

SHAKE SHACK®

10 COLUMBUS CIRCLE UNIT 302
NEW YORK, NY 10019
SHACK #1525

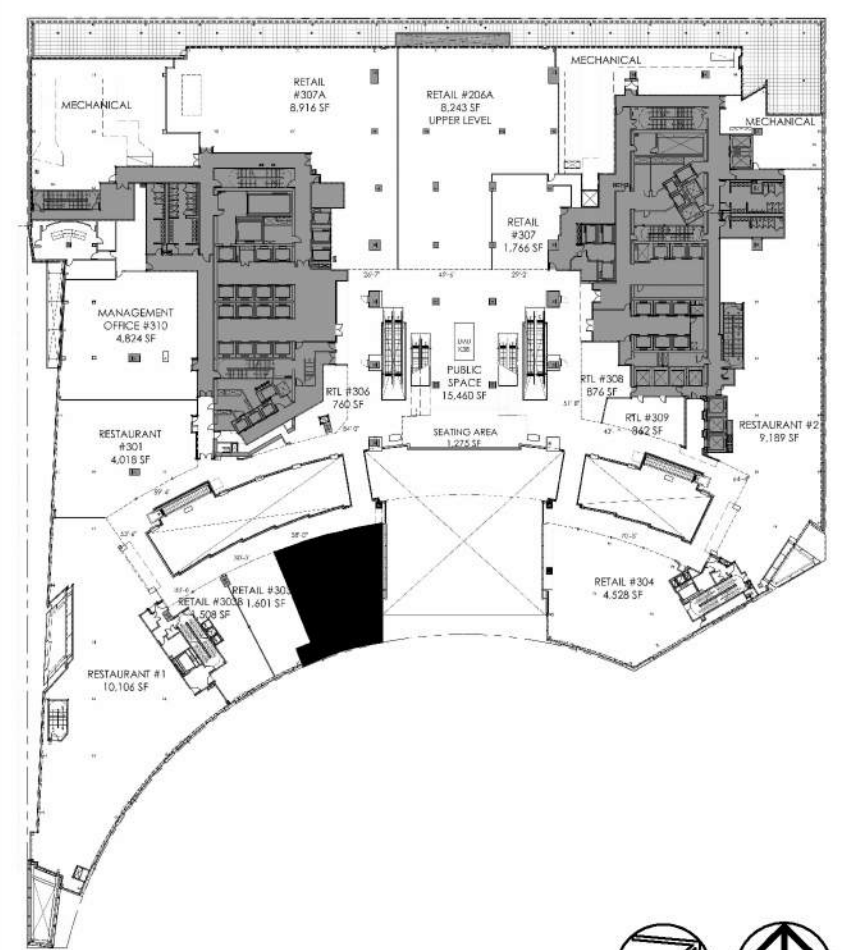
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KEY PLAN - COLUMBUS CIRCLE (FLOOR 3)



MECHANICAL CODES

BUILDING CODE: 2022 NEW YORK CITY BUILDING CODE
MECHANICAL CODE: 2022 NEW YORK CITY MECHANICAL CODE
ENERGY CODE: 2020 NEW YORK CITY ENERGY CONSERVATION CODE
FIRE CODE: 2015 NEW YORK CITY FIRE CODE
ACCESSIBILITY CODE: ICC/ANSI A117.1-2009

NYC SPECIAL INSPECTION NOTES

- A TEST OR TESTS SHALL BE CONDUCTED UNDER DIRECTION OF A SPECIAL INSPECTOR SUPERVISING THE INSTALLATION OF THE MECHANICAL SYSTEMS. THE TEST(S) SHALL SHOW COMPLIANCE WITH BUILDING CODE REQUIREMENTS AND CHAPTER 17 OF THE NEW YORK CITY BUILDING CODE.
- THE FOLLOWING SPECIAL INSPECTIONS SHALL BE REQUIRED:
MECHANICAL SYSTEMS BC 1704.16
FIRE RESISTANT PENETRATIONS AND JOINTS BC 1704.27
- THE SPECIAL INSPECTOR SUPERVISING THE INSTALLATION OF MECHANICAL SYSTEMS AND CONDUCTING SUCH TESTS SHALL FILE A CERTIFICATE AND REPORT OF TEST(S) THAT THE SYSTEM COMPLIES WITH APPLICABLE LAWS.

NYCECC PROGRESS INSPECTION NOTES

- THE FOLLOWING PROCESS INSPECTIONS SHALL BE REQUIRED:
SHUTOFF DAMPERS IB82
HVAC AND SERVICE WATER HEATING EQUIPMENT IB83
HVAC AND SERVICE WATER HEATING SYSTEM CONTROLS IB84
HVAC INSULATION AND SEALING IB85
MAINTENANCE INFO ID1

NYC PROGRESS INSPECTION NOTES

- THE FOLLOWING PROCESS INSPECTIONS SHALL BE REQUIRED:
FINAL - BC 110.5, DIRECTIVE 14 OF 1975 AND RCNY 101-10

NYC 2022 DEPARTMENT OF BUILDING NOTES

- UPON COMPLETION OF THE VENTILATION SYSTEM, CONDUCT A TEST UNDER THE PRESENCE AND DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR REGISTERED ARCHITECT QUALIFIED TO OBSERVE SUCH A TEST. THE TEST SHALL SHOW COMPLIANCE WITH CODE REQUIREMENTS FOR VENTILATION AND PROPER FUNCTION OF ALL OPERATING DEVICES BEFORE THE SYSTEM IS APPROVED.
- THE LICENSED PROFESSIONAL ENGINEER OR REGISTERED ARCHITECT WHO OBSERVED THE TESTS SHALL FILE THE CERTIFICATE TO DEMONSTRATE THAT THE SYSTEM COMPLIES WITH APPLICABLE LAWS. THE TEST AND REPORT SHALL BE MADE IN A MANNER SATISFACTORY TO THE SUPERINTENDENT.
- A STATEMENT SHALL BE FILED BY THE OWNER THAT THE SYSTEM OF VENTILATION WILL BE KEPT IN CONTINUOUS OPERATION AT ALL TIMES DURING THE NORMAL OCCUPANCY OF THIS BUILDING AS ORDERED IN THE APPLICABLE SECTION OF THE CODE.
- 2022 NEW YORK CITY MECHANICAL CODE CHAPTER 4 SECTION 401 SHALL GOVERN THE VENTILATION OF SPACES WITHIN A BUILDING INTENDED TO BE OCCUPIED.
- MECHANICAL VENTILATION BY A METHOD OF SUPPLY AIR AND RETURN OR EXHAUST AIR SHALL BE PROVIDED AS PER 2022 NEW YORK CITY MECHANICAL CODE CHAPTER 4, SECTION 403. THE AMOUNT OF SUPPLY AIR SHALL BE APPROXIMATELY EQUAL TO THE AMOUNT OF RETURN AND EXHAUST AIR. THE SYSTEM SHALL NOT BE PROHIBITED FROM PRODUCING NEGATIVE OR POSITIVE PRESSURE. THE SYSTEM TO CONVEY VENTILATION AIR SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH 2022 NEW YORK CITY MECHANICAL CODE CHAPTER 6.
- MECHANICAL VENTILATION SYSTEMS SHALL BE PROVIDED WITH MANUAL OR AUTOMATIC CONTROLS AS PER 2022 NEW YORK CITY MECHANICAL CODE CHAPTER 4 SECTION 405.
- THE DESIGN, CONSTRUCTION, AND INSTALLATION OF MECHANICAL EXHAUST SYSTEMS, INCLUDING DUST, STOCK, AND REFUSE CONVEYOR SYSTEMS, EXHAUST SYSTEMS SERVING COMMERCIAL COOKING APPLIANCES, AND ENERGY RECOVERY VENTILATION SYSTEMS, SHALL BE AS PER 2022 NEW YORK CITY MECHANICAL CODE CHAPTER 5 SECTION 501.
- MECHANICAL AND PASSIVE SMOKE CONTROL SYSTEMS THAT ARE REQUIRED BY THE 2022 NEW YORK CITY MECHANICAL CODE SHALL BE INSTALLED IN ACCORDANCE WITH 2022 NEW YORK CITY MECHANICAL CODE SECTION 513.2. SPECIAL INSPECTION AND TEST REQUIREMENTS SHALL BE IN ACCORDANCE WITH 2022 NEW YORK CITY MECHANICAL CODE SECTION 513.3.
- DUCT SYSTEMS USED FOR THE MOVEMENT OF AIR IN AIR-CONDITIONING, HEATING, VENTILATING AND EXHAUST SYSTEMS SHALL CONFORM TO THE PROVISIONS OF 2022 NEW YORK CITY MECHANICAL CODE CHAPTER 6, SECTION 601.
- THE INSTALLATION AND CONSTRUCTION OF DUCTWORK SHALL BE AS PER 2022 NEW YORK CITY MECHANICAL CODE CHAPTER 6, SECTION 603.
- PROTECTION OF DUCT PENETRATIONS AND AIR TRANSFER OPENINGS IN ASSEMBLIES REQUIRED TO BE PROTECTED SHALL BE AS PER 2022 NEW YORK CITY MECHANICAL CODE CHAPTER 6, SECTION 607. FIRE DAMPERS, SMOKE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS AND CEILING RADIATION DAMPERS SHALL BE PROVIDED AT THE LOCATIONS PRESCRIBED IN SECTIONS 607.5 THROUGH 607.9. WHERE AN ASSEMBLY IS REQUIRED TO HAVE BOTH FIRE DAMPERS AND SMOKE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS OR A FIRE DAMPER AND A SMOKE DAMPER SHALL BE REQUIRED.
- DUCT AND AIR TRANSFER OPENINGS THAT PENETRATE FIRE RATED PARTITIONS SHALL COMPLY WITH ALL REQUIREMENTS LISTED UNDER THE 2022 BUILDING CODE SECTION BC 716 AS APPLICABLE TO SYSTEM DESIGN.
- ALL FIRE DAMPERS ARE TO BE OF TYPE APPROVED BY THE BOARD OF FIRE UNDERWRITERS. WHERE ENTERING OR LEAVING SHAFTS, FIRE DAMPERS SHALL BE EQUIVALENT TO 1) FIRE WALL RATING.
- COMPLY WITH THE VENTILATION RULES OF THE DEPARTMENT OF BUILDINGS ADOPTED JANUARY 1, 2015.

INDEX OF DRAWINGS

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| M101 | MECHANICAL FLOOR PLAN | M703 | CAPTIVEAIRE DRAWINGS |
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| M501 | MECHANICAL DETAILS | M705 | CAPTIVEAIRE DRAWINGS |
| M502 | MECHANICAL DETAILS | M706 | CAPTIVEAIRE DRAWINGS |
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PROGRESS INSPECTIONS DESCRIPTIONS

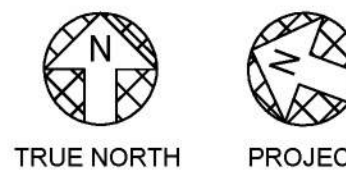
PROGRESS INSPECTIONS - DESCRIPTIONS:

| | INSPECTIONS/TEST | FREQUENCY (MINIMUM) | REFERENCE STANDARD (SEE ECC CHAPTER 6) OR OTHER CRITERIA | ECC OR OTHER CITATION |
|-----|---|--|--|--|
| IB | MECHANICAL AND SERVICE WATER HEATING INSPECTIONS | | | |
| IB1 | FIREPLACES: PROVISION OF COMBUSTION AIR AND TIGHT-FITTING FIREPLACE DOORS SHALL BE VERIFIED BY VISUAL INSPECTION. | PRIOR TO FINAL CONSTRUCTION INSPECTION | APPROVED CONSTRUCTION DOCUMENTS; ANSI Z21.60 (SEE ALSO MC 904), ANSI Z21.50 | C402.2.7, BC 2111, MC CHAPTERS 7, 8, FGC CHAPTER 6 |
| IB2 | SHUT OFF DAMPERS: DAMPERS FOR STAIR AND ELEVATOR SHAFT VENTS AND OTHER OUTDOOR AIR INTAKES AND EXHAUST OPENINGS INTEGRAL TO THE BUILDING ENVELOPE SHALL BE VISUALLY INSPECTED TO VERIFY THAT SUCH DAMPERS, EXCEPT WHERE PERMITTED TO BE GRAVITY DAMPERS, COMPLY WITH APPROVED CONSTRUCTION DRAWINGS. LITERATURE SHALL BE REVIEWED TO VERIFY THAT THE PRODUCT HAS BEEN... | AS REQUIRED DURING INSTALLATION | APPROVED CONSTRUCTION DOCUMENTS; AMCA 500D | C403.2.4.4; ASHRAE 90.1 CA - 6.4.3.4 |
| IB3 | HVAC SERVICE WATER HEATING AND COOL EQUIPMENT SIZING AND PERFORMANCE EQUIPMENT SIZING, EFFICIENCIES AND OTHER PERFORMANCE FACTORS OF ALL MAJOR EQUIPMENT UNITS, AS DETERMINED BY THE APPLICANT OF RECORD, AND NO LESS THAN 15% OF MINOR EQUIPMENT UNITS, SHALL BE VERIFIED BY VISUAL INSPECTION AND, WHERE NECESSARY, REVIEW OF MANUFACTURER'S DATA. POOL HEATERS AND COVERS SHALL BE VERIFIED BY VISUAL INSPECTION. | PRIOR TO FINAL PLUMBING AND CONSTRUCTION INSPECTION | APPROVED CONSTRUCTION DOCUMENTS | C403.2, C404.2, C404.7; ASHRAE 90.1 CA - 6.3, 6.4.1, 6.4.2, 6.8, 7.4, 7.8 |
| IB4 | HVAC SERVICE CONTROLS AND ECONOMIZERS AND SERVICE HOT WATER SYSTEM CONTROLS: NO LESS THAN 20% OF EACH TYPE OF REQUIRED CONTROLS AND ECONOMIZERS SHALL BE VERIFIED BY VISUAL INSPECTION AND TESTED FOR FUNCTIONALITY AND PROPER OPERATION. SUCH CONTROLS SHALL INCLUDE, BUT ARE NOT LIMITED TO: THERMOSTATIC SET POINT OVERLAP RESTRICTION OFF-HOUR SHUTOFF DAMPER SNOW-MELT SYSTEM DEMAND CONTROL SYSTEMS ECONOMIZERS AIR SYSTEMS VARIABLE AIR VOLUME FAN HYDRONIC SYSTEMS HEAT REJECTION EQUIPMENT FAN SPEED COMPLEX MECHANICAL SYSTEMS SERVING MULTIPLE ZONES VENTILATION ENERGY RECOVERY SYSTEMS HOT GAS BYPASS LIMITATION TEMPERATURE SERVICE WATER HEATING HOT WATER SYSTEM POOL HEATER AND TIME SWITCHES EXHAUST HOODS RADIANT HEATING SYSTEMS CONTROLS WITH SEASONALLY DEPENDENT FUNCTIONALITY: CONTROLS WHOSE COMPLETE OPERATION CANNOT BE DEMONSTRATED DUE TO PREVAILING WEATHER CONDITIONS TYPICAL OF THE SEASON DURING WHICH PROGRESS INSPECTIONS WILL BE PERFORMED SHALL BE PERMITTED TO BE SIGNED OFF FOR THE PURPOSE OF A TEMPORARY CERTIFICATE OF OCCUPANCY WITH ONLY A VISUAL INSPECTION, PROVIDED, HOWEVER, THAT THE PROGRESS INSPECTOR SHALL PERFORM A SUPPLEMENTAL INSPECTION WHERE THE CONTROLS ARE VISUALLY INSPECTED AND TESTED FOR FUNCTIONALITY AND PROPER OPERATION DURING THE NEXT IMMEDIATE SEASON THEREAFTER. THE OWNER SHALL PROVIDE FULL ACCESS TO THE PROGRESS INSPECTOR WITHIN TWO WEEKS OF THE PROGRESS INSPECTOR'S REQUEST FOR SUCH ACCESS FOR SUCH SUPPLEMENTAL INSPECTIONS. THE DEPARTMENT SHALL BE NOTIFIED BY THE APPROVED PROGRESS INSPECTION AGENCY OF ANY UNRESOLVED DEFICIENCIES IN THE INSTALLED... | AFTER INSTALLATION AND PRIOR TO FINAL ELECTRICAL AND CONSTRUCTION INSPECTION, EXCEPT THAT FOR CONTROLS WITH SEASONALLY DEPENDENT FUNCTIONALITY, SUCH TESTING SHALL BE PERFORMED BEFORE SIGN-OFF FOR ISSUANCE OF A FINAL CERTIFICATE OF OCCUPANCY | APPROVED CONSTRUCTION DOCUMENTS, INCLUDING CONTROL SYSTEM NARRATIVES; ASHRAE GUIDELINE 1, THE HVAC COMMISSIONING MANUAL, WHERE APPLICABLE | C403.2.4, C403.2.5, C403.2.11; C403.3, C403.4, C404.3, C404.6, C404.7; ASHRAE 90.1 CA - 6.3, 6.4, 6.5, 6.7.2.4, 7.4.4, 7.4.5 |
| IB5 | HVAC INSULATION AND SEALING: INSTALLED DUCT AND PIPING INSULATION SHALL BE VISUALLY INSPECTED TO VERIFY PROPER INSULATION PLACEMENT AND VALUES. JOINTS, LONGITUDINAL AND TRANSVERSE SEAMS AND CONNECTIONS IN DUCTWORK SHALL BE VISUALLY INSPECTED FOR PROPER SEALING. | PRIOR TO FINAL CONSTRUCTION INSPECTION | APPROVED CONSTRUCTION DOCUMENTS; SMACNA DUCT CONSTRUCTION STANDARDS, METAL AND FLEXIBLE | C403.2.1.1, C403.2.9.1.2, C403.2.10, C404.4, MC 804.9; ASHRAE 90.1 CA - 6.3, 6.4.4, 6.8.2, 6.8.3, 7.4.3 |
| IB6 | DUCT LEAKAGE TESTING: FOR DUCT SYSTEMS DESIGNED TO OPERATE AT STATIC PRESSURES IN EXCESS OF 3 INCHES W.G. (746 PA), REPRESENTATIVE SECTIONS, AS DETERMINED BY THE PROGRESS INSPECTOR, TOTALING AT LEAST 25% OF THE DUCT AREA, PER ECC C403.2.7.1.3, SHALL BE TESTED TO VERIFY THAT ACTUAL AIR LEAKAGE IS BELOW... | AFTER INSTALLATION AND SEALING AND PRIOR TO CLOSING SHAFTS, CEILING AN... | APPROVED CONSTRUCTION DOCUMENTS; SMACNA HVAC AIR DUCT LEAKAGE TEST MANUAL | C403.2.9.1.3; ASHRAE 90.1 CA - 6.4.4.2.2 |
| ID | OTHER | | | |
| ID1 | MAINTENANCE INFORMATION: MAINTENANCE MANUALS FOR MECHANICAL SERVICE HOT WATER AND ELECTRICAL EQUIPMENT AND SYSTEMS REQUIRING PREVENTIVE MAINTENANCE SHALL BE REVIEWED FOR APPLICABILITY TO INSTALLED EQUIPMENT AND SYSTEMS BEFORE SUCH MANUALS ARE PROVIDED TO THE OWNER. LABELS REQUIRED FOR SUCH EQUIPMENT OR SYSTEMS SHALL BE INSPECTED FOR ACCURACY AND COMPLETENESS | PRIOR TO SIGN-OFF OR ISSUANCE OF FINAL CERTIFICATE OF OCCUPANCY | APPROVED CONSTRUCTION DOCUMENTS, INCLUDING ELECTRICAL DRAWINGS WHERE APPLICABLE; ASHRAE GUIDELINE 4, PREPARATION OF OPERATING AND MAINTENANCE DOCUMENTATION FOR BUILDING SYSTEMS | C303.3, C408.5.2; ASHRAE 90.1 CA - 4.2.2.3, 6.7.2.2, 8.7.2 |

AREA/LOCATION MAP



PROPOSED SITE LOCATION
N.T.S.



BUILDING DEPARTMENT FILING NOTE:

THIS PLAN IS APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

NEW YORK ALTERATION WARNING STATEMENT:

IT IS A VIOLATION OF THE NEW YORK EDUCATION LAW, ARTICLE 148, SECTION 7209 FOR ANY PERSON, UNLESS THE INDIVIDUAL IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE SEAL OF AN ENGINEER IS ALTERED. THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM THEIR SEAL AND THE DATE OF NOTATION ALTERED BY FOLLOWING BY THEIR SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

SPECIAL INSPECTIONS

OWNER SHALL SUBCONTRACT WITH A NEW YORK STATE REGISTERED SPECIAL INSPECTION AGENCY TO PERFORM THE REQUIRED SPECIAL INSPECTIONS FOR THE MECHANICAL, PLUMBING AND FIRE PROTECTION SYSTEMS AS REQUIRED BY THE NEW YORK CITY BUILDING CODE. OWNER SHALL PAY AN EXPEDITER TO FILE ALL REQUIRED FORMS.

NOTE:

EXISTING CONDITIONS WERE TAKEN FROM ORIGINAL DRAWINGS & SITE VISITS AND MAY NOT REFLECT EXACT "AS-BUILT" CONDITIONS. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO SUBMITTING FINAL BIDS. CAREFULLY COORDINATE NEW WORK AND DEMOLITION WITH ALL OTHER DISCIPLINES AND EXISTING CONDITIONS.

TO THE BEST OF MY KNOWLEDGE, RELIEF AND PROFESSIONAL JUDGMENT, THIS APPLICATION IS IN COMPLIANCE WITH THE NYCECC 2020.

ANDREW G. BENNETT

DOB APPROVAL STAMP



SHAKE SHACK COLUMBUS CIRCLE NYC

10 COLUMBUS CIRCLE UNIT 302
NEW YORK, NY 10019
SHACK #1525

BLOCK: 1049
LOT: 7501
ZONING DISTRICT: C6-6, MD
MAP: 8c

MECHANICAL TITLE SHEET

DOB NOW JOB # M00964009-11

SEAL/SIGNATURE:



DRAWN BY: Author

CHECKED BY: Checker

JOB NO: 20230127.00

M-001.00

02/05/2024

| RESPONSIBILITY MATRIX | | | | | | |
|--|-----------|-------|-----------|----|---------|-------|
| DESCRIPTION | FURNISHED | | INSTALLED | | REMARKS | |
| | GC | OWNER | LL | GC | | OWNER |
| DIVISION 23: HEATING, VENTILATING, AND AIR CONDITIONING | | | | | | |
| 23.1 HVAC DUCTWORK AND PIPING IDENTIFICATION | | | | | | |
| HVAC DUCTWORK SYSTEM IDENTIFICATION | • | | | • | | |
| PIPING SYSTEM IDENTIFICATION | • | | | • | | |
| UTILITY SHUT OFF IDENTIFICATION IN KITCHEN | • | | | • | | |
| VALVE TAGS AND CHART | • | | | • | | |
| 23.2 ROOF CURBS | | | | | | |
| HVAC DAMPER IDENTIFICATION | • | | | • | | |
| 23.3 HVAC DUCTWORK SYSTEM COMPONENTS | | | | | | |
| HVAC DUCTWORK | • | | | • | | |
| GREASE DUCTWORK INSIDE TENANT SPACE | • | | | • | | |
| GREASE EXHAUST LOUVER | • | | | • | | |
| MAKEUP AIR DUCTWORK INSIDE TENANT SPACE | • | | | • | | |
| MAKEUP AIR LOUVER | • | | | • | | |
| OUTSIDE AIR DUCTWORK INSIDE TENANT SPACE | • | | | • | | |
| OUTSIDE AIR LOUVER | • | | | • | | |
| GENERAL EXHAUST AIR DUCTWORK INSIDE TENANT SPACE | • | | | • | | |
| GENERAL EXHAUST AIR LOUVER | • | | | • | | |
| INSULATION AND FIRE WRAP | • | | | • | | |
| DAMPERS | • | | | • | | |
| SMOKE DETECTORS | • | | | • | | |
| SUPPLY, RETURN, AND EXHAUST GRILLS AND REGISTERS | • | | | • | | |
| 23.4 MECHANICAL PIPING SYSTEM COMPONENTS | | | | | | |
| WALK-IN COOLER AND FREEZER WATER COOLED CONDENSERS | • | | | • | | 1 |
| REFRIGERANT PIPING FOR HVAC EQUIPMENT | • | | | • | | |
| VALVES AND ACCESSORIES (E.G. AIR VENTS) | • | | | • | | |
| CHILLED WATER PIPING WITHIN TENANT SPACE | • | | | • | | |
| CHILLED WATER LOOP BTU METER | • | | | • | | |
| CHILLED WATER PIPING TO DEMISED SPACE | • | | | • | | |
| 23.5 HVAC EQUIPMENT | | | | | | |
| SUPPLY FAN | • | | | • | | |
| RESTROOM EXHAUST FAN | • | | | • | | |
| ELECTROSTATIC PRECIPITATOR | • | | | • | | |
| DUCTED AND NON-DUCTED HEATING AND COOLING UNITS | • | | | • | | |
| MAKEUP AIR UNIT | • | | | • | | |
| 23.6 KITCHEN EXHAUST WITH FIRE SUPPRESSION SYSTEM | | | | | | |
| HOOD CONTROL PANEL | • | | | • | | |
| KITCHEN EXHAUST HOOD | • | | | • | | |
| STRUCTURAL SUPPORT | • | | | • | | |
| ELECTRICAL AND CONTROL WIRING | • | | | • | | |
| TANK FIRE SUPPRESSION SYSTEM | • | | | • | | 2 |
| TANK FIRE SUPPRESSION WIRING AND UTILITIES CONNECTION | • | | | • | | |
| TANK FIRE SUPPRESSION GAS VALVE | • | | | • | | |
| 23.7 COMMISSIONING ACTIVITIES | | | | | | |
| GREASE EXHAUST WATER LEAKAGE TEST | • | | | • | | |
| TEST AND BALANCE (TAB) REPORT | • | | | • | | |
| GENERAL NOTES: | | | | | | |
| 1. INFORMATION CONTAINED WITHIN IS BASED ON OUR INTERPRETATION OF THE FINAL EXECUTED WORK LETTER. | | | | | | |
| 2. CONTRACTOR TO CONFIRM ALL SCOPE WITH FINAL WORK LETTER PRIOR TO PROCUREMENT. | | | | | | |
| REMARKS: | | | | | | |
| 1. WALK-IN COOLER AND FREEZER CONDENSING UNITS FURNISHED AND INSTALLED BY OWNER VENDOR. | | | | | | |
| 2. GENERAL CONTRACTOR TO COORDINATE TANK INSTALLATION TIME WITH OWNER VENDOR AND FACILITATE SYSTEM SIGN-OFF. | | | | | | |

| SUBMITTAL MATRIX | | | | | |
|--|--------------------------------------|---------------------|-------------|--------------------------|-------------------|
| GENERAL CONTRACTORS TO ALSO REVIEW ARCHITECTURAL SPECIFICATIONS AS NOTED IN PLANS IN PLAN SECTION 700 OF THE ARCHITECTURAL PACKAGE FOR REQUIRED SUBMITTALS THAT MIGHT NOT BE LISTED BELOW. | | | | | |
| SUBMITTAL DESCRIPTION | Required Review Time (Business Days) | Architect of Record | Shake Shack | Physical Sample Required | Submit for Record |
| Diffusers, Grills & Registers | 5 | X | | | X |
| Ductwork Layout (if there are significant changes in field) | 5 | X | | | X |
| HVAC Equipment (if Captive Air - Submitted by Owner Vendor directly to Owner/AOR prior to construction)) | 5 | X | | | X |
| MEP Tests, Start-Up, and Programming Reports | 5 | X | | | X |

| SUBMITTAL MATRIX | | | | | |
|--|--------------------------------------|---------------------|-------------|--------------------------|-------------------|
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| Ductwork Layout (if there are significant changes in field) | 5 | X | | | X |
| HVAC Equipment (if Captive Air - Submitted by Owner Vendor directly to Owner/AOR prior to construction)) | 5 | X | | | X |
| MEP Tests, Start-Up, and Programming Reports | 5 | X | | | X |

- GENERAL NOTES:**
- PRIOR TO SUBMITTING BID, VISIT THE JOB SITE AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS OF THE PROJECT. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND OTHER DRAWINGS FOR ADDITIONAL REQUIREMENTS WHICH MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT, ENGINEER AND/OR OWNER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.
 - EXISTING CONDITIONS WERE TAKEN FROM ORIGINAL DRAWINGS AND SITE VISITS AND MAY NOT REFLECT EXACT "AS-BUILT" CONDITIONS. FIELD VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING FINAL BIDS. COORDINATE WITH OWNER AND DEMOLITION WITH OTHER DISCIPLINES AND EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
 - COORDINATE THE INSTALLATION OF THE MECHANICAL SYSTEMS WITH OTHER TRADES TO ENSURE A NEAT AND ORDERLY INSTALLATION. INSTALL DUCTWORK AND PIPING AS TIGHT TO STRUCTURE AS POSSIBLE. COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS. COORDINATE INSTALLATION OF DUCTWORK AND PIPING TO AVOID CONFLICTS WITH ELECTRICAL PANELS, LIGHTING FIXTURES, ETC. ANY MODIFICATIONS REQUIRED DUE TO LACK OF COORDINATION WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO EXTRA COST TO THE OWNER.
 - WHERE SHUTDOWN OF EXISTING SYSTEMS IS REQUIRED DURING NEW WORK, COORDINATE SHUTDOWN TIME AND DURATION WITH THE OWNER TO MINIMIZE DOWNTIME. NOTIFY OWNER SEVEN (7) DAYS PRIOR TO INTERRUPTION OF SERVICE.
 - DURING INSTALLATION OF NEW WORK, AVOID DAMAGING EXISTING SURFACES AND EQUIPMENT TO REMAIN. REPAIR DAMAGE CAUSED DURING CONSTRUCTION AT NO EXTRA COST TO THE OWNER.
 - PROVIDE TEMPORARY BARRIERS TO CONTAIN DUST AND DEBRIS RESULTING FROM THE PERFORMANCE OF THE WORK TO THE AREA WHERE WORK IS BEING PERFORMED.
 - ALL MECHANICAL EQUIPMENT SHOWN ON THE MECHANICAL PLANS SHALL BE PROVIDED BY DIVISION 23 UNLESS OTHERWISE NOTED.
 - NEW MECHANICAL EQUIPMENT, DUCTWORK AND PIPING ARE SHOWN AT APPROXIMATE LOCATIONS. FIELD MEASURE FINAL DUCTWORK AND PIPING LOCATIONS PRIOR TO FABRICATION AND MAKE ADJUSTMENTS AS REQUIRED TO FIT THE DUCTWORK AND PIPING WITHIN THE AVAILABLE SPACE. VERIFY THAT FINAL EQUIPMENT LOCATIONS MEET MANUFACTURER'S RECOMMENDATIONS REGARDING SERVICE CLEARANCE AND PROPER AIRFLOW CLEARANCE AROUND EQUIPMENT.
 - REFER TO ARCHITECTURAL DRAWINGS FOR RELATED CONSTRUCTION DETAILS AS APPLICABLE TO THE HVAC SYSTEM. VERIFY CHASES AND PENETRATIONS SHOWN ON ARCHITECTURAL DRAWINGS THAT ARE INTENDED FOR DUCTWORK AND PIPING MEET REQUIREMENTS.
 - COORDINATE LOCATION OF ROOF MOUNTED HVAC EQUIPMENT AND ROOF PENETRATIONS WITH THE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
 - INDOOR AIR QUALITY MEASURES: PROTECT INSIDE OF (INSTALLED AND DELIVERED) DUCTWORK AND HVAC UNITS FROM EXPOSURE TO DUST, DIRT, PAINT AND MOISTURE. REPLACE INSULATION THAT HAS BECOME WET AT ANY TIME DURING CONSTRUCTION, DRYING THE INSULATION IS NOT ACCEPTABLE. SEAL ANY TEARS OR JOINTS OF INTERNAL FIBERGLASS INSULATION. REMOVE DEBRIS FROM CEILING RETURN AIR FLEXIBLE INCLUDING DUST. AN INDEPENDENT, PROFESSIONAL DUCT CLEANING COMPANY SHALL VACUUM CLEAN ANY DUCTWORK CONNECTED TO HVAC UNITS THAT WERE OPERATED DURING THE CONSTRUCTION PERIOD. CLEANING FILTERS ARE INSTALLED PRIOR TO TURNING SYSTEM OVER TO THE OWNER. THE INTERNAL SURFACES AND ASSOCIATED COILS OF ANY HVAC UNITS THAT WERE OPERATED SHALL ALSO BE CLEANED.
 - INSTALL DUCTWORK AND PIPING PARALLEL TO BUILDING COLUMN LINES UNLESS OTHERWISE SHOWN OR NOTED.
 - OVERHEAD HANGERS AND SUPPORTS FOR EQUIPMENT, DUCTWORK AND PIPING SHALL BE FASTENED TO BUILDING JOISTS OR BEAMS. DO NOT ATTACH HANGERS AND SUPPORTS TO THE ABOVE FLOOR OR ROOF OR EXCEPT WHERE CONCRETE INSERTS IN CONCRETE SLABS ARE ALLOWED BY THE SPECIFICATIONS.
 - COORDINATE LOCATION OF EQUIPMENT SUPPORTS WITH LOCATION OF EQUIPMENT ACCESS PANELS/DOORS TO ENABLE SERVICE OF EQUIPMENT AND/OR FILTER REPLACEMENT.
 - SEAL PENETRATIONS THROUGH THE BUILDING COMPONENTS IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS. FIREPROOF PENETRATIONS THROUGH FIRE RATED COMPONENTS IN ACCORDANCE WITH U.L. REQUIREMENTS.
 - COORDINATE THE EXACT MOUNTING SIZE AND FRAME TYPE OF DIFFUSERS, REGISTERS AND GRILLES WITH THE SUPPLIER TO MEET THE CEILING, WALL AND DUCT INSTALLATION REQUIREMENTS.
 - ADJUST LOCATION OF CEILING DIFFUSERS, REGISTERS AND GRILLES AS REQUIRED TO ACCOMMODATE FINAL CEILING GRID AND LIGHTING LOCATIONS.
 - PAINT PORTIONS OF DUCTWORK AND INSULATION THAT ARE EXPOSED TO VIEW BY THE INSTALLATION OF DIFFUSERS, REGISTERS, AND GRILLES IN CEILINGS OR WALLS FLAT BLACK. PORTIONS INCLUDE BOTH THE INTERIOR OF UNLINED DUCTWORK AND THE EXTERIOR OF DUCTWORK AND INSULATION.
 - LOCATE AND SET THERMOSTATS AND HUMIDISTATS AT LOCATIONS SHOWN ON PLANS. VERIFY EXACT LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION. INSTALL DEVICES WITH TOP OF DEVICE AT MAXIMUM 48" AFF TO MEET ADA REQUIREMENTS UNLESS NOTED OTHERWISE ON PLANS. PROVIDE INSULATED BACKING FOR THERMOSTATS MOUNTED ON EXTERIOR BUILDING WALLS. INSTALL WIRING IN CONDUIT PROVIDED BY DIVISION 26. AT A MINIMUM, PROVIDE CONDUIT IN THE WALL FROM THE JUNCTION BOX TO 6" ABOVE THE CEILING.
 - COORDINATE THE LOCATION AND ELEVATION OF WALL-MOUNTED DEVICES WITH PRESENTATION BOARDS, DISPLAY CABINETS, SHELVES OR OTHER COMPONENTS SHOWN ON THE ARCHITECTURAL DRAWINGS THAT ARE TO BE INSTALLED UNDER OTHER DIVISIONS. CONTRACTOR WILL NOT BE REIMBURSED FOR RELOCATION OF WALL-MOUNTED DEVICES CAUSED BY A LACK OF COORDINATION.
 - PROVIDE A MANUAL BALANCING DAMPER IN EACH DUCT TAKEOFF FROM SUPPLY, RETURN, OUTDOOR AND EXHAUST AIR DUCTS.
 - PROVIDE A PREFABRICATED 45 DEGREE, HIGH EFFICIENCY, RECTANGULAR/ROUND BRANCH DUCT TAKEOFF FITTING FOR BRANCH DUCT CONNECTIONS AND TAKE-OFFS TO INDIVIDUAL DIFFUSERS, REGISTERS AND GRILLES. PROVIDE WITH INTEGRAL MANUAL BALANCING DAMPER AND LOCKING QUADRANT WHERE INDICATED ON PLANS.
 - BRANCH DUCTWORK TO AIR OUTLETS SHALL BE SAME SIZE AS OUTLET NECK SIZE UNLESS OTHERWISE NOTED.
 - REFER TO SPECIFICATIONS FOR DUCTWORK AND PIPING INSULATION REQUIREMENTS. DUCT SIZES ON MECHANICAL PLANS INDICATE CLEAR INSIDE AIRFLOW DIMENSIONS. INCREASE SHEET METAL SIZES ACCORDINGLY TO ACCOUNT FOR THICKNESS OF DUCT LINER.
 - FLEXIBLE DUCTWORK SHALL NOT EXCEED 5'-0" IN LENGTH AND SHALL BE INSTALLED AND SUPPORTED TO AVOID SHARP BENDS AND SAGGING. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
 - PROVIDE EQUIPMENT VENTS AND FLUES PER EQUIPMENT MANUFACTURERS RECOMMENDATIONS AND EQUIPMENT SPECIFICATIONS. KEEP PENETRATIONS THROUGH ROOF A MINIMUM OF 10'-0" FROM HVAC EQUIPMENT FRESH AIR INLETS AND 2'-0" FROM ROOF PARAPETS.
 - PROVIDE TYPE I GREASE HOOD EXHAUST DUCTWORK OF MINIMUM 16 GAUGE BLACK IRON WITH LIQUID TIGHT WELDS, WITH ACCESS PANELS FOR GREASE CLEANING AS REQUIRED BY NFPA 96 AND LOCAL CODES. SLOPE DUCT BACK TOWARDS HOOD AT MINIMUM OF 1/4" PER LINEAL FOOT MAINTAINING 18" CLEARANCE TO COMBUSTIBLE MATERIALS. INSTALL GREASE DUCTS IN AN APPROVED FIRE-RATED ENCLOSURE SEPARATED FROM THE EXHAUST DUCT BY A MINIMUM OF 6" AND MAXIMUM OF 12". VENTILATE ENCLOSURE TO THE OUTSIDE AIR IF REQUIRED BY CODE. AS AN OPTION, IF APPROVED BY LOCAL CODES, PROVIDE AN APPROVED WRAP SYSTEM IN LIEU OF THE RATED DUCT ENCLOSURE SYSTEM. DUCT WRAP SYSTEM SHALL MEET UL REQUIREMENTS FOR GREASE DUCT ENCLOSURES.
 - PROVIDE A NEW SET OF AIR FILTERS IN UNITS PRIOR TO TESTING, ADJUSTING AND BALANCING AND BEFORE TURNING SYSTEM(S) OVER TO OWNER.
 - FIELD VERIFY THAT THE EXISTING EQUIPMENT INCLUDING ACCESSORIES BEING REUSED FOR THIS PROJECT IS NOT DAMAGED AND IS IN GOOD WORKING ORDER. REPORT ANY DEFICIENCIES TO THE OWNER OR ARCHITECT. SUBMIT TO THE OWNER AND ARCHITECT A WRITTEN REPORT DESCRIBING TESTS PERFORMED TO VERIFY OPERATION AND RESULTS OF THE TESTS.
 - CLEAN EXISTING EQUIPMENT AND EQUIPMENT COMPONENTS BEING REUSED FOR THIS PROJECT. PROVIDE NEW FILTERS FOR EXISTING AIR HANDLING EQUIPMENT PRIOR TO STARTUP OF EQUIPMENT. NEW FILTERS SHALL BE COMPATIBLE WITH THE EXISTING EQUIPMENT AND EQUAL IN PERFORMANCE TO THE EXISTING FILTERS AT NEW CONDITION UNLESS OTHERWISE NOTED. CLEAN STRAINERS IN PIPING SYSTEMS PRIOR TO STARTING PUMPS.
 - TEMPORARY INSTALLATIONS OF INFECTION CONTROL MEASURES DURING CONSTRUCTION SHALL BE COORDINATED WITH THE FACILITY'S INFECTION CONTROL STAFF. PRIOR TO CONSTRUCTION PROVIDE ALL REQUIRED TEMPORARY INSTALLATIONS, INCLUDING DETAILS OF THE INFECTION CONTROL MEASURES SUCH AS TEMPORARY BARRIERS AND MEMBRANES, PORTABLE EXHAUST FANS AND TEMPORARY DUCTWORK. TEMPORARY INSTALLATIONS MUST NOT HAVE A NEGATIVE IMPACT ON EXISTING SYSTEMS NOR CAUSE UNSAFE CONDITIONS. TEMPORARY INSTALLATIONS SHALL MAINTAIN ADEQUATE EGRESS AND SHALL NOT OBSTRUCT EXISTING EXITS. CREATE A FIRE HAZARD OR REDUCE REQUIRED FIRE RESISTANCE. TEMPORARY VENTILATION SYSTEMS SHALL NOT CAUSE THE AIR BALANCE OF ADJACENT ROOMS OR SPACES TO BE IMPACTED OR ALTER THE PERFORMANCE OF PERMANENT BUILDING VENTILATION SYSTEMS. AIRFLOW MEASUREMENTS SHALL BE TAKEN TO VERIFY ADJACENT ROOMS OR SPACES ARE NOT IMPACTED.

