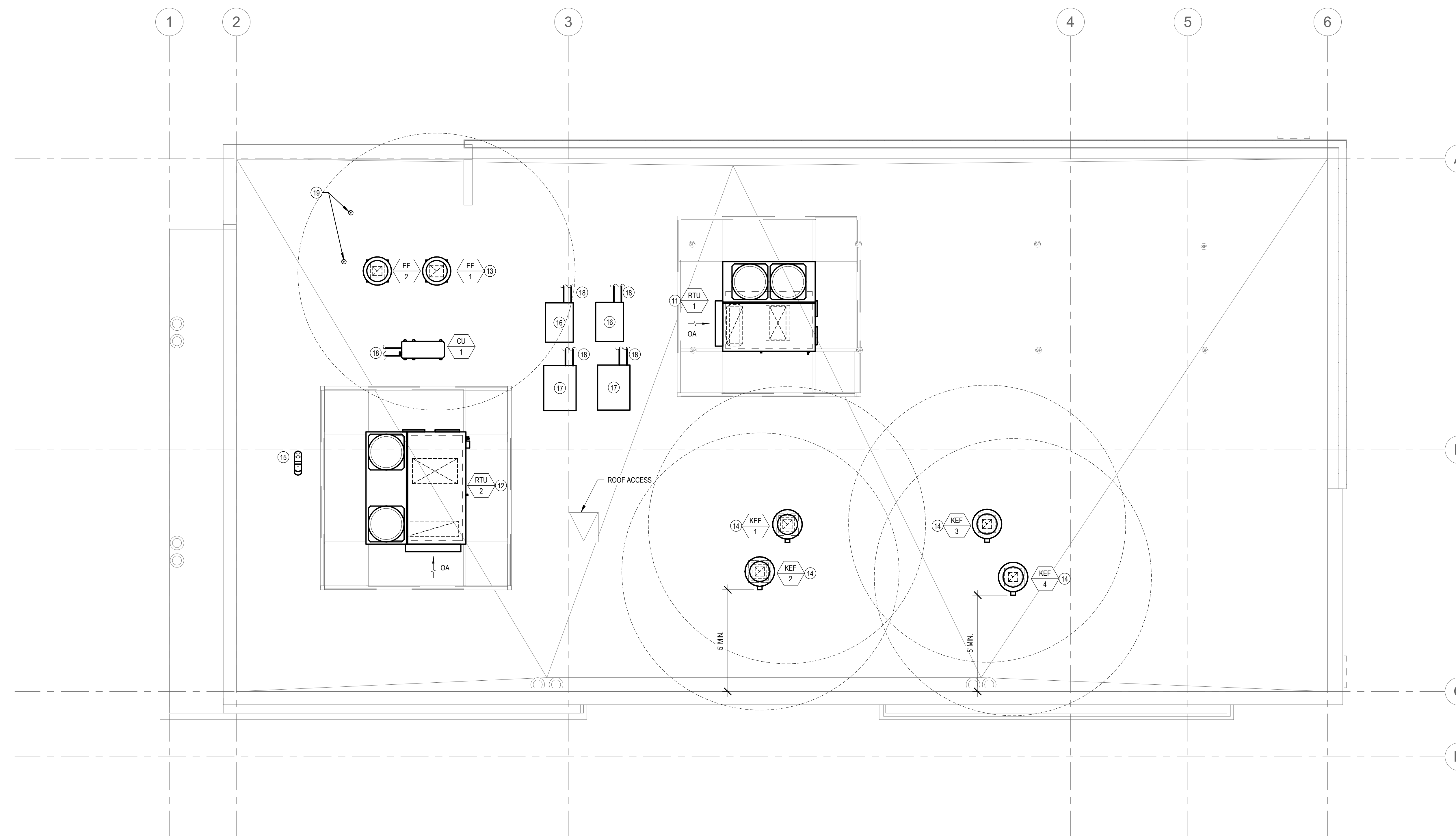
Description

MECHANICAL ROOF PLAN

Scale

1/4" = 1'-0"

M121



1 MECHANICAL ROOF PLAN

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

Date	Description
11/11/2022	ISSUE FOR PERMIT/BD

Seal / Signature



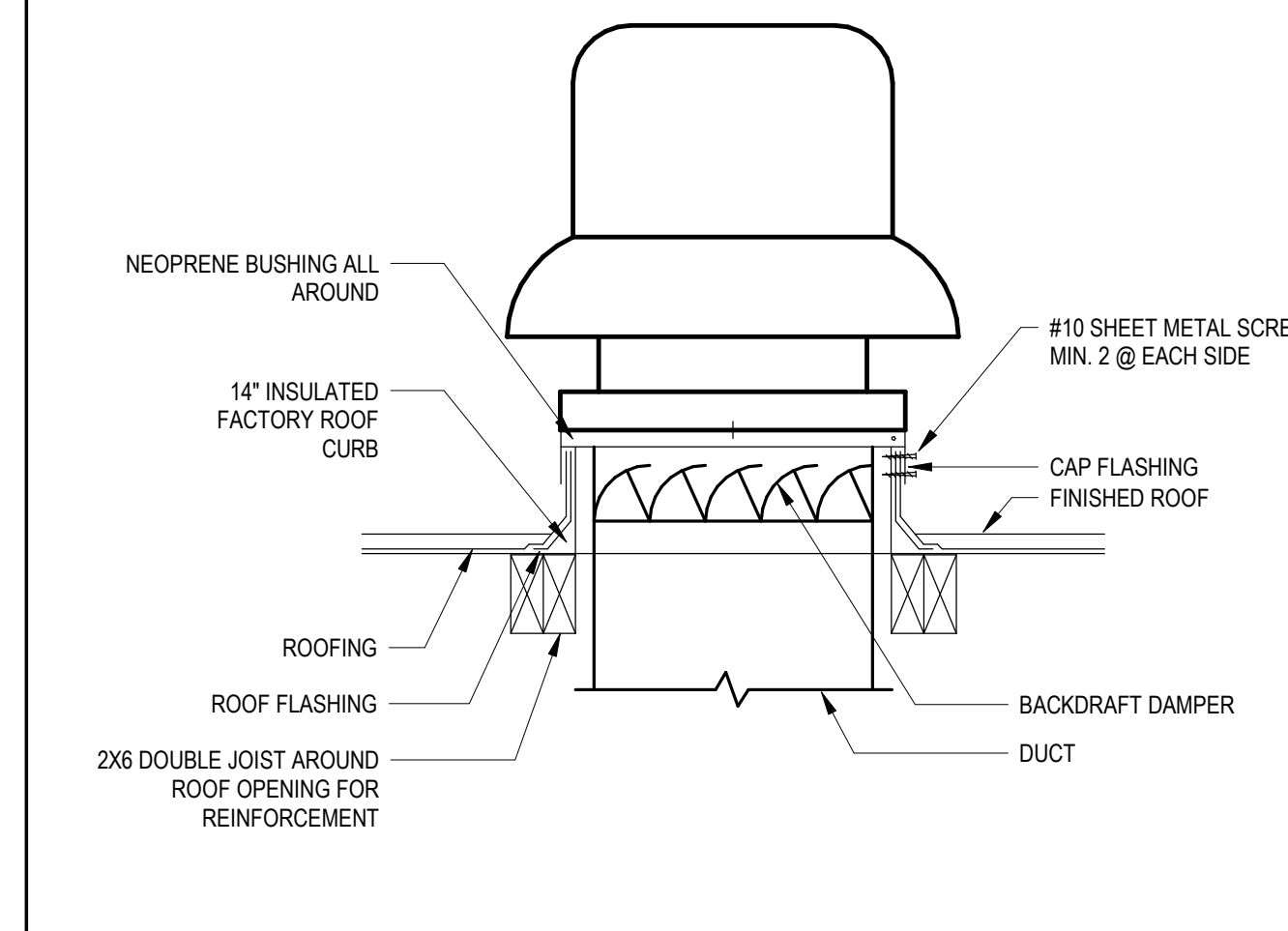
Project Name
SHAKE SHACK

Project Number
005.3688.000

Description
MECHANICAL DETAILS

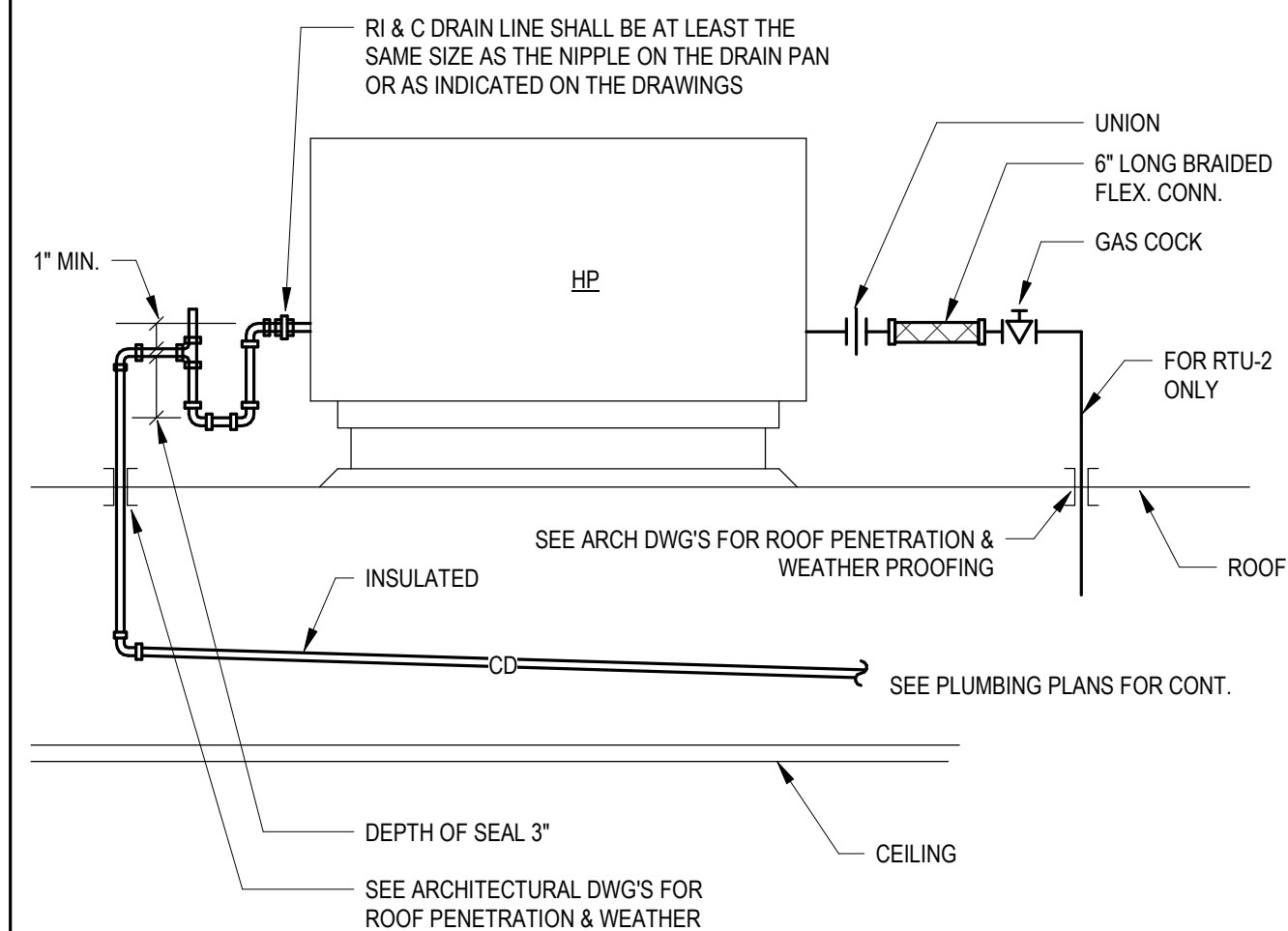
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M501



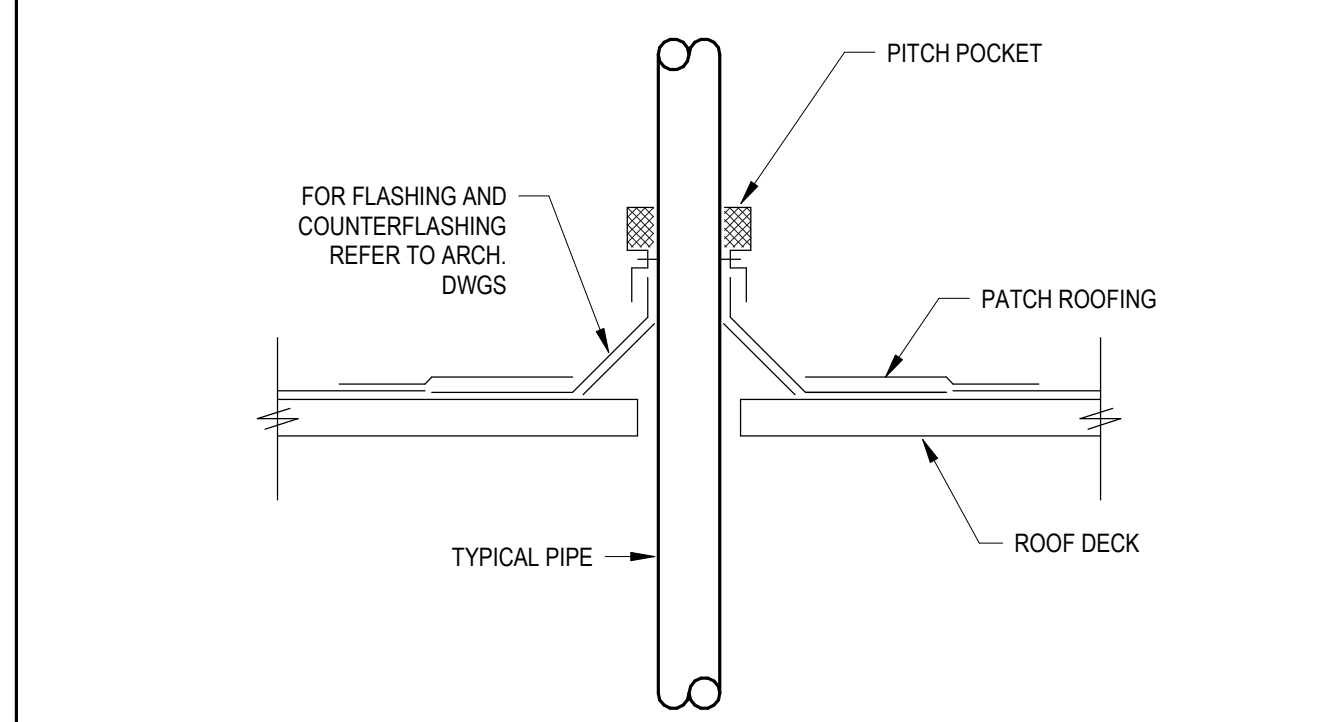
- NOTES:
1. DUCT SHALL BE 1" SMALLER THAN ROOF OPENING.
2. ROOF OPENING SHALL CONFORM TO MANUFACTURER'S CURB SIZE

EXHAUST FAN MOUNTING DETAIL 5



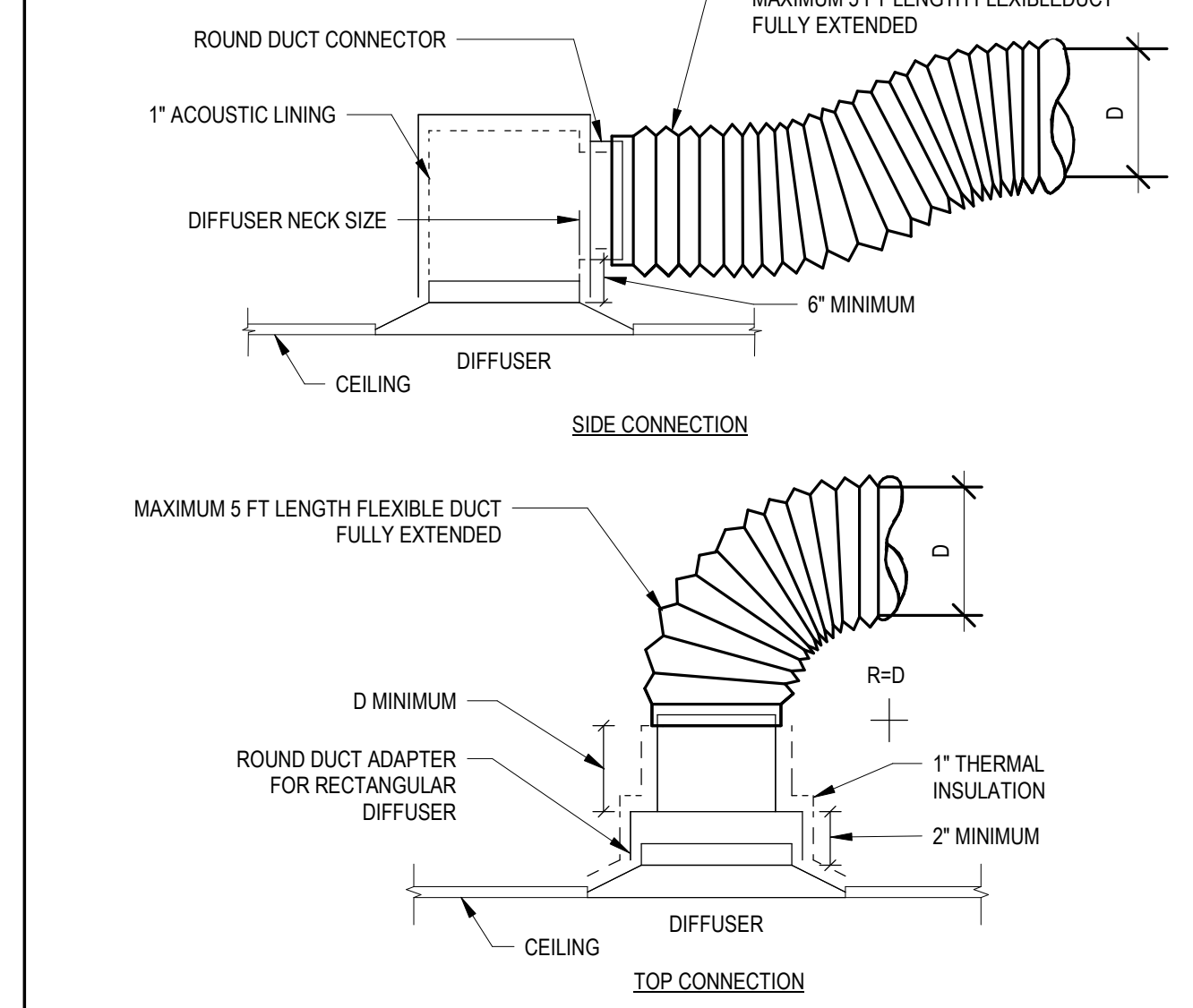
- NOTES:
ALL EXPOSED PIPING SHALL BE POLISHED CHROME PLATED

HP GAS/COND. DRAIN CONNECTION 3

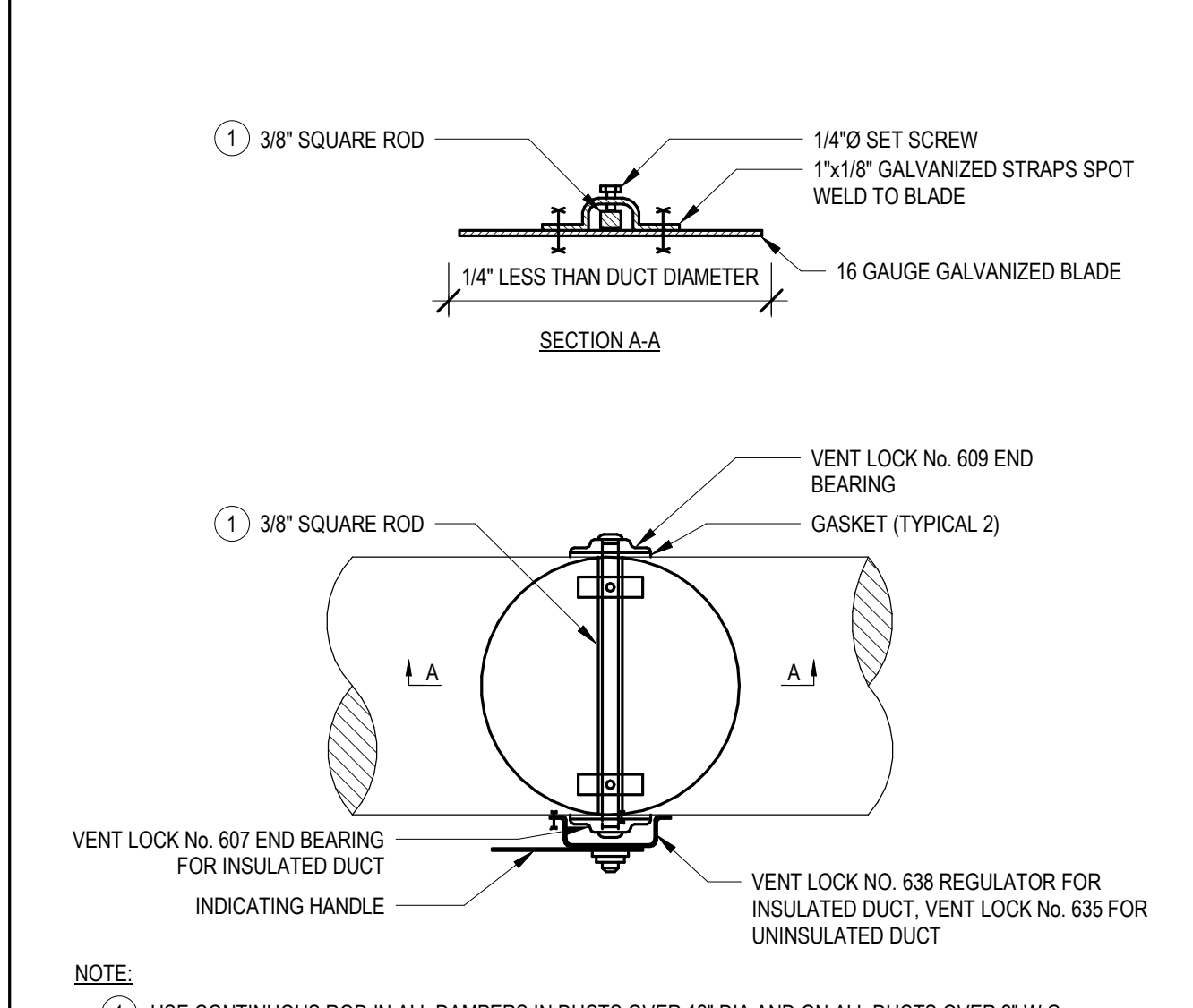


- NOTES:
1. PROVIDE PITCH POCKET CONSTRUCTION. ADDITIONAL FLASHING OR WEATHER CAP AS REQUIRED FOR WATERPROOF CONSTRUCTION. DO NOT MECHANICALLY FASTEN PIPE TO STRUCTURE IN ANY WAY.
2. SPACE BETWEEN PIPE AND SLEEVE SHALL BE FREE OF ANY FOREIGN MATERIALS.
3. PIPE SHALL NOT CONTACT STRUCTURE, AND WEDGES SHALL NOT BE USED TO MAINTAIN PIPE IN POSITION.
4. PIPE TO BE CENTERED IN OPENING; PROVIDE ADDITIONAL CLEARANCE FOR POSITIONAL CHANGE OF PIPE DUE TO LOADING OF PIPE OR OPERATION OF SYSTEM.

