


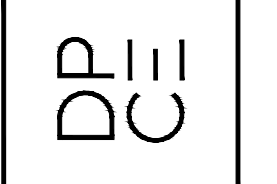
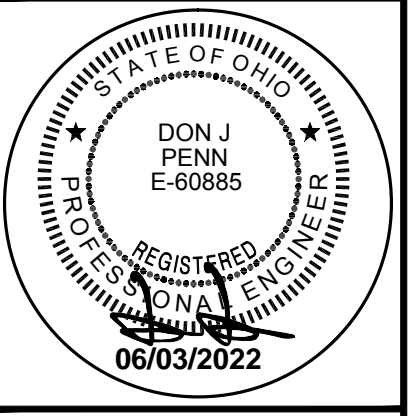
- ### CODED NOTES
- ① 2" DOMESTIC WATER SERVICE. SEE CIVIL FOR METER AND CONNECTION REQUIREMENTS.
 - ② CONNECT 4" SANITARY WASTE TO EXISTING SEWER MAIN. VERIFY REQUIREMENTS, LOCATION AND FLOW LINE AT JOB SITE.
 - ③ GREASE TRAP, SEE PLUMBING SHEETS FOR REQUIREMENTS.
 - ④ PROVIDE NEW CEC GAS METER AND PRESSURE CONTROL REGULATOR: CAPACITY 2047 CFH @ 5.0 PSI OUTLET PRESSURE. PLUMBING CONTRACTOR TO COORDINATE WITH GENERAL CONTRACTOR AND GAS UTILITY COMPANY TO HAVE NEW GAS METER INSTALLED AS REQUIRED FOR THE NEW CEC GAS SERVICE. SEE DETAIL 04/P3.2.
 - ⑤ GAS PIPING ON ROOF. PROVIDE PIPE SUPPORTS. SEE PIPE SUPPORT DETAIL 05/P3.2. PAINT EXPOSED PIPING ON ROOF WITH ZINC RICH GALVANIZING PAINT FOR CORROSION PROTECTION.

01 MECHANICAL ELECTRICAL PLUMBING SITE PLAN
 SCALE: 1"= 20'-0"




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 COLUMBUS, OH 43219
 C.E.C. ENTERTAINMENT, INC.
 1707 MARKET PLACE BLVD. SUITE 200
 IRVING, TX, 75063

COLUMBUS, OH

MEP SITE PLAN

REVISIONS

PROJECT NUMBER: CEC#205
 DATE: 06/03/2022

SHEET

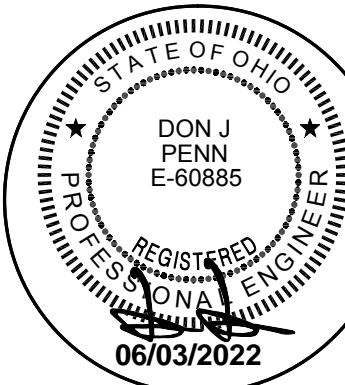
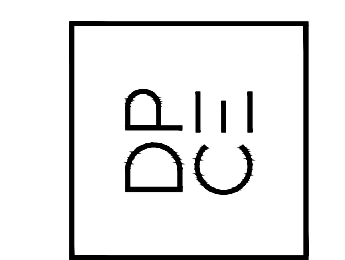
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 01 of 04

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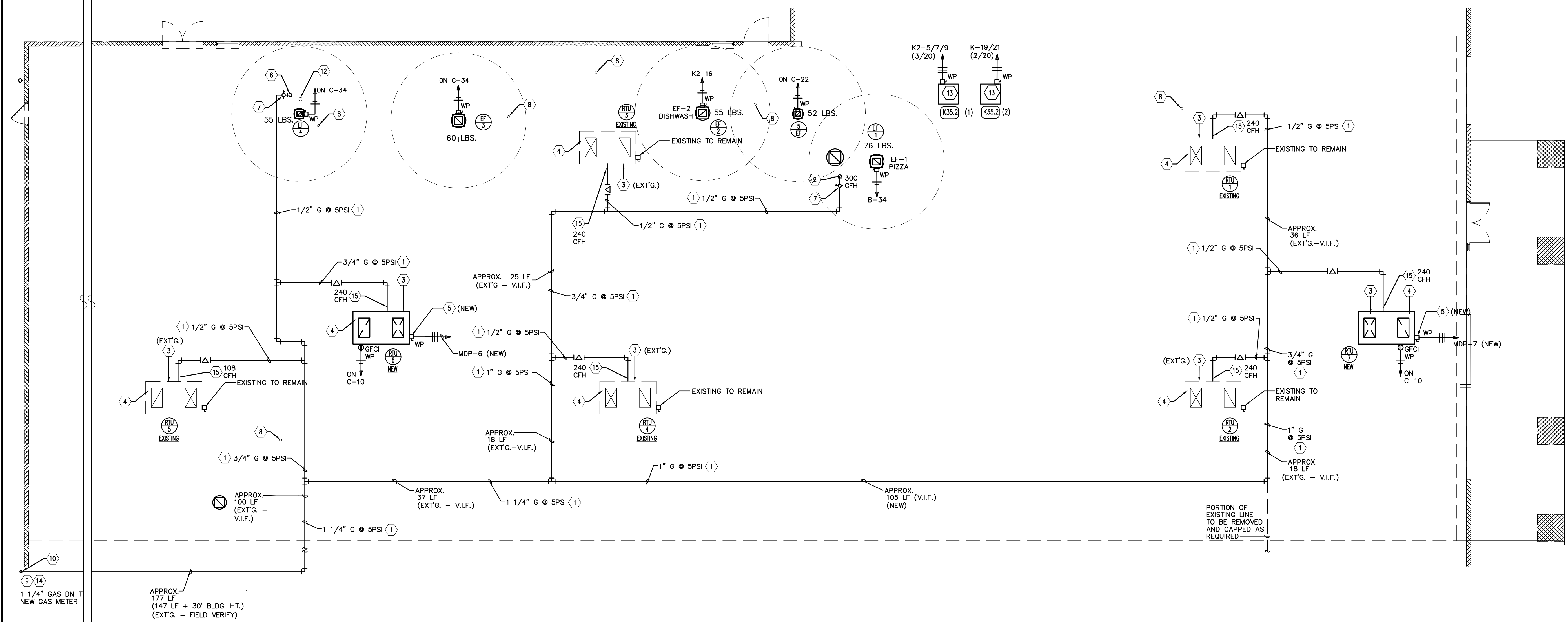
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01 MECHANICAL ELECTRICAL PLUMBING ROOF PLAN

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

CODED NOTES

- ① GAS PIPING ON ROOF. PROVIDE PIPE SUPPORTS. SEE PIPE SUPPORT DETAIL 05/P3.2. PAINT EXPOSED PIPING ON ROOF WITH ZINC RICH GALVANIZING PAINT FOR CORROSION PROTECTION.
- ② LOW PRESSURE GAS PIPING DOWN THRU ROOF AND CEILING SPACE TO PIZZA OVEN. PROVIDE GAS COCK, UNION, AND DIRT LEG AT CONNECTION. SEE DETAIL 08/P3.2.
- ③ DISCHARGE CONDENSATE DOWN THRU ROOF INSIDE CURB. PROVIDE UV RATED PVC PIPING. SEE DETAIL 10/P3.2 AND SHEET P1.1 AND P2.1 FOR CONTINUATION.
- ④ LENNOX TO PROVIDE HVAC UNITS WITH SMOKE DETECTOR INSTALLED IN SUPPLY AND RETURN AIR DUCT. GENERAL CONTRACTOR TO MAKE FINAL CONNECTION. UPON ACTIVATION SMOKE DETECTOR IS TO SIGNAL FIRE ALARM PANEL AND SHUT DOWN RTU.
- ⑤ NEMA 3R DISCONNECT SWITCH AND WP, GFCI SHALL BE PROVIDED WITH NEW RTUs.
- ⑥ LOW PRESSURE GAS PIPING DOWN THRU ROOF AND CEILING SPACE TO WATER HEATER. PROVIDE GAS COCK, UNION AND DIRT LEG AT CONNECTION. SEE DETAIL 05/P3.4.
- ⑦ GAS REGULATOR - SET AT MANUFACTURER'S RECOMMENDATIONS.
- ⑧ PLUMBING VENT THRU ROOF. INSTALL 10'-0" CLEAR FROM ANY FRESH AIR INTAKE ON ROOF (RTU'S, SUPPLY AIR FANS, ETC.). SEE VENT DETAIL 09/P3.2.
- ⑨ PLUMBING CONTRACTOR TO COORDINATE WITH GENERAL CONTRACTOR AND GAS UTILITY COMPANY TO HAVE NEW GAS METER INSTALLED. SEE DETAIL 04/P3.2.
- ⑩ GAS SUPPLY PIPING DOWN ALONG WALL TO GAS METER.
- ⑪ GAS REGULATOR AT METER, REGULATE SERVICE PRESSURE DOWN TO MINIMUM OF 2 PSI. COORDINATE WITH GAS COMPANY; SEE UTILITY CONTACTS ON SHEET P1.1.
- ⑫ WATER HEATER FLUE AND COMBUSTION AIR VENTS THRU ROOF PER MANUFACTURER, SEE INSTALLATION MANUAL.
- ⑬ PROPOSED LOCATIONS OF CONDENSING UNITS FOR WALK-IN COOLERS AND FREEZER. RUN SLEEPERS WITH THE SLOPE OF ROOF. REFER TO SHEET E3.0 FOR POWER REQUIREMENTS.
- ⑭ SEE GAS DEMAND SCHEDULE FOR GAS LOAD. COORDINATE WITH GAS COMPANY. SEE UTILITY CONTACTS ON SHEET P1.1.
- ⑮ PROVIDE GAS COCK, UNION, REGULATOR (SET AT MANUFACTURER'S RECOMMENDATIONS) AND DIRT LEG AT CONNECTION.

GAS DEMAND SCHEDULE

TAG	ITEM	DEMAND
-	RTU-1	240 CFH
-	RTU-2	240 CFH
-	RTU-3	240 CFH
-	RTU-4	240 CFH
-	RTU-5	108 CFH
-	RTU-6	240 CFH
-	RTU-7	240 CFH
K13	PIZZA OVEN 2 @ 120 CFH	300 CFH
-	GWH	199 CFH
-	TOTAL =	2047 CFH

5 PSI PRESSURE GAS
GAS PIPING SYSTEM SIZED FROM THE INTERNATIONAL FUEL GAS CODE (IFGC), TABLE 402.4 (7) BASED ON 650' (MAX.) TOTAL DEVELOPED LENGTH AT 5 PSI.

SECTION 11400 - FOOD SERVICE EQUIPMENT INSTALLATION

1. SECTION INCLUDES: INSTALLATION OF OWNER PROVIDED FOOD SERVICE EQUIPMENT. THIS EQUIPMENT SHALL BE FURNISHED, ASSEMBLED, AND SET IN PLACE UNDER SEPARATE CONTRACT, WITH FINAL UTILITY CONNECTION BY GENERAL CONTRACTOR.

2. RELATED SECTIONS
A. MECHANICAL AND ELECTRICAL SERVICES AND FINAL CONNECTIONS TO EQUIPMENT.

3. OWNER WILL PROVIDE EQUIPMENT MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR CONTRACTOR'S USE.

4. OWNER WILL PROVIDE EQUIPMENT MANUFACTURER'S OPERATION AND MAINTENANCE DATA FOR CONTRACTOR'S USE.

5. COORDINATE SIZE OF ACCESS AND ROUTE TO PLACE OF INSTALLATION.

6. OWNER PROVIDED (BY OWNER)
A. EQUIPMENT SCHEDULED ON THE DRAWINGS.
B. MECHANICAL REFRIGERATION SYSTEMS, INCLUDING COMPRESSOR UNITS, CONDENSERS, EVAPORATOR COILS, AND CONTROL VALVES.
C. MOTOR STARTERS.
D. WALK-IN REFRIGERATOR/FREEZER THERMOSTATS.
E. STAINLESS STEEL TRIM STRIPS, SUPPORTS AND CONNECTIONS, ATTACHMENT DEVICES, AND ACCESSORIES.

7. CONTRACTOR PROVIDED: REFRIGERANT SYSTEM INSTALLATION
A. REFRIGERANT LINES: TYPE "L" HARD COPPER TUBING.
B. FITTINGS: WROUGHT COPPER OR BRASS DESIGNED FOR USE WITH HIGH TEMPERATURE SOLDER.
C. PIPING JOINTS: WELD WITH SILVER SOLDER (SI-F6s)
D. PIPING: PROPERLY SUSPENDED FROM AN ANCHOR TO THE STRUCTURE WITH ADJUSTABLE HANGERS 6" O.C. MAXIMUM.
E. SUCTON LINES: SIZE TO HAVE MAXIMUM PRESSURE DROP OF TWO POUNDS IN MEDIUM TEMPERATURE SYSTEMS, ONE POUND IN LOW TEMPERATURE SYSTEM.
F. LIQUID LINES: SIZED TO GIVE MAXIMUM PRESSURE TO PREVENT TRAPPING OF OIL, RIGID INSULATION ON ALL SUCTION LINES TO BE ARIAFLEX INSULATION BY ARMSTRONG; 1" THICK AT MEDIUM TEMP., 1/2" THICK AT LOW TEMP. REFRIGERANT LINES IN PVC OR EMT CONDUIT TO BE SEALED AT BOTH ENDS WITH DOW CORNING 3-6546 SILICONE RTV FOAM.
G. EVACUATION AND CHARGING: AFTER COMPLETION OF THE PRESSURE TEST, THE SYSTEM SHALL BE EVACUATED USING AN APPROVED AUXILIARY VACUUM PUMP. CONNECTIONS FOR EVACUATIONS TO BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

8. ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
DELIVERY, HANDLING AND STORAGE
A. DELIVERY: UPON RECEIVING EQUIPMENT, CHECK CRATES/CARTONS TO IDENTIFY LABELS WITH RECEIVING P.O., ASSURE CORRECT ITEM HAS BEEN RECEIVED.
B. HANDLING: UNCRATE EQUIPMENT IN ORGANIZED MANNER. TAKE CARE NOT TO MISPLACE LOOSE PARTS, ACCESSORIES, ASSEMBLY AND OPERATING INSTRUCTIONS, AND WARRANTY CARDS. KEEP UTILITY HOOKUP NOTES AND TAGS ON EQUIPMENT UNTIL AFTER CONNECTIONS ARE MADE. ASSEMBLE IN WORKMANSHIP MANNER IN ACCORD WITH MANUFACTURER'S DIRECTIONS, TAKING CARE TO MAKE SURE FASTENERS ARE TIGHT AND COMPONENTS ARE ALIGNED AND SQUARE.
C. STORAGE: STORE EQUIPMENT CLEAR OF FLOOR IN MANNER TO PREVENT WARPING, TWISTING OR SAGGING.

9. INSTALLATION
A. INSTALL ITEMS IN ACCORD WITH MANUFACTURER'S INSTRUCTIONS AND FABRICATOR'S SHOP DRAWINGS. INSTALL IN ACCORD WITH LOCAL COVERING HEALTH BUILDING AND SAFETY AND FIRE PROTECTION CODES AND REGULATIONS AND NEMA, UL, A.G.A. ASME, AND NFPA.
B. ELECTROLYSIS: INSULATE TO PREVENT ELECTROLYSIS BETWEEN DISSIMILAR METALS. PROVIDE SEALANT TO ACHIEVE CLEAN JOINT WITHOUT CREVICES.
C. EQUIPMENT
1. GENERAL: SET IN PLACE AND POSITION PER KITCHEN EQUIPMENT PLAN, READY FOR UTILITY HOOK UP. AFTER UTILITY HOOKUPS ARE MADE, LEVEL AND SECURE TO CONCRETE. DISHWASHER COMPLETELY CLOSE AND SEAL GAPS, JOINTS AND SEAMS BETWEEN FIXTURES/EQUIPMENT AND WALLS, CEILING AND FLOORS WITH STAINLESS STEEL TRIM STRIPS AND/OR CLEAR SILICONE SEALANT TO PREVENT TRAPPING OF OIL OR SEAMS OVER 1/4" NCH VIDE.
2. REFRIGERANT PIPING: INSTALL COPPER TUBING AND FITTINGS. CUT WITH PIPE CUTTERS AND RESHAPE WITH SIZING TOOL. EXPOSE PIPING TO VIEW AS REQUIRED BY AMERICAN STANDARD SPECIFIC CODE FOR MECHANICAL REFRIGERATION. FOR EXPOSED AREAS OR ACCESSIBLE FURRED CEILING SPACES, USE HARD COPPER TUBING. RUN EXPOSED TUBING IN SUCH MANNER AS TO PREVENT DAMAGE FROM ACTIVITIES IN AREAS, OTHERWISE RUN TUBING IN PIPE OR CONDUIT.
a. SUCTION LINES: SIZE TO GIVE MAX PRESSURE DROP FROM EVAPORATOR TO MACHINE OF 2 LB. FOR HIGH TEMP SYSTEM AND 1 LB. FOR FREEZER SYSTEM. ALLOWING GAS VELOCITIES OF NOT LESS THEN 750 RPM IN HORIZONTAL RUNS AND 1500 RPM IN VERTICAL RISERS. SIZE LIQUID LINES TO GIVE MAX. PRESSURE DROP OF 3 LBS. FROM RECEIVER TO EVAPORATOR.
b. TUBING RUNS: ELEVATION TO PREVENT TRAPPING OF OIL.
c. TIES: SECURE SUCTION AND LIQUID LINES FOR EACH SYSTEM TOGETHER, EXCEPT WHEN RUN THROUGH CONDUIT; 24 INCH INTERVALS WITH BLACK PLASTIC ELECTRICAL TAPE WITH 2 WRAPS MINIMUM.
d. INSULATION: INSULATE REFRIGERANT SUCTION LINES OUTSIDE OF REFRIGERATED COMPARTMENTS BACK TO COMPRESSORS.
e. HANGERS AND SUPPORTS: PROVIDE ADJUSTABLE HANGERS, ANCHORS OR STRAPS REQUIRED FOR PROPER SUPPORT OF PIPING
NOT RUN IN CONDUIT. SPACE HANGERS NOT TO EXCEED 10 FEET O.C. AND CLOSER WHERE REQUIRED FOR PROPER SUPPORT OF SMALL PIPING. PROVIDE INSULATED REFRIGERANT PIPING WITH APPROVED TYPE SLEEVES AT HANGER POINTS.
f. WALK-IN COOLER FREEZER BOXES: TRANSIT LEVEL FLOOR SCREENS PRIOR TO WALL AND CEILING PANEL ERECTION. SEAL WALL AND/OR CEILING PENETRATIONS FOR REFRIGERANT CONDUITS AND REFRIGERATION LINES. ETC. TO PREVENT FROST AND CONDENSATE BUILD-UP. ELECTRICAL CONDUITS, ON EXTERIOR OF BOX.
g. OIL SEPARATORS: PROVIDE LOW TEMPERATURE OPERATIONS OF SYSTEM, RETURN LINE CONNECTED TO TOP OF CRANKCASE ABOVE OIL LEVEL. PROVIDE EXPOSED OIL RETURN LINES WITH SHUT-OFF VALVES OF PACKLESS STEM TYPE.
h. EVAPORATOR COILS: SUPPORT BY HANGERS UTILIZING FISH PLATES
ON TOP OF WALK-IN UNIT A FULL 4 INCHES CLEAR FROM UNDERSIDE OF CEILING PANELS.
i. FLUORESCENT LIGHT FIXTURES: INSTALLED BY LOCAL MANUFACTURER'S REPRESENTATIVE INSTALLER.

DIVISION 15 MECHANICAL
SECTION 15100 GENERAL MECHANICAL REQUIREMENTS

1. SCOPE OF WORK
B. AIR CONDITIONING AND HEATING, HOODS AND EXHAUST FANS BY OWNER. INSTALLED BY CONTRACTOR. FACTORY BUILT AIR CONDITIONING AND HEATING UNITS OF THE SINGLE ZONE ROOFTOP PACKAGE, FILTERS, FANS, MOTORS, DRIVES, HVAC UNITS, HOODS, ETC.
C. AIR DISTRIBUTION SYSTEM, SHEET METAL DUCTWORK, VOLUME DAMPERS, SPLITTER DAMPERS, TURNING VANES, AIR CONTROL DEVICES, GRILLES, REGISTERS, DIFFUSERS, FLEXIBLE DUCT, INSTALL PER SMACNA STANDARDS. FIBERGLASS DUCT BOARD IS NOT AN ACCEPTABLE ALTERNATIVE.
D. PLUMBING: SOIL, WASTE AND VENT PIPING, DOMESTIC HOT AND COLD WATER DISTRIBUTION, HOT WATER GENERATORS, FIXTURES, GREASE TRAPS, VENT CONDENSATE LINES OF HVAC AND MISCELLANEOUS EQUIPMENT, UNDERFLOOR OR OVER HEAD SODA, REFRIGERANT LINE CONDUIT AND/OR ROOF LEADERS.
E. MISCELLANEOUS SUPPLY AND EXHAUST FANS, MAKE-UP AIR UNITS.
F. TEMPERATURE CONTROLS, THERMAL INSULATION, APPARATUS FOUNDATIONS AND SUPPORTS, PIPE HANGERS AND SUPPORTS AND ALL NECESSARY TOOLS, ACCESSORIES AND APPLIANCES AS REQUIRED TO MAKE ALL SYSTEMS COMPLETE AND OPERATIVE.

2. PRODUCTS AND EXECUTION:
A. ELECTRICAL PROVISIONS FOR MECHANICAL WORK, EXCEPT FOR SUCH ITEMS AS ARE NORMALLY WIRED UP AT THEIR POINT OF MANUFACTURE AND SO ELECTRICAL CONTRACTOR, THE ELECTRICAL SUBCONTRACTOR WILL DO ALL ELECTRICAL WIRING OF EVERY CHARACTER FOR POWER SUPPLY, LINE VOLTAGE CONDUIT AND LOW VOLTAGE CONTROL WIRING AND CONDUIT. THE ELECTRICAL SUBCONTRACTOR SHALL ERECT ALL MOTORS IN PLACE READY FOR CONNECTION, EXCEPT FOR SUCH ITEMS AS ARE NORMALLY SUPPLIED WITH STARTERS INSTALLED, (HVAC UNITS, ETC) AT THEIR POINT OF MANUFACTURE. ALL OTHER STARTERS NOT FURNISHED WITH EQUIPMENT TO BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. THE ELECTRICAL SUBCONTRACTOR WILL MOUNT ALL SUCH STARTERS, AS DIRECTED, FURNISHING SUPPORTING STRUCTURES WHERE NECESSARY. THE OWNER AND OTHER CONTRACTORS SHALL FURNISH WITH EACH ITEM REQUIRING ELECTRICAL CONNECTIONS, THE NECESSARY INSTRUMENTS AND WIRING DIAGRAMS TO THE ELECTRICAL SUBCONTRACTOR. THE ELECTRICAL SUBCONTRACTOR SHALL REFER TO THE SPECIFICATIONS TO DETERMINE THE SCOPE OF THE WORK.
B. CHARGE AND OPENINGS, VARIOUS DIVISIONS, HOWEVER, THE LOCATIONS OF CHARGE OPENINGS AND OPENINGS SHALL BE DETERMINED AND COORDINATED WITH OTHER DIVISIONS IN AMPLE TIME TO AVOID CUTTING NEW CONSTRUCTION.
C. ROOF FLASHING OF DUCTS AND CURBS DIVISION 7, HOWEVER, PLUMBING VENT FLASHING AND GOUNTER FLASHING SHALL BE PROVIDED UNDER THIS DIVISION AND PER ROOF MANUFACTURER RECOMMENDATIONS.
D. OPENINGS IN ROOF DECK: WHERE PIPING, DUCTS, VENTS OR ANY OTHER MECHANICAL APPARATUS PENETRATES ROOF DECK AND OPENING IS NOT SPECIFICALLY SHOWN ON STRUCTURAL DRAWINGS, OBTAIN ARCHITECT'S APPROVAL OF APPROVED LOCAL LANDLORD APPROVED ROOF DECK INSTALLER DO CUTTING AND PAY INSTALLER COST OF CUTTING AND FLASHING OPENING.

3. PERMITS, FEES AND CODE REGULATIONS:
A. PERMITS: OBTAIN ALL PERMITS REQUIRED TO DO THIS WORK AND PAY ANY FEES REQUIRED BY SUCH PERMITS.
B. REGULATIONS: CONFORM TO ALL STATE AND LOCAL ORDINANCES AND RULINGS APPLICABLE TO THIS WORK AND IN EFFECT AT THE TIME THE WORK IS PERFORMED. APPROVAL OF VARIOUS INSURING AND INSPECTION AUTHORITIES SHALL BE OBTAINED. WHEN REQUESTED, PROVIDE ALL NECESSARY EVIDENCE OF COMPLIANCE, WITH APPLICABLE CODES, SHALL BE FURNISHED.
C. CONFLICTS: IF A CONFLICT EXISTS BETWEEN THE DRAWINGS AND/OR SPECIFICATIONS AND ANY ABOVE MENTIONED AUTHORITY, THE CONTRACTOR SHALL ADVISE ARCHITECT IMMEDIATELY IN WRITING FIVE (5) DAYS PRIOR TO PRESENTING PROPOSAL OR INCLUDE ALL COST REQUIRED TO MEET REGULATIONS.

4. STRUCTURAL AND SPACE CONDITION:
A. THE SPECIFICATIONS AND ACCOMPANYING DRAWINGS ARE INTENDED TO ENCOMPASS A SYSTEM THAT WILL NOT INTERFERE WITH THE STRUCTURAL, ELECTRICAL AND ARCHITECTURAL DESIGN OF THE BUILDING, AND WHICH WILL FIT INTO THE AVAILABLE SPACES. AS SUCH, THE CONTRACTOR SHALL REVIEW THE SCOPE OF THE DRAWINGS TO SHOW ALL NECESSARY OFFSETS AND OBSTRUCTIONS OF STRUCTURAL CONDITIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL HIS WORK IN SUCH A MANNER THAT IT DOES NOT INTERFERE WITH THE STRUCTURE, POWER PANELS, CONTROL DEVICES AND INTERFERENCES WITH ALL OTHER TRADES, PRESERVE HEADROOM, AND KEEP OPENINGS AND PASSAGEWAYS CLEAR.
B. DO NOT RUN PIPING OR DUCTWORK, OR LOCATE EQUIPMENT (WITH RESPECT TO AIR CONDITIONING) OVER OR UNDER POWER PANELS, MOTOR CONTROL CENTERS OR DRY TYPE TRANSFORMERS WITHIN 42" IN FRONT OF EQUIPMENT, OVER EQUIPMENT OR WITHIN 36" HORIZONTALLY OF SAME SPACE.

5. DRAWINGS:
A. THE DRAWINGS AS PREPARED ARE DIAGRAMMATIC BUT SHALL BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION OF THE PROJECT AND THE WORK OF THE TRADES WILL BE MADE TO CHANGE FROM THE DRAWINGS NECESSARY TO FIT THE WORK OF VARIOUS TRADES, TO CONFORM TO EQUIPMENT ACTUALLY BEING INSTALLED, OR TO CONFORM TO THE RULES OF AUTHORITIES HAVING JURISDICTION SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER.
6. AS-BUILT DRAWINGS:
A. PROVIDE AND KEEP UP-TO-DATE, A COMPLETE RECORD SET OF PRINTS WHICH SHALL BE COMPLETED BY THE CONTRACTOR. THIS RECORD SHALL BE INDIVIDUAL WHO APPROVED CHANGES, AND SHALL SHOW EVERY CHANGE FROM THE ORIGINAL CONTRACT DRAWINGS. THIS SET OF PRINTS SHALL BE KEPT ON THE JOB SITE AND SHALL BE USED ONLY AS A RECORD SET.