MECHANICAL SYMBOLS

THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS OR ABBREVIATIONS ARE USED.

| STANDARD MOUNTING HEIGHT | HVAC DUCTWORK AND ACCESSORIES | PIPING SYMBOLS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| THERMOSTATS (USER ADJUSTABLE)(TOP OF DEVICE) 48" CONTROLS (TOP OF DEVICE) 48" | LINEAR SLOT DIFFUSER INSULATED FLEXIBLE DUCT (MAX. 5'-0" LONG) BRANCH DUCT WITH 45° RECTANGLE-ROUND BRANCH FITTING AND MANUAL VOLUME DAMPER ELBOW WITH TURNING VANES BRANCH DUCT WITH BELL-MOUTH FITTING & MANUAL VOLUME CONTROL DAMPER RETURN, EXHAUST, OR OUTSIDE AIR DUCT UP RETURN, EXHAUST, OR OUTSIDE AIR DUCT DOWN SUPPLY AIR DUCT UP SUPPLY AIR DUCT DOWN EQUIPMENT WITH FLEXIBLE DUCT CONNECTION 10" (NECK SIZE) CSD-1 (TYPE) 300 CFM (CFM OF SUPPLY DIFFUSER OR REGISTER) 24x24 (NECK SIZE) CEC-1 (TYPE) 800 CFM (CFM OF EXHAUST GRILLE) MANUAL VOLUME DAMPER SQUARE TO ROUND TRANSITION DUCT MOUNTED SMOKE DETECTOR (SD-SUPPLY/RD-RETURN) ROUND DUCT TAG INDICATING DIAMETER RECTANGULAR DUCT TAG INDICATING INTERNAL DUCT DIMENSIONS. FLAT OVAL DUCT TAG INDICATING INTERNAL DUCT DIMENSIONS. RISER DESIGNATION FIRE DAMPER FIRE SMOKE DAMPER SMOKE DAMPER VOLUME DAMPER MOTORIZED DAMPER BACKDRAFT DAMPER | DIRECTION OF FLOW CONTROL VALVE THREE-WAY CONTROL VALVE SHUTOFF VALVE CHECK VALVE BALANCING VALVE WITH PRESSURE PORTS TRIPLE DUTY VALVE WITH PRESSURE PORTS STRAINER STRAINER WITH BLOWDOWN VALVE RELIEF / SAFETY VALVE SOLENOID VALVE PRESSURE REDUCING VALVE GAS PRESSURE REGULATOR THERMOSTATIC MIXING VALVE PIPE ANCHOR EXPANSION JOINT PIPE GUIDE PIPING SUPPORT F & T TRAP BUCKET TRAP THERMOSTATIC TRAP BACKFLOW PREVENTER PRESSURE GAUGE THERMOMETER PRESSURE AND TEMPERATURE TEST PLUG UNION FLANGE CONNECTION VACUUM RELIEF VALVE AUTOMATIC AIR VENT MANUAL AIR VENT PRESSURE / VACUUM SWITCH CLEANOUT CAP ELBOW UP ELBOW DOWN TEE UP TEE DOWN ELBOW UP WITH SHUT-OFF VALVE (SOV) ELBOW DOWN WITH SHUT-OFF VALVE (SOV) TEE UP WITH SHUT-OFF VALVE (SOV) TEE DOWN WITH SHUT-OFF VALVE (SOV) REDUCER RECIRCULATION PUMP P-TRAP GAS COCK TOP BEAM CLAMP TRAPEZE HANGER FLEXIBLE CONNECTION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ANNOTATION MECHANICAL PLAN NOTE CALLOUT MECHANICAL EQUIPMENT DESIGNATION (CONTRACTOR FURNISHED AND INSTALLED UNLESS NOTED OTHERWISE) CONNECTION POINT OF NEW WORK TO EXISTING DETAIL REFERENCE. UPPER NUMBER INDICATES DETAIL NUMBER LOWER NUMBER INDICATES SHEET NUMBER SECTION CUT DESIGNATION | ABBREVIATIONS <table border="0" style="width: 100%;"> <tr> <td>A/C AIR CONDITIONING</td> <td>HWP HEATING WATER PUMP</td> </tr> <tr> <td>ACC AIR COOLED CHILLER</td> <td>IN WC INCHES OF WATER COLUMN</td> </tr> <tr> <td>ACCU AIR COOLED CONDENSING UNIT</td> <td>L LOUVER</td> </tr> <tr> <td>AFC ABOVE FINISHED CEILING</td> <td>LAT LEAVING AIR TEMPERATURE</td> </tr> <tr> <td>AFF ABOVE FINISHED FLOOR</td> <td>LEW LEAVING WET BULB TEMPERATURE</td> </tr> <tr> <td>AFG ABOVE FINISHED GRADE</td> <td>LP LOW PRESSURE</td> </tr> <tr> <td>AHJ AUTHORITY HAVING JURISDICTION</td> <td>LWB LEAVING WET BULB TEMPERATURE</td> </tr> <tr> <td>AHU AIR HANDLING UNIT</td> <td>LWT LEAVING WATER TEMPERATURE</td> </tr> <tr> <td>AI ANALOG INPUT</td> <td>MAU MAKE-UP AIR UNIT</td> </tr> <tr> <td>AO ACCESS PANEL</td> <td>MAX MAXIMUM</td> </tr> <tr> <td>APD AIR PRESSURE DROP</td> <td>MBH 1000 BTU PER HOUR</td> </tr> <tr> <td>AWG AMERICAN WIRE GAUGE</td> <td>MD MOTORIZED DAMPER</td> </tr> <tr> <td>B BOILER</td> <td>MFR MANUFACTURER</td> </tr> <tr> <td>BAS BUILDING AUTOMATION SYSTEM</td> <td>MIN MINIMUM</td> </tr> <tr> <td>BB BRISONE</td> <td>N/A NOT APPLICABLE</td> </tr> <tr> <td>BD BACKDRAFT DAMPER</td> <td>N/C NORMALLY CLOSED</td> </tr> <tr> <td>BD BLOWDOWN</td> <td>NOM NOMINAL</td> </tr> <tr> <td>BFC BELOW FINISHED CEILING</td> <td>NCR NOISE CRITERIA</td> </tr> <tr> <td>BFF BELOW FINISHED FLOOR</td> <td>NF NON-FUSED</td> </tr> <tr> <td>BFG BELOW FINISHED GRADE</td> <td>NC NOT IN CONTRACT</td> </tr> <tr> <td>BFI BOILER FEED PUMP</td> <td>NO NOTED</td> </tr> <tr> <td>BHP BRAKE HORSEPOWER</td> <td>PICV PRESSURE INDEP. CONTROL VALVE</td> </tr> <tr> <td>BI BINARY INPUT</td> <td>PROVIDE FURNISH AND INSTALL</td> </tr> <tr> <td>BO BOTTOM OF DUCT</td> <td>QTY QUANTITY</td> </tr> <tr> <td>BOS BOTTOM OF STRUCTURE</td> <td>RA RETURN AIR ROOM CRITERIA</td> </tr> <tr> <td>BTU BRITISH THERMAL UNIT</td> <td>RD RETURN DUCT</td> </tr> <tr> <td>CFM CUBIC FEET PER MINUTE</td> <td>REA RELIEF AIR RETURN FAN</td> </tr> <tr> <td>CH CHILLER</td> <td>RFR REFRIGERANT</td> </tr> <tr> <td>CO COOLING</td> <td>RH RELATIVE HUMIDITY</td> </tr> <tr> <td>CLEANOUT</td> <td>RPM REVOLUTIONS PER MINUTE</td> </tr> <tr> <td>CONDENSATE PUMP</td> <td>RTU ROOFTOP UNIT</td> </tr> <tr> <td>CONDENSATE POWER</td> <td>SA SUPPLY AIR</td> </tr> <tr> <td>CONTROL</td> <td>SCP STEAM CONDENSATE PUMP</td> </tr> <tr> <td>CRAC COMPUTER ROOM AIR CONDITIONING UNIT</td> <td>SD SMOKE DUCT DETECTOR</td> </tr> <tr> <td>CRU COMPUTER ROOM UNIT</td> <td>SH SHUT-OFF VALVE</td> </tr> <tr> <td>CT COOLING TOWER</td> <td>SH SENSIBLE HEAT CAPACITY</td> </tr> <tr> <td>CWP CONDENSER WATER PUMP</td> <td>SP SCOPE OF WORK</td> </tr> <tr> <td>CJ CHILLED WATER PUMP</td> <td>ST STATIC PRESSURE</td> </tr> <tr> <td>DB DECIBELS</td> <td>STM STEAM TRAP</td> </tr> <tr> <td>DBA DECIBEL AVERAGE</td> <td>TBD TO BE DETERMINED</td> </tr> <tr> <td>DDC DIRECT DIGITAL CONTROL</td> <td>TCIC TEMPERATURE CONTROLS CONTRACTOR</td> </tr> <tr> <td>DJ DIGITAL INPUT</td> <td>TCIP TEMPERATURE CONTROL PANEL</td> </tr> <tr> <td>DISC DISCONNECT</td> <td>TF TRANSFER FAN</td> </tr> <tr> <td>DN DOWN</td> <td>TFA TO FLOOR ABOVE</td> </tr> <tr> <td>DS DUCT SILENCER</td> <td>TFB TO FLOOR BELOW</td> </tr> <tr> <td>DX DIRECT EXPANSION</td> <td>TH TOTAL HEAT CAPACITY</td> </tr> <tr> <td>E EXISTING</td> <td>TSP TOTAL STATIC PRESSURE</td> </tr> <tr> <td>ED EXHAUST DUCT</td> <td>TT TEMPERATURE TRANSMITTAL</td> </tr> <tr> <td>EAT ENTERING AIR TEMPERATURE</td> <td>TYP TYPICAL</td> </tr> <tr> <td>EDB ENTERING DRY BULB</td> <td>UF UNDERFLOOR</td> </tr> <tr> <td>EF EXHAUST FAN</td> <td>UG UNDERGROUND</td> </tr> <tr> <td>EFF EFFICIENCY</td> <td>UIS UNDERSLAB</td> </tr> <tr> <td>EMS ENERGY MANAGEMENT SYSTEM</td> <td>UH UNIT HEATER</td> </tr> <tr> <td>ESP EXTERNAL STATIC PRESSURE</td> <td>UNO UNLESS NOTED OTHERWISE</td> </tr> <tr> <td>ETR EXISTING TO REMAIN</td> <td>UVV VARIABLE AIR VOLUME</td> </tr> <tr> <td>EWB ENTERING WET BULB</td> <td>VEL VELOCITY</td> </tr> <tr> <td>EWT ENTERING WATER</td> <td>VFD VARIABLE FREQUENCY DRIVE</td> </tr> <tr> <td>FCU FAN COIL UNIT</td> <td>VRF VARIABLE REFRIGERANT FLOW</td> </tr> <tr> <td>FFA FROM FLOOR ABOVE</td> <td>VRV VARIABLE REFRIGERANT VOLUME</td> </tr> <tr> <td>FFB FROM FLOOR BELOW</td> <td>W WITH</td> </tr> <tr> <td>FF FINISHED FLOOR</td> <td>W/O WITHOUT</td> </tr> <tr> <td>FPI FINS PER INCH</td> <td>WC WET BULB</td> </tr> <tr> <td>FPM FEET PER MINUTE</td> <td>WC WATER COLUMN</td> </tr> <tr> <td>GC GENERAL CONTRACTOR</td> <td>WPD WATER PRESSURE DROP</td> </tr> <tr> <td>GPM GALLONS PER MINUTE</td> <td>XP EXPLOSION PROOF</td> </tr> <tr> <td>HOA HAND-OFF-AUTOMATIC</td> <td></td> </tr> <tr> <td>HP HORSEPOWER</td> <td></td> </tr> <tr> <td>HTG HEATING</td> <td></td> </tr> </table> | A/C AIR CONDITIONING | HWP HEATING WATER PUMP | ACC AIR COOLED CHILLER | IN WC INCHES OF WATER COLUMN | ACCU AIR COOLED CONDENSING UNIT | L LOUVER | AFC ABOVE FINISHED CEILING | LAT LEAVING AIR TEMPERATURE | AFF ABOVE FINISHED FLOOR | LEW LEAVING WET BULB TEMPERATURE | AFG ABOVE FINISHED GRADE | LP LOW PRESSURE | AHJ AUTHORITY HAVING JURISDICTION | LWB LEAVING WET BULB TEMPERATURE | AHU AIR HANDLING UNIT | LWT LEAVING WATER TEMPERATURE | AI ANALOG INPUT | MAU MAKE-UP AIR UNIT | AO ACCESS PANEL | MAX MAXIMUM | APD AIR PRESSURE DROP | MBH 1000 BTU PER HOUR | AWG AMERICAN WIRE GAUGE | MD MOTORIZED DAMPER | B BOILER | MFR MANUFACTURER | BAS BUILDING AUTOMATION SYSTEM | MIN MINIMUM | BB BRISONE | N/A NOT APPLICABLE | BD BACKDRAFT DAMPER | N/C NORMALLY CLOSED | BD BLOWDOWN | NOM NOMINAL | BFC BELOW FINISHED CEILING | NCR NOISE CRITERIA | BFF BELOW FINISHED FLOOR | NF NON-FUSED | BFG BELOW FINISHED GRADE | NC NOT IN CONTRACT | BFI BOILER FEED PUMP | NO NOTED | BHP BRAKE HORSEPOWER | PICV PRESSURE INDEP. CONTROL VALVE | BI BINARY INPUT | PROVIDE FURNISH AND INSTALL | BO BOTTOM OF DUCT | QTY QUANTITY | BOS BOTTOM OF STRUCTURE | RA RETURN AIR ROOM CRITERIA | BTU BRITISH THERMAL UNIT | RD RETURN DUCT | CFM CUBIC FEET PER MINUTE | REA RELIEF AIR RETURN FAN | CH CHILLER | RFR REFRIGERANT | CO COOLING | RH RELATIVE HUMIDITY | CLEANOUT | RPM REVOLUTIONS PER MINUTE | CONDENSATE PUMP | RTU ROOFTOP UNIT | CONDENSATE POWER | SA SUPPLY AIR | CONTROL | SCP STEAM CONDENSATE PUMP | CRAC COMPUTER ROOM AIR CONDITIONING UNIT | SD SMOKE DUCT DETECTOR | CRU COMPUTER ROOM UNIT | SH SHUT-OFF VALVE | CT COOLING TOWER | SH SENSIBLE HEAT CAPACITY | CWP CONDENSER WATER PUMP | SP SCOPE OF WORK | CJ CHILLED WATER PUMP | ST STATIC PRESSURE | DB DECIBELS | STM STEAM TRAP | DBA DECIBEL AVERAGE | TBD TO BE DETERMINED | DDC DIRECT DIGITAL CONTROL | TCIC TEMPERATURE CONTROLS CONTRACTOR | DJ DIGITAL INPUT | TCIP TEMPERATURE CONTROL PANEL | DISC DISCONNECT | TF TRANSFER FAN | DN DOWN | TFA TO FLOOR ABOVE | DS DUCT SILENCER | TFB TO FLOOR BELOW | DX DIRECT EXPANSION | TH TOTAL HEAT CAPACITY | E EXISTING | TSP TOTAL STATIC PRESSURE | ED EXHAUST DUCT | TT TEMPERATURE TRANSMITTAL | EAT ENTERING AIR TEMPERATURE | TYP TYPICAL | EDB ENTERING DRY BULB | UF UNDERFLOOR | EF EXHAUST FAN | UG UNDERGROUND | EFF EFFICIENCY | UIS UNDERSLAB | EMS ENERGY MANAGEMENT SYSTEM | UH UNIT HEATER | ESP EXTERNAL STATIC PRESSURE | UNO UNLESS NOTED OTHERWISE | ETR EXISTING TO REMAIN | UVV VARIABLE AIR VOLUME | EWB ENTERING WET BULB | VEL VELOCITY | EWT ENTERING WATER | VFD VARIABLE FREQUENCY DRIVE | FCU FAN COIL UNIT | VRF VARIABLE REFRIGERANT FLOW | FFA FROM FLOOR ABOVE | VRV VARIABLE REFRIGERANT VOLUME | FFB FROM FLOOR BELOW | W WITH | FF FINISHED FLOOR | W/O WITHOUT | FPI FINS PER INCH | WC WET BULB | FPM FEET PER MINUTE | WC WATER COLUMN | GC GENERAL CONTRACTOR | WPD WATER PRESSURE DROP | GPM GALLONS PER MINUTE | XP EXPLOSION PROOF | HOA HAND-OFF-AUTOMATIC | | HP HORSEPOWER | | HTG HEATING | |
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| ACC AIR COOLED CHILLER | IN WC INCHES OF WATER COLUMN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ACCU AIR COOLED CONDENSING UNIT | L LOUVER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AFC ABOVE FINISHED CEILING | LAT LEAVING AIR TEMPERATURE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AFF ABOVE FINISHED FLOOR | LEW LEAVING WET BULB TEMPERATURE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AFG ABOVE FINISHED GRADE | LP LOW PRESSURE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AHJ AUTHORITY HAVING JURISDICTION | LWB LEAVING WET BULB TEMPERATURE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AHU AIR HANDLING UNIT | LWT LEAVING WATER TEMPERATURE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AI ANALOG INPUT | MAU MAKE-UP AIR UNIT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AO ACCESS PANEL | MAX MAXIMUM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| FFA FROM FLOOR ABOVE | VRV VARIABLE REFRIGERANT VOLUME | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FFB FROM FLOOR BELOW | W WITH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FF FINISHED FLOOR | W/O WITHOUT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FPI FINS PER INCH | WC WET BULB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FPM FEET PER MINUTE | WC WATER COLUMN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GC GENERAL CONTRACTOR | WPD WATER PRESSURE DROP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GPM GALLONS PER MINUTE | XP EXPLOSION PROOF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HOA HAND-OFF-AUTOMATIC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HP HORSEPOWER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HTG HEATING | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALL DUCT DIMENSIONS SHOWN ON DRAWINGS ARE INSIDE DIMENSIONS. REFER TO DUCTWORK SPECIFICATIONS FOR DUCTWORK INSULATION AND LINER INFORMATION.

HVAC CONTROL DEVICES

| | |
|-----|--|
| ⊕ | HUMIDISTAT |
| ⊖ | THERMOSTAT |
| CO | CARBON MONOXIDE SENSOR |
| CO2 | CARBON DIOXIDE SENSOR |
| PS | DIFFERENTIAL PRESSURE SENSOR |
| FS | FLOW SWITCH |
| HS | HUMIDITY SENSOR |
| PS | PULL STATION |
| RT | REMOTE TESTING STATION WITH INDICATING LIGHT |
| SP | STATIC PRESSURE |
| SW | SWITCH |
| TS | TEMPERATURE SENSOR |

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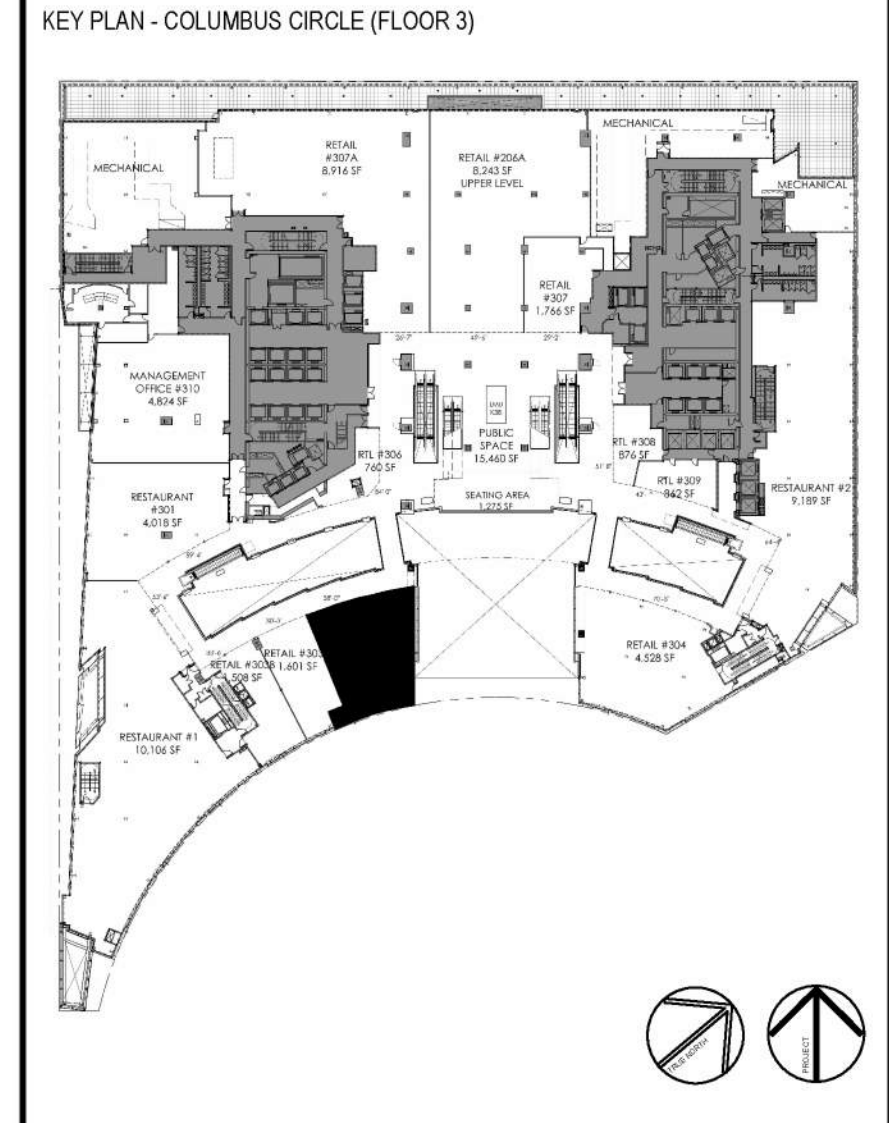
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ANDREW G. BENNETT

Bergmeyer

800 South Figueroa St.
 Suite 1080
 Los Angeles, CA 90017
 213.231.1080
 1 LA
 675 N High St.
 Suite 300
 Columbus, OH 43215
 614.293.8687
 BOS
 51 Stagers St.
 6th Floor
 Boston, MA 02210
 617.542.1029

HNY
CONSULTING ENGINEERS

240 WEST 37TH STREET, 3RD FLOOR
 NEW YORK, NY 10018
 TEL: 212.413.8600
 www.hny-eng.com
 235002058



| 1 | 2024-02-05 | IFC SET | |
|-----|------------|---------------------|-------------|
| | 2024-01-22 | PERMIT BID SET | |
| | 2024-01-03 | LANDLORD REVIEW SET | |
| NO. | BY | DATE | DESCRIPTION |

SHAKE SHACK

SHAKE SHACK COLUMBUS CIRCLE NYC

10 COLUMBUS CIRCLE UNIT 302
 NEW YORK, NY 10019
 SHACK #1525

BLOCK: 1049
 LOT: 791
 ZONING DISTRICT: C6-6, MD
 MAP: 8c

MECHANICAL GENERAL INFORMATION

DOB APPROVAL STAMP

DOB ID# 303 # M000964000-41

SEALED SIGNATURE: _____ DRAWN BY: Author

CHECKED BY: Checker

JOB NO: 20230127.00

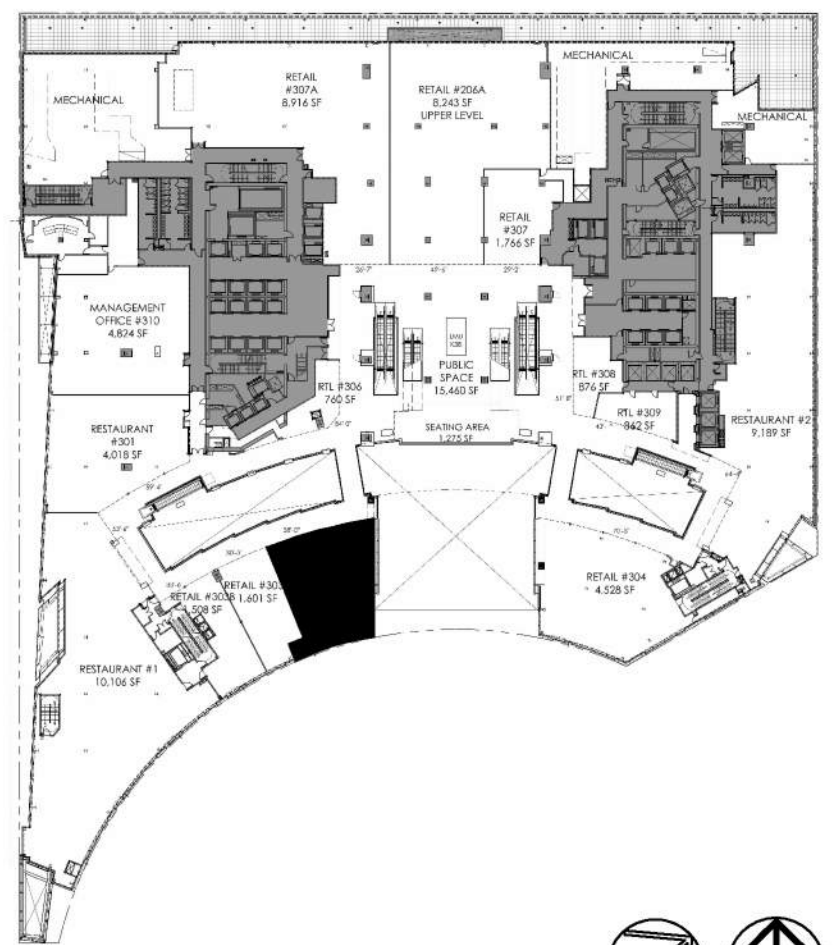
M-002.00

02/05/2024



240 WEST 37TH STREET, 3RD FLOOR
 NEW YORK, NY 10018
 TEL: 212.413.8400
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 2350025268

KEY PLAN - COLUMBUS CIRCLE (FLOOR 3)



| NO. | BY | DATE | DESCRIPTION |
|-----|----|------------|---------------------|
| 1 | | 2024-02-05 | IFC SET |
| | | 2024-01-22 | PERMIT BID SET |
| | | 2024-01-03 | LANDLORD REVIEW SET |



SHAKE SHACK COLUMBUS CIRCLE NYC
 10 COLUMBUS CIRCLE UNIT 302
 NEW YORK, NY 10019
 SHACK #1525

BLOCK: 1049
 LOT: 7501
 ZONING DISTRICT: C6-6, MD
 MAP: 8c

MECHANICAL FLOOR PLAN

DOB NOW JOB # M00064009-11

SEAL/SIGNATURE: DRAWN BY: Author
 CHECKED BY: Checker
 JOB NO: 20230127.00

M-101.00

02/05/2024

MECHANICAL GENERAL NOTES:

- DO NOT ROUTE ANY DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS. REFER TO SHEET M101 FOR ADDITIONAL GENERAL NOTES AND REQUIREMENTS.
- REFER TO DETAILS AND SCHEDULES SHEETS FOR FURTHER INFORMATION.
- MOUNT ALL THERMOSTATS AND SENSORS CONTROLLING HVAC EQUIPMENT AT 48" AFF UNLESS OTHERWISE NOTED.

RELOCATION OF BASE BUILDING MEP SERVICES MUST BE COORDINATED & APPROVED BY LL.

LOCATION OF EXISTING UTILITIES MAY BE IN DIFFERENT LOCATIONS THAT DRAWINGS INDICATE. TENANT ENGINEER IS ULTIMATELY RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS IN FIELD (BASE BUILDING SERVICES, ETC).

AS BUILT DRAWINGS ARE TO BE SUBMITTED TO THE LANDLORD IN FULL SIZE HARD COPY FORMAT AND IN AUTOCAD DWG AND DXF FORMATS UPON COMPLETION AND TESTING OF ALL MECHANICAL SYSTEMS.

ALL BASE BUILDING SHUT DOWNS, TESTING, TIE-INS AND CONNECTIONS MUST BE COORDINATED IN ADVANCE WITH THE LANDLORD USING THE REQUEST FORMS PROVIDED BY LL.

PROTECT ALL EXISTING BASE BUILDING SERVICES THAT RUN THROUGH THIS SPACE DURING CONSTRUCTION. PATCH / REPAIR ALL DAMAGED INSULATION.

ALL ROTATING EQUIPMENT SHALL BE PROVIDED WITH VIBRATION ISOLATION DEVICES IN GENERAL ACCORDANCE WITH ASHRAE GUIDELINES AND ACHIEVING A MINIMUM EFFICIENCY OF 98%.

BASE BUILDING STAFF SHALL WITNESS THE FLUSHING AND TREATING OF THE PIPING. BASE BUILDING CHEMICAL TREATMENT FIRM SHALL BE USED FOR FLUSHING AND PRE-TREATING OF ALL NEW PIPING.

AIR BALANCE REPORT SHALL BE SUBMITTED TO THE LANDLORD FOR REVIEW AND APPROVAL.

PRESSURE TEST FOR NEW CHILLED WATER PIPING SHALL BE AT 1.5 TIMES SYSTEM PRESSURE FOR 4 HOURS. TEST TO BE WITNESSED BY THE BASE BUILDING OPERATING ENGINEERING STAFF.

ALL NEW PIPING SHALL BE CHEMICALLY CLEANED AND TESTED PRIOR TO BEING OPENED TO THE BASE BUILDING CHILLED WATER SYSTEM. BASE BUILDING CHEMICAL TREATMENT VENDOR TO BE USED. COORDINATE WITH BASE BUILDING ENGINEERS FOR WITNESSING OF FLUSHING AND CLEANING OF ALL NEW PIPING.

MECHANICAL PLAN NOTES:

- TYPE I GREASE HOOD EXHAUST DUCTWORK SHALL BE MINIMUM SPECIFIED THICKNESS WITH LIQUID TIGHT WELDS PER NYC MECHANICAL CODE. THE MINIMUM REQUIRED THICKNESS SHALL COMPLY WITH THE FOLLOWING: DUCTS WITH A CROSS-SECTIONAL AREA UP TO AND INCLUDING 155 SQUARE INCHES SHALL BE 16 GAUGE STEEL. DUCTS WITH A CROSS-SECTIONAL AREA OVER 155 SQUARE INCHES, BUT NOT MORE THAN 200 SQUARE INCHES SHALL BE 14 GAUGE STEEL. DUCTS WITH A CROSS-SECTIONAL AREA EQUAL TO OR MORE THAN 200 SQUARE INCHES SHALL BE CONSTRUCTED OF 12 GAUGE STEEL. IF STAINLESS STEEL IS USED FOR DUCT MATERIAL, THE GAGE STEEL MAY BE INCREASED UPWARD BY 1 EVEN SIZE.
- INSTALL ACCESS PANELS FOR CLEANING AS REQUIRED BY NFPA 96 AND LOCAL CODES. TRANSITION GREASE DUCTWORK AS REQUIRED TO HOOD AND FAN CONNECTIONS. PROVIDE 45" MAX OFFSETS AS REQUIRED TO COORDINATE WITH STRUCTURE. PROVIDE RADIUS ELBOWS WITHOUT TURNING VANES. SLOPE HORIZONTAL GREASE DUCT BACK TOWARDS HOOD AT MINIMUM OF 1/4" PER LINEAL FOOT. GREASE DUCTS SHALL BE CONTAINED IN A UL APPROVED GREASE DUCT WRAP SYSTEM.
- INSTALL "DUCTMATE ULTIMATE DOOR" ON DUCTS 12" OR LARGER AND INSTALL "DUCTMATE F2 SANDWICH ACCESS DOOR" FOR DUCTS LESS THAN 12" ON GREASE DUCT FOR CLEANING IN LOCATION SHOWN AT A MINIMUM AND AS REQUIRED BY NFPA 96 AND LOCAL CODES.
- TYPE I HOODS SHALL BE FURNISHED COMPLETE WITH INTERNALLY PIPED FIRE SUPPRESSION SYSTEM AND EXTERNAL FOAM SUPPLY BOTTLES WITH REMOTE FULL CONTROLS AND IN COMPLIANCE WITH NFPA 96. DIVISION 23 SHALL COORDINATE COMPLETE INSTALLATION WITH FIRE PROTECTION CONTRACTOR TO MEET APPROVAL OF LOCAL INSPECTOR AND CODE COMPLIANCE INCLUDING TESTING.
- HOOD SHALL OVERHANG THE COOKING SURFACE BY AT LEAST 6" ON BOTH SIDES.
- MOUNT THERMOSTATS, HUMIDITY SENSORS, AND TEMPERATURE SENSOR(S) ON WALL. THERMOSTATS AND SENSOR(S) SHALL BE LABELED TO MATCH THE UNIT TAG AND CORRESPOND TO THE ELECTRICAL LEGEND IN THE ELECTRICAL PANELBOARD SERVING THE EQUIPMENT. COORDINATE COLOR WITH ARCHITECT.
- INSTALL HOOD FIRE SUPPRESSION MANUAL PULL STATION. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH FIRE SUPPRESSION SYSTEM INSTALLER AND THE AUTHORITY HAVING JURISDICTION.
- PROVIDE ANALOX AX600 OR APPROVED EQUAL CARBON DIOXIDE SENSOR WITH REMOTE ALARM REPEATER TO BE MOUNTED AT 12" AFF. PROVIDE CARBON DIOXIDE SENSOR WITH RELAY. RELAY SHALL BE INTERLOCKED WITH THE BUILDING FIRE ALARM SYSTEM. THE SENSOR SHALL BE EQUIPPED WITH A LOCAL AUDIBLE AND VISUAL ALARM. THE LOW LEVEL ALARM SHALL ACTIVATE THE LOCAL AUDIBLE AND VISUAL ALARM. THE HIGH LEVEL ALARM SHALL ACTIVATE RELAY. INSTALL SENSOR PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. LOW LEVEL ALARM - 0.5% ± 5,000 PPM HIGH LEVEL ALARM - 3.0% ± 30,000 PPM.
- CARBON MONOXIDE DETECTOR FURNISHED BY OWNER. INSTALL AT 5'-0" AFF. COORDINATE FINAL LOCATION WITH OWNER REPRESENTATIVE.
- CONTRACTOR SHALL COORDINATE WITH NATIONAL TAB TO PROVIDE UV-PH INDOOR AIR PURIFICATION SYSTEM, MODEL PH-IPG-24V. INSTALL IN UNIT BLOWER COMPARTMENT PER MANUFACTURER'S INSTRUCTIONS.
- SUSPEND WALK-IN COOLER CONDENSER TIGHT TO STRUCTURE IN PLENUM.
- SUSPEND WALK-IN TRASH CONDENSER TIGHT TO STRUCTURE IN PLENUM.
- SUSPEND WALK-IN FREEZER CONDENSER TIGHT TO STRUCTURE IN PLENUM.
- INSTALL RETURN GRILLE WITH CENTER OF DEVICE AT 12'-5" AFF.
- MOUNT TEMPERATURE SENSOR PROVIDED WITH KITCHEN EXHAUST HOODS ON WALL.
- INSTALL DUCT SMOKE DETECTOR IN SUPPLY AND RETURN AIR PLENUM.
- CONTRACTOR TO COORDINATE 1" UNDERCUT ON DOOR FOR EXHAUST AIR PATH.
- SUSPEND FCU-1 FROM STRUCTURE WITH BOTTOM OF UNIT AT 11'-6" AFF.
- SUSPEND FCU-2 FROM STRUCTURE WITH BOTTOM OF UNIT AT 12'-5" AFF.
- SUSPEND FCU-3 FROM STRUCTURE WITH BOTTOM OF UNIT AT 12'-3" AFF.
- SUSPEND ESP-1 FROM STRUCTURE WITH BOTTOM OF UNIT AT 9'-1" AFF.
- SUSPEND MAU-1 FROM STRUCTURE WITH BOTTOM OF UNIT AT 9'-1" AFF.
- ALL EXISTING PIPING WITHIN DESIGN EQUIPMENT LOCATION SHALL BE REROUTED AROUND EQUIPMENT AND ITS REQUIRED CLEARANCE.
- VERIFY EXISTING LOUVER IS PROVIDED WITH INTEGRAL BACK DRAFT DAMPER AND PROVIDE BACK DRAFT DAMPER IF NOT PROVIDED.
- UNUSED SECTIONS OF THE EXHAUST LOUVER ARE TO BE BLANKED OFF.
- INSTALL FAN MANUFACTURER'S FILTER BOX ON INLET SIDE OF FAN.
- FLOOR MOUNT SMOG HOG DETERGENT TANK PER MANUFACTURER'S INSTRUCTIONS. REFERENCE SMOG HOG DRAWINGS FOR MORE DETAILS.
- INSTALL REMOTE MOUNTED HOOD MONITORING PANEL TIGHT TO CEILING LINE PER MANUFACTURER'S INSTRUCTIONS.

ALL GREASE DUCT TO BE WATER TESTED BY ENVIROMATIC AT MECHANICAL CONTRACTOR'S EXPENSE. CONTACT OWNER'S NATIONAL ACCOUNT VENDOR:
 ENVIROMATIC
 DON PFELEDER
 1.800.325.8476
 inspections@enviromatic.com

THE BUILDINGS HVAC SYSTEMS SHALL BE BALANCED BY NATIONAL TAB (NO EXCEPTIONS) AND CONTRACTED BY THE GENERAL CONTRACTOR.

CONTACT:
 WILL TURNBOUGH
 will@natontab.com
 855-882-8822 ext1704

DOB APPROVAL STAMP

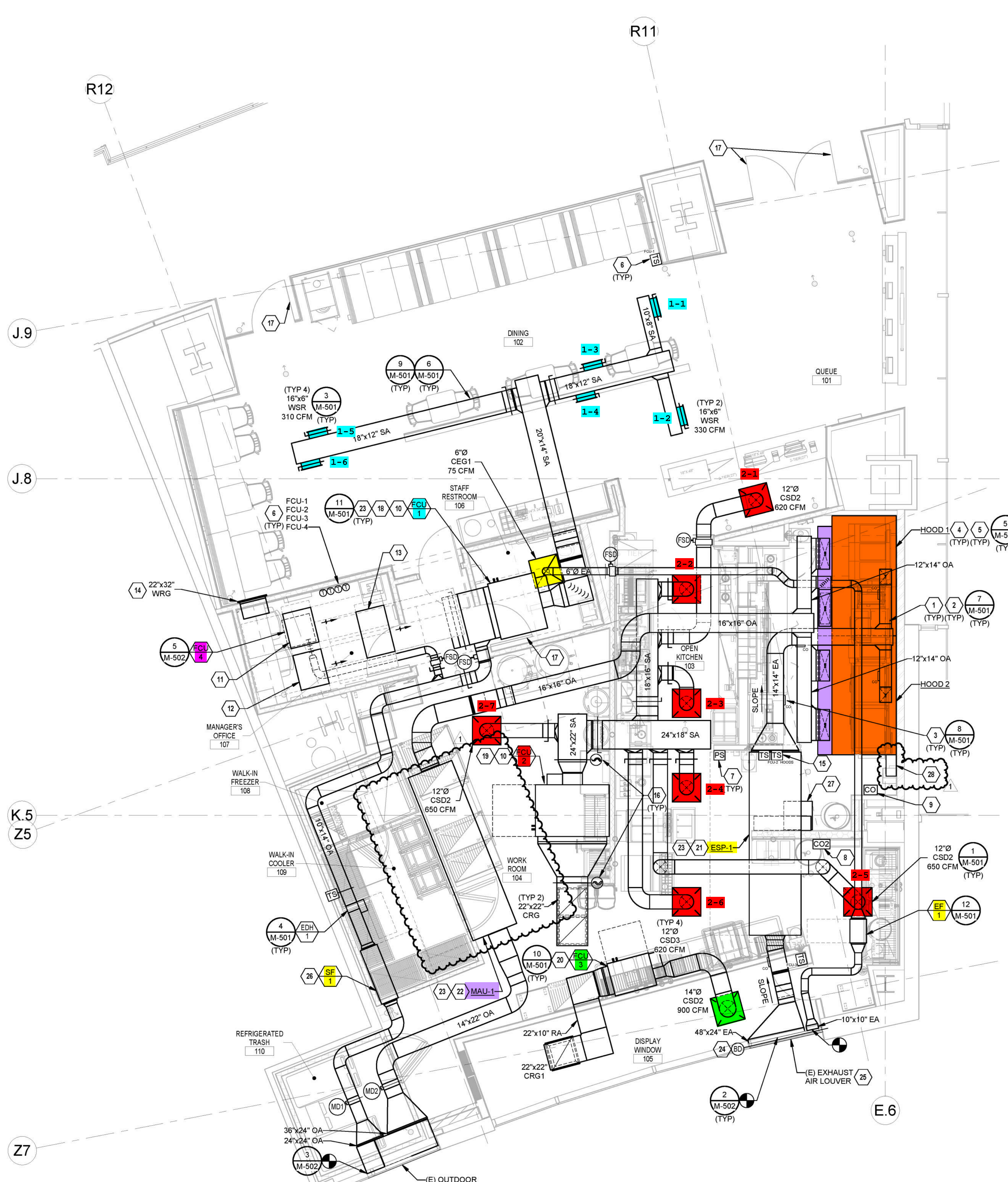
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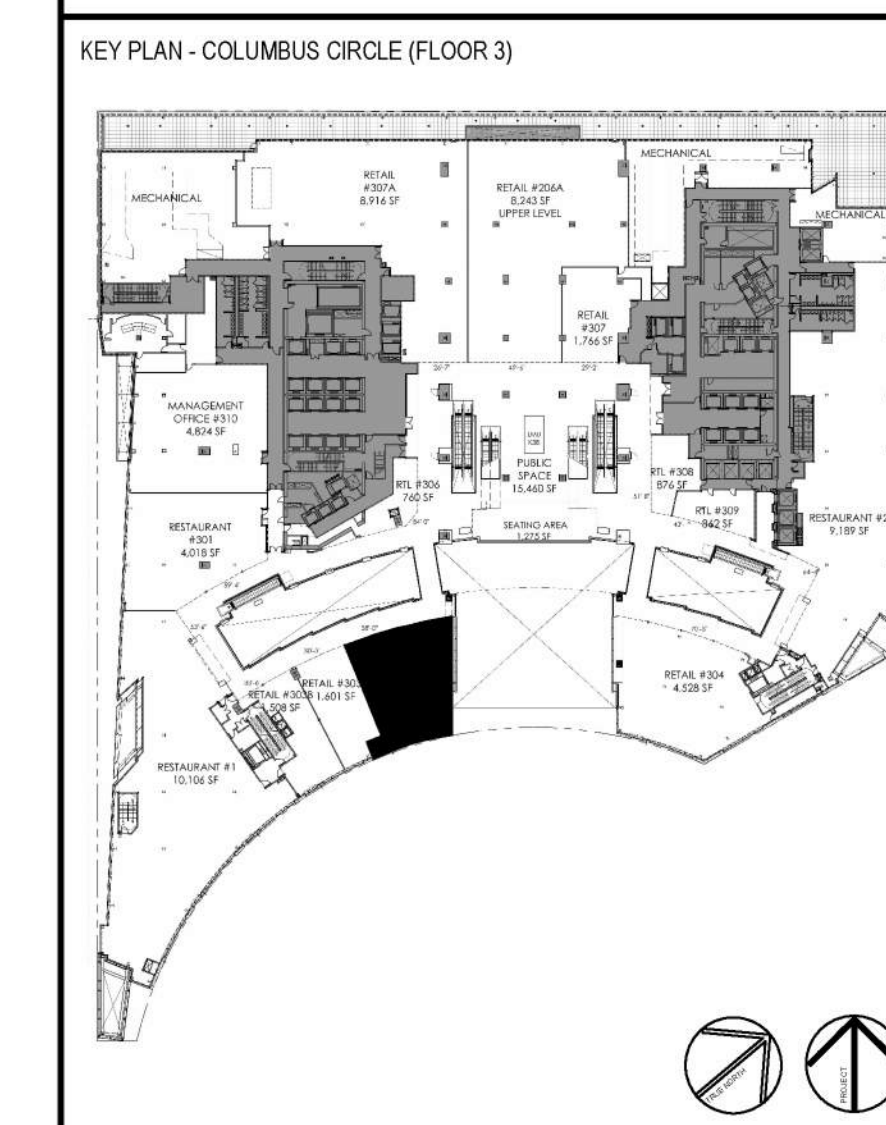
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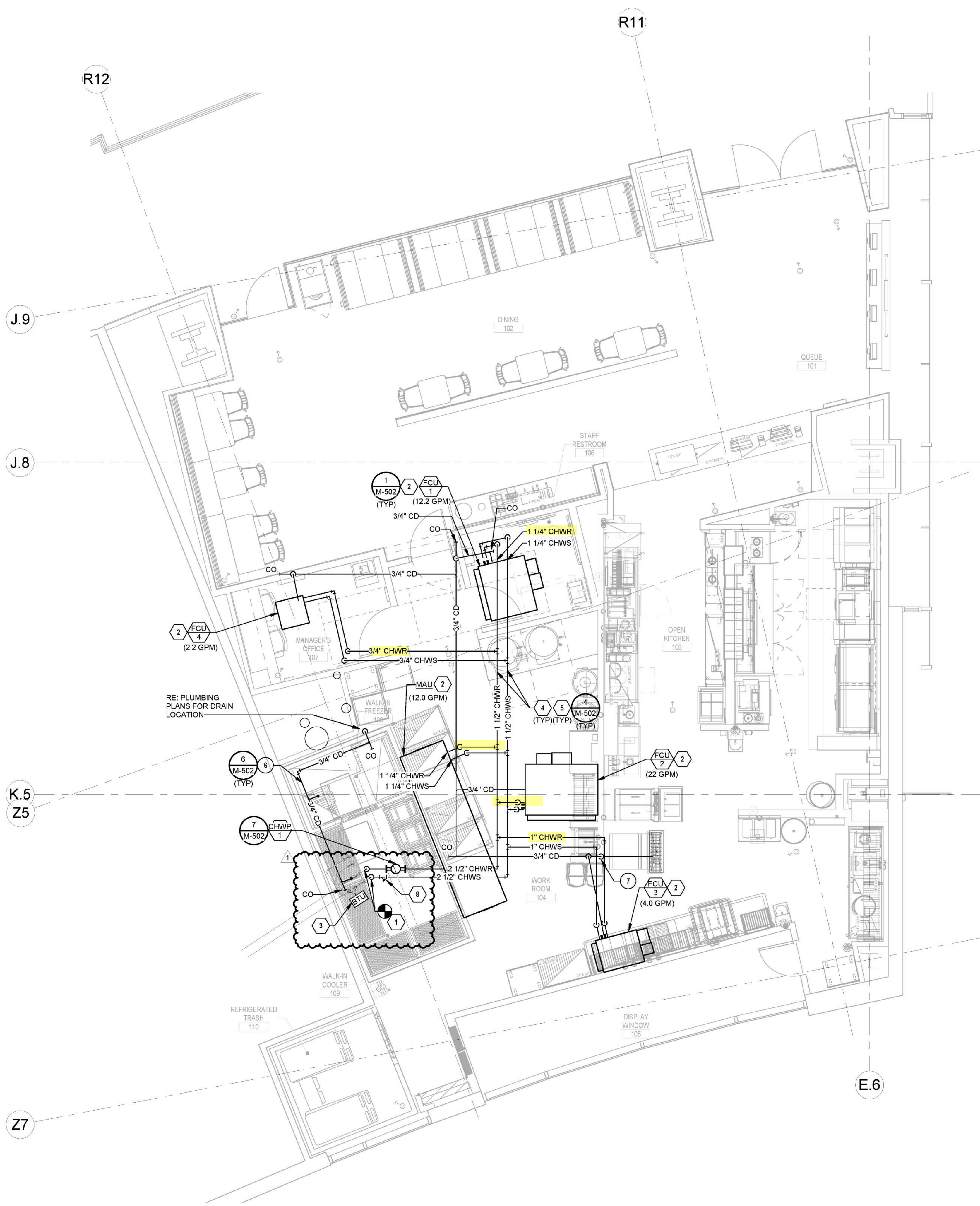
MECHANICAL FLOOR PLAN
 1/4" = 1'-0"



- MECHANICAL GENERAL NOTES:**
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 - REFER TO SHEET M101 FOR ADDITIONAL GENERAL NOTES AND REQUIREMENTS.
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 - MOUNT ALL THERMOSTATS AND SENSORS CONTROLLING HVAC EQUIPMENT AT 48" AFF UNLESS OTHERWISE NOTED.

WIRE FCU DRAIN PAN DETECTORS TO BASE BUILDING BMS, PROVIDE OUTPUT CONTACT TO CONNECT TO BASE BUILDING SIEMENS BMS SYSTEM.

- MECHANICAL PLAN NOTES:**
- CONNECT NEW 2-1/2" CHWS & CHWR TO EXISTING 2-1/2" CHWS & CHWR.
 - MAINTAIN WORKING CLEARANCES ON MECHANICAL EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. DO NOT ROUTE ANY PIPING OR DUCTWORK IN WORKING CLEARANCES OF UNITS.
 - LANDLORD PROVIDED AT TENANT EXPENSE, 2 CHANNEL FLEXIM FLEXUS BTU/FLOW METER TO BE INSTALLED ON 2 1/2" CHWS LINE. METER TO BE SIZED FOR A PEAK FLOW OF 48.4 GPM AT 45 DEGREES F. INSTALL FLOW METER PER MANUFACTURER'S INSTALLATION REQUIREMENTS WITH A MINIMUM STRAIGHT RUN OF PIPE 10 PIPE DIAMETERS IN LENGTH UPSTREAM OF THE METER AND 5 PIPE DIAMETERS IN LENGTH DOWNSTREAM OF THE METER. REFERENCE CONTROLS DRAWING M503 AND SPECIFICATIONS FOR ADDITIONAL METER REQUIREMENTS.
 - ALL PIPING, VALVES, AND ACCESSORIES INSTALLED ON THE CHILLED WATER SYSTEM SHALL BE 300 LB CLASS.
 - DO NOT ROUTE CHILLED WATER PIPING ABOVE ELECTRICAL PANELS AND DATA RACK.
 - ROUTE EVAP COIL CONDENSATE PIPE, SIZE PER COIL REQUIREMENTS, TO PENETRATE THROUGH COOLER WALL AND DOWN ALONG EXTERIOR COOLER WALL TO TERMINATE WITH AIR GAP OVER FLOOR SINK. SEAL AROUND PIPING AND BOLT PENETRATIONS THRU COOLER/FREEZER BOX WALLS OR CEILINGS WITH BACKER ROD SEALANT.
 - ROUTE CONDENSATE DOWN IN WALL AND DISCHARGE TO TRENCH DRAIN WITH AIR GAP.
 - INSTALL Y STRAINER ON COOLER WATER SUPPLY LINE.