PIPE THROUGH ROOF 8



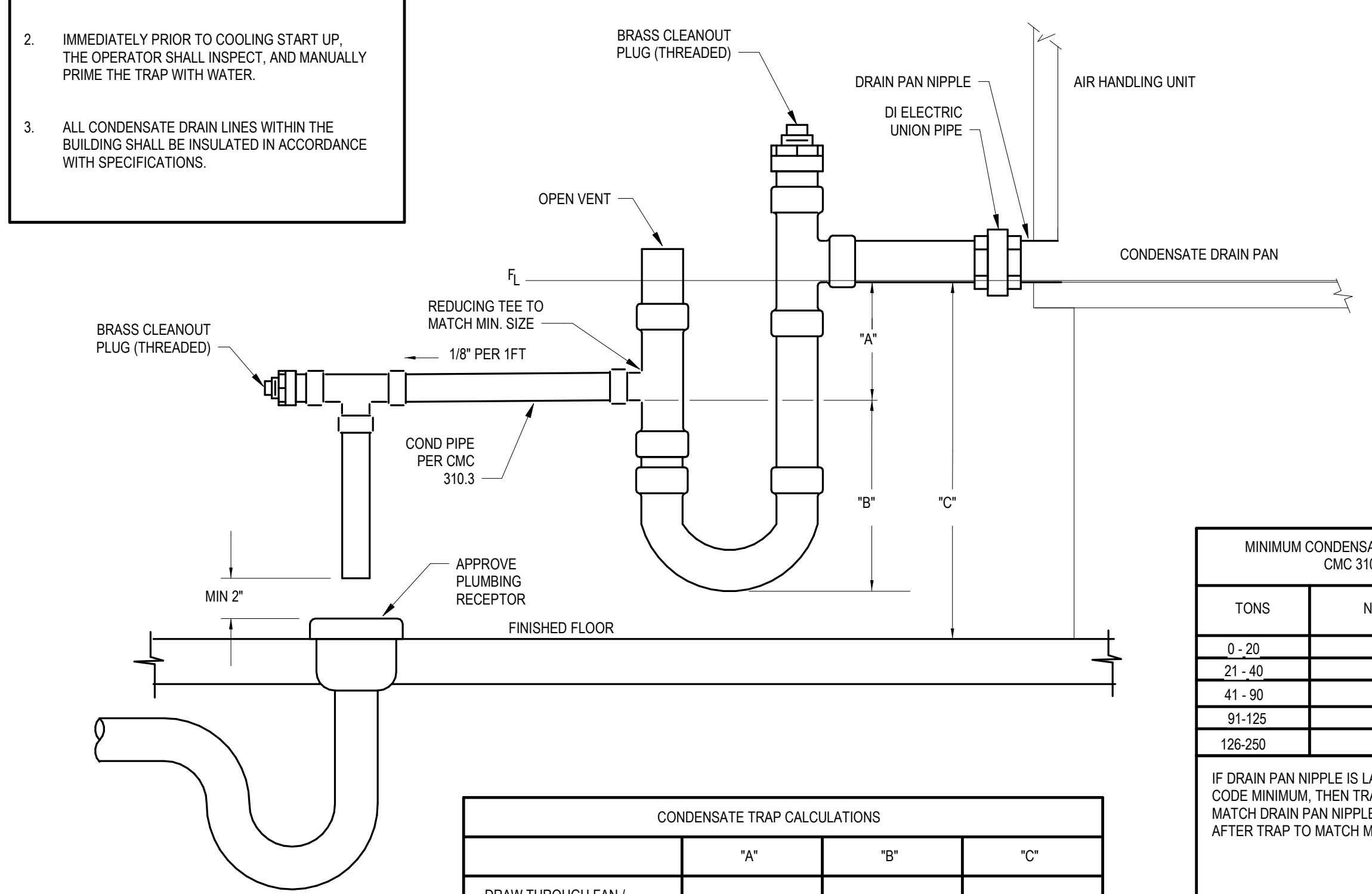
DIFFUSER CONNECTION DETAIL 4



- NOTE:
1. USE CONTINUOUS ROD IN ALL DAMPERS IN DUCTS OVER 12" DIA AND ON ALL DUCTS OVER 2" W.G.

ROUND VOLUME DAMPER 2

- NOTES:
1. TYPE 1/2" COPPER CONDENSATE DRAIN PIPE TO RECEPTOR.
2. IMMEDIATELY PRIOR TO COOLING START UP, THE OPERATOR SHALL INSPECT, AND MANUALLY PRIME THE TRAP WITH WATER.
3. ALL CONDENSATE DRAIN LINES WITHIN THE BUILDING SHALL BE INSULATED IN ACCORDANCE WITH SPECIFICATIONS.

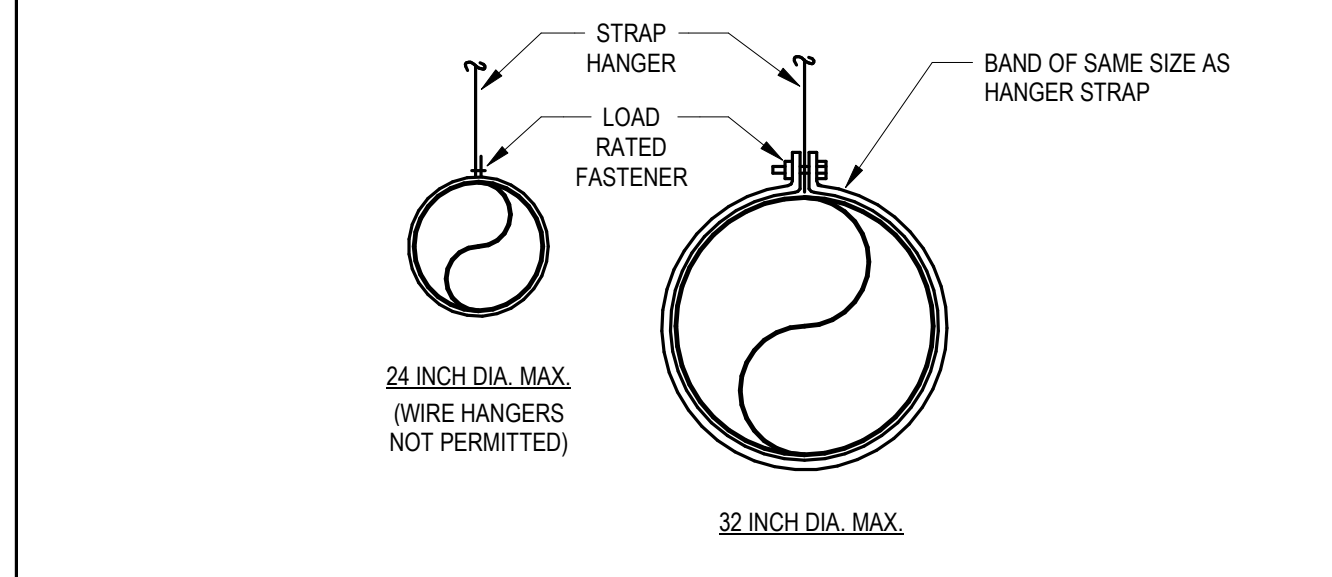


	"A"	"B"	"C"
DRAW THROUGH FAN / NEGATIVE PRESSURE TRAP	TSP+1"	0.5A+PIPE O.D.	MIN. A+B+2"
BLOW THROUGH FAN / POSITIVE PRESSURE TRAP	1" MIN.	TSP+1"	MIN. A+B+2"
TSP= TOTAL STATIC PRESSURE			

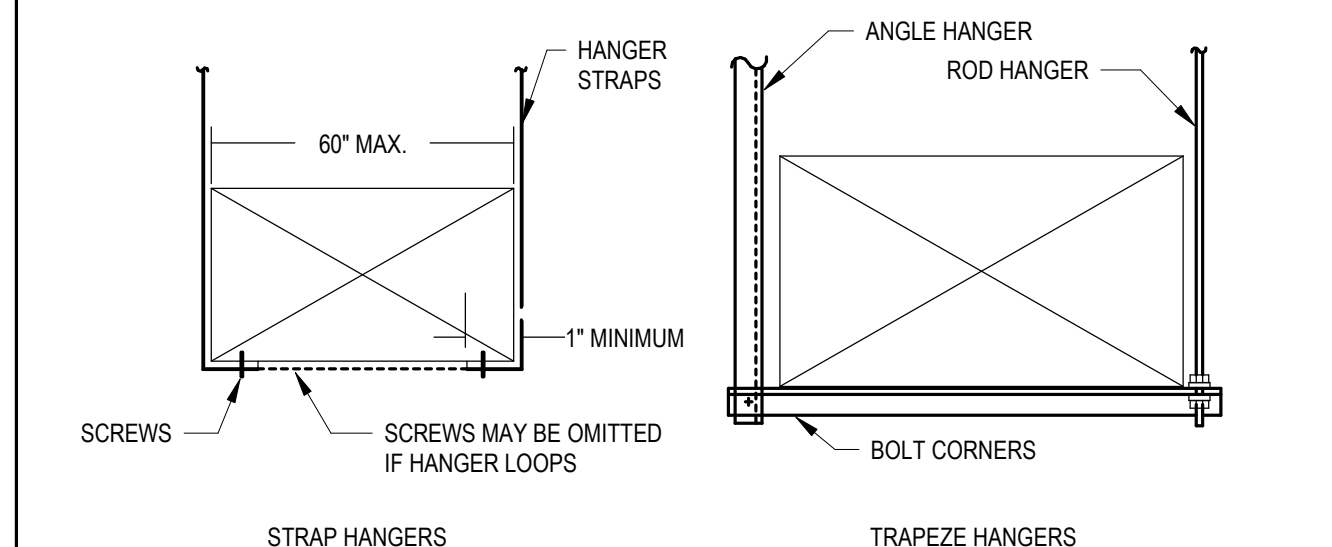
TONS	NOM. PIPE SIZE
0 - 20	3/4"
21 - 40	1"
41 - 60	1-1/4"
61 - 125	1-1/2"
126 - 250	2"

IF DRAIN PAN NIPPLE IS LARGER THAN CODE MINIMUM, THEN TRAP SHALL MATCH DRAIN PAN NIPPLE. REDUCE AFTER TRAP TO MATCH MINIMUM SIZE.

HORIZONTAL ROUND DUCT SUPPORT DETAIL 7

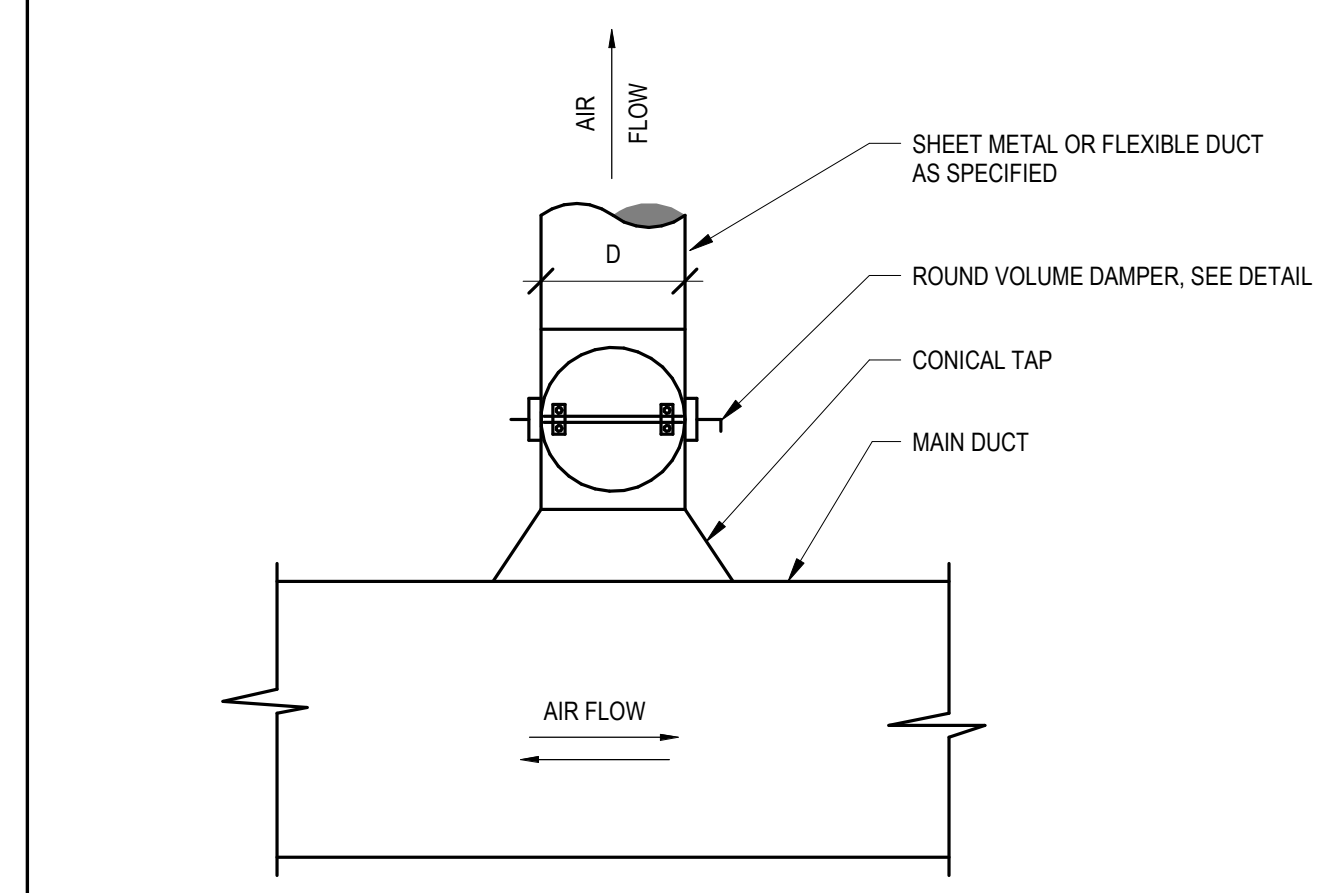


- NOTES:
1. APPLICABLE FOR DUCT SIZE UP TO MAXIMUM 32"Ø.
2. FOR HANGER SIZE AND SPACING, SEE SMACNA HVAC DUCT CONSTRUCTION STANDARDS TABLE 5-2.
3. FOR UPPER ATTACHMENT TO BUILDING, SEE SMACNA HVAC DUCT CONSTRUCTION STANDARDS FIG. 5-1 TO 5-4, WITH SPECIFIC BUILDING STRUCTURAL ENGINEER APPROVAL. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS WITH DETAILS AND SUPPORT LOCATIONS.
4. ALL DUCT HANGER AND ATTACHMENTS SHALL BE REVIEWED AND APPROVED BY SEOR BEFORE FABRICATION AND INSTALLATION.

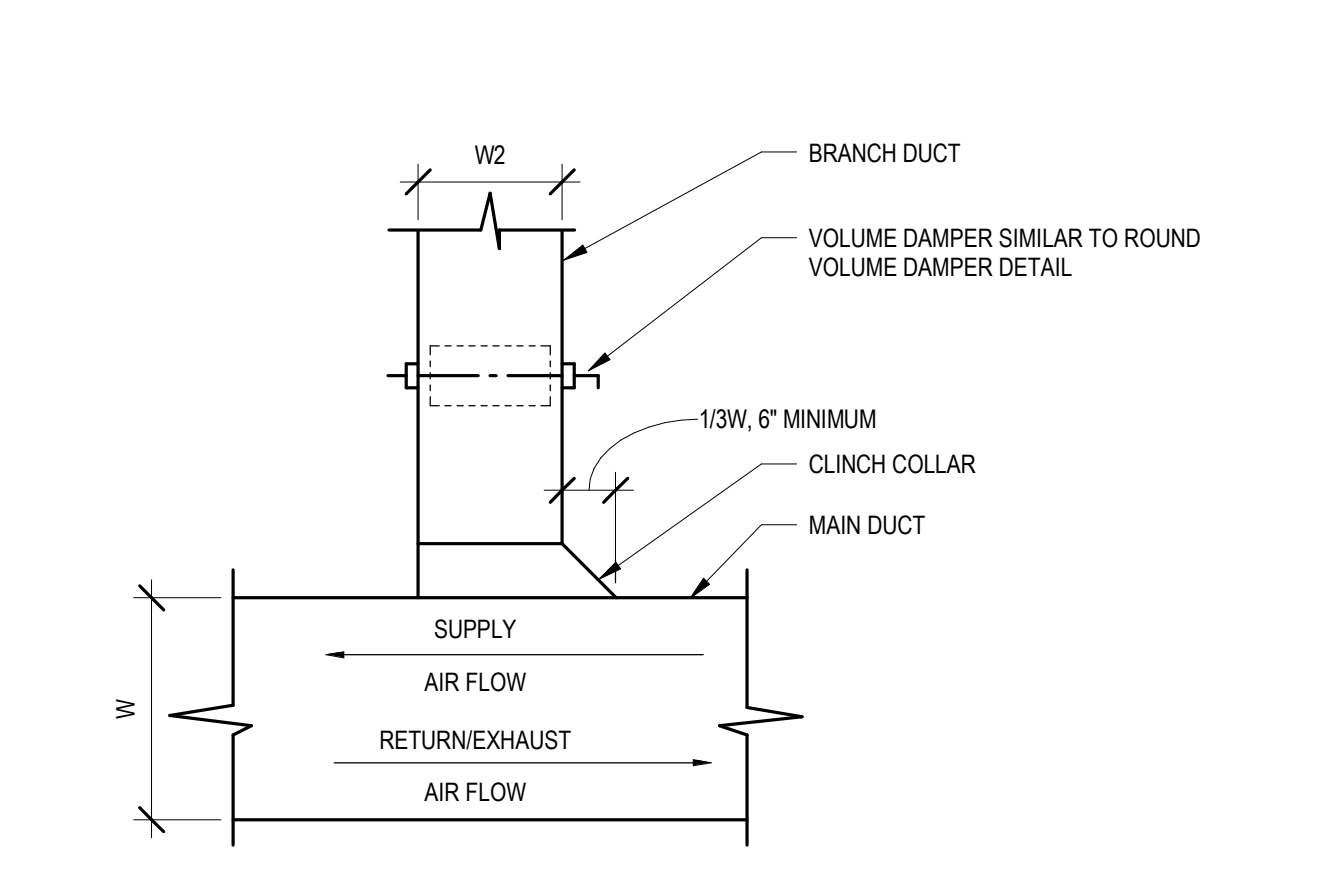


- NOTES:
1. APPLICABLE FOR DUCT SIZE UP TO ITS CROSS SECTIONAL AREA OF MAXIMUM 6 SQ. FT.
2. FOR HANGERS SIZE AND SPACING, SEE SMACNA HVAC DUCT CONSTRUCTION STANDARDS TABLE 5-1.
3. FOR UPPER ATTACHMENT TO BUILDING, SEE SMACNA HVAC DUCT CONSTRUCTION STANDARDS FIG. 5-1 TO 5-4, WITH SPECIFIC BUILDING STRUCTURAL ENGINEER APPROVAL. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS WITH DETAILS AND SUPPORT LOCATIONS.
4. ALL DUCT HANGER AND ATTACHMENTS SHALL BE REVIEWED AND APPROVED BY SEOR BEFORE FABRICATION AND INSTALLATION.

