MECHANICAL SYMBOLS LIST

AIR DEVICES

	CEILING DIFFUSER EXHAUST
	CEILING DIFFUSER EXHAUST
	CEILING DIFFUSER EXHAUST
	SIDEWALL GRILLE–SUPPLY
	SIDEWALL GRILLE–RETURN

DUCT ACCESSORIES

VD	VOLUME DAMPER W/ ACCESS DOOR
	FIRE DAMPER W/ ACCESS DOOR
M	MOTORIZED DAMPER W/ ACCESS DOOR
BD	BACKDRAFT DAMPER

CONTROLS AND SENSORS

T	THERMOSTAT
H	HUMIDISTAT
S	MANUAL ON/OFF SWITCH
S	DUCT SMOKE DETECTOR
CO	CO DETECTOR
T_S	TEMPERATURE SENSOR

DUCTWORK

	AIR DUCT W/ 1.5" ACOUSTICAL LINING
	FLEXIBLE DUCT
FC FC	FLEXIBLE CONNECTION
20x16	RECTANGULAR DUCT (WIDTH X DEPTH)
ø12	ROUND DUCT (DIAMETER)
	ROUND DUCT CROSS SECTION
	SUPPLY AIR RECTANGULAR DUCT CROSS SECTION
	RETURN AIR RECTANGULAR DUCT CROSS SECTION
R	RADIUS ELBOW W/VANE(S) (1.5=R/D STANDARD)

MECHANICAL ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AL	ACOUSTIC LINING
BOB	BOTTOM OF BEAM
BOD	BOTTOM OF DUCT
BOE	BOTTOM OF EQUIPMENT
CDS	CEILING DIFFUSER SUPPLY
CDR	CEILING DIFFUSER RETURN
CFM	CUBIC FEET OF AIR PER MINUTE
IEER	INTEGRATED ENERGY EFFICIENCY RATIO
EER	ENERGY EFFICIENCY RATIO
DN	DOWN
EG	EXHAUST GRILLE
FC	FLEXIBLE CONNECTION
FD/AD	FIRE DAMPER W/ACCESS DOOR
MD	MOTORIZED DAMPER
RTU	ROOF TOP UNIT
KEF	KITCHEN EXHAUST FAN
RA	RETURN AIR
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SG	SUPPLY GRILLE
SA	SUPPLY AIR
VD	VOLUME DAMPER
BD	BACKDRAFT DAMPER
EF	EXHAUST FAN
AHU	AIR HANDLING UNIT
ACCU	AIR COOLED CONDENSING UNIT

MECHANICAL DRAWING LIST

M–101	MECHANICAL GENERAL NOTES, SYMBOLS LIST & ABBREVIATIONS
M–102	MECHANICAL SPECIFICATIONS
M–201	MECHANICAL FLOOR PLAN – GROUND LEVEL
M–202	MECHANICAL FLOOR PLAN – LEVEL 2 & MECHANICAL ROOF PLAN
M–301	MECHANICAL DETAILS (1 OF 2)
M–302	MECHANICAL DETAILS (2 OF 3)
M–303	MECHANICAL DETAILS (3 OF 3)
M–401	MECHANICAL SCHEDULES
M–501	HOOD DETAILS (1 OF 5)
M–502	HOOD DETAILS (2 OF 5)
M–503	HOOD DETAILS (3 OF 5)
M–504	HOOD DETAILS (4 OF 5)
M–505	HOOD DETAILS (5 OF 5)
M–601	HVAC HEAT LOAD SUMMARY

CODE COMPLIANCE

ALL WORK AND MATERIAL SHALL BE PERFORMED AND INSTALLED IN COMPLIANCE WITH THE FOLLOWING CODES AS ADOPTED AND AMENDED BY THE INSPECTING AUTHORITY. NOTHING IN THESE DRAWINGS IS TO BE CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THESE CODES OR OTHERS APPLICABLE TO THESE PROJECT:

a. 2023 FLORIDA BUILDING CODE–BUILDING, 8TH EDITION.

b. 2023 FLORIDA BUILDING CODE–PLUMBING, 8TH EDITION.

c. 2023 FLORIDA BUILDING CODE–MECHANICAL, 8TH EDITION.

c. 2023 FLORIDA BUILDING CODE–ENERGY CONSERVATION, 8TH EDITION.

d. 2023 FLORIDA BUILDING CODE–FUEL GAS, 8TH EDITION.

e. NATIONAL ELECTRICAL CODE–2020.