7. PROTECTION OF MATERIALS:
A. TAKE SUCH PRECAUTIONS AS ARE NECESSARY TO PROTECT ALL EQUIPMENT AND MATERIALS FROM DAMAGE.
8. WORKMANSHIP:
A. LABOR SHALL BE PERFORMED IN A NEAT WORKMANLIKE MANNER BY MECHANICS SKILLED IN THEIR PARTICULAR TRADES.
9. MATERIALS AND EQUIPMENT:
A. ALL MATERIALS SHALL BE NEW AND OF THE BEST QUALITY, WHERE MANUFACTURER'S NAMES AND MODEL NUMBERS ARE MENTIONED IN THE SPECIFICATIONS, AND/OR DRAWINGS. IT IS INTENDED TO SET A STANDARD OF QUALITY AND SHALL NOT BE CONSIDERED TO LIMIT COMPETITION UNLESS SPECIFICALLY STATED IN DRAWINGS OR TO DISCRIMINATE AGAINST "EQUAL" PRODUCTS OF OTHER MANUFACTURER, THE WORDS "OR APPROVED EQUAL" ARE TO FOLLOW EACH MATERIAL SPECIFICATION WHERE A SUBSTITUTION WILL BE CONSIDERED, ANY PROPOSED SUBSTITUTION MUST BE SUBMITTED FOR COMPARISON AND IT IS UNDERSTOOD THAT THE ENGINEER SHALL BE THE SOLE JUDGE IN THE MATTER. CONTRACTOR MUST INCLUDE COST OF ALL STRUCTURAL CHANGES TO FACILITATE ALTERATIONS IN BID COST.
B. GUARANTEE: FURNISH WRITTEN CERTIFIED GUARANTEE, IN ACCEPTABLE FORM, TO THE OWNER, AGAINST DEFECTIVE WORKMANSHIP, MATERIALS, AND OPERATING EQUIPMENT, FURTHER, GUARANTEE TO REBALANCE AND ADJUST ENTIRE SYSTEM OR ANY PART THEREOF, AS REQUIRED FOR PERFECT OPERATION FOR A PERIOD OF AT LEAST ONE (1) YEAR AFTER ACCEPTANCE, INCLUDING COST OF REFRIGERANT CHARGE, REPAIR, REPLACE AND MAKE SATISFACTORILY OPERATIVE ANY AND ALL DEFECTIVE ITEMS AND, WORK HOLDING OWNER FREE FROM ANY COST AND LIABILITY IN CONNECTION THEREWITH FOR THE TERM OF GUARANTEE. THE MANUFACTURER SHALL PROVIDE A WARRANTY ON HIS UNIT COMPRESSORS FOR A PERIOD OF FIVE (5) YEARS AND HEAT EXCHANGER FOR A PERIOD OF 10 YEARS.
5. VIBRATIONS AND NOISE:
A. EACH OF THE VARIOUS PIECES OF EQUIPMENT SHALL OPERATE WITHOUT OBJECTIONABLE VIBRATION OR NOISE. ALL ROTATING EQUIPMENT SHALL BE IN STATIC AND DYNAMIC BALANCE AND SHALL BE MOUNTED, SUPPORTED AND FASTENED SO THAT UNDESIRABLE VIBRATION WILL BE TRANSMITTED TO THE BUILDING. THE SPECIFIC SIZE OF VIBRATION ISOLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION AND SHALL BE SUBMITTED TO THE ARCHITECT FOR APPROVAL. IF, IN THE OPINION OF THE ARCHITECT, OBJECTIONABLE VIBRATION OR TRANSMISSION THEREOF TO THE BUILDING OCCURS, THE CONTRACTOR SHALL EXECUTE REMEDIAL MEASURES AS MAY BE NECESSARY TO ELIMINATE SUCH UNSATISFACTORY OPERATING CONDITIONS AT THE CONTRACTOR'S EXPENSE.

11. OPERATING INSTRUCTIONS:
A. BROCHURES: WRITTEN INSTRUCTIONS, ASSEMBLED AND BOUND IN BROCHURES, SHALL BE FURNISHED IN TRIPLICATE FOR OPERATING AND MAINTAINING ALL EQUIPMENT FURNISHED UNDER THIS DIVISION OF THE SPECIFICATIONS. INSTRUCTIONS SHALL INCLUDE ALL NORMAL OPERATING PROCEDURES, MAINTENANCE PROCEDURES, LUBRICATION TYPE AND FREQUENCY OF LUBRICATION REQUIRED, PARTS LISTS SHALL BE FURNISHED.
B. DEMONSTRATION: UPON COMPLETION AND ACCEPTANCE OF WORK BY THE OWNER, THE CONTRACTOR SHALL BE REQUIRED TO INSTRUCT THE OPERATING PERSONNEL IN THE OPERATION OF THE ENTIRE INSTALLATION. TWO SESSIONS SHALL BE HELD, ONE FOR SUMMER OPERATION AND ONE FOR WINTER OPERATION, BOTH IN THE RESPECTIVE SEASONS.
C. ADJUSTMENT LOCATION AND USE: PROVIDE, IN TRIPLICATE, SUITABLY BOUND OPERATING BOOK CONTAINING ALL EQUIPMENT, ITS LOCATION, USE AND DESCRIPTION, AND BUILDING SCHEMATICS. SUBMIT TO ARCHITECT FOR APPROVAL BEFORE PRINTING IN FINAL FORM.
D. CONTROLS: COORDINATE WORK WITH LOCAL UTILITY AND FURNISH ALL LABOR AND/OR MATERIALS (NOT FURNISHED BY UTILITY) WHICH IS REQUIRED TO PROVIDE A WORKING UTILITY TO THE JOB SITE. SUBMIT TO THE OWNER THREE (3) COMPLETE SHOP DRAWINGS IN ACCORDANCE WITH THE PROVISIONS OF SECTION 01300 OF THESE SPECIFICATIONS, INCLUDING ALL PLUMBING FIXTURES, TRIM, DRAMS, CLEANOUTS, PIPING, VALVES, INSULATION, HANGERS, SUPPORTS, EQUIPMENT AND DEVICES PROPOSED TO BE FURNISHED AND INSTALLED. SHOP DRAWINGS SHALL NOT BE REVIEWED UNLESS THEY BEAR THE REVIEW STAMP OF THE GENERAL CONTRACTOR.

12. FINAL INSPECTIONS:
A. SCHEDULE: UPON COMPLETION OF CONTRACT, THERE SHALL BE A FINAL INSPECTION OF THE COMPLETED INSTALLATION, PRIOR TO THIS INSPECTION, ALL WORK SHALL BE COMPLETED, TESTED, BALANCED, AND ADJUSTED AND IN FINAL OPERATING CONDITION.
B. PERSONNEL: A QUALIFIED PERSON REPRESENTING THE CONTRACTOR MUST BE PRESENT AT THIS FINAL INSPECTION TO DEMONSTRATE THE SYSTEM AND PREVE THE PERFORMANCE OF THE EQUIPMENT.
13. CUTTING AND PATCHING:
A. WHERE CUTTING AND PATCHING BECOMES NECESSARY TO PERMIT THE INSTALLATION OF ANY WORK UNDER THIS CONTRACT, OR SHOULD IT BECOME NECESSARY TO REPAIR ANY DEFECTS THAT MAY APPEAR IN PATCHING UP TO THE EXPIRATION OF THE GUARANTEE, SUCH CUTTING SHALL BE DONE UNDER THE SUPERVISION OF THE OWNER BY THE TRADE OF SUBCONTRACTOR WHOSE WORK IS TO BE DISTURBED. AFTER THE TRADE OF SUBCONTRACTOR HAS BEEN COMPLETED, THE TRADE OF SUBCONTRACTOR WHOSE WORK HAS BEEN DISTURBED SHALL REPAIR AND DAMAGE. THE COST OF FINAL CUTTING AND PATCHING SHALL BE PAID BY THE TRADE OF SUBCONTRACTOR REQUIRING IT TO BE DONE.
14. EXCAVATIONS AND BACKFILLING:
A. PROVIDE NECESSARY EXCAVATING AND BACKFILLING FOR THE INSTALLATION OF WORK SPECIFIED IN THIS DIVISION. TRENCHES FOR UNDERGROUND PIPING AND CONDUITS SHALL BE EXCAVATED TO REQUIRED DEPTH WITH BELL HOLES PROVIDED AS NECESSARY TO ENSURE UNIFORM BEARING. CANE SHOULD BE TAKEN TO EXCAVATE BELOW DEPTH, AND ANY EXCAVATION BELOW DEPTH SHALL BE REFILLED WITH SAND OR GRAVEL FIRMLY COMPACTED, WHERE ROCK OR HARD OBJECTS ARE ENCOUNTERED, THEY SHAL BE EXCAVATED TO A GRADE SIX (6) INCHES (6") BELOW AS SPECIFIED. AFTER THE PIPE HAS BEEN INSTALLED, TESTED AND APPROVED, THE TRENCHES SHALL BE BACKFILLED TO GRADE WITH APPROVED MATERIAL, WELL-TAMPED OR PADDED COMPACTLY IN PLACE. DO NOT PATCH BACK TO EXISTING OPERATIONS UNTL PIPING HAS BEEN INSPECTED BY THE OWNER OR BY THE LOCAL INSPECTOR OF THE MUNICIPALITY IN WHICH THE WORK IS BEING PERFORMED. DO NOT PERFORM BACKFILLING OPERATIONS EXCEPT IN THE PRESENCE OF THE OWNER OR INSPECTOR.
B. PIPING SHALL BE COVERED WITH A MINIMUM OF 12" OF PROTECTIVE FROST LINE, WHERE STREETS, SIDEWALKS, ETC. ARE DISTURBED, CUT OR DAMAGED BY THIS WORK, THE EXPENSE OF REPAIRING SAME IN A MANNER APPROVED BY THE OWNER SHALL BE PART OF THIS CONTRACT.

15. GUARANTEE:
A. THE GUARANTEE PROVISION OF THIS SPECIFICATION REQUIRES PROMPT REPLACEMENT OF ALL DEFECTIVE WORKMANSHIP AND MATERIALS OCCURRING UNDER THIS CONTRACT. THIS INCLUDES ALL WORK REQUIRED TO REMOVE AND REPLACE THE DEFECTIVE ITEM AND TO MAKE ALL NECESSARY ADJUSTMENTS TO RESTORE THE ENTIRE INSTALLATION TO ITS ORIGINAL SPECIFIED OPERATING CONDITION AND FINISH AT THE TIME OF ACCEPTANCE.
16. FIRE STOPPING
A. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR FIRESTOPPING AROUND ALL OPENINGS FOR PIPES, LINE CONDUITS, ETC. INSTALLED BY HIM. ALL FIRE WALLS, FIRESTOPPING SHALL BE PERFORMED BY AN INSTALLER WHO HAS BEEN TRAINED BY THE MANUFACTURER, OR MANUFACTURER'S REPRESENTATIVE. IN THE INSTALLATION PROCEDURES BASED ON PUBLISHED UL TESTS AND APPROVED EQUALS AS INDICATED ON THE DRAWINGS.
B. FIRESTOPPING SHALL MEET THE REQUIREMENTS OF ASTM E-814 OR UL 1479 FIRE TESTS BY A RECOGNIZED TESTING AGENCY. FIRESTOPPING SHALL ALSO CONFORM TO THE FOLLOWING GOVERNING CODES: LOCAL BUILDING CODE, STATE BUILDING CODE, NFPA 101 - LIFE SAFETY CODE AND NFPA 70 - NATIONAL ELECTRIC CODE.
C. PENETRATION:
1. CLEAN PENETRATION HOLES OF DIRT, LOOSE MATERIALS AND FOREIGN MATTER WHICH MAY AFFECT BOND OR INSTALLATION.
2. REMOVE COATINGS SUCH AS PAINT, CURING COMPOUNDS, WATER REPELLENT & SEALERS AS REQUIRED.
3. INSTALL BACKING MATERIALS TO PREVENT LIQUID MATERIAL LEAKAGE.
D. APPLICATION
1. PREPARE AND APPLY PENETRATION SEALING SYSTEMS IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. EMPLOY INSTALLATION TECHNIQUES WHICH WILL ENSURE THAT FIRESTOPPING IS DEPOSITED TO FILL AND SEAL HOLES AND OPENINGS.
3. TOOL EXPOSED SURFACES OF APPLIED SEALANT TO SMOOTH FINISH.
4. PROTECT MATERIALS FROM DAMAGE ON SURFACES SUBJECTED TO TRAFFIC.
E. PROVIDE INTUMESCENT SEALANTS AND COLLARS AT OPENINGS INVOLVING PLASTIC OR INSULATED PIPE SIMILAR TO THE METACALK SERIES 880 AND 950.
F. FIRESTOPPING BY DOW CORNING, 3M, HILTI OR METACALK MAY BE FURNISHED AT THE CONTRACTOR'S OPTION.

SECTION 15400 PLUMBING
1. SCOPE OF WORK
A. FURNISHING OF ALL LABOR, MATERIALS, TOOLS, TRANSPORTATION SERVICES, ETC. NECESSARY TO COMPLETE THE INSTALLATION OF THE PLUMBING SYSTEM AND AS DESCRIBED IN THESE SPECIFICATIONS, AS ILLUSTRATED ON THE ACCOMPANYING DRAWINGS, OR AS DIRECTED BY THE ARCHITECT.
B. ALL HOT AND COLD WATER SYSTEMS WITH COMPLETE CONNECTIONS FROM THE WATER METER, OR LANDLORD PROVIDED SUB-IN, TO ALL PLUMBING FIXTURES AND EQUIPMENT REQUIRING WATER CONNECTIONS. THESE SYSTEMS WILL BE COMPLETE WITH CONTROLS, VALVES, EQUIPMENT, DEVICES AND INSULATION.
C. ALL SOIL, WASTE, AND VENT SYSTEMS OUTSIDE AND INSIDE THE BUILDING AND SEWER CONNECTIONS TO MUNICIPAL SYSTEM OR LANDLORD PROVIDED SUB-IN, AS INDICATED ON DRAWINGS.
D. FURNISH AND SET PLUMBING FIXTURES, INCLUDING ALL THE REQUIRED TRIM AND SUPPORTS.
E. TRENCHING, PIPE BEDDING AND BACKFILLING.
F. ALL ROUGH-IN AND FINAL CONNECTION TO EQUIPMENT IN THE KITCHEN, BATH AND SERVICE AREAS, IF INDICATED ON THE DRAWINGS, INCLUDING NECESSARY TRAPS AND MISCELLANEOUS ITEMS AS REQUIRED.
G. COORDINATE WITH OWNER AND K.E.C.
H. FURNISH ALL FINAL PLUMBING CONNECTIONS TO HEATING AND AIR CONDITIONING EQUIPMENT, AND KITCHEN BAR EQUIPMENT INCLUDING CONDENSATE DRAINS, INDIRECT WASTE AND GAS PIPING. SEE KITCHEN DRAWINGS FOR REQUIREMENTS.
I. METERS AND UTILITY CONNECTIONS:
1. WATER: COORDINATE WORK WITH THE LOCAL WATER COMPANY OF LANDLORD. FURNISH ALL LABOR AND/OR MATERIAL (NOT FURNISHED BY THE WATER COMPANY), WHICH IS REQUIRED TO CONNECT TO EXISTING LINE AND/OR SET METER. INSTALL ALL PERMANENT WATER SUPPLY LINES FROM THE POINT OF CONNECTION AND COMPLETE THE WORK AS SHOWN, ALL IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL WATER COMPANY. OWNER SHALL PAY TAP FEES (IF REQUIRED), PLUMBING CONTRACTOR SHALL PAY ALL WORK RELATED INSPECTION FEES BY AUTHORITY HAVING JURISDICTION (IF REQUIRED).
2. SEWER CONNECTIONS: COORDINATE WORK WITH THE LANDLORD AND/OR LOCAL UTILITY COMPANY. ALL WORK AND MATERIALS SHALL BE IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL GOVERNING AUTHORITY. TAP FEES SHALL BE PAID BY OWNER (IF REQUIRED), PLUMBING CONTRACTOR SHALL PAY ALL WORK RELATED INSPECTION FEES BY AUTHORITY HAVING JURISDICTION (IF REQUIRED).

3. GAS: COORDINATE WORK WITH LOCAL UTILITY AND FURNISH ALL LABOR AND/OR MATERIALS (NOT FURNISHED BY UTILITY) WHICH IS REQUIRED TO PROVIDE A WORKING UTILITY TO THE JOB SITE. SUBMIT TO THE OWNER REGULATOR, FURNISH SYSTEM FROM TAPPING POINT TO AND IN THE BUILDING AS REQUIRED AND SHOWN ON DRAWINGS. OWNER SHALL PAY TAP FEES (IF REQUIRED), PLUMBING CONTRACTOR SHALL PAY ALL WORK RELATED INSPECTION FEES (IF REQUIRED).
a. GAS PIPING TO HEATING, VENTILATING AND AIR CONDITIONING EQUIPMENT, AND WATER HEATER.
b. INSTALL FIRE SUPPRESSION AND VALVES.
4. SHOP DRAWINGS:
A. WITHIN 15 DAYS AFTER AWARD OF CONTRACT, AND BEFORE ANY PLUMBING MATERIALS ARE DELIVERED TO THE JOB SITE, SUBMIT TO THE OWNER THREE (3) COMPLETE SHOP DRAWINGS IN ACCORDANCE WITH THE PROVISIONS OF SECTION 01300 OF THESE SPECIFICATIONS, INCLUDING ALL PLUMBING FIXTURES, TRIM, DRAMS, CLEANOUTS, PIPING, VALVES, INSULATION, HANGERS, SUPPORTS, EQUIPMENT AND DEVICES PROPOSED TO BE FURNISHED AND INSTALLED. SHOP DRAWINGS SHALL NOT BE REVIEWED UNLESS THEY BEAR THE REVIEW STAMP OF THE GENERAL CONTRACTOR.
5. PRODUCT HANDLING:
A. IN THE EVENT OF DAMAGE, IMMEDIATELY MAKE ALL REPAIRS AND REPLACEMENTS NECESSARY TO THE APPROVAL OF, OF AND NO ADDITIONAL COST TO THE OWNER.
6. EXAMINATION OF THE SITE:
A. ALL CONTRACTORS SUBMITTING PROPOSALS FOR THIS WORK SHALL FIRST EXAMINE THE SITE AND ALL CONDITIONS, INCLUDING LOCAL RULES AND REGULATIONS, THEREON AND/OR THEREIN. ALL PROPOSALS SHALL HAVE TAKEN INTO CONSIDERATION ALL CONDITIONS THAT MAY AFFECT THE WORK UNDER THIS CONTRACT. LACK OF THIS INFORMATION WILL NOT BE CONSIDERED AS JUSTIFICATION FOR EXTRA COST OR ALLOWANCES TO THE CONTRACT PRICE.
7. GUARANTEE:
A. ALL WORK PERFORMED UNDER THIS SECTION SHALL BE GUARANTEED TO BE FREE OF DEFECTIVE MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE OF THE WORK BY THE OWNER.
B. UPON NOTICE RECEIVED FROM THE OWNER, ARCHITECT OR ENGINEER, OF FAILURE OF ANY PART OF THE GUARANTEED EQUIPMENT DURING THE GUARNTY PERIODS, THE CONTRACTOR, AT NO ADDITIONAL COST TO THE OWNER, SHALL PROMPTLY REPAIR OR REPLACE THE DEFECTIVE PART OR PARTS WITH NEW PARTS. ALL LABOR REQUIRED TO PERFORM GUARANTEED SHALL BE INCLUDED AS PART OF THE COMPLETE WARRANTY.
8. PRODUCTS:
A. DESCRIPTION:
1. SOIL, WASTE, AND VENT PIPING: BELOW FLOOR TO 5'-0" OUTSIDE BUILDING AND YARD PIPING SHALL BE A.B.S. OR P.V.C. SCHEDULE 40 PIPE AND FITTINGS IF APPROVED BY LOCAL AUTHORITY, OR STANDARD WEIGHT COATED CAST IRON SOIL PIPE AND CAST IRON NEOPRENE GASKET FITTINGS. YARD PIPING, WHERE UNDER A SUPERIMPOSED LOAD CONDITION SUCH AS DRIVEWAY OR PARKING AREA, SHALL BE SERVICE WEIGHT CAST IRON SOIL PIPE AND CAST IRON PIPE AND GASKET FITTING. 199. ATTACHMENT TO STRUCTURE TO BE AS REQUIRED.
2. ABOVE FLOOR SHALL BE A.B.S. OR P.V.C. SCHEDULE 40 IF APPROVED BY LOCAL AUTHORITY, OR STANDARD WEIGHT CAST IRON PIPE WITH NEOPRENE RUBBER GASKETS OR HUBLESS CAST IRON PIPE WITH NEOPRENE RUBBER GASKETS AND STAINLESS STEEL CLAMPS (CLAMPS ALL OR EQUAL).
3. HOT AND COLD WATER PIPING:
a. ABOVE THE FLOOR SHALL BE TYPE "L" COPPER WITH 955 SWEAT SOLDERED AND WROUGHT COPPER FITTINGS. UNDER BUILDING SLABS SHALL BE TYPE "K" SOFT DRAIN COPPER TUBING WITHOUT JOINTS UNDER FLOOR. LOOP FROM WALL TO WALL.
b. CONDENSATE DRAIN PIPING:
i. CONDENSATE DRAIN PIPING SHALL BE GALVANIZED SCHEDULE 40 OR P.V.C. FROM HVAC ON ROOF AND OTHER EQUIPMENT UNLESS STATED OTHERWISE.
ii. CONTRACTOR SHALL FURNISH AND INSTALL 1/2" OR 1" COPPER CONDENSATE DRAINS ON COOLER/FREEZER EVAPORATOR COILS; WITH TRAP ASSEMBLY AND 2" AIR GAP ABOVE DRAIN AS SHOWN ON THE DRAWINGS. FREEZER CONDENSATE PIPING SHALL BE WRAPPED WITH HEAT TAPE WITH A MINIMUM RATING OF 10 WATTS PER LINEAL FOOT FOR ITS ENTIRE LENGTH WITHIN THE FREEZER COMPARTMENT.
5. INDIRECT WASTE PIPING: SHALL BE TYPE "L" COPPER WITH 955 SWEAT SOLDER AND WROUGHT COPPER FITTINGS. SEE PLUMBING PLAN FOR REQUIREMENTS) UNLESS OTHERWISE INDICATED.
6. GAS PIPING:
a. GAS PIPING INCLUDING TAP AND SERVICE SHALL BE INCLUDED. COORDINATE METER LOCATION WITH LOCAL AUTHORITY.
b. UNDERGROUND GAS PIPING SHALL BE PLASTIC APPROVED GAS PIPING WITH LONG RADIUS STEEL WELDING FITTINGS, PROTECT PIPE AND FITTINGS WITH TRAXET WRAPPING TAPE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. OTHER TYPE OF PIPE PROTECTION OF EQUIVALENT QUALITY WILL BE OPTIONAL WITH THIS CONTRACTOR. INSTALLATION OF GAS SERVICE PIPING AND MATERIAL SHALL MEET WITH LOCAL GAS COMPANY'S APPROVAL.
c. GAS PIPING ABOVE GROUND SHALL BE SCHEDULE 40 BLACK STEEL WITH 125 LB. BLACK MALLEABLE IRON SCREWED FITTINGS AND SUPPORTED AT INTERVALS NOT TO EXCEED 8'-0" AND AT EACH CHANGE IN HORIZONTAL OR VERTICAL DIRECTION. GAS PIPING COMPOUND AT JOINTS SHALL BE IN COMPLIANCE WITH NFPA BULLETIN NO. 54 AND LOCAL APPLICABLE CODES AND SUITABLE FOR NATURAL GAS SERVICE.
d. GAS PIPING SHALL SUPPLY HVAC UNITS, WATER HEATER AND KITCHEN EQUIPMENT IF INDICATED ON DRAWINGS BY THIS CONTRACTOR.
e. MOISTURE TRAPS SHALL BE PROVIDED AT EACH DROP FOR DROP FOR HVAC UNITS, WATER HEATER AND KITCHEN EQUIPMENT.
7. STORM DRAIN LEADER: SAME AS SOIL, WASTE & VENT PIPING.
8. INSULATION:
a. ALL WATER PIPES, RAIN LEADERS AND ETC. SHALL BE INSULATED. PIPING SHALL BE INSULATED TO PREVENT EXCESSIVE HEAT LOSS AND TO PREVENT CONDENSATION AND SWEATING. ALL PIPING SHALL BE INSULATED WITH AT LEAST 1/2" THICK FOAM INSULATION AS MANUFACTURED BY ARMSTRONG ARMAFLEX OR APPROVED EQUAL AS INDICATED ON PLANS AND NOTES. AS MUCH OF THE INSULATION AS POSSIBLE SHALL BE SLIPPED ON TO THE PIPING AS THE PIPING IS BEING CONNECTED IN ORDER TO AVOID CUTTING THE INSULATION. ALL BUTT ENDS AND ANY NECESSARY LONGITUDINAL JOINTS SHALL BE SEALED WITH RUBBER BASED ADHESIVE.
7. FIXTURES:
A. SEE DRAWINGS FOR SPECIFICATIONS.
8. FLASHINGS:
A. ALL PIPING AND VENTS PASSING THROUGH ROOF SHALL BE FLASHED WATER TIGHT WITH SIX POUND TO THE SQUARE FOOT LEADING SLEEVE FLASHING WITH BASE EXTENDING AT LEAST 12 INCHES IN EACH DIRECTION BEYOND THE OUTSIDE DIAPHRAGM OF THE PIPE. TURN SLEEVE DOWN A MINIMUM OF 1-1/2" INTO TOP OF VENT PIPE WITH LEAD FITTING SNUGLY INSIDE OF PIPE. ALL GAS VENT CAPS SHALL BE FITTED WITH SNUGLY INSIDE OF PIPE. ALL VENT CAPS SHALL BE WEATHER PROOF. VERIFY APPROVED FLASHING MATERIAL AND METHODS WITH ROOFING CONTRACTOR TO ENSURE A COMPLETE JOB. SEE DETAILS ON ARCH. SHEETS.
9. CLEANOUTS:
A. SEE DRAWINGS FOR SPECIFICATIONS.
10. EQUIPMENT:
A. WATER HEATER, FURNISHED AND INSTALLED BY PLUMBING CONTRACTOR:
1. SIZE, CAPACITY, TYPE AND MANUFACTURER AS INDICATED BY DRAWINGS. WATER HEATER SHALL BE GAS.
2. GAS WATER HEATER SHALL BE PROVIDED WITH CLASS "B" UL LABELED FLUE. SIMILAR TO METALBESTOS TYPE RV COMPLETE WITH PIPE FITTINGS, CEILING COLLAR, FIRE STOP, ROOF FLASHING, WEATHERTIGHT STORM COLLAR AND BIRD-PROOF VENT CAP. INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
3. THE WATER HEATER SHALL BE PROVIDED WITH ALL TEMPERATURE AND SAFETY CONTROLS INCLUDING ASME AND ANSI Z11.22 RATED TEMPERATURE AND PRESSURE RELIEF VALVE, GAS PRESSURE REGULATOR (IF REQUIRED), DRAIN VALVE, EXPANSION TANK, ETC. PLUMBER SHALL MAKE WATER, GAS AND GAS VENT CONNECTIONS WITH CUTOFF VALVES AND DIELECTRIC UNIONS IN WATER AND GAS LINES.
3. CLEANING AND PROTECTION:
1. THE CONTRACTOR SHALL REMOVE FROM THE JOB SITE ALL DEBRIS AND LEFTOVER MATERIALS FOR WHICH HE IS RESPONSIBLE. CLEAN ALL FIXTURES AND EQUIPMENT AND REPAIR ANY BLEMISHES IN THE FINISH. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR REPLACING FIXTURES WHERE DAMAGE RESULTS FROM FAILURE TO PROVIDE PROTECTION DURING INSTALLATION.
2. FLOUSH OUT PIPES: AFTER THE PLUMBING PIPING HAS BEEN INSTALLED, INSPECTED AND APPROVED, THE PIPING SYSTEM SHALL BE FLOUSHED TO REMOVE ANY FOREIGN MATTER FROM THE PIPES WITH CHLORINE OR HTH SOLUTION TO SANITIZE THE NEW PIPING OR AS REQUIRED BY THE LOCAL AUTHORITIES.
F. MAINTENANCE:
1. THE CONTRACTOR, THROUGHOUT THE GUARANTEE PERIOD, SHALL MAINTAIN ALL PARTS OF THE PLUMBING FIXTURES AND ASSOCIATED EQUIPMENT. ONE MONTH AFTER FINAL ACCEPTANCE OF THE BUILDING BY THE OWNER, THE CONTRACTOR SHALL GO OVER ALL THE FIXTURES AND TEST ALL WORKING PARTS AND PUT EVERYTHING IN GOOD WORKING ORDER. ALL FIXTURES, INCLUDING TRAPS, SHALL BE THOROUGHLY CLEANED AND ALL PARTS PUT IN GOOD WORKING ORDER.