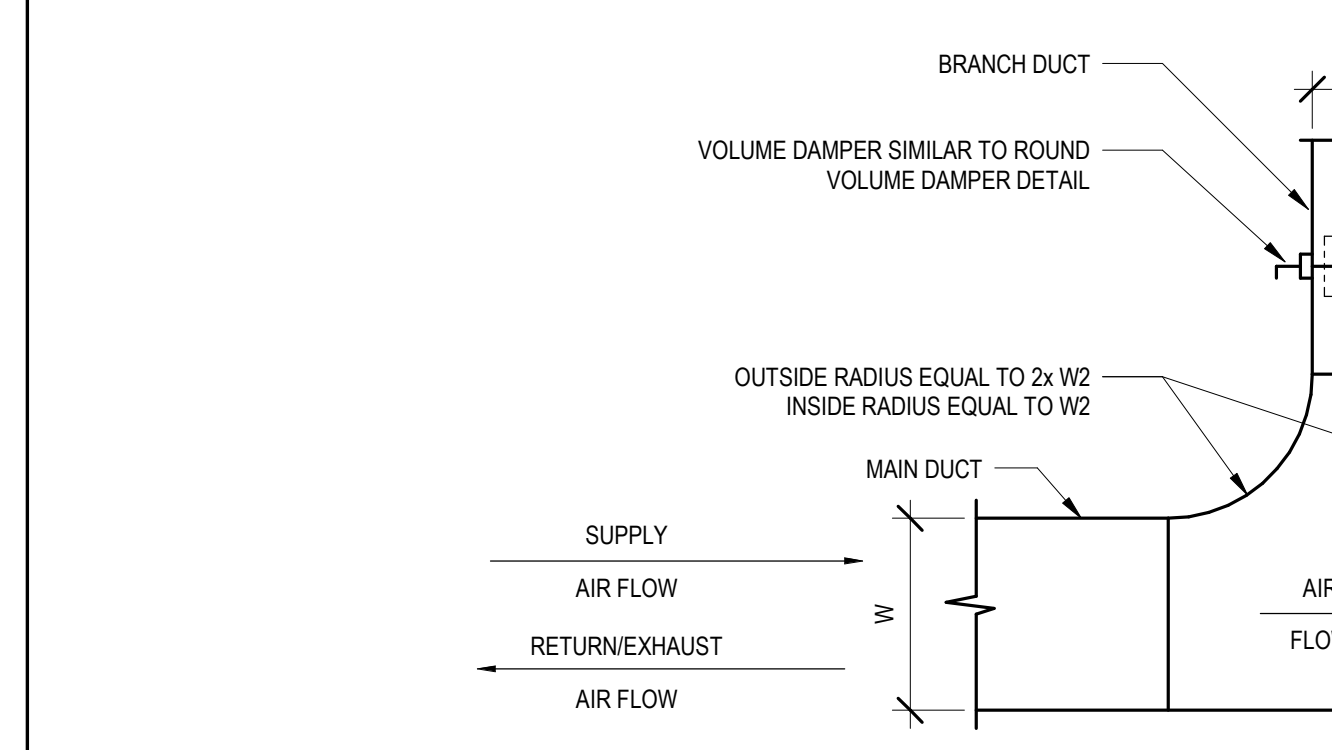
RECTANGULAR DUCT SUPPORT 6



- NOTES:
1. DEPTH OF MAIN DUCT MUST BE 2" LARGER THAN CONICAL DIAMETER



- NOTES:
1. DEPTH AT W1 MUST BE AT LEAST 2" THAN DEPTH AT W2



- NOTES:
1. DEPTH OF DUCT FOR W1 AND W2 SHOULD BE EQUAL.

DUCTWORK CONNECTION DETAIL 1

CONDENSATE TRAP DETAIL 9

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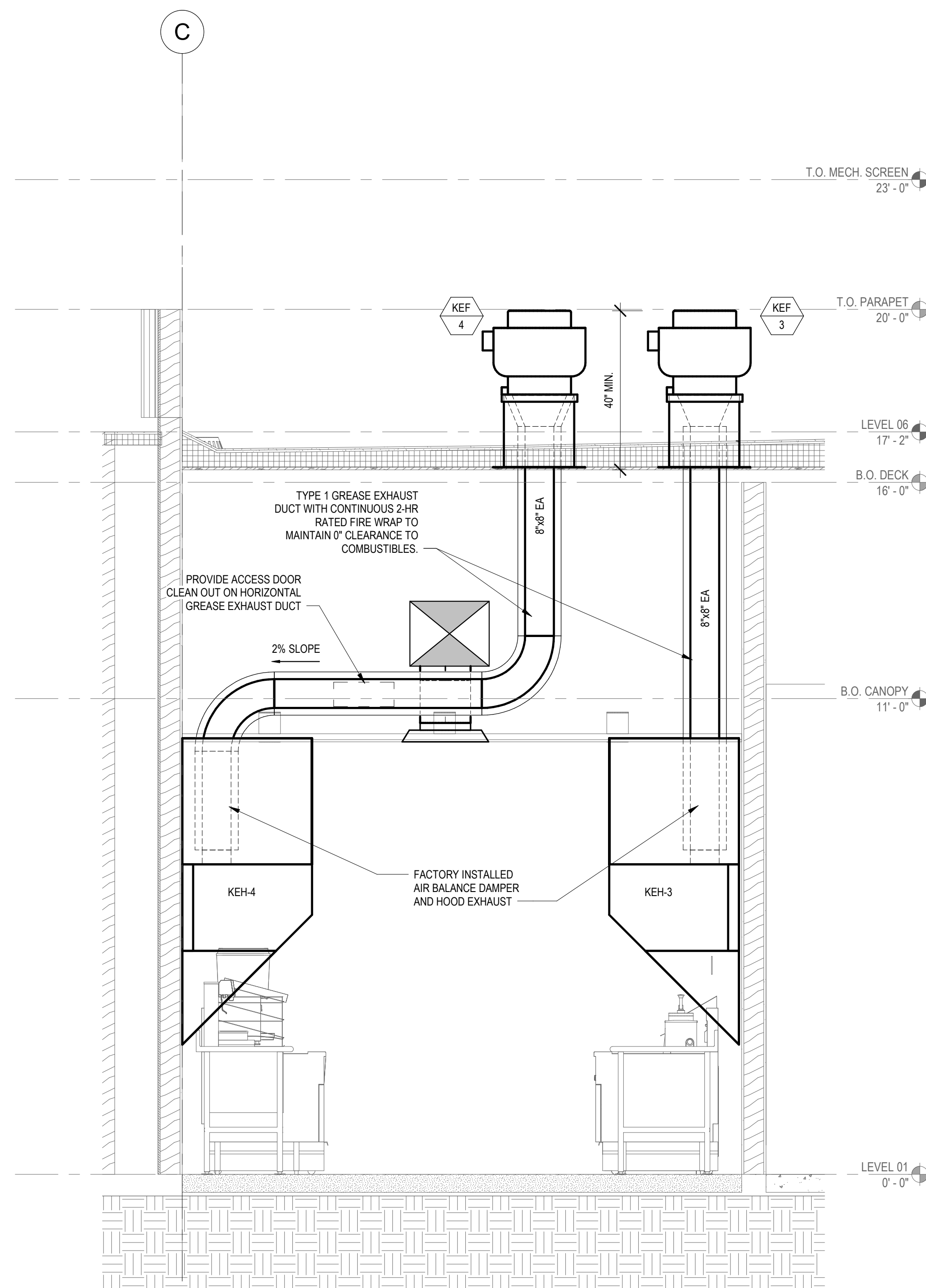


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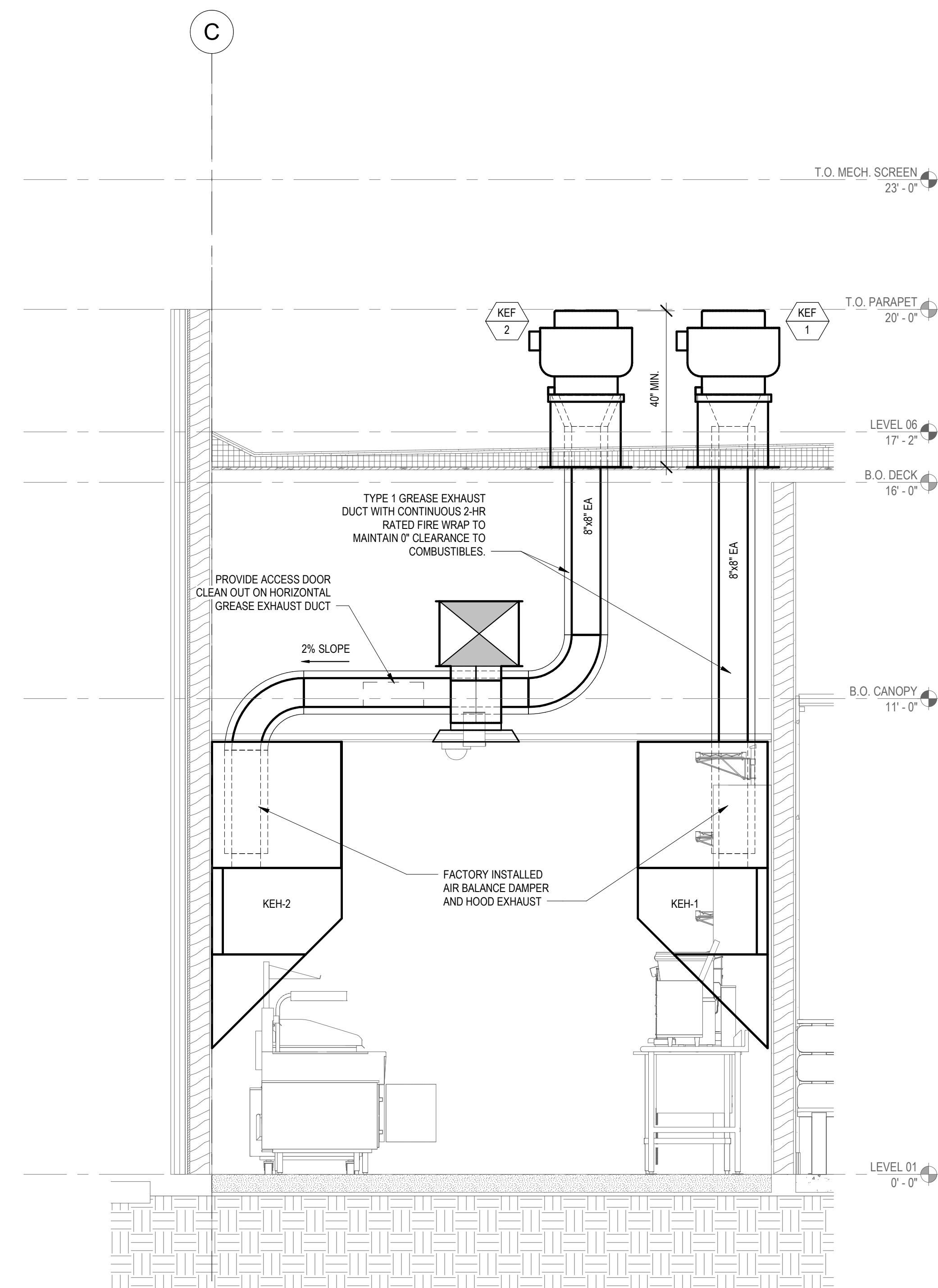
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Date	Description
11/11/2022	ISSUE FOR PERMIT/BID



2 KEH-3 & KEH-4 HOOD SECTION
SCALE: 1/2" = 1'-0"



1 KEH-1 & KEH-2 HOOD SECTION
SCALE: 1/2" = 1'-0"

Seal / Signature



Project Name
SHAKE SHACK

Project Number
005.3688.000

Description
MECHANICAL ELEVATIONS

Scale
1/2" = 1'-0"

M502

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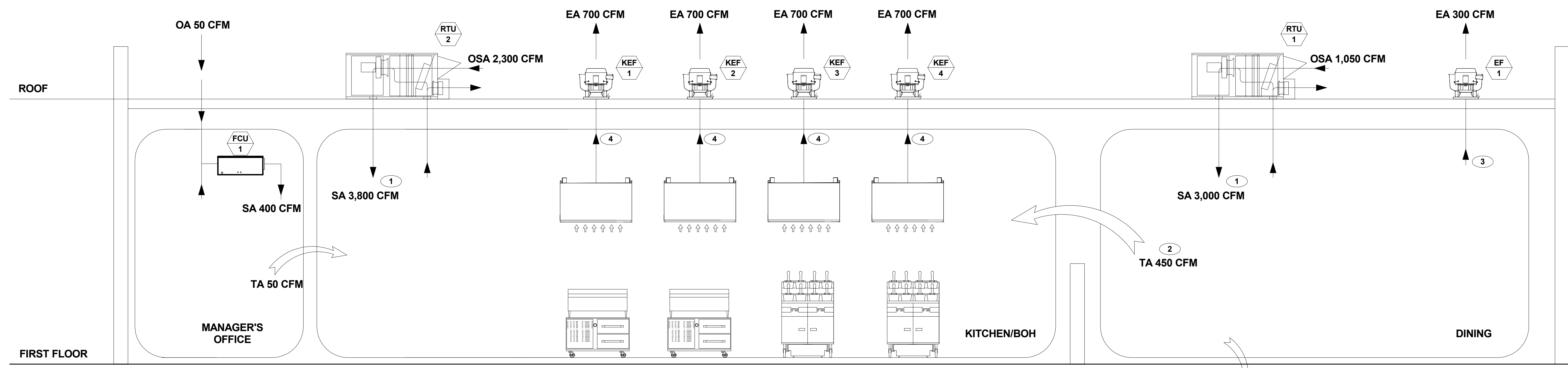
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AIR BALANCE TABLE AT DESIGN						
	HVAC SUPPLY (CFM)	HVAC RETURN (CFM)	HVAC OSA (CFM)	HOOD EXHAUST (CFM)	GENERAL EXHAUST (CFM)	AREA SERVED
RTU-1	3,000	1,950	1,050	-	-	DINING
RTU-2	3,800	1,500	2,300	-	-	KITCHEN
FCU-1	400	350	50	-	-	OFFICE
KEF-1	-	-	-	700	-	GRILL-1
KEF-2	-	-	-	700	-	GRILL-2
KEF-3	-	-	-	700	-	FRYER-1
KEF-4	-	- <td -	700	-	FRYER-2	
EF-1	-	-	-	-	300	RESTROOMS
TOTAL	7,200	3,800	3,400	2,800	300	
OSA			3,400	-3,100		

TOTAL PRESSURIZATION DIFFERENCE = +300



- KEYNOTES:**
- TOTAL OF AIR OUTLETS.
 - TRANSFER AIR TO KITCHEN FROM DINING.
 - TOTAL OF RESTROOM EXHAUST FANS.
 - KITCHEN HOOD EXHAUST.
 - EXFILTRATION

Date	Description
11/11/2022	ISSUE FOR PERMIT/BID

Seal / Signature



Project Name
SHAKE SHACK

Project Number
005.3688.000

Description
MECHANICAL AIRFLOW DIAGRAMS

Scale
3/8" = 1'-0"

M601



W 190TH STREET AT WESTERN AVENUE
TORRANCE, CA 90501

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GENERAL

ALL ROOFTOP UNITS SHALL SHUT DOWN UPON ALARM FROM KITCHEN EXHAUST HOOD FIRE EXTINGUISHING SYSTEM.

RTU-1

- DURING OCCUPIED HOURS, UNIT SHALL RUN CONTINUOUSLY AND OUTDOOR AIR DAMPER AND RETURN AIR DAMPER SET TO MINIMUM POSITION TO MAINTAIN MINIMUM VENTILATION.
- WHEN FREE COOLING IS NOT AVAILABLE, THE COMPRESSORS WILL BE CONTROLLED BY THE ZONE THERMOSTAT. WHEN FREE COOLING IS AVAILABLE, THE OUTDOOR AIR DAMPER IS MODULATED BY ECONOMIZER CONTROL TO PROVIDE A 50 DEG-F TEMPERATURE INTO THE ZONE. AS THE MIXED AIR TEMPERATURE FLUCTUATES ABOVE 55DEG-F OR BELOW 50 DEG-F, DAMPERS WILL BE MODULATED (OPEN OR CLOSE) TO BRING THE MIXED-AIR TEMPERATURE BACK WITHIN CONTROL.
- IF MECHANICAL COOLING IS UTILIZED WITH FREE COOLING, THE OUTDOOR-AIR DAMPER WILL MAINTAIN ITS CURRENT POSITION AT THE TIME THE COMPRESSOR IS STARTED. IF THE INCREASE IN COOLING CAPACITY CAUSES THE MIXED-AIR TEMPERATURE TO DROP BELOW 45 DEG-F, THEN THE OUTDOOR-AIR DAMPER POSITION WILL BE DECREASED TO THE MINIMUM POSITION. IF THE MIXED AIR TEMPERATURE CONTINUES TO FALL, THE OUTDOOR AIR DAMPER WILL CLOSE. CONTROL RETURNS TO NORMAL ONCE THE MIXED AIR TEMPERATURE RISES ABOVE 48 DEG-F.
- THE POWER EXHAUST FANS WILL BE ENERGIZED AND DE-ENERGIZED AS THE OUTDOOR AIR DAMPER OPENS AND CLOSSES. FOR ECONOMIZER OPERATION, THERE MUST BE A THERMOSTAT CALL FOR THE FAN.
- IF THE UNIT IS ON OCCUPIED MODE AND THE FAN IS ON, THE DAMPER WILL OPERATE AT MINIMUM POSITION. OTHERWISE, THE DAMPER WILL BE CLOSED. WHEN THE ECONOMIZER IS IN OCCUPIED MODE AND A CALL FOR COOLING EXISTS, THE CONTROL WILL FIRST CHECK FOR INDOOR FAN OPERATION. IF THE FAN IS NOT ON, THEN COOLING WILL NOT BE ACTIVATED.
- IF THE FAN IS ON, THEN THE CONTROL WILL OPEN THE ECONOMIZER TO THE MINIMUM POSITION. IF FREE COOLING CAN BE USED AS DETERMINED FROM THE APPROPRIATE CHANGEOVER COMMAND (73 DEG-F DB), THEN THE CONTROL WILL MODULATE THE DAMPERS OPEN TO MAINTAIN THE MIXED-AIR TEMPERATURE SET-POINT AT 50 DEG-F TO 55 DEG-F. IF THERE IS A FURTHER DEMAND FOR, THEN THE CONTROL WILL BRING ON COMPRESSOR STAGE 1 TO MAINTAIN THE MIXED-AIR TEMPERATURE SET POINT.

DOAS-1

- DURING OCCUPIED HOURS, UNIT SHALL RUN CONTINUOUSLY AND:
-WHEN THE EXHAUST HOOD CONTROLLER IS TURNED ON, ACTIVATING THE KITCHEN EXHAUST, THE MIXING BOX DAMPER IS MODULATED TO PROVIDE 2,300 CFM OF OA AIR FOR MAKE UP AIR.
-WHEN THE EXHAUST HOOD CONTROLLER IS TURNED OFF, DEACTIVATING THE KITCHEN EXHAUST, THE MIXING BOX DAMPER IS MODULATED TO PROVIDE 250 CFM OF OA AIR FOR MINIMUM VENTILATION.
- UNIT SHALL BE OUTFITTED WITH CASLINK FOR FUTURE CLOUD BASED MONITORING, WHICH MONITORS EVERY POINT OF OPERATION. PROVIDES CONFIGURABLE AUTOMATED FAULT ALERT E-MAILS, AND REMOTE CONTROL CAPABILITIES.
- SPACE TEMP CONTROL (HEAT PUMP) MAINTAINS A CONSTANT SUPPLY AIR VOLUME AND MODULATES THE COMPRESSOR FREQUENCY TO ACCURATELY MAINTAIN THE DESIRED SPACE TEMPERATURE SET POINT AND COMPENSATE FOR FLUCTUATIONS IN ENTERING OA AIR TEMPERATURE USING PID CONTROLS DESIGNED SPECIFICALLY FOR THE DOAS.
- WHEN THE RELATIVE HUMIDITY IN THE SPACE IS ABOVE THE MAXIMUM SET POINT, THE COOLING CAPACITY SHALL BE STAGED TO PROVIDE A OFF COIL TEMPERATURE OF 54 DEG-F AND APPLY HOT GAS REAHEAT TO OBTAIN THE REQUIRED SUPPLY AIR TEMPERATURE TO ACHIEVE THE SPACE TEMPERATURE SET POINT.
- THE UNIT WILL BE CAPABLE OF MODULATING AND SHUTTING OFF THE COMPRESSOR TO PROVIDE FREE COOLING AND DEHUMIDIFICATION AS THE OUTDOOR AIR CONDITIONS ALLOW.