CITY OF DAYTONA BEACH BUILDING DEPARTMENT NOTES

ALL WORK SHALL COMPLY WITH APPLICABLE SECTIONS OF THE 2023 FLORIDA BUILDING CODE–BUILDING, 8TH EDITION, AND ALL AMENDMENTS AND RULES AND REGULATIONS OF THE DEPARTMENT OF BUILDINGS TO DATE.

1. ALL HEATING AND COOLING LOADS CALCULATED PER ASHRAE/ACCA 183.
2. VENTILATION FOR ALL AREA SHALL COMPLY WITH 2023 FLORIDA BUILDING CODE–MECHANICAL, 8TH EDITION, CHAPTER 4.
3. TESTS WILL BE CONDUCTED UNDER DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT OR OTHER PERSON HAVING NOT LESS THAN FIVE (5) YEARS EXPERIENCE SUPERVISING THE INSTALLATION OF SUCH MECHANICAL SYSTEMS. THE TESTS WILL SHOW COMPLIANCE WITH 2023 FBC, ENERGY CONSERVATION, 8TH EDITION REQUIREMENTS AS OUTLINES IN SECTION.
4. THE LICENSED PROFESSIONAL ENGINEER, ARCHITECT OR OTHER PERSON HAVING NOT LESS THAN FIVE (5) YEARS EXPERIENCE SUPERVISING THE INSTALLATION OF SUCH MECHANICAL SYSTEMS AND CONDUCTING SUCH TESTS WILL FILE DOCUMENTATION AND REPORTS OF TESTS THAT THE SYSTEM COMPLIES WITH THE CONSTRUCTION DOCUMENTS AND APPLICABLE LAWS.
5. TESTS OF MECHANICAL SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING SECTIONS OF THE INTERNATIONAL 2021 INTERNATIONAL MECHANICAL CODE:
   A. VENTILATION SYSTEM BALANCING 2023 FLORIDA BUILDING CODE–MECHANICAL, 8TH EDITION – MC 403.3
   B. VENTILATION SYSTEM SERVING COMMERCIAL COOKING APPLIANCES 2023 FLORIDA BUILDING CODE–MECHANICAL, 8TH EDITION – MC 507
6. THE FOLLOWING WORK ITEMS, COMPONENTS, MATERIALS, CAPACITIES, ETC. SHALL COMPLY WITH THE REFERENCED CODE OR STANDARD:
   A. STANDARDS OF HEATING – 2023 FLORIDA BUILDING CODE–MECHANICAL, 8TH EDITION – 309.1
   B. DUCT CONSTRUCTION AND INSTALLATION–2023 FLORIDA BUILDING CODE–MECHANICAL, 8TH EDITION –603
   C. AIR INTAKES, EXHAUSTS AND RELIEF –2023 FLORIDA BUILDING CODE–MECHANICAL, 8TH EDITION– 401.5
   D. AIR FILTERS –2023 FLORIDA BUILDING CODE–MECHANICAL, 8TH EDITION– 605
   E. MANUAL AND AUTOMATIC FIRE AND SMOKE CONTROLS FOR AIR DISTRIBUTION SYSTEMS –2023 FLORIDA BUILDING CODE–MECHANICAL, 8TH EDITION – 606
   F. GAS FIRED EQUIPMENT – 2023 FLORIDA BUILDING CODE–FUEL GAS, 8TH EDITION
5. MINIMUM TEMPERATURE TO BE MAINTAINED IN OCCUPIED SPACES DURING HEATING SEASON: 68 DEG. FAHRENHEIT.
6. A STATEMENT SHALL BE FILED BY THE OWNER OR TENANT IN POSSESSION THAT THE VENTILATION SYSTEM WILL BE KEPT IN CONTINUOUS OPERATION AT ALL TIMES DURING THE NORMAL OCCUPANCY OF THE STRUCTURE AS REQUIRED BY 2023 FBC–MECHANICAL, 8TH EDITION– 403.3
7. SMOKE DETECTOR SHALL MEET UL268A.
8. SMOKE DETECTION SYSTEMS SHALL BE INSTALLED AND SEQUENCED TO FOLLOW CONTROLS OPERATIONS WITH THE REQUIREMENTS OF SECTION 2023 FLORIDA BUILDING CODE–MECHANICAL, 8TH EDITION TO CLOSE DAMPERS AND AUTOMATICALLY STOP THE FAN.
10. A STATEMENT SHALL BE FILED BY THE OWNER OR TENANT IN POSSESSION THAT THE VENTILATION SYSTEM WILL BE KEPT IN CONTINUOUS OPERATION AT ALL TIMES DURING THE NORMAL OCCUPANCY OF THE STRUCTURE AS REQUIRED BY 2023 FBC–MECHANICAL, 8TH EDITION – 403.3
11. REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED FIRE–RATED WALL AND SMOKE WALL CONSTRUCTION AND LOCATION.
12. THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.
13. VENTILATION SYSTEMS SHALL BE BALANCED TO MAINTAIN THE MINIMUM VENTILATION AIRFLOW RATE AS SHOWN IN VENTILATION REQUIREMENT TABLE. THIS SYSTEM SHALL BE BALANCED BY APPROVED METHOD. CONTRACTOR TO SUBMIT THE AIR BALANCE REPORT TO INSPECTOR OF RESPECTIVE BUILDING DEPARTMENT PRIOR TO FINAL INSPECTION.
14. MECHANICAL SYSTEMS SHALL BE COMMISSIONED PER AS PER 2023 FBC, ENERGY CONSERVATION, 8TH EDITION – C408.2.2, C408.2.1, C408.2.5. FINAL COMMISSIONING REPORT SHALL BE DUE WITHIN 90 DAYS OF RECEIPT OF CERTIFICATE OF OCCUPANCY.
15. A COMMISSIONING PLAN SHALL BE DEVELOPED BY A LICENSED DESIGN PROFESSIONAL, MECHANICAL ENGINEER OR APPROVED AGENCY.
16. A PRELIMINARY REPORT OF COMMISSIONING TEST PROCEDURES AND RESULTS SHALL BE COMPLETED AND CERTIFIED BY THE LICENSED DESIGN PROFESSIONAL, ELECTRICAL ENGINEER, MECHANICAL ENGINEER OR APPROVED AGENCY AND PROVIDED TO THE BUILDING OWNER OR OWNER'S AUTHORIZED AGENT AS PER 2023 FBC, ENERGY CONSERVATION, 8TH EDITION – C408.2.4.