SECTION 15550 - SPRINKLER SYSTEM
1. SCOPE OF WORK
A. WORK INCLUDED UNDER THIS SECTION CONSISTS OF PROVIDING LABOR, MATERIALS, APPLIANCES, EQUIPMENT, TOOLS, TRANSPORTATION, SUPERINTENDENCE AND SERVICES REQUIRED TO CONSTRUCT AND INSTALL A SPRINKLER SYSTEM AS SPECIFIED, INDICATED AND ELSEWHERE REQUIRED.
B. THE SPRINKLER SYSTEM SPECIFIED HEREIN IS REQUIRED TO MEET THE LOCAL BUILDING CODE.
C. REFER TO SECTION 15400, PLUMBING, FOR PIPING AND CHECK VALVES.
2. PRODUCTS
A. HANGERS: MUST MEET NFPA APPROVED TYPE FOR CONSTRUCTION USED.
B. SPRINKLERS
1. SPRINKLERS SHALL BE APPROVED AUTOMATIC SPRAY SPRINKLERS TO COMPLY WITH NFPA 13. SPRINKLERS SHALL BE OF OPERATING TEMPERATURE AS REQUIRED BY NFPA AND THE FIRE MARSHAL'S REQUIREMENTS. UNLESS OTHERWISE SPECIFIED, INDICATED BY METAL CABINET WITH NUMBER OF REPLACEMENT HEADS OF VARIOUS TYPES AND QUANTITIES AS REQUIRED BY INSURING AGENCY.
2. SEMI - RECESSED SPRINKLERS WITH 1/2" DISCHARGE ORIFICE IN FINISHED AREA UNLESS OTHERWISE SPECIFIED TO THE PUBLIC.
3. STANDARD CHROME PENDANT SPRINKLERS WITH SHORT ESCUTCHEON (1/2") 1/2" DISCHARGE ORIFICE IN KITCHEN & SERVICE AREAS.
C. WATER FLOW INDICATOR
1. PROVIDE AN ELECTRIC WATER FLOW INDICATOR WHERE INDICATED AND/OR REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. WATER FLOW INDICATOR SHALL BE PROVIDED WITH TIME DELAY METER, WHICH WORKS THROUGHOUT THE LIFE OF THE SYSTEM. SWITCHES SHALL BE WIRED COMPATIBLE WITH SOLENOID VALVE INSTALLED IN DOMESTIC WATER LINE.
3. EXECUTION
A. INSTALLATION
1. DRAWINGS WERE PREPARED WITH INTENT THAT ALL LINES CLEAR OBSTRUCTIONS AS PIPES, BEAMS, LIGHTS, HANGERS AND SIMILAR ITEMS. EXAMINE BUILDING AND PLANS CONFIRMING DIMENSIONS. BEFORE PIPE IS CUT, FABRICATED AND/OR INSTALLED, TO DETERMINE IF OFFSETS ARE NECESSARY, WHERE REQUIRED, OFFSETS SHALL BE MADE WITHOUT ADDITIONAL COST TO OWNER.
2. FOLLOWING GENERAL SCHEME SHALL BE EMPLOYED WHEN LOCATING SPRINKLER HEADS UNLESS RESTRICTED BY RULES AND REGULATING BODIES.
3. UNLESS OTHERWISE INDICATED, CONCEAL PIPING IN FINISHED PORTIONS OF BUILDING AND EXPOSED SEWERHEAD LOCATIONS AND/OR REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. CONCEAL PIPING IN FURRING, PIPE SPACES, CHASES AND ABOVE SUSPENDED CEILINGS. INSTALLED EXPOSED PIPING PARALLEL OR PERPENDICULAR TO WALLS.
4. LINES AT OR ABOVE CEILING SHALL BE HELD AS HIGH AS POSSIBLE AND BE RUN TO AVOID CONFLICTS. INCLUDE FITTINGS AND MATERIAL REQUIRED TO ACCOMPLISH THIS RESULT.
5. PROVIDE SLEEVES FOR PIPING PASSING THROUGH FLOORS, CEILINGS AND MASONRY OF CONCRETE WALLS. LOCATE, SET AND ANCHOR SLEEVES.
6. PROVIDE LINTELS REQUIRED TO PROPERLY COMPLETE SPRINKLER INSTALLATION.
7. PROVIDE PLATES ON LINES PASSING THROUGH FLOORS, CEILING OR WALLS.
8. HANGERS MUST BE PROPERLY SPACED AND SECURED TO BUILDING STRUCTURE TO ADEQUATELY SUPPORT LINES. SUPPORT FROM SUSPENDED CEILINGS AND/OR SIMILAR CONSTRUCTION WILL NOT BE ACCEPTED.
9. DEVICES SHALL BE IN ACCORDANCE WITH RULES AND REGULATIONS OF NFPA AND INSURING AGENCY AND SHALL BEAR THEIR LABEL OF APPROVAL.
10. REDUCING BUSHINGS ARE NOT PERMITTED IN MORE THAN ONE OUTLET OF ANY TEE OR ANY TWO OUTLETS OF ANY CROSS. BUSHINGS ARE NOT PERMITTED IN ANY ELBOWS OR WHEN THE REDUCTION IN SIZE OF THE LINE IS LESS THAN 1/2".
11. INSTALL CHECK VALVE WHERE INDICATED ON PLANS.
B. TESTING
1. TEST SYSTEMS UNDER NORMAL OPERATING CONDITIONS AND DEMONSTRATE THAT PARTS ARE FUNCTIONING PROPERLY. CONDUCT TESTS AND DELIVER CERTIFICATES OF APPROVAL. DELIVER COPIES OF CERTIFICATES TO ARCHITECT/ENGINEER & LANDLORD.
2. TEST SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:
a. TWO HOUR, 200 POUND HYDROSTATIC TEST ABOVE/GROUND SYSTEM.
b. BUDDY COST AND RUN TESTS AS MAY BE NECESSARY TO DEMONSTRATE THAT EQUIPMENT EQUALS OR EXCEEDS CAPACITIES SPECIFIED UPON REQUEST.
c. NOTIFY ARCHITECT/ENGINEER TWENTY-FOUR HOURS BEFORE TESTING.

DIVISION 15 MECHANICAL
SECTION 15100 GENERAL MECHANICAL REQUIREMENTS

1. SCOPE OF WORK
A. THE WORK TO BE ACCOMPLISHED UNDER THIS SECTION OF SPECIFICATIONS INCLUDES THE FURNISHING OF LABOR, MATERIALS, SUPERVISION AND EQUIPMENT FOR THE COMPLETE INSTALLATION OF AIR CONDITIONING, HEATING, VENTILATING, PLUMBING, FIRE PROTECTION TOGETHER WITH ALL THE NECESSARY AUXILIARIES AND APPURTENANCES. GENERALLY THE WORK SHALL CONSIST OF, BUT IS NOT LIMITED TO, ITEMS LISTED IN THE FOLLOWING PARAGRAPHS.

11. OPERATING INSTRUCTIONS:
A. BROCHURES: WRITTEN INSTRUCTIONS, ASSEMBLED AND BOUND IN BROCHURES, SHALL BE FURNISHED IN TRIPLICATE FOR OPERATING AND MAINTAINING ALL EQUIPMENT FURNISHED UNDER THIS DIVISION OF THE SPECIFICATIONS. INSTRUCTIONS SHALL INCLUDE ALL NORMAL OPERATING PROCEDURES, MAINTENANCE PROCEDURES, LUBRICATION TYPE AND FREQUENCY OF LUBRICATION REQUIRED, PARTS LISTS SHALL BE FURNISHED.
B. DEMONSTRATION: UPON COMPLETION AND ACCEPTANCE OF WORK BY THE OWNER, THE CONTRACTOR SHALL BE REQUIRED TO INSTRUCT THE OPERATING PERSONNEL IN THE OPERATION OF THE ENTIRE INSTALLATION. TWO SESSIONS SHALL BE HELD, ONE FOR SUMMER OPERATION AND ONE FOR WINTER OPERATION, BOTH IN THE RESPECTIVE SEASONS.
C. ADJUSTMENT LOCATION AND USE: PROVIDE, IN TRIPLICATE, SUITABLY BOUND OPERATING BOOK CONTAINING ALL EQUIPMENT, ITS LOCATION, USE AND DESCRIPTION, AND BUILDING SCHEMATICS. SUBMIT TO ARCHITECT FOR APPROVAL BEFORE PRINTING IN FINAL FORM.
D. CONTROLS: COORDINATE WORK WITH LOCAL UTILITY AND FURNISH ALL LABOR AND/OR MATERIALS (NOT FURNISHED BY UTILITY) WHICH IS REQUIRED TO PROVIDE A WORKING UTILITY TO THE JOB SITE. SUBMIT TO THE OWNER THREE (3) COMPLETE SHOP DRAWINGS IN ACCORDANCE WITH THE PROVISIONS OF SECTION 01300 OF THESE SPECIFICATIONS, INCLUDING ALL PLUMBING FIXTURES, TRIM, DRAMS, CLEANOUTS, PIPING, VALVES, INSULATION, HANGERS, SUPPORTS, EQUIPMENT AND DEVICES PROPOSED TO BE FURNISHED AND INSTALLED. SHOP DRAWINGS SHALL NOT BE REVIEWED UNLESS THEY BEAR THE REVIEW STAMP OF THE GENERAL CONTRACTOR.

12. FINAL INSPECTIONS:
A. SCHEDULE: UPON COMPLETION OF CONTRACT, THERE SHALL BE A FINAL INSPECTION OF THE COMPLETED INSTALLATION, PRIOR TO THIS INSPECTION, ALL WORK SHALL BE COMPLETED, TESTED, BALANCED, AND ADJUSTED AND IN FINAL OPERATING CONDITION.
B. PERSONNEL: A QUALIFIED PERSON REPRESENTING THE CONTRACTOR MUST BE PRESENT AT THIS FINAL INSPECTION TO DEMONSTRATE THE SYSTEM AND PREVE THE PERFORMANCE OF THE EQUIPMENT.
13. CUTTING AND PATCHING:
A. WHERE CUTTING AND PATCHING BECOMES NECESSARY TO PERMIT THE INSTALLATION OF ANY WORK UNDER THIS CONTRACT, OR SHOULD IT BECOME NECESSARY TO REPAIR ANY DEFECTS THAT MAY APPEAR IN PATCHING UP TO THE EXPIRATION OF THE GUARANTEE, SUCH CUTTING SHALL BE DONE UNDER THE SUPERVISION OF THE OWNER BY THE TRADE OF SUBCONTRACTOR WHOSE WORK IS TO BE DISTURBED. AFTER THE TRADE OF SUBCONTRACTOR HAS BEEN COMPLETED, THE TRADE OF SUBCONTRACTOR WHOSE WORK HAS BEEN DISTURBED SHALL REPAIR AND DAMAGE. THE COST OF FINAL CUTTING AND PATCHING SHALL BE PAID BY THE TRADE OF SUBCONTRACTOR REQUIRING IT TO BE DONE.
14. EXCAVATIONS AND BACKFILLING:
A. PROVIDE NECESSARY EXCAVATING AND BACKFILLING FOR THE INSTALLATION OF WORK SPECIFIED IN THIS DIVISION. TRENCHES FOR UNDERGROUND PIPING AND CONDUITS SHALL BE EXCAVATED TO REQUIRED DEPTH WITH BELL HOLES PROVIDED AS NECESSARY TO ENSURE UNIFORM BEARING. CANE SHOULD BE TAKEN TO EXCAVATE BELOW DEPTH, AND ANY EXCAVATION BELOW DEPTH SHALL BE REFILLED WITH SAND OR GRAVEL FIRMLY COMPACTED, WHERE ROCK OR HARD OBJECTS ARE ENCOUNTERED, THEY SHAL BE EXCAVATED TO A GRADE SIX (6) INCHES (6") BELOW AS SPECIFIED. AFTER THE PIPE HAS BEEN INSTALLED, TESTED AND APPROVED, THE TRENCHES SHALL BE BACKFILLED TO GRADE WITH APPROVED MATERIAL, WELL-TAMPED OR PADDED COMPACTLY IN PLACE. DO NOT PATCH BACK TO EXISTING OPERATIONS UNTL PIPING HAS BEEN INSPECTED BY THE OWNER OR BY THE LOCAL INSPECTOR OF THE MUNICIPALITY IN WHICH THE WORK IS BEING PERFORMED. DO NOT PERFORM BACKFILLING OPERATIONS EXCEPT IN THE PRESENCE OF THE OWNER OR INSPECTOR.
B. PIPING SHALL BE COVERED WITH A MINIMUM OF 12" OF PROTECTIVE FROST LINE, WHERE STREETS, SIDEWALKS, ETC. ARE DISTURBED, CUT OR DAMAGED BY THIS WORK, THE EXPENSE OF REPAIRING SAME IN A MANNER APPROVED BY THE OWNER SHALL BE PART OF THIS CONTRACT.

15. GUARANTEE:
A. THE GUARANTEE PROVISION OF THIS SPECIFICATION REQUIRES PROMPT REPLACEMENT OF ALL DEFECTIVE WORKMANSHIP AND MATERIALS OCCURRING UNDER THIS CONTRACT. THIS INCLUDES ALL WORK REQUIRED TO REMOVE AND REPLACE THE DEFECTIVE ITEM AND TO MAKE ALL NECESSARY ADJUSTMENTS TO RESTORE THE ENTIRE INSTALLATION TO ITS ORIGINAL SPECIFIED OPERATING CONDITION AND FINISH AT THE TIME OF ACCEPTANCE.
16. FIRE STOPPING
A. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR FIRESTOPPING AROUND ALL OPENINGS FOR PIPES, LINE CONDUITS, ETC. INSTALLED BY HIM. ALL FIRE WALLS, FIRESTOPPING SHALL BE PERFORMED BY AN INSTALLER WHO HAS BEEN TRAINED BY THE MANUFACTURER, OR MANUFACTURER'S REPRESENTATIVE. IN THE INSTALLATION PROCEDURES BASED ON PUBLISHED UL TESTS AND APPROVED EQUALS AS INDICATED ON THE DRAWINGS.
B. FIRESTOPPING SHALL MEET THE REQUIREMENTS OF ASTM E-814 OR UL 1479 FIRE TESTS BY A RECOGNIZED TESTING AGENCY. FIRESTOPPING SHALL ALSO CONFORM TO THE FOLLOWING GOVERNING CODES: LOCAL BUILDING CODE, STATE BUILDING CODE, NFPA 101 - LIFE SAFETY CODE AND NFPA 70 - NATIONAL ELECTRIC CODE.
C. PENETRATION:
1. CLEAN PENETRATION HOLES OF DIRT, LOOSE MATERIALS AND FOREIGN MATTER WHICH MAY AFFECT BOND OR INSTALLATION.
2. REMOVE COATINGS SUCH AS PAINT, CURING COMPOUNDS, WATER REPELLENT & SEALERS AS REQUIRED.
3. INSTALL BACKING MATERIALS TO PREVENT LIQUID MATERIAL LEAKAGE.
D. APPLICATION
1. PREPARE AND APPLY PENETRATION SEALING SYSTEMS IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. EMPLOY INSTALLATION TECHNIQUES WHICH WILL ENSURE THAT FIRESTOPPING IS DEPOSITED TO FILL AND SEAL HOLES AND OPENINGS.
3. TOOL EXPOSED SURFACES OF APPLIED SEALANT TO SMOOTH FINISH.
4. PROTECT MATERIALS FROM DAMAGE ON SURFACES SUBJECTED TO TRAFFIC.
E. PROVIDE INTUMESCENT SEALANTS AND COLLARS AT OPENINGS INVOLVING PLASTIC OR INSULATED PIPE SIMILAR TO THE METAC

SECTION 15770 - HEATING, VENTILATING AND AIR CONDITIONING

- 1. WORK INCLUDED:
A. HEATING, VENTILATING AND AIR CONDITIONING WORK REQUIRED, INCLUDING HOISTING OF EQUIPMENT TO THE ROOF AND SETTING IT IN PLACE, INCLUDES, BUT NOT NECESSARILY LIMITED TO:
1. PACKAGE HEATING, VENTILATING AND AIR CONDITIONING UNITS (IF NOT EXISTING NOTED TO BE REUSED)
2. INSTALLATION OF OWNER FURNISHED EXHAUST HOOD, EXHAUST FANS AND MAKE-UP AIR UNIT (DUCTWORK FURNISHED & INSTALLED BY CONTRACTOR)
3. CLOAK & HOOD EXHAUST DUCTS, DAMPERS, GRILLS, REGISTERS AND DIFFUSERS.
4. INSULATION OF DUCTS AND PIPING.
5. HVAC CONTROLS, REMOTE TEMPERATURE SENSORS AND CONTROL WIRING.
B. GAS CONNECTIONS (IF REQUIRED SEE DRAWINGS): PLUMBING CONTRACTOR WILL BRING GAS TO HEATING, VENTILATING AND AIR CONDITIONING AND FINAL TIE-IN TO HVAC BY PLUMBING CONTRACTOR.
2. INTENT OF DRAWINGS:
A. THE DRAWINGS ARE DIAGRAMMATIC TO THE EXTENT THAT THEY DO NOT INDICATE OFFSETS, BENDS, SPECIAL FITTINGS AND EXACT LOCATIONS.
B. PIPING, DUCTWORK, APPARATUS AND EQUIPMENT SHALL BE INSTALLED TO AVOID OBSTRUCTIONS, PRESERVE HEADROOM, KEEP OPENINGS AND PASSAGEWAYS CLEAR, AND MAKE ALL OPERATING EQUIPMENT ACCESSIBLE FOR MAINTENANCE.
C. GOVERNING CODES AND STANDARDS:
1. INSTALL ALL WORK IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE STANDARDS OF SAFETY, ADOPTED AND APPROVED BY THE INSURANCE UNDERWRITERS AND THE LATEST STANDARDS RECOGNIZED BY ASHRAE AND SMACNA AND IN ACCORDANCE WITH LOCAL CODE.
2. IN CASE OF CONFLICT BETWEEN SAID CODES AND THE DRAWINGS, THE CODES SHALL GOVERN IN ALL CASES; HOWEVER, NOTIFY OWNER, BEFORE MAKING SUCH CHANGE.
3. EXAMINATIONS OF DRAWINGS AND SITE:
A. BEFORE COMMENCING THE WORK, THE CONTRACTOR SHALL CAREFULLY STUDY THE DRAWINGS, SPECIFICATIONS AND SITE. HE SHALL DEFINITELY DETERMINE IN ADVANCE THE METHODS OF INSTALLING AND CONNECTING THE APPARATUS, THE MEANS FOR GETTING THE EQUIPMENT INTO PLACE, AND SHALL MAKE THEMSELVES FAMILIAR WITH ALL OF THE REQUIREMENTS OF THE CONTRACT. EQUIPMENT SHALL PHYSICALLY FIT THE AREA ALLOCATED WITH AMPLE ACCESS FOR SERVICE.
B. THE CONTRACTOR SHALL REFER ANY DISCREPANCIES TO THE ARCHITECT FOR DECISION BEFORE PROCEEDING WITH THE WORK.
4. SUBMITTALS:
A. MATERIALS LIST: THE CONTRACTOR SHALL SUBMIT, AT HIS EXPENSE, THREE (3) COPIES OF EQUIPMENT BROCHURES IN INDEX FORM WITHIN FIFTEEN (15) DAYS AFTER CONTRACT IS SIGNED. ALL EQUIPMENT AND MATERIAL SUBMITTALS SHALL BE SUBMITTED AT ONE TIME. THE DRAWINGS SUBMITTED SHALL BEAR THE STAMP OF APPROVAL OF THE CONTRACTOR AS EVIDENCE THAT THE DRAWINGS HAVE BEEN CHECKED BY THE CONTRACTOR AND COMPLY WITH THE REQUIREMENTS OF THE CONTRACT DRAWINGS AND SPECIFICATIONS.
5. GUARANTEE:
A. FURNISH WRITTEN CERTIFIED GUARANTEE, IN ACCEPTABLE FORM, TO THE OWNER, AGAINST WORKMANSHIP, MATERIALS, AND OPERATING EQUIPMENT; FURTHER, GUARANTEE TO REBALANCE AND ADJUST ENTIRE SYSTEM OR ANY PART THEREOF, AS REQUIRED FOR PERFECT OPERATION FOR A PERIOD OF AT LEAST ONE (1) YEAR AFTER ACCEPTANCE, INCLUDING COST OF REFRIGERANT CHARGE, REPAIR, REPLACE AND MAKE SATISFACTORILY OPERATIVE ANY AND ALL DEFECTIVE ITEMS AND, WORK HOLDING OWNER FREE FROM ANY COST AND LIABILITY IN CONNECTION THEREWITH FOR THE TERM OF GUARANTEE. THE MANUFACTURER SHALL PROVIDE A WARRANTY ON HIS UNIT COMPRESSORS FOR A PERIOD OF FIVE (5) YEARS AND HEAT EXCHANGER FOR A PERIOD OF 10 YEARS.
6. COORDINATION OF OTHER TRADES:
A. THE WORK UNDER THIS SECTION SHALL BE COORDINATED WITH OTHER TRADES TO MAINTAIN A RAPID AND SMOOTH CONSTRUCTION PROGRESS WITH A MINIMUM OF INTERFERENCE.
7. PAINTING:
A. APPLY ONE (1) COAT OF ZINC CHROMATE, OR RUSTOLEUM TO BARE METAL SURFACES OF SUPPORTS, ETC. COLOR TO MATCH UNITS COLOR OR AS DIRECTED BY ARCHITECT OR OWNER.
8. CLEAN-UP:
A. ALL EQUIPMENT AND EXPOSED SURFACES SHALL BE LEFT SMOOTH AND CLEAN. ALL PLATE WORK SHALL BE POLISHED AND THE ENTIRE PREMISES SHALL BE CLEANED OF UNUSED MATERIALS, RUBBISH, AND DEBRIS AND GREASE SPOTS.
9. PRODUCTS:
A. GENERAL:
1. ALL EQUIPMENT SHALL BE THE CAPACITY AND TYPE SHOWN ON THE EQUIPMENT SCHEDULE ON THE DRAWINGS AND SHALL AS MANUFACTURED BY ONE OF THE MANUFACTURERS DESIGNATED ON THAT SCHEDULE OR SHALL BE AN EQUAL APPROVED IN ADVANCE BY THE ARCHITECT.
B. SHEETMETAL WORK
1. SHEETMETAL: PRIME STEEL SHEETS, HOT DIPPED GALVANIZED OF THE FOLLOWING GAUGES:
a. UP TO 12" WIDE OR DIAMETER, #26
b. 13" TO 30" WIDE OR DIAMETER, #24
c. 31" TO 60" WIDE OR DIAMETER, #22
d. PARTITIONS FORMING PLENUM OR SUCTION CHAMBERS, #18 GAUGE WITH 1-1/2" X 1-1/2" X 3/16" GALVANIZED IRON ANGLE AND RIVETS FOR SEAM CONNECTION AND STIFFENING.
e. EXPOSED ROUND DUCT SHALL BE SPIRAL TYPE SIMILAR TO SEMCO "SS" 78 DUAL WALL ROUND PIPE WITH #2 INSULATION PERFORATED LINER WITH ALL REQUIRED FITTINGS. PIPE SHALL BE 24-26 GA.
2. DUCT CONSTRUCTION:
a. LONGITUDINAL JOINTS: PITTSBURGH CORNER SEAMS OR SNAP LOCK.
b. TRANSVERSE JOINTS: GOVERNMENT LOCKS RIVETED AT CORNERS, CONSTRUCTED OF METAL ONE GAUGE HEAVIER THAN THAT JOINING DUCT SECTIONS. DUCTS UNDER 20" MAY BE JOINED WITH TRANSVERSE CAPSTRIPS.
c. SUPPORTS EXCEPT AS OTHERWISE SPECIFIED, ALL DUCT HANGERS SHALL BE CONSTRUCTED OF 3/4" NO. 16 GALVANIZED STRAP, SPACING NOT TO EXCEED EIGHT FOOT INTERVALS, WHERE DUCT HANGERS EXCEED SIX FEET IN LENGTH, PROVIDE ADEQUATE SWAY BRACING. ALL VERTICAL DUCTS SHALL BE SUPPORTED ON ANGLE IRON BRACKETS.
d. ELBOWS: MADE FOR AN EASY FLOW OF AIR FOR MINIMUM FRICTION, INSIDE RADIUS EQUAL TO WIDTH OF DUCT. PROVIDE ELBOWS WITH APPROVED DUCT TURNS WHERE INDICATED ON PLANS OR WHERE SPACE DOES NOT PERMIT REQUIRED RADIUS.
e. FLEXIBLE CONNECTION: AT ALL FANS, CONNECTIONS SHALL BE NEOPRENE COATED GLASS FIBER CLOTH ENDS WHICH ARE TO BE TURNED INTO ABUTTING ENDS OF SHEETMETAL OR ANGLE IRON FRAMES SO AS TO FORM A GASKET TO FORM AN AIR TIGHT JUNCTION.
f. WORKMANSHIP AND CONSTRUCTION SHALL MEET AND EXCEED THE STANDARDS AS SET FORTH BY SMACNA
C. GRILLES, REGISTERS AND DIFFUSERS:
1. SIZES: AS INDICATED ON DRAWINGS.
2. SUPPLY DIFFUSERS: AS INDICATED ON DRAWINGS.
3. RETURN AIR REGISTERS: AS INDICATED ON DRAWINGS.
D. DUCT INSULATION:
1. INSULATE ALL SUPPLY, MAKE-UP AIR AND RETURN AIR DUCTS WITH FOIL-FACED BLANKET, SEE PLANS FOR ADDITIONAL INFORMATION. (NOT REQUIRED FOR SPIRAL, ROUND DUCT)
2. MAXIMUM 25 FLAME SPREAD 50 SMOKE DEVELOP.

- E. ROOFTOP UNIT EQUIPMENT:
1. CHUCK E. CHEESE HAS AN EXCLUSIVE NATIONAL ACCOUNT AGREEMENT WITH LENNOX INDUSTRIES. PLEASE CONTACT YOUR LOCAL LENNOX SALES OFFICE FOR PRICING, OR CONTACT LENNOX NATIONAL ACCOUNT MANAGER, CHRIS MURRAY AT 1-800-367-6285.
2. UNITS SELECTED AT 80" F DB, 67" F WB, 105" F OUTDOOR AMBIENT.
3. NO UNIT LOSSES INCLUDED. ALLOW FOR WET COIL AND DIRTY FILTER.
4. PROVIDE ROOF CURB
5. PROVIDE ECONOMIZER AND BAROMETRIC RELIEF DAMPER.
6. PROVIDE TWO SETS OF 2" 30% PLEATED FILTERS. CHANGE FILTERS PRIOR TO AIR BALANCE, AND AFTER FINAL STORE CLEANING.
7. PROVIDE 7 DAY FULLY PROGRAMMABLE REMOTE THERMOSTAT IN MANAGER'S OFFICE. PROVIDE SENSOR AT LOCATION SHOWN IN DINING ROOM. THERMOSTAT TO HAVE ECONOMIZER CONTROL CAPABILITY.
8. PROVIDE UNIT WITH CO2 INDOOR AIR QUALITY SENSOR AND CONTROLS. MINIMUM O.A. SETTING @ 50% REQUIRED VENTILATION.
9. MECHANICAL CONTRACTOR TO PROVIDE AND INSTALL SMOKE DETECTOR, ELECTRICAL CONTRACTOR TO WIRE. SMOKE DETECTOR TO SIGNAL FIRE ALARM PANEL AND TURN OFF ROOFTOP UNIT WHEN ACTIVATED.
10. MECHANICAL CONTRACTOR TO PROVIDE WITH ROOFTOP UNIT NEMA 3R DISCONNECT SWITCH, WP & GFCI
10. EXECUTION:
A. INSTALLATION OF EQUIPMENT:
1. GENERAL:
a. INSTALL ALL EQUIPMENT WHERE INDICATED ON THE APPROVED CONTRACT DRAWINGS.
b. AVOID INTERFERENCE WITH STRUCTURE AND THE WORK OF OTHER TRADES. DO NOT CUT INTO LOAD CARRYING MEMBERS WITHOUT THE SPECIFIC APPROVAL OF THE ARCHITECT.
c. TEMPERATURE CONTROL SYSTEM SHALL BE AS SHOWN ON THE DRAWINGS.
B. ACCEPTANCE:
1. THE SYSTEM SHALL NOT BE CONSIDERED FOR ACCEPTANCE UNTIL THE MECHANICAL SUBCONTRACTOR HAS COMPLETED WORK AND DEMONSTRATED TO THE REPRESENTATIVE OF THE OWNER, PROPER OPERATION OF THE SYSTEM AND STRICT COMPLIANCE WITH THE SPECIFICATIONS, PARTICULARLY IN REFERENCE TO THE FOLLOWING ARTICLES OF THESE SPECIFICATIONS.
a. TESTING
b. CLEANING
c. START UP AND TEST DOCUMENT
d. TRAINING OF OPERATING PERSONNEL
e. AS-BUILT DRAWINGS
f. GUARANTEE CERTIFICATES
g. INDEPENDENT AIR BALANCE REPORT
C. AIR CONDITIONING UNIT START-UP AND TEST:
1. ALL AIR CONDITIONING EQUIPMENT SHALL BE STARTED AND CHECKED BY THE MANUFACTURER'S FACTORY SERVICE PERSONNEL. THE MANUFACTURER SHALL CORRECT ANY PROBLEMS ARISING WITH THE EQUIPMENT. THE MANUFACTURER SHALL PROVIDE A CHECKLIST OR REPORT ON THE OPERATION OF THE EQUIPMENT, WHICH SHALL BE FORWARDED TO THE ARCHITECT.
D. GUARANTEE:
1. THE GUARANTEE PROVISION OF THIS SPECIFICATION REQUIRES PROMPT REPLACEMENT OF ALL DEFECTIVE WORKMANSHIP AND MATERIALS OCCURRING WITHIN ONE YEAR OF JOB ACCEPTANCE. THIS INCLUDES ALL WORK REQUIRED TO REMOVE AND REPLACE THE DEFECTIVE ITEM AND TO MAKE ALL NECESSARY ADJUSTMENTS TO RESTORE THE ENTIRE INSTALLATION TO ITS ORIGINAL SPECIFIED OPERATING CONDITION AND FINISH AT THE TIME OF ACCEPTANCE.
11. TOILET EXHAUST FANS:
A. TOILET EXHAUST FANS: ALL COMPLETE WITH ROOF-MOUNTED CURB, COLLAR AND DAMPER. THE CONTRACTOR SHALL SET FAN CURB AND THE FAN, AND COORDINATE THE ELECTRICAL INTERLOCK WITH ELECTRICAL CONTRACTOR FOR SIMULTANEOUS OPERATION WITH ROOF-TOP UNITS.
12. EXHAUST HOOD AND FAN SYSTEM:
A. KITCHEN HOODS, SUPPLY, EXHAUST AND TOILET EXHAUST FANS: ALL COMPLETE WITH ROOF MOUNTING CURBS, COLLARS AND DAMPERS WILL BE FURNISHED TO THE JOB SITE BY OWNER UNDER SEPARATE CONTRACT. THE CONTRACTOR WILL HANG THE HOODS, SET FAN CURBS AND FANS, AND FURNISH AND INSTALL ALL INTERCONNECTING DUCTWORK AS REQUIRED BY CODE AND PER HOOD MANUFACTURER'S CUT SHEETS. TYPE II HOODS SHALL HAVE GALVANIZED SHEET METAL EXHAUST DUCTWORK AND TYPE I HOODS SHALL HAVE WELDED BLACK IRON EXHAUST DUCTWORK.
13. FIRE DAMPER
A. BASED ON RUSKIN FD-35, FIRE DAMPERS IN LOW VELOCITY DUCTWORK SHALL BE FURNISHED WITH INTERLOCKING HINGED BLADES. ALL DAMPERS SHALL BE UL APPROVED AND LABELED AND SHALL MEET ALL REQUIREMENTS OF NFPA NO. 90A. FURNISH WITH UL LABELED FUSIBLE LINKS WITH TEMPERATURE RANGES TO CONFORM TO NFPA RECOMMENDATIONS. ALL FIRE DAMPERS SHALL BE DYNAMIC TYPE.
1. DAMPERS AT WALL GRILLES, REGISTERS, ETC., SHALL BE TYPE "A" WITH BLADES IN THE AIR STREAM.
2. ALL OTHER FIRE DAMPERS SHALL BE TYPE "B" WITH BLADES, OUT OF THE AIR STREAM UNLESS OTHERWISE NOTED.
14. ACCESS DOOR
A. ACCESS DOORS SHALL BE INSULATED, AIRTIGHT, "HINGED" AND GASKETED STYLE, WITH A MINIMUM OF TWO QUICK ACTION LATCHES. DOOR SHALL BE MOUNTED IN A GALVANIZED STEEL FRAME WITH AN INSIDE "FOLD-OVER" FLANGE FOR DUCT ATTACHMENT. DOOR HEIGHT SHALL BE 24"; WIDTH SHALL BE EQUAL TO THE DUCT WIDTH OR 12" WHICHEVER IS LESS, UNLESS OTHERWISE SHOWN OR NOTED ON DRAWINGS.