1 MECHANICAL PIPING FLOOR PLAN
 1/4" = 1'-0"

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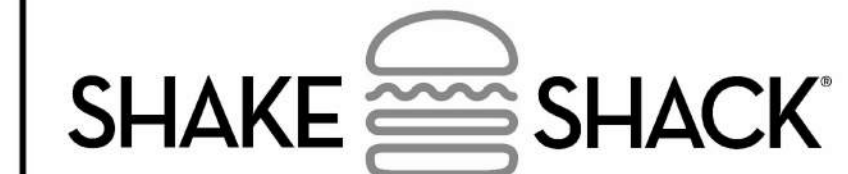
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 ANDREW G. BENNETT

DOB APPROVAL STAMP



SHAKE SHACK COLUMBUS CIRCLE NYC
 10 COLUMBUS CIRCLE UNIT 302
 NEW YORK, NY 10019
 SHACK #1525

BLOCK: 1049
 LOT: 7501
 ZONING DISTRICT: C6-6, MD
 MAP: 8c

MECHANICAL PIPING FLOOR PLAN

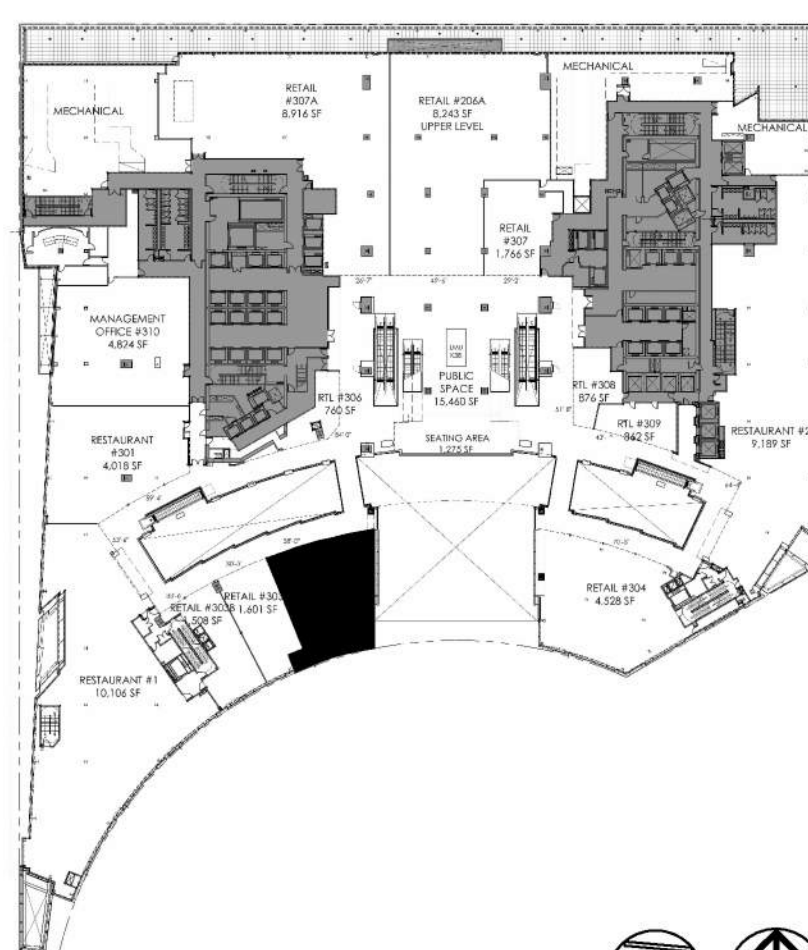
DOB NOW JOB # M00064009-11

SEAL/SIGNATURE: [Signature] DRAWN BY: Author
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240 WEST 37TH STREET, 3RD FLOOR
 NEW YORK, NY 10018
 TEL: 212.413.8400
 www.hny-eng.com
 2350022568

KEY PLAN - COLUMBUS CIRCLE (FLOOR 3)



| NO. | BY | DATE | DESCRIPTION |
|-----|----|------------|---------------------|
| 1 | | 2024-02-05 | IFC SET |
| 2 | | 2024-01-22 | PERMIT BID SET |
| 3 | | 2024-01-03 | LANDLORD REVIEW SET |



SHAKE SHACK COLUMBUS CIRCLE NYC
 10 COLUMBUS CIRCLE UNIT 302
 NEW YORK, NY 10019
 SHACK #1525

BLOCK: 1049
 LOT: 791
 ZONING DISTRICT: C6-6, MD
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MECHANICAL DETAILS

DOB NOW JOB # M00096009-11

SCALE: 1/8" = 1'-0"

SEAL/SIGNATURE: _____

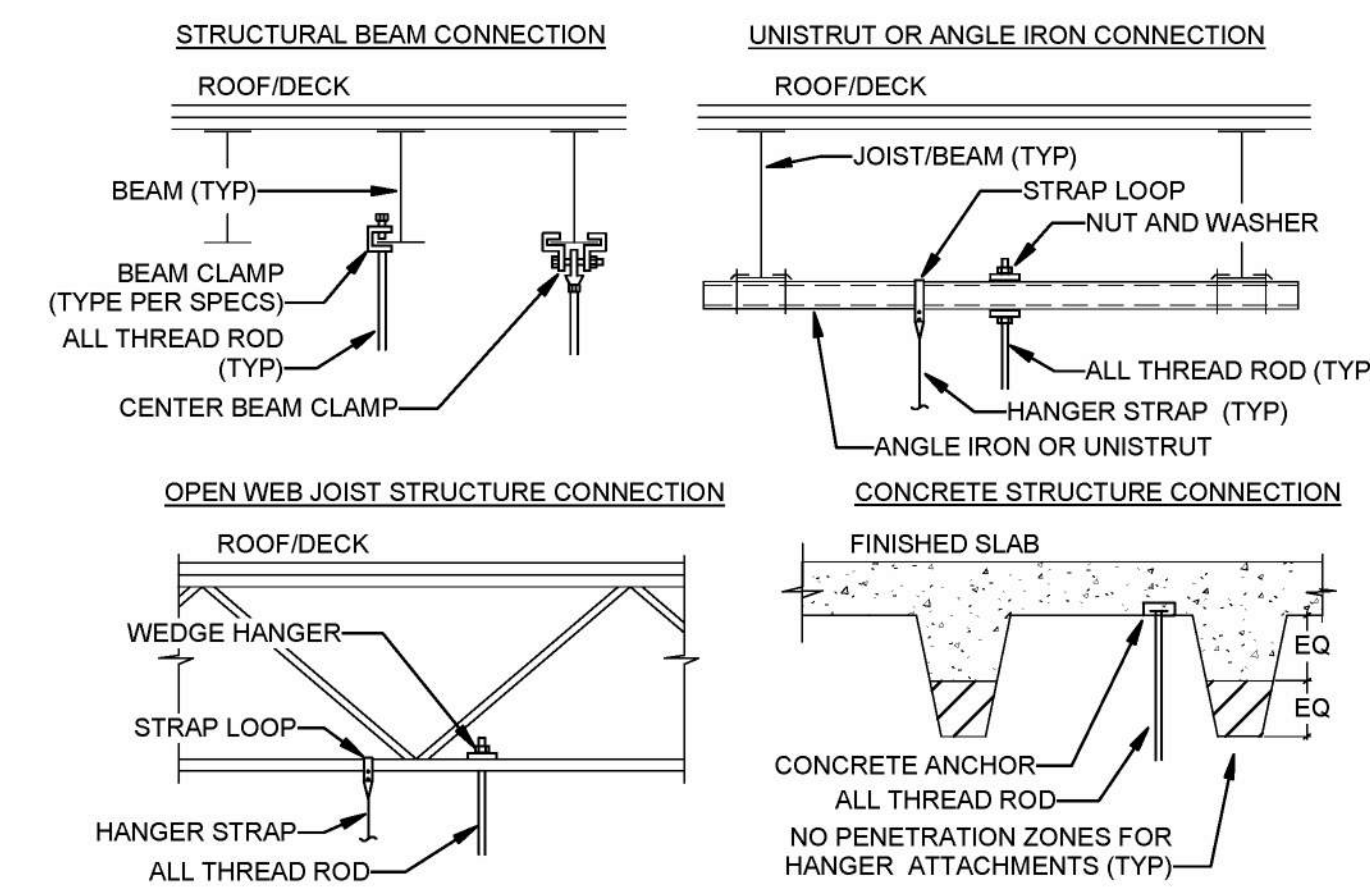
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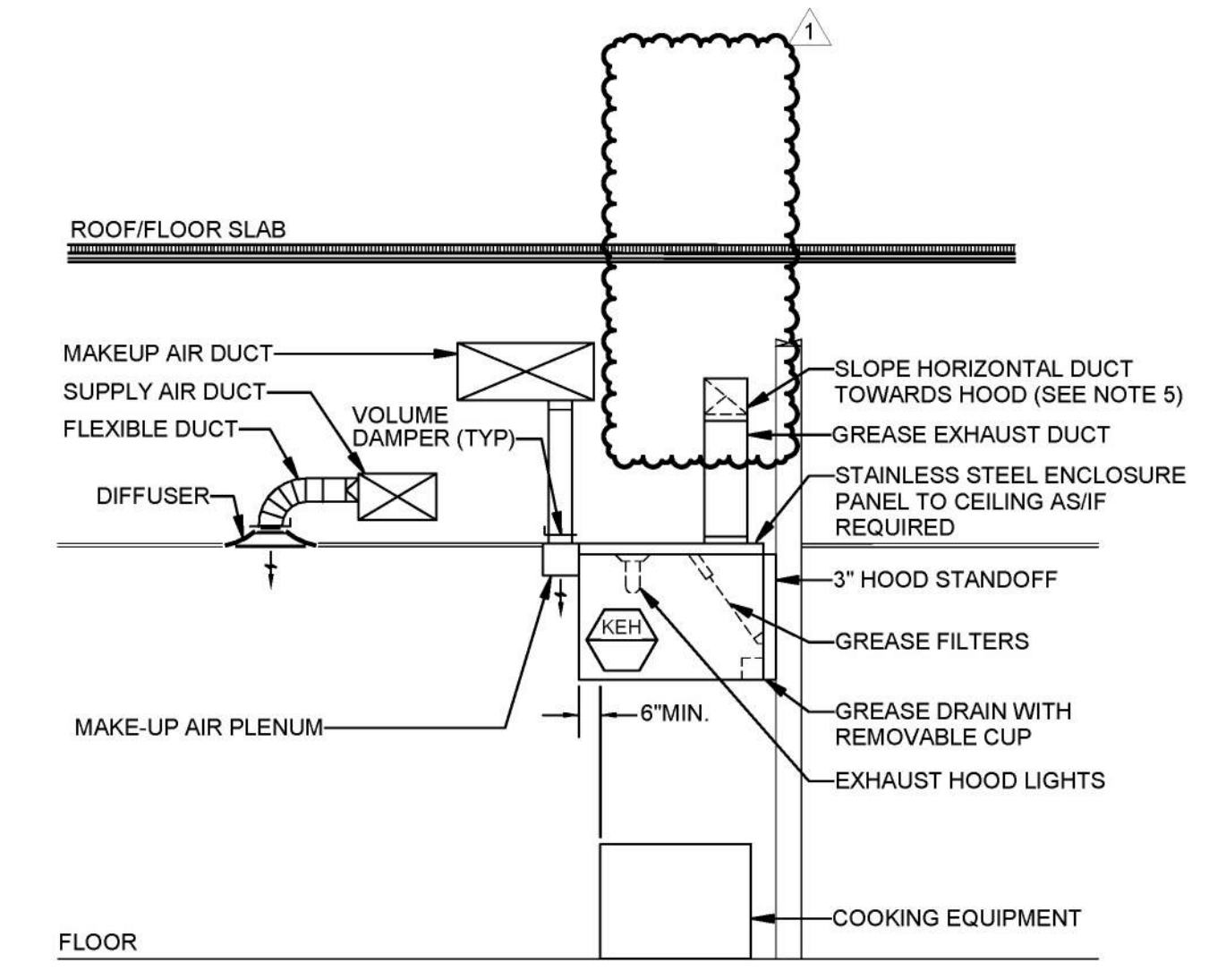
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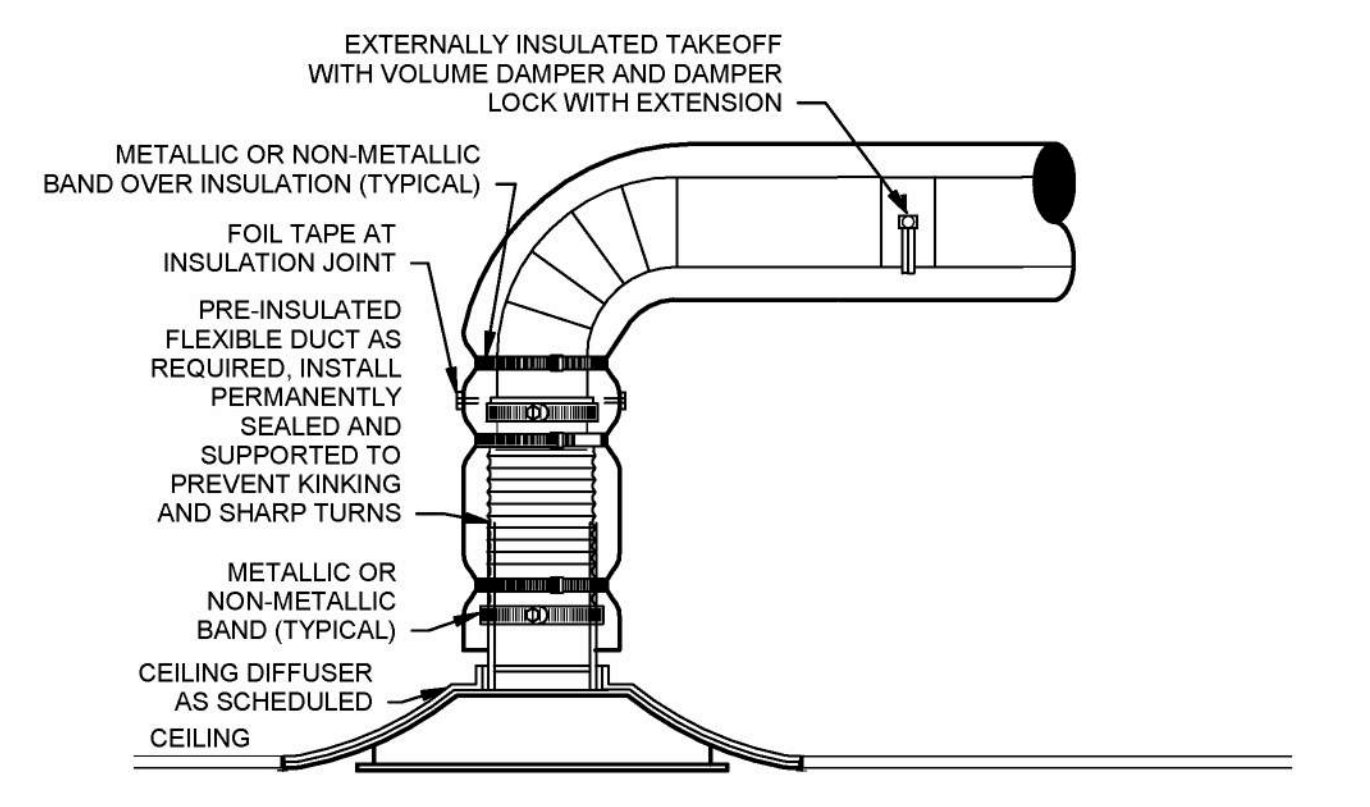
NOTES:
 1. ALL ATTACHMENTS SHALL BE INSTALLED PER MANUFACTURER'S REQUIREMENTS AND SHALL BE APPROVED FOR THE SPECIFIC APPLICATION.
 2. COORDINATE ALL ATTACHMENTS WITH ARCHITECT AND STRUCTURAL ENGINEER.
 3. REFER TO SPECIFICATIONS FOR MORE INFORMATION ON APPROVED ATTACHMENT METHODS.
 4. REFER TO SPECIFICATIONS FOR REQUIREMENTS RELATING TO SEISMIC INSTALLATIONS.
 5. FOR OPEN WEB JOIST STRUCTURE, CONTRACTOR MAY HANG FROM TOP CHORD AND RUN DUCT AND PIPING THROUGH WEB JOIST WHEN APPROPRIATE. ANY CONCENTRATED LOADS NOT OCCURRING AT JOIST PANEL POINTS MUST BE REVIEWED BY A STRUCTURAL ENGINEER FOR FIELD INSTALLED PANEL BRACE REQUIREMENTS.

9 HANGER UPPER ATTACHMENT DETAILS NTS



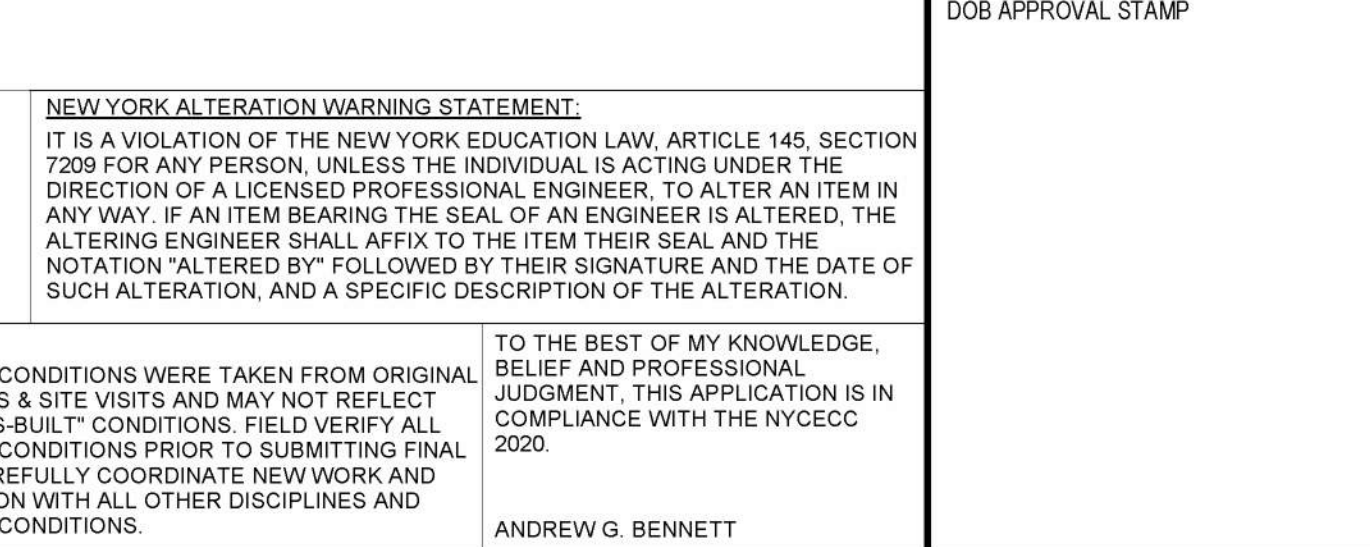
NOTES:
 1. SUBMIT SHOP DRAWINGS OF ALL HOOD SYSTEMS TO CITY FOR APPROVAL PRIOR TO INSTALLATION.
 2. TOTAL HOOD SYSTEM TO BE IN COMPLETE CONFORMANCE WITH NFPA, AND ALL LOCAL CODES AND REGULATIONS.
 3. COORDINATE ALL FIRE PROTECTION SYSTEMS WITH FIRE PROTECTION CONTRACTOR WHO SHALL ALSO BE RESPONSIBLE FOR ALL PERMITS AND TESTING REQUIRED.
 4. PROVIDE WRAP SYSTEM WHERE APPROVED BY LOCAL CODES IN LIEU OF RATED ENCLOSURE.
 5. PROVIDE ACCESS PANELS AS REQUIRED BY LOCAL CODE AND PER PLAN.
 6. HOODS SHALL EXTEND MINIMUM 6" BEYOND ALL OPEN SIDES AND FRONT EDGE OF FOOD COOKING EQUIPMENT BEING SERVED.

5 KITCHEN EXHAUST HOOD ELEVATION DETAIL NTS

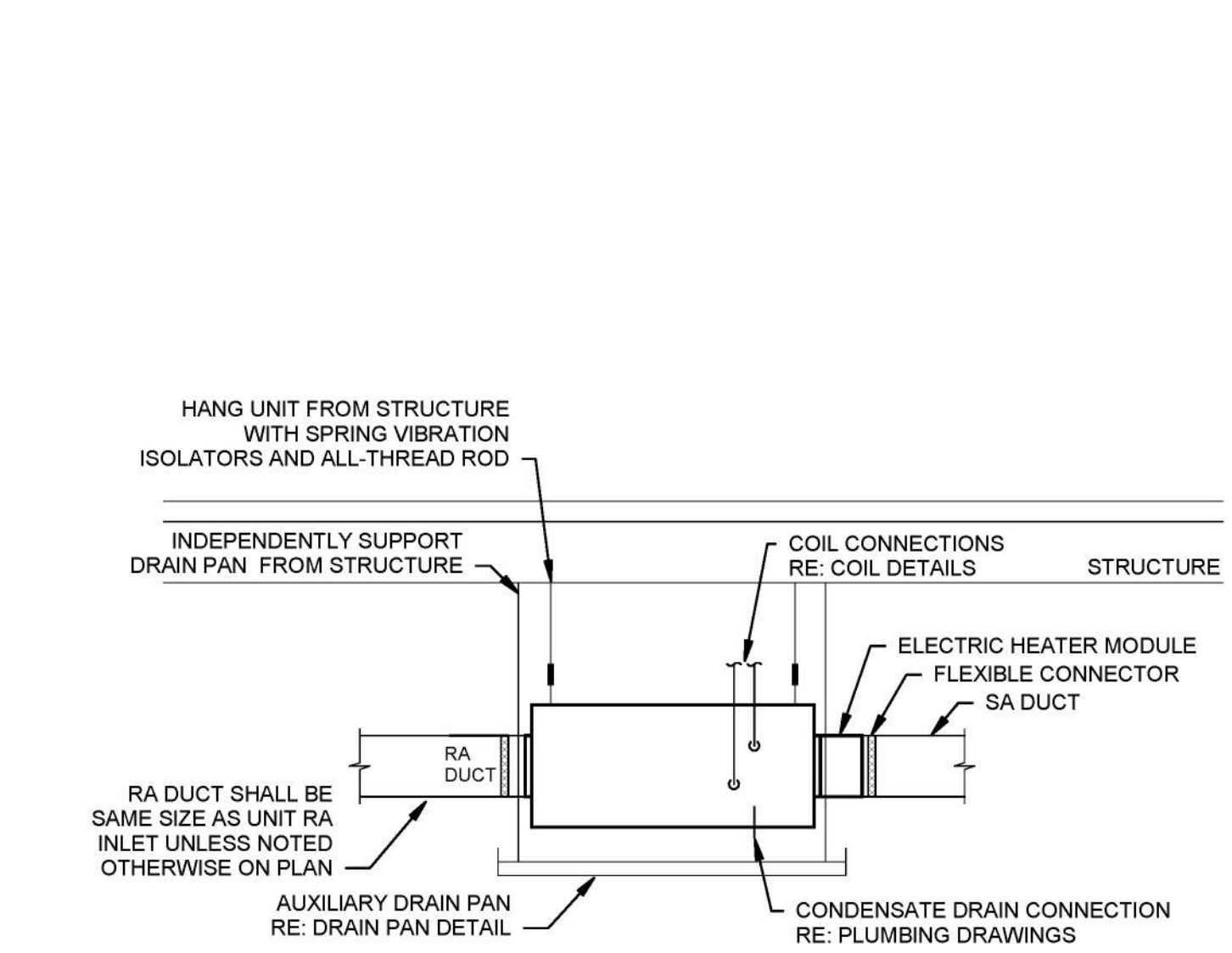


NOTES:
 1. FLEXIBLE DUCT LENGTH MAY NOT EXCEED 5'-0". EXTEND RIGID DUCT AS REQUIRED.
 2. REFER TO SPECIFICATIONS FOR FLEXIBLE DUCTWORK INSTALLATION REQUIREMENTS.

1 LAY-IN CEILING DIFFUSER DETAIL NTS

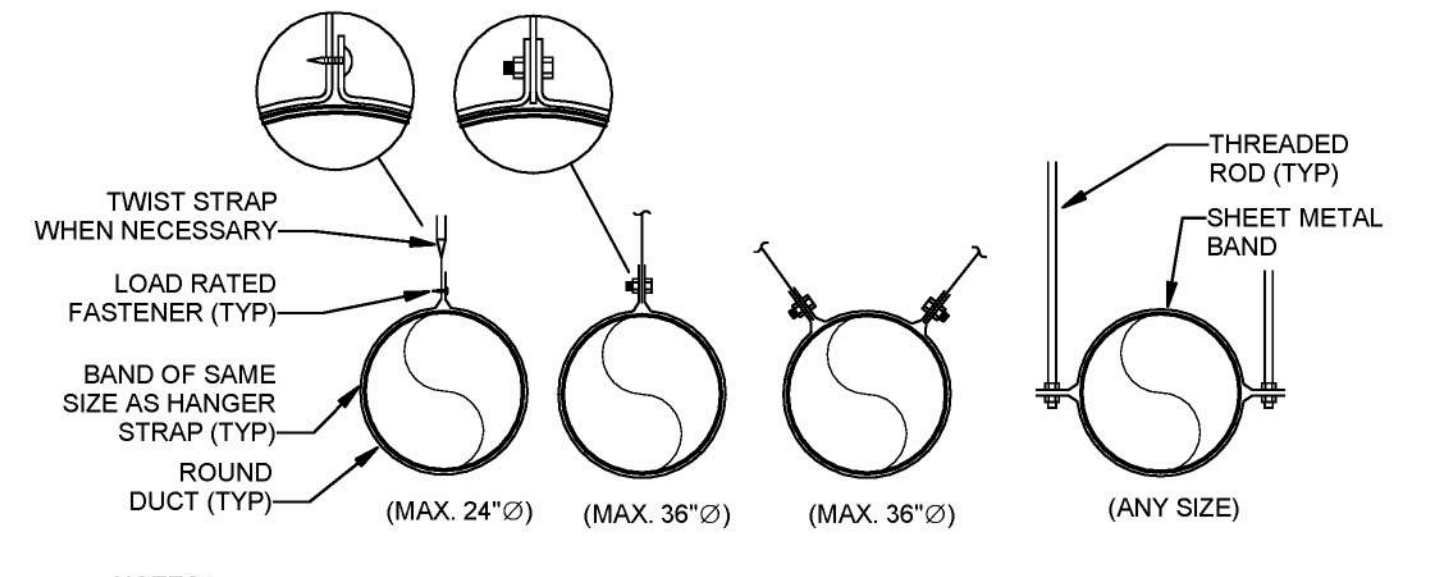
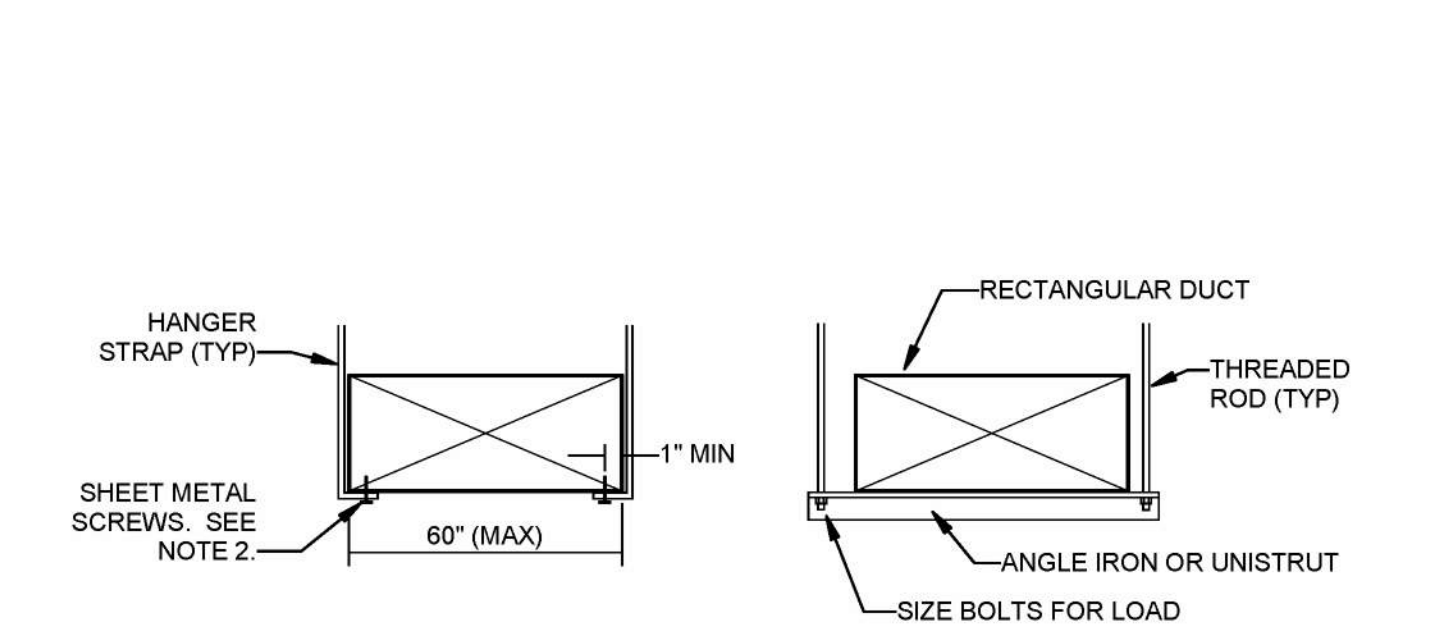


NOTES:
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 2. REFER TO SPECIFICATIONS FOR FLEXIBLE DUCTWORK INSTALLATION REQUIREMENTS.



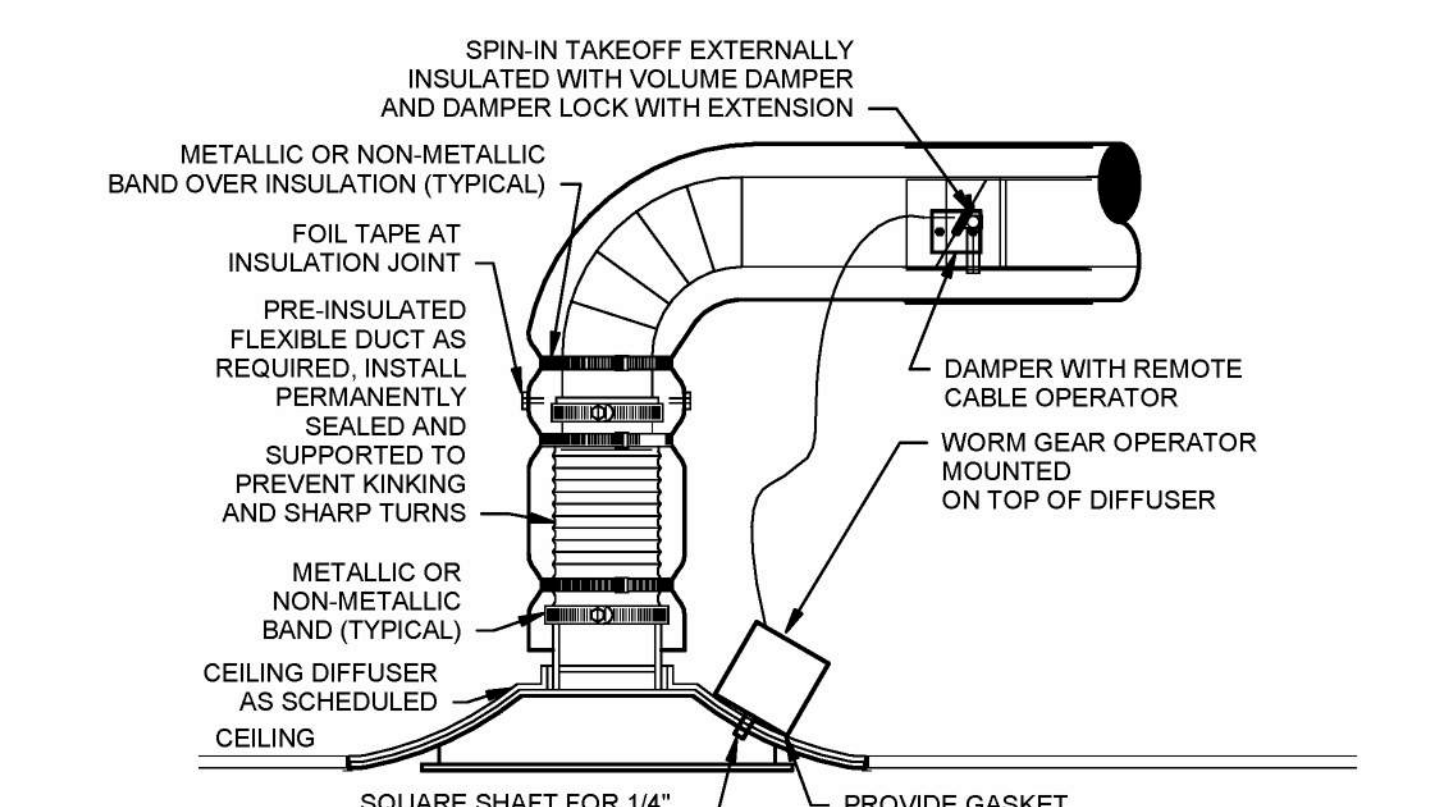
NOTES:
 1. ARRANGEMENT SHOWN IS SCHEMATIC, ADJUST TO SUIT FIELD CONDITIONS AND MEET LOCAL CODE REQUIREMENTS.

11 HORIZONTAL HVAC UNIT DETAIL NTS



NOTES:
 1. USE THREADED ROD FOR RECTANGULAR DUCTS LARGER THAN 60" WIDE.
 2. OMIT SHEET METAL SCREWS IF HANGER STRAP IS CONTINUOUS AND LOOPS UNDER ENTIRE RECTANGULAR DUCT.
 3. FOR ROUND DUCTS LARGER THAN 36"Ø, USE TWO HANGER RODS TO SUPPORT DUCT FROM EACH SIDE.
 4. HANGERS MUST NOT DEFORM DUCT SHAPE.

6 DUCT HANGER LOWER ATTACHMENT DETAILS NTS

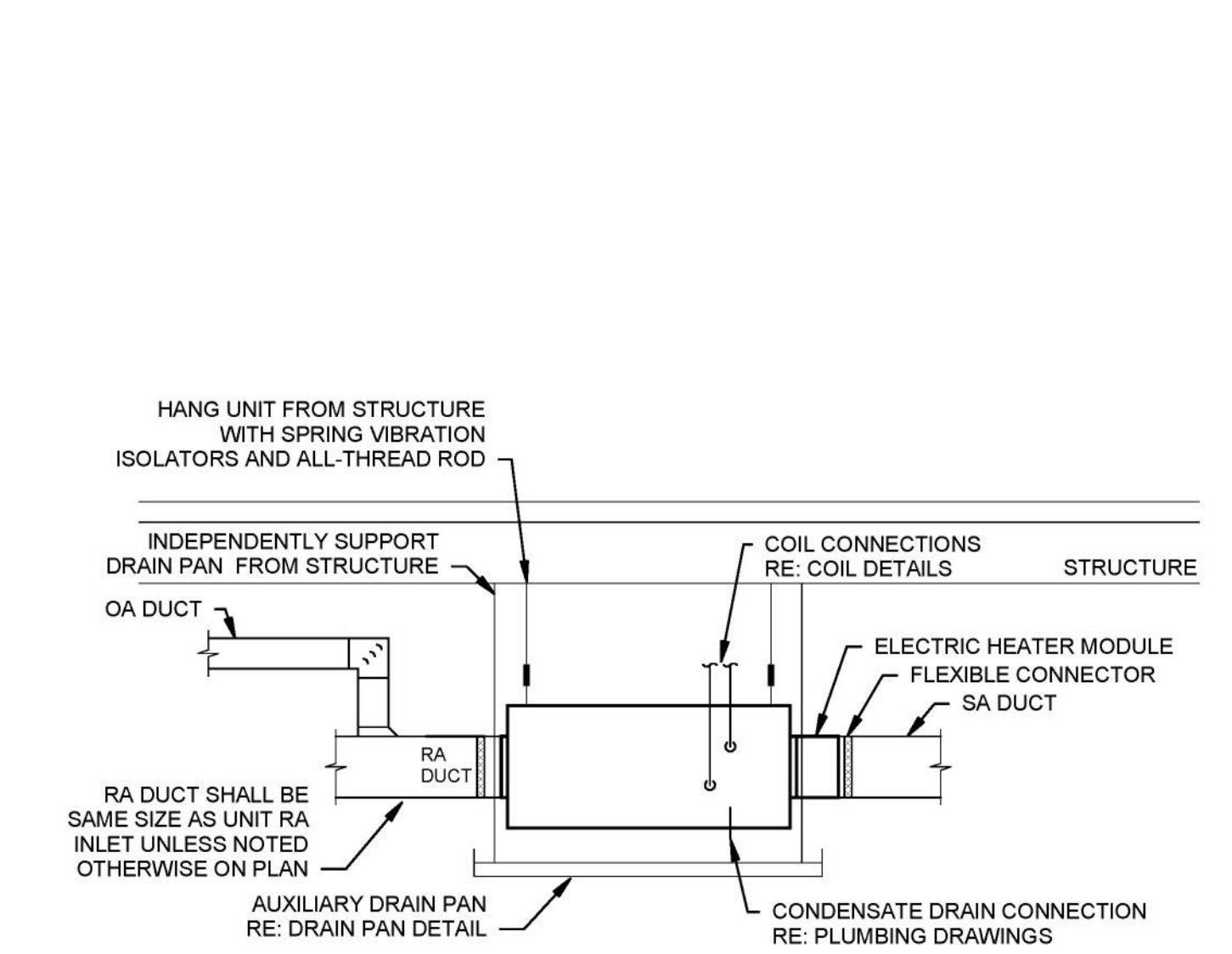


NOTES:
 1. FLEXIBLE DUCT LENGTH MAY NOT EXCEED 5'-0". EXTEND RIGID DUCT AS REQUIRED.
 2. REFER TO SPECIFICATIONS FOR FLEXIBLE DUCTWORK INSTALLATION REQUIREMENTS.

2 HARD CEILING DIFFUSER DETAIL NTS

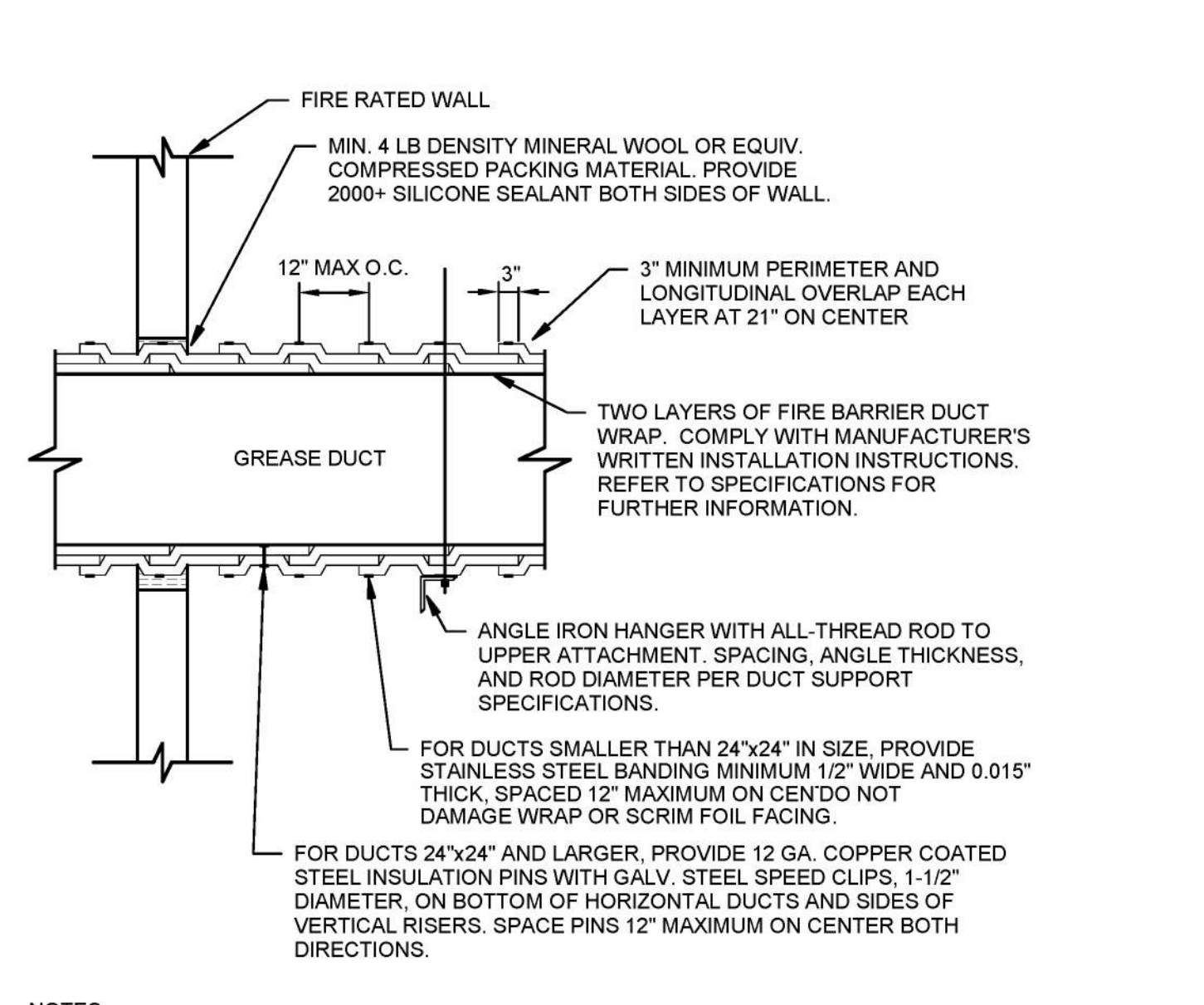


NOTES:
 1. REFER TO ELECTRICAL CODE TO DETERMINE EXACT CLEARANCE DEPTH REQUIRED BASED ON FIELD CONDITIONS. THE CLEARANCE SHALL NOT BE LESS THAN 36".
 2. PROVIDE THE GREATER OF 30" MINIMUM CLEARANCE WIDTH OR THE WIDTH OF THE CONTROLS ENCLOSURE.
 3. ALL ACCESS DOORS TO THE HEATER MUST BE ABLE TO OPEN A MINIMUM OF 90 DEGREES.



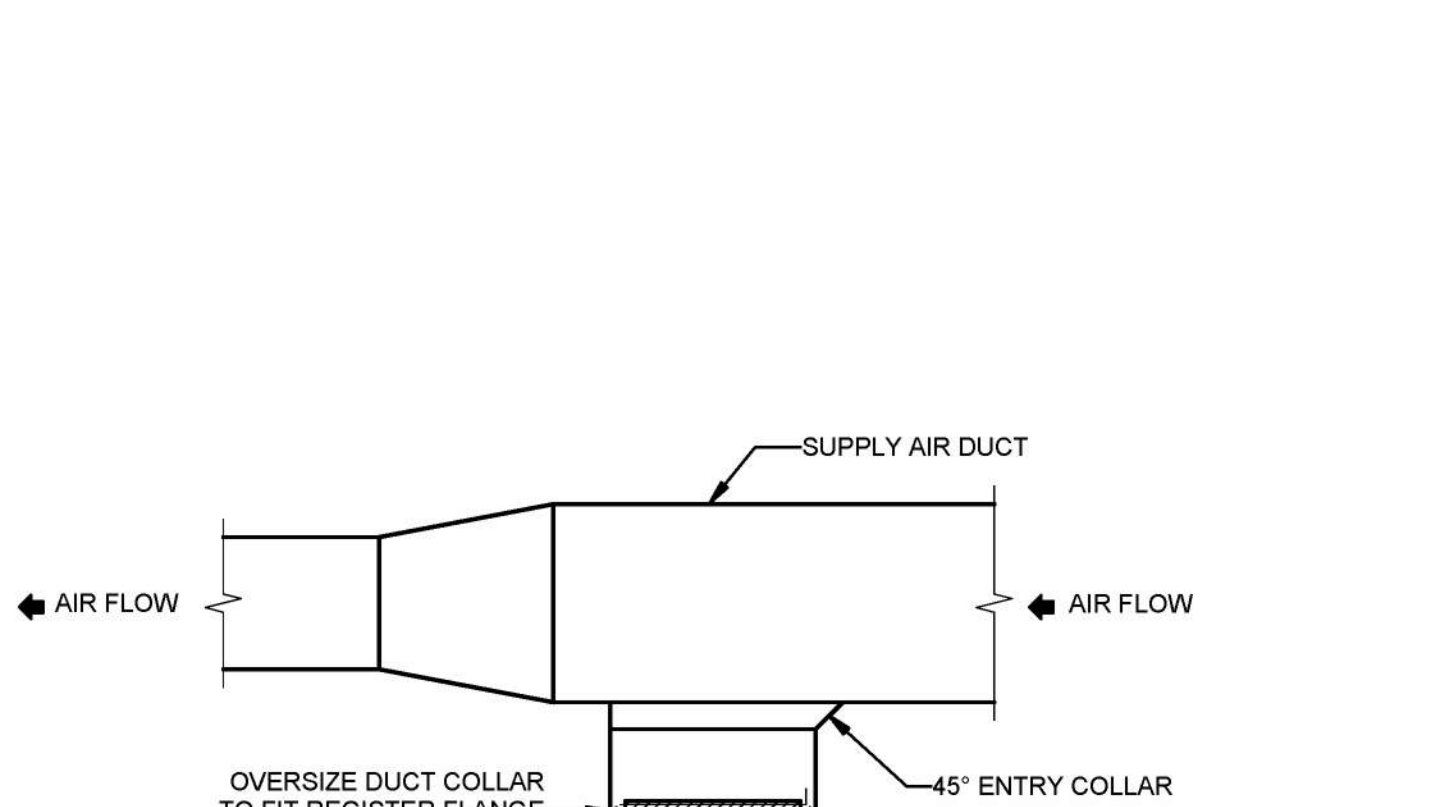
NOTES:
 1. ARRANGEMENT SHOWN IS SCHEMATIC, ADJUST TO SUIT FIELD CONDITIONS AND MEET LOCAL CODE REQUIREMENTS.

11 HORIZONTAL HVAC UNIT DETAIL WITH OA NTS



NOTES:
 1. INSTALL GREASE EXHAUST AND FIRE RATED DUCT WRAP IN ACCORDANCE WITH THE MANUFACTURER'S APPROVED INSTRUCTIONS AND UL LISTED INSTALLATION DETAILS. TECHNIQUES THAT DIFFER FROM THE ABOVE METHOD ARE ACCEPTABLE IF THEY ARE UL TESTED AND APPROVED.