GENERAL NOTES

1. CONTRACTOR SHALL SURVEY THE AREA OF THIS WORK BEFORE SUBMITTING A BID AND SHALL BE RESPONSIBLE FOR NOTIFYING THE ARCHITECT OF ANY CONDITIONS WHICH WOULD PREVENT THE INSTALLATION OF THE WORK AS SHOWN ON DRAWINGS.
2. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIALS WHICH VIOLATE ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.
3. BEFORE PROCEEDING WITH ANY WORK IN OCCUPIED OR USED AREAS, THE CONTRACTOR SHALL APPLY TO OWNER FOR PERMISSION TO ENTER SUCH AREAS. THE CONTRACTOR IS OBLIGED TO PERFORM HIS WORK ONLY AT THE TIMES DESIGNATED BY OWNER. THERE WILL BE NO ADDITIONAL COMPENSATION FOR THE WORK PERFORMED AFTER HOURS OR ON OFF–DAYS WITHOUT PRIOR WRITTEN APPROVAL.
4. THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED, AND IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE PRESENT OCCUPANTS.
5. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK IN OVERTIME AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.
6. CONTRACTOR SHALL ASCERTAIN THE APPROPRIATE METHOD FOR BRINGING THE UNITS INTO AND THROUGH THE BUILDING TO POSITION UNIT IN LOCATION SHOWN ON THE PLANS. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH RESTRICTIVE SPACES. COORDINATE WITH BUILDING OWNER APPROPRIATE TIMES OF DAY SUCH EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.
7. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW SYSTEM.
8. WHERE PENETRATIONS THROUGH FIRE RATED WALLS ARE NOT FIRE PROOFED THIS CONTRACTOR SHALL BE RESPONSIBLE TO SEAL SAME TO MAINTAIN THE RATED INTEGRITY.
9. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND APPROVED MANNER. RESTORE EXISTING WORK DISTURBED WHILE INSTALLING NEW WORK TO ACCEPTABLE CONDITION AS DETERMINED BY ARCHITECT.
10. PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO INSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. ALL SYSTEM SHUTDOWNS AFFECTING OTHER AREAS SHALL BE COORDINATED WITH BUILDING OWNER. INSTALL ISOLATION VALVES AT POINT OF CONNECTION TO THE EXISTING PIPING. PROVIDE TEMPORARY DUCT CAPS AND/OR CONNECTIONS TO MINIMIZE SHUTDOWN TIME.
11. SUPPORT ALL DUCTWORK AND PIPING FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OR SUPPORTS FOR EQUIPMENT, FURNISH ADDITIONAL FRAMING. INSERTS SHALL BE STEEL, SLOTTED TYPE AND FACTORY PAINTED. MULTI–ROD SHALL BE SIMILAR TO FEE & MASON SERIES 9000 WITH END CAPS AND CLOSURE STRIPS. MAXIMUM LOADING INCLUDING PIPES, DUCTWORK CONTENTS AND COVERING SHALL NOT EXCEED 75% OF RATED INSERT CAPABILITY. WHEN SUPPORTING FROM BUILDING USE BEAM CLAMPS IN APPROVED MANNER.
12. PROVIDE ALL NECESSARY FLASHING AND COUNTER FLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPES, DUCTS, LOUVERS, CONDUIT, AND EQUIPMENT. PROVIDE EQUIPMENT CURBS AND DUNNAGE STEEL AS REQUIRED.
13. SEAL OPENINGS AROUND DUCTS AND PIPING THROUGH PARTITIONS, WALLS AND FLOORS WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL (FIBERGLASS INSULATION IS NOT ACCEPTABLE).
14. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.
15. ACCESS DOORS ARE REQUIRED FOR ALL BUILDING SERVICE VALVES THAT RUN THROUGH THE SPACE, AND ACCESS DOOR SHALL HAVE THE EQUAL RATED CAPACITY (1HR, 2HR, ETC.) AS WALL. COORDINATE ALL LOCATIONS OF ACCESS DOORS WITH THE ARCHITECT.
16. REMOVABLE ACCESS TILE AND/OR ACCESS DOOR ARE REQUIRED IN HUNG CEILINGS, SHAFTS AND WALLS FOR ALL VOLUME AND FIRE DAMPERS, AUTOMATIC DAMPERS AND ALL OTHER MECHANICAL EQUIPMENT AND DEVICES. HVAC CONTRACTOR TO FURNISH ACCESS LOCATION REQUIREMENTS TO GENERAL CONTRACTOR. ACCESS TILE IDENTIFICATION: PROVIDE BUTTONS, TABS, AND MARKERS TO IDENTIFY LOCATION OF CONCEALED VALVES, DAMPERS AND EQUIPMENT.
17. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.
18. UNLESS OTHERWISE SPECIFICALLY SPECIFIED, INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION.
19. MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
20. ALL EQUIPMENT SHALL BE PROVIDED WITH ONE YEAR WARRANTY PARTS AND LABOR AND FIVE YEARS ON COMPRESSORS. WARRANTY PERIOD BEGINS UPON PROJECT ACCEPTANCE
21. ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS WORK WITH ITS COMPLETION AND FINAL ACCEPTANCE AND SHALL REPLACE ANY OF THE SAME WHICH MAY BE DAMAGED, LOST, OR STOLEN WITHOUT ADDITIONAL COST TO THE OWNER.
23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FAILURE OF ANY DUCTWORK SYSTEM OR EQUIPMENT TO FUNCTION PROPERLY UPON COMPLETION OF HIS WORK UPON SAID SYSTEM OR EQUIPMENT.
24. SUBMIT SHOP DRAWING OF ALL WORK WHICH MUST BE APPROVED BY THE ARCHITECT AND ENGINEER BEFORE WORK COMMENCES.
25. ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
26. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, EQUIPMENT, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION. THE ON–SITE INSPECTION SHALL VERIFY EXISTING DUCTWORK, PIPING (SIZES, CLEARANCES, ETC) AND CONDITIONS.
27. INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS THE CONTRACTOR SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.
28. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, BALANCED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.
29. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL," "SHALL BE," "FURNISH," "PROVIDE," "A," "THE," AND "ALL" HAVE BEEN OMITTED FOR BREVITY.
30. WHERE A CONFLICT EXISTS BETWEEN THE DRAWINGS, THE SPECIFICATIONS OR ANY OTHER CONSTRUCTION DOCUMENT, THE ONE WITH THE MOST STRINGENT REQUIREMENT(S) SHALL APPLY.

DEFINITIONS:

1) "PROVIDE": TO SUPPLY, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.

2) "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.

3) "FURNISH" OR "SUPPLY": TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH RELATED ACCESSORIES.