- DIVISION 16 - ELECTRICAL**
SECTION 16050 - GENERAL NOTES AND SPECIFICATION
1. GENERAL:
A. CONTRACTOR SHALL PROVIDE ALL NECESSARY MATERIALS, LABOR, TOOLS, TRANSPORTATION, SUPERINTENDENCE AND RELATED ITEMS TO INSTALL A COMPLETE AND FULLY OPERATIVE INTERIOR AND EXTERIOR ELECTRICAL SYSTEM AS SPECIFIED HEREIN, SHOWN ON THE DRAWINGS AND ELSEWHERE REQUIRED.
B. ALL OUTLETS, FIXTURES AND EQUIPMENTS SHALL BE FULLY CONNECTED TO PROPER SOURCES OF POWER SUPPLY AND LEFT READY FOR USE.
C. PROVIDE ALL EXCAVATION AND TAMP-BACKFILL AS REQUIRED TO COMPLETE WORK. CORRECT ANY SETTLING DURING GUARANTEE PERIOD TO OWNER'S SATISFACTION.
D. PROVIDE ALL NECESSARY CUTTING AND PATCHING AS REQUIRED TO COMPLETE WORK. PATCHING SHALL BE DONE BY MECHANICS SKILLED AT THEIR WORK. ALL OPENINGS SHALL BE FILLED AND PATCHED TO CONFORM TO FIRE REGULATIONS.
E. COOPERATE WITH OTHER TRADES: MAKE KNOWN TO OTHER TRADES ARRANGEMENT OF ELECTRICAL WORK AND EXAMINE WORK OF OTHER TRADES TO AVOID CONFLICTS. EXAMINE DRAWINGS OF OTHER TRADES TO DETERMINE EXACT EQUIPMENT LOCATIONS OF POWER REQUIREMENTS AND CONTROLS. EXAMINE MANUFACTURERS' SHOP DRAWINGS TO DETERMINE ROUGHING-IN REQUIREMENTS.
F. PERMITS, FEES & CODES: PAY ALL COST FOR PERMITS, FEES AND INSPECTIONS REQUIRED BY AUTHORIZED AGENCIES HAVING JURISDICTION OVER ELECTRICAL WORK. ELECTRICAL SYSTEM SHALL CONFORM TO REQUIREMENTS OF THE MOST CURRENT NATIONAL, STATE AND LOCAL ELECTRICAL CODES, LOCAL AUTHORITIES AND UTILITY COMPANY.
G. ALL ELECTRICAL MATERIALS SHALL BE NEW, LISTED AND LABELED BY UL AND SHALL CONFORM TO INDUSTRY STANDARDS, PARTICULARLY NEMA, NFPA, N.E.C. & OTHERS.
H. INCANDESCENT LIGHTING DIRECTORIES IN PANEL BOARD WITH CLEAR PLASTIC SHIELD, PROVIDE ENGRAVED PLASTIC LOAD NAMEPLATES ON ALL DISCONNECT SWITCHES, MOTOR STARTERS AND CONTROL DEVICES.
I. TESTS: ENTIRE ELECTRICAL SYSTEM SHALL BE FULLY TESTED AND CORRECTED OR ANY SHORT CIRCUITS, OPEN GROUNDS, FAULTY WIRING AND INCORRECT CONNECTIONS.
J. GUARANTEE: COMPLETE ELECTRICAL SYSTEM INCLUDING ALL MATERIALS, EQUIPMENT AND LABOR SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR BEGINNING WITH DATE OF ACCEPTANCE OF BUILDING BY OWNER.
K. EACH BIDDER SHALL, BEFORE SUBMITTING A PROPOSAL, VISIT AND EXAMINE THE SITE IN ACCORDANCE WITH DIVISION 1 TO SATISFY HIMSELF AS TO MATERIALS AND SCOPE OF THE NEW CONSTRUCTION AND ANY DIFFICULTY ATTENDING THE PERFORMANCE OF THE WORK.
L. THE SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE, CLAIMS MADE SUBSEQUENT TO THE TIME OF SUBMISSION OF THE PROPOSAL FOR LABOR, EQUIPMENT AND MATERIAL REQUIRED FOR DIFFICULTIES ENCOUNTERED, WHICH COULD HAVE BEEN FORESEEN HAD AN EXAMINATION BEEN MADE, WILL NOT BE RECOGNIZED.
M. WORKMANSHIP: ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN NEAT, WORKMANLIKE MANNER. UNSIGHTLY INSTALLATIONS SHALL BE REMOVED OR REWORKED AT NO ADDITIONAL EXPENSE TO THE OWNER.
SECTION 16121 - BASIC MATERIALS AND METHODS
1. GENERAL:
A. SECTION 16A APPLIES TO ALL WORKS HEREUNDER AND SHALL INCLUDE CONDUIT, BOXES, WIRE, WIRING DEVICES, LIGHTING FIXTURES AND RELATED MATERIALS.
2. CONDUIT:
A. CONNECTIONS TO EQUIPMENT, WHICH SHALL BE MADE WITH THREE FEET FLEXIBLE LIQUID-TIGHT CONDUIT WITH LIQUID-TIGHT CONNECTORS.
B. CONNECTIONS TO RECESSED LIGHTING FIXTURES SHALL BE MADE WITH SIX FEET OF FLEXIBLE CONDUIT FROM A JUNCTION BOX. LOCATE JUNCTION BOX TO PREVENT RELOCATION OF THE LIGHT FIXTURE.
C. INTERMEDIATE GRADE CONDUIT WITH THREE-DRIP FITTING.
D. SHALL BE PROVIDED IN SLAB-ON-GRADE, OUTSIDE BUILDING, BURIAL BELOW GRADE AND IN WET LOCATIONS.
E. ALL OTHER CONDUIT SHALL BE ELECTRIC METALLIC TUBING WITH COMPRESSION TYPE FITTINGS, EXCEPT EXTERIOR EXPOSED CONDUIT SHALL BE RIGID GALVANIZED CONDUIT.
3. BOXES:
A. CONCEALED BOXES SHALL BE 4-INCH SQUARE GALVANIZED STEEL WITH GALVANIZED EXTENSION RINGS, TOTAL DEPTH OF NOT LESS THAN 2-1/2 INCHES.
B. SURFACE MOUNTED BOXES SHALL BE PRESSED GALVANIZED STEEL, UTILITY TYPE.
C. GANGABLE SECTIONAL SWITCH BOXES ARE SPECIFICALLY NOT ALLOWED.
4. WIRE & CABLE (600V AND LESS):
A. THE WIRE MEETING REQUIREMENTS BELOW SHALL BE SUITABLE FOR SECONDARY POWER AND LIGHT CIRCUITS AND CONTROL CIRCUITS WITHIN THE LIMITATIONS OF THESE SPECIFICATIONS.
C. INSULATED WIRE NO. 8 AWG AND LARGER SHALL BE STRANDED.
D. ALL WIRE SHALL BE BROUGHT TO THE JOB IN UNBROKEN PACKAGES, AND SHALL BEAR THE DATE OF MANUFACTURING AND SHALL NOT BE OLDER THAN TWELVE MONTHS.
E. TYPE OF WIRE SHALL BE AS FOLLOWS:
1. UNLESS OTHERWISE SPECIFIED OR INDICATED OTHERWISE ON DRAWINGS, ALL #12 AND #10 WIRE SHALL BE THHN AND ALL WIRE #8 AND LARGER SHALL BE THHN-THWN TYPE.
2. WIRING ADJACENT TO HEAT PRODUCING EQUIPMENT SHALL BE TYPE AVA.
3. NO WIRE SMALLER THAN #12 GAUGE SHALL BE USED, EXCEPT FOR SIGNAL OR CONTROL SYSTEMS OR WHERE OTHERWISE INDICATED. WIRE SHALL BE COPPER, 600 VOLT MINIMUM RATING, EXCEPT FOR SPECIAL SYSTEMS.
4. UNLESS NOTED OTHERWISE, ALL CONDUCTORS SHALL BE SOFT DRAWN COPPER CONFORMING TO THE LATEST ASTM SPECIFICATIONS AND THE LATEST REQUIREMENTS OF NEC, UNLESS OTHERWISE NOTED OR SPECIFIED. ALL INSULATION SHALL BE RATED 600 VOLT.
5. ALL WIRE SHALL BE AS MANUFACTURED BY GENERAL CABLE CO., PHELPS DODGE, ANACONDA, OR A CABLE EQUIVALENT.
6. ALL WIRE SHALL BE INSTALLED IN CONDUIT AND UNCOLOR-CODED. ALL WIRE SHALL BE 98% CONDUCTIVE COPPER, RATED FOR MAXIMUM OF 600 VOLTS.
7. WIRE CONNECTORS: WIRE CONNECTORS FOR SIZED #10 AWG AND LESS SHALL BE "PRESS-SNURE", IDEAL "WRAP-CAP", T&B "STAKONS" OR 3M "SCOTCHLOK". CONNECTORS FOR WIRE SIZE #8 AND LARGER SHALL BE T&B OR BURNDY METHODS USING HYDRAULIC PRESSES.
5. ELECTRIC TAPE SHALL BE JOHNS-MANVILLE "DUTCH-BRAND" 3M," SCOTCH BRANCH," OR PLYMOUTH "SLIPKNOT BRAND".
6. WALL SWITCHES SHALL BE AS FOLLOWS OR APPROVED EQUAL WITH COLOR AS DIRECTED BY ARCHITECT:
A. 20A, SP, 125/277V, HUBBELL #1221.
B. 20A, 3W, 125/277V, HUBBELL #1223.
C. 20A, 4W, 125/277V, HUBBELL #1224.
D. 20A, SP, 125/277V, WITH PILOT LIGHT -HUBBELL #1221-PL.
E. 20A, SP, 125/277V, WEATHERPROOF - HUBBELL #1281/1795.
F. 20A, SP, 125/277V KEYED SWITCH, HUBBELL #1221-L.
7. RECEPTACLES SHALL BE IVORY, EXCEPT BROWN SHALL BE INSTALLED TO MATCH FINISHES AND SHALL BE AS FOLLOWS OR APPROVED EQUAL, PROVIDE OTHER RECEPTACLES AS INDICATED ON THE DRAWINGS.
A. 20A, 125V, DUPLEX - HUBBELL #5362 (I)
B. 20A, 250V, 2W+G - HUBBELL #5461
C. 50A, 250V, 3W+G - ARROW-HART #5700, BRYANT #9630FR OR P & S #5950.
D. GROUND FAULT (20A/125V) - HUBBELL #GF-5362. PROVIDE SPRING LOADED WEATHERPROOF WHILE IN USE COVERS WHERE INDICATED.
E. CLOAK AND SIGN HANGER - ARROW-HART #5708, BRYANT #2828-GS OR HUBBELL.
8. PLATES: PROVIDE PLATEPLATES FOR ALL DEVICES INCLUDING WALL SWITCHES, RECEPTACLES, TELEPHONE OUTLETS AND WALL OUTLETS. FACE PLATES SHALL BE SATIN FINISHED STAINLESS STEEL IN ALL FOOD PREPARATION AREAS, BAR, RESTROOMS, OFFICES AND COMMERCIAL GRADE SMOOTH UNBREAKABLE PLASTIC IN LOBBY/DINING, COLOR TO MATCH DEVICES AND WALLS.
9. LIGHTING FIXTURES AND LAMPS SHALL BE FURNISHED BY OWNER THROUGH THE CONTRACTOR, AS SCHEDULED ON DRAWINGS AND CONTRACTOR SHALL INSTALL ALL LIGHTING FIXTURES. ALL RECESSED LIGHTING FIXTURES SHALL BE THERMALLY PROTECTED AS REQUIRED BY CODE.
10. LAMPS:
A. CONTRACTOR SHALL FURNISH AND INSTALL ONE COMPLETE SET OF LAMPS FOR ALL LIGHTING FIXTURES PROVIDE LABEL IN EACH FIXTURE INDICATING SIZE AND TYPE OF LAMP CORRESPONDING WITH SCHEDULE ON DRAWING. SIZE SHALL BE WORKED "MAXIMUM WATTAGE".
B. FLUORESCENT LAMPS SHALL BE STANDARD COOL WHITE, ENERGY EFFICIENT, MANUFACTURED BY GENERAL.
C. ELECTRIC WATT MISER I UNLESS NOTED OTHERWISE.
D. INCANDESCENT LAMPS SHALL BE INSIDE FROSTED WITH 2500 HOUR LAMP LIFE RATED 130 VOLTS.
11. FLUORESCENT BALLASTS SHALL BE ELECTRONIC, ENERGY EFFICIENT, MANUFACTURED BY GENERAL ELECTRIC, MAXI-MISER II, CLASS "P" OR APPROVED EQUAL.
12. RACEWAY SYSTEM
A. ALL WIRE SHALL BE (INSTALLED IN A METAL RACEWAY AND SHALL BE) CONCEALED WHERE POSSIBLE, WHERE NECESSARY TO EXPOSE THE WIRING THE RACEWAY SHALL BE INSTALLED AS INCONSPICUOUSLY AS POSSIBLE. ALL RACEWAY LINES WITH 90-DEGREE BENDS, PARALLEL WITH BUILDING LINES, SQUARE RACEWAYS, REAM SMOOTH AND MAKE-UP TIGHT. PLUG ENDS OF RACEWAYS FURRING CONSTRUCTION AND, SWAB CLEAN BEFORE PULLING WIRE OR CABLE. SUPPORT RACEWAYS FROM BUILDING STRUCTURE MEMBERS ONLY WITH APPROVED FASTENERS DESIGNED FOR THE PURPOSE.
B. RACEWAY SYSTEM SHALL BE INSTALLED TO MAINTAIN THE MAXIMUM HEADROOM WITH REQUIRED SUPPORTS FOR THE LOAD. ALL ANCHORS, STRAPS AND CLIPS SHALL BE THE TYPE DESIGNED FOR THE PURPOSE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. COMMON SUPPORTS MAY BE USED FOR MECHANICAL AND ELECTRICAL EQUIPMENT BY COORDINATING THE WORK WITH ALL TRADES.
C. ALL ELECTRICAL BOXES SHALL BE SUPPORTED FROM BUILDING STRUCTURAL MEMBERS INDEPENDENTLY OF THE CONDUIT RACEWAYS, MECHANICAL SYSTEMS OR SUSPENDED CEILING SUPPORTS. RECESSED BOXES SHALL BE FLUSH WITH SURROUNDING SURFACE. ALL BOXES AND CABINETS SHALL BE PROTECTED DURING CONSTRUCTION AND SHALL BE CLEANED BEFORE PULLING WIRE AND INSTALLING DEVICES.
D. SIZE OF CONDUIT SHALL NOT BE LESS THAN 3/4" AND NOT LESS THAN REQUIRED BY THE NATIONAL ELECTRICAL CODE.
13. WIRE: USE ONLY APPROVED TYPE WIRE-PULLING LUBRICANTS FOR WIRE PULLS. SPLICE WIRE IN ACCESSIBLE AND UL APPROVED JUNCTION BOXES. MAKE WIRE JOINTS MECHANICALLY STRONG BEFORE APPLYING THE CONNECTOR AND WHERE TAPE IS USED, WRAP EACH JOINT TO THE JOINT WITH TAPE. PROVIDE INSULATION, CLEAN AND POLISH METALLIC SURFACES BEFORE INSTALLING CONDUCTORS. APPLY PRESSURE TYPE LUGS ON STRANDED CONDUCTORS CONNECTED TO SCREW OR BOLT TYPE CONNECTIONS.
14. WIRING DEVICES: UNLESS NOTED OTHERWISE, RECEPTACLES SHALL BE INSTALLED 18" ABOVE THE FINISHED FLOOR, SWITCHES SHALL BE 48" AND CLOAK HANGERS 8'-0". RECEPTACLES NOTED ABOVE WORK COUNTERS AND CABINETS (AC) SHALL BE MOUNTED ABOVE THE BACKSPLASH. WEATHERPROOF RECEPTACLE COVERS SHALL BE WEATHERPROOF WHILE IN USE, PROVIDE A BONDING JUMPER BETWEEN THE BOX AND ALL DEVICES.
15. EQUIPMENT CONNECTIONS: PROVIDE ALL NECESSARY MOTOR STARTERS (VERIFY HOOD FANS WITH SUPPLIER), DISCONNECT SWITCHES, CONTROLS, BOXES, WIRES, ETC. AND CONNECT COMPLETE TO EACH PIECE OF EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS INDICATED ON THE DRAWINGS, WHERE EQUIPMENT RATINGS DIFFERENT FROM THAT INDICATED, CONSULT OWNER, CONSULT WITH EQUIPMENT SUPPLIER TO DETERMINE ROUGH-IN REQUIREMENTS, WHERE EQUIPMENT IS NOTED AS FUTURE, TERMINATE CIRCUIT IN JUNCTION BOX AND INSTALL SPRING WIRE NUTS ON THE ENDS OF THE CONDUCTORS.
16. LIGHTING FIXTURES:
A. PROVIDE ALL NECESSARY MOUNTING HARDWARE AND RELATED ITEMS TO PROPERLY INSTALL THE LIGHTING FIXTURES. FIXTURES SUPPORTED IN EXPOSED OR CONCEALED GRID CEILINGS SHALL BE PROVIDED WITH CLIPS. FIXTURES MOUNTED IN OR ON TILE CEILINGS SHALL BE ALIGNED WITH TILES. LIGHTING FIXTURES SHALL BE SUPPORTED FROM THE BUILDING STRUCTURAL MEMBERS EXCEPT FOR EXPOSED GRID CEILINGS WHERE A CEILING SUPPORTING WIRE SHALL BE PROVIDED AT EACH FIXTURE CORNER. DO NOT USE CEILING GRID CEILING SUPPORT WIRES FOR STRAPPING OR SUPPORT.
B. CLEANING: ALL EQUIPMENT INCLUDING PANELBOARDS, SWITCHES, WIRING DEVICES, LIGHTING FIXTURES, WALL PLATES, ETC. SHALL BE FREE OF CORROSION, DIRT, PAINT SPLATTER OR DAMAGE OF ANY SORT AT FINAL ACCEPTANCE OF THE WORK. CONTRACTOR SHALL CLEAN, REPAIR OR REPLACE SAME AS INSTRUCTED BY THE OWNER BEFORE FINAL PAYMENT.
18. POWER AND LIGHTING PANELS:
A. THE SERVICE ENTRANCE EQUIPMENT SHALL BE UL LISTED AND LABELED FOR THAT APPLICATION. BUSSING SHALL BE ALUMINUM, TIN-PLATED, BRACE BUSSING FOR 65,000 A.I.C. UNLESS NOTED OTHERWISE ON THE CONTRACT DRAWINGS.
B. LIGHTING AND POWER PANELBOARDS SHALL HAVE LOCKING DOOR AND FLUSH TRIM. BUSSING SHALL BE ALUMINUM, WITH BRACING TO SUIT INTERRUPTING RATING.
C. BREAKERS SHALL BE INDIVIDUAL MOLDED CASE, BOLT-IN STYLE, SIZED AS SCHEDULED. TWO POLE AND THREE POLE BREAKERS SHALL BE COMMON TRIP SINGLE POLE UNITS WITH HANDLETIES ARE NOT ACCEPTABLE.
D. PANELS SHALL BE CURB MOUNTED AS SHOWN ON PLANS.
E. CONTRACTOR TO VERIFY PANELBOARDS SHALL HAVE LOCKING UTILITY COMPANY FOR PROPER PANEL ASYMMETRICAL INTERRUPTING RATINGS. SUBMIT THIS INFORMATION WITH SHOP DRAWINGS AND PANELS, ALONG WITH LETTER FROM POWER COMPANY.
F. METER, C.T. CABINET, SERVICE CONDUCTORS AND CONDUIT, TRANSFORMER, ETC. SHALL BE PER LOCAL UTILITY REQUIREMENTS. COORDINATE SERVICE INSTALLATION WITH LOCAL UTILITY COMPANY, PROVIDING ALL NEEDED EQUIPMENT AND LABOR.

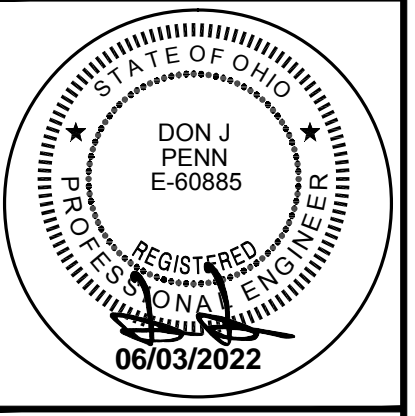
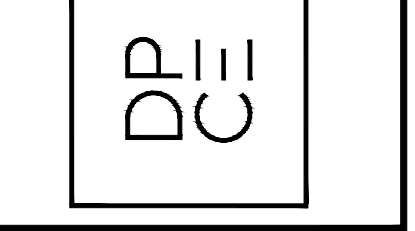
- 19. LIGHTING CONTROLS: FURNISH AS NOTED ON ELECTRICAL PLANS. UL LISTED.
20. GROUNDING:
A. EQUIPMENT GROUNDING
1. THE EQUIPMENT GROUNDING SYSTEM SHALL BE SUCH THAT ALL METALLIC STRUCTURES, ENCLOSURES, RECEPTABLES, JUNCTION BOXES, OUTLET BOXES, CABINETS, MACHINE FRAMES, PORTABLE EQUIPMENT AND OTHER CONDUCTIVE ITEMS ASSOCIATED WITH ELECTRICAL CIRCUITS OPERATE CONTINUOUSLY AT GROUND POTENTIAL AND PROVIDE A LOW IMPEDANCE PATH FOR POSSIBLE GROUND FAULT CURRENTS.
2. WIREWAYS, SWITCHGEAR, PANELBOARDS AND MOTOR CONTROL PANELS SHALL BE PROVIDED WITH AN EQUIPMENT GROUND BUS (INCLUDING LUG OR SCREW TERMINALS) SECURELY BONDED TO THE ENCLOSURE. JUNCTION BOXES AND OTHER ENCLOSURES (SIZES ABOVE 5"X5") SHALL UTILIZE AN EQUIPMENT GROUND BUS OR LUG AS REQUIRED TO SECURELY BOND THE EQUIPMENT GROUND CONDUCTOR TO THE ENCLOSURE.
3. ALL BRANCH CIRCUITS FOR POWER AND LIGHT SHALL INCLUDE A GREEN INSULATED GROUNDING CONDUCTOR. THE EQUIPMENT GROUND CONDUCTOR SHALL BE ELECTRICALLY AND MECHANICALLY CONTINUOUS FROM THE SOURCE OF SUPPLY TO THE EQUIPMENT TO BE GROUNDED.
4. LIGHTING FIXTURES SHALL BE SECURELY CONNECTED TO THE EQUIPMENT GROUND CONDUCTOR.
5. MOTORS SHALL BE CONNECTED TO THE EQUIPMENT GROUND CONDUCTOR WITH A CONDUIT GROUNDING BUSHING AND WITH A BOLTED SOLDERLESS LUG CONNECTION ON THE METAL FRAME. BOLTS, NUTS AND WASHERS SHALL BE BRONZE, CADMIUM PLATED STEEL, OR OTHER NON-CORROSIVE MATERIAL.
6. ALL CONDUIT SHALL BE CONNECTED TO THE EQUIPMENT GROUND BUS BY MEANS OF A GROUNDING BUSHING.
7. E.C. SHALL COORDINATE WITH CASH REGISTER SYSTEM SUPPLIER TO CLARIFY ANY GROUNDING AND/OR WIRING REQUIREMENTS.
B. SYSTEM GROUND
1. THE SERVICE NEUTRAL SHALL BE SOLIDLY BONDED TO THE GROUNDING ELECTRODE AT THE SERVICE, WATERLINE, BUILDING STEEL AND FOOTER REBAR. IN COMPLIANCE WITH N.E.C. ARTICAL 250.
21. INSTALLATION:
A. ALL GROUNDING CONDUCTORS SHALL BE SIZED AS PER THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE.
B. GROUND RODS: GROUND RODS SHALL BE THE COPPER CLAD STEEL TYPE END SHALL BE A MINIMUM OF 8 FEET IN LENGTH AND 3/4" INCH IN DIAMETER. GROUND RODS SHALL BE AS MANUFACTURED BY COPPERWELD STEEL COMPANY, OR AND ACCEPTABLE EQUIVALENT.
C. GROUNDING ELECTRODE CONDUCTORS SHALL BE STRANDED COPPER EQUIPMENT GROUND WIRE SHALL B THW INSULATED AND SHALL BE GREEN IN COLOR.
D. CONNECTIONS TO WATER SERVICE SHALL BE MADE WITH SUITABLE GROUND CLAMP OR LUG CONNECTION AHEAD OF THE BUILDING METER OR CUTOFF VALVE. VERIFY THE EXISTENCE AND BURIAL OF 10" OF COPPER WATER PIPE AHEAD OF AND AFTER THE WATER METER. OTHERWISE, PROVIDE UFER GROUND PER NEC.
E. CONNECTIONS TO GROUND RODS SHALL BE MADE BY A EXOTHERMAL WELD.
F. GROUNDING CABLES EMBEDDED IN THE FLOOR SHALL BE MADE IN RIGID CONDUIT.
G. GROUND RODS SHALL BE DRIVEN FULL LENGTH DIAGONALLY INTO THE EARTH AND HAVE A ONE (1) FOOT MINIMUM COVER.
H. ALL CONDUCTOR CONNECTIONS SHALL BE MADE UP TIGHT TO PROVIDE CONTINUITY OF METALLIC GROUND.
I. GROUND WIRES NOT IN CONDUIT SHALL BE SUPPORTED EVERY FIVE (5) FEET.
22. TEST:
A. THE CONTRACTOR SHALL RUN A GROUND RESISTANCE TEST AND IF THE RESISTANCE TO GROUND IS GREATER THAN 25 OHMS, ADDITIONAL GROUND RODS SHALL BE INSTALLED. THE TEST SHALL NOT BE MADE WITHIN FIVE (5) DAYS AFTER A RAIN.
B. THE CONTRACTOR SHALL PROVIDE OWNER WITH A COPY OF THE TEST PROCEDURE AND RESULTS OF THE TEST.
C. THE GROUND TEST SHALL BE MEASURED IN THE PRESENCE OF AN AUTHORIZED REPRESENTATIVE OF THE ARCHITECT. NO EQUIPMENT SHALL BE OPERATED UNTIL GROUND POTENTIAL IS VERIFIED.
23. WORKMANSHIP:
A. ALL WORK SHALL BE PERFORMED BY WORKMEN SKILLED IN THEIR TRADES AND SHALL BE TYPICAL OF THE BEST TRADE PRACTICES.
SECTION 16163 - SERVICE AND DISTRIBUTION
1. GENERAL
A. SCOPE: SECTION APPLIES TO ALL WORKS HEREUNDER AND SHALL INCLUDE SERVICE, METERING AND DISTRIBUTION.
B. SERVICE: THE ELECTRICAL DISTRIBUTION IS SIZED AS INDICATED ON THE ELECTRICAL PLANS. CONTRACTOR SHALL VERIFY SERVICE VOLTAGE WITH UTILITY COMPANY AND PROVIDE NECESSARY REVISIONS AND MODIFICATIONS REQUIRED. ELECTRICAL CONTRACTOR IS TO REFER TO THE POWER RISER DIAGRAM FOR FURTHER INFORMATION.
C. METERING: CONTRACTOR SHALL PROVIDE MODIFICATIONS NECESSARY METERING FACILITIES INCLUDING METER SOCKET, CURRENT TRANSFORMER CABINET, CONDUIT AND OTHER WORK FOR METERING REQUIRED BY THE LOCAL UTILITY COMPANY.
2. MATERIALS
A. DISCONNECT SWITCHES: SHALL BE (HEAVY-DUTY TYPE, NEMA HD) FUSED UNLESS NOTED OTHERWISE, DESIGNED TO ACCEPT ONLY REJECTION TYPE FUSES AND OPERATOR INTERLOCKED WITH THE DOOR IN THE "OFF" POSITION. SWITCHES SHALL BE MANUFACTURED BY GENERAL ELECTRIC, SQUARE D OR CUTLER-HAMMER.
B. FUSES: SHALL BE CURRENT LIMITING WITH 200,000 AMPERES INTERRUPTING CAPACITY. UL INC. CLASS RK1 AND SHALL BE DUAL ELEMENT, TIME DELAY, CLASS R REJECTION TYPE, ONE SET OF SPARE FUSES SHALL BE PROVIDED FOR EACH SIZE AND MOUNTED IN "SPARE FUSE CABINET" LOCATED AT THE SERVICE ENTRANCE. FUSE IDENTIFICATION LABELS SHALL BE MANUFACTURED BY BUSSMAN OR SHAWMUT.