ECU-1

- DURING OCCUPIED HOURS, UNIT SHALL RUN CONTINUOUSLY.
- SPACE TEMP CONTROL (HEAT PUMP) MODULATES THE COMPRESSOR FREQUENCY TO ACCURATELY MAINTAIN THE DESIRED SPACE TEMPERATURE SET POINT AND COMPENSATE FOR FLUCTUATIONS IN ENTERING OA AIR TEMPERATURE.

KITCHEN EXHAUST FANS

- KEF 1,2,3 AND 4 SHALL BE ENERGIZED BY CONTACTORS IN THE HOOD CONTROLLER. COORDINATE INSTALLATION WITH ELECTRICAL CONTRACTOR.
- UPON ALARM FROM KITCHEN EXHAUST HOOD FIRE EXTINGUISHING SYSTEM, EXHAUST FAN SHALL CONTINUE TO RUN.
- NORMAL TEMPERATURE TEST: EXHAUST FANS SHALL OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300 DEG-F UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

RESTROOM EXHAUST FAN

- EXHAUST FAN EF-1 SHALL OPERATE CONTINUOUSLY DURING OCCUPIED HOURS. INTERLOCK WITH RTU-1.

UTILITY ROOM EXHAUST FAN

- EXHAUST FAN EF-2 SHALL BE ENERGIZED WHEN THE SPACE TEMPERATURE IN THE UTILITY ROOM EXCEEDS 80 DEG-F.

KITCHEN EXHAUST HOODS

- THE ELECTRICAL PACKAGE, TYPICALLY FP, IS DESIGNED TO THERMOSTATICALLY ACTIVATE THE EXHAUST FANS FOR AN EXHAUST HOOD WHENEVER ELEVATED TEMPERATURES ARE SENSED IN THE EXHAUST SYSTEM. THIS OPTION WILL MEET THE REQUIREMENTS OF BY PROVIDING A THERMOSTAT(S) MOUNTED IN THE DUCT OR HOOD RISER TO SENSE INCREASED EXHAUST TEMPERATURES.
- CONTROLS SHALL BE LISTED BY ETL (UL 508A). THE CONTROL ENCLOSURE SHALL BE NEMA 1 RATED AND LISTED FOR INSTALLATION INSIDE OF THE EXHAUST HOOD UTILITY CABINET. THE CONTROL ENCLOSURE MAY BE CONSTRUCTED OF STAINLESS STEEL OR PAINTED STEEL.
- TEMPERATURE PROBES(S) LOCATED IN THE DUCT RISER SHALL BE CONSTRUCTED OF STAINLESS STEEL.
- A ROOM TEMPERATURE SENSOR IS ALSO PROVIDED FOR FIELD INSTALLATION IN THE KITCHEN SPACE IN ORDER TO START THE FAN(S) BASED ON THE TEMPERATURE DIFFERENTIAL BETWEEN THE ROOM AND THE EXHAUST AIR IN THE DUCT, RATHER THAN FIXED SET-POINTS. THE SYSTEM IS FACTORY PRE-SET TO ACTIVATE THE FANS AT 10 DEG-F ABOVE THE ROOM TEMPERATURE.
- ONCE THE DUCT TEMPERATURE REACHES THE ACTIVATION POINT, THE EXHAUST FANS WILL BE ACTIVATED. THE CONTROLS ALSO PROVIDE HYSTERESIS TO PREVENT CYCLING OF THE FANS AFTER THE COOKING APPLIANCES HAVE BEEN TURNED OFF AND THE HEAT IN THE EXHAUST SYSTEM IS REDUCED. THE HYSTERESIS IS FACTORY SET 2 DEGREES AND WILL KEEP THE EXHAUST RUNNING UNTIL THE TEMPERATURE FALLS 2 DEGREES BELOW THE ACTIVATION SET POINT. A HYSTERESIS TIMER ALSO EXISTS TO KEEP THE FANS RUNNING FOR AT LEAST 30 MIN AFTER BEING ACTIVATED BY THE TEMPERATURE RISE.
- THE ACTIVATION AND HYSTERESIS SETTINGS MAY BE FIELD ADJUSTED ON THE BOARD LCD INTERFACE LOCATED INSIDE THE CONTROL ENCLOSURE TO MEET APPLICATION NEEDS. THE PANEL IS FACTORY CONFIGURED TO SHUT DOWN SUPPLY FANS, TURN ON THE EXHAUST FANS AND TURN OFF THE HOOD LIGHTS IN A FIRE CONDITION.

Date	Description
11/11/2022	ISSUE FOR PERMIT/BD

Seal / Signature



Project Name

SHAKE SHACK

Project Number

005.3688.000

Description

MECHANICAL CONTROLS

Scale

NTS

M602

SPECIFICATION TABLE OF CONTENTS

- SECTION 23050 - COMMON WORK RESULTS FOR HVAC
SECTION 23059 - HANGERS AND SUPPORTS
SECTION 23060 - IDENTIFICATION
SECTION 23069 - TESTING, ADJUSTING, AND BALANCING FOR HVAC
SECTION 23070 - HVAC INSULATION
SECTION 23080 - COMMISSIONING
SECTION 23200 - REFRIGERANT PIPING
SECTION 23313 - METAL DUCTS
SECTION 23330 - AIR DUCT ACCESSORIES
SECTION 23373 - DIFFUSERS, REGISTERS AND GRILLES

SECTION 23050 - COMMON WORK RESULTS FOR HVAC

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS, AND DIVISION A SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

1.2 SCOPE OF WORK

- A. PROVIDE LABOR, INCLUDING FIELD ERECTION AND SUPERVISION, MATERIALS, EQUIPMENT AND ANCHLAGES, AND COORDINATE, PROCURE, FABRICATE, DELIVER, ERECT OR INSTALL, INTERFACE WITH EXISTING WORK, START, DEBURG AND TEST ALL SYSTEMS AS NECESSARY TO PROVIDE THE OWNER WITH A COMPLETE OPERATING FACILITY IN CONFORMANCE WITH THE CONTRACT DOCUMENTS AND IN CONFORMITY WITH REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION.

1.3 SCHEDULING

- A. SUBMIT SCHEDULES INDICATING PROPOSED METHODS AND SEQUENCE OF OPERATIONS FOR DEMOLITION PRIOR TO COMMENCEMENT OF WORK INCLUDING COORDINATION FOR SHUT-OFF OF UTILITY SERVICES AND DETAILS FOR DUST AND NOISE CONTROL.

1.4 SCHEDULING

- A. SUBMIT SCHEDULES INDICATING PROPOSED METHODS AND SEQUENCE OF OPERATIONS FOR DEMOLITION PRIOR TO COMMENCEMENT OF WORK INCLUDING COORDINATION FOR SHUT-OFF OF UTILITY SERVICES AND DETAILS FOR DUST AND NOISE CONTROL.

1.5 MAINTENANCE OF EXISTING UTILITY SERVICES

- A. UNINTERRUPTED NORMAL USE OF THE EXISTING FACILITIES MUST BE MAINTAINED DURING THE TIME REQUIRED TO PERFORM THE COMPLETE INSTALLATION OF THE WORK INDICATED IN THE CONTRACT DOCUMENTS. IT IS MANDATORY THAT THE EXISTING BUILDINGS BE MAINTAINED IN SERVICE.

1.6 INSTALLATION OF THE WORK

- A. THE CONTRACTOR SHALL CERTIFY THE FOLLOWING ITEMS ARE CORRECT WHEN USING SUBSTITUTED PRODUCTS OTHER THAN THOSE SCHEDULED OR SHOWN ON THE DRAWINGS AS A BASIS OF DESIGN.

1.7 MAINTENANCE MANUALS AND AS-BUILT DRAWINGS

- A. PROVIDE FOUR (4) COPIES OF OPERATING AND MAINTENANCE MANUAL FOR OWNERS USE FOR EACH PIECE OF EQUIPMENT. EACH ITEM SHALL BE CROSS-REFERENCED AND NUMBERED WITH AS-BUILT DRAWING DESCRIPTIONS.

1.8 SEISMIC SUPPORT

- A. CONTRACTOR SHALL SUPPORT AND BRACE ALL NEW HVAC PLUMBING AND FIRE PROTECTION SYSTEMS IN ACCORDANCE WITH REQUIREMENTS SPECIFIED.

1.9 PRODUCT HANDLING

- A. PROTECTION: PROTECT MATERIALS AND EQUIPMENT FROM DAMAGE DURING SHIPPING, STORAGE AND HANDLING. REMOVE FROM THE SITE ANY WET OR DAMAGED DUCT LINER OR INSULATION.

1.10 CONTRACT DRAWINGS

- A. CONTRACT DRAWINGS FOR MECHANICAL WORK ARE DIAGRAMMATIC, INTENDED TO CONVEY THE SCOPE OF THE WORK AND INDICATE GENERAL ARRANGEMENT OF EQUIPMENT, DUCTS, PIPING AND APPROXIMATE SIZES AND LOCATIONS OF EQUIPMENT AND OUTLETS. DO NOT SCALE DRAWINGS FOR MEASUREMENTS.

1.11 CONTRACT DRAWINGS

- A. CONSULT KITCHEN MECHANICAL, PLUMBING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL CONTRACTOR DRAWINGS AND SPECIFICATIONS TO BECOME AWARE OF ALL CONDITIONS AFFECTING THE WORK. COORDINATE INTERCONNECTING WORK WITH OTHER TRADES AFFECTED, AND VERIFY ALL SPACES IN WHICH THE WORK WILL BE INSTALLED.

C. WHERE JOB CONDITIONS REQUIRE REASONABLE CHANGES IN ORDER TO COORDINATE INSTALLATION WITH OTHER TRADES, THESE CHANGES SHALL BE MADE WITHOUT EXTRA COST TO THE OWNER.

1.1 DEMOLITION

- A. REMOVE ADJACENT MATERIALS INDICATED TO REMAIN. INSTALL AND MAINTAIN DUST AND NOISE BARRIERS TO KEEP DIRT, DUST, AND NOISE FROM BEING TRANSMITTED TO ADJACENT AREAS. REMOVE PROTECTION AND BARRIERS AFTER DEMOLITION OPERATIONS ARE COMPLETE.

B. LOCATE, IDENTIFY, AND PROTECT MECHANICAL SERVICES PASSING THROUGH DEMOLITION AREA AND SERVING OTHER AREAS OUTSIDE THE DEMOLITION LIMITS.

C. MATERIALS AND EQUIPMENT TO BE SALVAGED: REMOVE, DEMOLIT, AND DISCONNECT EXISTING MECHANICAL MATERIALS AND EQUIPMENT INDICATED TO BE REMOVED AND SALVAGED, AND DELIVER MATERIALS AND EQUIPMENT TO THE OWNER.

D. REPAIR OR REPLACE EQUIPMENT OR MATERIALS DAMAGED DURING DEMOLITION TO SATISFACTION OF OWNER'S DESIGNATED REPRESENTATIVE.

1.1.3 INTERRUPTION OF EXISTING UTILITY SERVICE:

- A. COORDINATE THE SHUT-OFF AND DISCONNECTION OF UTILITY SERVICES WITH THE OWNER AND THE UTILITY COMPANY.

B. NOTIFY THE OWNER'S REPRESENTATIVE OWNER'S PROJECT REPRESENTATIVE AT LEAST 5 DAYS PRIOR TO COMMENCING DEMOLITION OPERATIONS.

1.1.4 SCHEDULING:

- A. SUBMIT SCHEDULES INDICATING PROPOSED METHODS AND SEQUENCE OF OPERATIONS FOR DEMOLITION PRIOR TO COMMENCEMENT OF WORK INCLUDING COORDINATION FOR SHUT-OFF OF UTILITY SERVICES AND DETAILS FOR DUST AND NOISE CONTROL.

B. COORDINATE SEQUENCING WITH CONSTRUCTION PHASING AND OWNER OCCUPANCY.

1.1.5 MAINTENANCE OF EXISTING UTILITY SERVICES

- A. UNINTERRUPTED NORMAL USE OF THE EXISTING FACILITIES MUST BE MAINTAINED DURING THE TIME REQUIRED TO PERFORM THE COMPLETE INSTALLATION OF THE WORK INDICATED IN THE CONTRACT DOCUMENTS. IT IS MANDATORY THAT THE EXISTING BUILDINGS BE MAINTAINED IN SERVICE.

B. INVESTIGATE EXISTING CONDITIONS AND THE LOCATION OF ALL EXISTING EQUIPMENT AND THE LOCATION OF ALL EXISTING SERVICES BEFORE STARTING.

C. IF A SERVICE IS DISTURBED, IMMEDIATELY WITHOUT REGARD FOR WORKING HOURS, PLACE THE SERVICE BACK INTO OPERATION.

D. SUFFICIENT ADVANCE NOTICE SHALL BE GIVEN TO THE OWNER AND ITS PERMISSION OBTAINED PRIOR TO INTERRUPTION OF PRESENT SERVICES. IT SHOULD BE ASSUMED THAT DISRUPTION OF UTILITIES AND SERVICES WILL BE DONE AT OTHER THAN NORMAL WORKING HOURS. NO ADDITIONAL OR EXTRA PAYMENT WILL BE AUTHORIZED TO COMPLY WITH THESE REQUIREMENTS.

E. REPAIR, REPLACE AND MAINTAIN IN SERVICE ANY UTILITIES, FACILITIES, OR SERVICES UNDERGROUND, OVERGROUND, INTERIOR OR EXTERIOR, DAMAGED, BROKEN OR OTHERWISE RENDERED INOPERATIVE DURING THE COURSE OF CONSTRUCTION IN THE EXISTING BUILDING.

F. ALL OPENINGS MUST BE SECURELY COVERED, OR OTHERWISE PROTECTED, TO PREVENT INJURY DUE TO CARELESSLY OR RASHLY DROPPED TOOLS OR MATERIALS, RIG, DIRT, OR ANY FOREIGN MATTER. DAMAGED WORK SHALL BE REPAIRED OR REPLACED UNTIL WORK IS FULLY AND FINALLY ACCEPTED.

G. PROTECT HEATING EQUIPMENT AND ALL SIMILAR ITEMS OF EQUIPMENT FROM DIRT, GRIME, PLASTER, PAINT AND WATER DURING ALL PHASES OF CONSTRUCTION. THIS PROTECTION SHALL BE PROVIDED BY COVERING WITH TRANSPARENT PLASTIC SHEETING.

H. MAKE ALL CONNECTIONS TO EXISTING SYSTEM PIPING AND EQUIPMENT SYSTEMS DURING DESIGNATED PERIODS UPON APPROVAL OF THE OWNER AND AT NO INCREASE IN THE CONTRACT SUM.

I. DO NOT INTERRUPT EXISTING UTILITIES UTILIZED BY THE OWNER, EXCEPT AS APPROVED BY THE OWNER. INTERRUPTIONS MUST BE SCHEDULED TO SUIT THE OWNER'S REQUIREMENTS.

J. VERIFY ALL EXISTING WORK, WHERE EXISTING CONNECTIONS ARE PARTIAL, PROVIDE ALL NECESSARY MATERIALS, LABOR AND EQUIPMENT REQUIRED TO MODIFY EXISTING WORK. IN ADDITION, MAINTAIN INTEGRITY OF THE EXISTING SYSTEMS, RECTIFY ANY CONTAMINATION, DEGRADATION OF CLEANLINESS OR DAMAGE TO THE EXISTING SYSTEMS TO THE SATISFACTION OF THE OWNER.

1.1.6 INSTALLATION OF THE WORK

- A. THE CONTRACTOR SHALL CERTIFY THE FOLLOWING ITEMS ARE CORRECT WHEN USING SUBSTITUTED PRODUCTS OTHER THAN THOSE SCHEDULED OR SHOWN ON THE DRAWINGS AS A BASIS OF DESIGN.

1.7 MAINTENANCE MANUALS AND AS-BUILT DRAWINGS

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1.8 SEISMIC SUPPORT

- A. CONTRACTOR SHALL SUPPORT AND BRACE ALL NEW HVAC PLUMBING AND FIRE PROTECTION SYSTEMS IN ACCORDANCE WITH REQUIREMENTS SPECIFIED.

1.9 PRODUCT HANDLING

- A. PROTECTION: PROTECT MATERIALS AND EQUIPMENT FROM DAMAGE DURING SHIPPING, STORAGE AND HANDLING. REMOVE FROM THE SITE ANY WET OR DAMAGED DUCT LINER OR INSULATION.

1.10 CONTRACT DRAWINGS

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1.19 ELECTRICAL

A. GENERAL:

- 1. ALL ELECTRICAL MATERIAL, EQUIPMENT, AND APPARATUS SPECIFIED HEREIN SHALL CONFORM TO THE REQUIREMENTS OF DIVISION 26. REFER TO THE RESPONSIBILITY MATRIX FOR ADDITIONAL INFORMATION.

2. PROVIDE ALL MOTORS FOR EQUIPMENT SPECIFIED HEREIN. PROVIDE MOTOR CONTROLS, CONTROLLERS, AND OTHER ELECTRICAL APPARATUS AND WIRING WHICH ARE REQUIRED FOR THE OPERATION OF THE EQUIPMENT SPECIFIED HEREIN.

3. SET AND ALIGN ALL MOTORS AND DRIVES IN EQUIPMENT SPECIFIED HEREIN.

4. SPECIFY ELECTRICAL REQUIREMENTS (I.E., HORSEPOWER AND ELECTRICAL CHARACTERISTICS) FOR MECHANICAL EQUIPMENT AS SCHEDULED ON THE DRAWINGS.

B. QUALITY ASSURANCE:

- 1. ELECTRICAL COMPONENTS AND MATERIALS SHALL BE UL OR ETL LISTED/LABELLED AS SUITABLE FOR LOCATION AND USE - NO EXCEPTIONS.

C. STARTERS AND ELECTRICAL DEVICES:

- 1. MOTOR STARTER CHARACTERISTICS:
a. ENCLOSURES: NEMA 1 GENERAL PURPOSE ENCLOSURES WITH PADLOCK EARS, EXCEPT IN WET LOCATIONS SHALL NEMA 3R WITH CONDUIT HUBS.

b. TYPE AND SIZE OF STARTER SHALL BE AS RECOMMENDED BY MOTOR MANUFACTURER AND THE DRIVEN EQUIPMENT MANUFACTURER FOR APPLICABLE PROTECTION AND START UP CONDITION.

2. MANUAL SWITCHES SHALL HAVE PILOT LIGHTS AND ALL REQUIRED SWITCH POSITIONS FOR FULLY AND PROPERLY OVERLOAD PROTECTION. SELECTING ALLOY OR METALLIC TYPE THERMAL OVERLOAD RELAYS, SIZED ACCORDING TO ACTUAL OPERATING CURRENT (FIELD MEASURED).

3. MAGNETIC STARTERS:

- a. HEAVY DUTY, OIL RESISTANT, HAND-OFF-AUTO (H/OA), OR AS INDICATED.

4. COORDINATE WITH OTHER WORK, INCLUDING WIRELESS CARRIERS, RACEWAY AND EQUIPMENT INSTALLATION, AS NECESSARY TO PROPERLY INTERFACE THE INSTALLATION OF ELECTRICAL CONNECTIONS FOR EQUIPMENT WITH OTHER WORK.

5. CONNECT ELECTRICAL POWER SUPPLY CONDUCTORS TO EQUIPMENT CONDUCTORS IN ACCORDANCE WITH ELECTRICAL CODES AND ALL APPLICABLE WRITTEN INSTRUCTIONS AND WIRING DIAGRAMS. MATE AND MATCH CONDUCTORS OF ELECTRICAL CONNECTIONS FOR PROPER INTERFACE BETWEEN ELECTRICAL POWER SUPPLIES AND INSTALLED EQUIPMENT.