7 GREASE DUCT CLEANOUT ACCESS DOOR DETAIL NTS

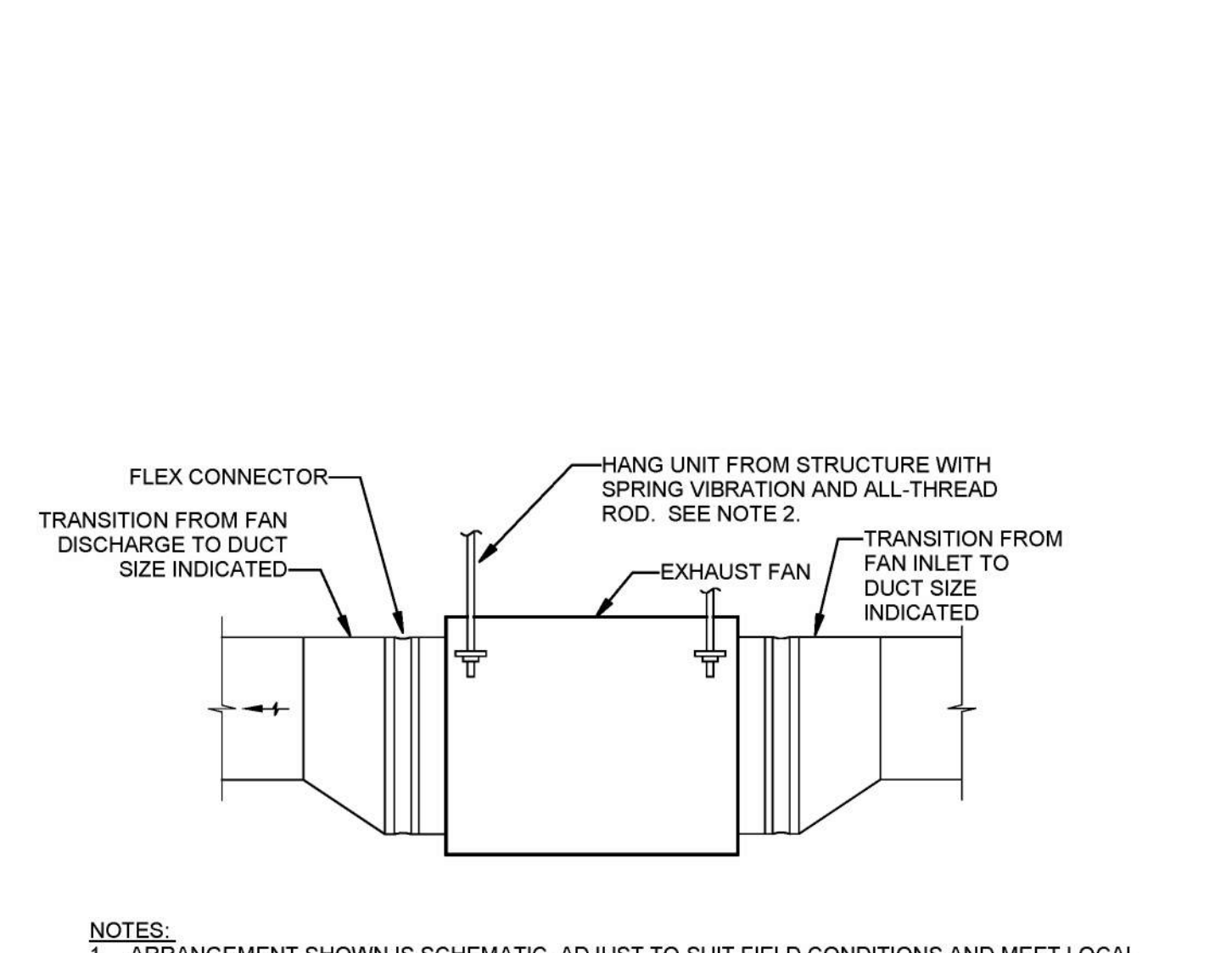


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3 DUCT MOUNTED REGISTER DETAIL NTS

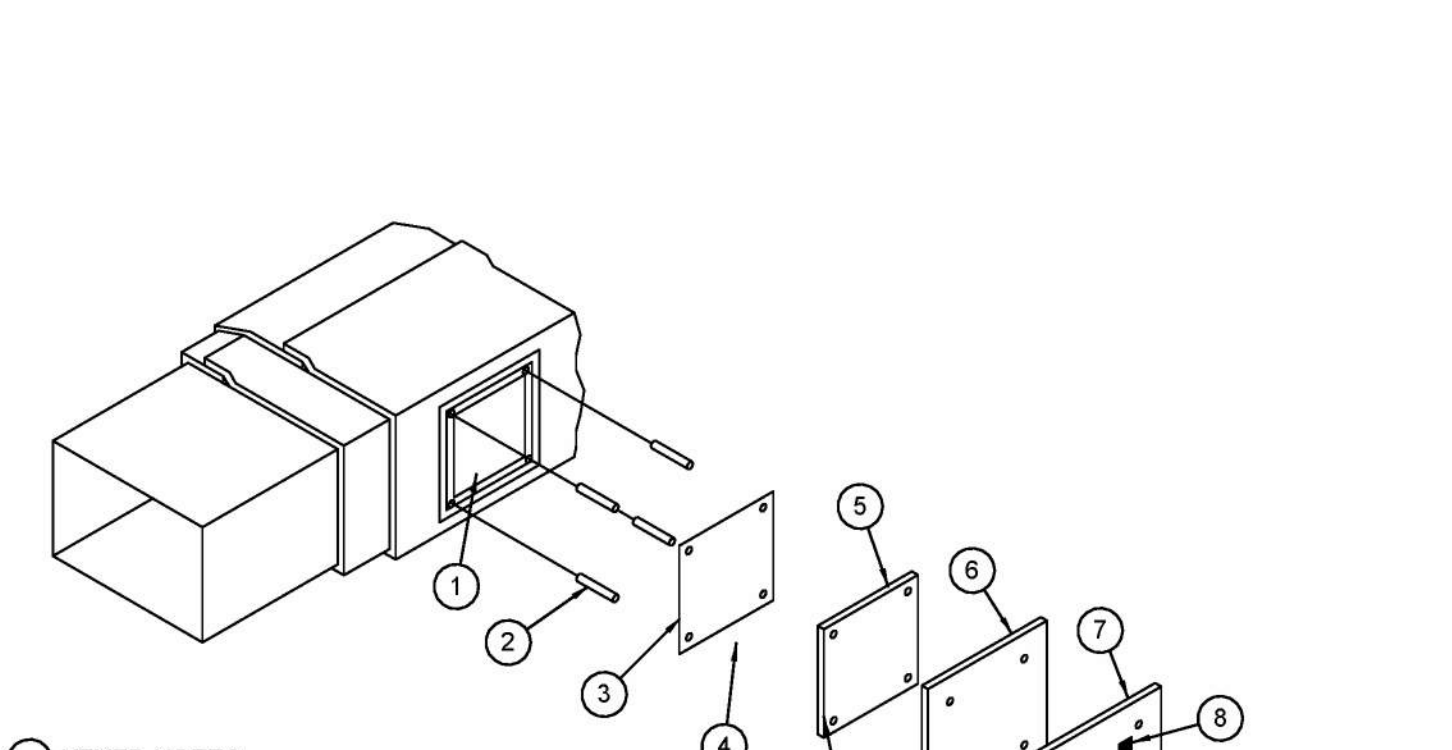


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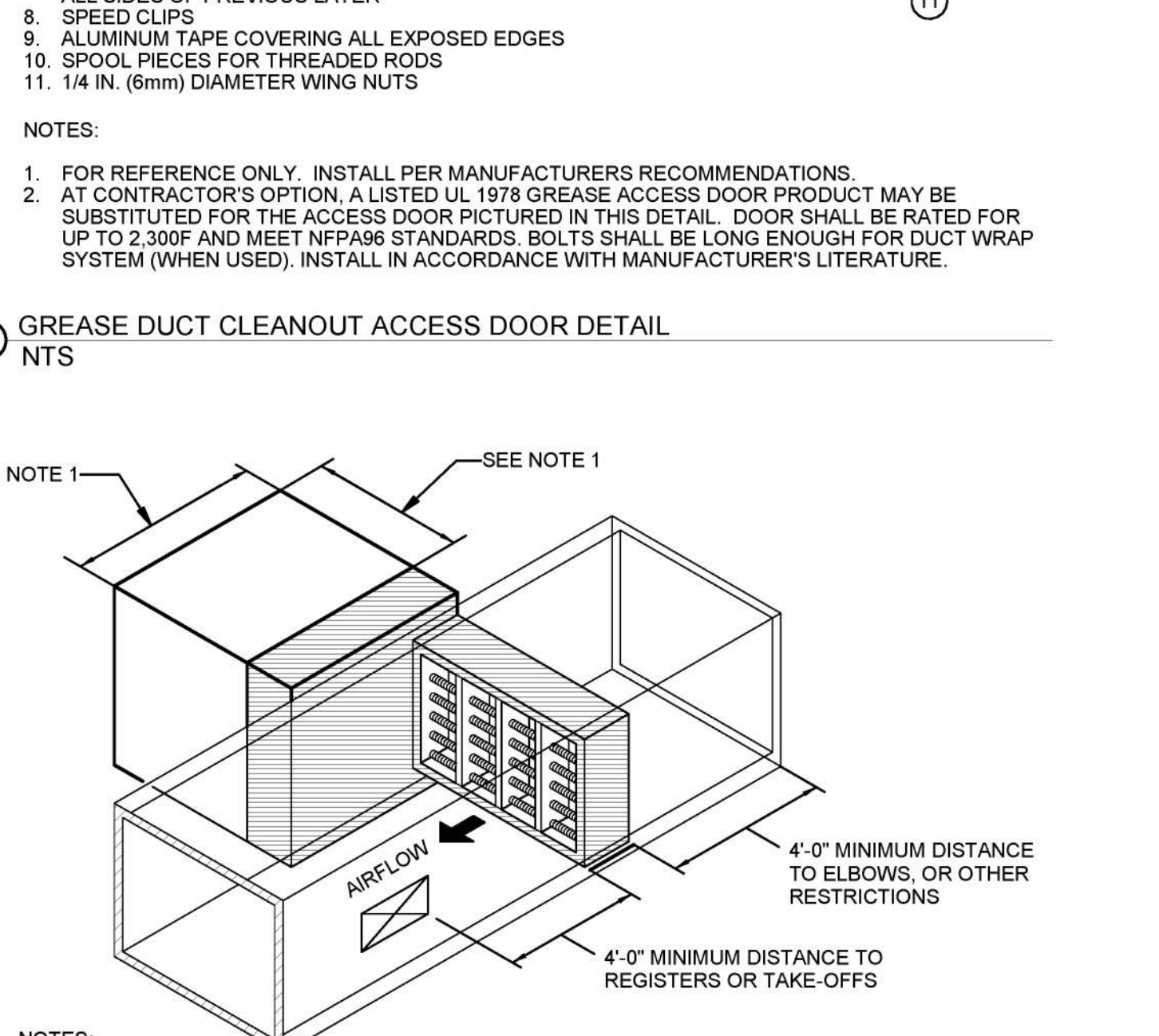
NOTES:
 1. ARRANGEMENT SHOWN IS SCHEMATIC, ADJUST TO SUIT FIELD CONDITIONS AND MEET LOCAL CODE REQUIREMENTS.
 2. FOR FANS 1 HP AND LESS, PROVIDE NEOPRENE RUBBER MOUNT HANGER (NR). FOR FANS LARGER THAN 1 HP, PROVIDE SPRING VIBRATION ISOLATION HANGER (SPVH).

12 IN-LINE FAN DETAIL NTS



NOTES:
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8 GREASE DUCT CLEANOUT ACCESS DOOR DETAIL NTS



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4 ELECTRIC DUCT HEATER DETAIL NTS



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TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGMENT, THIS APPLICATION IS IN COMPLIANCE WITH THE NYC EDC 2020.
 ANDREW G. BENNETT

DOB APPROVAL STAMP

MECHANICAL SYMBOLS (v2.12)

NOTE: THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS, ABBREVIATIONS, ETC. ARE NECESSARILY USED ON THE DRAWINGS.

CONTROLS SYMBOLS AND NOMENCLATURE

| | | | | | | | |
|--|-------------------------------|--|---|--|------------------------------|--|-------------------------|
| | FLUE DAMPER (BOILERS) | | HOT GAS REHEAT COIL | | RISER DESIGNATION | | MOTORIZED DAMPER |
| | BOILER | | COOLING COIL | | FIRE DAMPER | | BACKDRAFT DAMPER |
| | COOLING TOWER | | FURNACE | | FIRE SMOKE DAMPER | | VOLUME DAMPER |
| | CONDENSING UNIT | | HEATING COIL | | SMOKE DAMPER | | HUMIDISTAT |
| | FLUID COOLER | | DAMPER - GENERIC BLADE TYPE | | SMOKE DETECTOR | | THERMOSTAT |
| | WATER-COOLED CHILLER | | DAMPER - OPPOSED BLADE TYPE | | BTU METER | | PRESSURE SENSOR |
| | AIR-COOLED CHILLER | | DAMPER - PARALLEL BLADE TYPE | | CARBON MONOXIDE SENSOR | | POLLUTANT ALARM |
| | GENERIC HEAT EXCHANGER | | FLEXIBLE SENSING ELEMENT | | CARBON DIOXIDE SENSOR | | PULL STATION |
| | SHELL AND TUBE HEAT EXCHANGER | | AIRFLOW STATION | | CONTROL PANEL | | RELAY |
| | BASIN HEATER | | PUMP | | CURRENT CIRCUIT RELAY | | REFRIGERANT LEAK SENSOR |
| | GROUND HEAT EXCHANGER | | FAN | | DIFFERENTIAL PRESSURE SENSOR | | SENSOR - GENERIC |
| | HEAT RECOVERY WHEEL | | HUMIDIFIER | | ELECTRIC METER | | STATIC PRESSURE PORT |
| | | | AIR FILTER | | FLOW METER - FUEL METER | | SWITCH |
| | | | 3-WAY CONTROL VALVE | | FLOW SWITCH | | TEMPERATURE SENSOR |
| | | | 2-WAY CONTROL VALVE | | HUMIDITY SENSOR | | WATER METER |
| | | | AIR BYPASS DAMPER | | | | |
| | | | AIRFLOW MEASURING STATION | | | | |
| | | | DIRECT EXPANSION COOLING UNIT CONTROLLER | | | | |
| | | | FURNACE BURNER CONTROLLER | | | | |
| | | | SILICON-CONTROLLED RECTIFIER | | | | |
| | | | ELECTRIC HEATER CONTROL (MODULATING) | | | | |
| | | | ELECTRIC HEATER CONTROLLER (ON/OFF) | | | | |
| | | | ELECTRONIC COMMUTATED MOTOR | | | | |
| | | | VARIABLE FREQUENCY DRIVE | | | | |
| | | | MOTOR STARTER | | | | |
| | | | LOW LIMIT TEMPERATURE CONTROLLER (FREEZESTAT) | | | | |
| | | | EMERGENCY PUSH BUTTON | | | | |

| | |
|---|--|
| POINT TYPE | POINT TYPE |
| AI ANALOG INPUT (MODULATING) | AO ANALOG OUTPUT (MODULATING) |
| AV ANALOG VALUE (VIRTUAL) | BI BINARY INPUT (ON/OFF, OPEN/CLOSED, ETC) |
| BO BINARY OUTPUT (ON/OFF, OPEN/CLOSED, ETC) | BV BINARY VALUE (VIRTUAL) |
| COM COMMUNICATION LINK | MI MULTI-STATE INPUT |
| MO MULTI-STATE OUTPUT | MV MULTI-STATE VALUE (VIRTUAL) |
| ABBREVIATIONS | |
| -X GENERIC INDICATOR OF PLAN MARK NUMBER OR QTY | <> NOT EQUAL TO |
| BAS BUILDING AUTOMATION SYSTEM | CHWS CHILLED WATER SUPPLY |
| CHWR CHILLED WATER RETURN | CMD COMMAND |
| CP CONTROL PANEL | CV CONTROL VALVE |
| CWS CONDENSER WATER SUPPLY | CWR CONDENSER WATER RETURN |
| DCW DOMESTIC COLD WATER | DDC DIRECT DIGITAL CONTROL |
| DDC DIRECT DIGITAL CONTROL | E/C ELECTRICAL CONTRACTOR |
| E/O ECONOMIZER OUTSIDE AIR | EQ EQUALIZER |
| EM EQUIPMENT MANUFACTURER | F/A/C FIRE ALARM CONTRACTOR |
| FIP FAIL IN POSITION | G NATURAL GAS |
| HWS HEATING WATER SUPPLY | HWWR HEATING WATER RETURN |
| HPWS HEAT PUMP WATER SUPPLY | HPWR HEAT PUMP WATER RETURN |
| LPC LOW PRESSURE STEAM CONDENSATE | M/C MECHANICAL CONTRACTOR |
| MIN MINIMUM; MINUTES | MOA MINIMUM OUTSIDE AIR |
| NC NORMALLY CLOSED | NO NORMALLY OPEN |
| NIA NOT IN AUTO (IN HAND) | PID PROPORTIONAL INTEGRAL DERIVATIVE |
| RA RETURN AIR | REA RELIEF/EXHAUST AIR |
| RH RELATIVE HUMIDITY | SA SUPPLY AIR |
| SCHED AS SCHEDULED ON DRAWINGS | SPEC SPECIFIED |
| SPT SETPOINT | TBD TO BE DETERMINED |
| T/C/C TEMPERATURE CONTROLS CONTRACTOR | |
| WIRING TYPES | |
| — POWER WIRING | - - - SYSTEM CONTROL WIRING |
| - - - SYSTEM CONTROL WIRING | - · - BUILDING AUTOMATION WIRING |

POINTS LIST - FAN COIL UNIT

| POINT ID | DESCRIPTION | POINT TYPE | DEFAULT SET POINT | FAIL POSITION | STATUS ALARM | ALARM RANGE | NOTES |
|--|---|------------|--------------------|---------------|--------------|--------------------|-------|
| AIR SENSING | | | | | | | |
| MAT-LLT | MIXED AIR LOW LIMIT TEMPERATURE (LEVEL 1) | BI | 35 F | | X | ON ACTIVATION | A |
| PH-T | PREHEAT TEMPERATURE | AI | 40 F | | | | A |
| SAT | SUPPLY AIR TEMPERATURE | AI | 55 F CLG; 90 F HTG | | X | 50 F > SAT > 100 F | A |
| ZONE LEVEL SENSORS | | | | | | | |
| Z-T | ZONE TEMPERATURE | AI | SCHED. | | | | A, C |
| Z-T-DB | ZONE TEMPERATURE DEADBAND | BV | 5 F | | | | A |
| Z-H | ZONE HUMIDITY | AI | SCHED. | | | | A, C |
| SUPPLY FAN | | | | | | | |
| SF-C | SUPPLY FAN COMMAND (START/STOP) | BO | | | | | |
| SF-ST | SUPPLY FAN STATUS | BI | | | X | SF-ST <=> SF-C | |
| COOLING COIL - CHILLED WATER MODULATING | | | | | | | |
| CHWV-CO | CHILLED WATER VALVE CONTROL OUTPUT | AO | | NO | | | |
| CHWV-P | CHILLED WATER VALVE POSITION (PERCENT) | AI | | | X | CHWV-P <=> CHWV-CO | |
| LEAK DETECTION | | | | | | | |
| FCU-CND | CONDENSATE OVERFLOW DETECTION | BI | | | X | ON ACTIVATION | |
| HEATING COIL - ELECTRIC BINARY STAGED | | | | | | | |
| HE-C-X | ELECTRIC HEAT STAGE "X" COMMAND | BO | | | | | E |

ALL POINTS SHOWN SHALL BE PROVIDED BY BAS CONTRACTOR UNLESS NOTED OTHERWISE.

NOTES:
A. POINT SHALL BE ADJUSTABLE.
C. REFERENCE PROJECT DESIGN CONDITIONS SCHEDULE FOR SETPOINT.
E. COORDINATE NUMBER OF STAGES FOR CONTROL WITH EQUIPMENT FURNISHED.

SEQUENCE OF OPERATIONS

FAN COIL UNITS
The sequence of operations is organized into the following main categories: operating modes; control setpoint resets; safeties, overrides and interlocks; and component control loops. The operating modes describe the criteria that either enable or disable the various modes of operation. If a mode of operation is not listed within a component control loop section then that mode of operation has no direct influence on the operation of the component. The control setpoint reset section describes the logic and reference variables that will be used to reset control setpoints to a new value within its reset range. The safeties, overrides, and interlocks section outlines the hardware interlocks that are required to meet life safety requirements. Safeties and interlocks take precedence over all other control strategies outlined in this document. The control responses of each component for the various modes of operation are described in the component control loop sections. Setpoints shall be adjustable (adj.) as noted.

The sequence of operations, the points list and control diagrams shall be used to provide a complete description of the control philosophy for the controlled equipment. Individual setpoint values, reset ranges, and alarm action levels are listed in the points list. Components and control sensor locations are graphically depicted on the control diagram. The controls contractor shall be responsible for coordinating any necessary time delay setpoints to establish stable system operation.

GENERAL DESCRIPTION

The fan coil unit(s) (FCU) described by this sequence of operations consists of a constant speed supply fan, chilled water cooling coil, and electric staged or SCR (as scheduled) heating coil that operate to provide heating, ventilation, and air-conditioning for the conditioned spaces as shown on the drawings.

Each FCU shall operate stand alone with a programmable thermostat located in the office networked to single zone sensor(s) per the specification.

OPERATING MODES

OCCUPIED MODE:
The unit shall be in occupied mode per the Project Design Conditions Schedule shown on the control drawings.

COOLING MODE:
The unit shall be in cooling mode when the zone temperature (Z-T) rises above the dead band (Z-T-DB).

HEATING MODE:
The unit shall be in heating mode when the zone temperature (Z-T) falls below the dead band (Z-T-DB).

UNOCCUPIED MODE:
The unit shall be in unoccupied mode for all periods not included in the occupied hours of operation. Overrides of unoccupied schedule are defined at the zone level control.

FREEZE PROTECTION MODE:
The unit shall be in freeze protection mode when the temperature controller (MAT-LLT) senses a mixed air temperature less than the alarm setpoint. When in freeze protection mode, an alarm shall generate at the operator workstation. The unit shall automatically reset when the temperature rises 5 F above the alarm setpoint for 5 minutes (adj.).

OPTIMAL START/STOP:
The unit shall start prior to scheduled occupancy based on the time necessary for the zones to reach their occupied setpoints.

CONTROL SETPOINT RESETS

Not used.

SAFETIES, OVERRIDES AND INTERLOCKS

SMOKE DETECTOR INTERLOCK:
The unit shall be disabled via hard wired interlock at the fan start circuit on activation of a system smoke detector. See M101 for units with smoke detectors.

LEAK DETECTION INTERLOCK (FCU-CND):
The supply fan shall automatically shut down and the cooling coil shall be disabled upon detection of water in the overflow drain pan.

COMPONENT CONTROL LOOPS

SUPPLY FAN CONTROL - CONSTANT VOLUME

When in all modes:
The supply fans for FCU-1 and FCU-4 shall interlock with the hood control panel to energize when the kitchen exhaust fans are in operation.

When in Occupied Mode:
When in Cooling and Heating Mode
The fan shall be on.

When in Unoccupied Mode:
The fan shall be OFF. On a call for cooling/heating or override signal from the zone level, the fan shall operate as in occupied mode until the call is cleared or the override is removed.

When in Optimal Start/Stop Mode:
The fan shall operate as in occupied mode.

When in Freeze Protection Mode:
The fan shall be off.

COOLING COIL CHILLED WATER VALVE - MODULATING

When in Occupied Mode:
When in Cooling Mode:
The valve shall modulate to maintain the zone temperature setpoint (Z-T).

When in Heating Mode:
The valve shall be closed.

When in Unoccupied Mode:
The valve shall be closed.

On a call for cooling or override signal from the zone level the valve shall operate as in occupied mode until the call is cleared or the override is removed.

When in Freeze Protection Mode:
Upon detection of freezing air from mixed air temperature sensor, the chilled water valve shall be full open.

HEATING COIL - ELECTRIC STAGED

When in Occupied Mode:
When in Cooling Mode:
The coil shall be OFF.

When in Heating Mode:
The controller shall stage the heating to maintain the zone temperature setpoint (Z-T).

When in Unoccupied Mode:
The coil shall be OFF.

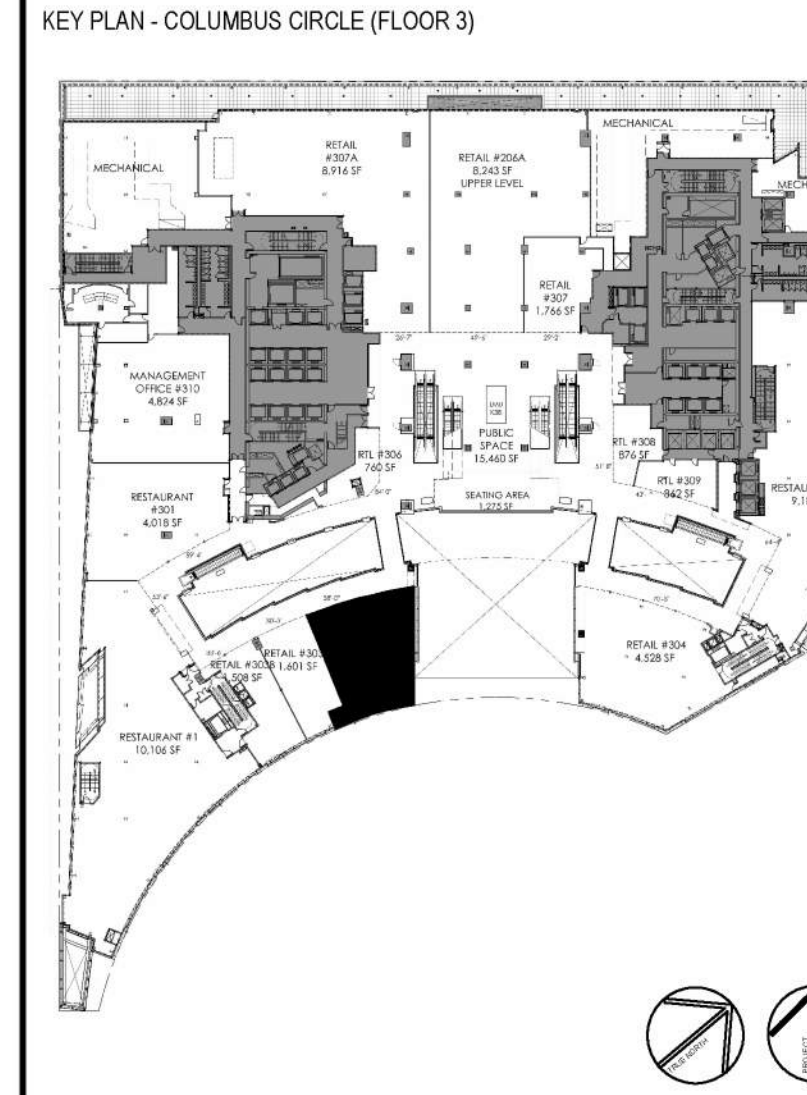
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LA 800 South Figueroa St. Suite 1080 Los Angeles, CA 90017 213.231.1086

COL 875 N High St. Suite 300 Columbus, OH 43215 614.963.9697

BOS 51 Stoughton St. 6th Floor Boston, MA 02210 617.542.1029

240 WEST 37TH STREET, 3RD FLOOR NEW YORK, NY 10018 TEL: 212.413.8400 www.hny-eng.com 2350002568



| | | |
|---|------------|---------------------|
| 1 | 2024-02-05 | IFC SET |
| | 2024-01-22 | PERMIT BID SET |
| | 2024-01-03 | LANDLORD REVIEW SET |

SHAKE SHACK COLUMBUS CIRCLE NYC

10 COLUMBUS CIRCLE UNIT 302
NEW YORK, NY 10019
SHACK #1525

BLOCK: 1049
LOT: 791
ZONING DISTRICT: C6-6, MD
MAP: 8c

MECHANICAL CONTROLS

DOB NOW JOB # M000960009-11

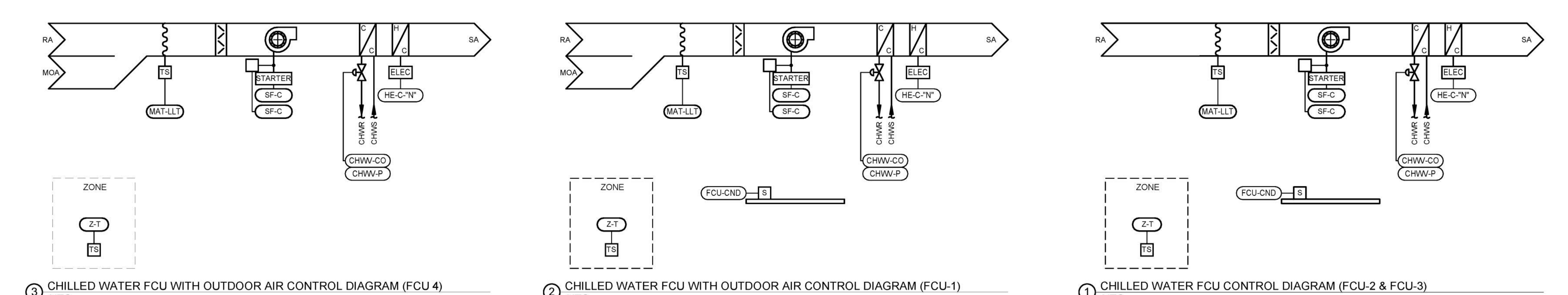
SCALE/SIGNATURE: _____ DRAWN BY: _____ Author

CHECKED BY: _____

JOB NO: 20230127.00

M-503.00

02/05/2024



③ CHILLED WATER FCU WITH OUTDOOR AIR CONTROL DIAGRAM (FCU-4) NTS

② CHILLED WATER FCU WITH OUTDOOR AIR CONTROL DIAGRAM (FCU-1) NTS

① CHILLED WATER FCU CONTROL DIAGRAM (FCU-2 & FCU-3) NTS

DOB APPROVAL STAMP

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ANDREW G. BENNETT

B. HYDRONIC SPECIALTIES

Provide shutoff valves 2 inches and smaller with threaded ends and bronze body construction. Provide rising or OS&Y stems extended type if insulated, handwheel operators, solid discs, and replaceable Teflon Packing. Provide lug type butterfly valves. Chilled water, valves shall be Class 300 for gate, check and globe valves, Class 300 for ball valves, and 300 PSI CWP for butterfly valves. Valves shall meet MSS specifications. Install valves where shown and where necessary for cut-off, for balancing and for control. Valves shall be Apollo, Crane, Hammond, Jenkins, Milwaukee, Nibco, Powell, or Stockham. For 2 inches and smaller, reference manufacturer with model number for ball valves is Nibco #T-585-70, gate valves is Nibco T-111, check valves is Nibco T-413-Y, and globe valves is Nibco T-211-Y. For larger than 2 inches, reference manufacturer with model number for ball valves is Nibco #T-585-Y, gate valves is Nibco F617-O, for check valves is Nibco F-918-B, for globe valves is Nibco F-718-B, and for butterfly valves is Nibco LD-2000.

Provide valve operators for each automatic valve with sufficient capacity to operate the valve under all conditions and to guarantee tight close-off against system pressure encountered. Provide operators with spring-return for normally closed or normally open position for fail safe operation to account for fire, low temperatures, or power interruption as indicated.

Provide control valves conforming to the construction requirements of shutoff valves described above. Size two-position control valves using pipe line size. Size two-position butterfly valves using the 90 degree flow coefficient (Cv). Size modulating control valves to produce the required capacity at a pressure loss not exceeding 5 PSI. Size modulating butterfly valves using the 60 degree flow coefficient (Cv). Control valves shall have equal percentage flow characteristics and shall not be less than 1/2 inch in size. Nominal body rating shall be the larger of 300 PSI or the system static head plus the maximum pump head at the maximum temperature of the control medium (i.e. chilled water, heating water, etc.). Valves shall meet MSS specifications and Class IV leakage requirements per ANSI/FCI 70-2. Provide two-way modulating valves with close-off ratings exceeding the maximum pressure difference, at any load condition, between the outlet and inlet. Equip each valve with proper packing to ensure there will be no leakage at the valve stem. Valves shall be manufactured by Belimo, Bray, Danfoss, Griswold Controls, Honeywell, Johnson Controls, Kale, Schneider Electric, Siemens, and Victaulic.

Provide circuit balancing valves manufactured by Armstrong, Bell & Gossett ITT, Griswold, Nibco, Pro Hydraulics, Taco, or Teal & Anderson. Valve shall be rated for 300 psig water working pressure (chilled water), and 250 degrees Fahrenheit maximum operating temperature and shall be bronze body with plug or globe style valve and calibrated orifice or venturi. Provide with connections for portable differential pressure meter with integral check valves and scale. Valve shall have position indicator and calibrated scale to register degree of valve opening. Valve shall have position indication readout and built-in memory stop for repeatable regulation and control. Valves 2 inch and smaller shall have threaded connections and 2-1/2 inch valves shall have flanged connections.

Provide automatic flow control valves as indicated on drawings by Griswold, Hays Fluid Controls, IM Hydraulics, Nexus, Pro Hydraulics, or Victaulic. Valves shall be class 300, with cast iron housing, stainless steel operating parts, threaded connections for 2 inch and smaller, flanged connections for 2-1/2 inch and larger. Factory set to automatically control flow rates within plus or minus 5 percent design, while compensating for system operating pressure differential. Provide quick disconnect valves for flow measuring equipment. Provide a metal identification tag with chain for each valve, factory marked with the zone identification, valve model number, and rate flow in GPM.

Provide Y-type strainers rated for 300 PSIG working pressure (chilled water), and with perforated Type 304 stainless steel basket and bottom drain connection. Screen openings shall be 20 mesh for 2 inches and smaller, 1/16 inch perforations for 2-1/2 inches to 4 inches and 1/8 inch perforations for larger than 4 inches. For 2-1/2 inches and larger, provide cast-iron body (ASTM A 126, Class B), flanged ends, and bolted cover. For 2 inches and smaller, provide cast bronze (ASTM B 62) body, threaded ends and screwed cover.

Provide thermometers (general) with accuracy of plus or minus 1 percent of range span or plus or minus one scale division to maximum of 1.5 percent of range span for chilled water service shall be 30 to 240 degrees Fahrenheit with 2-degree scale divisions (0 to 115 degrees Celsius with 1-degree scale divisions); heating water shall be 30 to 300 degrees Fahrenheit with 2-degree scale divisions (0 to 150 degrees Celsius with 1-degree scale divisions).

Provide brass or stainless steel thermowells, pressure rated to match piping system design pressure, with 2-inch extension for insulated piping and threaded cap nut with chain permanently fastened to well and cap. Install in piping tee where thermometers are indicated, in vertical position. Fill well with oil or graphite and secure cap.

Provide general use pressure gauges, ASME B40.1, Grade A, phosphor bronze bourdon-tube type, bottom connection; case of drawn steel or brass, glass lens, connector of brass, 1/4-inch NPS; scale shall be white coated aluminum, with permanently etched markings; accuracy of plus or minus 1 percent of range span, 2 times operating pressure; syphon of 1/4-inch NPS straight coil constructed of brass tubing with threads on each end; snubber of 1/4-inch NPS brass bushing with corrosion-resistant porous metal disc. Disc material shall be suitable for fluid served and rated pressure.

Pressure reducing valves, diaphragm operated, cast-iron or brass body valve, with low inlet pressure check valve, inlet strainer removable with system shut-down, and non-corrosive valve seat and stem. Select valve size, capacity, and operating pressure to suit system. Valve shall be factory-set at operating pressure and have the capability for field adjustment.

Provide test plugs manufactured by Flow Design Inc., MG Piping Products Co., Peterson Equipment Co., Sisco, Watts Regulator Co., or equal. Test plugs shall be nickel-plated brass body with neoprene core material, with 1/2-inch NPS fitting and 2 self-sealing valve core inserts, suitable for inserting a 1/8-inch O.D. Probe assembly from a dial-type thermometer or pressure gauge. Test plug shall have gasketed and threaded cap with retention chain and body of length to extend beyond insulation. Pressure rating shall be 500 PSIG.

C. CONDENSATE PIPING AND INSULATION

Condensate drain pipe installed inside of a building shall be any of the following: 1. ASTM B85, Type M hard-drawn copper tube with ANSI B16.22 wrought copper fittings for 1 inch and smaller. 2. ASTM B306, Type DWV hard-drawn copper tube with ANSI B16.23 wrought copper drainage pattern fittings for 1-1/4 inch and larger.

Provide soldered connections for copper piping. Solder filler metals shall be ASTM B32, 95-5 Tin-Antimony. Terminate at nearest roof drain, gutter, or other location as shown on drawings. Install cleanouts at elbows greater than 45 degrees. Paint piping exposed to sunlight with 2 coats of a water-based latex paint.

Provide fiberglass or flexible elastomeric insulation on interior condensate piping. Fiberglass insulation shall conform to ASTM C547 with a Type I or II vapor barrier jacket conforming to ASTM C1136 by Certainteed, Johns Manville, Knaf, or Owens-Corning. Flexible elastomeric insulation shall conform to ASTM C534 Type I by Aeroflex, Armflex, or K-Flex USA. Provide insulation thicknesses as follows:

Condensate piping: 1 inch thick for all condensate piping.

D. SYSTEM EVACUATION AND CHARGING

Blow out refrigeration lines with dry nitrogen at a suitable pressure before making final connection at the condensing unit or coil to ensure against dirt, scale, or other foreign material being in the lines. Draw a vacuum to 29 inches of mercury. Break this vacuum by charging dry refrigerant gas into the system, raising the pressure to 0 PSIG. Repeat the latter two steps for a triple evacuation before the final evacuation is started. Make final evacuation by reducing the system absolute pressure to a maximum of 0.5 millimeters (500 microns) and allowing the pump to run at this pressure for a minimum of two hours.

Repeat the proper amount of refrigerant charge per the manufacturer's recommendations. Record the amount of refrigerant by weight charged into the system for each circuit recorded to the nearest 1/4 pound on tags and attach tags to the liquid line near the condensing unit. Refrigerant shall be supplied by the HVAC Contractor.

E. TEMPERATURE CONTROLS

A. GENERAL REQUIREMENTS

Provide a complete system of temperature controls including controllers, control panels, thermostats, sensors, time switches, override timers, actuators, relays, and wiring required to provide the desired control systems specified on the drawings.

Submit shop drawings of equipment provided for temperature control. Submit operation and maintenance data, including trouble-shooting maintenance guide, step-by-step procedures indexed for each controller and thermostat function, inspection period, cleaning methods and materials, and calibration tolerances.

Provide integrated wiring diagrams showing interconnections between field installed equipment and package wiring furnished with the HVAC equipment. Control wiring shall be sized to accommodate the voltage drop associated with the distance between the control device and the controller.

Provide supervision and on-job check-out service as required to ensure that installation and operation of the temperature control system meets requirements of the drawings, specifications, and sequences of operation. The system shall be guaranteed for a period of one year following the acceptance of the system by the Architect/Engineer. Correct defects occurring during this period at no additional cost to the Owner.

Install control devices with top of device at 48 inches AFF to meet ADA requirements unless otherwise noted on the plans.

B. WIRING

Provide electrical and control wiring as specified under the section "Electrical Wiring."

C. THERMOSTAT CONTROL EQUIPMENT

Provide thermostat control equipment with sufficient communication, programming, input and output connections, and modulating or staging capability to meet the sequence of operations. Provide thermostats with the features as indicated:

- 1. LCD or LED display screen.
2. Button or touchscreen interface.
3. Display temperature.
4. Display temperature setpoint.
5. Adjust temperature setpoint.
6. Limit temperature setpoint adjustment within plus or minus 3 degrees F.
7. Display relative humidity.
8. Adjust relative humidity.
9. Display operating mode.
10. Adjust operating mode.
11. Adjust schedule, minimum seven day occupied/unoccupied.
12. Security lockout.
13. At contractor's option where multiple sensors are shown, the sensors may be provided with the thermostat in a single device.

Seven day programmable, occupied/unoccupied thermostats for on/off or multiple stages of heating and cooling systems shall be used. Order thermostat with multi-stage capability as required to match scheduled unit cooling/heating stages.

Remote sensors integrated with the seven day programmable thermostat shall be Honeywell TR21/TR21-H remote sensor or equal.

D. SENSORS AND RELAYS

Provide general-purpose type elements for use in input and output sensors. Provide transmitters or transducers with accuracy as required, compatible with the controllers used, with range suitable for the systems encountered. Transmitters and transducers shall have offset and span adjustments, temperature compensation, shock and vibration immunity, and zeroing capability. Sensor requirements shall include the combined effects of linearity, hysteresis, repeatability, and the transmitter.

- Provide sensors that meet the following minimum performance:
1. Dry-bulb temperature sensors at a minimum shall be accurate to +/- 2 degrees Fahrenheit over the range of 40 to 80 degrees Fahrenheit.
2. Wet-bulb temperature shall be calculated using dry-bulb temperature and humidity and shall be accurate to +/- 2 degrees Fahrenheit.
3. Enthalpy shall be calculated using dry-bulb temperature and humidity and shall be accurate to +/- 3 BTU/lb over the range of 20 to 36 BTU/lb.
4. Humidity sensors at a minimum shall be accurate within +/- 3 percent full range between 20 and 95 percent, with drift less than 1 percent full scale per year.
5. Pressure transmitters at a minimum shall be accurate to +/- 1 percent full scale with drift less than 1 percent full scale per year.

Provide remote sensors where indicated on the drawings and integrate them with the thermostat control equipment. Remote sensors shall have the following features: 1. Wired connection. 2. Temperature sensor. 3. Humidity sensor. 4. Blank faceplate. 5. Where multiple remote sensors are shown for a single unit, the sensors shall be provided in a single device.

Dry-bulb temperature sensors at a minimum shall be accurate to +/- 2 degrees Fahrenheit over the range of 40 to 80 degrees Fahrenheit. Wet-bulb temperature shall be calculated using dry-bulb temperature and humidity and shall be accurate to +/- 2 degrees Fahrenheit. Enthalpy shall be calculated using dry-bulb temperature and humidity and shall be accurate to +/- 3 BTU/lb over the range of 20 to 36 BTU/lb. Humidity sensors at a minimum shall be accurate within +/- 3 percent full range between 20 and 95 percent, with drift less than 1 percent full scale per year. Pressure transmitters at a minimum shall be accurate to +/- 1 percent full scale with drift less than 1 percent full scale per year.

Smoke detectors furnished and installed as indicated in this section or as scheduled on the plans (or heat detectors, if permitted by code) shall shut down each associated unit supply fan upon activation where required by code. Provide remote visual and audible alarm device in an approved location if smoke detectors are not connected to a fire alarm panel and label device as "Air Duct Detector Trouble".

Provide 24 Volt or 120 Volt timeswitches Intermatic Series FM1D20 or equal programmable type with 7-day programming with up to two "on" and "off" per day. Battery backup shall provide 48 hours of memory retention. Override timer switches shall be spring wound, 6-hour, normally open type. Coordinate 120 V wiring of timeswitch with electrical contractor if 120 V model is provided.

Provide relays with contact rating, configuration, and coil voltage that is suitable for the application. Relay shall be general purpose, enclosed plug-in type and protected by a heat and shock resistant duct cover. Number of contacts and operational function shall be as required. Transient suppression shall be provided as an integral part of the relay. Contacts shall be single coil, electrically operated, mechanically held, double-break, silver-to-silver type protected by arcing contacts. Positive locking shall be obtained without the use of hooks, latches, or semi-permanent magnets. Operating and release times shall be 100 milliseconds or less.

7. SEQUENCE OF OPERATION

A. FAN COIL UNIT CONTROL

Reference the Mechanical Controls Sheet, M503, for sequence of operations.

B. KITCHEN EXHAUST FAN CONTROL

Kitchen exhaust fan shall be energized through on-off switches at the associated exhaust hoods or cooking equipment or through a master kitchen ventilation control panel shown on the drawings. Kitchen fans shall be interlocked to prevent cooking appliances, make-up air and other air-handling equipment providing fresh air to the kitchen area as noted or scheduled on the drawings.

C. MAKE-UP AIR UNIT CONTROL

Make-up air unit supply air fan shall be energized and the outside air damper (MD2) shall open 100% when exhaust fans are energized. Exhaust fans and make-up air units shall modulate thru the hood control panel. Refer to installation, operation, and maintenance manual.

D. RESTROOM EXHAUST FAN (EF-1) CONTROL

Operate exhaust fans continuously during occupied hours and shut down during unoccupied hours. Provide a 7-day timeclock to switch each system between occupied and unoccupied operation.

E. OUTDOOR AIR SUPPLY FAN (SF-1) CONTROL

Operate exhaust fans continuously during occupied hours and shut down during unoccupied hours. Interlock fan with hood to establish occupied and unoccupied operation when hood is energized or deenergized respectively. When fan is energized the outside air damper (MD1) shall open 100%.

F. ELECTRIC DUCT HEATER (EDH-1) CONTROL

Electric duct heater shall modulate to maintain a 25°F leaving air temperature.

G. CHILLED WATER RETURN PUMP CONTROL (CHWP-1)

The pumps shall be controlled by the pump controller. The pump that is energized shall start on low speed and ramp up to maintain the condenser water differential pressure set point as measured by the differential pressure sensor. Initial differential setpoint shall be determined during system startup.

A pump shall be in failure mode and alarm when the pump is given a start signal and the pump status, based on differential pressure, indicates it is off.

8. ALTERNATES

Refer to the architectural portion of the specification for list of alternates. Applicable sections of the base specifications shall apply to all work required by the alternate unless otherwise specified. Determine whether or not and how each alternate affects work. Include labor, materials, equipment, and transportation services necessary for and incidental to the completion of work under each particular alternate. Furnish separate bid for each alternate applicable to work, stating the amount to be added or deducted from the base bid.

9. COMMISSIONING OF MECHANICAL SYSTEMS

A. PART 1 GENERAL

1.1 SUMMARY

a. Section includes Cx process requirements for the following HVAC systems, assemblies, and equipment: 1. Air handling units (Supply fans, return fan, packaged units, roof top units, specialized fans) 2. Exhaust fans 3. Fan coil units and terminal units 4. Condensing units 5. Make-Up air units 6. Ductwork and piping

b. Related Requirements: 1. Section 019113 "General Commissioning Requirements" for general Cx process requirement and CxA responsibilities.

1.2 INFORMATIONAL SUBMITTALS

a. Construction Checklists: Draft construction checklists will be created by CxA for Contractor review. b. Construction Checklists: Installation and Performance test checklists for systems, assemblies, subsystems, equipment, and components to be part of the Cx process and according to requirement in Section 019113 "General Commissioning Requirement."

1. Refrigerant piping, including the following: a. Refrigerant piping, fittings, and specialties. b. Refrigerant charge. c. General duty and specialty valves. d. Meters and gauges. 2. Air distribution systems, including the following: a. Supply, return, and exhaust systems. b. Metal ducts, liners, and fittings. c. Nonmetal ducts and fittings. d. Air-duct accessories, including volume dampers, fire and smoke dampers, turning vanes, sound attenuators, and flexible connectors. e. Duct-mounted access doors and panels. 3. Kitchen exhaust system, including the following: a. Exhaust and makeup air system. b. Metal ducts, liners, and fittings. c. Air-duct accessories, including volume dampers, fire and smoke dampers, turning vanes, sound attenuators, and flexible connectors. d. Duct-mounted access doors and panels. f. Exhaust fans. g. Make-Up air unit 4. Air-handling equipment, including the following: a. Fans and motors. b. Indoor air-handling units with and without coils, dampers, and filters. c. Outdoor air-handling units with and without coils, dampers, and filters.

B. PART 3 EXECUTION

3.1 CONSTRUCTION CHECKLISTS

a. Complete detailed construction checklists (prefunctional checklists) prepared by the CxA for HVAC systems, assemblies, subsystems, equipment, and components. 1. Air and hydronic distribution systems, including the following: a. Supply, return, outdoor-air, and exhaust-air distribution systems. b. Automatic dampers. c. Control valves. 2. Heating and cooling terminal and unitary equipment, including the following: a. Unit heaters. b. Fan coil units. c. Electric heating. 3. TAB verification.

3.2 CONSTRUCTION CHECKLIST REVIEW

a. Review and provide written comments on draft construction checklists. CxA will create required draft construction checklists and provide them to Contractor. b. Return draft construction checklists with written comments and for control. Checklists must be tested according to approved test procedures (for example, normal shutdown, normal auto position, normal manual position, unoccupied cycle, and alarm conditions).

c. When review comments have been resolved, the CxA will provide final construction checklists marked "Approved for Use, (date)." d. Use only construction checklists marked "Approved for Use, (date)."

3.3 Cx TESTING PREPARATION

a. Certify that HVAC systems, subsystems, and equipment have been installed, calibrated, and started and that they are operating according to the Contract Documents and approved submittals. b. Set systems, subsystems, and equipment in manual position to be tested according to approved test procedures (for example, normal shutdown, normal auto position, normal manual position, unoccupied cycle, and alarm conditions).

3.4 Cx TESTS COMMON TO HVAC SYSTEMS

- a. Comply with construction checklist requirements, including installation checks, startup, and performance tests 7 requirements for HVAC systems and equipment. b. Measure capacities and effectiveness of systems, assemblies, subsystems, equipment and components, including operational and control functions, to verify compliance with acceptance criteria. c. Coordinate schedule with, and perform Cx activities at the direction of CxA. d. Provide technicians, instrumentation, tools, and equipment to perform and document the following: 1. Construction checklist verification tests. 2. Construction checklist verification tests demonstrations. 3. Cx test demonstrations.

3.5 START-UP DOCUMENTATION COMMON TO ALL SYSTEMS

- a. The following Start-Up Documentation (Checklists and Tests) shall be considered common to all systems: 1. Checklist shall proceed from lower level devices to larger components to the entire system operation. 2. Verify labeling is affixed per specification and visible. 3. Verify prerequisite procedures are done. 4. Inspect for damage and ensure none is present. 5. Verify system is installed per the manufacturer's recommendations. 6. Verify system has undergone Start-Up per the manufacturer's recommendations. 7. Verify that access is provided for inspection, operation and repair. 8. Verify that access is provided for eventual replacement of the equipment. 9. Verify that record drawings, submittal data and O&M documentation accurately reflect the installed systems. 10. Verify all gauges and test ports are provided as required by contract documents and manufacturer's recommendations. 11. Verify all recorded nameplate data is accurate. 12. Verify that the installation ensures safe operation and maintenance. 13. Verify all rotating and moving parts are properly lubricated. 14. Verify specified replacement material/stock has been provided as required by the Contract Documents. 15. Verify all monitoring and ensure all alarms are active and set per requirements.

3.6 MECHANICAL IDENTIFICATION

- a. Include all applicable "Start-Up Checks Common to All Systems". b. Start-Up Checks: Perform the following checks: 1. Verify all valve tags, piping, duct, and equipment labeling corresponds with drawings and indexes and meets requirements specified. Correct any deficiencies for all piping and duct system. 2. Adjusting: Relocate any mechanical identification device which has become visually blocked by work of this division or other division. 3. Cleaning: Clean face of identification devices, and glass frames of valve charts.