- 3. EXECUTION
A. DISCONNECT SWITCHES SHALL BE INSTALLED 4'-0" ABOVE FINISHED FLOOR. ALL CABINETS SHALL BE VACUUM CLEANED BEFORE PULLING WIRE.
4. INSTALLATION OF EQUIPMENT AND FIXTURES
A. INSTALL ALL EQUIPMENT AND FIXTURES FORMING PART OF THE WORK OF THIS SECTION IN COMPLETE ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND ALL PERTINENT CODES AND REGULATIONS. MAKE ALL FINAL CONNECTIONS TO BAR AND KITCHEN EQUIPMENT.
5. LAMPING
A. LAMP ALL FIXTURES WITH LAMPS OF THE DESIGNED RATING AND PATTERN.
6. TESTING
A. GENERAL: UPON COMPLETION OF THIS PORTION AT THE WORK, FURNISH ALL EQUIPMENT AND PERSONNEL AND CONDUCT ALL TEST REQUIRED TO SECURE APPROVAL OF THE INSTALLATION FROM ALL AGENCIES HAVING JURISDICTION.
B. CRITERIA:
1. ALL SYSTEMS SHALL TEST FREE FROM SHORT CIRCUITS AND GROUNDS SHALL BE FREE FROM MECHANICAL AND ELECTRICAL DEFECTS AND SHALL SHOW AN INSULATION RESISTANCE BETWEEN PHASE CONDUCTORS AND GROUND OF NOT LESS THAN THAT REQUIRED BY THE NATIONAL ELECTRICAL CODE.
2. ALL SYSTEMS SHALL SHOW PROPER NEUTRAL CONNECTIONS.
7. CLEANING UP
A. ALL EQUIPMENT AND EXPOSED SURFACES SHALL BE LEFT SMOOTH AND CLEAN. ALL PLATE WORK SHALL BE POLISHED AND THE ENTIRE PREMISES SHALL BE CLEANED OF UNUSED MATERIALS, RUBBISH, DEBRIS AND GREASE SPOTS.



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1707 MARKET PLACE BLVD, SUITE 200
IRVING, TX, 75063
MEP SPECIFICATIONS

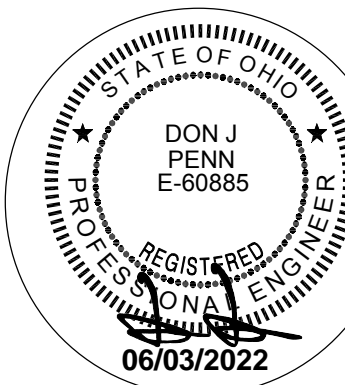
Table with 2 columns: REVISIONS, and empty rows for revision tracking.

PROJECT NUMBER: CE#205

DATE 06/03/2022



ARCHITECTURE - PLANNING - DESIGN
 CT CHANG, AIA
 1244 KARLA DRIVE, SUITE 104
 HURST, TX 76055-8750-6254



PERMIT SET
 THIS IS A PERMIT SET AS SET BY ORDINANCE AND PROCESS ESTABLISHED BY SEC. ENTERTAINMENT, INC.

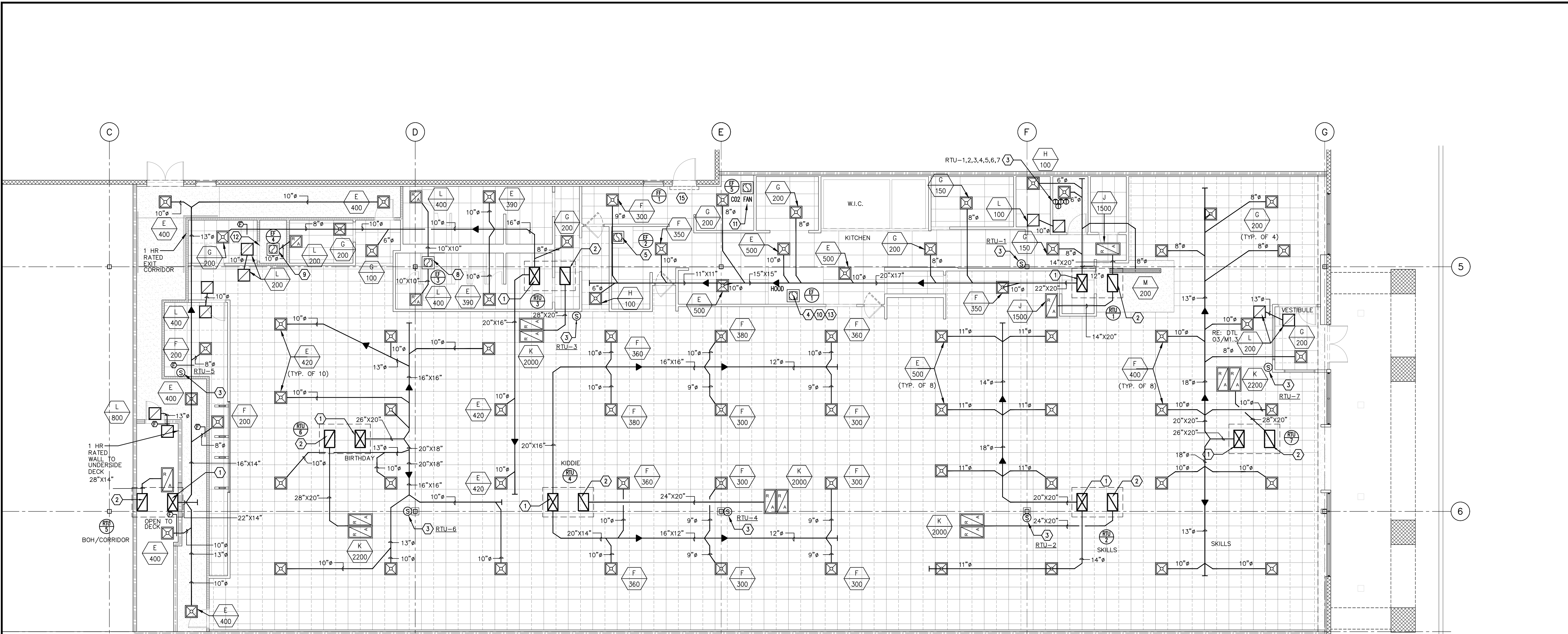
CHUCK E. CHEESE PIZZA #205
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 3888 MORSE ROAD
 COLUMBUS, OH 43219
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MECHANICAL PLAN

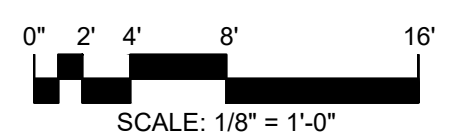
PROJECT NUMBER: CEC#205

DATE: 06/03/2022

SHEET
M1.0
 01 OF 06



01 MECHANICAL PLAN
 SCALE: 1/8" = 1'-0"



GENERAL NOTES

1. THE MECHANICAL CONTRACTOR SHALL VERIFY THAT ALL EQUIPMENT, AS SHOWN ON THESE DRAWINGS, WILL NOT CONFLICT WITH ANY DRAINS, SCUTTLERS, JOINTS, VENTS, PIPING OR EQUIPMENT.
2. ALL ROOFTOP EQUIPMENT SHALL HAVE MANUFACTURER SUPPLIED ROOF CURBS AND PIPE SEALS.
3. THE MECHANICAL CONTRACTOR SHALL PROVIDE COMPLETE INFORMATION AND COOPERATION TO THE OTHER CONTRACTOR AND TRADES AS REQUIRED FOR COMPLETION AND COORDINATION OF THE COMPLETE PROJECT.
4. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ADMINISTERING ALL WARRANTIES ON EQUIPMENT WHICH HE INSTALLS. THIS INCLUDES, BUT IS NOT LIMITED TO REFRIGERANT LINES, ETC.
5. ALL OUTSIDE AIR INTAKES SHALL BE A MINIMUM OF 10'-0" FROM ANY EXHAUST FANS OR PLUMBING VENTS.
6. PROVIDE VIBRATION ISOLATION DEVICES AND FLEXIBLE CONNECTIONS TO ALL MOVING MACHINERY.
7. ALL FLEXIBLE DUCTS SHALL BE SUPPORTED EVERY 3'-0" WITH 2" WIDE GALV. STEEL BANDS WITH A MINIMUM OF ONE PER EACH SECTION OF FLEXIBLE DUCT.
8. NO FLEXIBLE DUCTWORK SHALL BE ALLOWED ABOVE INACCESSIBLE CEILINGS.
9. ALL DUCT DIMENSIONS SHOWN ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS.
10. THE MECHANICAL CONTRACTOR SHALL COORDINATE ALL DUCT AND DIFFUSER LOCATION WITH SPRINKLER PIPING, SPRINKLER HEADS AND LIGHTING LAYOUTS AS REQUIRED.

11. THE MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR AND OTHER TRADES, ALL REQUIRED OPENINGS AND EXCAVATIONS. ALL REQUIRED OPENINGS AND FOUNDATIONS, FLOORS, WALLS AND ROOF SHALL BE CONSTRUCTED INTO THE STRUCTURE WITH THE USE OF SLEEVES, CURBS, ETC. CUTTING AND PATCHING SHALL BE HELD TO A MINIMUM.
12. ALL ITEMS PROJECTING THROUGH ROOF SHALL BE FLASHED THROUGH CURBS OR PIPE SEALS A MINIMUM OF 12" ABOVE THE ROOF. THE PIPE CURBS AND SEALS SHALL BE SUPPLIED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE ROOFING CONTRACTOR. INSURE THAT AMPLE BOOT OPENINGS ARE PROVIDED TO ACCOMMODATE ANY ELECTRICAL CONDUIT PENETRATIONS REQUIRED.
13. REFER TO ARCHITECTURAL DOOR SCHEDULE FOR DOORS THAT ARE TO BE UNDERCUT.
14. MOUNT THERMOSTATS/SENSORS AT 54" AFF UNLESS SPECIFIED DIFFERENTLY ON PLAN.
15. HOOD EXHAUST SYSTEMS SHALL BE CONSTRUCTED AND INSTALLED PER NFPA 96 AND CURRENT EDITION OF LOCAL BUILDING AND FIRE CODES

BIDDING NOTES

1. KITCHEN HOODS AND HOOD EXHAUST FANS ARE SUPPLIED BY KITCHEN EQUIPMENT CONTRACTOR AND INSTALLED BY HVAC CONTRACTOR. BID IS TO INSTALL THE ENTIRE HOOD.
2. REFER TO CAPTIVE AIR DETAIL ON SHEET M1.4 FOR BIDDING INSTALLATION COORDINATION ONLY.
3. ALL HOOD DUCTWORK IS TO BE FURNISHED AND INSTALLED BY HVAC CONTRACTOR.

TESTING AND COMISSION NOTES

1. PROVIDE A TEST AND BALANCE REPORT TO THE BUILDING DEPARTMENT AT THE TIME OF FINAL INSPECTION PER IMC 403.1.
2. PROVIDE WRITTEN CAPTURE AND PERFORMANCE TEST RESULTS FOR HOOD EXHAUST AT TIME OF FINAL INSPECTION PER IMC 506 & 507.
3. PROVIDE (DELIVER) COMMISSIONING REPORT TO THE OWNER WITHIN 90 DAYS OF THE CERTIFICATE OF OCCUPANCY PER IECC C408.2.5.4

CODED NOTES

- ① SUPPLY AIR DUCT UP THRU ROOF TO RTU. SIZE AS INDICATED. TRANSITION IN VERTICAL TO UNIT OPENING SIZE. FIELD VERIFY.
- ② RETURN AIR DUCT UP THRU ROOF TO RTU. SIZE AS INDICATED. TRANSITION IN VERTICAL TO UNIT OPENING SIZE. FIELD VERIFY. REFER TO DETAIL 09/M1.3.
- ③ TOUCH THERMOSTATS WITH REMOTE SENSORS TO MATCH UNIT TO BE REMOTELY LOCATED IN MANAGERS OFFICE AS SHOWN ON THIS SHEET. M.C. TO INSTALL THERMOSTAT AND SENSOR. THERMOSTAT TO HAVE ECONOMIZER CONTROL CAPABILITY. LABEL THERMOSTAT IN OFFICE FOR EACH APPROPRIATE ZONE.
- ④ 19"x10" EXHAUST FROM TYPE I HOOD TO BE 16 GA WELDED BLACK STEEL IN A 1 HOUR VENTED ENCLOSURE BY THE MECHANICAL CONTRACTOR. EXTEND UP THRU ROOF TO EE-1. OFFSET AS REQUIRED TO MAINTAIN A 10'-0" MINIMUM CLEARANCE FROM RTU AIR INTAKE.
TYPE I-HOODS SHALL BE DESIGNED AND INSTALLED TO AUTOMATICALLY ACTIVATE THE EXHAUST FAN WHENEVER COOKING OPERATIONS OCCUR. THE ACTIVATION OF THE EXHAUST FAN SHALL OCCUR THROUGH AN INTERLOCK WITH THE COOKING APPLIANCES BY MEANS OF HEAT SENSORS OR BY MEANS OF OTHER APPROVED METHODS. UPON ACTIVATION OF THE TYPE I HOOD FIRE SUPPRESSION SYSTEM ALL POWER UNDER THE HOOD (GAS AND ELECTRIC) AND THE MAKE-UP AIR SYSTEM SHALL SHUT OFF WHILE THE EXHAUST FAN STAYS ON.
- ⑤ 10x10 DISHWASH EXHAUST DUCT FROM TYPE J EXHAUST GRILLE UP THRU ROOF TO EE-2. TRANSITION AS REQUIRED.
- ⑥ 12" ELECTRIC /COMPRESSOR ROOM EXHAUST DUCT UP THROUGH ROOF TO EXHAUST FAN ON ROOF.
- ⑦ LOCATION OF TEMPERATURE SENSOR CONNECTED TO THERMOSTAT IN MANAGER'S OFFICE. MOUNT 72" AFF.
- ⑧ 14x12 TOILET EXHAUST DUCT UP THRU ROOF TO EE-3.
- ⑨ 8x8 UTILITY EXHAUST DUCT UP THRU ROOF TO EE-4.
- ⑩ CONNECT EE-1 CONTROLS FOR AUTOMATIC OPERATION WHEN COOKING (PIZZA OVENS ARE ON).
- ⑪ 8" METAL DUCT UP TO EE-5 ON ROOF. TRANSITION BOTH ENDS, TO FIT FAN AND EXH REG.
- ⑫ UNDERCUT DOOR TO ROOM FOR PURPOSE OF RETURN
- ⑬ 18" GREASE DUCT CLEAN-OUT, PROVIDE FULL SIZE CLEAN OUT ALIGNED WITH HORIZONTAL DUCT.
- ⑭ TITUS 33 RL STEEL RUN GRILLE, 23x14; FIRE DAMPER W/FUSIBLE LINK.
- ⑮ AIR CURTAIN FAN FF-1.

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OUTSIDE AIR CALCULATIONS PER IMC 2015, TABLE 403.3

*PER ASHRAE VARIABLE OCCUPANCY 50% FACTOR WITH CO2 SENSOR CONTROLS AS USED.

RTU's	SERVES	AREA S.F.	OCCUPANTS	OUTSIDE AIR CFM/SF (0.18 CFM/SF)	OUTSIDE AIR CFM/PERSON	OUTSIDE AIR CFM REQUIRED	OUTSIDE AIR CFM ACTUAL	SUPPLY AIR	OUTSIDE AIR FRACTION	REMARKS
1	KITCHEN	-	13	-	15	195	1000	4000		
2	SKILLS	-	102	-	20	2040	2000	4000		
3	KIDDIE & RESTROOM	-	60	-	20	1200	2000	4000		
4	KIDDIE	-	118	-	20	2360	2000	4000		
5	BOH & CORRIDOR	1085	-	1953	20	1953	2000	2400		
6	BIRTHDAY	-	118	-	20	2360	2000	4200		
7	SKILLS	-	102	-	20	2040	2000	4200		
BUILDING			513			12,148	11,00	26,800	50%	

AIR DISTRIBUTION

MARK	MFG'R	MODEL	FLOW RATE CFM	CORE VEL. FPM	N.C. LEVEL	MODULE SIZE	NECK SIZE	MOUNTING TYPE	DESCRIPTION	NOTES	CFM RANGE
A	TITUS OR EQUAL	TDC-AA	SEE PLANS	500 MAX.	30 MAX.	24x24	12"φ	LAY-IN	4-WAY FIXED LOUVER CLG. DIFFUSER	1, 2	426-600
B	TITUS OR EQUAL	TDC-AA	SEE PLANS	500 MAX.	30 MAX.	24x24	10"φ	LAY-IN	4-WAY FIXED LOUVER CLG. DIFFUSER	1, 3	251-425
C	TITUS OR EQUAL	TMS-AA	SEE PLANS	1000 MAX.	35 MAX.	24x24	15"φ	LAY-IN	4-WAY FIXED LOUVER CLG. DIFFUSER	1, 3	800-1200
D	TITUS OR EQUAL	TMS-AA	SEE PLANS	750 MAX.	30 MAX.	24x24	14"φ	LAY-IN	4-WAY FIXED LOUVER CLG. DIFFUSER	1, 3	600-799
E	TITUS OR EQUAL	TMS-AA	SEE PLANS	750 MAX.	30 MAX.	24x24	12"φ	LAY-IN	4-WAY FIXED LOUVER CLG. DIFFUSER	1, 3	400-599
F	TITUS OR EQUAL	TMS-AA	SEE PLANS	700 MAX.	30 MAX.	24x24	10"φ	LAY-IN	4-WAY FIXED LOUVER CLG. DIFFUSER	1, 3	250-400
G	TITUS OR EQUAL	TMS-AA	SEE PLANS	500 MAX.	30 MAX.	24x24	8"φ	LAY-IN	4-WAY FIXED LOUVER CLG. DIFFUSER	1, 3	0-249
H	TITUS OR EQUAL	TMS-AA	SEE PLANS	500 MAX.	30 MAX.	12x12	6"x6"x8"φ	LAY-IN	4-WAY FIXED LOUVER CLG. DIFFUSER	1	0-170
J	TITUS OR EQUAL	56FL	SEE PLANS	500 MAX.	30 MAX.	48x24	46x22	LAY-IN	0" DEFLECTION SLOTTED EXHAUST GRILLE	1, 3	
K	TITUS OR EQUAL	56FL	SEE PLANS	500 MAX.	30 MAX.	48x24 (2)	46x22 (2)	LAY-IN	0" DEFLECTION SLOTTED EXHAUST GRILLE	1, 5	
L	TITUS OR EQUAL	56FL	SEE PLANS	500 MAX.	30 MAX.	24x24	22x22	LAY-IN	0" DEFLECTION SLOTTED EXHAUST GRILLE	1	
M	TITUS OR EQUAL	ML/MP.38	SEE PLANS	500 MAX.	30 MAX.	48	10"φ	LAY-IN	(3) 3/4" LINEAR SLOTS 4-FOOT LONG	1	
N	TITUS OR EQUAL	8SS	SEE PLANS	500 MAX.	30 MAX.	24x24	22x22	LAY-IN	PERFORATED EXHAUST GRILLE	4	STAINLESS
O	TITUS OR EQUAL	272FS	SEE PLANS	500 MAX.	30 MAX.	14x10	12x8	SURFACE	SIDEWALL SUPPLY GRILLE	1	
P	TITUS OR EQUAL	56FL	SEE PLANS	500 MAX.	30 MAX.	14x10	12x8	SURFACE	0" DEFLECTION SLOTTED EXHAUST GRILLE	1	

- NOTES:
1. PROVIDE WITH OFF-WHITE FINISH.
 2. PROVIDE WITH AG-75 DAMPER.
 3. PROVIDE WITH AG-35-AA DAMPER.
 4. PROVIDE WITH MP-39 DIFFUSER PLENUM. PROVIDE OVAL TO ROUND TRANSITION AS REQUIRED.
 5. PROVIDE WITH AG-15-SS DAMPER.
 6. PROVIDE SQUARE TO ROUND ADAPTER. SEE PLAN FOR SIZE.

ROOFTOP UNIT LABELING

ALL ROOFTOP UNITS ARE TO BE LABELED WITH ENGRAVED LAMINATED NAMEPLATES, SCREWED TO THE EXTERIOR OF THE UNITS SHOWING THE FOLLOWING INFORMATION :

1. UNIT NUMBER _____
2. MODEL NUMBER _____
3. SERIAL NUMBER _____
4. GAS OR ELECTRIC HEAT _____
5. TONNAGE _____
6. VOLTAGE _____

ENTOUCH CONTROLS:

1. COMMUNICATING THERMOSTAT, TEMPERATURE DISCHARGE SENSOR AND ZONE SENSOR FURNISHED BY ENTOUCH AND INSTALLED BY CONTRACTOR.
2. CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE SHIPMENT FROM ENTOUCH AND WILL BE RESPONSIBLE FOR RECEIVING AND STORAGE DURING CONSTRUCTION.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALL CONTROLS COMPONENT AND PERFORM INITIAL STARTUP.

ENERGY MONITORING:

1. ENTOUCH CONTROLS WILL PROVIDE AND INSTALL ENERGY MONITORING DEVICES TO MONITOR TOTAL BUILDING AND ROOFTOP UNIT USAGE.
2. ENTOUCH CONTROLS WILL BE RESPONSIBLE TO INSTALL RSM-100 WITH 10K TYPE II WALL SENSOR IN ZONES.

AIR BALANCE

KITCHEN

MARK	SUPPLY CFM	RETURN CFM	OUTSIDE CFM	EXHAUST CFM	AIR BALANCE
RTU 1	4000	3000	1000	0	+1000
EF 1	0	0	0	2000	-2000
EF 2	0	0	0	400	-400
EF 5	0	0	0	200	-200
SUB TOTAL	4000	3000	1000	2600	-1600

BIRTHDAY & BACK OF HOUSE

MARK	SUPPLY CFM	RETURN CFM	OUTSIDE CFM	EXHAUST CFM	AIR BALANCE
RTU 3	4000	2000	2000	1100	+900
RTU 6	4200	2200	2000	2000	-0
EF 3	0	0	0	800	-800
EF 4	0	0	0	200	-200
RTU 5	2400	400	2000	2000	-0
SUB TOTAL	8200	4200	4000	3100	+900

KIDDIE / SKILLS

MARK	SUPPLY CFM	RETURN CFM	OUTSIDE CFM	EXHAUST CFM	AIR BALANCE
RTU 4	4000	2000	2000	600	+1400
SUB TOTAL	4000	2000	2000	600	+1400

SKILLS/ FAMILY

MARK	SUPPLY CFM	RETURN CFM	OUTSIDE CFM	EXHAUST CFM	AIR BALANCE
RTU 2	4000	2000	2000	1100	+900
RTU 7	4200	2200	2000	2000	-0
SUB TOTAL	8200	4200	4000	3100	+900
BUILDING TOTAL	24,400	13,400	11,000	9,400	+1600

NOTE:
A COMPLETE TEST AND AIR BALANCE SHALL BE PERFORMED ON ALL AIR DISTRIBUTION EQUIPMENT. THE TEST AND BALANCE SHALL BE PERFORMED BY THE CONTRACTOR USING TAG CERTIFICATION METHODS OF TESTING AND BALANCING OF AIR AND HYDROIC SYSTEMS. THE CONTRACTOR SHALL SUBMIT TO THE OWNER (6) COPIES OF A WRITTEN REPORT WITHIN 30 DAYS AFTER THE INSPECTION IS COMPLETE. LIST ALL COMPLAINTS AND MAINTENANCE ENCOUNTERED AND INDICATE STEPS TAKEN OR NEEDED TO BE TAKEN TO CORRECT.

ROOFTOP UNIT SCHEDULE

MARK	MFG'R	MODEL	NOM. TONS	SUPPLY CFM	SUPPLY FAN H.P.	EXT. S.P.	O/A CFM	COOLING BTUH		HEATING BTUH		ELECTRICAL				OPER. WEIGHT LBS	ZONE SERVED	REMARKS					
								COOLING TOTAL	COOLING SENSIBLE	HEATING INPUT	HEATING OUTPUT	COMP. NO.	COMP. RLA EA.	FAN NO.	FAN FLA EA.				VOLT	φ	MCA	FUSE SIZE	E.E.R.
RTU 1	LENNOX	LGH120H4BH3G	10	4000	3.0	0.8"	1000	118,000	63,000	240,000	192,000	2	8.0	2	1.3	480	3	28	35	12	1,300	KITCHEN	EXISTING SEE NOTES #5 & #7
RTU 2	LENNOX	LGH120H4BH3G	10	4000	3.0	0.8"	2000	118,000	63,000	240,000	192,000	2	8.0	2	1.3	480	3	28	35	12	1,300	SKILLS	EXISTING SEE NOTES #5 & #7
RTU 3	LENNOX	LGH120H4BH3G	10	4000	3.0	0.8"	2000	118,000	63,000	240,000	192,000	2	8.0	2	1.3	480	3	28	35	12	1,300	KIDDIE	EXISTING SEE NOTES #5 & #7
RTU 4	LENNOX	LGH120H4BH3G	10	4000	3.0	0.8"	2000	118,000	63,000	240,000	192,000	2	8.0	2	1.3	480	3	28	35	12	1,300	BIRTHDAY	EXISTING SEE NOTES #5 & #7
RTU 5	LENNOX	LGH072H4BU4G	6	2400	3.0	0.8"	2000	75,000	50,000	108,000	86,000	1	8.2	1	.33	480	3	17	20	12	760	HALLWAY	EXISTING SEE NOTES #5 & #7
RTU 6	LENNOX	LGH120H4BH3G	10	4200	3.0	0.8"	2000	118,000	63,000	240,000	192,000	2	8.0	2	1.3	480	3	28	35	12	1,300	BIRTHDAY	NEW SEE NOTES 1 THRU & 12
RTU 7	LENNOX	LGH120H4BH3G	10	4200	3.0	0.8"	2000	118,000	63,000	240,000	192,000	2	8.0	2	1.3	480	3	28	35	12	1,300	SKILLS	NEW SEE NOTES 1 THRU & 12

NOTES:

1. HVAC UNITS AND 14" ROOF CURBS TO BE PROVIDED BY THE OWNER/LENNOX.
2. UNITS SELECTED WITH SPECS. AT 80°F DB, 67°F WB, 95°F OUTDOOR AMBIENT.
3. (NOT USED)
4. (NOT USED)
5. PROVIDE UNIT WITH CO2 INDOOR AIR QUALITY SENSOR AND CONTROLS. MINIMUM O.A. SETTING @ 50% REQUIRED VENTILATION.
6. (NOT USED)
7. MECHANICAL CONTRACTOR TO PROVIDE TWO MERV13 SETS OF 2" 30% PLEATED FILTERS & CHANGE FILTERS PRIOR TO AIR BALANCE, AND AFTER FINAL STORE CLEANING. DATE FILTERS.
8. OWNER TO PROVIDE 7 DAY FULLY PROGRAMMABLE REMOTE E-STATS. MECHANICAL CONTRACTOR TO INSTALL IN MANAGER'S OFFICE WITH SENSORS IN STORE. OWNER/LENNOX TO PROVIDE REQUIRED SENSORS. MECHANICAL CONTRACTOR TO INSTALL AT LOCATION SHOWN IN DINING / GAME AREA AND THERMOSTAT TO HAVE ECONOMIZER CONTROL CAPABILITY.
9. OWNER/LENNOX TO PROVIDE HVAC UNITS WITH SMOKE DETECTOR INSTALLED IN RETURN AIR DUCT. MECHANICAL CONTRACTOR TO MAKE FINAL CONNECTION. UPON ACTIVATION SMOKE DETECTOR IS TO SIGNAL FIRE ALARM PANEL AND SHUT DOWN RTU.
10. RELOCATE ELECTRICAL SERVICE TO CEC ELECTRICAL PANEL - ELECTRICIAN TO EXECUTE FINAL CONNECTION.
11. ADJUST SUPPLY AIR AS SCHEDULED
12. SPECIFICATION NOTES FOR LENNOX:
ROOFTOP UNITS SHALL BE LENNOX MODEL LGA/C.
THERMOSTAT CONTROLLER SHALL BE LENNOX MODEL (X5683).
SENSOR SHALL BE LENNOX MODEL (29M55) REMOTE ROOM SENSOR.
INSTALLING CONTRACTOR SHALL SET HEAT/COOL RANGES AT EACH UNIT.