SCOPE OF WORK

SCOPE OF WORK

1. THE WORK UNDER CONTRACT INCLUDES ALL LABOR, MATERIALS AND APPLIANCES NECESSARY FOR THE FURNISHING, INSTALLING AND TESTING, COMPLETE AND READY FOR SAFE OPERATION OF THE SYSTEMS AS DESCRIBED IN THE SPECIFICATIONS, FLOOR PLAN(S) DESIGN, DETAIL DRAWINGS, NOTES, RFI'S, ETC. FOR THIS PROJECT. WORK SHALL BE INSTALLED IN A NEAT, WORKMANLIKE MANNER.
2. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH THE DEPARTMENT HAVING JURISDICTION, OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.
3. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OR ACTUAL USE OF EQUIPMENT OR OCCUPANCY OF SPACES, BY OWNER, INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER DATE IS EARLIER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR.

GENERAL HVAC NOTES

GENERAL:

1. PROVIDE ALL MATERIAL AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE MECHANICAL SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.
2. CONTRACT DOCUMENT DRAWINGS FOR MECHANICAL WORK (HVAC, PLUMBING, AND FIRE PROTECTION) ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY.
3. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS THAT ARE NOT FIXED BY DIMENSIONS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS AND SHALL HAVE THE APPROVAL OF THE ENGINEER BEFORE BEING INSTALLED. DO NOT SCALE DRAWINGS.
4. WHEN MECHANICAL WORK (HVAC, PLUMBING, SHEET METAL, FIRE PROTECTION, ETC.) IS SUBCONTRACTED, IT SHALL BE THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE SUBCONTRACTORS AND THE ASSOCIATED CONTRACTS. WHEN DISCREPANCIES ARISE PERTAINING TO WHICH CONTRACTOR PROVIDES A PARTICULAR ITEM OF THE MECHANICAL CONTRACT OR WHICH CONTRACTOR PROVIDES FINAL CONNECTIONS FOR A PARTICULAR ITEM OF THE MECHANICAL CONTRACT, IT SHALL BE BROUGHT TO THE ATTENTION OF THE MECHANICAL CONTRACTOR, WHOSE DECISION SHALL BE FINAL.
5. COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH ARCHITECTURAL, STRUCTURAL, CIVIL, ELECTRICAL WORK, ETC., SHOWN ON OTHER CONTRACT DOCUMENT DRAWINGS.
6. INSTALL ALL MECHANICAL EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, CONTRACT DOCUMENTS, AND APPLICABLE CODES AND REGULATIONS.
7. WHERE TWO OR MORE ITEMS OF THE SAME TYPE OF EQUIPMENT ARE REQUIRED, THE PRODUCT OF ONE MANUFACTURER SHALL BE USED.
8. COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURERS' CERTIFIED DRAWINGS. COORDINATE AND PROVIDE ALL DUCT AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.
9. ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE AND ELECTRICAL DIVISION OF THE SPECIFICATION.