3.7 MECHANICAL INSULATION

- a. Include all applicable "Start-Up Checks Common to All Systems". b. Start-Up Checks: Examine all piping, systems and equipment specified to be insulated. 1. Ensure quality of insulation. Patch and repair all insulation damaged after installation. 2. Ensure the integrity of vapor barrier around all cold surfaces.

3.8 PIPING GENERAL

- a. Include all applicable "Start-Up Checks Common to All Systems". b. Start-Up Checks: These procedures apply to all installed piping systems, including underground site utilities. 1. Inspect all piping for proper installation, adequate support (with appropriate vibration isolation where applicable) and adequate isolation valves for required services. 2. Provide notifications of pipe cleaning and flushing activities. 3. Flush and clean all piping and clean all strainers. Provide documentation of all related procedures. 4. Ensure adequate drainage is provided at low points and venting is provided at high points. 5. Ensure facilities to effectively drain and fill the system are in place. 6. Ensure air is thoroughly removed from the system as applicable. 7. Provide notification of pressure testing. 8. Pressure and/or leak test all applicable systems in accordance with the requirements in the applicable Division 23 specification. 9. Provide applicable piping systems as specified in the individual sections and as required by regulatory authorities. 10. Submit pressure test reports that document the pressure testing results with certification of the results. Include drawings/diagrams indicating sections of pipe that are tested with the corresponding report. 11. Set and adjust fill, pressure, or level controls to the required setting.

3.9 AC MOTORS

- a. Include all applicable "Start-Up Checks Common to All Systems". b. Start-Up Checks: Perform the following checks during start-up and as specified in manufacturer's instructions: 1. Verify proper alignment, installation, and rotation. 2. Verify properly sized overloads are in place. c. Start-Up Tests: Perform the following tests, measurements, or procedures during start-up and as specified in the manufacturer's instruction: 1. Measure voltage available to all phases. Measure amps and RPM after motor has been placed in operation and is under load. 2. Record all motor nameplate data.

3.10 PACKAGED HEATING AND COOLING UNITS

- a. Include all applicable "Start-Up Checks Common to All Systems". b. Refer to AC Motors in this section. c. General: Provide the services of a factory-authorized service representative to test and inspect unit installation, provide startup service, and to demonstrate and train Owner's maintenance personnel is required by the Owner. b. Start-Up Checks: Perform the following inspections/checks during start-up: 1. Test controls and demonstrate compliance with requirements. Replace damaged or malfunctioning controls and equipment. 2. Install new filters after start-up.

3.11 TERMINAL UNITS

- a. Include all applicable "Start-Up Checks Common to All Systems". b. Start-Up Checks: Perform the following inspections/checks during start-up: 1. After construction is completed, including painting if applicable, clean unit exposed surfaces. 2. Clean factory-finished surfaces. Repair any marred or scratches surfaces with manufacturer's touch-up paint. 3. Verify adequate access for maintenance. 4. Check power and control voltages. 5. Check rotation of fan where applicable. 6. Check operation of water leak sensors. 7. Check calibration and operation of the controlling elements. 8. Check control valves for required close-off and fail position. 9. Install new filter units for terminals requiring same.

3.12 FANS

- a. Include all applicable "Start-Up Checks Common to All Systems". b. General: Provide the services of a factory-authorized service representative to test and inspect exhaust fan installation, provide startup service, and to demonstrate and train Owner's maintenance personnel is required by the Owner. c. Start-Up Checks: Perform the following inspections/checks during start-up: 1. Inspect the field assembly of components and installation of the units, piping, ductwork, and electrical connections. 2. Clean unit cabinet interiors to remove foreign material and construction dirt and dust. Vacuum clean fan wheel, fan cabinet, coils entering air face. Ensure volatile irritants are contained and kept out of occupied spaces. 3. Adjust and lubricate dampers and linkages for proper damper operation. 4. Verify the unit is secure on mountings and supporting devices and connections for ductwork, and electrical are complete. Verify proper thermal overload protection is installed in motors, starters, and disconnects. 5. Ensure vibration isolation integrity is maintained with the fan installation and associated connectors. 6. Lubricate bearings, pulleys, belts, and other moving parts with factory-recommended lubricants. 7. Stroke all dampers to ensure free and full travel.

3.13 DUCTWORK ACCESSORIES

- a. Include all applicable "Start-Up Checks Common to All Systems". b. Start-Up Checks: Perform the following checks during start-up and as specified: 1. Cleaning: Clean factory-finished surfaces. Repair any marred or scratches surfaces with manufacturer's touch-up paint. c. Start-Up Tests: In addition to specifications, perform the following as a minimum: 1. Operate installed ductwork accessories to demonstrate compliance with requirements. Test for air leakage while system is operating. Repair or replace faulty accessories, as required to obtain proper operation and leak proof performance. 2. Label access doors in accordance with Division 21 Section "Mechanical Identification" 3. Adjusting: Adjust ductwork accessories for proper settings, install fusible links in-fire dampers and adjust for proper action.

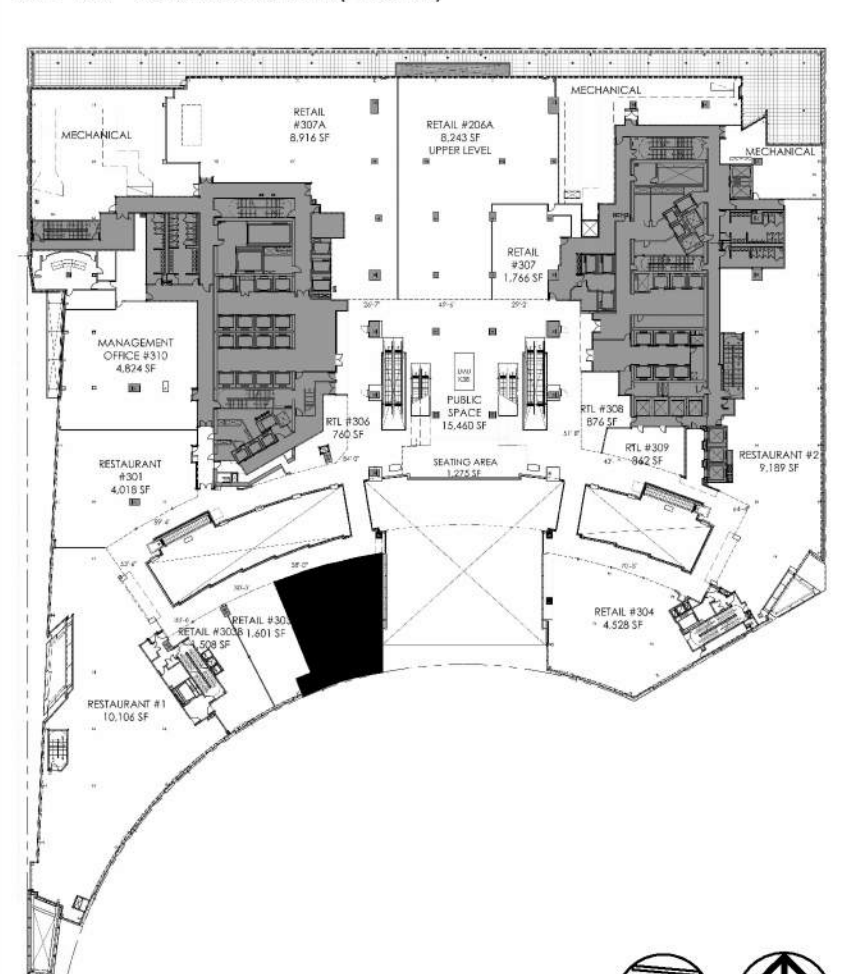
END OF SECTION 23

DOB APPROVAL STAMP

Bergmeyer logo and contact information for Los Angeles, CA and Boston, MA offices.

HNY CONSULTING ENGINEERS logo and address: 240 WEST 37TH STREET, 3RD FLOOR, NEW YORK, NY 10018.

KEY PLAN - COLUMBUS CIRCLE (FLOOR 3)



Revision table with columns: NO., BY, DATE, DESCRIPTION. Includes revisions for IFC SET, PERMIT BID SET, and LANDLORD REVIEW SET.



SHAKE SHACK COLUMBUS CIRCLE NYC

10 COLUMBUS CIRCLE UNIT 302 NEW YORK, NY 10019 SHACK #1525

Block, Lot, Zoning District, and Map information.

MECHANICAL SPECIFICATIONS

DOB NOW JOB #

Professional Engineer seal for Andrew G. Bennett, State of New York, License No. 08528. Includes signature line and date 02/05/2024.

Special Inspections, Note, and New York Alteration Warning Statement sections.

| BUILDING AIR BALANCE SUMMARY NORMAL OPERATION | | | | |
|---|--------------|---------------|---------------|-------------------|
| UNIT NO. | SUPPLY (CFM) | OUTDOOR (CFM) | EXHAUST (CFM) | PERCENT O.A./S.A. |
| FCU-1 | 1,900 | 650 | -- | 34% |
| FCU-2 | 4,400 | 0 | -- | 0% |
| FCU-3 | 900 | 0 | -- | 0% |
| FCU-4 | 380 | 40 | -- | 11% |
| MAU-1 | 1,700 | 1,700 | -- | 100% |
| ESP-1 | -- | -- | 2,500 | -- |
| EF-1 | -- | -- | 75 | -- |
| TOTALS | 9,260 | 2,390 | 2,575 | -- |
| TOTAL AIRFLOW AVAILABLE FOR PRESSURIZATION (CFM) | | | | -185 |
| PERCENT POSITIVE PRESSURIZATION | | | | -7.7% |

| PROJECT DESIGN CONDITIONS | | | | | | | | | | | |
|--|--|--|--|--|--|----------------------------------|--|--|--|--|--|
| CLIMATE CONDITIONS | | | | | | BUILDING OPERATING HOURS: | | | | | |
| WEATHER STATION: NEW YORK CENTRALPARK, NY, USA | | | | | | MONDAY - FRIDAY TBD BY OWNER | | | | | |
| CLIMATE ZONE: 4A | | | | | | SATURDAY TBD BY OWNER | | | | | |
| HEATING (DB): 99.6% 13.0 °F | | | | | | SUNDAY TBD BY OWNER | | | | | |
| COOLING (DB/MCW): 0.4% 90.7 °F 73.6 °F | | | | | | HOLIDAY TBD BY OWNER | | | | | |
| SPACE / UNIT DESCRIPTION | | | | | | | | | | | |
| SET POINTS | | | | | | | | | | | |
| COOLING / DE-HUMIDIFICATION | | | | | | | | | | | |
| HEATING | | | | | | | | | | | |
| HUMIDIFICATION | | | | | | | | | | | |
| ZONE VENTILATION RESET | | | | | | | | | | | |
| SPACE OPERATING HOURS OCCUPIED / UNOCCUPIED | | | | | | | | | | | |
| NOTES | | | | | | | | | | | |
| A. ZONE LEVEL SET POINT CONDITIONS SHALL BE AS SCHEDULED UNLESS OTHERWISE SCHEDULED OR NOTED ON THE DRAWINGS FOR ROOM SPECIFIC SPACE CONDITIONS. | | | | | | | | | | | |
| B. ZONE LEVEL OCCUPANCY HOUR SCHEDULE SHALL BE PER BUILDING OPERATING HOURS UNLESS OTHERWISE SCHEDULED. | | | | | | | | | | | |
| C. ZONE LEVEL CONTROLS SHALL BE CAPABLE OF OPERATING WITH INDEPENDENT OCCUPANCY SCHEDULES. | | | | | | | | | | | |

| GRILLE, REGISTER, AND DIFFUSER SCHEDULE | | | | | | | | | | | | | | | | |
|---|--------------|---------------------------|-------|-----------------------|---------------|-------------------|----------------|--------|-------|---|---|---|---|---|---|---|
| MARK | MANUFACTURER | SERVICE | MODEL | CONSTRUCTION MATERIAL | FACE TYPE | MOUNTING LOCATION | FACE SIZE (IN) | MAX NC | NOTES | | | | | | | |
| CEG | E.H. PRICE | EXHAUST GRILLE W/ DAMPER | 80D | STEEL | EGGCRATE | SURFACE | 12x12 | 30 | A | B | C | F | G | H | | |
| CRG | E.H. PRICE | RETURN GRILLE | 80 | STEEL | EGGCRATE | LAY-IN | 24x24 | 30 | A | B | C | F | H | | | |
| CS1 | E.H. PRICE | SUPPLY DIFFUSER | SCD | STEEL | SQUARE CONE | SURFACE | 12x12 | 30 | A | B | C | F | H | J | K | L |
| CS2 | E.H. PRICE | SUPPLY DIFFUSER | SCD | STEEL | SQUARE CONE | LAY-IN | 24x24 | 30 | A | B | C | F | H | K | | |
| CS3 | E.H. PRICE | SUPPLY DIFFUSER | PDR | STEEL | PERFORATED | LAY-IN | 24x24 | 30 | A | B | C | F | H | | | |
| WRG | E.H. PRICE | RETURN GRILLE W/DAMPER | 530D | STEEL | LOUVERED FACE | WALL OR DUCT | (SEE PLANS) | 30 | A | B | C | D | F | H | | |
| WSR | E.H. PRICE | SUPPLY REGISTER W/ DAMPER | 520D | STEEL | LOUVERED FACE | WALL OR DUCT | (SEE PLANS) | 30 | A | B | C | D | E | F | G | H |
| MODEL NUMBERS SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER AND MODEL NUMBERS ONLY. REVIEW THE COMPLETE DESCRIPTION, NOTES AND SPECIFICATIONS TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED. THE MANUFACTURERS LISTED ARE THE BASIS FOR THE DESIGN. | | | | | | | | | | | | | | | | |
| NOTES: | | | | | | | | | | | | | | | | |
| A. EQUIPMENT FURNISHED AND INSTALLED PER THE EQUIPMENT RESPONSIBILITY SCHEDULE. | | | | | | | | | | | | | | | | |
| B. NECK SIZE SHOWN ON DRAWINGS. PROVIDE BRANCH DUCT TO MATCH NECK SIZE UNLESS OTHERWISE SHOWN ON DRAWINGS. | | | | | | | | | | | | | | | | |
| C. DIFFUSERS SHALL BE PREFINISHED TO MATCH CEILING/WALL/EXPOSED DUCT COLOR (COORDINATE WITH ARCHITECT). | | | | | | | | | | | | | | | | |
| D. FRONT BLADES PARALLEL TO LONG DIMENSION. | | | | | | | | | | | | | | | | |
| E. DOUBLE DEFLECTION BARS SHALL BE ADJUSTABLE. | | | | | | | | | | | | | | | | |
| F. FRAME TYPE TO MATCH CEILING/WALL CONSTRUCTION. COORDINATE WITH ARCHITECTURAL, REFLECTED CEILING/WALL PLAN. | | | | | | | | | | | | | | | | |
| G. PROVIDE OPPOSED BLADE DAMPER ADJUSTABLE FROM FACE OF DEVICE. | | | | | | | | | | | | | | | | |
| H. PROVIDE DIFFUSERS, LAMP SLOTS, AND GRILLES WITH NO EXPOSED MOUNTING SCREWS. | | | | | | | | | | | | | | | | |
| I. CONTRACTOR SHALL PROVIDE REMOTE CABLE-OPERATED VOLUME DAMPER BY METROPOLITAN AIR TECHNOLOGIES MODEL RT-250 WITH EXTERNAL WORM GEAR OPERATOR OR EQUIVALENT YOUNG REGULATOR BUTTERFLY DAMPER WITH 270-275 CONTROLLER. OPERATOR SHALL HAVE A SQUARE DRIVE FOR 1/4" NUT DRIVER. DAMPER ASSEMBLY SHALL INCLUDE GALVANIZED STEEL DUCT WITH ROLLED BEAD STIFFENERS, REINFORCED BLADE, SELF LUBRICATING BEARING AND WORM GEAR MOUNTING PLATE. DAMPER SHALL BE INSTALLED IN BRANCH DUCT NOT INLET OF FLENUM DIFFUSER. (RE: 2M521) | | | | | | | | | | | | | | | | |
| K. 4-WAY THROW PATTERN UNLESS OTHERWISE INDICATED BY FLOW ARROWS ON DRAWINGS. | | | | | | | | | | | | | | | | |
| L. PROVIDE RAPID MOUNT FRAME FOR INSTALLATION IN HARD CEILING. | | | | | | | | | | | | | | | | |

| FAN COIL UNIT SCHEDULE (CHILLED WATER COOLING, ELECTRIC HEATING) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--------------|---------|-----------|------------|-------|----------|-------|--------|---------|-------|----------|----------|-------------|--------------|------------|----------|----------|--------------|------------|---------------|----------|-------------|-------------|--------------|------|-------|-----|--------------|-----------|--------------|-------|
| MARK | MANUFACTURER | MODEL | UNIT TYPE | SUPPLY FAN | | | | | | | | | | COOLING COIL | | | | | | | | | | HEATING COIL | | | | MIN OA (CFM) | DISC TYPE | WEIGHT (LBS) | NOTES |
| | | | | FAN TYPE | CFM | ESP (IN) | BHP | NOM HP | VFD Y/N | VPH | TH (MBH) | SH (MBH) | EAT (°F DB) | LAT (°F WB) | FLOW (GPM) | EWT (°F) | LWT (°F) | MAX WPD (FT) | ROWS / FPI | MIN OUT (MBH) | NOM (KW) | EAT (°F DB) | LAT (°F DB) | VPH | | | | | | | |
| FCU-1 | Carrier | 42BHE20 | FCU | BELT | 1,900 | 0.80 | 0.71 | 1 | Y | 480/3 | 77.5 | 53.2 | 80.4 | 66.6 | 55.0 | 53.3 | 12.2 | 45 | 57 | 10.2 | 8 | 82.4 | 19.9 | 54.6 | 85.0 | 480/3 | 550 | NF | 440 | A-Q | |
| FCU-2 | Carrier | 42BHE40 | FCU | BELT | 4,400 | 0.80 | 0.26 | 3 | Y | 480/3 | 112.9 | 96.1 | 75.0 | 62.5 | 55.3 | 53.7 | 22 | 45 | 57 | 11.9 | 6 | 64.8 | 25.0 | 70.0 | 85.0 | 480/3 | 0 | NF | 674 | A-Q | |
| FCU-3 | Carrier | 42BHE08 | FCU | BELT | 900 | 0.80 | 0.4 | 0.5 | Y | 480/3 | 17.7 | 17.7 | 75.0 | 62.5 | 57.1 | 55.9 | 4 | 45 | 57 | 3.1 | 6 | 14.6 | 4.5 | 70.0 | 85.0 | 480/3 | 0 | NF | 268 | A-Q | |
| FCU-4 | Carrier | 42WKN12 | Cassette | DIRECT | 380 | 0.80 | 0.125 | 0.125 | Y | 208/1 | 10.6 | 9.0 | 78.8 | 62.6 | 54.0 | 52.5 | 2.2 | 45 | 57 | 2.6 | 1 | 8.3 | 1.5 | 63.7 | 85.0 | 208/1 | 40 | NF | 45 | A-Q | |
| MODEL NUMBERS SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER AND MODEL NUMBERS ONLY. REVIEW THE COMPLETE DESCRIPTION, NOTES AND SPECIFICATIONS TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED. THE MANUFACTURERS LISTED ARE THE BASIS FOR THE DESIGN. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NOTES: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A. PROVIDE FACTORY MOUNTED DISCONNECT INSTALLED ON SERVICE SIDE OF UNIT. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B. STARTER PROVIDED BY DIVISION 26 CONTRACTOR. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C. VARIABLE FREQUENCY DRIVE FURNISHED BY DIVISION 23 CONTRACTOR. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D. PROVIDE SHAFT GROUNDING SYSTEM ON MOTOR. REFER TO MOTOR SPECIFICATION FOR ADDITIONAL INFORMATION. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| E. PROVIDE SINGLE POINT POWER CONNECTION. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F. SPECIFIED FAN ESP ACCOUNTS FOR DUCT LOSSES EXTERNAL TO UNIT. ESP EXCLUDES UNIT INLET AND OUTLET OPENING LOSSES. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G. PROVIDE MOTOR HORSEPOWER TO OVERCOME INTERNAL UNIT STATIC PRESSURE DROP PLUS SPECIFIED EXTERNAL STATIC PRESSURE DROP. NOMINAL MOTOR HP SHALL BE NO LARGER THAN THE FIRST AVAILABLE NOMINAL MOTOR SIZE GREATER THAN THE... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H. DIVISION 23 CONTRACTOR SHALL PROVIDE SMOKE DETECTORS IN RETURN AIR AND SUPPLY AIR DUCT(S). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I. UNIT SHALL BE DRAWN THRU CONFIGURATION. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J. PROVIDE WITH SPRING VIBRATION ISOLATION AND ALL-THREAD HANGING RODS. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K. PROVIDE HEATING COIL WITH THERMAL OVERLOAD PROTECTION AND AIRFLOW PROVING SWITCH. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L. PROVIDE HEATER TO MEET OR EXCEED SCHEDULED MINIMUM MBH OUTPUT. NOMINAL KW IS BASED ON LISTED MANUFACTURER'S STANDARD PRODUCT. COORDINATE EQUIPMENT POWER SUPPLY WITH ELECTRICAL CONTRACTOR IF DIFFERENT FROM THAT... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M. SELECT EQUIPMENT FOR ELEVATION OF 0 FEET ABOVE SEA LEVEL. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| N. PROVIDE AUXILIARY DRAIN PAN WITH FLOOD DETECTOR SWITCH TO SHUT OFF UNIT WHEN WATER IS PRESENT IN DRAIN PAN. AUXILIARY DRAIN PROVIDED BY PLUMBING CONTRACTOR. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| O. DIVISION 23 TEMPERATURE CONTROL CONTRACTOR SHALL PROVIDE CONTROL VALVE SIZED USING THE SCHEDULED CONTROL VALVE AUTHORITY FLOW COEFFICIENT (CV). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P. VALVE CV IS BASED ON SPECIFIC GRAVITY OF WATER PROVIDED BY LOCAL AT A CONCENTRATION OF 0%. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Q. PROVIDE WITH CHILLED WATER COIL RATED FOR 300 PSIG OPERATING PRESSURE AND 1.5X TEST PRESSURE. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| ELECTRIC DUCT HEATER SCHEDULE | | | | | | | | | | | | | | |
|--|--------------|-------|---------------|----------------|------------------|---------------|---------------|--------------------|-----------|-----|-------|-----|--|--|
| MARK | MANUFACTURER | MODEL | MIN OUT (MBH) | NOM INPUT (KW) | MIN NO OF STAGES | SIZE (W x H") | MAX APD (CFM) | MAX TEMP RISE (°F) | DISC TYPE | VPH | NOTES | | | |
| EDH-1 | INDEECO | QUZ | 22.4 | 7 | SCR | 10x14 | 0.03 | 690 | 30 | NF | 480/3 | A-H | | |
| MODEL NUMBERS SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER AND MODEL NUMBERS ONLY. REVIEW THE COMPLETE DESCRIPTION, NOTES AND SPECIFICATIONS TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED. THE MANUFACTURERS LISTED ARE THE BASIS FOR THE DESIGN. | | | | | | | | | | | | | | |
| NOTES: | | | | | | | | | | | | | | |
| A. EQUIPMENT FURNISHED AND INSTALLED PER THE RESPONSIBILITY SCHEDULE. | | | | | | | | | | | | | | |
| B. UNIT AIR PRESSURE DROP SHALL NOT EXCEED SCHEDULED VALUE. | | | | | | | | | | | | | | |
| C. SUPPORT UNIT FROM STRUCTURE WITH ALL-THREAD HANGING RODS. | | | | | | | | | | | | | | |
| D. PROVIDE FACTORY MOUNTED DISCONNECT INSTALLED ON SERVICE SIDE OF UNIT. | | | | | | | | | | | | | | |
| E. PROVIDE AIRFLOW PROVING SWITCH AND THERMAL OVERLOAD PROTECTION. | | | | | | | | | | | | | | |
| F. PROVIDE MAGNETIC CONTACTORS. | | | | | | | | | | | | | | |
| G. PROVIDE SCR CONTROLS DESIGNED TO MODULATE THE HEATER OUTPUT FROM 0 TO 100 PERCENT CAPACITY. | | | | | | | | | | | | | | |
| H. PROVIDE CONTROL POWER TRANSFORMER AND LOW VOLTAGE THERMOSTAT WITH STAGES AS REQUIRED TO CONTROL HEATER. | | | | | | | | | | | | | | |

| FAN SCHEDULE | | | | | | | | | | | | | | |
|--|-------------|--------------|----------|----------|-----|-------------|--------|---------|-----------|------------|-------|----|-------------|-----|
| MARK | SERVICE | MANUFACTURER | MOUNTING | MODEL | CFM | DRIVE (ESP) | MIN HP | FAN RPM | VFD (Y/N) | ELECTRICAL | | | NOTES | |
| EF-1 | TOILETS | GREENHECK | INLINE | CSP-A200 | 75 | 0.5 | DIRECT | 1160 | 826 | Y | 120/1 | NF | COMBINATION | A-E |
| SF-1 | OUTDOOR AIR | GREENHECK | INLINE | SQ-99-VG | 690 | 0.5 | DIRECT | 114 | 1560 | Y | 120/1 | NF | COMBINATION | A-E |
| MODEL NUMBERS SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER AND MODEL NUMBERS ONLY. REVIEW THE COMPLETE DESCRIPTION, NOTES AND SPECIFICATIONS TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED. THE MANUFACTURERS LISTED ARE THE BASIS FOR THE DESIGN. | | | | | | | | | | | | | | |
| NOTES: | | | | | | | | | | | | | | |
| A. EQUIPMENT FURNISHED AND INSTALLED PER THE RESPONSIBILITY SCHEDULE, REF ARCHITECTURAL DRAWINGS. | | | | | | | | | | | | | | |
| B. PROVIDE FACTORY MOUNTED DISCONNECT SWITCH. | | | | | | | | | | | | | | |
| C. INTERLOCK FAN OPERATION WITH TIME CLOCK. | | | | | | | | | | | | | | |
| D. PROVIDE WITH MANUFACTURER'S FAN SPEED CONTROLLER FOR BALANCING PURPOSES. | | | | | | | | | | | | | | |
| E. PROVIDE WITH MANUFACTURER FILTER BOX. | | | | | | | | | | | | | | |

| OUTDOOR AIR REQUIREMENTS, IMC-2015 (IP) | | | | | | | | | | | | |
|---|--------------------------------|--|--|---|---|-------------------------------------|--|----------------------------|--|-------------------------------|-----------------------------------|-----------------------------|
| SYSTEM DESIGNATION | SYSTEM TAB NAME OR LIST SINGLE | SINGLE-ZONE SYSTEMS ONLY | | MULTI-ZONE SYSTEMS ONLY | | FLOOR AREA SERVED BY SYSTEM [sq ft] | SYSTEM AVERAGED AREA-BASED OUTDOOR AIR RATE (CFM/SF) | SYSTEM POPULATION (PEOPLE) | SYSTEM AVERAGED PEOPLE-BASED OUTDOOR AIR RATE (CFM/PP) | REQUIRED OA INTAKE FLOW [cfm] | REQUIRED DCV OA INTAKE FLOW [cfm] | DESIGN OA INTAKE FLOW [cfm] |
| | | SINGLE-ZONE SYSTEM ASSOCIATED VENTILATION ZONE | SINGLE-ZONE WORST CASE ZONE AIR DISTRIBUTION EFFECTIVENESS [ε] | SYSTEM VENTILATION EFFICIENCY [ε _v] | | | | | | | | |
| FCU-1 | SINGLE ZONE | DINING | 0.80 | - | - | 953 | 0.180 | 44 | 7.50 | 627 | N/A | 650 |
| FCU-2 | MULTIZONE (FCU 2) | - | - | 1.00 | - | 1,187 | 0.000 | 0.000/1 | 0.00 | 0 | N/A | 0 |
| FCU-3 | SINGLE ZONE | SIGNAGE ROOM | 0.80 | - | - | 127 | 0.000 | 0 | 0.00 | 0 | N/A | 0 |
| FCU-4 | SINGLE ZONE | OFFICE | 0.80 | - | - | 80 | 0.060 | 2 | 5.00 | 19 | N/A | 40 |
| TOTALS | | | | | | | | | | 645 | 0 | 690 |
| GENERAL NOTES: | | | | | | | | | | | | |
| 1. VENTILATION CALCULATIONS BASED ON IMC-2015. | | | | | | | | | | | | |
| 2. SYSTEM POPULATIONS BASED ON MAX SEATING AND/OR CODE MAXIMUM VALUES. | | | | | | | | | | | | |
| 3. SINGLE ZONE SYSTEMS (V _{av} = V _{avz}): SYSTEM VENTILATION EFFICIENCY CALCULATION IS NOT REQUIRED FOR SINGLE ZONE SYSTEMS. WORST CASE AIR DISTRIBUTION EFFECTIVENESS BETWEEN HEATING AND COOLING MODES OF OPERATION IS SHOWN IN TABLE. | | | | | | | | | | | | |
| 4. 100% OA SYSTEMS (V _{av} = Σ V _{avz} zones V _{avz}): WHEN ONE AIR HANDLER SUPPLIES ONLY OUTDOOR AIR TO ONE OR MORE ZONES. EACH ZONE IS INDIVIDUALLY CALCULATED WITH ITS WORST CASE ZONE AIR DISTRIBUTION EFFECTIVENESS (HEATING/COOLING). | | | | | | | | | | | | |
| 5. MULTI-ZONE RECIRCULATING SYSTEMS: CALCULATOR USED TO DETERMINE VENTILATION AIRFLOW IN COMPLIANCE WITH IMC-2015 V _{av} AND ASHRAE 62.1-2013 APPENDIX A. VENTILATION RATE SHOWN IS ACTUAL CALCULATED WITH CORRECTION FACTORS INCLUDED. EACH ZONE IS CALCULATED WITH ITS WORST CASE ZONE AIR DISTRIBUTION EFFECTIVENESS (HEATING/COOLING) AS PART OF CALCULATIONS TO FIND ε _v . | | | | | | | | | | | | |

| PUMP SCHEDULE | | | | | | | | | | | | | | | | | | | | |
|--|---------------|--------------|----------|--------------|-----------|----------------|-------------------|---------------|----------------|--------------|------------|------|-----------|------|-----------|--------------|--------------|-----------|-----|-----|
| MARK | SERVICE | MANUFACTURER | MODEL | SIZE | MOUNTING | MIN FLOW (GPM) | MAX WORKING (GPM) | NPSHA (FT HD) | MAX PEI (PSIG) | MAX BHP (FT) | MAX NOM HP | RPM | VFD (Y/N) | VPH | DISC TYPE | STARTER TYPE | WEIGHT (LBS) | NOTES | | |
| CHWP-1 | CHILLED WATER | TACO | SKV1507D | 1.5x1.5x7.25 | SUSPENDED | 2.2 | 54 | 50 | 300 | 4 | 0.45 | 1.07 | 2 | 1760 | Y | 480/3 | NF | INTERGRAL | 226 | A-H |
| MODEL NUMBERS SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER AND MODEL NUMBERS ONLY. REVIEW THE COMPLETE DESCRIPTION, NOTES AND SPECIFICATIONS TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED. THE MANUFACTURERS LISTED ARE THE BASIS FOR THE DESIGN. | | | | | | | | | | | | | | | | | | | | |
| NOTES: | | | | | | | | | | | | | | | | | | | | |
| A. PROVIDE WITH AIR SEPARATOR AND COMPRESSION TANK. | | | | | | | | | | | | | | | | | | | | |
| B. SUPPORT PUMP FROM STRUCTURE WITH VERTICAL SUPPORTS INDEPENDENT FROM PIPING. | | | | | | | | | | | | | | | | | | | | |
| C. DISCONNECT SWITCH PROVIDED BY DIVISION 26 CONTRACTOR. | | | | | | | | | | | | | | | | | | | | |
| D. STARTER PROVIDED BY DIVISION 26 CONTRACTOR. | | | | | | | | | | | | | | | | | | | | |
| E. VFD FURNISHED BY DIVISION 23 CONTRACTOR. | | | | | | | | | | | | | | | | | | | | |
| F. PUMP MOTOR SHALL BE NON-OVERLOADING THROUGHOUT THE FULL RANGE OF THE PUMP CURVE. | | | | | | | | | | | | | | | | | | | | |
| G. NPSHA IS THE NET POSITIVE SUCTION HEAD AVAILABLE TO THE PUMP. PUMP AT DESIGN CONDITIONS SHALL HAVE NPSH LESS THAN SPECIFIED VALUE. | | | | | | | | | | | | | | | | | | | | |
| H. PUMP SHALL MEET OR BE MORE EFFICIENT THAN THE SCHEDULED DEPARTMENT OF ENERGY (DOE) PUMP ENERGY INDEX (PEI) RATING. | | | | | | | | | | | | | | | | | | | | |

BUILDING DEPARTMENT FILING NOTE:
THIS PLAN IS APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

NEW YORK ALTERATION WARNING STATEMENT:
IT IS A VIOLATION OF THE NEW YORK EDUCATION LAW, ARTICLE 14B, SECTION 7209 FOR ANY PERSON, UNLESS THE INDIVIDUAL IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE SEAL OF AN ENGINEER IS ALTERED. THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM THEIR SEAL AND THE NOTATION "ALTERED BY FOLLOWED BY THEIR SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION."

SPECIAL INSPECTIONS:
OWNER SHALL SUBCONTRACT WITH A NEW YORK STATE REGISTERED SPECIAL INSPECTION AGENCY TO PERFORM THE REQUIRED SPECIAL INSPECTIONS FOR THE MECHANICAL, PLUMBING AND FIRE PROTECTION SYSTEMS AS REQUIRED BY THE NEW YORK CITY BUILDING CODE. OWNER SHALL PAY AN EXPEDITER TO FILE ALL REQUIRED FORMS.

NOTE:
EXISTING CONDITIONS WERE TAKEN FROM ORIGINAL DRAWINGS & SITE VISITS AND MAY NOT REFLECT EXACT "AS-BUILT" CONDITIONS. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO SUBMITTING FINAL BIDS. CAREFULLY COORDINATE NEW WORK AND DEMOLITION WITH ALL OTHER DISCIPLINES AND EXISTING CONDITIONS.

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGMENT, THIS APPLICATION IS IN COMPLIANCE WITH THE NYCECC 2020.
ANDREW G. BENNETT

DOB APPROVAL STAMP

Bergmeyer

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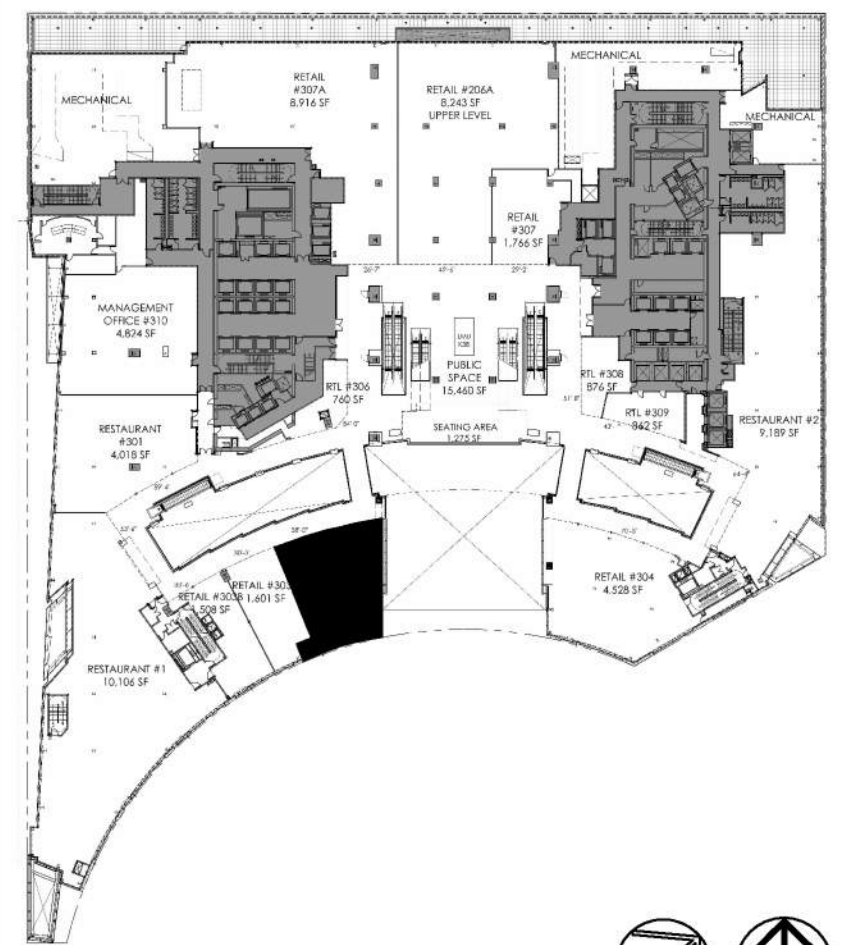
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235002568

KEY PLAN - COLUMBUS CIRCLE (FLOOR 3)



| NO. | BY | DATE | DESCRIPTION |
|-----|----|------------|---------------------|
| 1 | | 2024-02-05 | IFC SET |
| | | 2024-01-22 | PERMIT BID SET |
| | | 2024-01-03 | LANDLORD REVIEW SET |

SHAKE SHACK

SHAKE SHACK COLUMBUS CIRCLE NYC

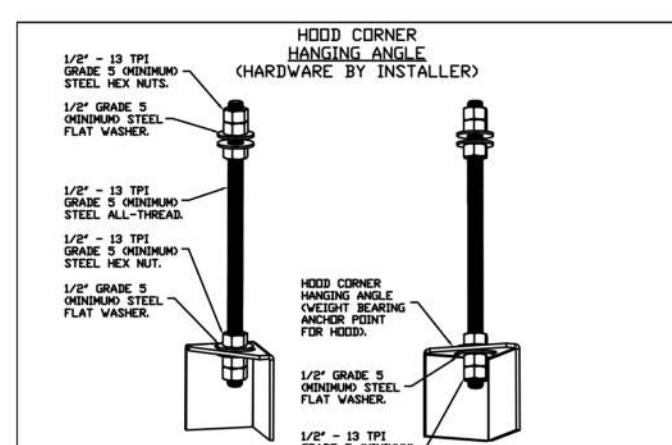
10 COLUMBUS CIRCLE UNIT 302
NEW YORK, NY 10019
SHACK #1525

BLOCK: 1049
LOT: 7501
ZONING DISTRICT: C6-6, MD
MAP: 8c

MECHANICAL SCHEDULES

DOB NOW JOB # M000640009-11

SEALED SIGNATURE: [Signature]
DRAWN BY: Author
CHECKED BY: Checker
JOB NO: 20230127.00
M-601.00
02/05/2024



| HOOD STYLE / MODEL | 450 DEGREES cfm/ft. | 600 DEGREES cfm/ft. | 700 DEGREES cfm/ft. |
|---------------------------|---------------------|---------------------|---------------------|
| CANOPY ND-2 | 150 | 200 | 250 |
| CANOPY ND-2 w/ END PANELS | 105 | 140 | 175 |
| SLOPED SND-2 | 228 | 294 | - |
| ISLAND ND-ZWI | 269 | 300 | 350 |
| ISLAND ND-SI | 346 | 422 | 475 |

ETL HOOD LISTING DETAIL
 EXHAUST CFM = LENGTH OF HOOD X CFM/FAULT (LONG)
 SUPPLY CFM = EXHAUST CFM X PERCENTAGE REQUIRED
 TOTAL DUCT AREA (sq. in.) = 144 X CFM
 DUCT LENGTH = DUCT WIDTH

CALCULATIONS UTILIZED
 CAPTIVE-AIRE HOODS BUILT IN COMPLIANCE WITH:

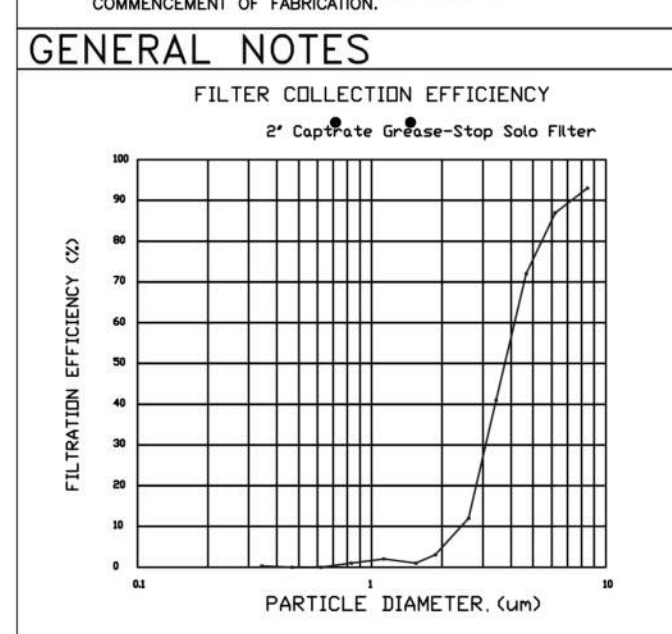
 ETL File number: 3054804-001/002

BUILDING CODES
 CAPTIVE-AIRE HOODS HAVE OPTIONAL CLEARANCE REDUCTION SYSTEMS AVAILABLE AS FOLLOWS:

| MATERIAL | CLEARANCE REDUCTION SYSTEM |
|---------------------|----------------------------|
| NON-COMBUSTIBLE | NONE REQUIRED |
| LIMITED-COMBUSTIBLE | 3" UNINSULATED STANDOFF |
| COMBUSTIBLE | 1" INSULATED STANDOFF |

- CLEARANCE TO COMBUSTIBLES**
- ALL ELECTRICAL "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY ELECTRICAL CONTRACTORS.
 - ALL PLUMBING "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY PLUMBING CONTRACTORS.
 - HANGING BRACKETS LOCATED AND WELDED AS SHOWN ON PLANS. ALL OTHER HANGER MATERIALS PROVIDED BY INSTALLING CONTRACTORS.
 - ALL CONNECTIONS FROM CAPTIVE-AIRE HOOD PER MECHANICAL CONTRACTOR'S PLANS.
 - COOKING EQUIPMENT TO SHUT OFF IN EVENT OF FIRE.
 - CONDUIT PANS TO TURN ON IN EVENT OF FIRE.
 - ALL LIGHT FIXTURES SHOWN INSTALLED BY CAPTIVE-AIRE ARE FACTORY PROVIDED. INTERCONNECTIONS BETWEEN HOODS AND TO SWITCHES ARE BY ELECTRICAL CONTRACTOR.
 - LAMPS FOR LIGHT FIXTURES BY INSTALLING CONTRACTORS.
 - SEISMIC RESTRAINTS ARE RESPONSIBILITY OF INSTALLING CONTRACTOR.
 - INSTALLING CONTRACTORS ASSUME ALL RELATED RESPONSIBILITY FOR REVIEW OF DIMENSIONAL DATA CONTAINED ON THESE DOCUMENTS FOR ACCURACY, INTEGRITY AND COMPLIANCE WITH ALL CODE REQUIREMENTS IN EFFECT PRIOR TO ANY RELEASE FOR PRODUCTION OF EQUIPMENT SHOWN.

- GENERAL NOTES**
11. KITCHEN HOODS MUST BE BALANCED WITH KITCHEN.
 12. KITCHEN SHALL BE NEGATIVE WITH RESPECT TO DRIVING AREA.
 13. RESTRAINT SHALL BE POSITIVE WITH RESPECT TO AMBIENT PRESSURE.
- ADDITIONAL**
14. WRITTEN HOOD DIMENSIONS HAVE PRECEDENCE OVER SCALE.
 15. SIZES AND "DIMENSIONS" COPIES OF THIS DOCUMENT MUST BE RECEIVED BY THE FACTORY PRIOR TO COMMENCEMENT.