ADDITIONAL NOTE:
CHUCK E. CHEESE HAS AN EXCLUSIVE NATIONAL ACCOUNT AGREEMENTS WITH LENNOX INDUSTRIES. CONTACT YOUR LOCAL LENNOX SALES OFFICE FOR PRICING OR CONTACT LENNOX NATIONAL ACCOUNT MANAGER, ROYCE HAMILTON, 972-497-6788

10. OWNER/LENNOX TO PROVIDE ROOFTOP UNITS WITH NEMA 3R DISCONNECT SWITCH AND GFCI PROTECTED ELECTRICAL CONTRACTOR TO EXECUTE FINAL CONNECTION.

FAN SCHEDULE

MARK	MFG'R	MODEL	CFM	EXT. S.P.	TYPE	SERVING	ELECTRICAL			OPER. WEIGHT LBS	REMARKS
							H.P.	VOLT	φ		
EF 1	SEE NOTE #1 BELOW	DU85HFA	2000	0.50"	CENT.	PIZZA HOOD	3/4	120	1	76	PROVIDE WITH HINGE KIT, ROOF CURB W/ VENTED EXTENSION, DISCONNECT, ENERGIZE RTU-1 WHENEVER EF-1 PIZZA HOOD EXHAUST (AND PIZZA OVEN) IS ON.
EF 2	SEE NOTE #1 BELOW	DU25HFA	400	0.50"	CENT.	DISHWASH MACHINE	1/4	120	1	52	PROVIDE WITH ROOF CURB, NEC DISCONNECT AND EPOXY COATING. INTERLOCK WITH DISHWASH MACHINE, REFER TO ELECTRICAL DRAWINGS.
EF 3	GREENHECK	G-095-VG	800	0.50"	CENT.	TOILETS	1/6	120	1	60	PROVIDE WITH ROOF CURB, NEC DISCONNECT BIRD SCREEN AND BACKDRAFT DAMPER. EXHAUST FAN AND ACCESSORIES BY MECHANICAL CONTRACTOR.
EF 4	GREENHECK	G-080-VG	200	0.50"	CENT.	UTILITY ROOM	1/20	120	1	55	PROVIDE WITH ROOF CURB, NEC DISCONNECT BIRD SCREEN AND BACKDRAFT DAMPER. EXHAUST FAN AND ACCESSORIES BY MECHANICAL CONTRACTOR.
EF 5	GREENHECK	G-080-VG	200	0.50"	CENT.	CO2	1/20	120	1	55	PROVIDE WITH ROOF CURB, NEC DISCONNECT BIRD SCREEN AND BACKDRAFT DAMPER. EXHAUST FAN AND ACCESSORIES BY MECHANICAL CONTRACTOR.
FF 1	MARS	42CH	2,550	-	-	DELIVERY DOOR	1/2	120	1	55	PROVIDED BY KITCHEN SUPPLIER WITH AUTOMATIC DOOR PLUNGER SWTCH. INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR.

NOTES:

1. CONTACT CAPTIVE-AIRE FOR PRICING. FANS AND HOODS SUPPLIED AND INSTALLED BY MECHANICAL CONTRACTOR. SEE DRAWING M1.4 FOR DETAILS.

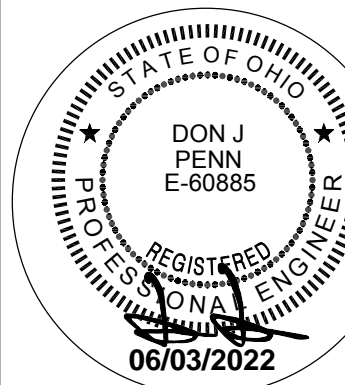
11. CONTRACTOR TO LABEL ALL HVAC UNITS PER DETAIL BELOW.
13. ENERGIZE RTU-5 WHENEVER EF-1 PIZZA HOOD EXHAUST IS ON.

MECHANICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
→	DIRECTION OF FLOW	▭	LINED DUCTWORK
⊖	THERMOSTAT	▭	RECTANGULAR ELBOW WITH TURNING VANES
⊘	GATE VALVE	▭	ROUND FLEXIBLE DUCT CONNECTION
⊘	CHECK VALVE	▭	90 DEGREE ELBOW DOWN
⊘	STRAINER	▭	90 DEGREE ELBOW UP
⊘	UNION	▭	FLEXIBLE DUCT CONNECTION
⊘	PRESSURE GAUGE	⊗	SUPPLY AIR DEVICE
⊘	THERMOMETER	▭	DUCT SIZE TRANSITION
E.A.	EXHAUST AIR	CHWS	CHILLED WATER SUPPLY
⊘	F.D. FIRE DAMPER	CHWR	CHILLED WATER RETURN
H.O.A.	HAND - OFF - AUTOMATIC	CWS	CONDENSER WATER SUPPLY
N.C.	NORMALLY CLOSED	CWR	CONDENSER WATER RETURN
N.O.	NORMALLY OPEN	HWS	HOT WATER SUPPLY
M.A.	MIXED AIR	HWR	HOT WATER RETURN
O.A.	OUTSIDE AIR	RS	REFRIGERANT SUCTION
REL. A.	RELIEF AIR	RL	REFRIGERANT LIQUID
R.A.	RETURN AIR	FOT	FLAT ON TOP
⊘	DUCT MOUNTED SMOKE DETECTOR	-D	CONDENSATE DRAIN (PITCHED)
⊘	MANUAL BALANCING DAMPER	⊘	BACKDRAFT DAMPER
⊘	MOTORIZED DAMPER	⊘	POINT OF CONNECTION
⊘	CEILING RETURN AIR DEVICE		NOTE: NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT.
⊘	SUPPLY DUCT RISER		



ARCHITECTURE - PLANNING - DESIGN
CT CHANG, AIA
1244 KARLA DRIVE, SUITE 104
HURST, TX 76058 817-510-6254



PERMIT SET

THIS IS A PERMIT SET AS SET BY ORDINANCE AND PROCESS ESTABLISHED BY SEC. ENTERTAINMENT, INC.

#205
CHUCK E. CHEESE PIZZA
EASTON SQUARE SHOPPING CENTER
3888 MORSE ROAD
COLUMBUS, OH 43219

COLUMBUS, OH
C.E.C. ENTERTAINMENT, INC.
1707 MARKET PLACE BLVD. SUITE 200
IRVING, TX 75063

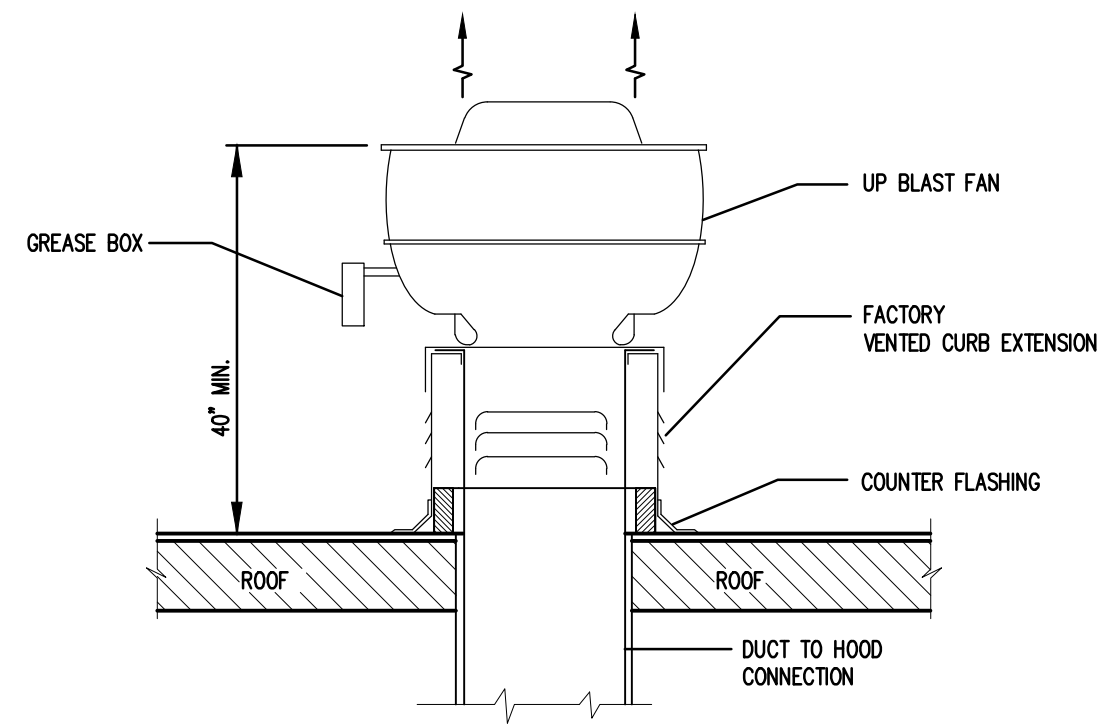
MECHANICAL SCHEDULES

REVISIONS

PROJECT NUMBER: CEC#205

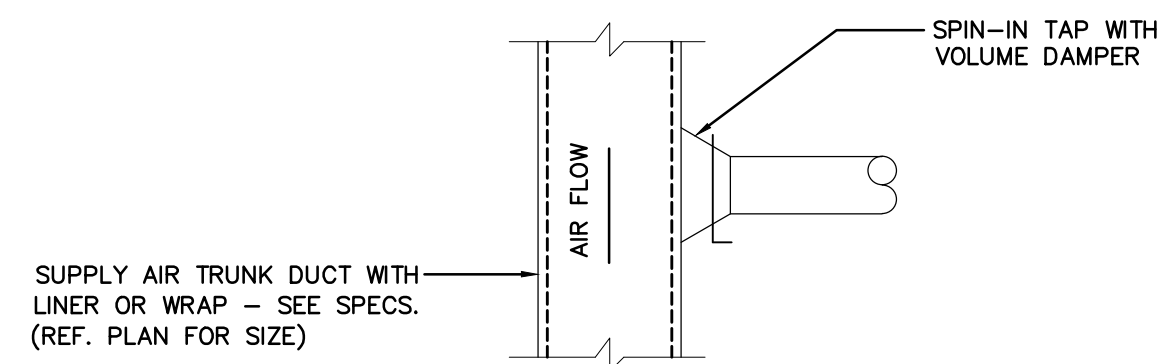
DATE: 06/03/2022

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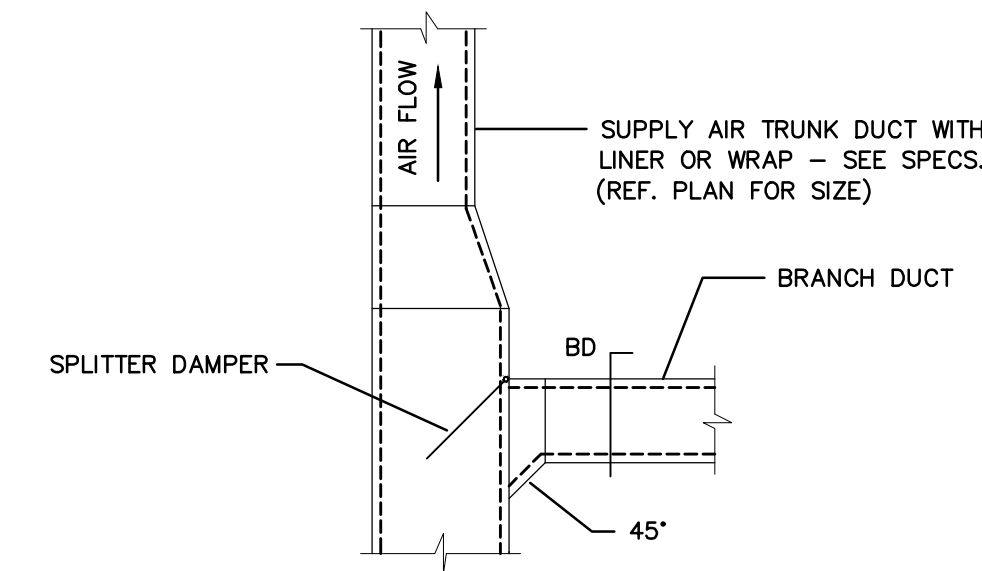
10 UP-BLAST EXH FAN DETAIL

SCALE: N.T.S.



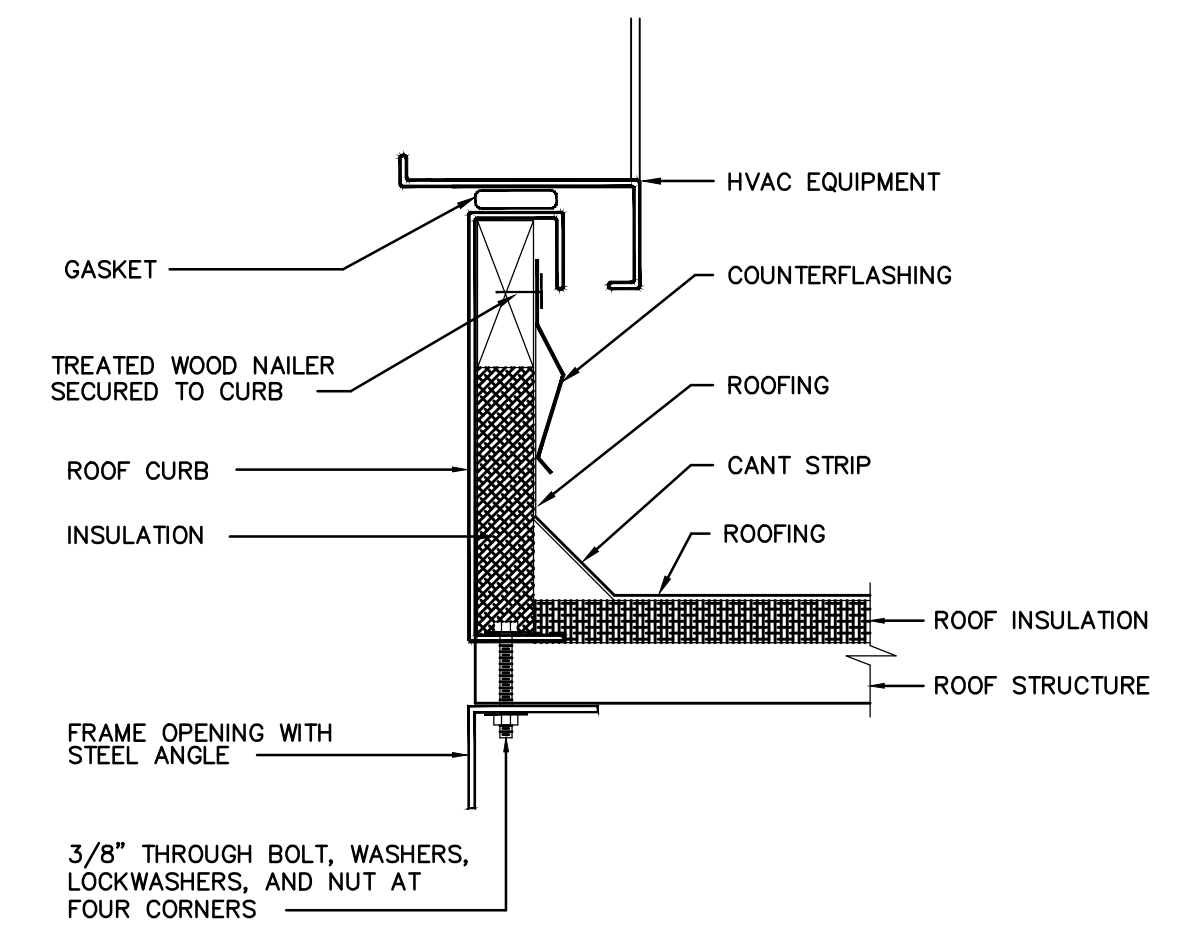
07 SPIN-IN TAP DETAIL

SCALE: N.T.S.



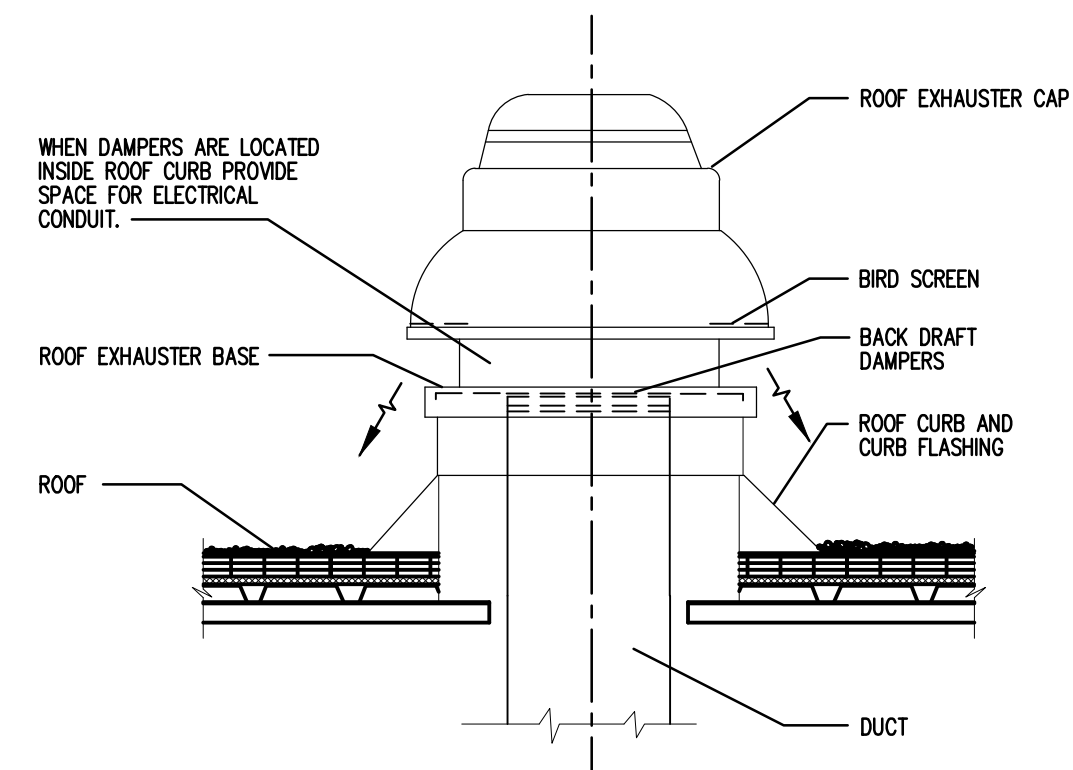
04 TYPICAL BRANCH DUCT TAP

SCALE: N.T.S.



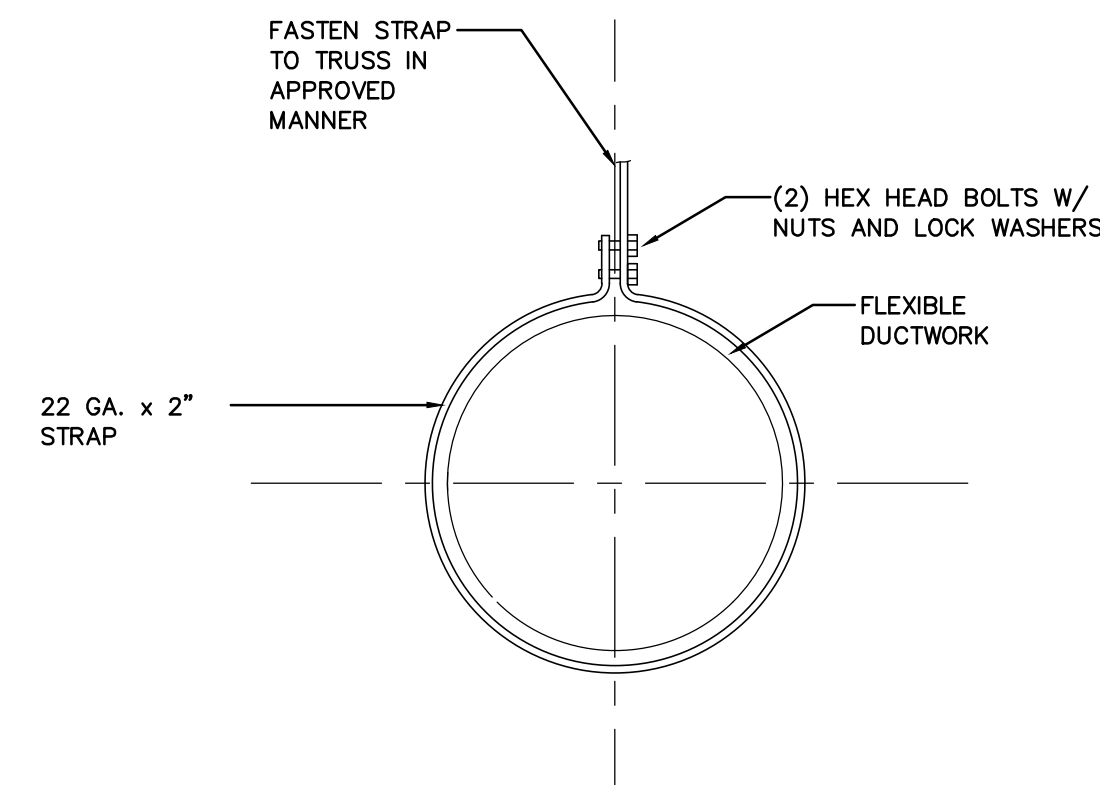
01 ROOFTOP CURB DETAIL

SCALE: N.T.S.



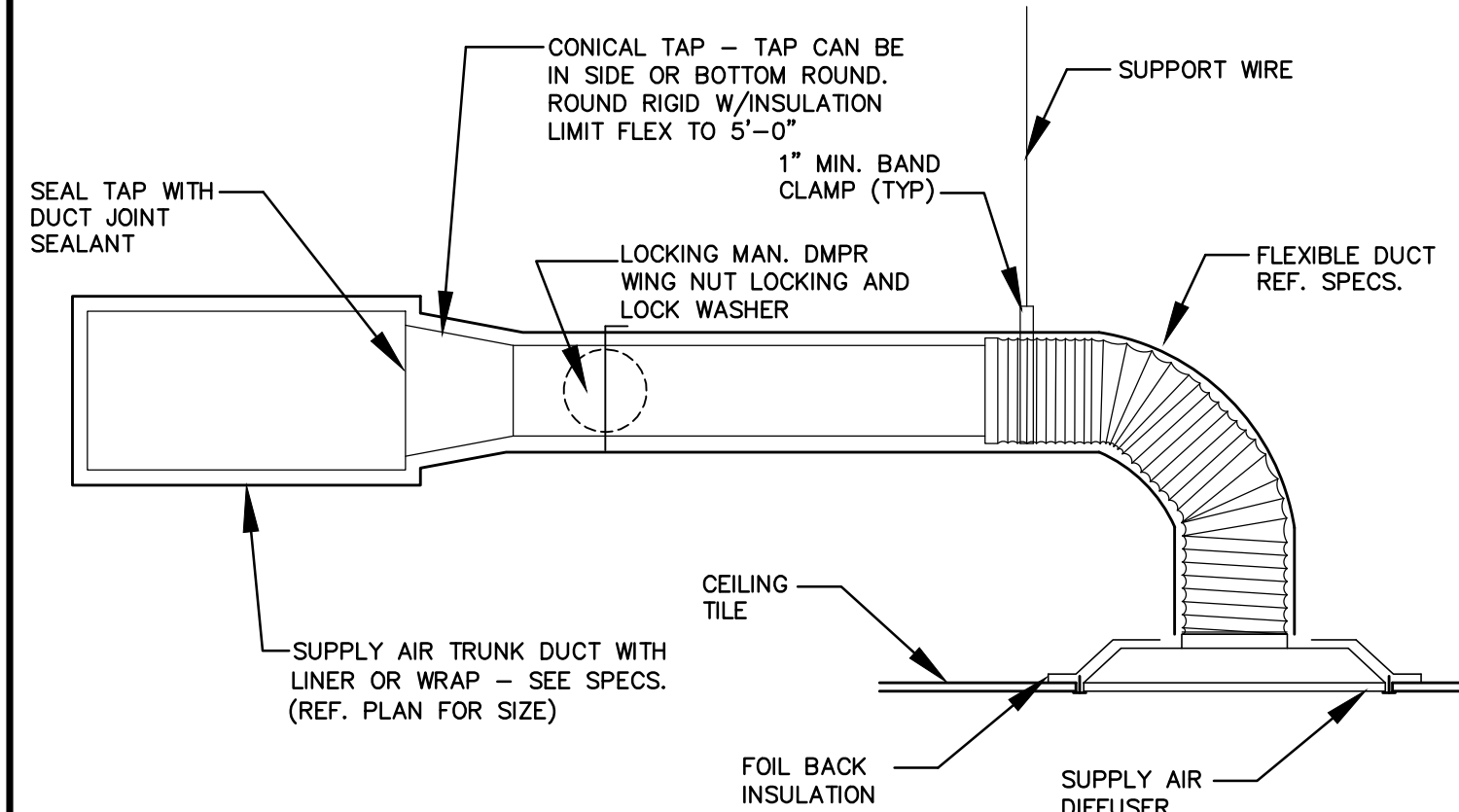
11 ROOF MNTD EXH FAN DETAIL

SCALE: N.T.S.



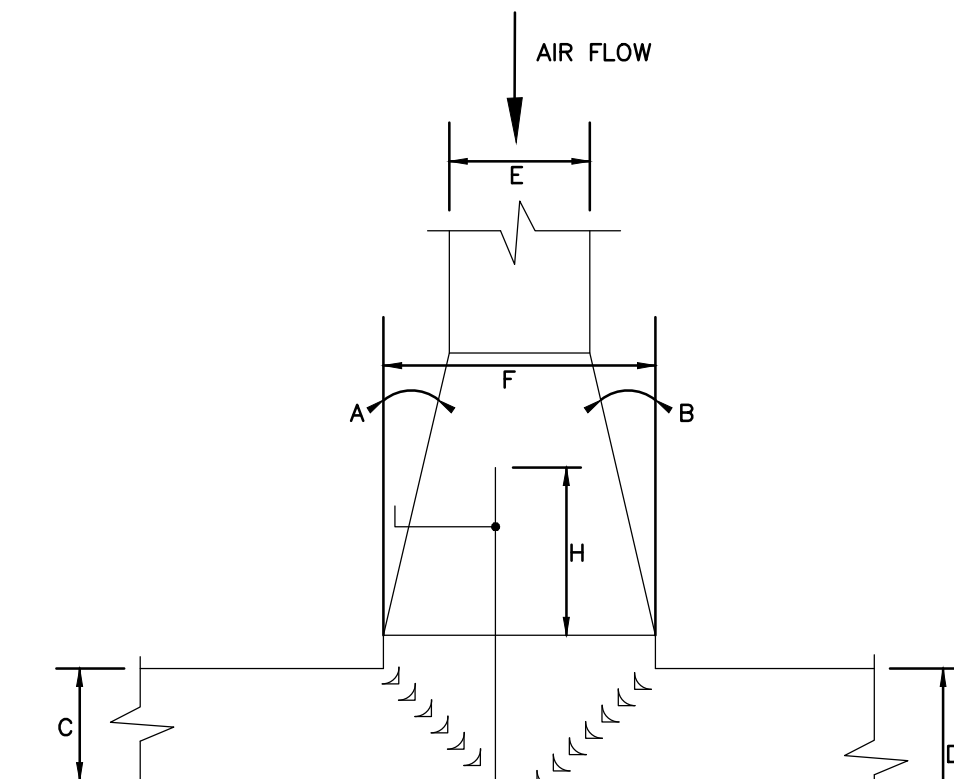
08 FLEX DUCT SUPPORT

SCALE: N.T.S.