10. PROVIDE VIBRATION ISOLATION FOR ALL MECHANICAL EQUIPMENT TO PREVENT TRANSMISSION OF VIBRATION TO BUILDING STRUCTURE.
11. LOCATE ALL TEMPERATURE, AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS WITH THE STRAIGHT SECTION OF PIPE OR DUCT UP– AND DOWNSTREAM AS RECOMMENDED BY THE MANUFACTURER FOR GOOD ACCURACY.
12. WHERE BEAMS ARE INDICATED TO BE PENETRATED WITH DUCTWORK OR PIPING, COORDINATE DUCTWORK AND PIPING LAYOUT WITH BEAM OPENING SIZE AND OPENING LOCATIONS. COORDINATION SHALL BE DONE PRIOR TO THE FABRICATION OF DUCTWORK, CUTTING OF PIPING, OR FABRICATION OF BEAMS.
13. ALL MISCELLANEOUS STEEL REQUIRED TO ENSURE PROPER INSTALLATION AND AS SHOWN IN THE DETAILS FOR DUCTWORK AND EQUIPMENT (UNLESS OTHERWISE NOTED) SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
14. PROVIDE ACCESS PANELS FOR INSTALLATION IN WALLS AND CEILINGS, WHERE REQUIRED, TO SERVICE DAMPERS, VALVES, SMOKE DETECTORS, AND OTHER CONCEALED MECHANICAL EQUIPMENT. ACCESS PANELS SHALL BE TURNED OVER TO THE GENERAL CONTRACTOR FOR INSTALLATION. ACCESS PANELS SHALL HAVE THE EQUAL RATED CAPACITY (1HR, 2HR, ETC.) AS WALL.
15. MECHANICAL EQUIPMENT, DUCTWORK, AND PIPING SHALL NOT BE SUPPORTED FROM A METAL DECK.
16. ALL EQUIPMENT, PIPING, DUCTWORK, ETC., SHALL BE SUPPORTED AS DETAILED, SPECIFIED AND REQUIRED TO PROVIDE A VIBRATION–FREE INSTALLATION.
17. ALL DUCTWORK, PIPING, AND EQUIPMENT SUPPORTED FROM STRUCTURAL STEEL SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. ALL ATTACHMENTS TO STEEL BAR JOISTS, TRUSSES, OR JOIST GIRDERS SHALL BE AT PANEL POINTS. PROVIDE BEAM CLAMPS MEETING MSS STANDARDS. WELDING TO STRUCTURAL MEMBERS SHALL NOT BE PERMITTED. THE USE OF C–CLAMPS SHALL NOT BE PERMITTED.
18. LOCATIONS AND SIZES OF ALL FLOOR, WALL, AND ROOF OPENINGS SHALL BE COORDINATED WITH ALL OTHER TRADES INVOLVED.
19. ALL OPENINGS IN FIRE WALLS DUE TO DUCTWORK, PIPING, CONDUIT, ETC., SHALL BE FIRE STOPPED WITH A PRODUCT SIMILAR TO 3M OR APPROVED EQUAL.
20. ALL CONDENSATE DRAIN LINES FROM EACH ROOF TOP UNIT SHALL BE PIPED FULL SIZE OF THE UNIT DRAIN OUTLET, WITH "P" TRAP, AND PIPED TO THE NEAREST DRAIN. SEE THE DETAILS SHOWN IN THE DRAWINGS OR THE CONTRACT SPECIFICATIONS FOR THE DEPTH OF THE AIR CONDITIONING CONDENSATE TRAP.
21. REFER TO TYPICAL DETAILS FOR DUCTWORK, PIPING, AND EQUIPMENT INSTALLATION.
22. ALL TESTS SHALL BE COMPLETED BEFORE ANY MECHANICAL EQUIPMENT OR PIPING INSULATION IS APPLIED.
23. TESTING, ADJUSTING, AND BALANCING AGENCY SHALL BE A MEMBER OF THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB). TESTING, ADJUSTING, AND BALANCING SHALL BE PERFORMED IN ACCORDANCE WITH THE AABC STANDARDS.