6. MAINTAIN EXISTING ELECTRICAL SERVICE AND FEEDERS TO OCCUPIED AREAS AND OPERATIONAL FACILITIES, UNLESS OTHERWISE INDICATED, OR WHEN AUTHORIZED OTHERWISE IN WRITING BY OWNER, OR ARCHITECT/ENGINEER. PROVIDE TEMPORARY PROTECTION DURING INTERRUPTIONS TO EXISTING FACILITIES WHEN NECESSARY. SCHEDULE MOMENTARY OUTAGES FOR REPLACING EXISTING SYSTEMS WITH NEW WIRING SYSTEMS. WHEN THAT CUTTING-OVER HAS BEEN SUCCESSFULLY ACCOMPLISHED, REMOVE, RELOCATE, OR ABANDON EXISTING WIRING AS INDICATED.

7. COVER SPLICES WITH ELECTRICAL INSULATING MATERIAL EQUIVALENT TO, OR OF GREATER INSULATION RESISTIVITY RATING, THAN INSULATION INSULATION RATING OF THOSE CONDUCTORS BEING SPLICED.

8. PREPARE CABLES AND WIRES BY CUTTING AND STRIPPING COVERING ARMOR, JACKETS, AND INSULATION PROPERLY TO ENSURE UNIFORM AND HEAT TOLERANT WHERE CABLES AND WIRES ARE TERMINATED. EXERCISE CARE TO AVOID CUTTING THROUGH TAPES WHICH WILL REMAIN ON CONDUCTORS. ALSO AVOID "RINGING" COPPER CONDUCTORS WHILE SKINNING WIRE.

E. MOTORS AND MOTOR CONTROL EQUIPMENT: CONFORM TO THE STANDARDS OF THE NEMA. EQUIP MOTORS WITH MAGNETIC OR MANUAL LINE STARTERS WITH OVERLOAD PROTECTION. MOTOR STARTERS AND LINE VOLTAGE CONTROLS SHALL BE INSTALLED UNDER ELECTRICAL SUPERVISION AND IN ACCORDANCE WITH OVERLOAD QUANTITY OF POLES AND VOLTAGE RATING AS REQUIRED.

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3.

PACKAGED DX ROOFTOP UNIT - HEAT PUMP																																
MARK	MANUFACTURER / MODEL NO.	SERVICE	SUPPLY FAN				COOLING DX						HOT GAS REHEAT			HEATING - HEAT PUMP				GAS HEATING					ELECTRICAL				REMARKS			
			AIRFLOW (CFM)	ESP (IN. WG.)	HP	HOODS ON OA AIR (CFM)	MIN OA AIR (CFM)	CAPACITY (MBH)		EAT (F)		LAT (F)		IEER	CAPACITY (MBH)	EAT (F)	LAT (F)	CAPACITY (MBH)	EAT (F)	LAT (F)	COP	INPUT CAPACITY (MBH)	OUTPUT CAPACITY (MBH)	EAT (F)	LAT (F)	TURN DOWN RATIO	REFRIG. TYPE	VPHHZ		MCA	MOCP	WT. (LBS)
								TOTAL	SENSIBLE	DB	WB	DB	WB																			
RTU-1	CAPTIVE AIRE / CASRTU2-18-10T	BOH	3000	1	5	-	1050	102	86	79	64	52	51.5	18.8	96	82.0	70.0	97	59.0	89.0	5.5	-	-	-	-	R410A	208/3/60	66.6	80	2000	1-9	
RTU-2	CAPTIVE AIRE / CASRTU5-20-15T	KITCHEN	3800	1	5	2300	300	185	136	81	66	52	51.5	18.6	130	82.0	70.0	111	53.0	80.0	5.6	158	128	60	90	6.1	R410A	208/3/60	82.8	90	2600	1-9

- NOTES:
1. PROVIDE WITH CASIMI INTERFACE AND REMOTE TEMPERATURE AND HUMIDITY SENSORS.
2. PROVIDE WITH FACTORY MOUNTED AND WIRED VFD FOR SUPPLY FAN.
3. PROVIDE WITH VARIABLE SPEED COMPRESSOR AND ECM CONDENSING FANS.
4. PROVIDE WITH BAROMETRIC RELIEF DIFFERENTIAL DRY BULB TEMPERATURE ECONOMIZER.
5. PROVIDE WITH SMOKE DETECTOR FOR AUTOMATIC SHUT-DOWN OF UNIT UPON SMOKE DETECTION.
6. PROVIDE WITH MERV-8 PRE FILTER AND MERV 13 FINAL FILTER.
7. PROVIDE WITH MANUFACTURERS 12" CURB.
8. PROVIDE WITH GASLINK COMMUNICATION CARD FOR FUTURE CONNECTION.
9. PROVIDE WITH NATIONAL TAB UV-PH INDOOR PURIFICATION SYSTEM PHI-PKG14-24V (GENERAL CONTRACTOR FURNISHED, TAB CONTRACTOR INSTALLED).

AIR DISTRIBUTION SCHEDULE					
MARK	MANUFACTURER / MODEL NO.	MODULE SIZE (IN.)	NECK SIZE (IN.)	CFM RANGE	MAX NC
CD-1	TITUS / OMNI-AA	24x24	6	0-100	25
			8	101-200	
			10	201-350	
			12	351-600	
14	501-700				
CD-2	TITUS / PAR-AA	24x24	6	0-100	25
			8	101-200	
			10	201-350	
			12	351-600	
14	501-700				
SS-1	TITUS / 300FL	-	MATCH DUCT SIZE	ON PLANS	25
CR-1 / EG-1	TITUS / PAR-AA	24x24	6	0-100	25
			8	101-200	
			10	201-350	
			12	351-600	
14	501-700				
22x22	701-1600				
EG-2	TITUS / 300FL	-	MATCH DUCT SIZE	ON PLANS	25

- NOTES:
1. FURNISH WITH OFF-WHITE BAKED ENAMEL FINISH UON. COORDINATE EXACT FINISH WITH ARCHITECT.
2. PROVIDE LAY-IN BORDER TYPE FOR ACOUSTICAL TILE CEILINGS. PROVIDE SURFACE MOUNT BORDER FOR OTHER.
3. PROVIDE OPTIONAL INSULATION ON SUPPLY DIFFUSERS.

EXHAUST FAN																
MARK	MANUFACTURER / MODEL NO.	SERVICE	FAN TYPE	DRIVE	AIRFLOW (CFM)	ESP	FAN RPM	STARTING MEANS	MOTOR DATA			ELECTRICAL			WT. (LBS)	REMARKS
									BHP	HP	RPM	VPHHZ	MCA	MOCP		
EF-1	GREENHECK / G-100-VG	RESTROOMS	DOWNBLAST	DIRECT	300	0.5	1263	ECM	0.1	0.25	1725	120/1/60	100	1-4		
EF-2	GREENHECK / G-97-VG	UTILITY ROOM	DOWNBLAST	DIRECT	200	0.5	1399	ECM	0.1	0.25	-	120/1/60	100	3-5		
KEF-1	CAPTIVEAIRE / DU50HFA	HOOD	UPBLAST	DIRECT	700	1.25	1549	ECM	0.38	0.50	-	208/1/60	150	6-9		
KEF-2	CAPTIVEAIRE / DU50HFA	HOOD	UPBLAST	DIRECT	700	1.25	1549	ECM	0.38	0.50	-	208/1/60	150	6-9		
KEF-3	CAPTIVEAIRE / DU50HFA	HOOD	UPBLAST	DIRECT	700	1.25	1549	ECM	0.38	0.50	-	208/1/60	150	6-9		
KEF-4	CAPTIVEAIRE / DU50HFA	HOOD	UPBLAST	DIRECT	700	1.25	1549	ECM	0.38	0.50	-	208/1/60	150	6-9		

- NOTES:
1. PROVIDE WITH VARI-GREEN ECM WITH DIAL ONLY.
2. INTERLOCK EF-1 WITH RTU-1.
3. PROVIDE WITH STANDARD 14" CURB.
4. PROVIDE WITH BACKDRAFT DAMPER, GRAVITY OPERATED.
5. PROVIDE WITH VARI-GREEN CONTROLLER CONNECTED TO TEMPERATURE CONTROL MONITOR TO ADJUST FAN SPEED BASED ON TEMPERATURE SET POINT (80 F).
6. INTERLOCK KITCHEN FANS WITH RTU-2.
7. PROVIDE WITH FACTORY CURBS, GREASE BOX, ECM WIRING PACKAGE, AND FAN BASE CERAMIC SEAL.
8. PROVIDE WITH UL782 LISTING.
9. SEE CAPTIVE AIRE DRAWINGS FOR ADDITIONAL REQUIREMENTS AND FIELD WIRING.

HEAT PUMP FAN COIL UNIT																									
MARK	MANUFACTURER / MODEL NO.	SERVICE	SUPPLY FAN				DX COOLING						HEATING				ELECTRICAL				REMARKS				
			AIRFLOW (CFM)	ESP (IN. WG.)	HP	OUTDOOR AIR (CFM)	CAPACITY (MBH)		EAT (F)		LAT (F)		CAPACITY (MBH)	EAT (F)	LAT (F)	VPHHZ	MCA	MOCP	WT. (LBS)						
							TOTAL	SENSIBLE	DB	WB	DB	WB								DB		WB			
FC-1	CARRIER / FMC4218	OFFICE	400	0.3	0.33	50	16.6	13.9	74.7	60	54	52	17	68	94	208/1/60	2.6	15	150	1-3					

- NOTES:
1. PROVIDE WITH MERV-13 FILTER BOX.
2. PROVIDE WITH CONDENSATE PUMP EQUAL TO HMAX TATTOO. PROVIDE SEPARATE 120/1/60 POWER CONNECTION.
3. PROVIDE WITH PROGRAMMABLE THERMOSTAT.

CONDENSING UNIT															
MARK	MANUFACTURER / MODEL NO.	SERVICE	CAPACITY (MBH)	EER (AHR)	SEER	COP (47 F)	AMBIENT AIR TEMP (F)		REFRIG. TYPE	ELECTRICAL			WT. (LBS)	REMARKS	
							SUMMER	WINTER		VPHHZ	MCA	MOCP			
CU-1	CARRIER / 29H4418	FC-1	18	11.5	14	3.7	95	17	R410A	208/1/60	11.8	20	200	1	

- NOTES:
1. PROVIDE WITH NEOPRENE PADS.

KITCHEN EXHAUST HOOD											
MARK	MANUFACTURER / MODEL NO.	LENGTH	DESIGN (CFM/FT)	EXHAUST COLLAR			HOOD CONSTRUCTION	FIRE SYSTEM	FIRE PIPING SYSTEM (Y/N)	WT. (LBS)	
				CFM	LENGTH (INCH)	WIDTH (INCH)					ESP
KEH-1	CAPTIVEAIRE / 3650 BO-2	4'	175	700	8	8	-0.57	430 SS	ANSUL R102	Y	250
KEH-2	CAPTIVEAIRE / 3650 BO-2	4'	175	700	8	8	-0.57	430 SS	ANSUL R102	Y	250
KEH-3	CAPTIVEAIRE / 3650 BO-2	3' 8"	175	642	8	7	-0.55	430 SS	ANSUL R102	Y	250
KEH-4	CAPTIVEAIRE / 3650 BO-2	3' 8"	175	642	8	7	-0.55	430 SS	ANSUL R102	Y	250

- NOTES:
1. PROVIDE WITH UL APPROVED MANUAL AIR VOLUME DAMPER ON EXHAUST COLLAR BY HOOD MANUFACTURER.
2. SEE CAPTIVE AIRE DRAWINGS FOR ADDITIONAL REQUIREMENTS AND FIELD WIRING.

AIR CURTAIN									
MARK	MANUFACTURER / MODEL NO.	SERVICE	FLOW RATE (CFM)	VELOCITY (FPM)	HP	VPHHZ	FLA	MOCP	REMARKS
AC-1	MARS / LPV238-0B	DELIVERY DOOR	900	1800	1/6	120/1/60	2.4	15	1.2
AC-2	READY ACCESS / DTU03-2025E	TAKE OUT WINDOW	-	2800	1 @ 1/12 1 @ 1/20	120/1/60	16.4	20	13.4

- NOTES:
1. PROVIDE WITH WALL MOUNTING BRACKET.
2. AIR CURTAIN TO BE CONTROL BY DOOR SWITCH.
3. PROVIDE WITH RELAY SWITCH KIT TO OPERATE UNIT WHEN WINDOW OPENS.
4. PROVIDE WITH ELECTRIC HEATED OPTION.

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CIVIL
Contact:
Douglas Conlon
Tel 213.418.0201

Date	Description
11/11/2022	ISSUE FOR PERMIT/BD

Seal / Signature



Project Name
SHAKE SHACK

Project Number
005.3688.000

Description
MECHANICAL SCHEDULES

Scale

M701

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Project Name
SHAKE SHACK

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Description
CAPTIVEAIRE DRAWINGS

Scale

M802

FIRE SYSTEM INFORMATION

FIRE SYSTEM NO	TAG	TYPE	SIZE	FLOW POINTS	INSTALLATION	
					SYSTEM	LOCATION ON HOOD
1		TANK FS	4.0/4.0/4.0/4.0	64	WALL UTILITY CABINET LEFT	N/A

GAS VALVE(S)

FIRE SYSTEM NO	TAG	TYPE	SIZE	SUPPLIED BY
1		SC ELECTRICAL	VFY	CAPTIVEAIRE SYSTEMS

WALL-MOUNT UTILITY CABINET

HOOD NO	LOCATION	SIZE	UTILITY CABINET(S)				WEIGHT
			FIRE SYSTEM	ELECTRICAL	SWITCHES		
1	WALL MNT	12"x60"x24"	TANK FS	4.0/4.0/4.0/4.0			500.00 LBS

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

LEGEND - FIRE CABINET TANK SYSTEM

- 4 GALLON TANK.
- PRIMARY ACTUATOR RELEASE.
- SECONDARY ACTUATOR RELEASE.
- PRESSURE SUPERVISION SWITCH.
- PRIMARY HOSE ASSEMBLY.
- SECONDARY HOSE ASSEMBLY.
- REMOTE MANUAL ACTUATION DEVICE.

NOTES

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

- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE SIZE, NOT THE OVERALL APPLIANCE SIZE.
- THIS FIRE SYSTEM COMPLIES WITH UL 300 REQUIREMENTS.

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

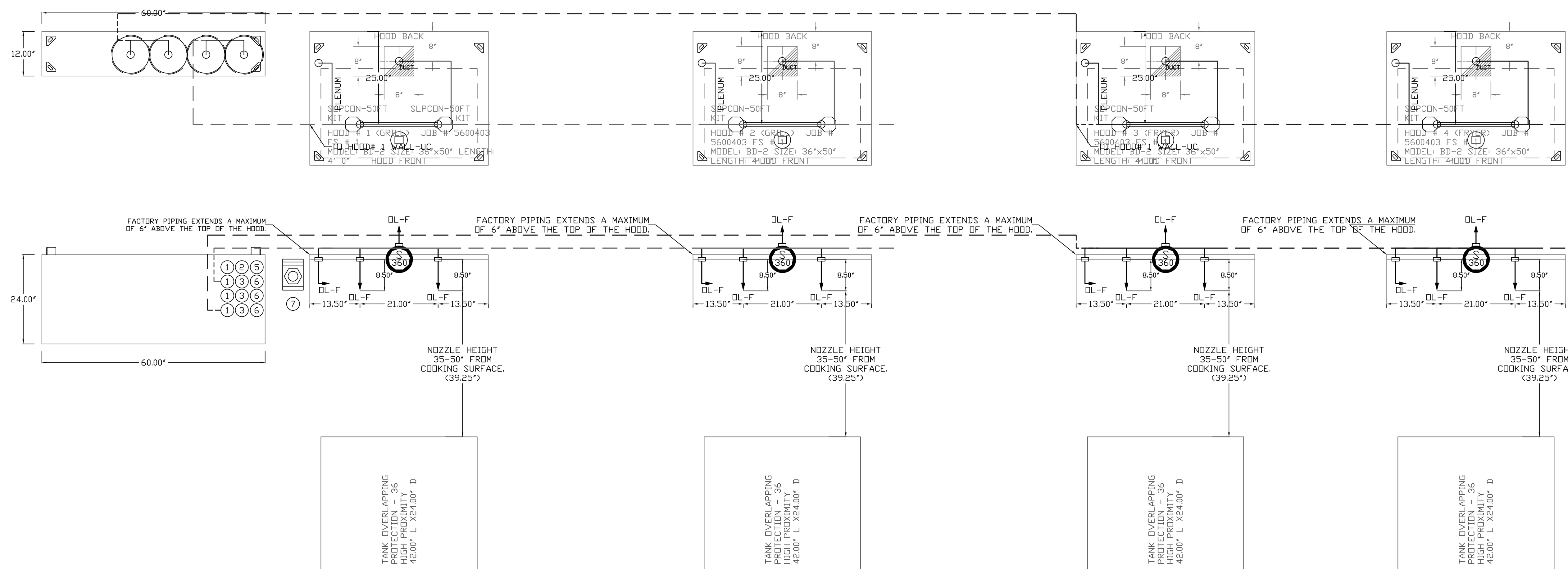
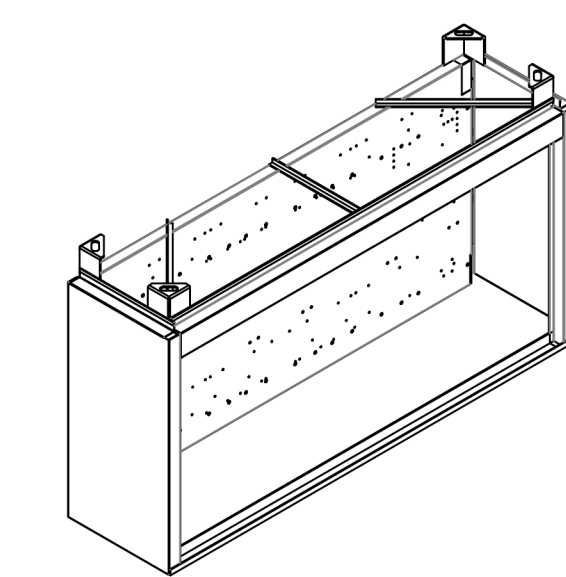
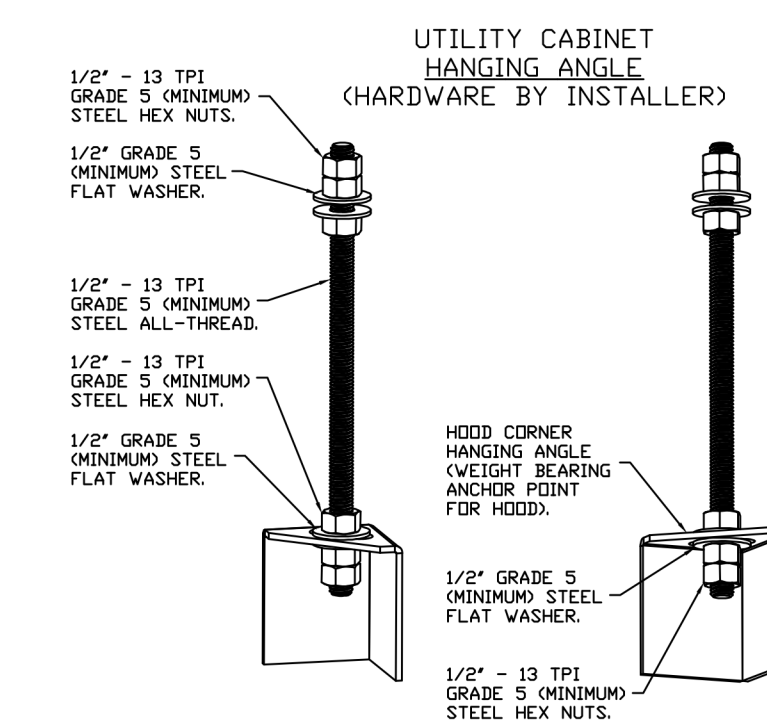
JOB #: 5600403
JOB NAME: SHAKESHACK-1462-BAYBROOKHOUSTONKITCHEN).

SYSTEM SIZE: TANK-SP-4-WC TOTAL FP REQUIRED: 64.
HOOD # 1 4' 0.00" LONG x 36" WIDE x 50" HIGH.
RISER # 1 SIZE: 8" x 8".
HOOD # 1 METAL BLOW-OFF CAPS INCLUDED.
HOOD # 2 4' 0.00" LONG x 36" WIDE x 50" HIGH.
RISER # 1 SIZE: 8" x 8".
HOOD # 2 METAL BLOW-OFF CAPS INCLUDED.
HOOD # 3 4' 0.00" LONG x 36" WIDE x 50" HIGH.
RISER # 1 SIZE: 8" x 8".
HOOD # 3 METAL BLOW-OFF CAPS INCLUDED.
HOOD # 4 4' 0.00" LONG x 36" WIDE x 50" HIGH.
RISER # 1 SIZE: 8" x 8".
HOOD # 4 METAL BLOW-OFF CAPS INCLUDED.

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

**WALL-MOUNT UTILITY CABINET
ASSEMBLY INSTRUCTIONS**

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION BENEATH UTILITY CABINET HANGING ANGLES AND ABOVE CEILING ANCHORS. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.