FILTER DETAIL

FOR QUESTIONS, CALL THE
 Eastern PA Mechanical
 REGION 108
 PHONE: (267) 504 - 4126
 EMAIL: reg108@captiveaire.com

HOOD INFORMATION - JOB#6341781

| HOOD NO | TAG | MODEL | MANUFACTURER | LENGTH | MAX COOKING TEMP | TYPE | APPLIANCE DUTY | DESIGN CFM/FT | TOTAL EXH CFM | EXHAUST PLENUM | | | | TOTAL SUPPLY CFM | HOOD CONSTRUCTION | HOOD CONFIG | | | |
|---------|------------|-----------------|--------------|--------|------------------|------|----------------|---------------|---------------|----------------|------|--------|------|------------------|-------------------|----------------------|----------------------|-------|--------|
| | | | | | | | | | | WIDTH | LENG | HEIGHT | DIA | | | CFM | VEL | SP | END TO |
| 1 | Hood Left | S424 ND-2 | CAPTIVEAIRE | 8' 4" | 600 DEG | I | HEAVY | 150 | 1250 | 10' | 12' | 4' | 1250 | 1500 | -0.602" | 0 | 430 SS WHERE EXPOSED | LEFT | ALONE |
| 2 | Hood Right | S424 ND-2-PSP-P | CAPTIVEAIRE | 8' 4" | 600 DEG | I | HEAVY | 150 | 1250 | 10' | 12' | 4' | 1250 | 1500 | -0.602" | 850 | 430 SS WHERE EXPOSED | RIGHT | ALONE |
| 3 | PSP Left | 126 MISC-PSP | CAPTIVEAIRE | 7' 8" | 300 DEG | I | N/A | 0 | 0 | | | | | | | 430 SS WHERE EXPOSED | ALONE | ALONE | |

HOOD INFORMATION

| HOOD NO | TAG | TYPE | FILTER(S) | | | | LIGHT(S) | | | UTILITY CABINET(S) | | | | FIRE SYSTEM PIPING | HOOD HANGING WEIGHT | |
|---------|------------|------------------------|-----------|--------|--------|------------------------|----------|----------------|------------|--------------------|------|------|------|--------------------|---------------------|--------------------|
| | | | QTY | HEIGHT | LENGTH | EFFICIENCY @ 7 MICRONS | QTY | TYPE | WIRE GUARD | LOCATION | SIZE | TYPE | SIZE | | | ELECTRICAL MODEL # |
| 1 | Hood Left | CAPTIVATE SOLID FILTER | 6 | 16" | 16" | 85% SEE FILTER SPEC | 3 | RECESSED ROUND | NO | | | | | | YES | 373 LBS |
| 2 | Hood Right | CAPTIVATE SOLID FILTER | 6 | 16" | 16" | 85% SEE FILTER SPEC | 3 | RECESSED ROUND | NO | | | | | | YES | 472 LBS |
| 3 | PSP Left | | | | | | 0 | | | | | | | NO | 42 LBS | |

HOOD OPTIONS

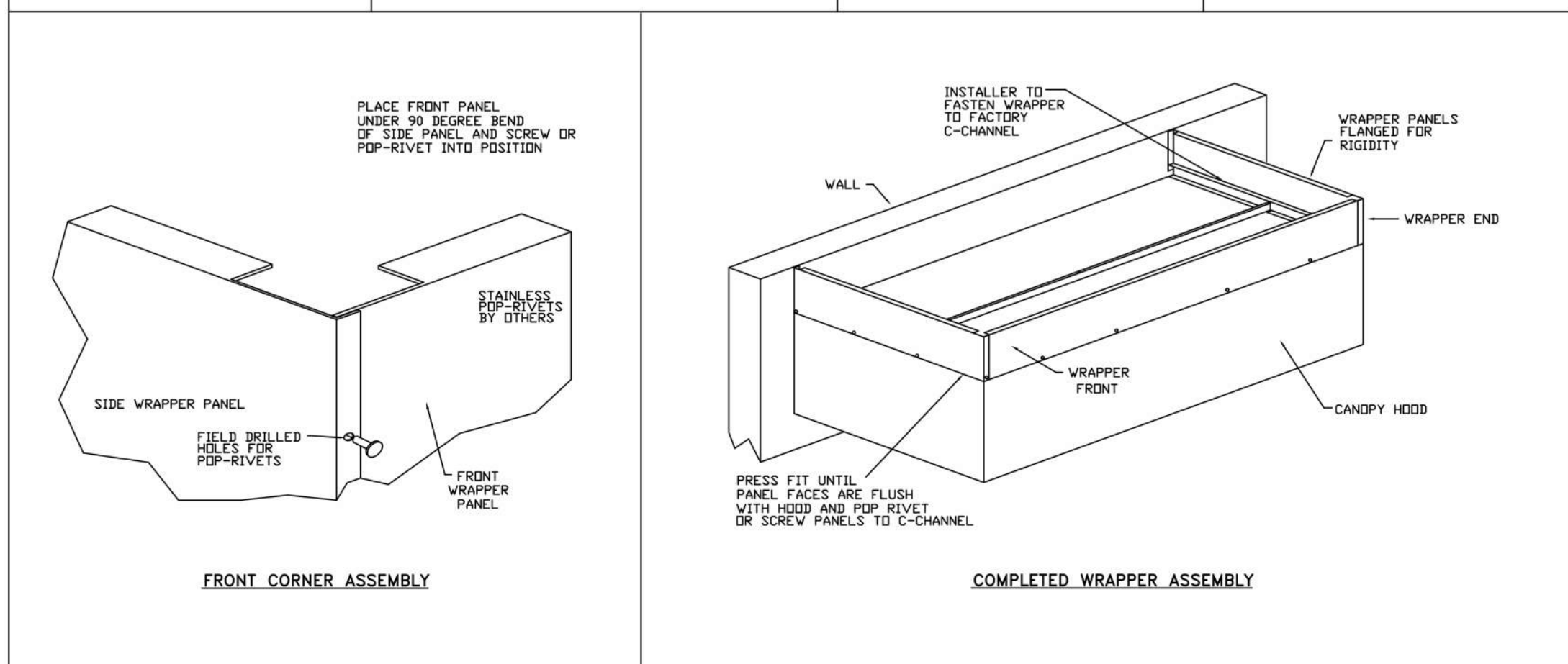
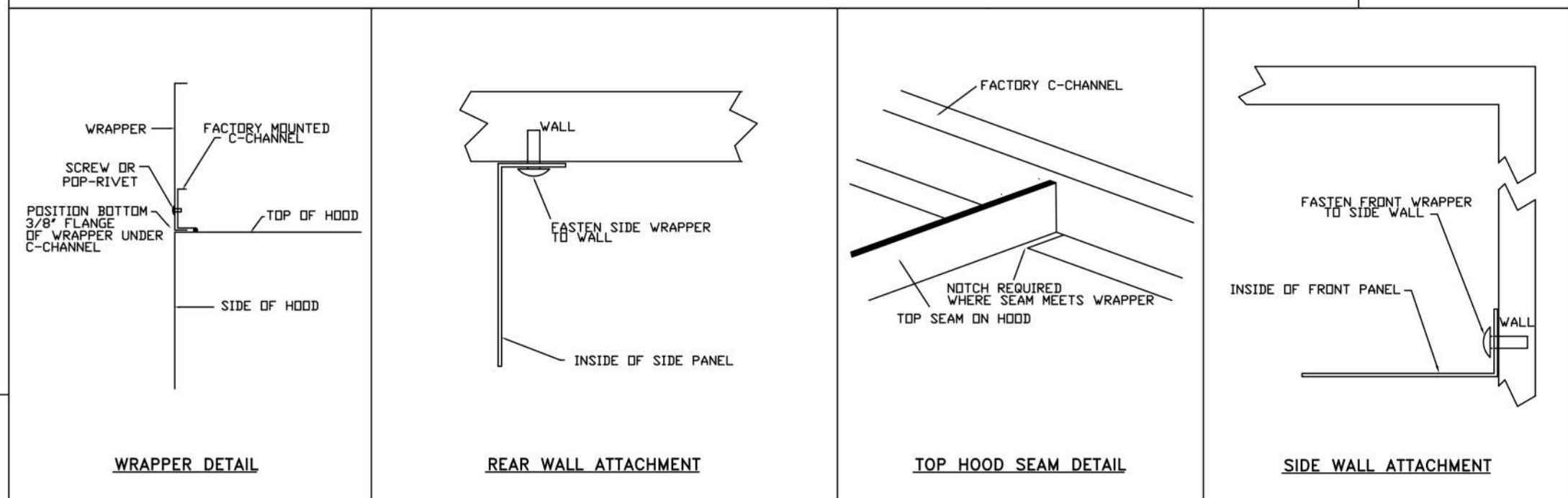
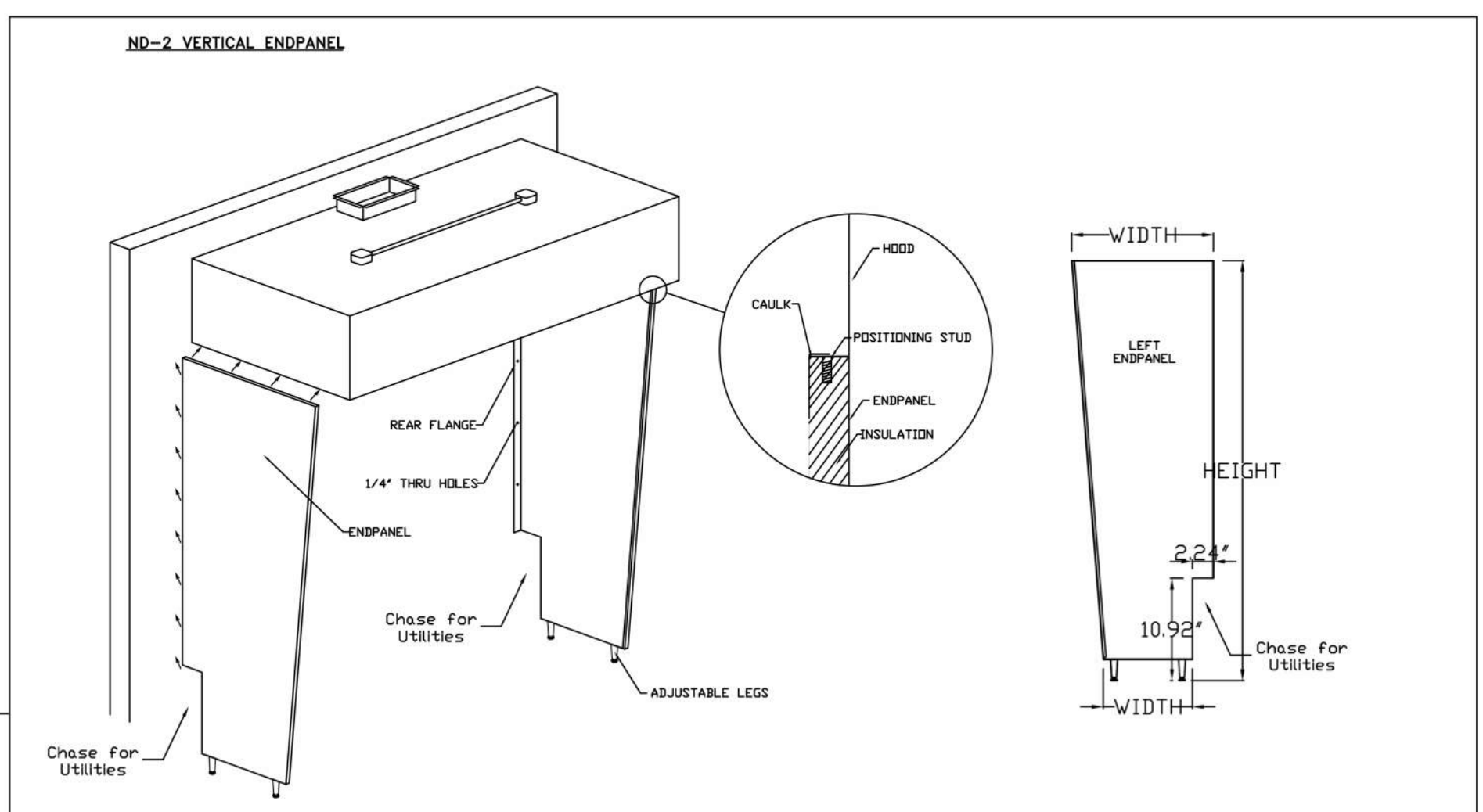
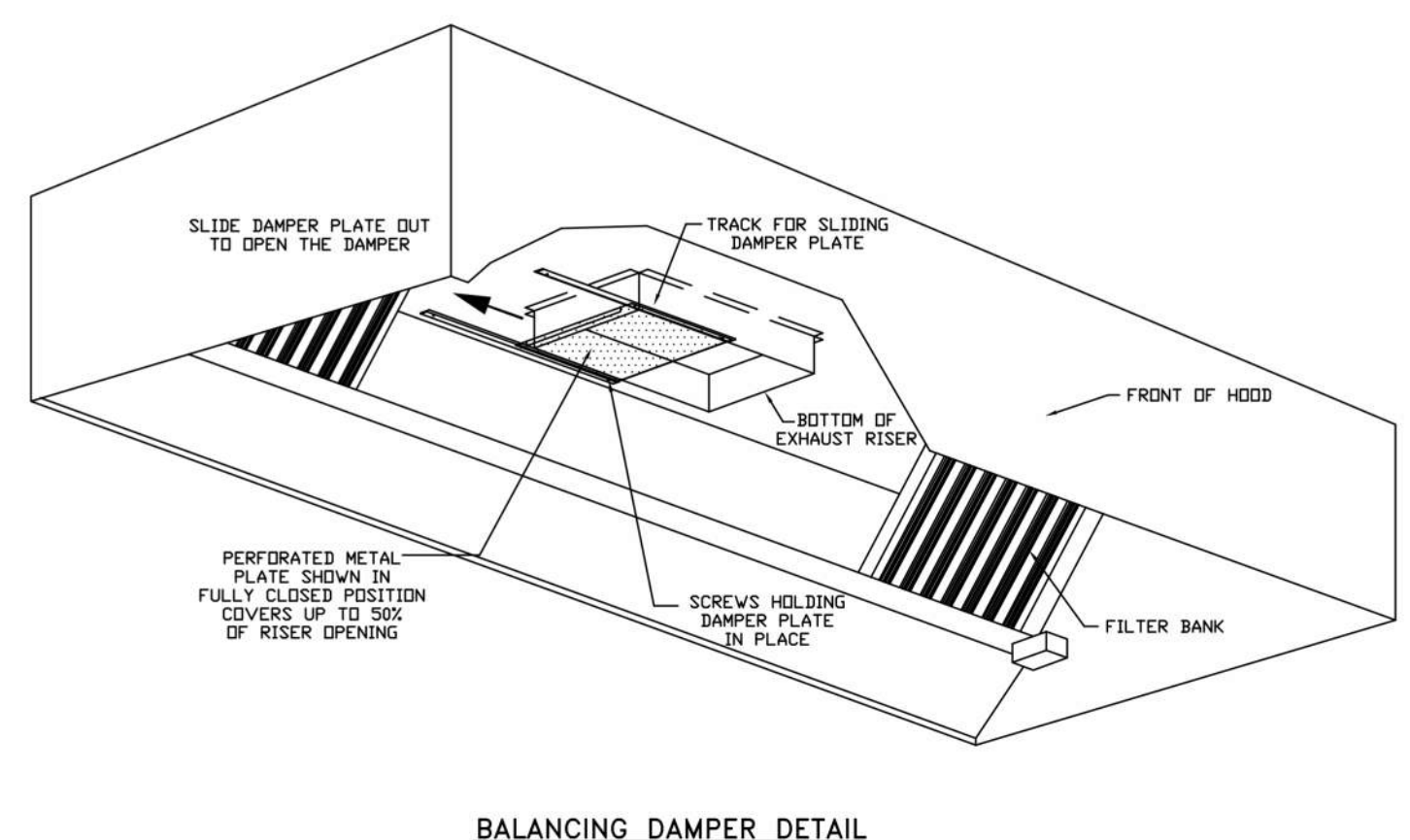
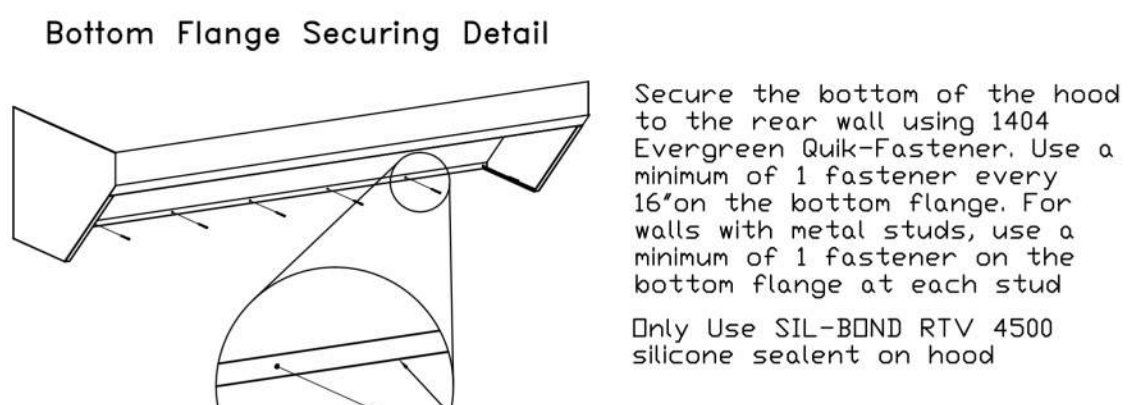
| HOOD NO | TAG | OPTION |
|---------|------------|--|
| 1 | Hood Left | LEFT END STANDOFF (FINISHED) 1' WIDE 54" LONG INSULATED. BALANCE DAMPERS. INSULATION FOR BACK OF HOOD. RISER SENSOR INSTALL 6IN PLEN. LEFT WALL AS END PANEL. BALANCE DAMPERS. INSULATION FOR BACK OF HOOD. RISER SENSOR INSTALL 6IN PLEN. RIGHT WIDE VERTICAL END PANEL 42" TOP WIDTH, 36" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS. |
| 2 | Hood Right | RIGHT WIDE VERTICAL END PANEL 42" TOP WIDTH, 36" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS. |

PERFORATED SUPPLY PLENUM(S)

| HOOD NO | TAG | PDS | LENGTH | WIDTH | HEIGHT | TYPE | RISER(S) | | | |
|---------|------------|-------|--------|-------|--------|------|----------|------|-----|--------|
| | | | | | | | WIDTH | LENG | DIA | CFM |
| 2 | Hood Right | Front | 100' | 12' | 6' | MJA | 10" | 20" | 425 | 0.122" |
| 3 | PSP Left | Front | 92' | 12' | 6' | MJA | 10" | 20" | 425 | 0.122" |

WALL-MOUNT UTILITY CABINET

| HOOD NO | LOCATION | SIZE | UTILITY CABINET(S) | | | | WEIGHT |
|---------|----------|-------------|--------------------|-------------|--------------------|-------------------|------------|
| | | | FIRE SYSTEM TYPE | SIZE | ELECTRICAL MODEL # | SWITCHES QUANTITY | |
| 2 | WALL MNT | 12"x48"x24" | TANK FS | 4.0/4.0/4.0 | | | 400.00 LBS |



NOTE:
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REVISIONS

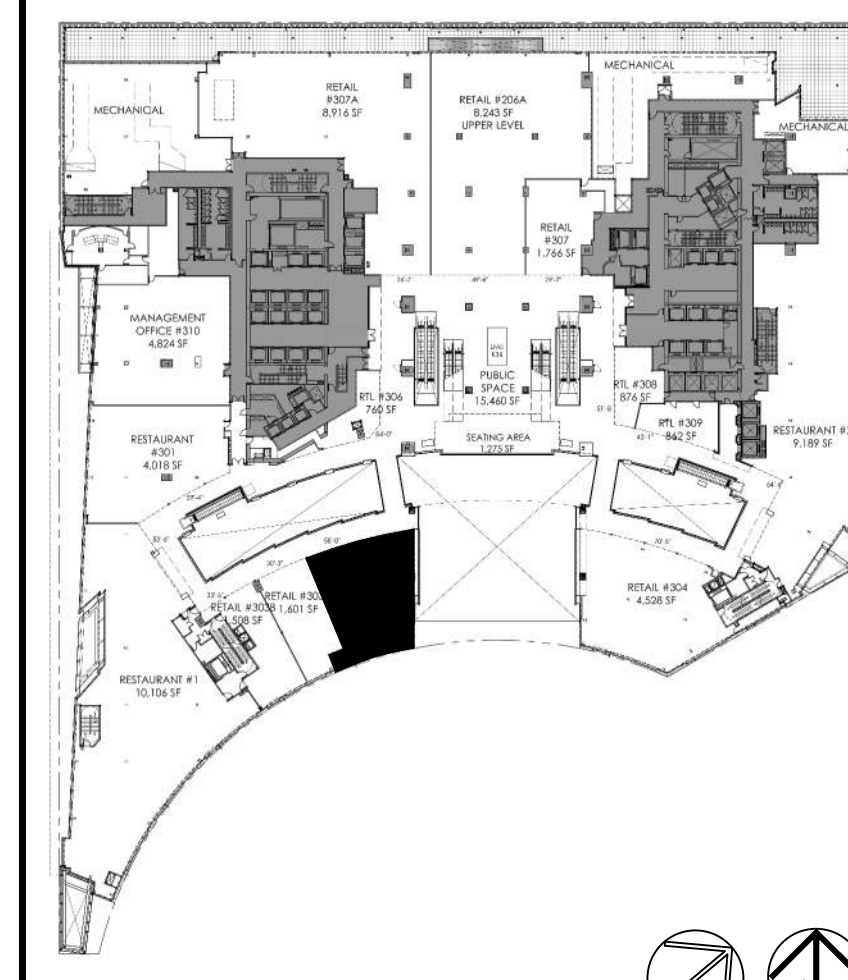
| NO. | DESCRIPTION | DATE |
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Shake Shack-1525-Columbus Circle, NY
 NEW YORK, NY, 10019

DATE: 1/26/2024
DWG.#: 6341781
DRAWN BY: Joe.shilba
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 1

KEY PLAN - COLUMBUS CIRCLE (FLOOR 3)



| NO. | BY | DATE | DESCRIPTION |
|-----|----|------------|---------------------|
| 1 | | 2024-02-05 | IFC SET |
| | | 2024-01-22 | PERMIT BID SET |
| | | 2024-01-03 | LANDLORD REVIEW SET |

SHAKE SHACK
 SHAKE SHACK COLUMBUS CIRCLE NYC
 10 COLUMBUS CIRCLE UNIT 302
 NEW YORK, NY 10019
 SHACK #1525

BLOCK: 1049
 LOT: 791
 ZONING DISTRICT: C6-6, MID
 MAP: 8c

CAPTIVEAIRE DRAWINGS

DOB NOW JOB # M00964009-41

| | |
|--------------------|---------------------|
| SEAL/SIGNATURE: | DRAWN BY: Author |
| FOR REFERENCE ONLY | CHECKED BY: Checker |
| | JOB NO: 202312100 |

M-701.00

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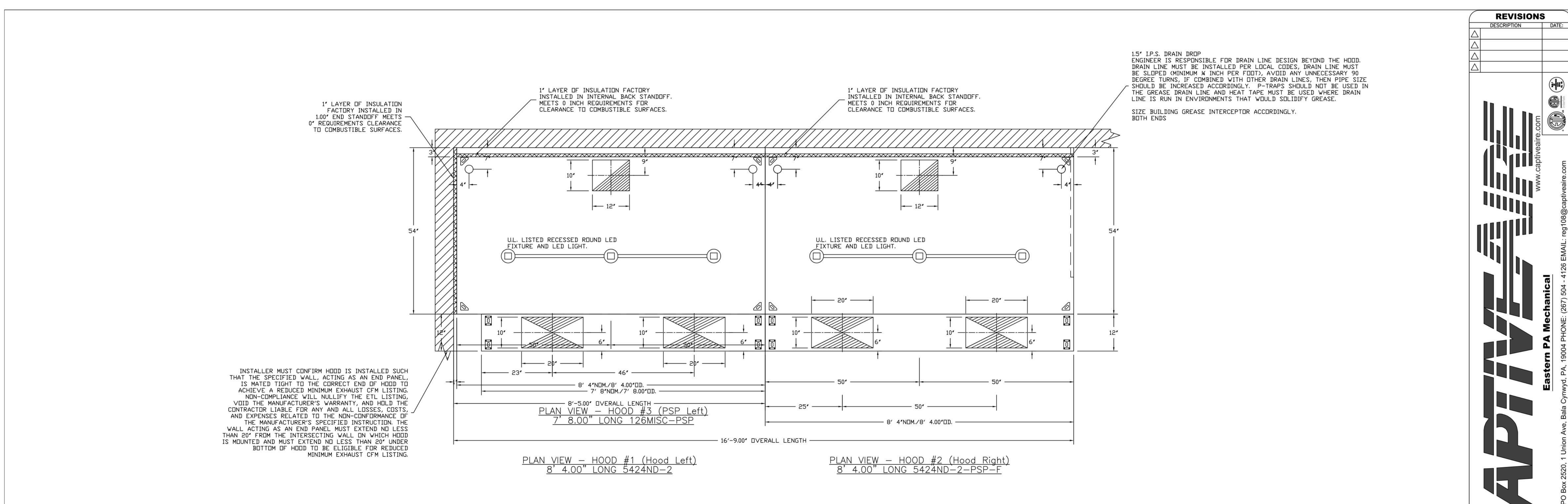
SPECIAL INSPECTIONS:
 OWNER SHALL SUBCONTRACT WITH A NEW YORK STATE REGISTERED SPECIAL INSPECTION AGENCY TO PERFORM THE REQUIRED SPECIAL INSPECTIONS FOR THE MECHANICAL, PLUMBING AND FIRE PROTECTION SYSTEMS AS REQUIRED BY THE NEW YORK CITY BUILDING CODE. OWNER SHALL PAY AN EXPEDITER TO FILE ALL REQUIRED FORMS.

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TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGMENT, THIS APPLICATION IS IN COMPLIANCE WITH THE NYC EOC 2020.

DOB APPROVAL STAMP

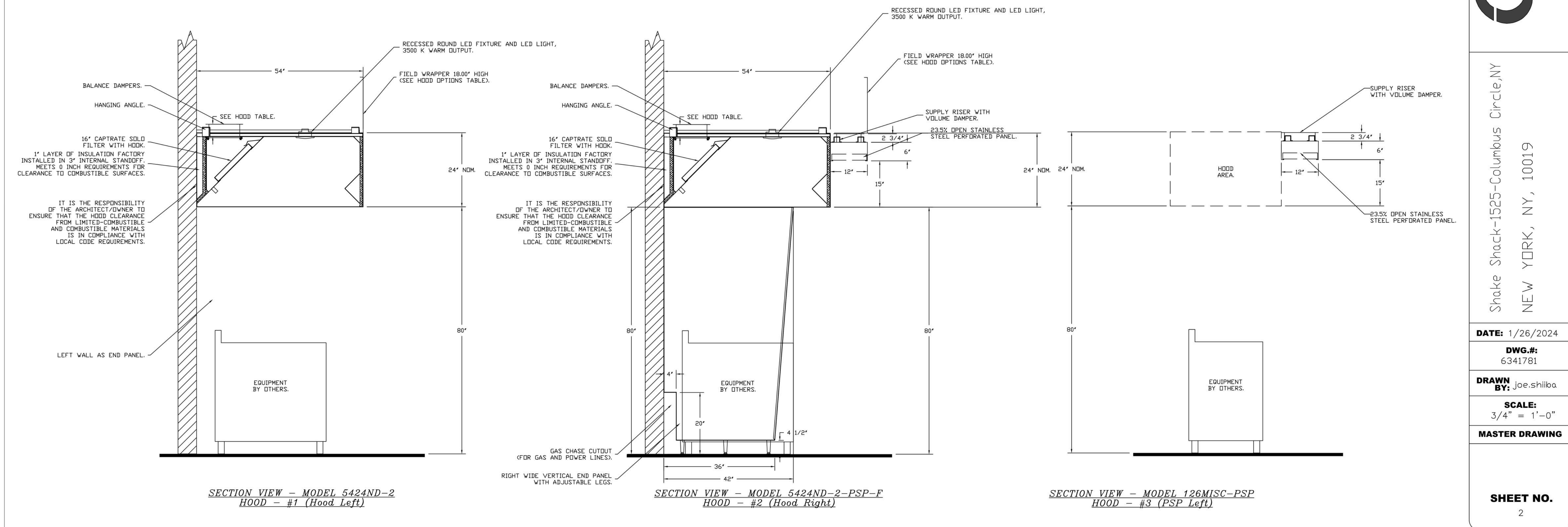
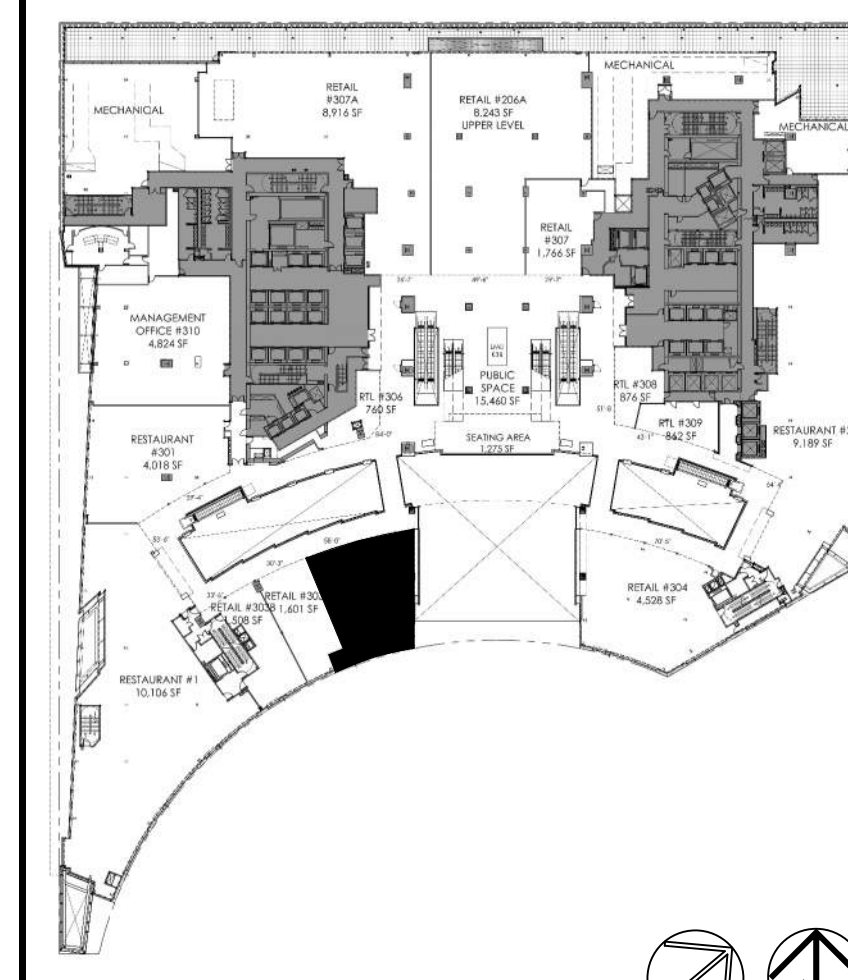
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| REVISIONS | |
|-------------|------|
| DESCRIPTION | DATE |
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 www.captiveaire.com
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KEY PLAN - COLUMBUS CIRCLE (FLOOR 3)



Shake Shack-1525-Columbus Circle, NY
 NEW YORK, NY, 10019

DATE: 1/26/2024
DWG.#: 6341781
DRAWN BY: Joe.shilba
SCALE: 3/4" = 1'-0"
MASTER DRAWING

SHEET NO.
 2

| NO. | BY | DATE | DESCRIPTION |
|-----|----|------------|---------------------|
| 1 | | 2024-02-05 | IFC SET |
| | | 2024-01-22 | PERMIT BID SET |
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SHAKE SHACK

SHAKE SHACK COLUMBUS CIRCLE NYC

10 COLUMBUS CIRCLE UNIT 302
 NEW YORK, NY 10019
 SHACK #1525

BLOCK: 1049
 LOT: 7501
 ZONING DISTRICT: C6-6, MID
 MAP: 8c

CAPTIVEAIRE DRAWINGS

DOB NOW JOB # M00964009-11

SEAL/SIGNATURE:

DRAWN BY: Author
 CHECKED BY: Checker
 JOB NO: 20230127.00

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DOB APPROVAL STAMP

Bergmeyer

LA
 800 South Figueroa St.
 Suite 1080
 Los Angeles, CA 90017
 213.437.1050

COL
 875 N. High St.
 Suite 300
 Columbus, OH 43215
 614.863.8687

BOS
 54 Stevens St.
 6th Floor
 Boston, MA 02210
 617.542.1025

www.bergmeyer.com

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FIRE SYSTEM INFORMATION - JOB#6341781

| FIRE SYSTEM NO | TAG | TYPE | SIZE | MAX FP | DESIGN FP | INSTALLATION | |
|----------------|-----|---------|-------------|--------|-----------|---------------------------|------------------|
| | | | | | | SYSTEM | LOCATION ON HOOD |
| 1 | | TANK FS | 4.0/4.0/4.0 | 60 | 56 | WALL UTILITY CABINET LEFT | N/A |

GAS VALVE(S)

| FIRE SYSTEM NO | TAG | TYPE | SIZE | SUPPLIED BY |
|----------------|-----|---------------|-------|---------------------|
| 1 | | SC ELECTRICAL | 2,000 | CAPTIVEAIRE SYSTEMS |

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 #: 6341781
 JOB NAME: SHAKE SHACK-1525-COLUMBUS CIRCLE,NY.

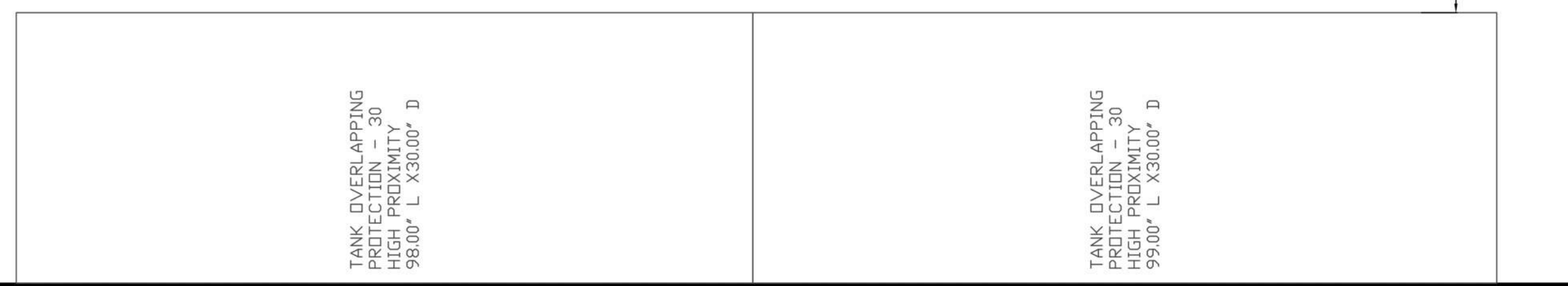
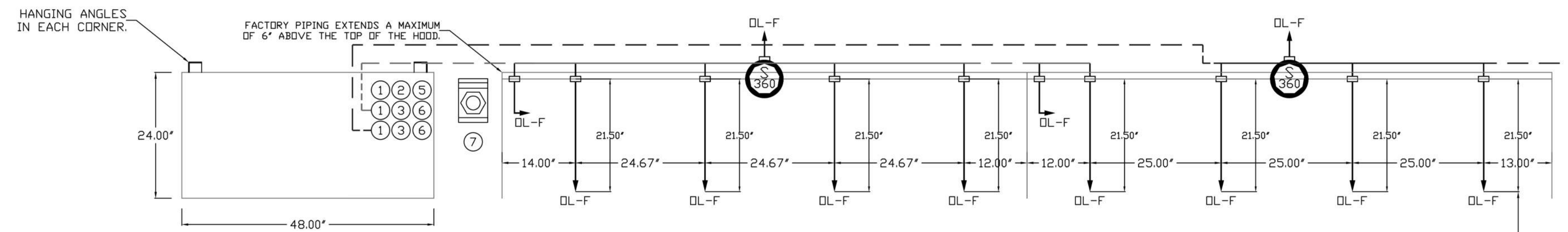
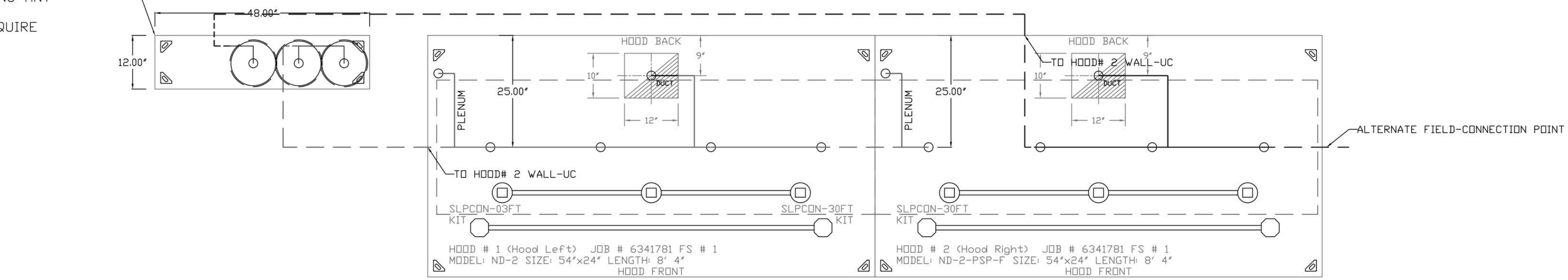
SYSTEM SIZE: TANK-SP-3-WC DESIGN FP: 56. MAXIMUM FP: 60.
 HOOD # 1 8' 4.00' LONG x 54' WIDE x 24' HIGH.
 RISER # 1 SIZE: 10" x 12".
 HOOD # 1 METAL BLOW-OFF CAPS INCLUDED.
 HOOD # 2 8' 4.00' LONG x 54' WIDE x 24' HIGH.
 RISER # 1 SIZE: 10" x 12".
 HOOD # 2 METAL BLOW-OFF CAPS INCLUDED.

- SYSTEM REQUIRES A MINIMUM OF 7 FT OF EQUIVALENT PIPE LENGTH BETWEEN TANK AND NEAREST APPLIANCE NOZZLE FOR MOST APPLIANCES. EACH 90 DEGREE ELBOW ADDS 13 FT OF EQUIVALENT LENGTH. SEE MANUAL FOR DETAILS.

- 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.

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.



REVISIONS

| NO. | DESCRIPTION | DATE |
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Shake Shack-1525-Columbus Circle, NY
 NEW YORK, NY, 10019

DATE: 1/26/2024
DWG.#: 6341781
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SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 3

DOB APPROVAL STAMP

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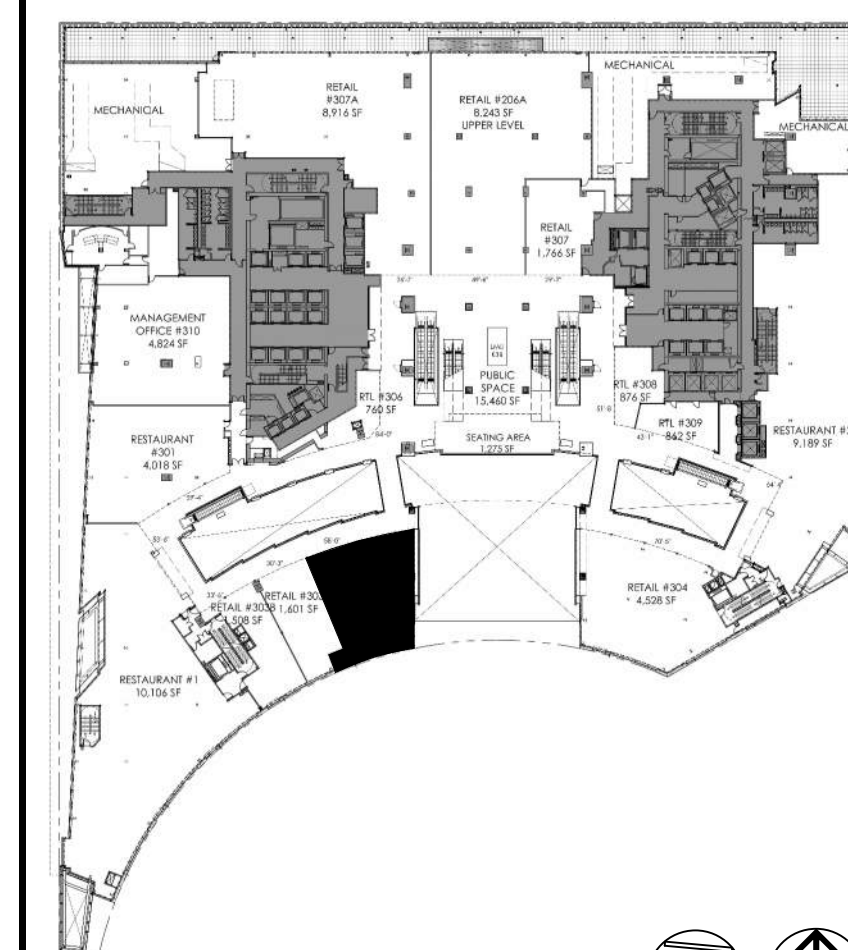
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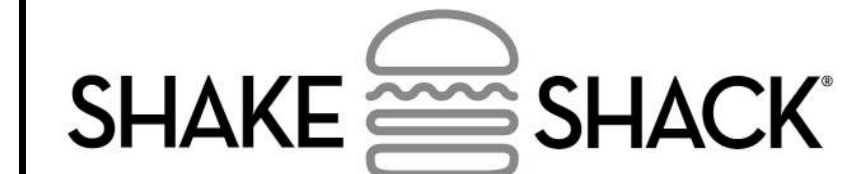


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 COL 875 N. High St. Suite 300 Columbus, OH 43215 601.960.8687
 BOS 51 Stoughton St. 6th Floor Boston, MA 02210 617.592.1020
 www.bergmeyer.com

KEY PLAN - COLUMBUS CIRCLE (FLOOR 3)



| NO. | BY | DATE | DESCRIPTION |
|-----|----|------------|---------------------|
| 1 | | 2024-02-05 | IFC SET |
| | | 2024-01-22 | PERMIT BID SET |
| | | 2024-01-03 | LANDLORD REVIEW SET |



SHAKE SHACK COLUMBUS CIRCLE NYC
 10 COLUMBUS CIRCLE UNIT 302
 NEW YORK, NY 10019
 SHACK #1525

BLOCK: 1049
 LOT: 791
 ZONING DISTRICT: C6-6, M2
 MAP: 8c

CAPTIVEAIRE DRAWINGS

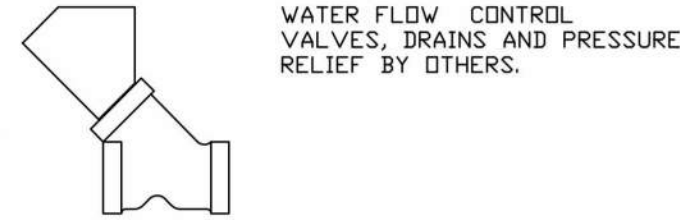
DOB NOW JOB # M00964009-11

SEAL/SIGNATURE: [Signature Area]
DRAWN BY: Author
CHECKED BY: Checker
JOB NO.: 20230127.00
M-703.00

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MUA FAN INFORMATION - JOB#6341781

| FAN UNIT NO | TAG | QTY | FAN UNIT MODEL # | BLDWR | HOUSING | MIN CFM | DESIGN CFM | ESP | RPM | MOTDR ENCL | HP | BHP | PHASE | VOLT | FLA | MCA | MDCP | WEIGHT (LBS) | SONES |
|-------------|-------|-----|------------------|-----------|----------|---------|------------|-------|------|------------|-------|--------|-------|------|-----|------|------|--------------|-------|
| 1 | MAU-1 | 1 | A1-E.354-16Z | 16Z-1-MOD | A1-E.354 | 1000 | 1700 | 1.500 | 2149 | ODP-ECM | 3.400 | 1.2350 | 3 | 480 | 3.2 | 4.5A | 15A | 930 | 21.3 |



COILS - JOB#6341781

| FAN UNIT NO | TAG | COIL TYPE | DESIGN CFM | COOLING | | | | | | | | | | HEATING | | | | | | | | | | | |
|-------------|-------|---------------|------------|------------------|------------------|-----------------|-----------------|---------------------|--------------------|-----------------|----------------|----------------|-------------------|-----------------|------------------|-----------------|---------------------|--------------------|-----------------|----------------|----------------|----------------|-------------------|-----|-----|
| | | | | ENTERING DB TEMP | ENTERING WB TEMP | LEAVING DB TEMP | LEAVING WB TEMP | ENTERING FLUID TEMP | LEAVING FLUID TEMP | FLUID FLOW RATE | PERCENT GLYCOL | TOTAL CAPACITY | SENSIBLE CAPACITY | LATENT CAPACITY | ENTERING DB TEMP | LEAVING DB TEMP | ENTERING FLUID TEMP | LEAVING FLUID TEMP | FLUID FLOW RATE | PERCENT GLYCOL | STEAM PRESSURE | TOTAL CAPACITY | SENSIBLE CAPACITY | | |
| 1 | MAU-1 | CHILLED WATER | 1700 | 90.7°F | 73.6°F | 64.2°F | 62.6°F | 45.0°F | 57.0°F | 11.6 GAL/MIN | 0 | 68.0 MBH | 49.9 MBH | 181 MBH | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

ELECTRIC MAKE-UP AIR UNIT(S)

| FAN UNIT NO | TAG | DSGN KW'S | MAX KW'S | PHASE | VOLTS | AMPERAGE | TEMP RISE | OUTPUT BTUs |
|-------------|-------|-----------|----------|-------|-------|----------|-----------|-------------|
| 1 | MAU-1 | 31 | 35 | 3 | 480 | 42.1 | 57 °F | 119455 |