HVAC DUCTWORK – SHEET METAL

1. CERTAIN ITEMS SUCH AS RISES AND DROPS IN DUCTWORK,ACCESS DOORS, VOLUME DAMPERS, ETC., ARE INDICATED ON THE CONTRACT DOCUMENT DRAWINGS FOR CLARITY FOR A SPECIFIC LOCATION REQUIREMENT AND SHALL NOT BE INTERPRETED AS THE EXTENT OF THE REQUIREMENTS FOR THESE ITEMS.
2. CONTRACTOR TO CHECK AND CORRECT ANY AND ALL DEFICIENCIES IN EXISTING DUCTS. ALL NEW DUCTWORK WILL COMPLY WITH THE LATEST SMACNA GUIDELINES AND CONFORM WITH REQUIREMENTS OF THE LATEST HANDBOOKS PUBLISHED BY ASHRAE.
3. PROVIDE VOLUME DAMPER AT EACH TAP TO MAIN DUCT AND WHERE NECESSARY TO PROPERLY BALANCE SYSTEM.
4. SUPPLY AND RETURN DUCTWORK 20' FROM ALL HVAC UNITS SHALL BE LINED WITH 1.5" ACOUSTICAL LINING.
5. RE–INSULATE ALL DUCTWORK AND PIPING IN WHICH INSULATION HAS BEEN REMOVED OR DAMAGED WITH INSULATION EQUAL TO THE EXISTING INSULATION.
6. CONTRACTOR SHALL SUPPLY AND INSTALL ALL NECESSARY SUPPLY DIFFUSERS AND RETURN AIR REGISTERS WHERE INDICATED ON THE DRAWING. COORDINATE LOCATION OF DIFFUSERS AND REGISTERS WITH REFLECTED CEILING PLAN.
7. IN CORRIDORS WHERE CEILING SPEAKERS AND AIR DIFFUSERS ARE INDICATED BETWEEN THE SAME LIGHT FIXTURES, INSTALL BOTH DEVICES AT THE QUARTER POINTS BETWEEN THE FIXTURES.
8. UNLESS OTHERWISE SHOWN, LOCATE ALL ROOM THERMOSTATS 4'–0" (CENTER LINE) ABOVE THE FINISHED FLOOR. NOTIFY THE ENGINEER OF ANY ROOMS WHERE THE PRECEDING LOCATION CANNOT BE MAINTAINED OR WHERE THERE IS A QUESTION ON LOCATION.
9. ALL DUCTWORK SHALL CLEAR DOORS AND WINDOWS.
10. ALL DUCTWORK DIMENSIONS, AS SHOWN ON THE DRAWINGS, ARE INTERNAL CLEAR DIMENSIONS AND DUCT SIZE SHALL BE INCREASED TO COMPENSATE FOR DUCT LINING THICKNESS.
11. PROVIDE ALL 90–DEGREE SQUARE ELBOWS WITH DOUBLE RADIUS TURNING VANES UNLESS OTHERWISE INDICATED. ELBOWS IN DISHWASHER, KITCHEN, AND LAUNDRY EXHAUSTS SHALL BE OF UN–VANED SMOOTH RADIUS CONSTRUCTION WITH A RADIUS EQUAL TO 1–1/2 TIMES THE WIDTH OF THE DUCT. PROVIDE ACCESS DOORS UPSTREAM OF ALL ELBOWS WITH TURNING VANES.
12. COORDINATE DIFFUSER, REGISTER, AND GRILL LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS, LIGHTING, AND OTHER CEILING ITEMS AND MAKE MINOR DUCT MODIFICATIONS TO SUIT.
13. ALL AIR HANDLING UNITS SHALL OPERATE WITHOUT MOISTURE CARRYOVER.
14. LOCATE ALL MECHANICAL EQUIPMENT FOR U