05 DIFFUSER CONNECTION DETAIL

SCALE: N.T.S.



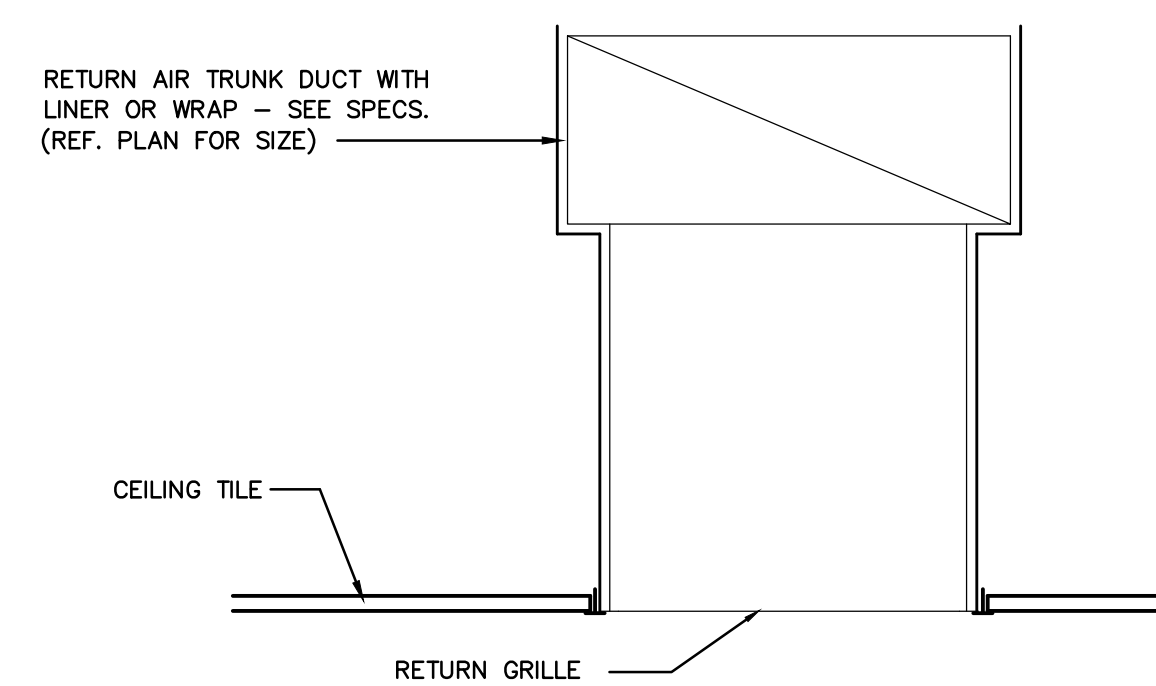
- DIMENSIONAL RELATIONSHIP**
1. ANGLES A & B EACH TO BE 20 DEGREES OR LESS
 2. SEE FLOOR PLANS FOR VALUES FOR C, D & E.
 3. $F = C + D$
 4. $H = 1.5 \times C$
 5. HEIGHT OF FITTING EQUAL TO THAT OF HIGHEST OF THE THREE DUCTS
 6. CHANGE IN HEIGHTS OF DOWNSTREAM DUCTS TO OCCUR AFTER THE TURN

02 SPLITTER TEE

SCALE: N.T.S.

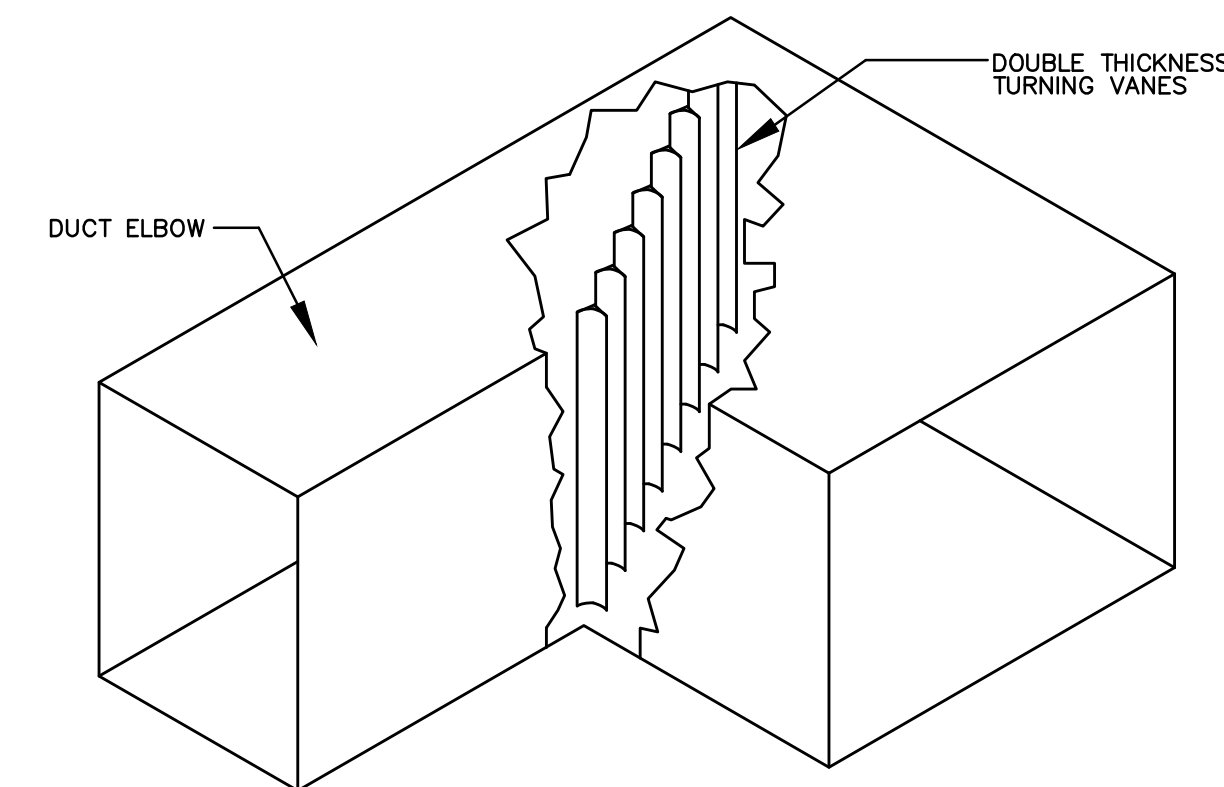
BIDDING NOTES

1. KITCHEN HOODS AND HOOD EXHAUST FANS ARE SUPPLIED BY HVAC CONTRACTOR AND INSTALLED BY THE HVAC CONTRACTOR. THE BID IS TO INCLUDE ENTIRE INSTALLATION OF THE ENTIRE HOOD SYSTEM.
2. THE DETAILS ON THIS SHEET ARE FOR BIDDING INSTALLATION COORDINATION ONLY. CONTRACTOR SHALL OBTAIN ACTUAL CUT SHEET INFORMATION SUPPLIED PRIOR TO INSTALLATION.
3. ALL HOOD DUCTWORK IS TO BE FURNISHED AND INSTALLED BY THE HVAC CONTRACTOR.
4. DISH HOOD EQUIPMENT TO BE ORDERED AND INSTALLED ONLY AS REQUIRED BY LOCAL CODES. (NOTE: ENGINEER TO CONFIRM WHETHER HOOD EQUIPMENT IS REQUIRED PER LOCAL CODE PRIOR TO ISSUING DRAWINGS.)
5. ANSUL FIRE PROTECTION SYSTEM IS BY HVAC CONTRACTOR. FIRE PROTECTION SYSTEM IS TO ONLY BE INSTALLED IF PIZZA OVEN HOOD IS REQUIRED TO BE A TYPE 1 HOOD BY LOCAL CODES. (NOTE: ENGINEER OF RECORD TO CONFIRM WHETHER A TYPE I OR II HOOD IS REQUIRED PER LOCAL CODE. GENERAL NOTES TO BE UPDATED ACCORDINGLY PRIOR TO ISSUING DRAWINGS.)



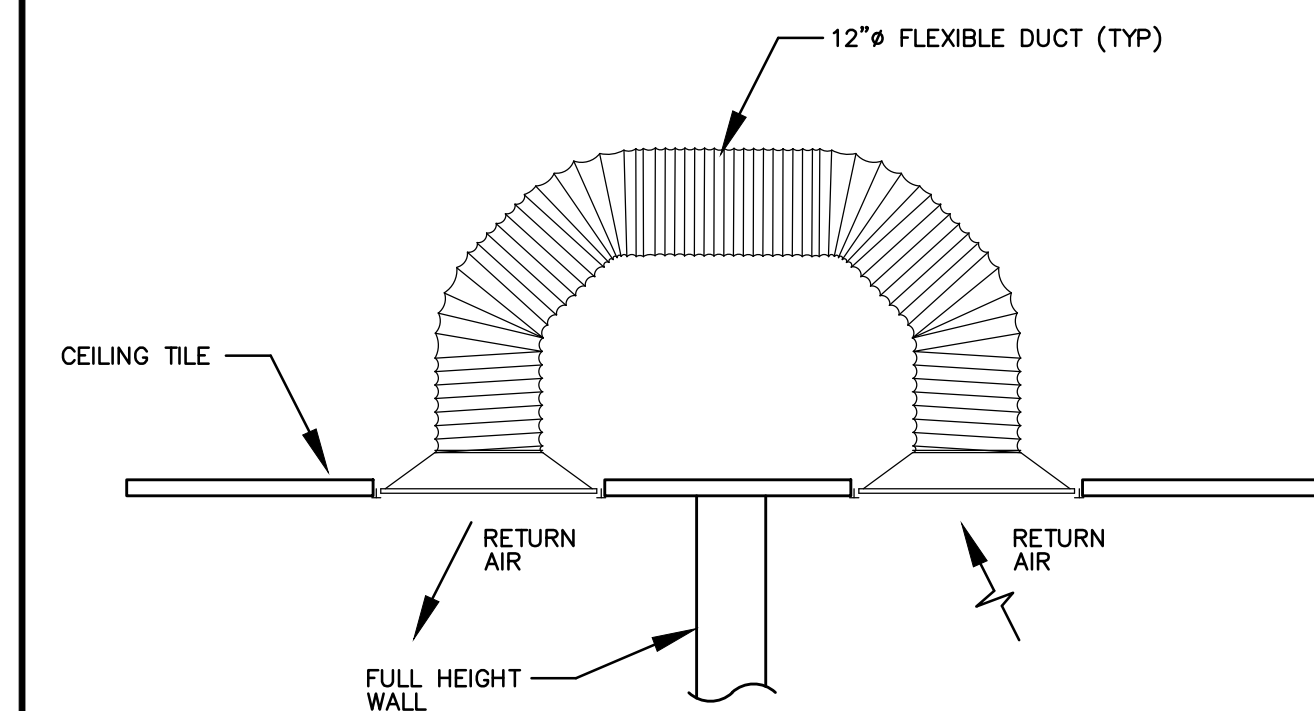
09 RETURN AIR CONNECTION

SCALE: N.T.S.



06 MITERED ELBOW

SCALE: N.T.S.

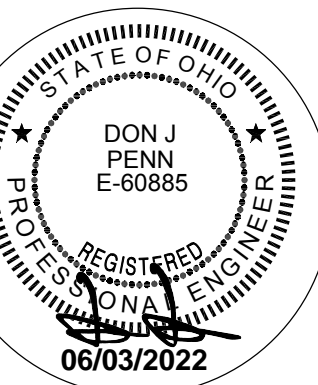


03 TRANSFER DUCT DETAIL

SCALE: N.T.S.



ARCHITECTURE - PLANNING - DESIGN
 CT CHANG, AIA
 1244 KARLA DRIVE, SUITE 104
 HURST, TX 76055-8751-6254



PERMIT SET
 THIS IS A PERMIT SET AS SET BY LOCAL CODES AND PROCESS ESTABLISHED BY SEC. ENTERTAINMENT, INC.

CHUCK E. CHEESE PIZZA #205
 EASTON SQUARE SHOPPING CENTER
 3888 MORSE ROAD
 COLUMBUS, OH 43219
 C.E.C. ENTERTAINMENT, INC.
 1707 MARKET PLACE BLVD. SUITE 200
 IRVING, TX 75063

MECHANICAL DETAILS

NO.	DATE	DESCRIPTION

PROJECT NUMBER: CEC#205

DATE: 06/03/2022

SHEET
M1.3
 03 OF 06

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HOOD INFORMATION - JOB#5439785

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S)						HOOD CONSTRUCTION	HOOD CONFIG		
										WIDTH	LENG	HEIGHT	DIA	CFM	VEL		SP	END TO END	ROW
1	Pizza	7224 ND-2	CAPTIVEAIRE	8' 0"	600 DEG	I	HEAVY	225	1800			4"	14"	1800	1684	-0.930"	430 SS WHERE EXPOSED	ALONE	ALONE
2	Dish	4824 VHB-G	CAPTIVEAIRE	4' 0"	700 DEG	II	N/A	100	400			4"	8"	400	1146	-0.061"	304 SS 100%	ALONE	ALONE

HOOD INFORMATION

HOOD NO	TAG	FILTER(S)				LIGHT(S)				UTILITY CABINET(S)				FIRE SYSTEM PIPING	HOOD HANGING WEIGHT		
		TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QTY	TYPE	WIRE GUARD	LOCATION	SIZE	FIRE SYSTEM TYPE	SIZE			ELECTRICAL MODEL #	SWITCHES QUANTITY
1	Pizza	CAPTRATE SOLO FILTER	5	16"	16"	85% SEE FILTER SPEC	3	L55 SERIES E26	NO	RIGHT	12"x72"x24"	TANK FS	4.0/4.0	DCV-1011	1 LIGHT 1 FAN	YES	818 LBS
2	Dish						0									NO	156 LBS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1	Pizza	BACKSPLASH 80.00" HIGH X 108.00" LONG 430 SS VERTICAL. LEFT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS. RIGHT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS.

FOR QUESTIONS, CALL THE
Dallas Office
REGION 45
PHONE: (214) 220-3999
EMAIL: reg45@captivaire.com

SPECIFICATION: CAPTRATE GREASE-STOP SOLO FILTER

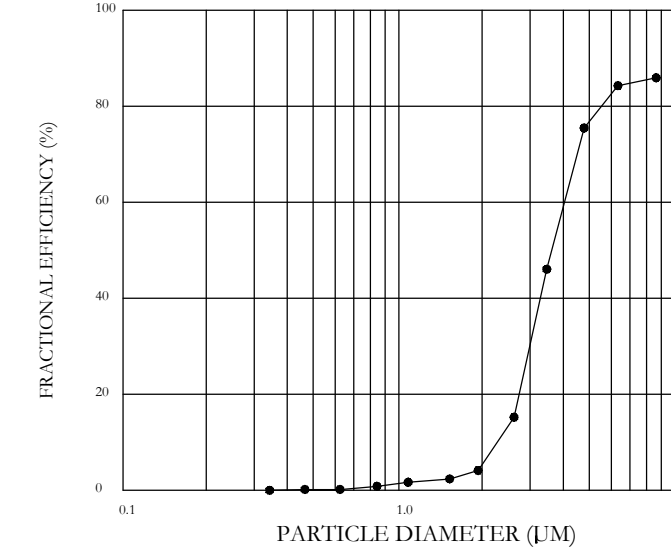
THE CAPTRATE GREASE-STOP SOLO FILTER IS A SINGLE-STAGE FILTER FEATURING A UNIQUE S-Baffle DESIGN IN CONJUNCTION WITH A SLOTTED REAR Baffle DESIGN, TO DELIVER EXCEPTIONAL FILTRATION EFFICIENCY.

FILTER IS STAINLESS STEEL CONSTRUCTION, AND SIZED TO FIT INTO STANDARD 2-INCH DEEP HOOD CHANNEL(S).

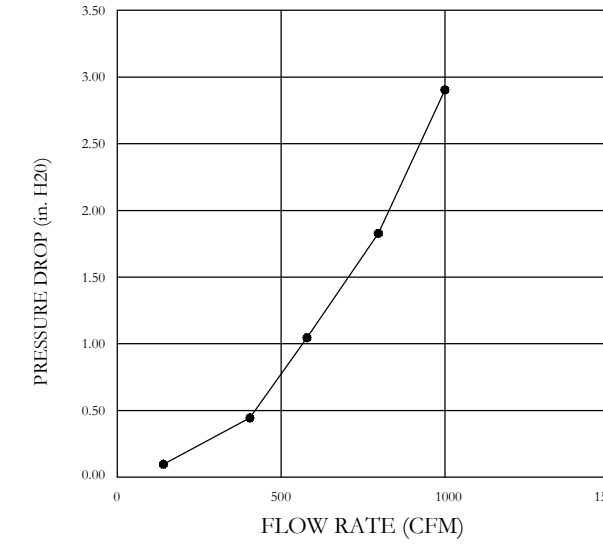
UNITS SHALL INCLUDE STAINLESS STEEL HANDLES AND A FASTENING DEVICE TO SECURE THE TWO COMPONENTS WHEN ASSEMBLED.

GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 85% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 1.0 INCHES OF WATER GAUGE. THE CAPTRATE GREASE-STOP SOLO WAS TESTED TO ASTM STANDARD ASTM F2519-05. MANUFACTURER APPROVED FOR USE IN SOLID FUEL APPLICATIONS AS A SPARK ARRESTER.

EFFICIENCY VS. PARTICLE DIAMETER



PRESSURE DROP VS. FLOW RATE



CAPTRATE FILTERS ARE BUILT IN COMPLIANCE WITH:

- NFPA #96.
- NSF STANDARD #2.
- UL STANDARD #1046.
- INT. MECH. CODE (IMC).
- ULC-S649.



SYSTEM DESIGN VERIFICATION (SDV)

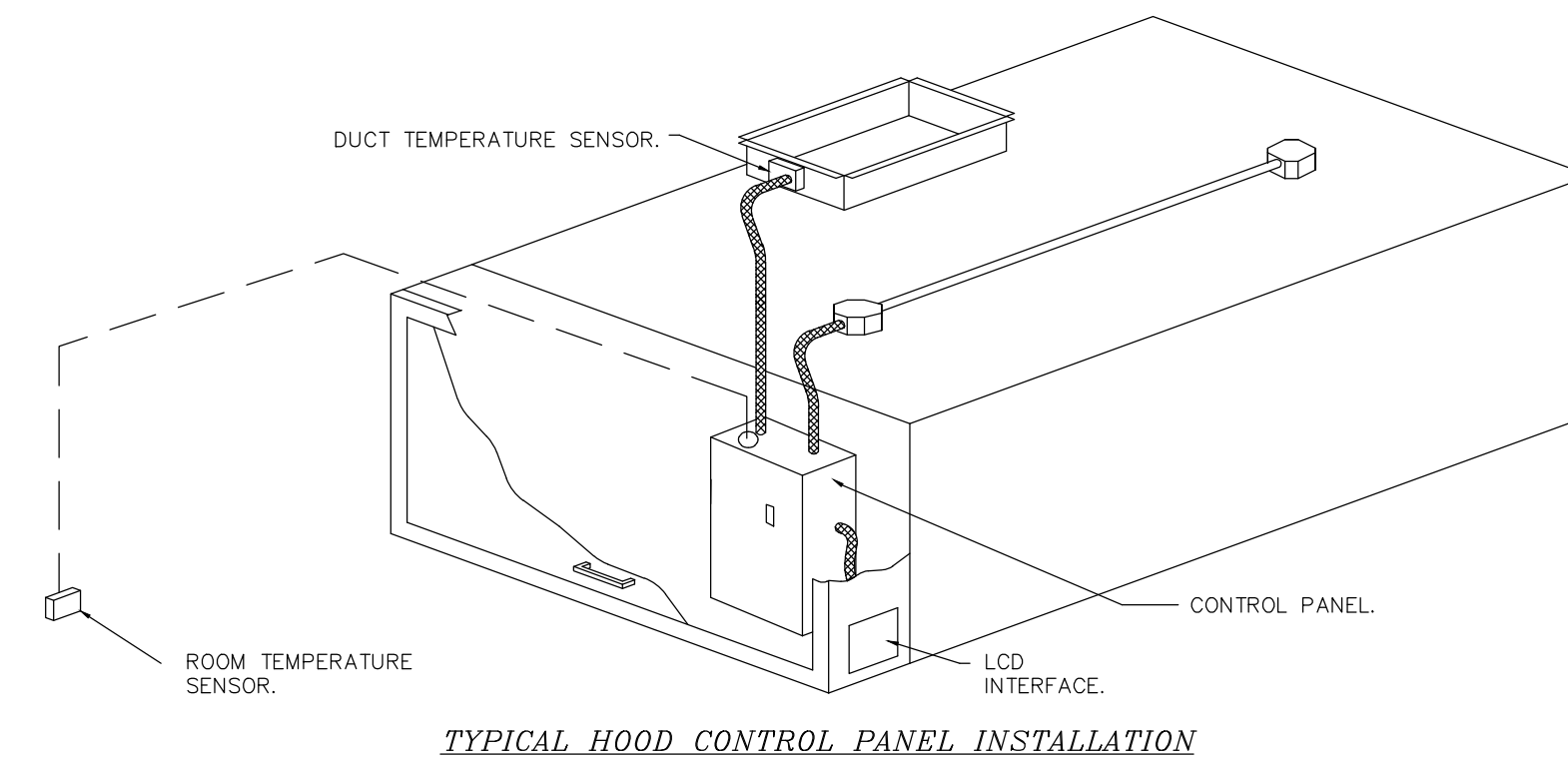
IF ORDERED, CAS SERVICE WILL PERFORM A SYSTEM DESIGN VERIFICATION (SDV) ONCE ALL EQUIPMENT HAS HAD A COMPLETE START UP PER THE OPERATION AND INSTALLATION MANUAL. TYPICALLY, THE SDV WILL BE PERFORMED AFTER ALL INSPECTIONS ARE COMPLETE.

ANY FIELD RELATED DISCREPANCIES THAT ARE DISCOVERED DURING THE SDV WILL BE BROUGHT TO THE ATTENTION OF THE GENERAL CONTRACTOR AND CORRESPONDING TRADES ON SITE. THESE ISSUES WILL BE DOCUMENTED AND FORWARDED TO THE APPROPRIATE SALES OFFICE. IF CAS SERVICE HAS TO RESOLVE A DISCREPANCY THAT IS A FIELD ISSUE, THE GENERAL CONTRACTOR WILL BE NOTIFIED AND BILLED FOR THE WORK. SHOULD A RETURN TRIP BE REQUIRED DUE TO ANY FIELD RELATED DISCREPANCY THAT CANNOT BE RESOLVED DURING THE SDV, THERE WILL BE ADDITIONAL TRIP CHARGES.

DURING THE SDV, CAS SERVICE WILL ADDRESS ANY DISCREPANCY THAT IS THE FAULT OF THE MANUFACTURER. SHOULD A RETURN TRIP BE REQUIRED, THE GENERAL CONTRACTOR AND APPROPRIATE SALES OFFICE WILL BE NOTIFIED. THERE WILL BE NO ADDITIONAL CHARGES FOR MANUFACTURER DISCREPANCIES.

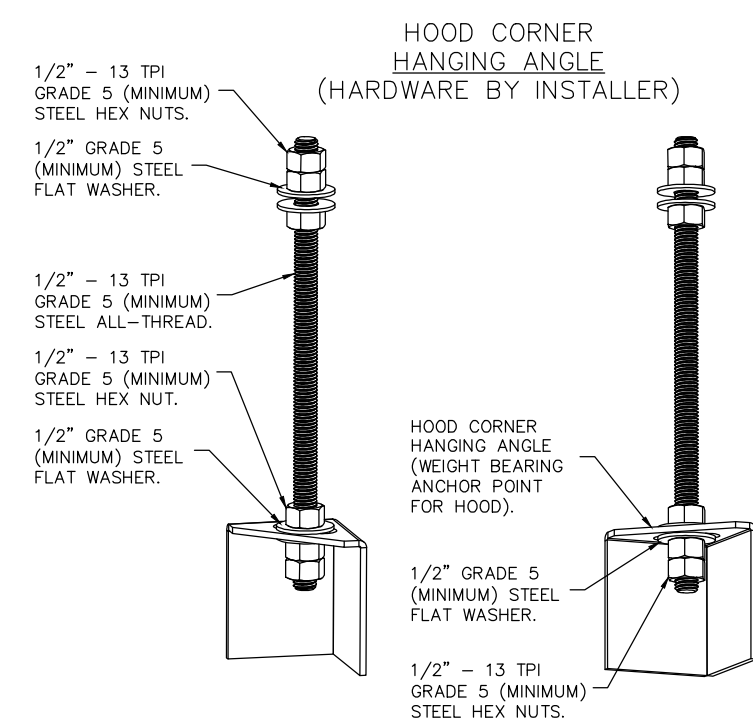
DEMAND CONTROL VENTILATION HOOD CONTROL PANEL SPECIFICATIONS:

- CONTROLS SHALL BE LISTED BY ETL (UL 508A) AND SHALL COMPLY WITH DEMAND VENTILATION SYSTEM TURNDOWN REQUIREMENTS OUTLINED IN IECC 403.2.6 (2015).
- THE CONTROL ENCLOSURE SHALL BE NEMA 1 RATED AND LISTED FOR INSTALLATION INSIDE OF THE EXHAUST HOOD UTILITY CABINET. THE CONTROL ENCLOSURE MAY BE CONSTRUCTED OF STAINLESS STEEL OR PAINTED STEEL.
- TEMPERATURE PROBE(S) LOCATED IN THE EXHAUST DUCT RISER(S) SHALL BE CONSTRUCTED OF STAINLESS STEEL.
- A DIGITAL CONTROLLER SHALL BE PROVIDED TO ACTIVATE THE HOOD EXHAUST FANS DYNAMICALLY BASED ON A FIXED DIFFERENTIAL BETWEEN THE AMBIENT AND DUCT TEMPERATURE SENSORS. THIS FUNCTION SHALL MEET THE REQUIREMENTS OF IMC 507.1.1.
- A DIGITAL CONTROLLER SHALL PROVIDE ADJUSTABLE HYSTERESIS SETTINGS TO PREVENT CYCLING OF THE FANS AFTER THE COOKING APPLIANCES HAVE BEEN TURNED OFF AND/OR THE HEAT IN THE EXHAUST SYSTEM IS REDUCED.
- A DIGITAL CONTROLLER SHALL PROVIDE AN ADJUSTABLE MINIMUM FAN RUN-TIME SETTING TO PREVENT FAN CYCLING.
- VARIABLE FREQUENCY DRIVES (VFDS) SHALL BE PROVIDED FOR FANS AS REQUIRED. THE DIGITAL CONTROLLER SHALL MODULATE THE VFDS BETWEEN A MINIMUM SETPOINT AND A MAXIMUM SETPOINT ON DEMAND. THE DUCT TEMPERATURE SENSOR INPUT(S) TO THE DIGITAL CONTROLLER SHALL BE USED TO CALCULATE THE SPEED REFERENCE SIGNAL.
- THE VFD SPEED RANGE OF OPERATION SHALL BE FROM 0% TO 100% FOR THE SYSTEM, WITH THE ACTUAL MINIMUM SPEED SET AS REQUIRED TO MEET MINIMUM VENTILATION REQUIREMENTS.
- AN INTERNAL ALGORITHM TO THE DIGITAL CONTROLLER SHALL MODULATE SUPPLY FAN VFD SPEED PROPORTIONAL TO ALL EXHAUST FANS THAT ARE LOCATED IN THE SAME FAN GROUP AS THE SUPPLY FAN.
- THE SYSTEM SHALL OPERATE IN PREP MODE DURING LIGHT COOKING LOAD OR COOL DOWN MODE WHEN SUFFICIENT HEAT REMAINS UNDERNEATH THE HOOD SYSTEM AFTER COOKING OPERATIONS HAVE COMPLETED. OPERATION DURING EITHER OF THESE PERIODS WILL DISABLE THE SUPPLY FANS AND PROVIDE AN EXHAUST FAN SPEED THAT IS EQUAL TO THE MINIMUM VENTILATION REQUIREMENT.
- A DIGITAL CONTROLLER SHALL DISABLE THE SUPPLY FAN(S), ACTIVATE THE EXHAUST FAN(S), ACTIVATE THE APPLIANCE SHUNT TRIP, AND DISABLE AN ELECTRIC GAS VALVE AUTOMATICALLY WHEN FIRE CONDITION IS DETECTED ON A COVERED HOOD.
- A DIGITAL CONTROLLER SHALL ALLOW FOR EXTERNAL BMS FAN CONTROL VIA DRY CONTACT (EXTERNAL CONTROL SHALL NOT OVERRIDE FAN OPERATION LOGIC AS REQUIRED BY CODE).
- AN LCD INTERFACE SHALL BE PROVIDED WITH THE FOLLOWING FEATURES:
 - ON/OFF PUSH BUTTON FAN & LIGHT SWITCH ACTIVATION.
 - INTEGRATED GAS VALVE RESET FOR ELECTRONIC GAS VALVES (NO RESET RELAY REQUIRED).
 - VFD FAULT DISPLAY WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
 - DUCT TEMPERATURE SENSOR FAILURE DETECTION WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
 - MIS-WIRED DUCT TEMPERATURE SENSOR DETECTION WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
 - A SINGLE LOW VOLTAGE CAT-5 RJ45 WIRING CONNECTION.
 - AN ENERGY SAVINGS INDICATOR THAT UTILIZES MEASURED KWH FROM THE VFDS.