FAN OPTIONS

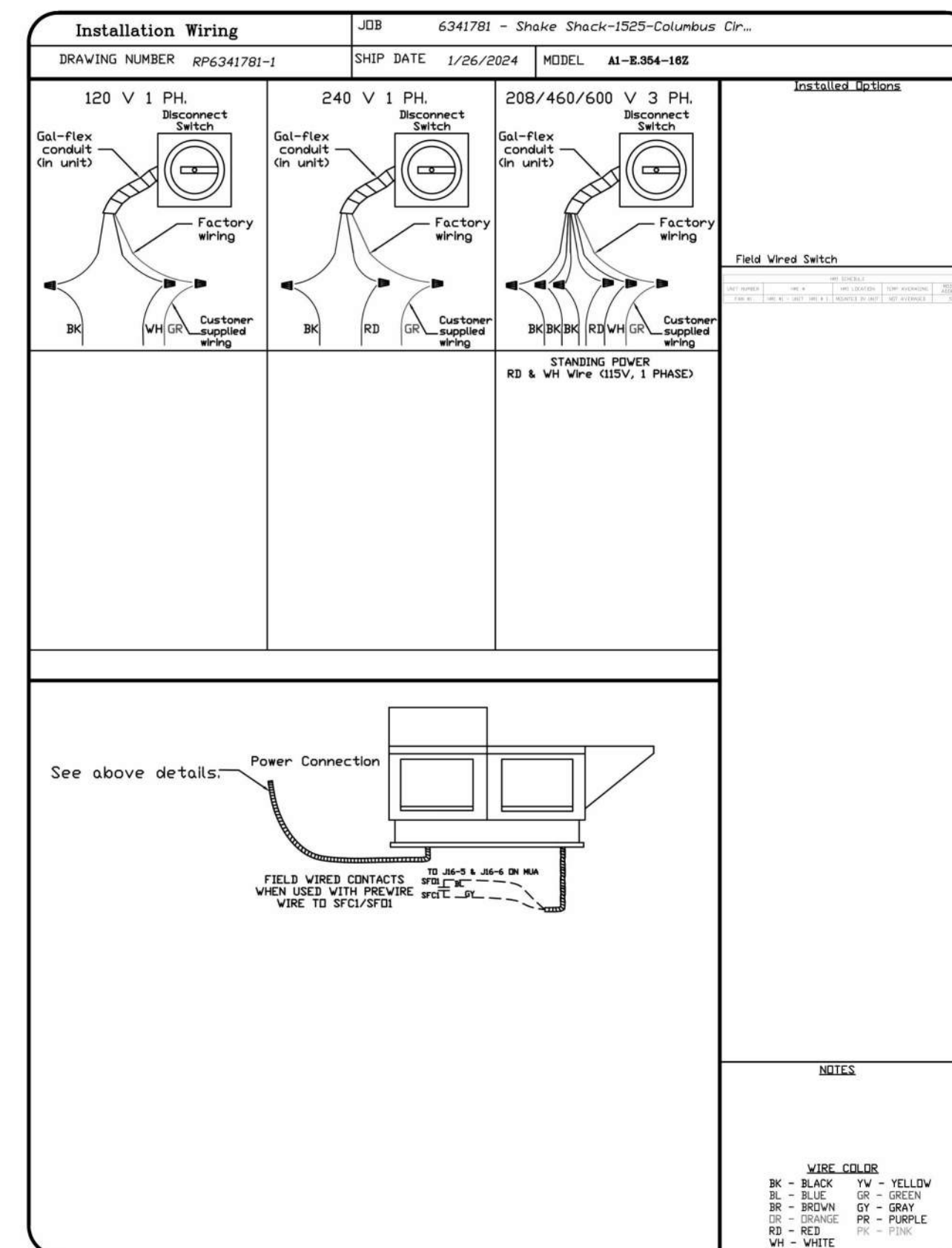
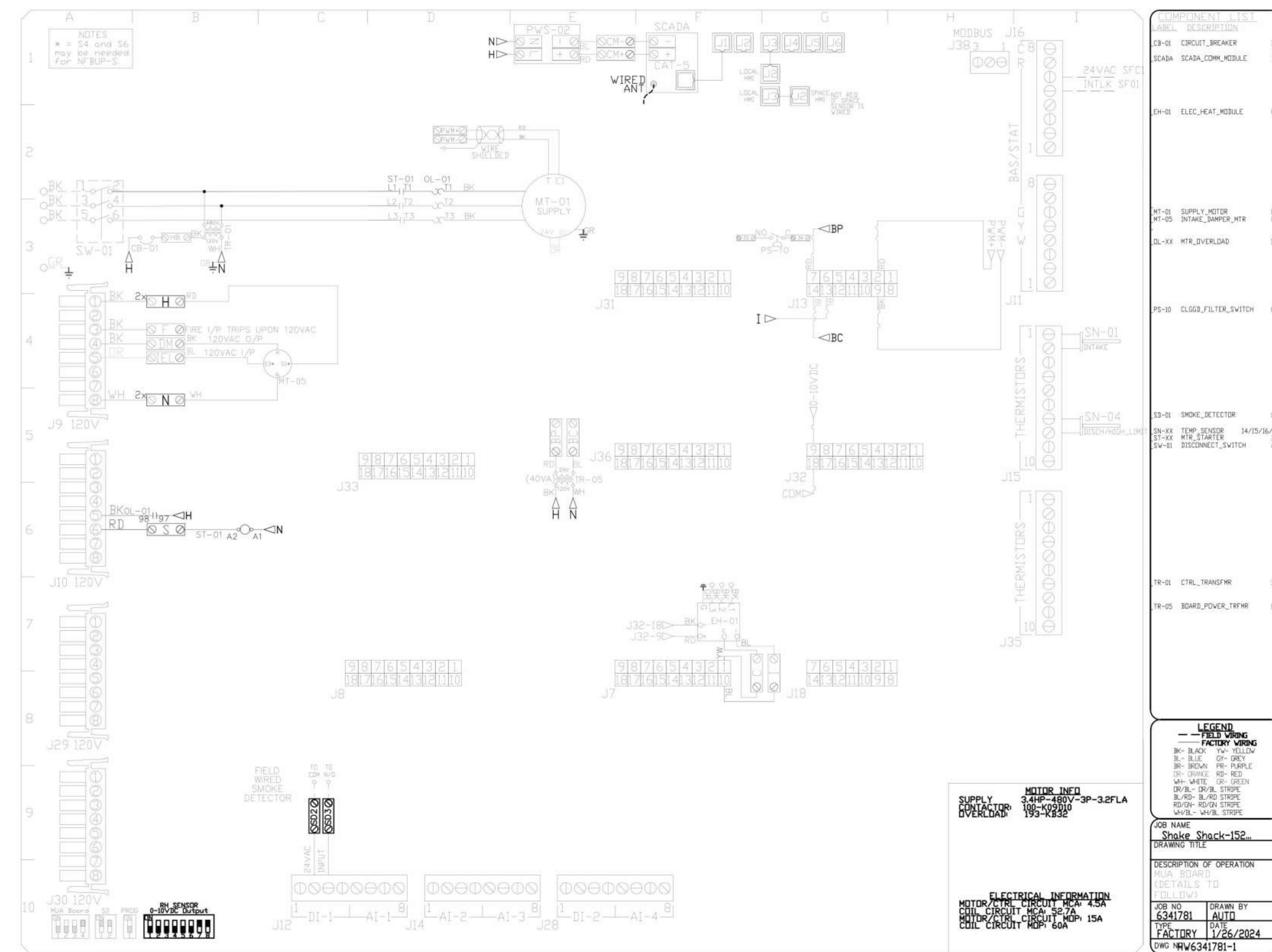
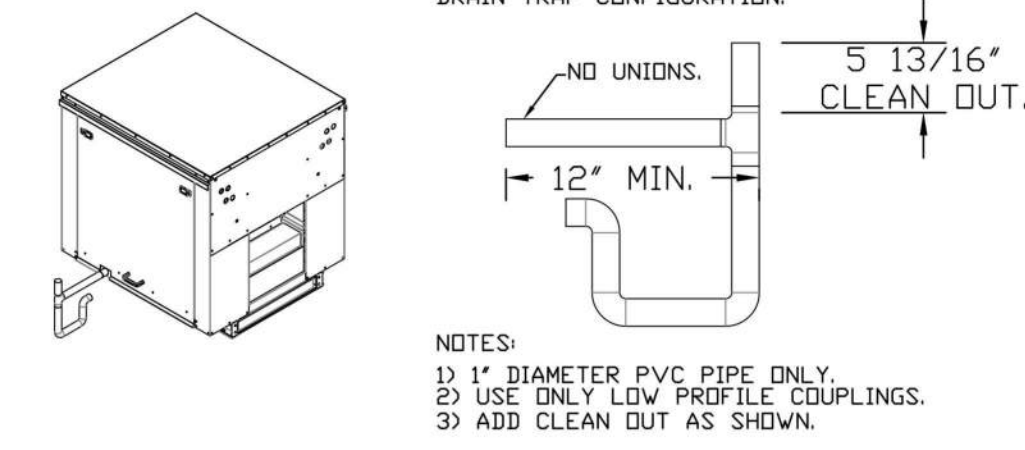
| FAN UNIT NO | TAG | QTY | DESCRIPTION |
|-------------|-------|-----|---|
| 1 | MAU-1 | 1 | EH 1 MUA CONTROLS SHEET METAL |
| | | 1 | CASLINK BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED |
| | | 1 | MOTORIZED BACKDRAFT DAMPER FOR A1-D HOUSING - MEETS AMCA CLASS 1A RATING |
| | | 1 | INSULATION OPTION FOR V-BANK FILTER SECTION |
| | | 1 | COMMERCIAL SMOKE DETECTOR/ALARM INTERLOCK - ALARM SUPPLIED BY OTHERS |
| | | 1 | CHILLED WATER MODULE - 1,000 TO 3,250 CFM (5 TON) NOT STOCKED. ALLOW 5-6 WEEKS LEAD TIME. TEMPERATURE CONTROLS, MIXING VALVES, THERMOSTATS, AND FREEZE PROTECTION BY OTHERS |
| | | 1 | CLOGGED FILTER SWITCH - DRY CONTACT |
| | | 1 | SIZE 1 ELECTRIC HEATER INDOOR HANGING OPTION. INCLUDES 2 HSA125 HANGING SPRING ISOLATORS PER UNI-STRUT |
| | | 1 | FREEZESTAT |
| | | 1 | ECM WIRING PACKAGE - SUPPLY FAN CONTROL-3 PHASE ZIEHL MOTOR |
| | | 1 | 2 YEAR PARTS WARRANTY |
| | | 1 | High pressure coil construction to increase maximum operating pressure to 350 psi |

FAN ACCESSORIES

| FAN UNIT NO | TAG | EXHAUST | | | | SUPPLY | | |
|-------------|-------|------------|----------------|------------|----------------|----------------|------------------|------------|
| | | GREASE CUP | GRAVITY DAMPER | WALL MOUNT | SIDE DISCHARGE | GRAVITY DAMPER | MOTORIZED DAMPER | WALL MOUNT |
| 1 | MAU-1 | | | | YES | | YES | |

| HMI SCHEDULE | | | | | |
|--------------|---------------|--------|-----------------|----------------|----------------|
| UNIT NUMBER | HMI # | HMI # | HMI LOCATION | TEMP AVERAGING | MODBUS ADDRESS |
| FAN #1 | HMI #1 - UNIT | HMI #1 | MOUNTED IN UNIT | NOT AVERAGED | 55 |

TYPICAL DRAIN TRAP INSTALL RECOMMENDED COIL DRAIN TRAP CONFIGURATION



REVISIONS

| NO. | DESCRIPTION | DATE |
|-----|-------------|------|
| | | |

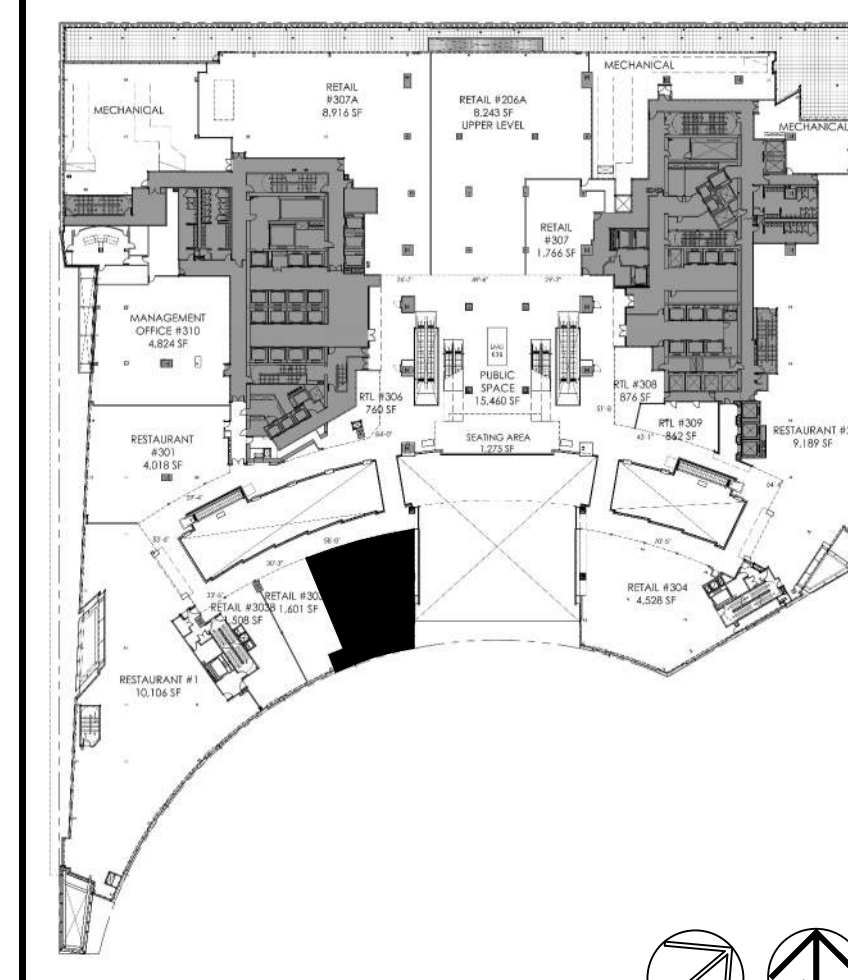
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Shake Shack-1525-Columbus Circle, NY
NEW YORK, NY, 10019
DATE: 1/26/2024
DWG.#: 6341781
DRAWN BY: Joe.shilba
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 4

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KEY PLAN - COLUMBUS CIRCLE (FLOOR 3)



| NO. | BY | DATE | DESCRIPTION |
|-----|----|------------|---------------------|
| 1 | | 2024-02-05 | IFC SET |
| | | 2024-01-22 | PERMIT BID SET |
| | | 2024-01-03 | LANDLORD REVIEW SET |

SHAKE SHACK

SHAKE SHACK COLUMBUS CIRCLE NYC
10 COLUMBUS CIRCLE UNIT 302
NEW YORK, NY 10019
SHACK #1525

BLOCK: 1049
LOT: 791
ZONING DISTRICT: C6-6, M2
MAP: 8c

CAPTIVEAIRE DRAWINGS

DOB NOW JOB # M00964009-11

| | |
|--------------------|---------------------|
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| M-704.00 | |

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TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGMENT, THIS APPLICATION IS IN COMPLIANCE WITH THE NYC EOC 2020.

DOB APPROVAL STAMP

- FAN R1-A1-E-35A-16Z - HEATER (MAU-1)
 1. ELECTRIC HEATED MAKE UP AIR UNIT WITH 16" DIRECT DRIVE FAN AND A 2 STAGE TOTAL, 1 MODULATING, 35KV 480 - 3 COIL.
 2. V-BANK EZ FILTERS - INDOOR.
 3. SIDE DISCHARGE - AIR FLOW RIGHT -> LEFT.
 4. SIZE 1 ELECTRIC HEATER WITH MUA CONTROLS SHEET METAL.
 5. GASLINK BUILDING MONITORING SYSTEM COMMUNICATIONS MODULE. REQUIRES INTERNET & FIELD WIRED ETHERNET CONNECTION OR 3G CELLULAR SERVICE. INCLUDES REV 3 COM MODULE, RJ45 TO MODBUS CONVERTER, 3 FT CAT5 CABLE, AND 1 FT OF SHIELDED TWISTED PAIR.
 6. MOTORIZED BACK DRAFT DAMPER 16" X 18" FOR SIZE 1 STANDARD & MODULAR HEATER UNITS V/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LOW LEAKAGE, TFB205 ACTUATOR INCLUDED.
 7. "INSULATION" FOR V-BANK INTAKE OPTION.
 8. COMMERCIAL SMOKE DETECTOR INTERLOCK (DETECTOR BY OTHERS).
 9. CW COIL MODULE FOR SIZE 1 MODULAR FANS - 1200 THRU 2500 CFM (5 TON, 5V510049-915X27.0) NOT STOCKED. ALLOW 5-6 WEEKS LEAD TIME. TEMPERATURE CONTROLS, MIXING VALVES, THERMOSTATS, AND FREEZE PROTECTION BY OTHERS.
 10. CLOGGED FILTER SWITCH.
 11. INDOOR HANGING CRABLE FOR THE SIZE 1 ELECTRIC HEATER. 2 HSA12S HANGING ISOLATORS PER UNI-STRUT INCLUDED.
 12. FREEZESTAT FACTORY SET AT 35°F AND 10 MINUTES.
 13. CM CONTROL FOR RTU/MUA SUPPLY FAN CONTROLLED BY OUTPUT SIGNAL FROM CONTROL BOARD.
 14. 2 YEAR PARTS WARRANTY.

NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN SMACNA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/CORNER BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRAMATICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT. SUGGESTED STRAIGHT DUCT SIZE IS 20" X 20".

SUPPLY SIDE HEATER INFORMATION:
 WINTER TEMPERATURE = 19°F. TEMP. RISE = 58°F.
 KWs CALCULATED OFF ACTUAL AIR DENSITY.
 KWs AT ALTITUDE OF 0.0 FT. = 31.
 KWs AT ALTITUDE OF 66 FT. = 31.

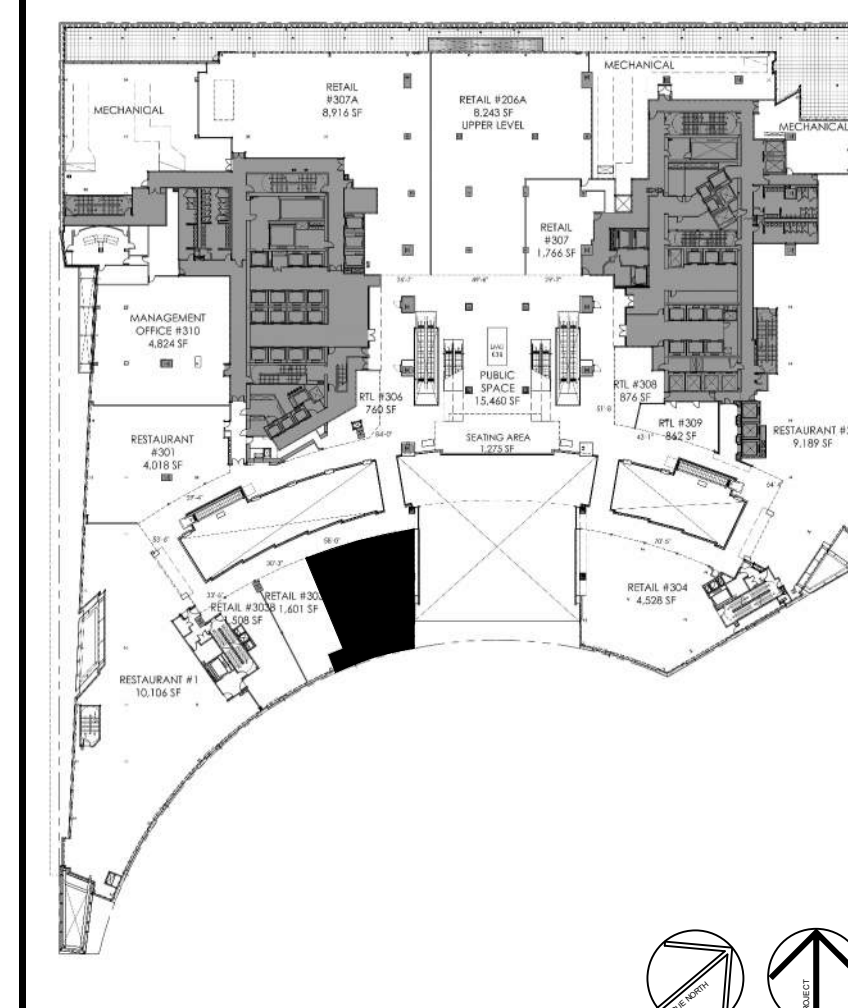


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KEY PLAN - COLUMBUS CIRCLE (FLOOR 3)

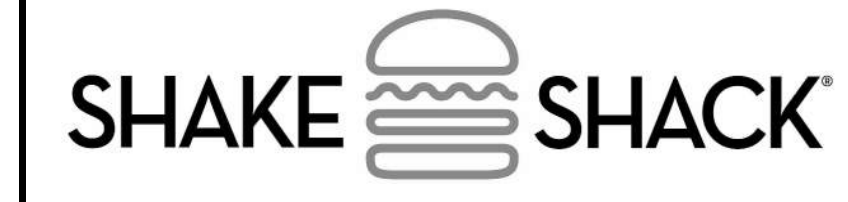


Shake Shack-1525-Columbus Circle, NY
 NEW YORK, NY, 10019

DATE: 1/26/2024
DWG.#: 6341781
DRAWN BY: Joe.shilba
SCALE: 3/4" = 1'-0"
MASTER DRAWING

SHEET NO.
 5

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 10 COLUMBUS CIRCLE UNIT 302
 NEW YORK, NY 10019
 SHACK #1525

BLOCK: 1049
 LOT: 791
 ZONING DISTRICT: C6-6, M2
 MAP: 8c

CAPTIVEAIRE DRAWINGS

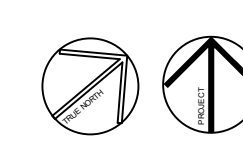
DOB NOW JOB # M00964009-41

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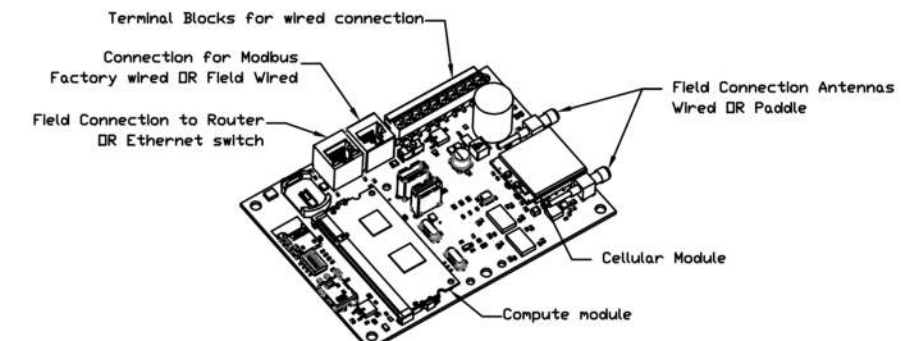
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ELECTRICAL PACKAGE - JOB#6341781

| NO | TAG | PACKAGE # | LOCATION | SWITCHES | | OPTION | FANS CONTROLLED | | |
|----|-----|------------|--------------------|-------------------------------|----------|---|-----------------|------|-----------|
| | | | | LOCATION | QUANTITY | | TYPE | ? HP | VOLTS FLA |
| 1 | | SC-01110MA | 18"x18"x6" WALL MT | FACE MOUNT RIGHT SIDE OF HOOD | 1 LIGHT | SMART CONTROLS THERMOSTATIC CONTROL V/ RELAY ON/OFF WITH SUPPLY | | | |

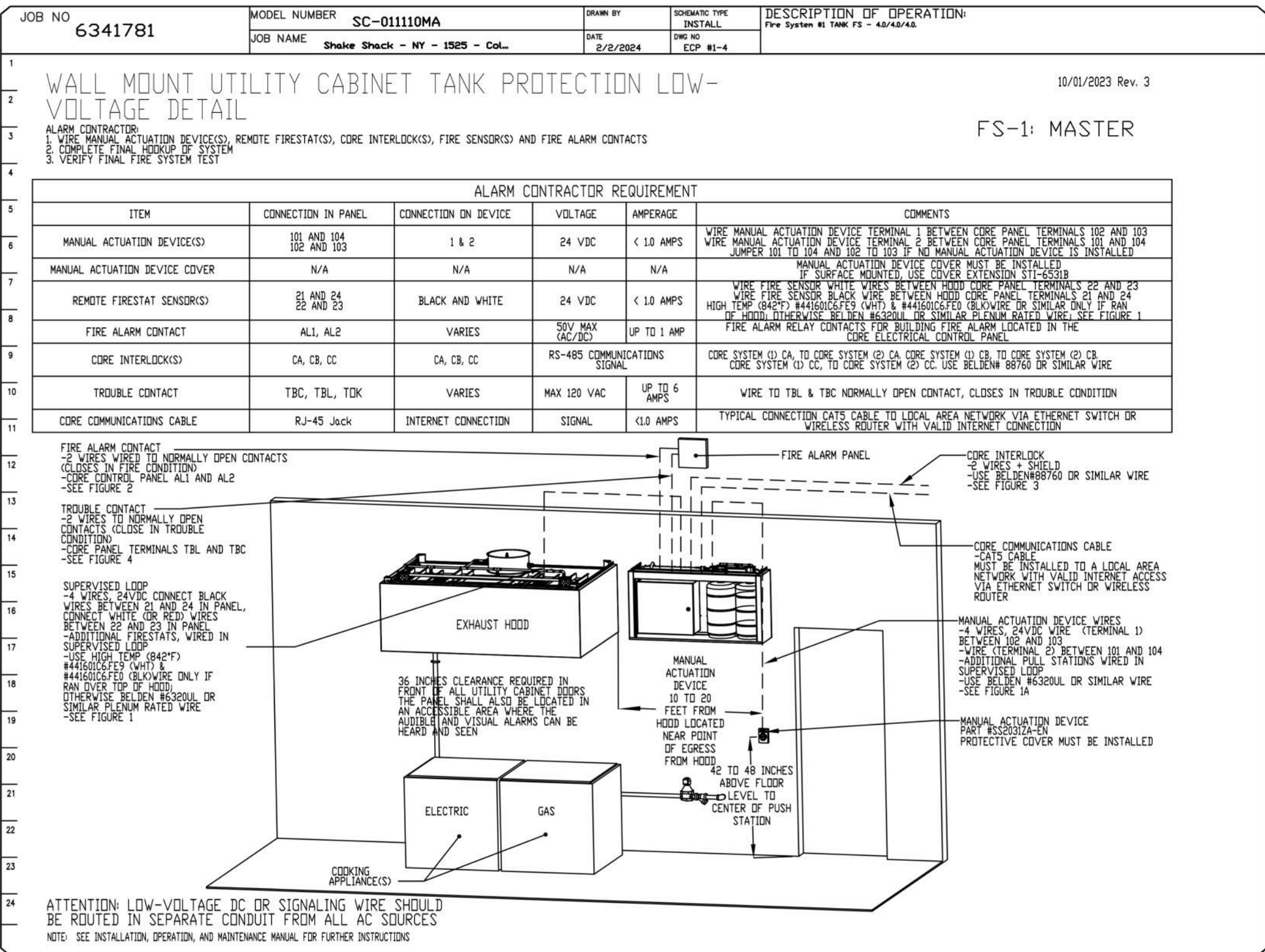
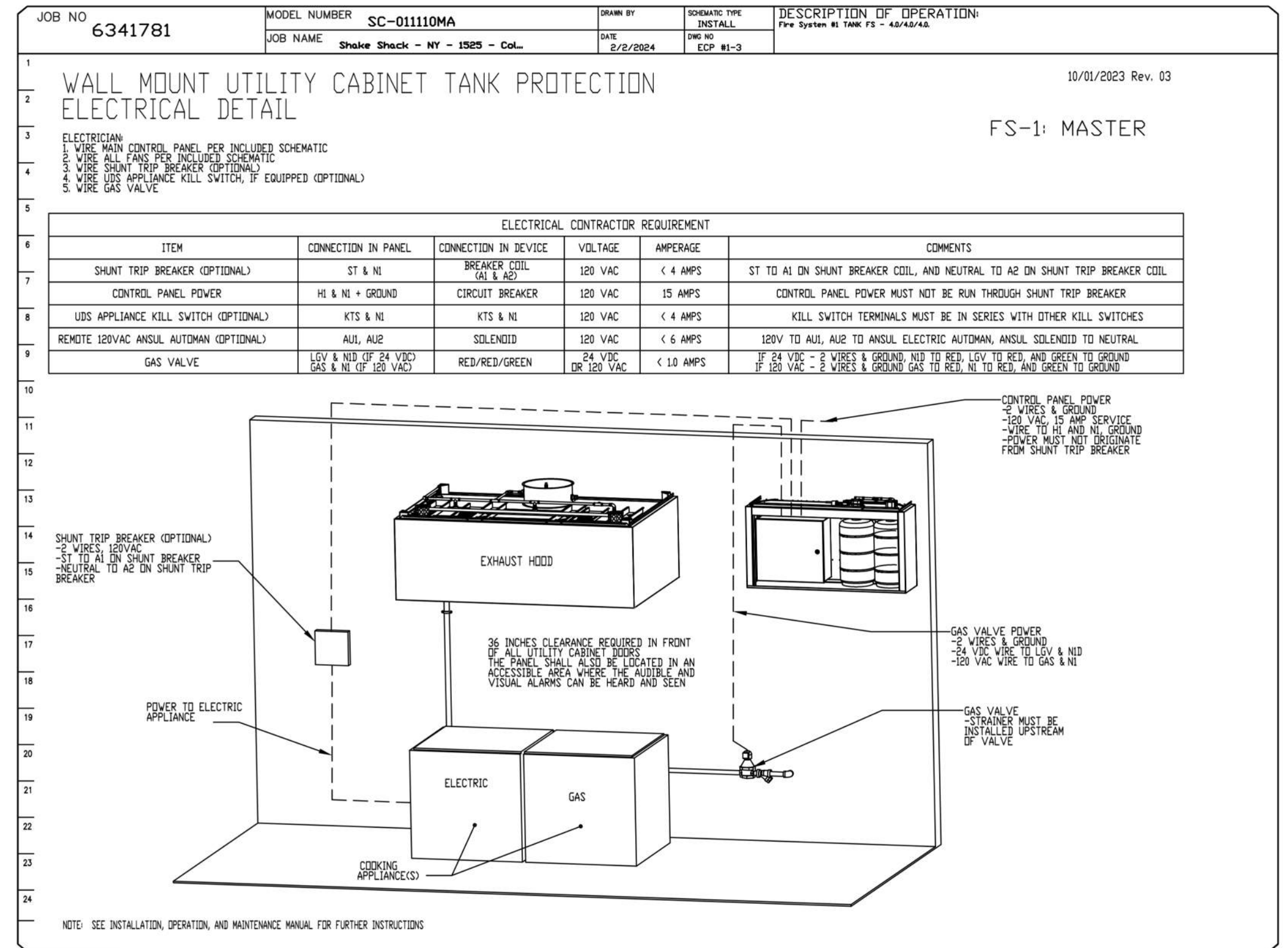
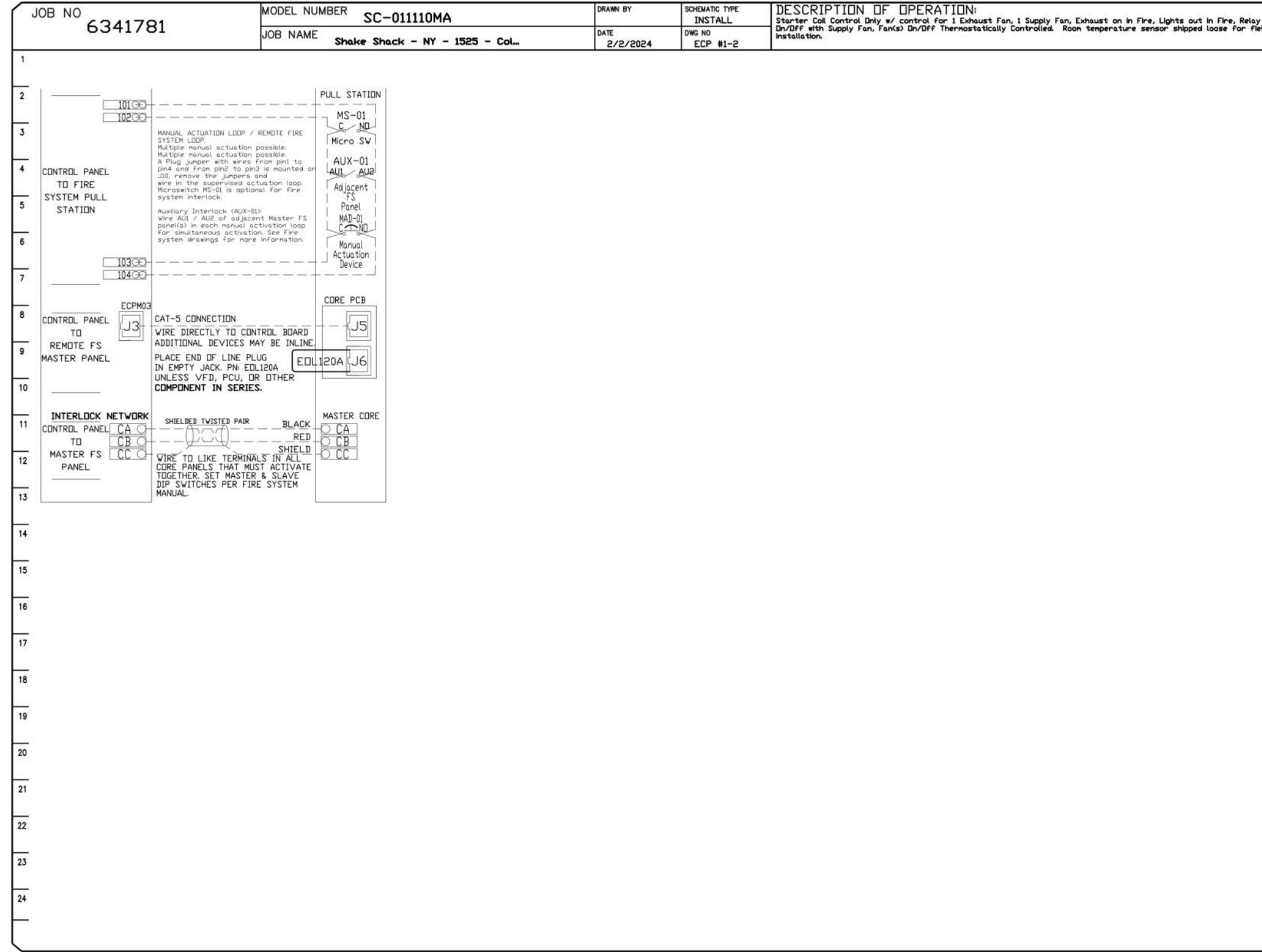
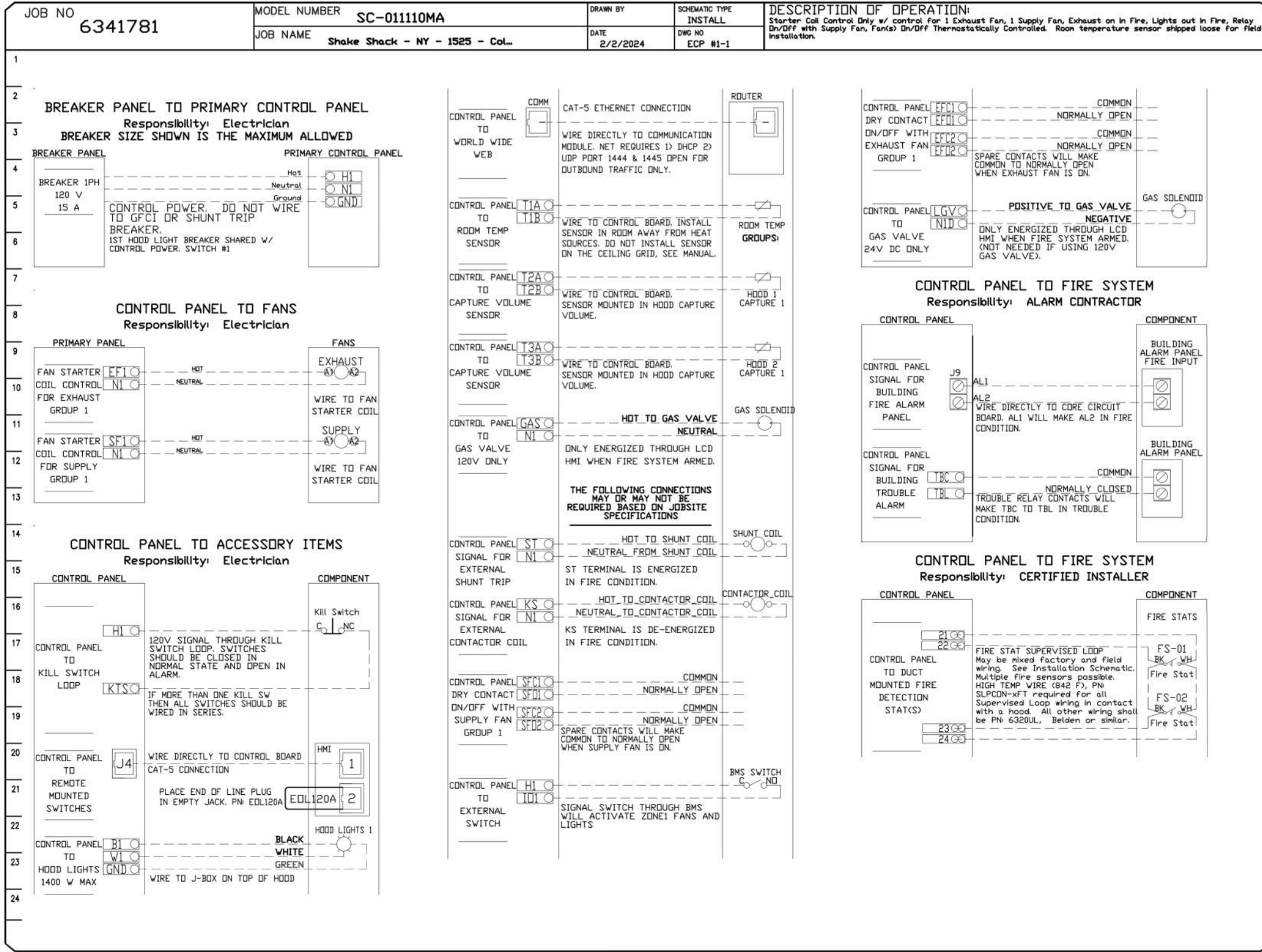


CASlink Monitor and Control

Hood control panel to support communications to cloud-based Building Management System.
Hood Control Panel to allow cloud-based Building Management System to monitor and control parameters outlined as MONITOR on the points list.
Hood Control Panel to allow cloud-based Building Management System to control parameters outlined as CONTROL on the points list.
Hood Control Panel to allow cloud-based Building Management System to implement SYSTEM RECOMMENDED control strategies for fully integrated Building Management.

MONITORING AND CONTROL POINTS LIST

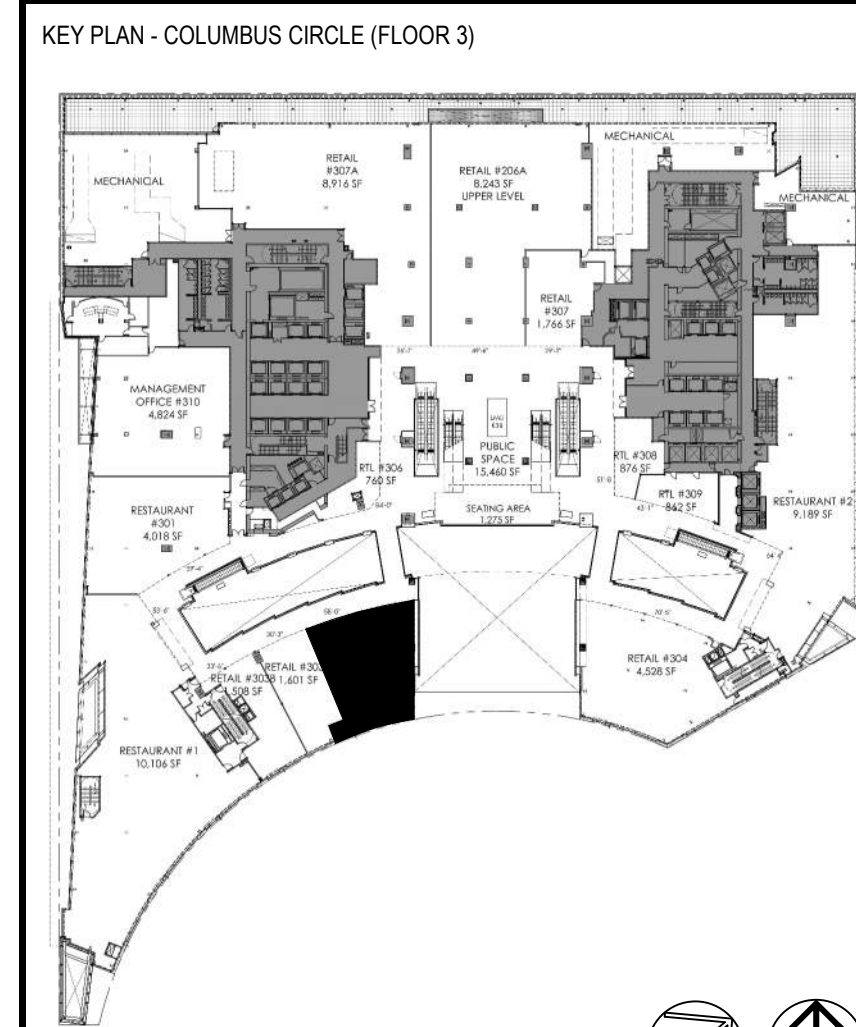
| Item | Function | Item | Function |
|-----------------------------------|-------------------|-----------------------------------|-------------------|
| AC Packages | MONITOR | Room Temperature(s) | MONITOR |
| Room Temperature | MONITOR | Unit Temperature(s) | MONITOR |
| Unit Temperature | MONITOR | WCU Discharge Temperature | MONITOR |
| WCU Discharge Temperature | MONITOR | Exhaust RTV Discharge Temperature | MONITOR |
| Exhaust RTV Discharge Temperature | MONITOR | Control Panel | MONITOR |
| Fan Speed | MONITOR | Fan Alarm | MONITOR |
| Fan Alarm | MONITOR | Fan Failure | MONITOR |
| Fan Failure | MONITOR | Fan Start | MONITOR |
| Fan Start | MONITOR | FTV Failure | MONITOR |
| FTV Failure | MONITOR | FTV Filter Plug Percentage | MONITOR |
| FTV Filter Plug Percentage | MONITOR | Fan Condition | MONITOR |
| Fan Condition | MONITOR | Control Panel | MONITOR |
| Control Panel | MONITOR | Light Button(s) | MONITOR & CONTROL |
| Light Button(s) | MONITOR & CONTROL | Wash Button | MONITOR & CONTROL |
| Wash Button | MONITOR & CONTROL | | |



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10 COLUMBUS CIRCLE UNIT 302
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ZONING DISTRICT: C6-6, MID
MAP: 8c

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DOB NOW JOB # M00964009-41

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JOB NO: 20230127.00

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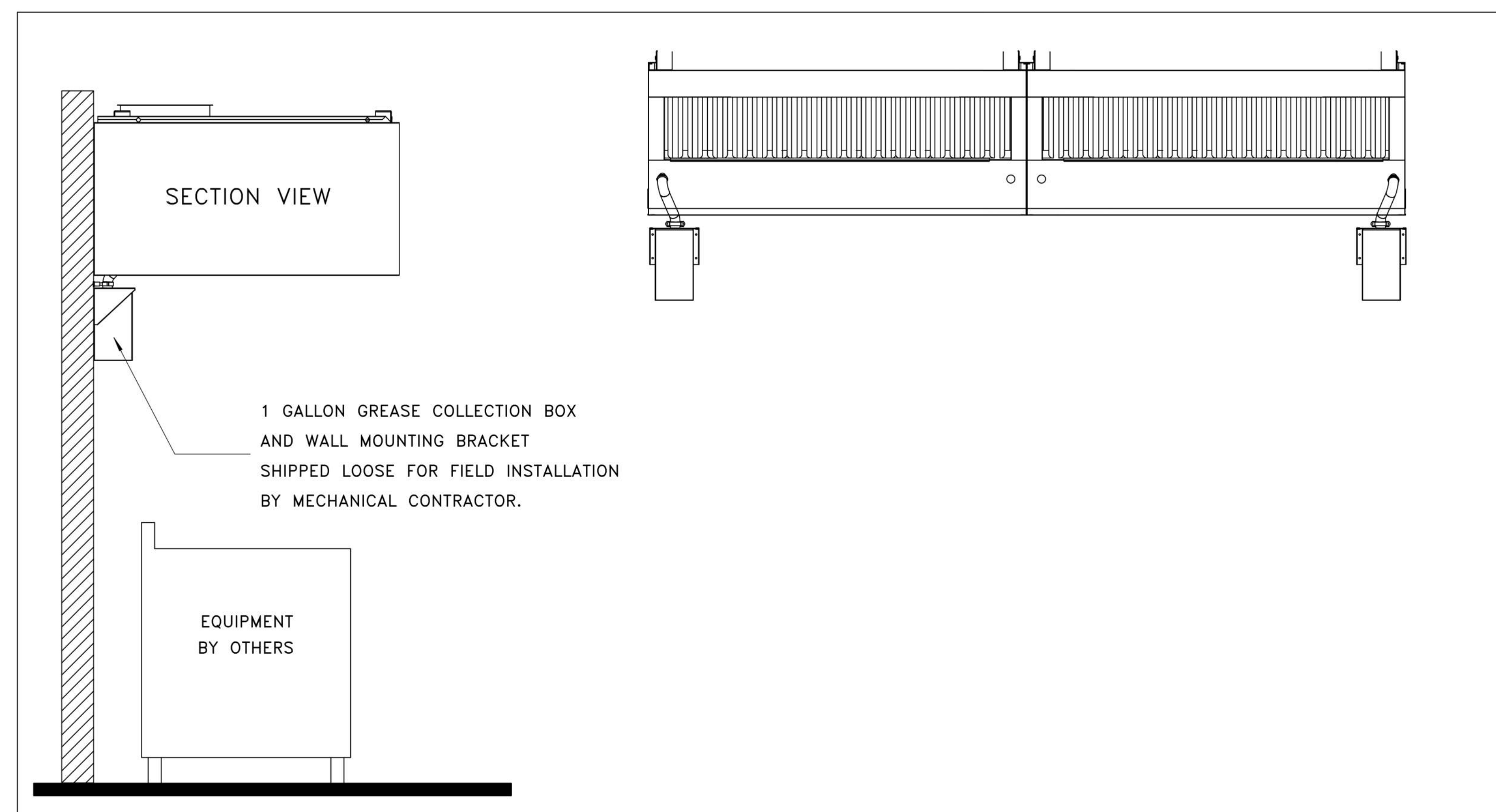
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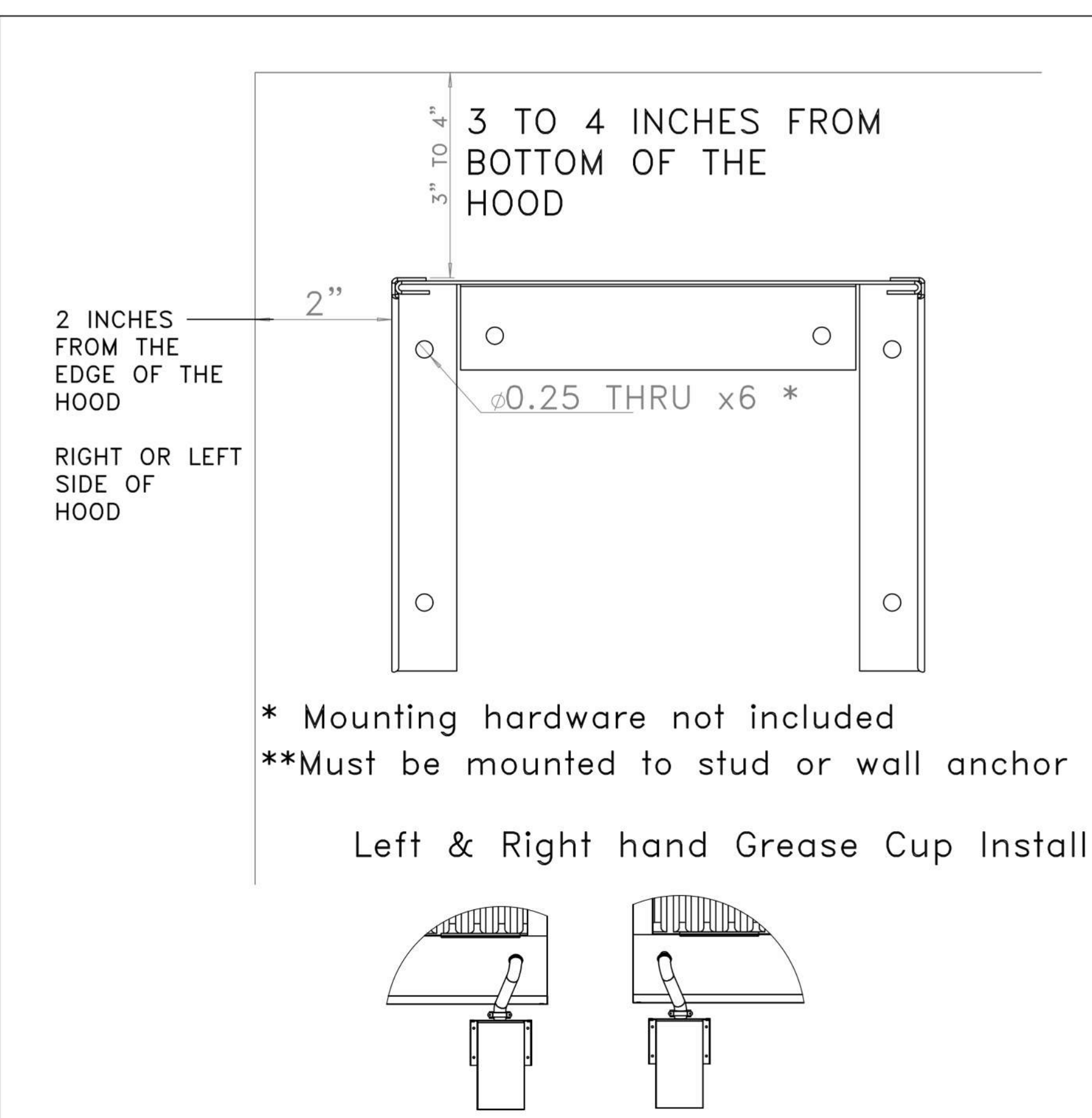
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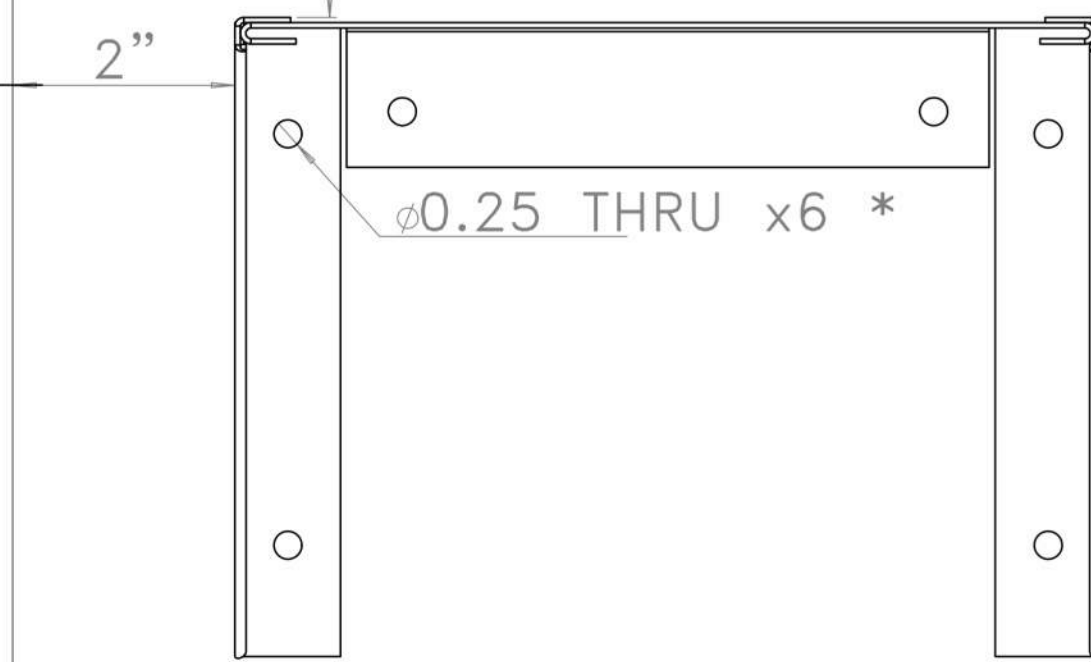
1 GALLON GREASE COLLECTION BOX AND WALL MOUNTING BRACKET SHIPPED LOOSE FOR FIELD INSTALLATION BY MECHANICAL CONTRACTOR.