SECTION 0101 – QUALITY OF WORK

1.1 WORKMANSHIP

A. ALL WORK SHALL BE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE.

B. ALL DEFECTS WHICH DEVELOP OR ARE DISCOVERED WITHIN THIS PERIOD SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE ARCHITECT OR BUILDING MANAGER AT NO ADDITIONAL COST TO THE OWNER.

C. UPON COMPLETION OF THE WORK THE CONTRACTOR SHALL REMOVE FROM THE SITE, ALL TOOLS, DEMOLISHED APPLIANCES AND ANY SURPLUS MATERIAL.

1.2 CODE COMPLIANCE

A. ALL WORK SHALL MEET ALL STATE AND LOCAL CODES HAVING JURISDICTION.

END OF SECTION 0101

SECTION 0102 –REQUIRED DOCUMENTS

1.1 SHOP DRAWINGS

A. A SET OF PRINTS FOR ANY MECHANICAL WORK INCLUDING BUT NOT LIMITED TO, DUCTWORK AND PIPING LAYOUT SHALL BE SUBMITTED FOR APPROVAL TO THE ENGINEER PRIOR TO CONSTRUCTION OR PURCHASE OF MATERIALS.

1.2 SUBMITTALS

A. EQUIPMENT SUBMITTALS OF ALL PROPOSED MECHANICAL AND ANCILLARY EQUIPMENT INCLUDING ALL ACCESSORIES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. ALL PERTINENT MODELS, SIZES, ACCESSORIES AND CHOICES SHALL BE CLEARLY CHECKED, PRINTED OR OTHERWISE INDICATED ON THE SUBMITTALS.

1.3 RECORD DRAWINGS

A. UPON COMPLETION OF THE WORK, A RECORD DRAWING SHALL BE SUBMITTED TO THE OWNER DEPICTING ALL SUBSEQUENT CHANGES, ADDITIONS AND OR CORRECTIONS TO THE CONTRACT DRAWINGS AND OR CONTRACT SCOPE MADE DURING CONSTRUCTION. THIS DRAWING SHALL REPRESENT A COMPLETE RECORD OF THE WORK INSTALLED.

1.4 EQUIPMENT OPERATING INSTRUCTIONS

A. ON COMPLETION AND ACCEPTANCE OF WORK, THIS CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS,EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS CONTRACT.

B. THESE INSTRUCTIONS SHALL BE TYPED ON 8–1/2 IN. X 11 IN. PAPER AND BOUND IN THREE–RING BINDERS WITH CLEAR ACETATE COVERS. THE CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE ELECTRONIC COPY TO THE ENGINEER.

C. THE INSTRUCTION BOOKLET SHALL BE ORGANIZED IN SECTIONS, WITH ONE SECTION PER SYSTEM. THE COVER OF THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND PHONE NUMBER OF THE PROJECT, ARCHITECT, ENGINEER, MECHANICAL CONTRACTOR AND SUBCONTRACTORS.