SEQUENCE OF OPERATIONS:

- THE HOOD CONTROL PANEL IS CAPABLE OF OPERATING IN ONE OR MORE OF THE FOLLOWING STATES AT ANY GIVEN TIME:
 - AUTOMATIC:** THE SYSTEM OPERATES BASED ON THE DIFFERENTIAL BETWEEN ROOM TEMPERATURE AND THE TEMPERATURE AT THE HOOD CAVITY OR EXHAUST DUCT COLLAR. FANS ACTIVATE AT A CONFIGURABLE TEMPERATURE DIFFERENTIAL THRESHOLD. DEPENDING ON THE JOB CONFIGURATION EACH FAN ZONE CAN BE CONFIGURED AS STATIC OR DYNAMIC. THESE TERMS REFER TO WHETHER A VARIABLE MOTOR (SUCH AS EC MOTORS OR VFD DRIVEN MOTORS) MODULATE WITH TEMPERATURE. IF THE PANEL IS EQUIPPED WITH VARIABLE SPEED FANS AND THE ZONE IS DEFINED AS "DYNAMIC", THESE WILL MODULATE WITHIN A USER-DEFINED RANGE BASED ON THE TEMPERATURE DIFFERENTIAL. PANELS EQUIPPED WITH VARIABLE SPEED FANS AND A FAN ZONE DEFINED AS "STATIC", FANS WILL RUN AT A SET SPEED CALCULATED FOR THE DRIVE. DEMAND CONTROL VENTILATION SYSTEMS ARE CAPABLE OF MODULATING EXHAUST AND MAKE UP AIR FAN SPEEDS PER THE REQUIREMENTS OUTLINED IN IECC 403.2.8.
 - MANUAL:** THE SYSTEM OPERATES BASED ON HUMAN INPUT FROM AN HMI.
 - SCHEDULE:** A WEEKLY SCHEDULE CAN BE SET TO RUN FANS FOR A SPECIFIED PERIOD THROUGHOUT THE DAY. THERE ARE THREE OCCUPIED TIMES PER DAY TO ALLOW FOR THE USER TO SET UP A TIME THAT IS SUITABLE TO THEIR NEEDS. ANY TIME THAT IS WITHIN THE DEFINED OCCUPIED TIME, THE SYSTEM WILL RUN AT MODULATION MODE AND FOLLOW THE FAN PROCEDURE ALGORITHM BASED ON TEMPERATURE DURING THIS TIME. DURING UNOCCUPIED TIME, THE SYSTEM WILL HAVE AN EXTRA OFFSET TO PREVENT UNINTENDED ACTIVATION OF THE SYSTEM DURING A TIME WHERE THE SYSTEM IS NOT BEING OCCUPIED.
 - OTHER:** THE SYSTEM OPERATES BASED ON THE INPUT FROM AN EXTERNAL SOURCE (DDC, BMS OR HARD-WIRED INTERLOCK).
 - FIRE:** UPON ACTIVATION OF THE HOOD FIRE SUPPRESSION SYSTEM, THE EXHAUST FAN WILL COME ON OR CONTINUE TO RUN, THE HOOD MAKEUP AIR WILL SHUTDOWN, AND A SIGNAL WILL BE SENT FOR ACTIVATING THE SHUNT TRIP BREAKER PROVIDED BY THE ELECTRICIAN. FUEL GAS WILL SHUT OFF VIA A MECHANICAL/ELECTRICAL GAS VALVE ACTUATED BY THE HOOD FIRE SUPPRESSION SYSTEM.



ASSEMBLY INSTRUCTIONS

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

REVISIONS

DESCRIPTION	DATE

1901 Royal Lane, Suite 101, Dallas, TX, 75228 PHONE: (214) 220-3999 FAX: (214) 220-0099 EMAIL: reg45@captivaire.com

CAPTIVEAIRE

Dallas Office

Chuck E Cheese Columbus OH #205
3886 Morse Rd,
Columbus, OH, 43219

DATE: 4/21/2022
DWG.#: 5439785
DRAWN BY: WDM-45
SCALE: 3/4" = 1'-0"
MASTER DRAWING

SHEET NO.
1

ARCHITECTURE - PLANNING - DESIGN

CT CHANG, AIA
1244 KARLA DRIVE, SUITE 104
HURST, TX, 76055 817-510-6254

STATE OF OHIO
DON J PENN
E-60885
REGISTERED PROFESSIONAL ENGINEER
06/03/2022

PERMIT SET
THIS IS A PERMIT TYPE SET AS SET BY ORDINANCE AND PROCESS ESTABLISHED BY SEC. ENTERTAINMENT, INC.

CHUCK E. CHEESE PIZZA #205
EASTON SQUARE SHOPPING CENTER
3886 MORSE ROAD
COLUMBUS, OH 43219
C.E.C. ENTERTAINMENT, INC.
1707 MARKET PLACE BLVD. SUITE 200
IRVING, TX, 75063

COLUMBUS, OH

CAPTIVEAIRE KITCHEN HOOD DETAILS

PROJECT NUMBER: CEC#205
DATE: 06/03/2022

SHEET
M1.4
04 of 06

EXHAUST FAN INFORMATION - JOB#5439785

FAN UNIT NO.	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL.	HP	BHP	PHASE	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SONES
1	PIZZA	1	DURHFA	CAPTIFARE	1800	1.300	1438	TEAD-ECM 0.750	0.5890	1	115	8.9	370 FPM	88	14
2	DISH	1	DURHFA	CAPTIFARE	400	0.500	1434	TEAD-ECM 0.250	0.1290	1	115	2.9	284 FPM	54	11.5

FAN OPTIONS

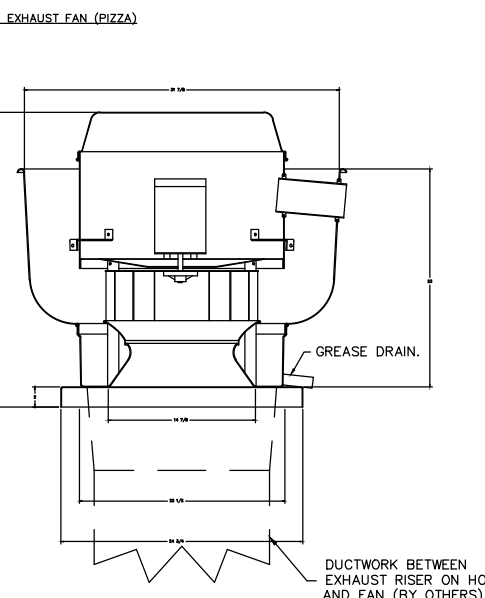
FAN UNIT NO.	QTY	DESCRIPTION
1	PIZZA	1 GREASE BOX
1	PIZZA	1 LOW BEING PACKAGE - PWM SIGNAL FROM ECM/3 PHASE (TELECO MOTOR), CCW ROTATION
1	PIZZA	1 2 YEAR PARTS WARRANTY
1	DISH	1 12-REED DAMPER
2	DISH	1 LOW BEING PACKAGE - MANUAL OR 0-10VDC REFERENCE SPEED CONTROL (TELECO MOTOR), CCW ROTATION
1	DISH	1 2 YEAR PARTS WARRANTY

FAN ACCESSORIES

FAN UNIT NO.	EXHAUST	SUPPLY
1	PIZZA	GREASE GRABBY WALL CURB (DAMPEN MOIST)
2	DISH	YES

CURB ASSEMBLIES

NO.	ON FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	PIZZA	36 LBS	CURB	23.000" W X 23.000" H X 20.000" ALONG LENGTH, RIGHT VENTED, HINGED.
2	# 2	DISH	22 LBS	CURB	17.500" W X 17.500" H X 20.000" ALONG LENGTH, RIGHT.



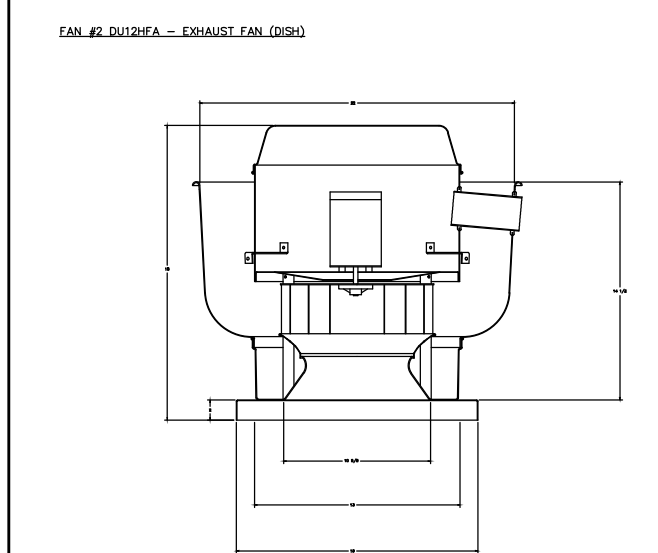
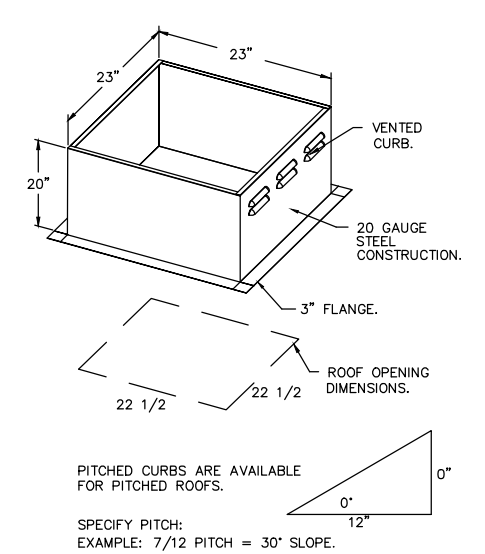
FEATURES:

- DIRECT DRIVE CONSTRUCTION (NO BELT/PULLEYS)
- ROOF MOUNTED FAN
- RESTAURANT HOODS
- ALUM. AND ALUM. AND ALU-MEAS
- VARIABLE SPEED CONTROL
- INTERNAL WIRING
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE)
- HIGH HEAT OPERATION 300° (CLASS)
- GREASE CLASSIFICATION TESTS
- NEMA 3R SAFETY DISCONNECT SWITCH

NORMAL DIMENSIONAL TOLERANCE
 EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE OPERATING AT 200° (FAN UNIT). ALL FAN PARTS HAVE REACHED 100% ORIGINAL DIMENSIONS AND WITHOUT ANY DEGRADATION EFFECTS TO THE FAN WHICH WOULD CAUSE UNRELIABLE OPERATION.

ABNORMAL FLAME-UP TEST
 EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 300° (FAN UNIT) FOR 4 HOURS OF 15 MINUTES WITHOUT THE FAN BEING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNRELIABLE CONDITION.

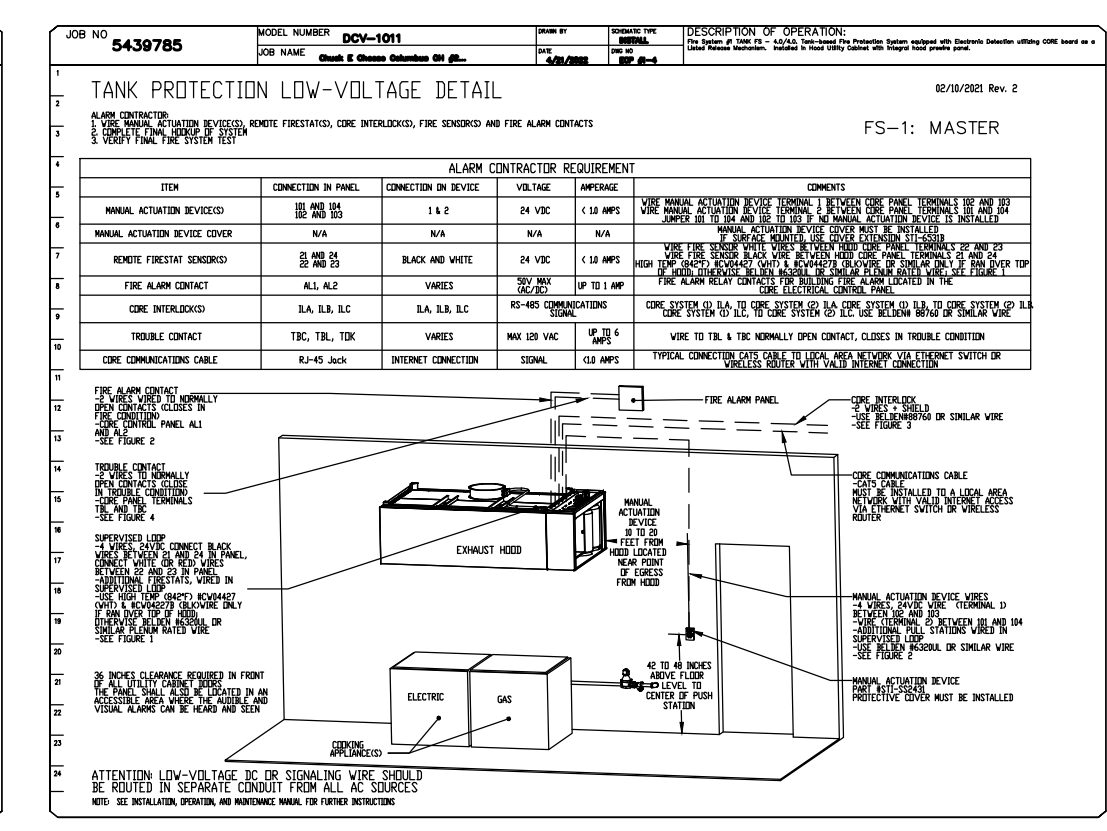
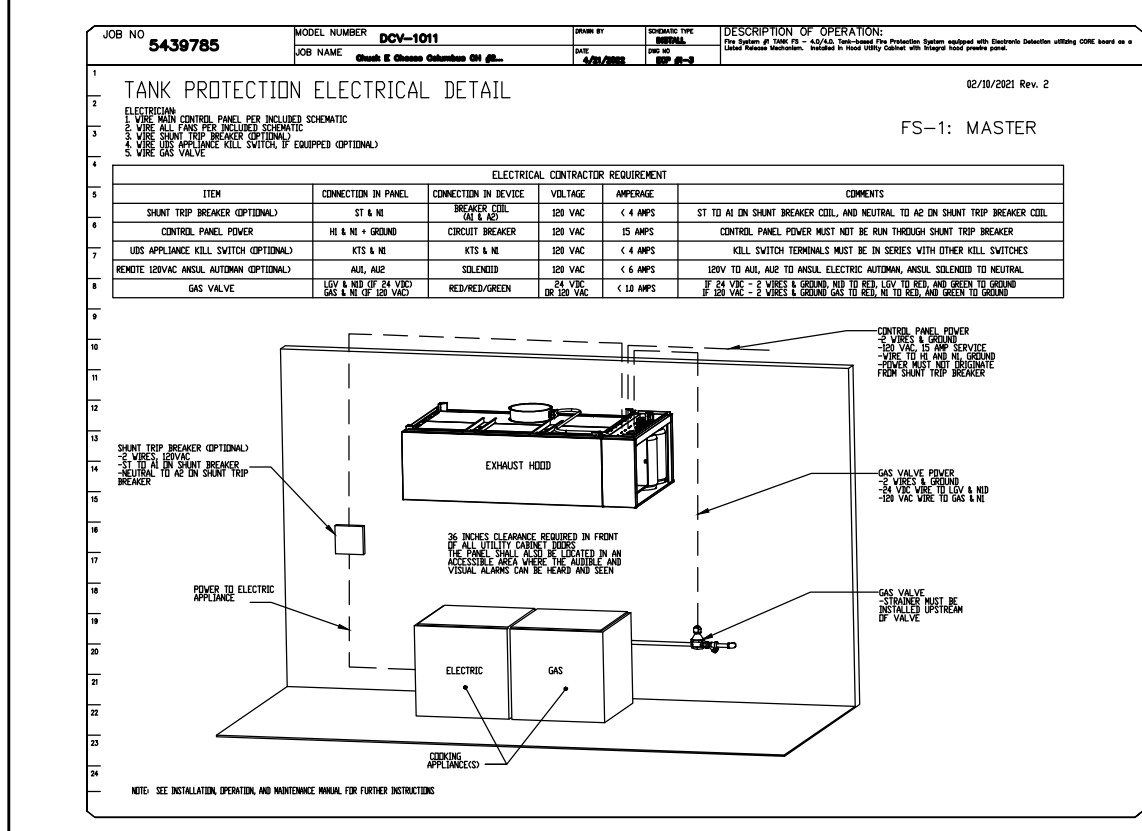
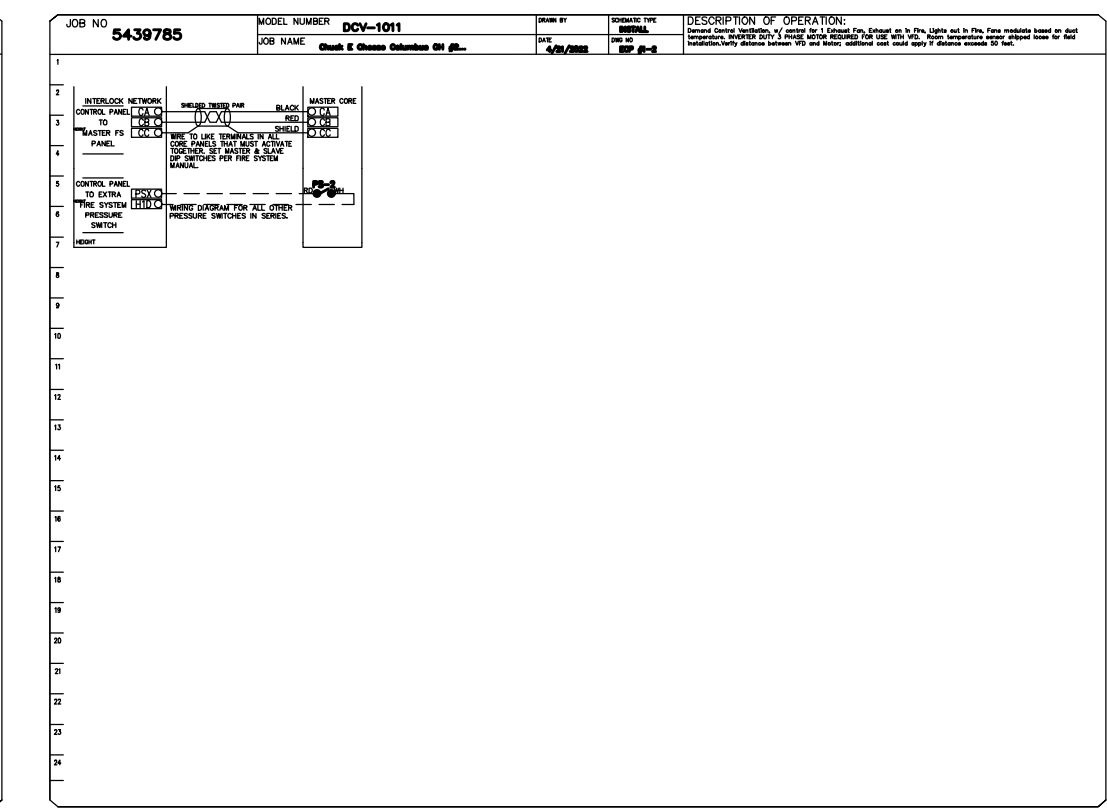
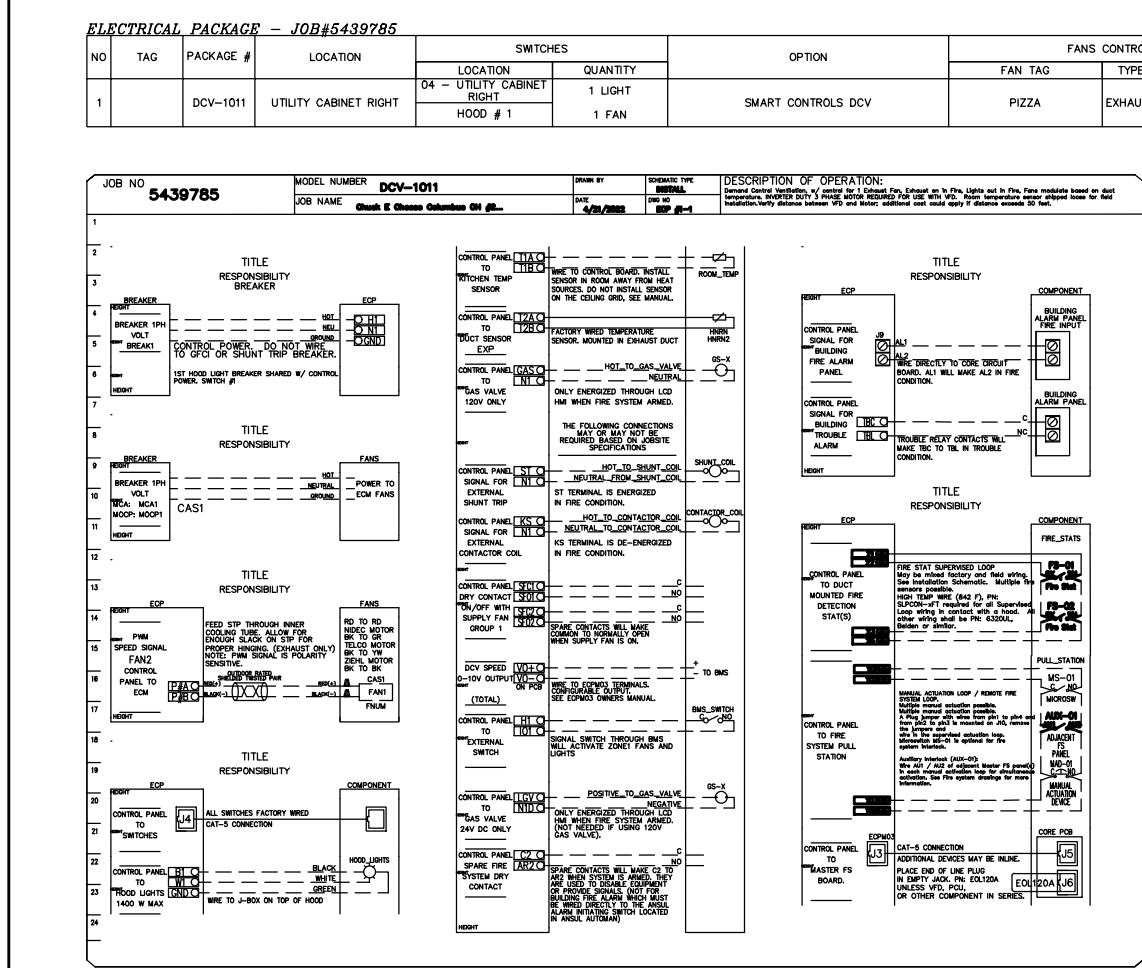
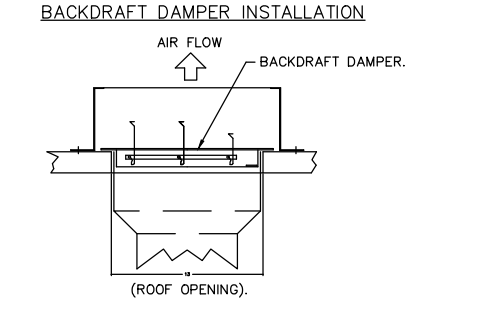
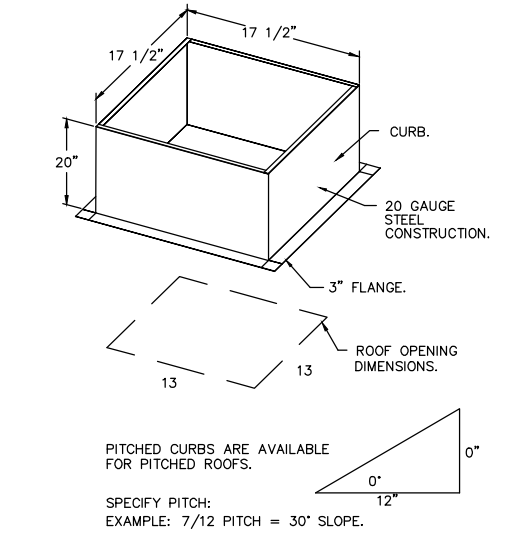
DESIGN
 LOW BEING PACKAGE - PWM SIGNAL FROM ECM/3 PHASE (TELECO MOTOR), CCW ROTATION



FEATURES:

- DIRECT DRIVE CONSTRUCTION (NO BELT/PULLEYS)
- ROOF MOUNTED FAN
- RESTAURANT HOODS
- ALUM. AND ALUM. AND ALU-MEAS
- VARIABLE SPEED CONTROL
- INTERNAL WIRING
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE)
- HIGH HEAT OPERATION 300° (CLASS)
- GREASE CLASSIFICATION TESTS
- NEMA 3R SAFETY DISCONNECT SWITCH

DESIGN
 12-REED DAMPER
 LOW BEING PACKAGE - MANUAL OR 0-10VDC REFERENCE SPEED CONTROL (TELECO MOTOR), CCW ROTATION
 2 YEAR PARTS WARRANTY



REVISIONS

NO.	DATE	DESCRIPTION
1	4/21/2022	ISSUE FOR PERMIT SET

Chuck E Cheese Columbus OH #205
 3886 Morse Rd.
 Columbus, OH, 43219

DATE: 4/21/2022
 DWG. #: 5439785
 DRAWN BY: WEM-45
 SCALE: 3/4" = 1'-0"
 MASTER DRAWING

SHEET NO. 4

REVISIONS

NO.	DATE	DESCRIPTION
1	4/21/2022	ISSUE FOR PERMIT SET

Chuck E Cheese Columbus OH #205
 3886 Morse Rd.
 Columbus, OH, 43219

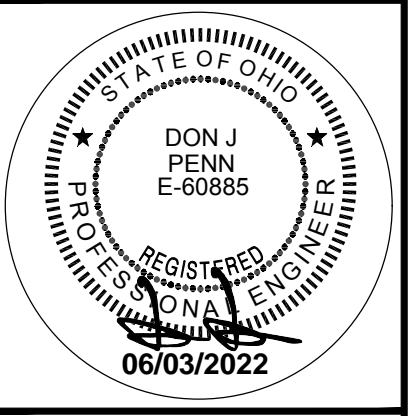
DATE: 4/21/2022
 DWG. #: 5439785
 DRAWN BY: WEM-45
 SCALE: 3/4" = 1'-0"
 MASTER DRAWING

SHEET NO. 5



CAPTIVE AIR
 ARCHITECTURE - PLANNING - DESIGN

CT CHANG, AIA
 1244 KARLA DRIVE, SUITE 104
 HURST, TX, 76055-8717-510-6254



PERMIT SET
 THIS IS A PERMIT SET AS SET BY ORDINANCE AND PROCESS ESTABLISHED BY DEC ENTERTAINMENT, INC.

CHUCK E. CHEESE PIZZA #205
 EASTON SQUARE SHOPPING CENTER
 3886 MORSE ROAD
 COLUMBUS, OH 43219

C.E.C. ENTERTAINMENT, INC.
 1707 MARKET PLACE BLVD. SUITE 200
 IRVING, TX, 75063

CAPTIVE AIR KITCHEN HOOD DETAILS

REVISIONS

NO.	DATE	DESCRIPTION
1	06/03/2022	ISSUE FOR PERMIT SET

PROJECT NUMBER: CEC#205
 DATE: 06/03/2022

SHEET
M1.6
 06 OF 06

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