EQUIPMENT BY OTHERS



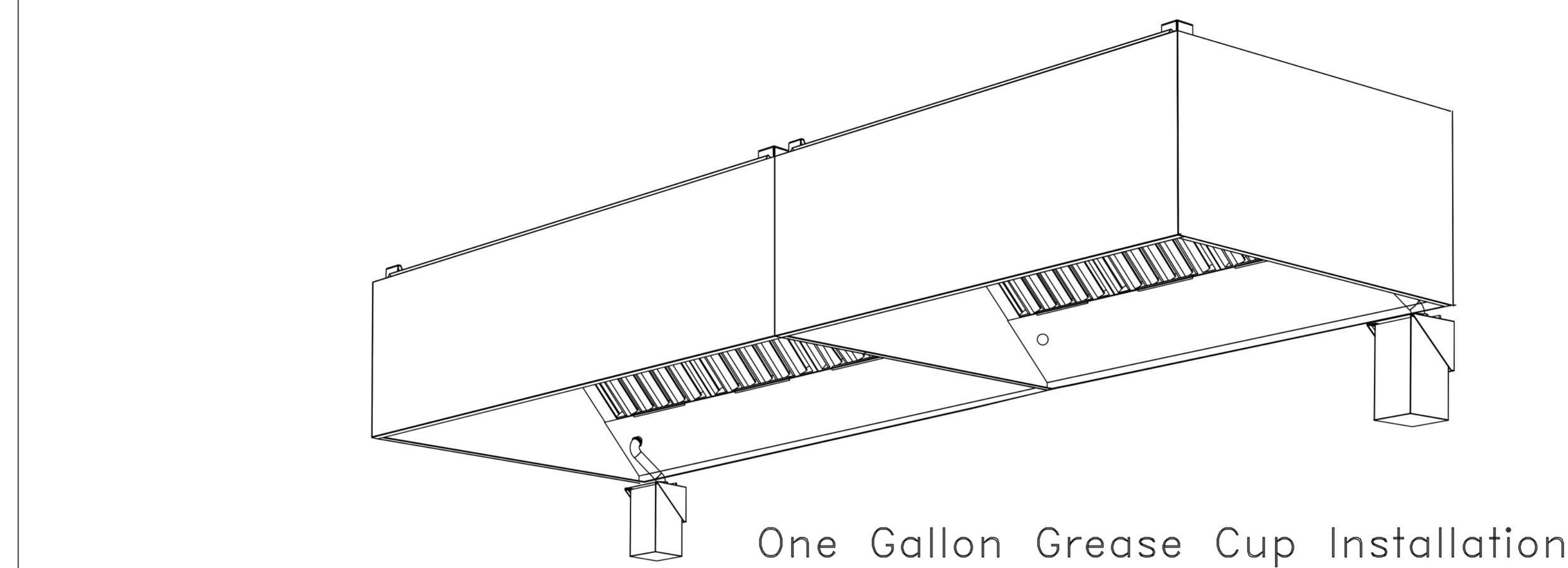
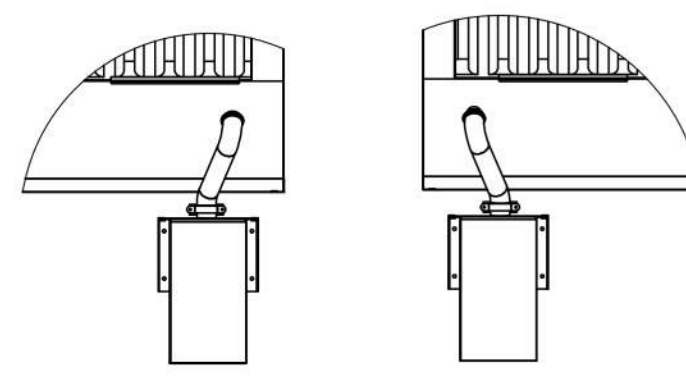
2 INCHES FROM THE EDGE OF THE HOOD
 RIGHT OR LEFT SIDE OF HOOD

3 TO 4 INCHES FROM BOTTOM OF THE HOOD



* Mounting hardware not included
 **Must be mounted to stud or wall anchor

Left & Right hand Grease Cup Install

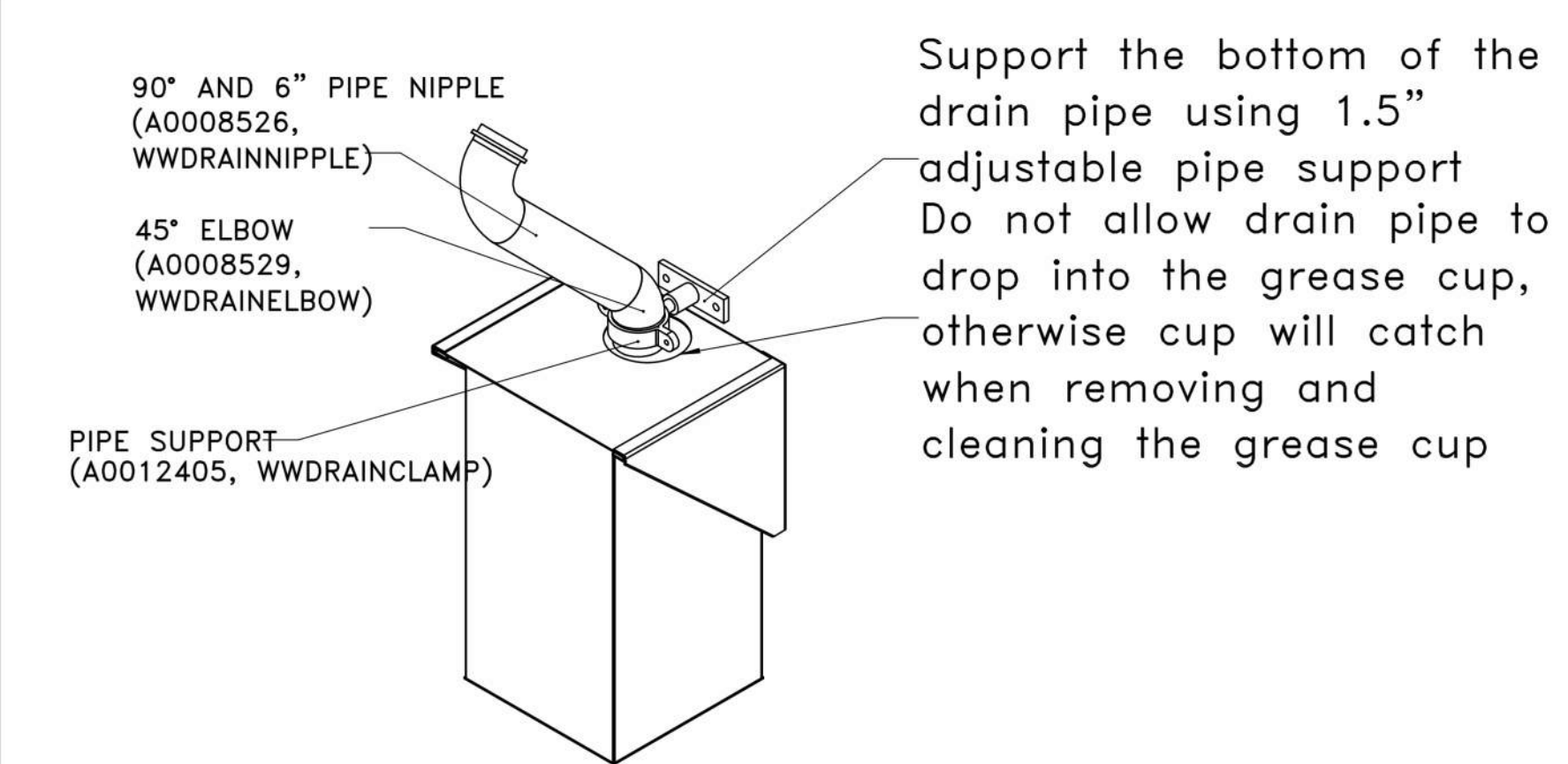


One Gallon Grease Cup Installation

Instructions below outline single, or dual, one gallon grease cup installation for ND-2 hood models.

The one gallon grease cup comes as an assembly of stainless steel wall mounting bracket and one gallon cup. The mounting bracket should be installed 2" from the edge of the containment plenum and 3"-4" below the bottom of the hood.

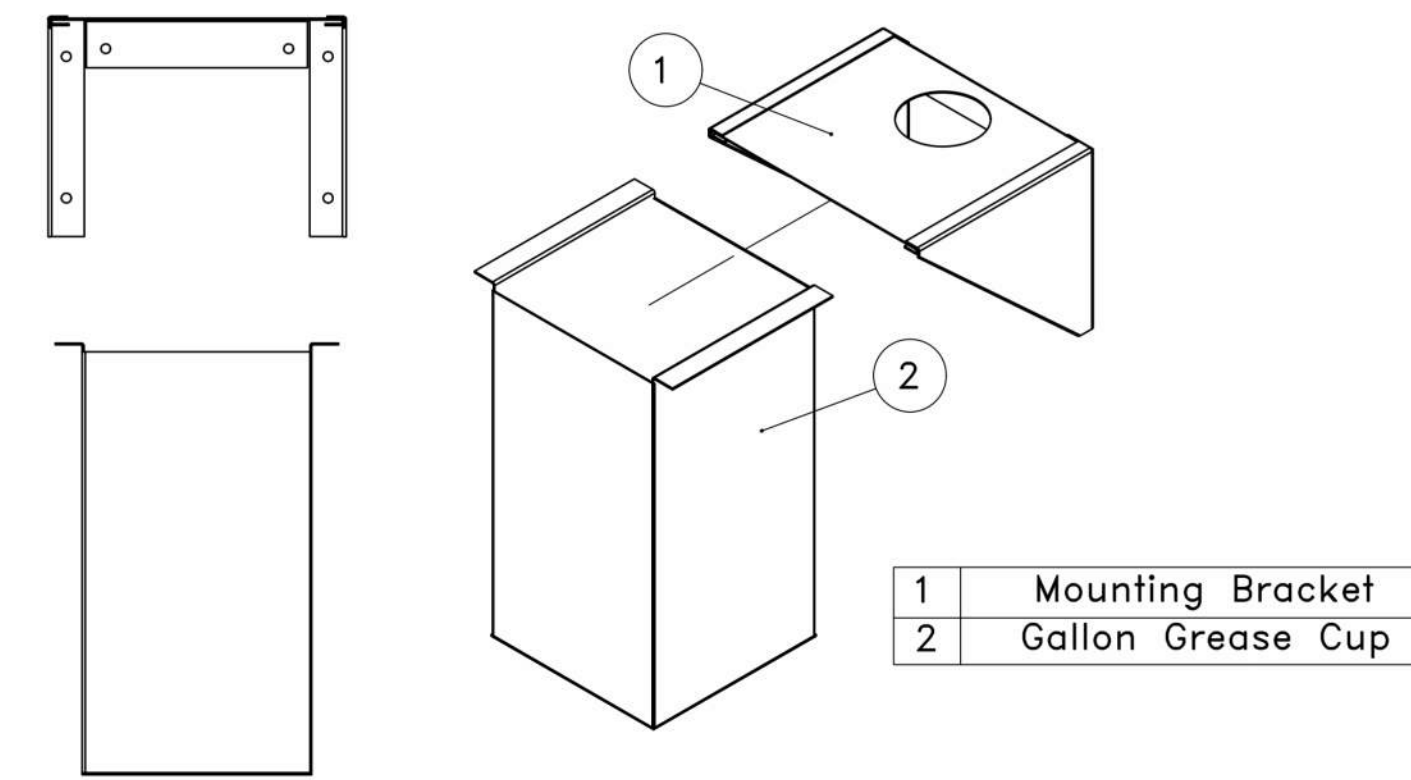
Piping from the hood grease drain should route to the opening of the grease cup, but not into the cup, otherwise the cup will not be able to be removed and emptied.



Gallon Grease Cup Assembly

90° AND 6" PIPE NIPPLE (A0008526, WWDRAINNIPPLE)
 45° ELBOW (A0008529, WWDRAINELBOW)
 PIPE SUPPORT (A0012405, WWDRAINCLAMP)

Support the bottom of the drain pipe using 1.5" adjustable pipe support. Do not allow drain pipe to drop into the grease cup, otherwise cup will catch when removing and cleaning the grease cup



1 GALLON GREASE COLLECTION BOX AND WALL MOUNTING BRACKET SHIPPED LOOSE FOR FIELD INSTALLATION BY MECHANICAL CONTRACTOR.

| REVISIONS | |
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| DESCRIPTION | DATE |
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 DRAWN BY: Joe.shilbo
 SCALE: 3/4" = 1'-0"
 MASTER DRAWING
 SHEET NO. 7

DOB APPROVAL STAMP

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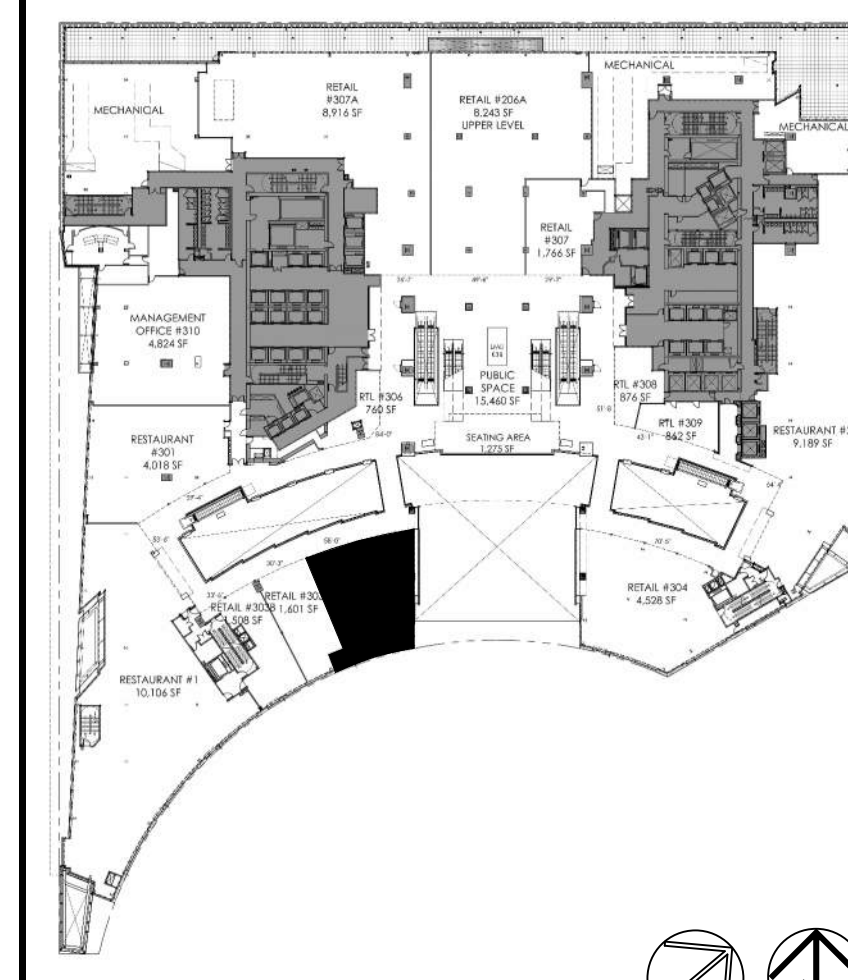
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Bergmeyer

LA 800 South Figueroa St. Los Angeles, CA 90017 213.637.1080
 COL 875 N. High St. Suite 300 Columbus, OH 43215 609.860.8687
 BOS 151 Stoughton St. 6th Floor Boston, MA 02210 617.592.1029

KEY PLAN - COLUMBUS CIRCLE (FLOOR 3)



| NO. | BY | DATE | DESCRIPTION |
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| 1 | | 2024-02-05 | IFC SET |
| | | 2024-01-22 | PERMIT BID SET |
| | | 2024-01-03 | LANDLORD REVIEW SET |

SHAKE SHACK

SHAKE SHACK COLUMBUS CIRCLE NYC

10 COLUMBUS CIRCLE UNIT 302
 NEW YORK, NY 10019
 SHACK #1525

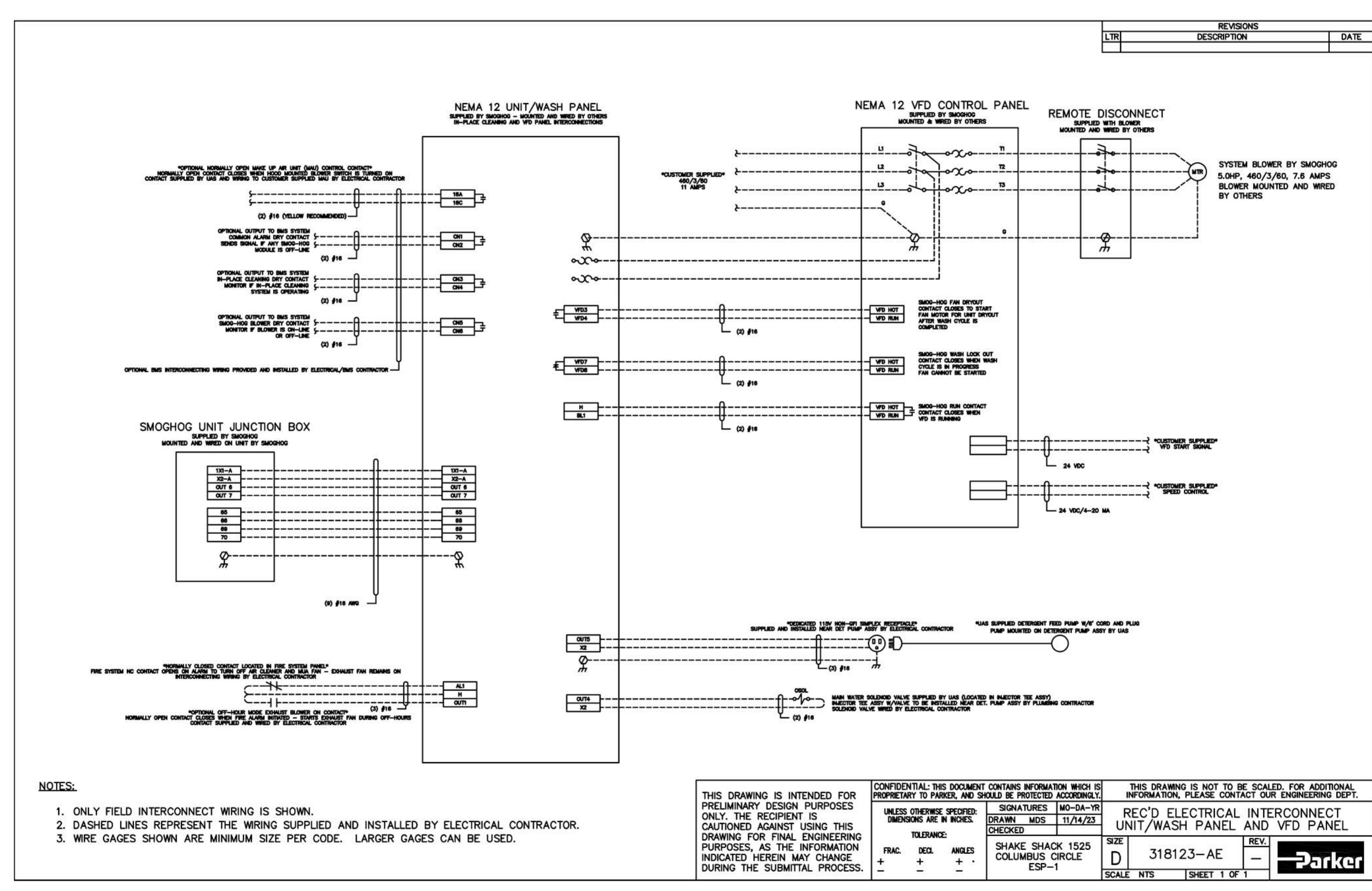
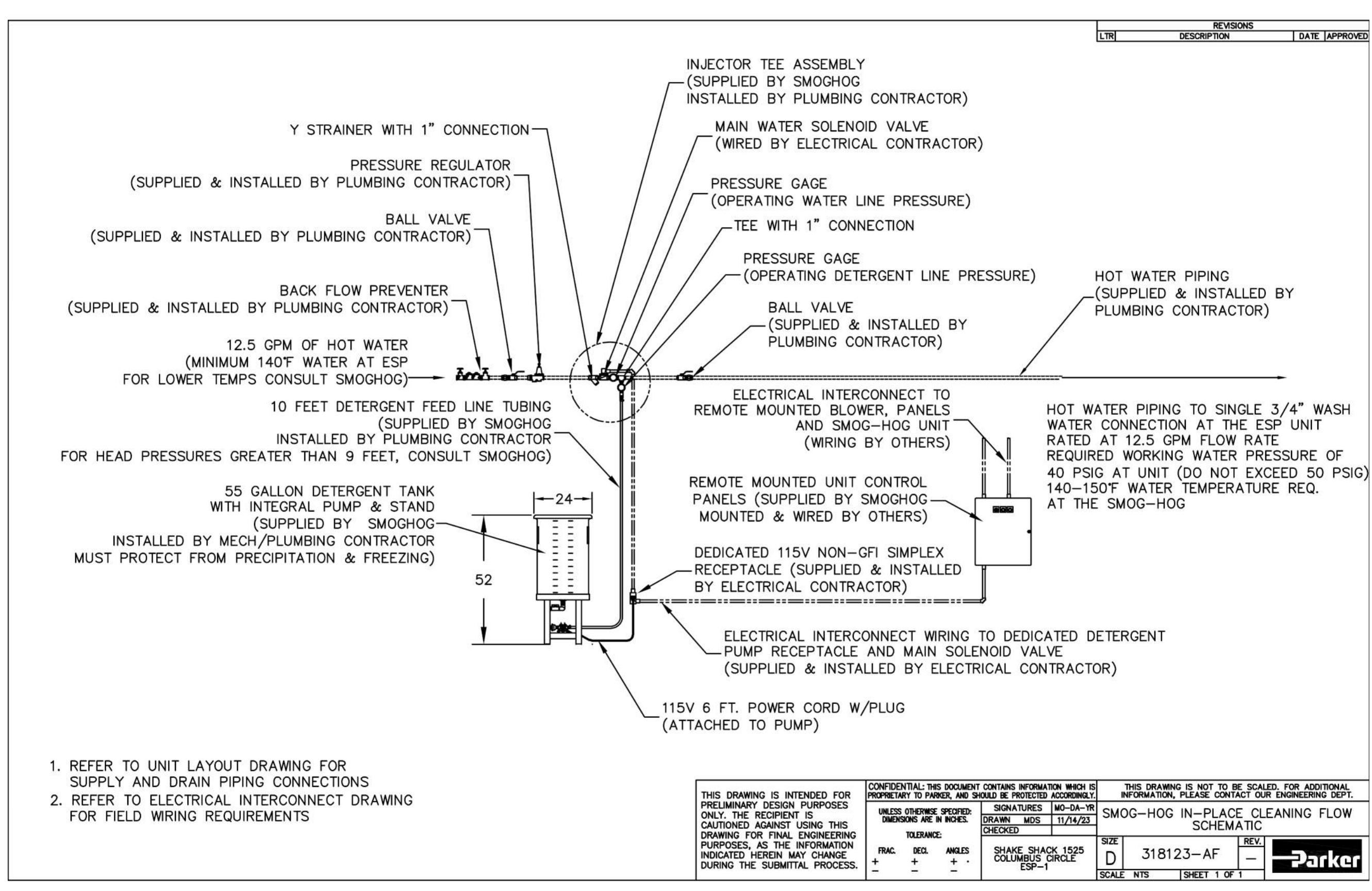
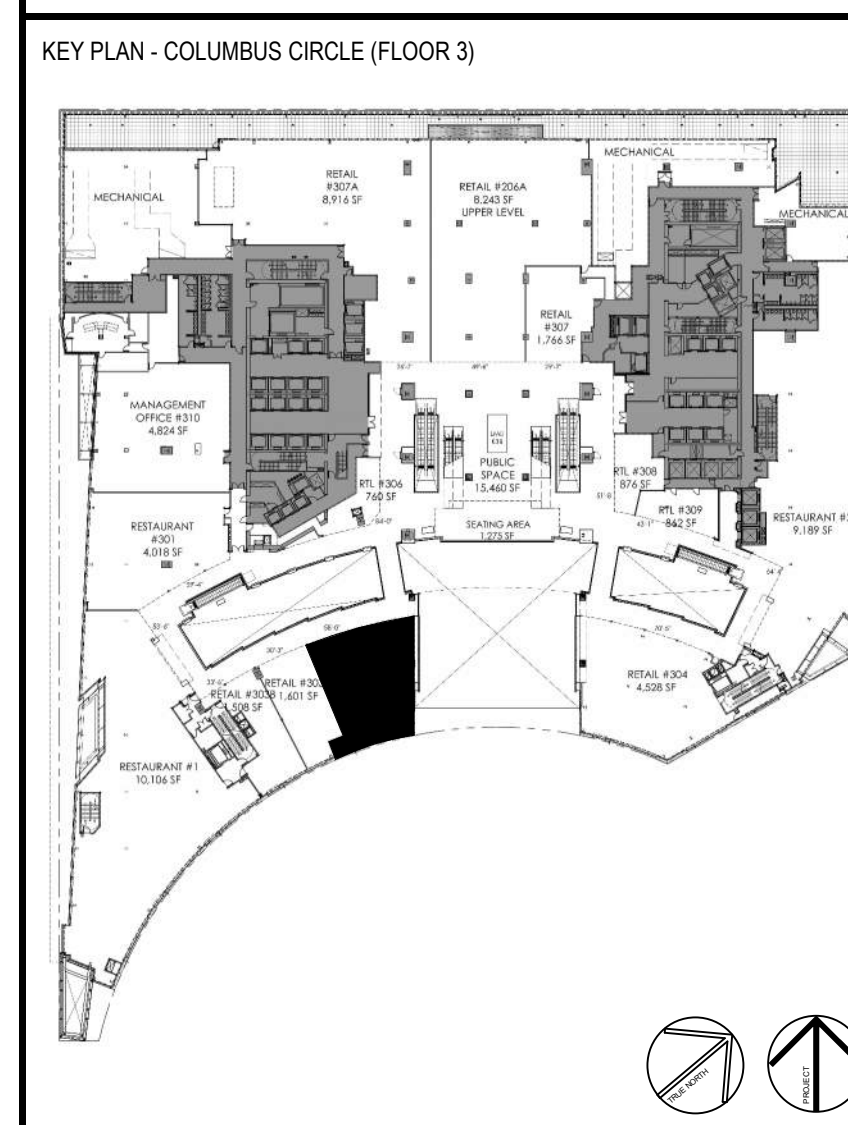
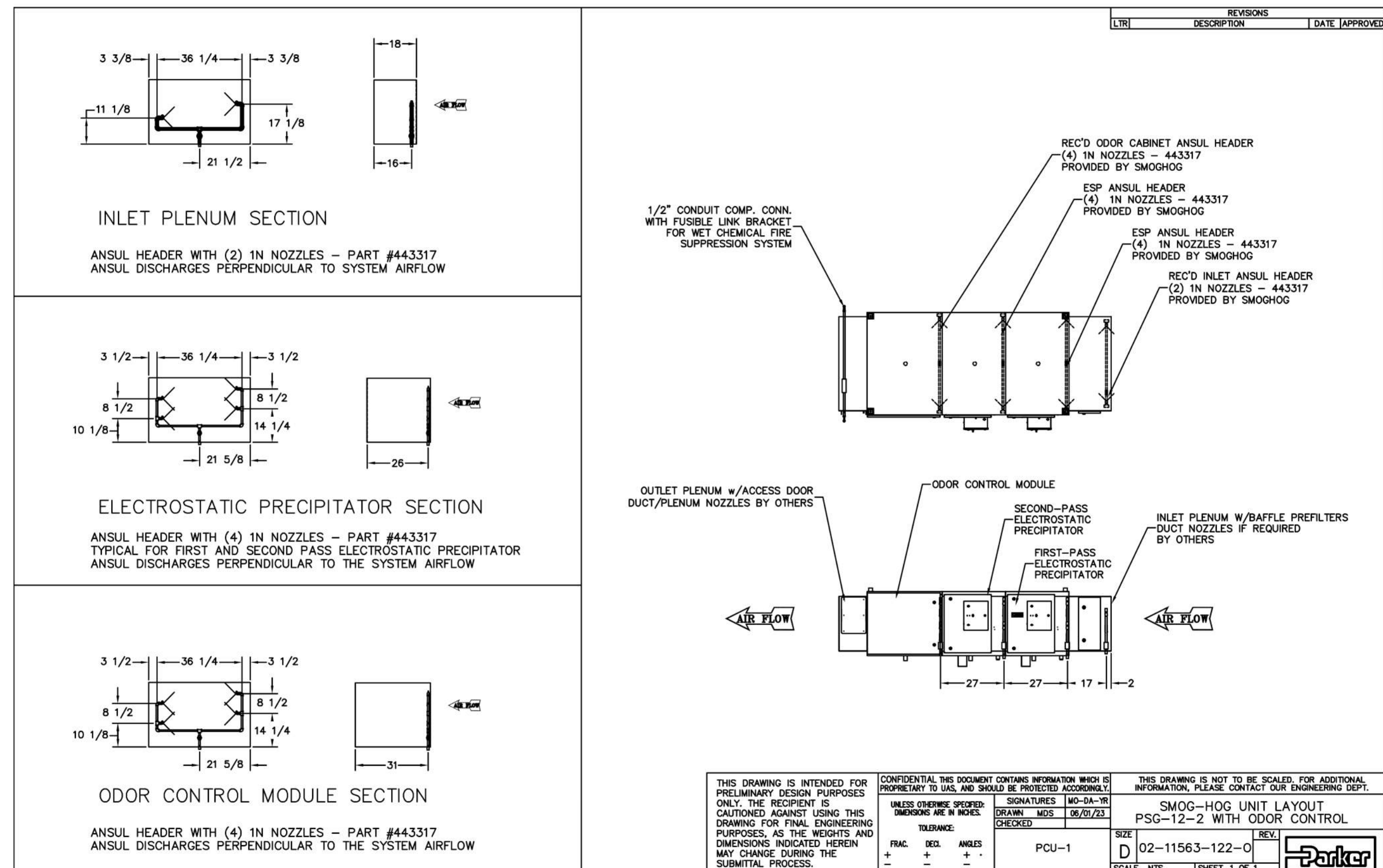
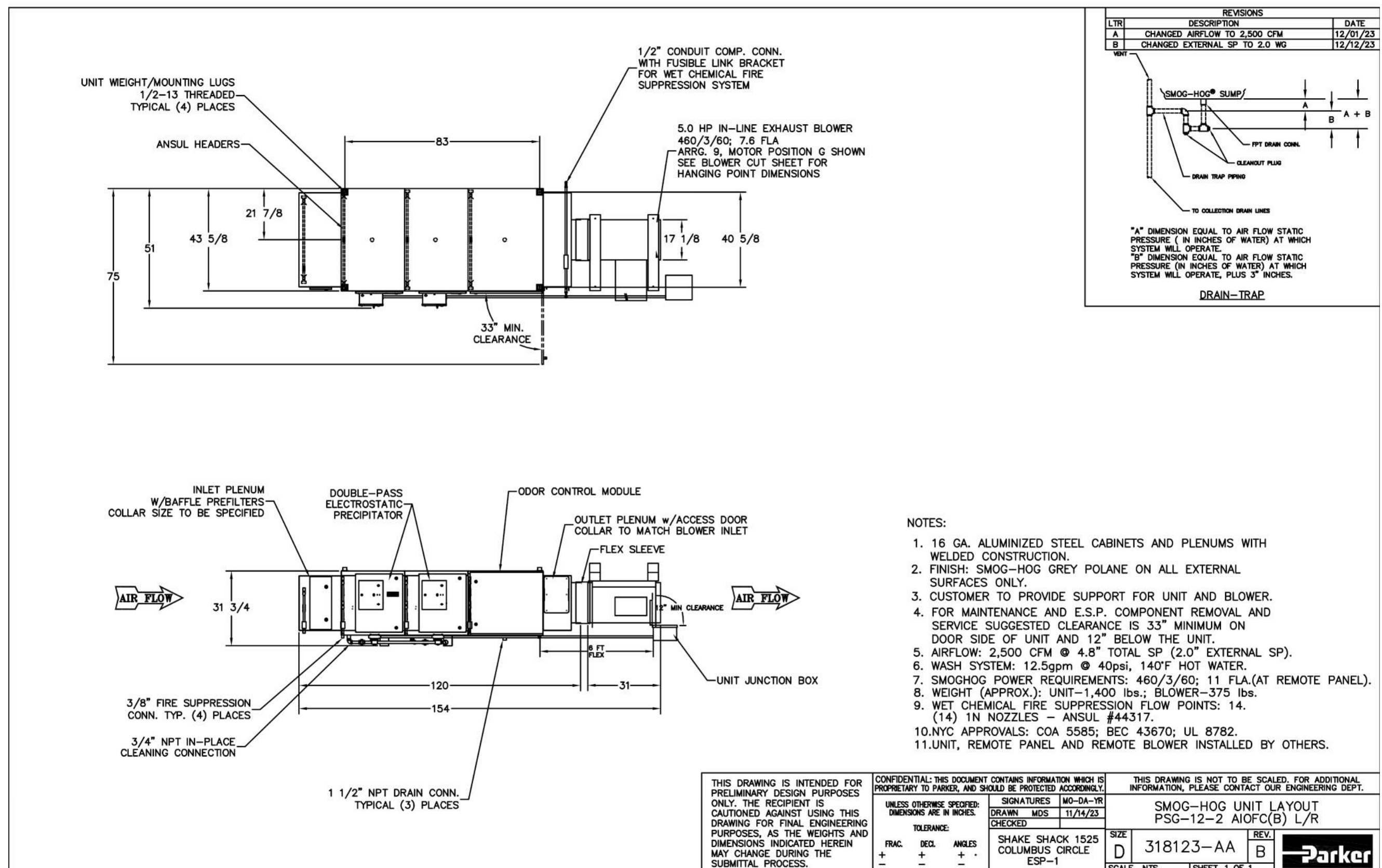
BLOCK: 1049
 LOT: 7501
 ZONING DISTRICT: C6-6, MID
 MAP: 8c

CAPTIVEAIRE DRAWINGS

DOB NOW JOB # M00964009-41

SEAL/SIGNATURE: [Signature]
 DRAWN BY: Author
 CHECKED BY: Checker
 JOB NO: 20230127.00
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M-707.00

NOTE:
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SHAKE SHACK

SHAKE SHACK COLUMBUS CIRCLE NYC

10 COLUMBUS CIRCLE UNIT 302
NEW YORK, NY 10019
SHACK #1525

BLOCK: 1049
LOT: 701
ZONING DISTRICT: C6-6, MID
MAP: 8c

SMOGHOG DRAWINGS

DOB NOW JOB # M00964009-41

SEAL/SIGNATURE:

DRAWN BY: Author

CHECKED BY: Checker

JOB NO: 20230127.00

M-708.00

BUILDING DEPARTMENT FILING NOTE:
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NEW YORK ALTERATION WARNING STATEMENT:
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TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGMENT, THIS APPLICATION IS IN COMPLIANCE WITH THE NYCECC 2020.

DOB APPROVAL STAMP

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Printed Date: 12/12/2023
Job: SHAKE SHAKE 1525 - COLUMBUS CIRCLE
Mark: ESP-1
Model: QEI-12

| Performance | |
|----------------------------|-------|
| Quantity | 1 |
| Volume (CFM) | 2,500 |
| Total External SP (in. wg) | 4.863 |
| Operating Power (hp) | 3.31 |
| Required Power (hp) | 3.31 |
| Fan RPM | 3455 |
| Max Fan RPM | 4,000 |
| Elevation (ft) | 30 |
| Start-up Temp.(F) | 70 |
| Operating Temp.(F) | 70 |

| Fan Configuration | |
|---------------------|--------------|
| Size | 12 |
| Class | II |
| Fan Series | 300 |
| Arrangement | 9 |
| Discharge Position | Horizontal |
| Mounting | Ceiling Hung |
| Material Type | Steel |
| Spark Resistance | None |
| Wheel Material | Steel |
| Inlet Cone Material | Steel |

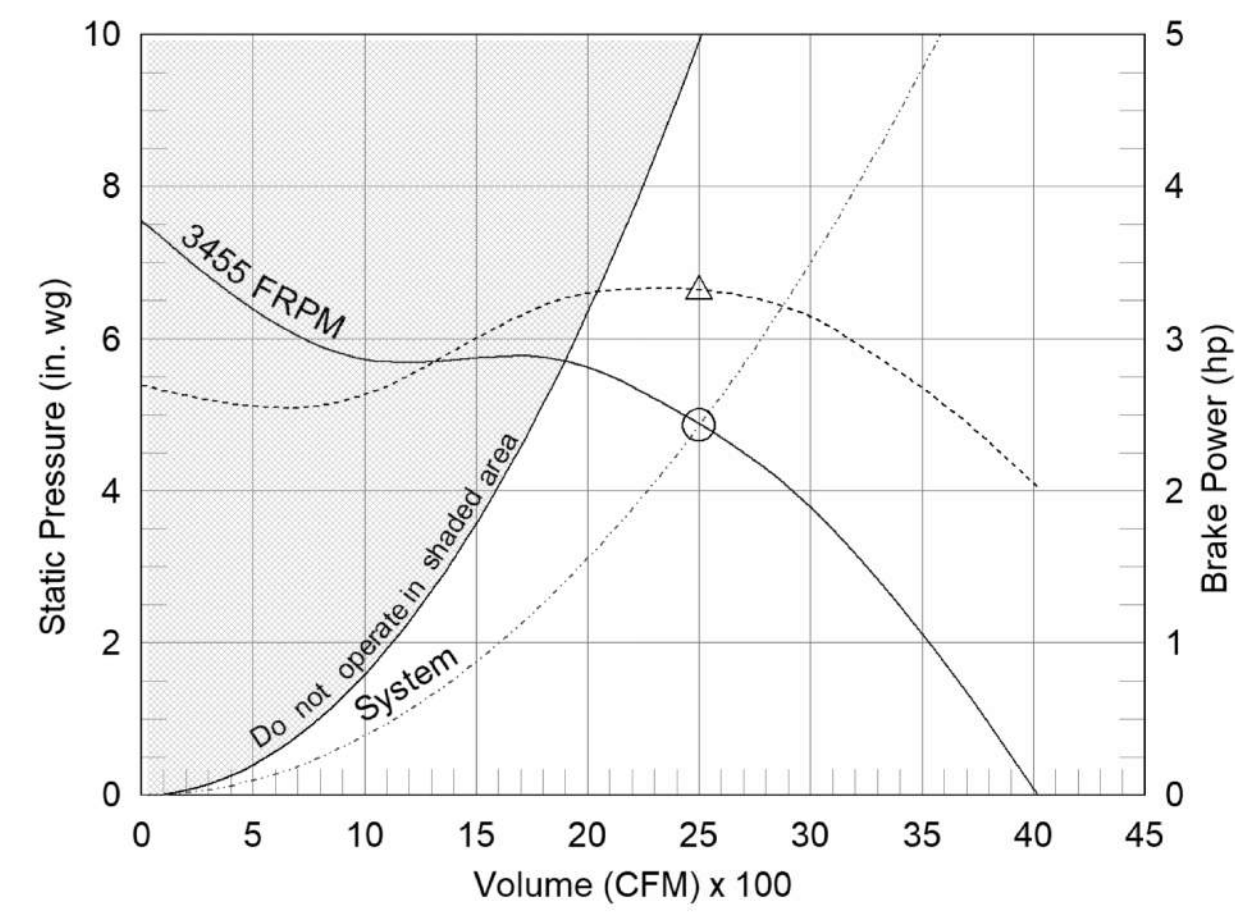
| Equipment Weights | |
|-------------------|-----|
| Fan (LMD)(lb) | 180 |
| Motor/Drive (lb) | 106 |
| Accessories (lb) | 67 |

| Misc Fan Data | |
|--------------------------|--------|
| Fan Energy Index (FEI) | 1.09 |
| Outlet Velocity (ft/min) | 1,592 |
| Static Efficiency (%) | 60 |
| Wheel WRZ (lb-ft2) | 3.5 |
| Tip Speed (ft/min) | 13,566 |
| Thrust Weight (%) | 11.6 |
| Thrust Force (lb) | 41 |

| Motor and Drives | |
|----------------------|----------|
| Motor | Included |
| Size (hp) | 5 |
| RPM | 3600 |
| Enclosure | TEFC |
| V/CP | 460/60/3 |
| Frame Size | 164T |
| Max Frame Size | 184 |
| Location | G |
| Pulley Type | Constant |
| Drive Loss (%) | 4.3 |
| Drives | Standard |
| Drive Service Factor | 1.5 |

Model: QEI-12
Mixed Flow Belt Drive

Operating Performance



| Static Pressure Calculations | |
|------------------------------|--------------|
| External SP | 4.5 in. wg |
| Belt Tube | 0.363 in. wg |
| Total External SP | 4.863 in. wg |

Nameplate Model: QEI-12-300-50-G

Sound Power by Octave Band

| Sound Data | 62.5 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | LwA | dBA | Sones |
|------------|------|-----|-----|-----|------|------|------|------|-----|-----|-------|
| Inlet | 86 | 89 | 82 | 79 | 79 | 78 | 76 | 72 | 85 | 74 | 24 |
| Outlet | 93 | 89 | 86 | 83 | 85 | 82 | 78 | 75 | 89 | 77 | 30 |
| Radiated | 87 | 83 | 75 | 66 | 67 | 64 | 60 | 57 | 74 | 62 | 13.6 |

LwA - A weighted sound power level, based on ANSI S1.4 dBA. A-weighted sound pressure level, based on 11.5 dB attenuation per octave band at 5 ft. dBA levels are not licensed by AMCA International. Sones - calculated using AMCA 301 at 5 ft. Inlet and outlet sound power levels are AMCA licensed.

\\us.parker.corp\GSF\TEAMS\Business Units\OU\Application Engineering\Mike Smith\Greenheck Files\JOBS\SHAKE SHAKE 1525 - COLUMBUS CIRCLE.cdw.gcf
CAPS 4.43.946 Generated by: mike.smith@parker.com Page 1 of 5



Printed Date: 12/12/2023
Job: SHAKE SHAKE 1525 - COLUMBUS CIRCLE
Mark: ESP-1
Model: QEI-12

Model: QEI-12
Mixed Flow Belt Drive

Standard Construction Features:

HOUSING: Continuously welded steel housing. Welded steel air straightening vanes. Lifting lugs. Heavy duty, steel motor supports with adjustment screws for belt tensioning. Structural parts are phosphatized and coated with Permatector.
BEARINGS, SHAFT: Heavy duty, self-aligning ball or roller face mounted bearings with extended lubrication lines.
WHEEL: Welded construction. Single thickness cambered blades.

Selected Options & Accessories:

Motor PN - 304656, Baldor Motor Model Number - EM3663T
Factory Vibration Test, 0.15 in/sec. Peak, Filter-in as measured at the fan RPM
NEMA Premium Efficient Motor - meets NEMA Table 12-12
Motor VFD Drives without Shaft Grounding Protection
Motor with Class F or Greater Insulation
Standard Drives
Finish - Coated
Bearings - L(10) Life of 120k Hours
Factory Vibration Test, 0.15 in/sec. Peak, Filter-in as measured at the fan RPM
Coating - Permatector, Concrete Gray-RAL 7023, Fan and Attached Accessories
Hanging, Isolator-Spring, Hanging, 1 Inch
Switch - NEMA-12, Toggle, For Indoor Use Only, Ship Separate
Quick opening inspection door
Inlet Flange - Punched
Outlet Flange - Punched
Companion Flange - Inlet and Outlet, Punched, Coated Steel
Extended Lube Lines - Copper
Belt Tube - Steel
Motor Cover - Steel
Mounting Rails
UL/CUL-762 - Power Vent, for Restaurant Exhaust Appliances
Drain Connection - 1 Inch Pipe, Thread w/Plug
Housing is not sealed for outdoor use
Unit Warranty: 1 Yr (Standard)

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CAPS 4.43.946 Generated by: mike.smith@parker.com Page 2 of 5

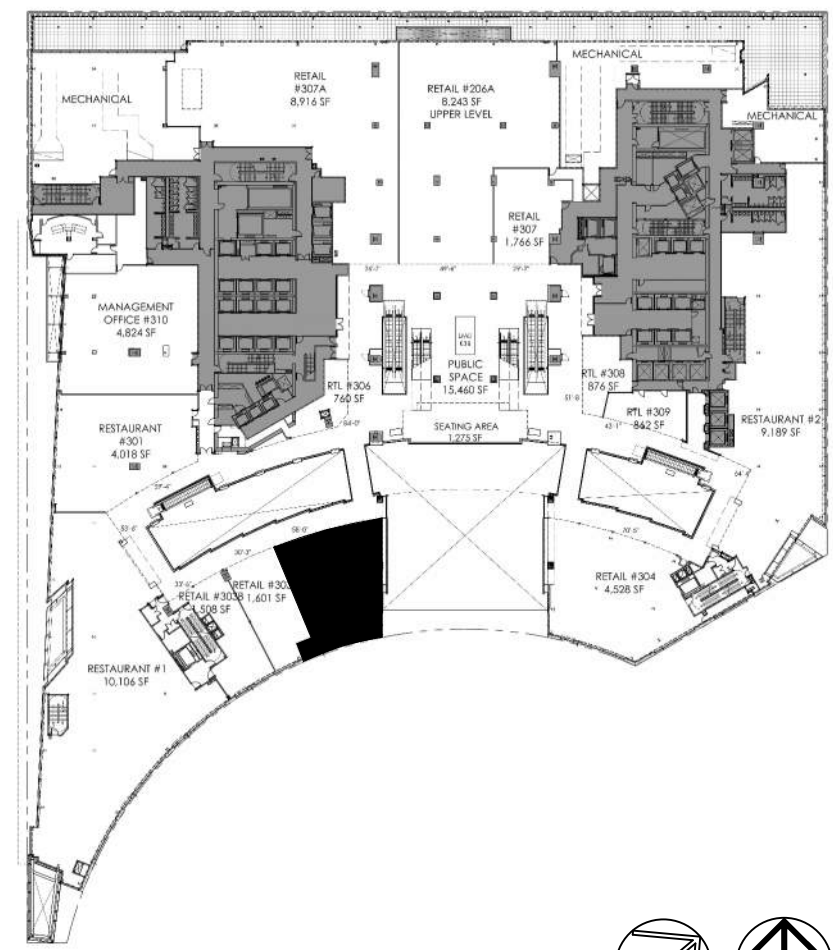
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SMOGHOG DRAWINGS

DOB NOW JOB # M00964009-11

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| SEAL/SIGNATURE: | DRAWN BY: Author |
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