REVISIONS

DESCRIPTION	DATE

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TORRANCE, CA, 90504

DATE: 10/21/2022
DWG.#: 5697692
DRAWN BY: Joe.shihobeh
SCALE: 3/4" = 1'-0"
MASTER DRAWING

SHEET NO.
2

EXHAUST FAN INFORMATION

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SDNES
1	KEF-1	1	DUS0HFA	CAPTIVEAIRE	700	1.250	1549	TEAD-ECM	0.500	0.3840	1	208	3.8	266 FPM	82	16.7067343199543
2	KEF-2	1	DUS0HFA	CAPTIVEAIRE	700	1.250	1549	TEAD-ECM	0.500	0.3840	1	208	3.8	266 FPM	82	16.7067343199543
3	KEF-3	1	DUS0HFA	CAPTIVEAIRE	700	1.250	1549	TEAD-ECM	0.500	0.3840	1	208	3.8	266 FPM	82	16.7067343199543
4	KEF-4	1	DUS0HFA	CAPTIVEAIRE	700	1.250	1549	TEAD-ECM	0.500	0.3840	1	208	3.8	266 FPM	82	16.7067343199543

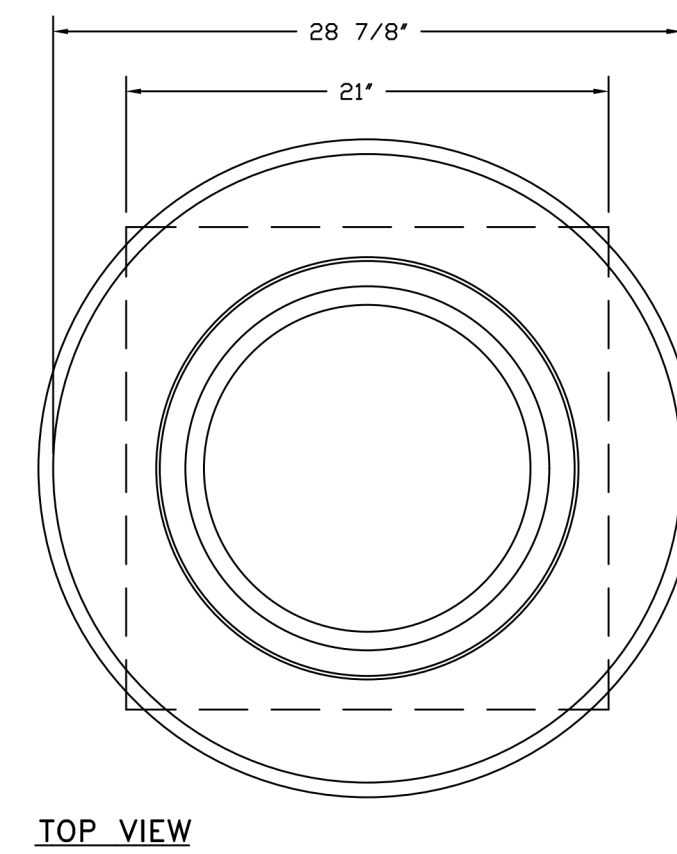
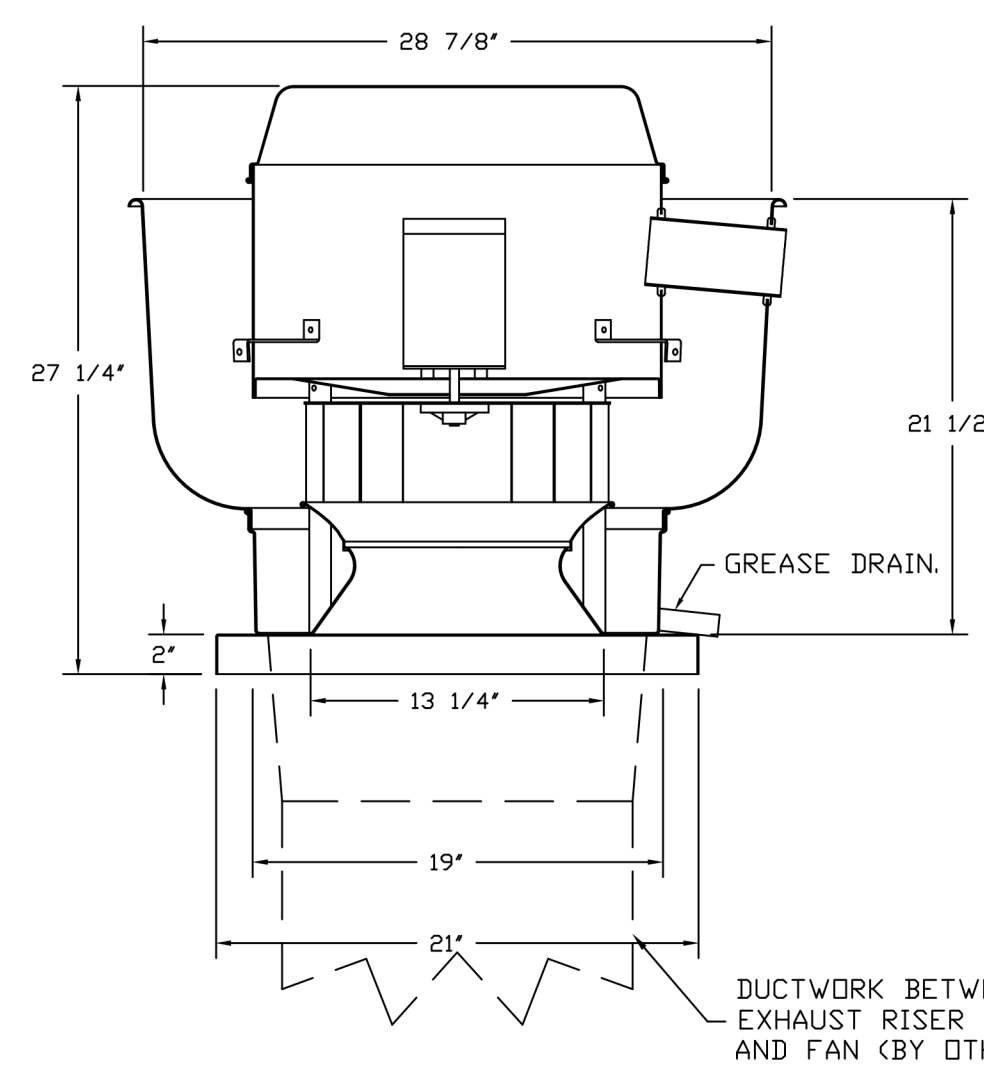
FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	KEF-1	1	GREASE BOX
		1	FAN BASE CERAMIC SEAL - INSTALLED AT PLANT - FOR GREASE DUCTS
		1	ECM WIRING PACKAGE - PWM SIGNAL FROM ECPMD3 PREWIRE (TELCO MOTOR), CCW ROTATION
		1	2 YEAR PARTS WARRANTY
2	KEF-2	1	GREASE BOX
		1	FAN BASE CERAMIC SEAL - INSTALLED AT PLANT - FOR GREASE DUCTS
		1	ECM WIRING PACKAGE - PWM SIGNAL FROM ECPMD3 PREWIRE (TELCO MOTOR), CCW ROTATION
		1	2 YEAR PARTS WARRANTY
3	KEF-3	1	GREASE BOX
		1	FAN BASE CERAMIC SEAL - INSTALLED AT PLANT - FOR GREASE DUCTS
		1	ECM WIRING PACKAGE - PWM SIGNAL FROM ECPMD3 PREWIRE (TELCO MOTOR), CCW ROTATION
		1	2 YEAR PARTS WARRANTY
4	KEF-4	1	GREASE BOX
		1	FAN BASE CERAMIC SEAL - INSTALLED AT PLANT - FOR GREASE DUCTS
		1	ECM WIRING PACKAGE - PWM SIGNAL FROM ECPMD3 PREWIRE (TELCO MOTOR), CCW ROTATION
		1	2 YEAR PARTS WARRANTY

CURB ASSEMBLIES

NO	DN FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	KEF-1	34 LBS	CURB	19.500"W X 19.500"L X 24.000"H ALONG LENGTH, RIGHT VENTED HINGED.
2	# 2	KEF-2	34 LBS	CURB	19.500"W X 19.500"L X 24.000"H ALONG LENGTH, RIGHT VENTED HINGED.
3	# 3	KEF-3	34 LBS	CURB	19.500"W X 19.500"L X 24.000"H ALONG LENGTH, RIGHT VENTED HINGED.
4	# 4	KEF-4	34 LBS	CURB	19.500"W X 19.500"L X 24.000"H ALONG LENGTH, RIGHT VENTED HINGED.

FANS #1 (KEF-1), #2 (KEF-2), #3 (KEF-3), #4 (KEF-4) - DUS0HFA EXHAUST FAN



FEATURES:

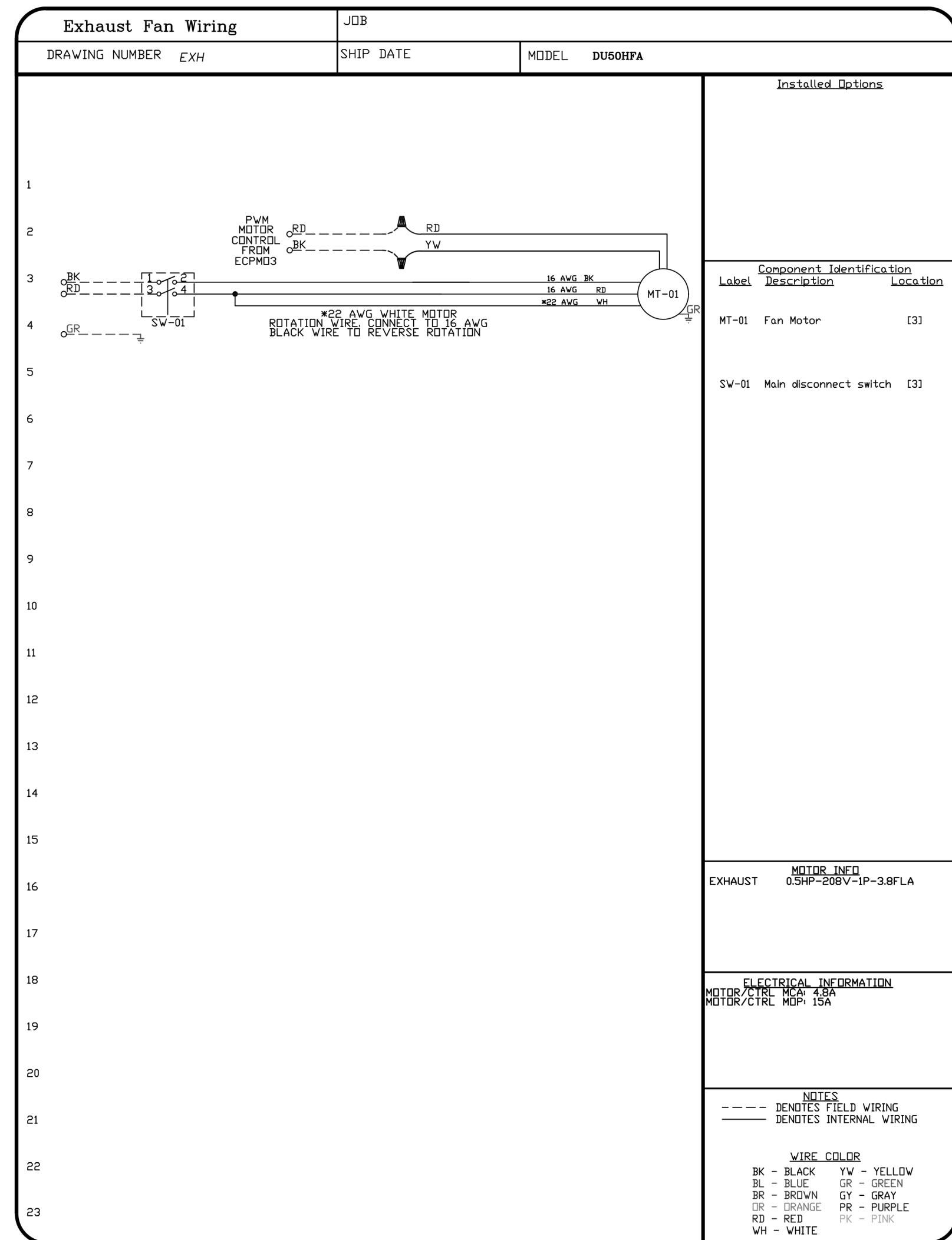
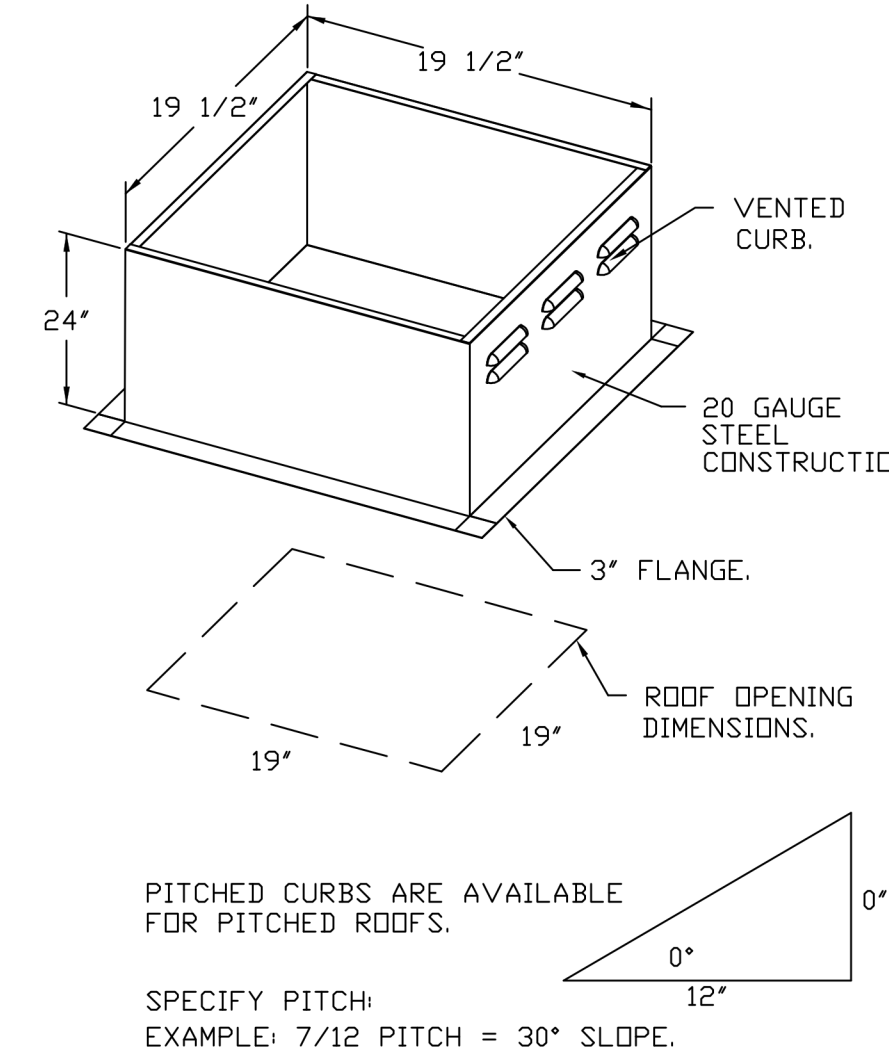
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND UL-C-5645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT SWITCH.

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

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

OPTIONS:

- GREASE BOX.
- FAN BASE CERAMIC SEAL - INSTALLED AT PLANT - FOR GREASE DUCTS.
- ECM WIRING PACKAGE - PWM SIGNAL FROM ECPMD3 PREWIRE (TELCO MOTOR), CCW ROTATION
- 2 YEAR PARTS WARRANTY.



REVISIONS

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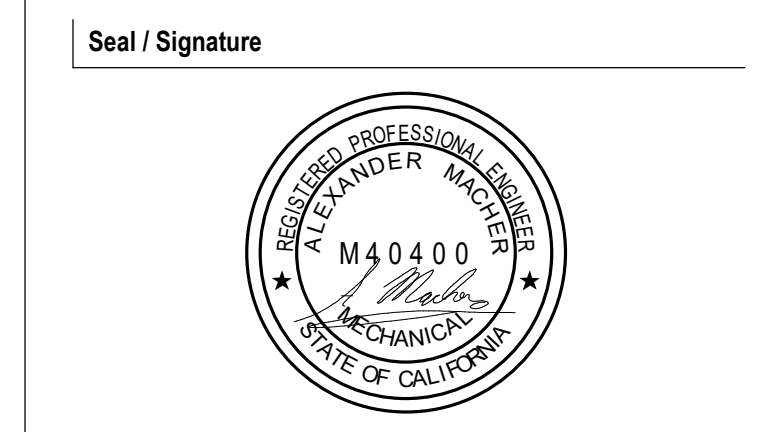
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W 190th St,
TORRANCE, CA, 90504

DATE: 10/21/2022
DWG.#: 5697692
DRAWN BY: Joe.shilba
SCALE: 3/4" = 1'-0"
MASTER DRAWING

SHEET NO.
3

Date	Description
11/11/2022	ISSUE FOR PERMIT/BD



Project Name
SHAKE SHACK

Project Number
005.3688.000

Description
CAPTIVEAIRE DRAWINGS

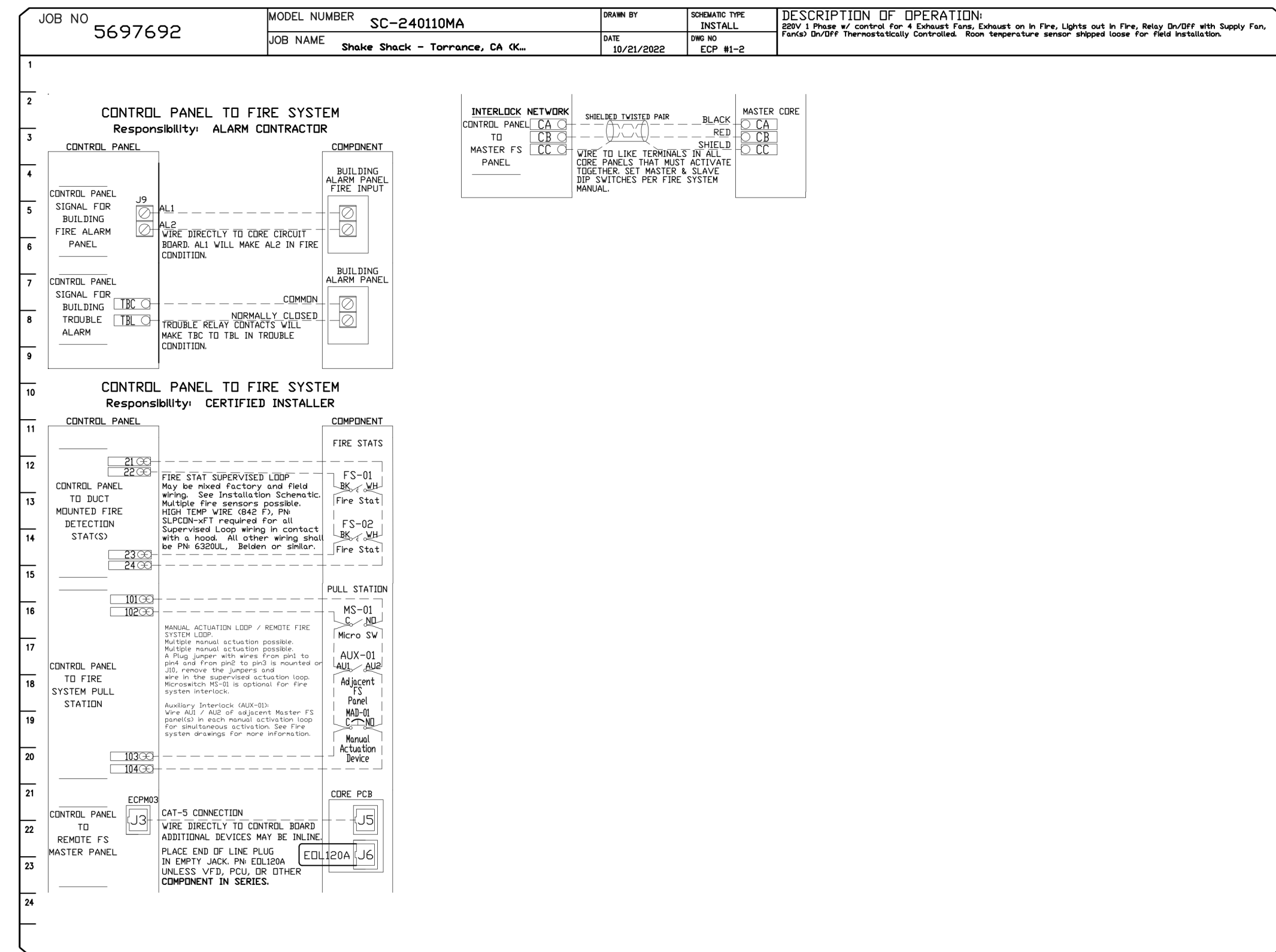
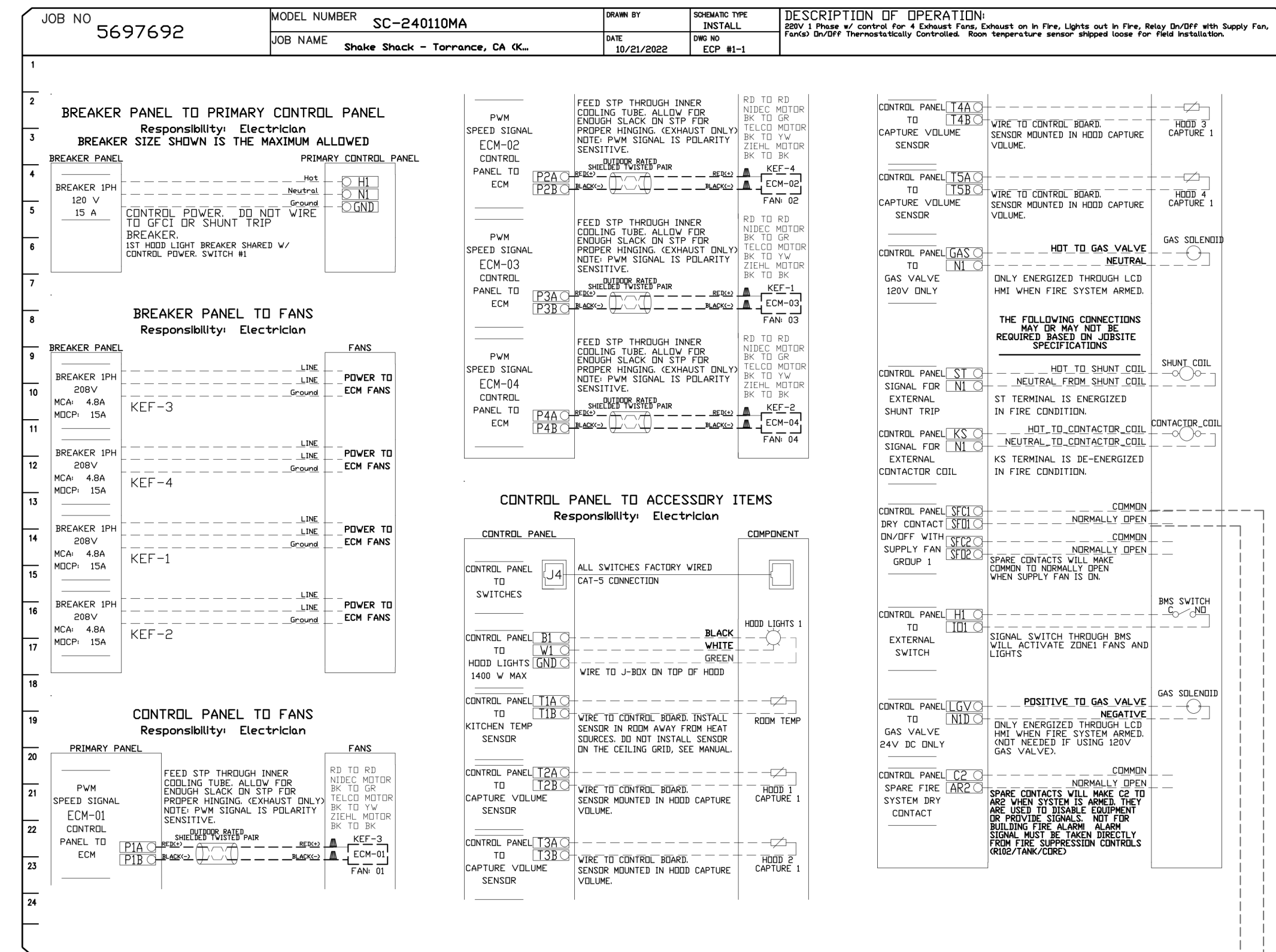
Scale

ELECTRICAL PACKAGE

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED					
				LOCATION	QUANTITY		FAN TAG	TYPE	HP	VOLT	FLA	
1		SC-240110MA	WALL MOUNT IN SS BOX 14' x 18' x 6'	05 - SS WALL MOUNT BOX	1 LIGHT	SMART CONTROLS THERMOSTATIC CONTROL W/ RELAY ON/OFF WITH SUPPLY	KEF-1	EXHAUST	1	0.500	208	3.8
					1 FAN		KEF-2	EXHAUST	1	0.500	208	3.8
							KEF-3	EXHAUST	1	0.500	208	3.8
							KEF-4	EXHAUST	1	0.500	208	3.8

ELECTRICAL PACKAGE - JOB#5697692

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED					
				LOCATION	QUANTITY		FAN TAG	TYPE	HP	VOLT	FLA	
1		SC-240110MA	WALL MOUNT IN SS BOX	05 - SS WALL MOUNT BOX	1 LIGHT	SMART CONTROLS THERMOSTATIC CONTROL W/ RELAY ON/OFF WITH SUPPLY	KEF-3	EXHAUST	1	0.500	208	3.8
					1 FAN		KEF-4	EXHAUST	1	0.500	208	3.8
							KEF-1	EXHAUST	1	0.500	208	3.8
							KEF-2	EXHAUST	1	0.500	208	3.8



REVISIONS

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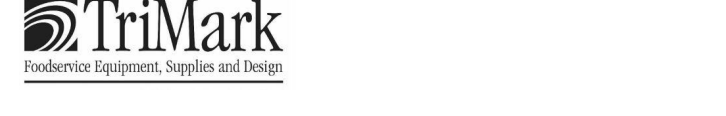
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Project Name
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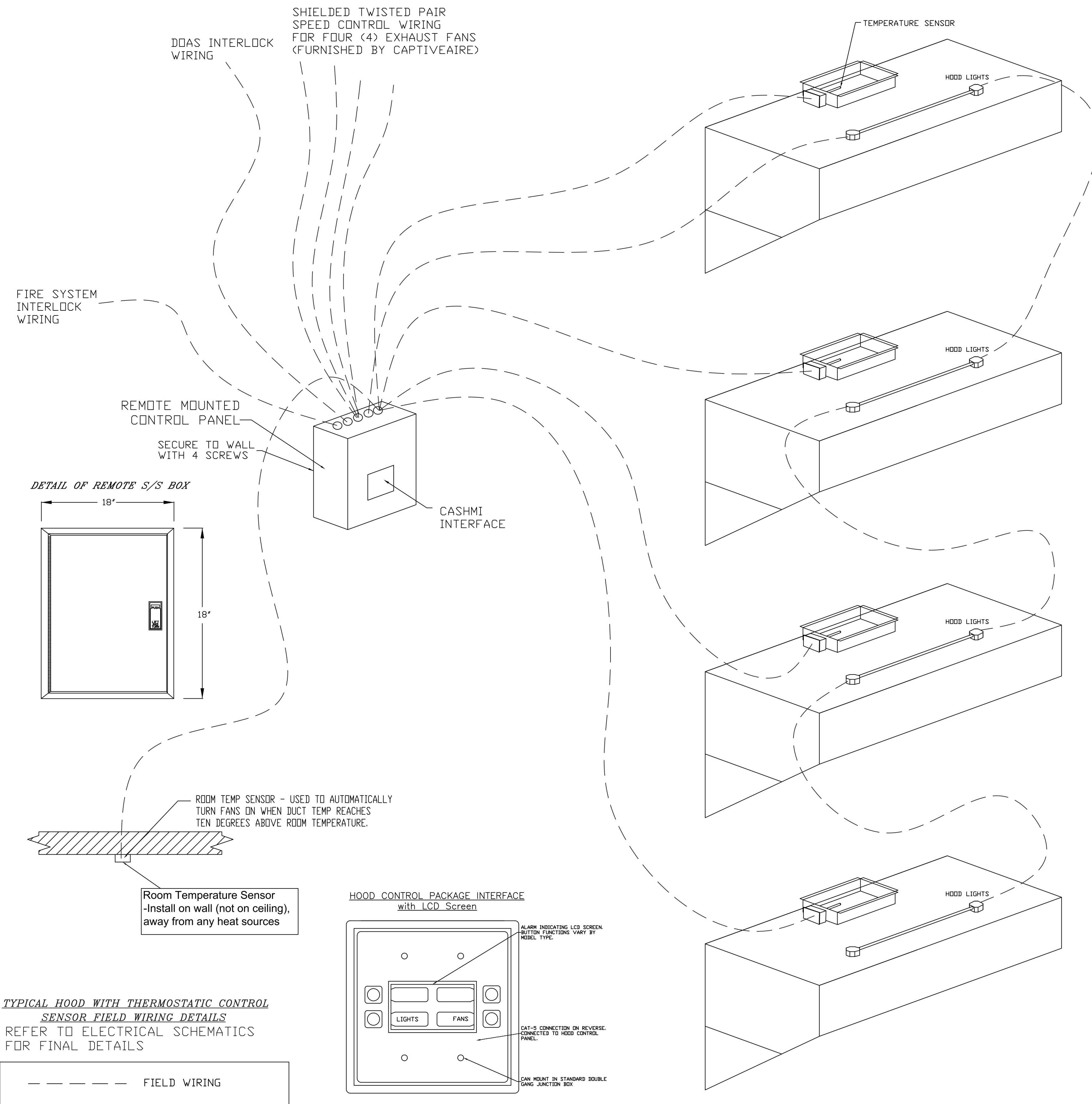
Description
CAPTIVEAIRE DRAWINGS

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M804

CRIMSON+ CONTROL DETAILS

LOW VOLTAGE & INTERLOCKS (SEE SCHEMATICS FOR LINE VOLTAGE)



SC- Specification:

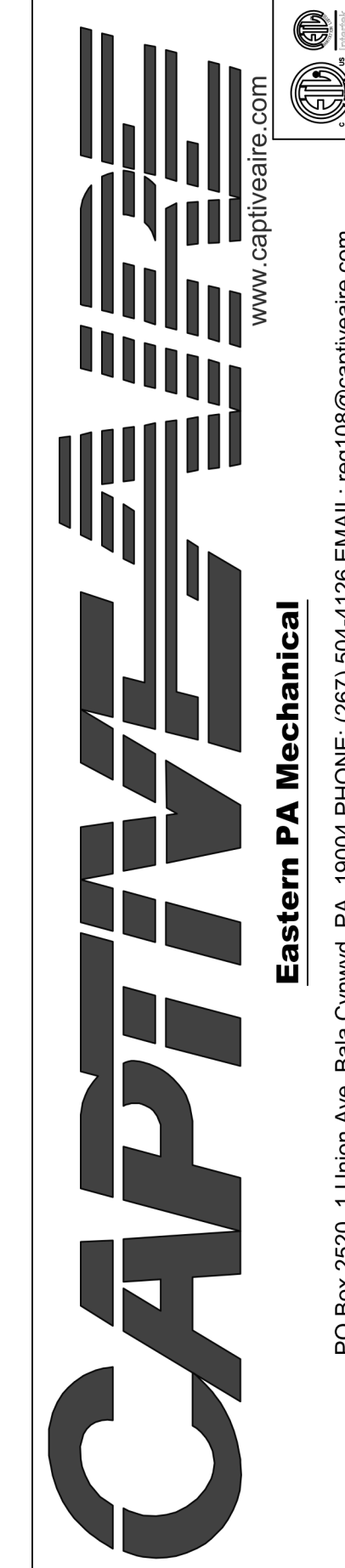
The Electrical Package, typically FP, is designed to thermostatically activate the exhaust fans for an exhaust hood whenever elevated temperatures are sensed in the exhaust system. This option will meet the requirements of IMC 507.2.1.1 by providing a thermostat(s) mounted in the duct or hood riser to sense increased exhaust temperatures. Controls shall be listed by ETL (UL 508A). The control enclosure shall be NEMA 1 rated and listed for installation inside of the exhaust hood utility cabinet. The control enclosure may be constructed of stainless steel or painted steel.

Temperature probes(s) located in the duct riser shall be constructed of Stainless Steel. A room temperature sensor is also provided for field installation in the kitchen space in order to start the fan(s) based on the temperature differential between the room and the exhaust air in the duct, rather than fixed set-points. The system is factory pre-set to activate the fans at 10 deg F° above the room temperature.

Once the duct temperature reaches the activation point, the exhaust fans will be activated. The controls also provide hysteresis to prevent cycling of the fans after the cooking appliances have been turned off and the heat in the exhaust system is reduced. The hysteresis is factory set 2 degrees and will keep the exhaust running until the temperature falls 2 degrees below the activation set point. A hysteresis timer also exists to keep the fans running for at least 30 min after being activated by the temperature rise.

The activation and hysteresis settings may be field adjusted on the board LCD interface located inside the control enclosure to meet application needs. The panel is factory configured to shut down supply fans, turn on the exhaust fans and turn off the hood lights in a fire condition.

REVISIONS	
DESCRIPTION	DATE



Shake Shack - Torrance, CA (Kitchen)R3
 W 190th St,
 TORRANCE, CA, 90504

DATE: 10/21/2022
 DWG.#: 5697692
 DRAWN BY: Joe Shilba
 SCALE: 3/4" = 1'-0"
 MASTER DRAWING
 SHEET NO. 6

CUSTOMER APPROVAL TO MANUFACTURE:

Approved as Noted

Approved with NO Exception Taken

Revise and Resubmit

SIGNATURE _____

Your Title _____ Date _____

Date	Description
11/11/2022	ISSUE FOR PERMIT/BID

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Project Name
 SHAKE SHACK

Project Number
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Description
 CAPTIVEAIRE DRAWINGS

Scale

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Project Name
SHAKE SHACK

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Description
CAPTIVEAIRE DRAWINGS

Scale

M807

DOAS/RTU FAN SCHEDULE - JOB#5671509

FAN UNIT NO	TAG	QTY	DOAS/RTU MODEL #	FAN INFORMATION										ELECTRICAL INFORMATION										COOLING INFORMATION										REHEAT INFORMATION										GAS HEAT INFORMATION										HEAT PUMP INFORMATION										NOTES
				MANUFACTURER	BLOWER	RETURN AIR CFM	MAX OUTSIDE AIR CFM	TOTAL CFM	WEIGHT (LBS)	ESP	HP	PHASE	VOLT	MCA	MDCP	DB	WB	DB	WB	DB	WB	DP	TOTAL	SENS.	IEER	ISMRE	DISCHARGE DB	DISCHARGE WB	CAPACITY DESIRED	CAPACITY MAX	MOISTURE REMOVAL RATE	GAS TYPE	INPUT BTU/S	OUTPUT BTU/S	TEMP RISE	ENTERING TEMP	MAX TEMP RISE	DISCHARGE TEMP	COP																									
1	RTU-1	1	CASRTU2-18-10T-DOAS	CAPTIVEAIRE	18P-2	1950	1050	3000	1871	1.000	5.00	3	208	66.6A	80A	86.0°F	68.0°F	78.9°F	64.2°F	52.2°F	52.3°F	102.0 MBH	85.5 MBH	18.6	4.3	75.0°F	62.0°F	77 MBH	96 MBH	15.1 LBS/HR	---	---	---	---	65.0°F	30.0°F	95.0°F	5.5	1,2,3,4,5,6,7,8,9,10,12,13,14,15,16,17																									
2	RTU-2	1	CASRTU3-1200-15T-DOAS	CAPTIVEAIRE	20P-3	1616	2184	3900	2537	1.000	5.00	3	208	82.8A	90A	86.0°F	68.0°F	81.3°F	65.5°F	48.4°F	48.3°F	185.6 MBH	135.9 MBH	18.8	5.7	70.0°F	59.9°F	92.9 MBH	129.6 MBH	44.2 LBS/HR	NATURAL	158649	128506	30°F	63.6°F	27.0°F	91.0°F	5.6	1,2,3,4,5,6,7,9,10,11,12,13,14,16,17,18,19,20																									

NOTES:

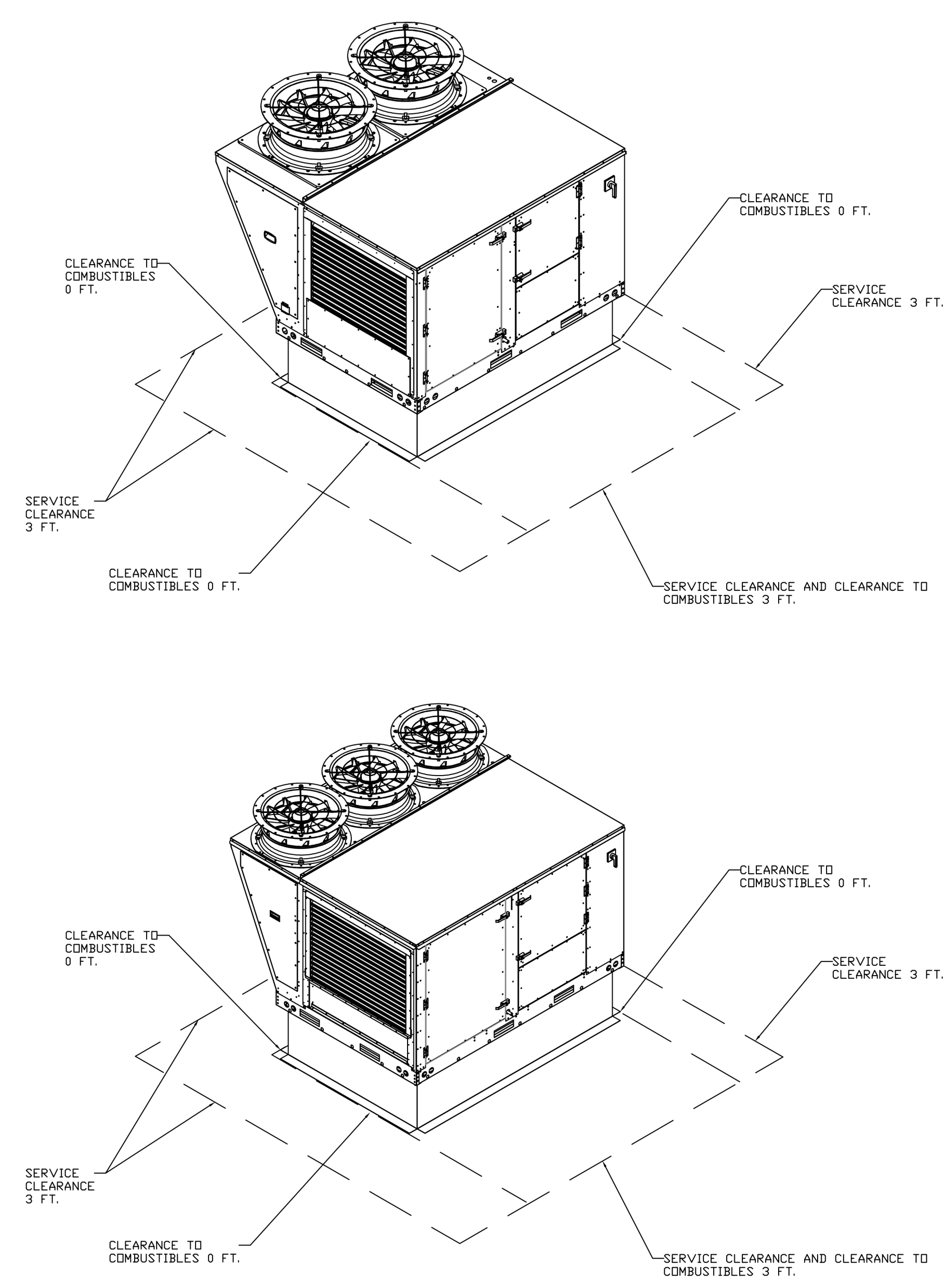
- INVERTER SCROLL COMPRESSOR WITH INTEGRATED OIL SENSOR. DIGITAL DR STAGED SCROLL NOT AN APPROVED EQUAL
- DIRECT DRIVE PLENUM BLOWER. BELT DRIVEN BLOWERS ARE NOT ACCEPTABLE
- INTEGRATED MONITORING VIA CELLULAR CONNECTION BY MANUFACTURER
- REFRIGERATION PRESSURE MONITORING ON HIGH AND LOW PRESSURE SIDE OF SYSTEM INCLUDED THROUGH DIGITAL INTERFACE
- EC MOTOR CONDENSING FANS
- ELECTRONIC EXPANSION VALVE. TXV NOT ACCEPTABLE
- SUCTION LINE ACCUMULATOR
- FACTORY COMMISSIONING WITH 5 YEAR PARTS WARRANTY
- AVERAGING INTAKE, EVAP AND DISCHARGE TEMPERATURE SENSORS (DISCHARGE SENSOR TO BE FACTORY MOUNTED WITHIN UNIT)
- 2" EXTERIOR DUAL-WALL CONSTRUCTION W/ R-13 INSULATION-MINIMUM 20GA EXTERIOR W/ 14GA BASE
- BIX EFFICIENT FURNACE, WITH MODULATING INDUCER TO MAINTAIN CONSTANT COMBUSTION EFFICIENCY ACROSS FIRING RANGE. 61 TURNDOWN WITH NG AND 51 TURNDOWN WITH LP
- SUPPLY CFM MONITORING INTEGRAL TO UNIT WITH CFM MEASUREMENT INCLUDED THROUGH DIGITAL INTERFACE
- FULLY MODULATING HOT GAS REHEAT
- 15 DEGREE LOW AMBIENT OPERATION
- RTU ECONOMIZER WITH FIXED DRY BULB CONTROL
- BANDMETRIC RELIEF DAMPER
- DOWN DISCHARGE/DOWN RETURN
- FACTORY COMMISSIONING WITH 5 YEAR PARTS WARRANTY, 25 YEAR WARRANTY ON STAINLESS STEEL HEAT EXCHANGER
- HAIL GUARD FOR CONDENSING COIL
- RTU ECONOMIZER WITH DIFFERENTIAL DRY BULB CONTROL

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	RTU-1	1	RTU TOTAL CFM MONITORING
		1	SINGLE POINT ELECTRICAL CONNECTION FOR RTU. 750VA TRANSFORMER USED. IF A NON-DCV PREWIRE OPTION IS SELECTED, THIS UNIT, THE #2B, #47, #4A, OR #2E PREWIRE OPTION MUST BE SELECTED. DOES NOT PROVIDE SUPPLY STARTER IN PREWIRE
		1	CASLINK BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED
		1	LOW AMBIENT COOLING OPERATION - DOWN TO OF AMBIENT
		1	RTU2 DOWN DISCHARGE
		1	2" MERV 13 FILTERS FOR RTU2 (QTY. 4)
		1	2" MERV 8 FILTERS FOR RTU2 (QTY. 4)
		1	OVERHEAT STAT
		1	VFD FACTORY MOUNTED AND WIRED IN RTU COMMERCIAL CONTROL VESTIBULE
		1	REMOTE TEMPERATURE AND HUMIDITY SPACE SENSOR
		1	RTU2 CURB DUCT HANGER
		1	COMMERCIAL SMOKE DETECTOR/ALARM INTERLOCK - ALARM SUPPLIED BY OTHERS
		1	OCCUPIED SCHEDULING
		1	CLOGGED FILTER SWITCH - NOTIFICATION ON HMI
		1	RTU2 CONVENIENCE OUTLET (GFCI), 15 AMP - REQUIRES SEPARATE 120V CONNECTION. INCLUDES RECEPTACLE, COVER AND J-BOX
		1	10 TON MODULATING COOLING OPTION WITH HEAT PUMP, 208/230V. R410A REFRIGERANT, VARIABLE SPEED COMPRESSOR, ECM CONDENSING FANS
		1	15 TON MODULATING REHEAT OPTION WITH HEAT PUMP - SPACE DEWPOINT CONTROL
		1	RTU2 ECONOMIZER BANDMETRIC RELIEF
		1	RTU INTAKE/RETURN DAMPER - MANUAL CONTROL VIA HMI
		1	RTU2 DOWN RETURN
		1	VAV PACKAGE W/ MANUAL/DDC CONTROL (#71 VFD INCLUDED)
		1	LOAD REACTOR MOUNTED IN FAN
		1	RTU ECONOMIZER - FIXED DRY BULB CONTROL
		1	5 YEAR ENTIRE UNIT PARTS WARRANTY, 10 YEAR ENTIRE UNIT PARTS WARRANTY WITH REMOTE MONITORING AND CAPTIVEAIRE SERVICE CONTRACT
		2	RTU-2
1	MANIFOLD PRESSURE GAUGE, 0 TO 10" WC, 1 FURNACE		
1	RTU TOTAL CFM MONITORING		
1	SHIP LOOSE GAS STRAINER 3/4"		
1	SINGLE POINT ELECTRICAL CONNECTION FOR RTU. 750VA TRANSFORMER USED. IF A NON-DCV PREWIRE OPTION IS SELECTED, THIS UNIT, THE #2B, #47, #4A, OR #2E PREWIRE OPTION MUST BE SELECTED. DOES NOT PROVIDE SUPPLY STARTER IN PREWIRE		
1	CASLINK BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED		
1	LOW AMBIENT COOLING OPERATION - DOWN TO OF AMBIENT		
1	RTU3 DOWN DISCHARGE		
1	2" MERV 13 FILTERS FOR RTU3 (QTY. 4)		
1	2" MERV 8 FILTERS FOR RTU3 (QTY. 4)		
1	OVERHEAT STAT		
1	VFD FACTORY MOUNTED AND WIRED IN RTU COMMERCIAL CONTROL VESTIBULE		
1	REMOTE TEMPERATURE AND HUMIDITY SPACE SENSOR		
1	RTU3 CURB DUCT HANGER		
1	COMMERCIAL SMOKE DETECTOR/ALARM INTERLOCK - ALARM SUPPLIED BY OTHERS		
1	OCCUPIED SCHEDULING		
1	RTU3 POWERED CONVENIENCE OUTLET (GFCI), 15 AMP		
1	CLOGGED FILTER SWITCH - NOTIFICATION ON HMI		
1	RTU3 ECONOMIZER BANDMETRIC RELIEF		
1	RTU3 HAIL GUARD		
1	RTU INTAKE/RETURN DAMPER - MANUAL CONTROL VIA HMI		
1	DAMPER PRESET POSITIONS		
1	RTU3 DOWN RETURN		
1	VAV PACKAGE W/ MANUAL/DDC CONTROL (#71 VFD INCLUDED)		
1	LOAD REACTOR MOUNTED IN FAN		
1	POWERED EXHAUST FOR RTU3 - MANUAL CONTROL		
1	15 TON MODULATING COOLING OPTION WITH HEAT PUMP, 208/230V. R410A REFRIGERANT, VARIABLE SPEED COMPRESSOR, ECM CONDENSING FANS		
1	15 TON MODULATING REHEAT OPTION WITH HEAT PUMP - SPACE DEWPOINT CONTROL		
1	RTU ECONOMIZER - DIFFERENTIAL DRY BULB CONTROL		
1	5 YEAR ENTIRE UNIT PARTS WARRANTY, 10 YEAR ENTIRE UNIT PARTS WARRANTY WITH REMOTE MONITORING AND CAPTIVEAIRE SERVICE CONTRACT, 25 YEAR STAINLESS STEEL FURNACE PARTS WARRANTY (SEE ADDITIONAL DETAILS)		

CURB ASSEMBLIES

NO	ON FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	RTU-1	52 LBS	CURB	49.500"W X 75.000"L X 12.000"H ALONG WIDTH, RIGHT INSULATED.
2	# 2	RTU-2	68 LBS	CURB	59.500"W X 91.000"L X 12.000"H ALONG WIDTH, RIGHT INSULATED.



REVISIONS

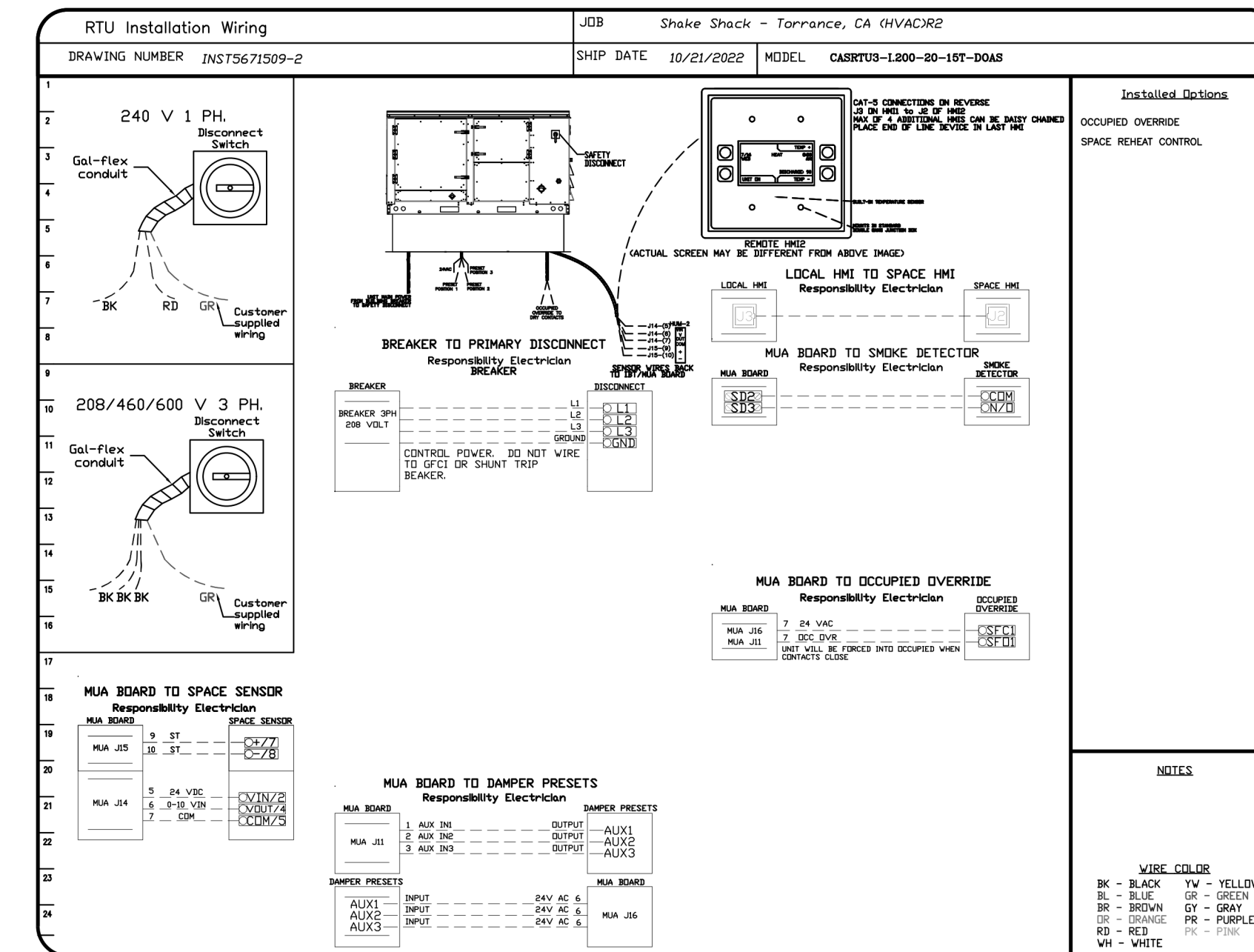
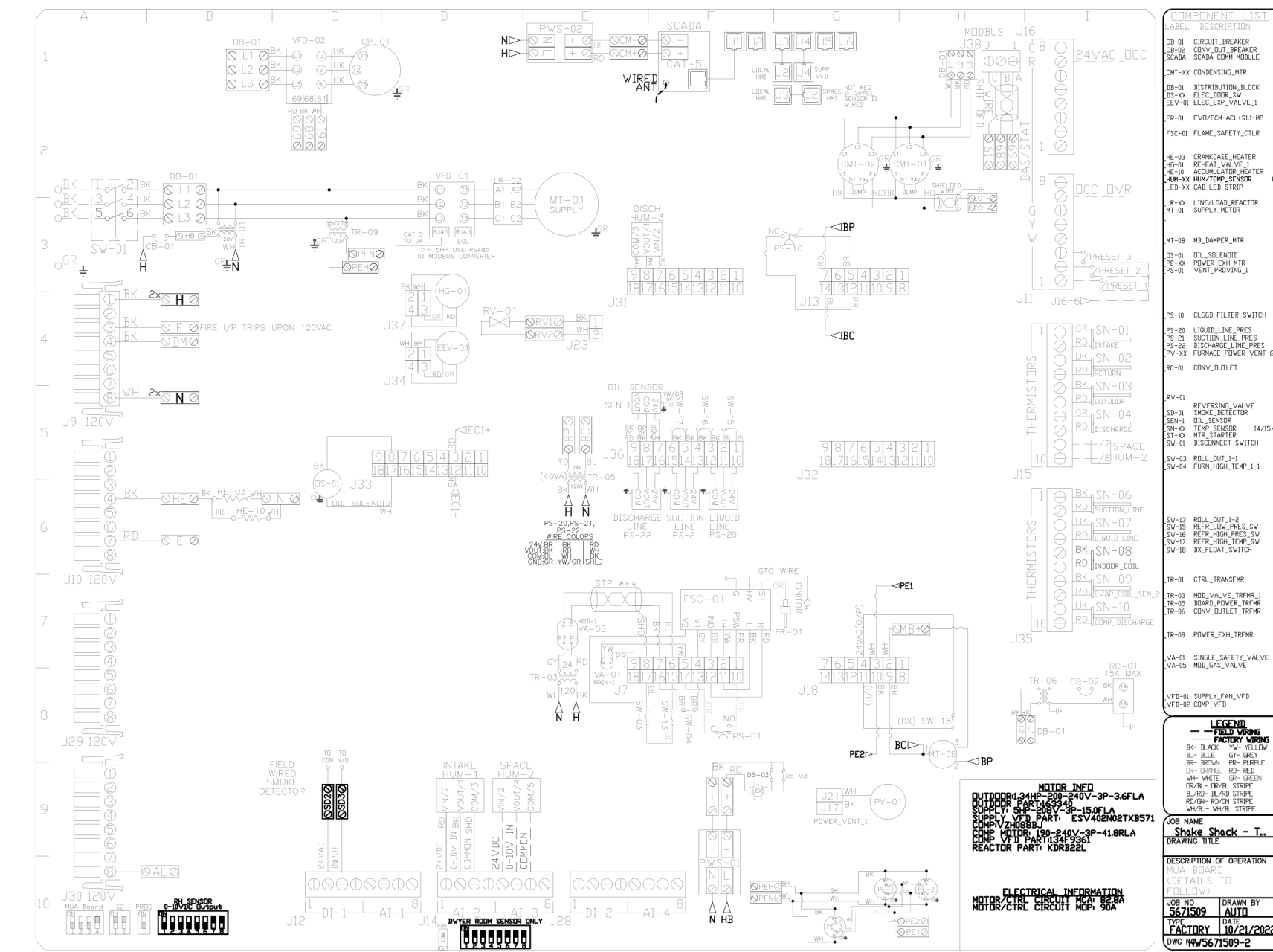
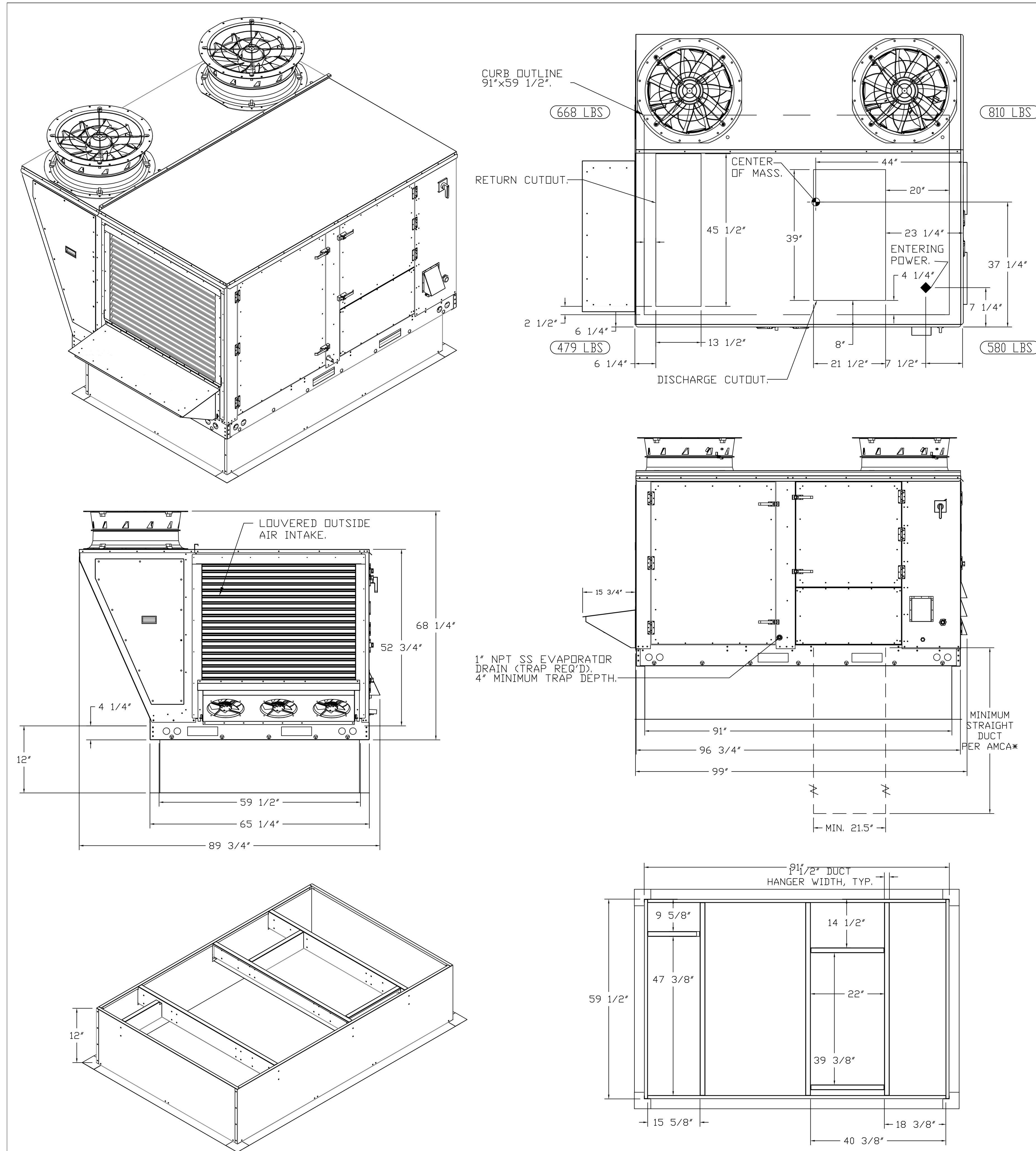
DESCRIPTION	DATE

CAPTIVEAIRE
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Shake Shack - Torrance, CA (HVACR2)
W 190th St,
TORRANCE, CA, 90504

DATE: 10/21/2022
DWG.#: 5671509
DRAWN BY: Joe.shiloo
SCALE: 3/4" = 1'-0"
MASTER DRAWING

SHEET NO.
1



FAN #2 CASRTU3-1200-20-15T-DDAS - HEATER (RTU-2)

- NOTES:
- DO NOT OBSTRUCT OUTSIDE AIR INLET, OUTSIDE AIR COIL OR OUTSIDE AIR FAN.
 - DENOTES CORNER WEIGHT.
 - ROOF OPENING MUST BE 2" SMALLER THAN CURB DIMENSIONS IN BOTH DIRECTIONS.

REVISIONS

NO.	DESCRIPTION	DATE

CAPTIVE

Eastern PA Mechanical

PO Box 2520, 1 Union Ave, Bellefonte, PA 16801 PHONE: (814) 504-4126 EMAIL: info@captivemechanical.com

Shake Shack - Torrance, CA (HVACR2)
W 190th St,
TORRANCE, CA, 90504

DATE: 10/21/2022

DWG.#: 5671509

DRAWN BY: Joe.Shilica

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

MASTER DRAWING

SHEET NO. 3

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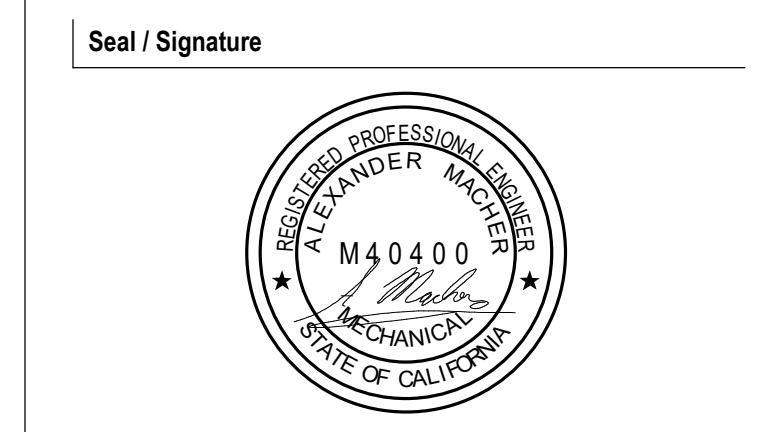
kpff

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STRUCTURAL
Contact:
Claudia Walker
Tel 213.310.8495

CIVIL
Contact:
Douglas Conlon
Tel 213.418.0201

Date	Description
11/11/2022	ISSUE FOR PERMIT/BID



Project Name
SHAKE SHACK

Project Number
005.3688.000

Description
CAPTIVEAIRE DRAWINGS

Scale

M809