END OF SECTION 0102

SECTION 078413–PENETRATION FIRE–STOPPING

1.1 QUALITY ASSURANCE

A. INSTALLER QUALIFICATIONS: AN FM GLOBAL–APPROVED FIRE–STOP CONTRACTOR OR A UL–QUALIFIED FIRE–STOP CONTRACTOR.

B. FIRE–TEST–RESPONSE CHARACTERISTICS: UL, INTERTEK ETL SEMKO OR FM GLOBAL

1.2 PENETRATION FIRESTOPPING

A. PENETRATIONS IN FIRE–RESISTANCE–RATED WALLS: F–RATINGS PER ASTM E 814 OR UL 1479.

B. PENETRATIONS IN HORIZONTAL ASSEMBLIES: F– AND T–RATINGS PER ASTM E 814 OR UL 1479:

C. PENETRATIONS IN SMOKE BARRIERS: L–RATINGS PER UL 1479.

D. W–RATINGS: PER UL 1479.

1.3 INSTALLATION

A. IDENTIFICATION: PREPRINTED METAL OR PLASTIC LABELS.

1.4 FIELD QUALITY CONTROL

A. INSPECTION OF INSTALLED FIRE–STOPPING: BY OWNER–ENGAGED AGENCY ACCORDING TO ASTM E 2174.

1.5 THROUGH–PENETRATION FIRESTOP SYSTEM SCHEDULE

WHERE UL–CLASSIFIED SYSTEMS ARE INDICATED, THEY REFER TO SYSTEM NUMBERS IN UL'S "FIRE RESISTANCE DIRECTORY" UNDER PRODUCT CATEGORY XHEZ.

FOR THE FOLLOWING SYSTEMS:

METALLIC AND NON–METALLIC PIPES, CONDUIT, OR TUBING, ELECTRICAL CABLES, CABLE TRAYS WITH ELECTRIC CABLES, MISCELLANEOUS ELECTRICAL PENETRANTS, INSULATED PIPES, GROUPINGS OF PENETRANTS, USE ON OR MORE THE FOLLOWING MATERIALS:

a. LATEX SEALANT
b. SILICONE SEALANT
c. INTUMESCENT PUTTY
d. MORTAR
h. SILICONE FOAM
i. PILLOWS/BAGS
j. INTUMESCENT WRAP STRIPS
k. INTUMESCENT COMPOSITE SHEET

1.6 MANUFACTURERS

1. HILTI CONSTRUCTION CHEMICAL, INC
2. TREMCO INC.
3. 3M FIRE PROTECTION PRODUCTS

END OF SECTION 078413

SECTION 230517 – SLEEVES AND SLEEVE SEALS FOR HVAC PIPING

1.1 SLEEVE–SEAL SYSTEMS

A. FIELD–ASSEMBLED, MODULAR SEALING–ELEMENT UNIT FOR FILLING ANNULAR SPACE BETWEEN PIPING AND SLEEVE.

1. SEALING ELEMENTS: EPDM RUBBER OR NBR.
2. PRESSURE PLATES: CARBON STEEL, PLASTIC, STAINLESS STEEL.
3. CONNECTING BOLTS AND NUTS: CARBON STEEL WITH CORROSION–RESISTANT COATING, STAINLESS STEEL.

B. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

1. ADVANCE PRODUCTS & SYSTEMS, INC.
2. CALPICO, INC.
3. METRAFLEX COMPANY (THE).
4. PIPELINE SEAL AND INSULATOR, INC.

1.2 SLEEVE–SEAL FITTINGS

A. MANUFACTURED PLASTIC, SLEEVE–TYPE, PLASTIC OR RUBBER WATER–STOP ASSEMBLY MADE FOR IMBEDDING IN CONCRETE SLAB OR WALL.

1.3 GROUT

A. NON–SHRINK, FACTORY PACKAGED.

1.4 SLEEVE AND SLEEVE–SEAL SCHEDULE

A. USE SLEEVES AND SLEEVE SEALS FOR THE FOLLOWING PIPING–PENETRATION APPLICATIONS:

1. INTERIOR PARTITIONS:
a. PIPING SMALLER THAN NPS 6 (DN 150): GALVANIZED–STEEL–PIPE SLEEVES, PVC–PIPE SLEEVES.
b. PIPING NPS 6 (DN 150) AND LARGER: GALVANIZED–STEEL–SHEET SLEEVES.

END OF SECTION 230517

SECTION 230518 – ESCUTCHEONS FOR HVAC PIPING

PART 2 – PRODUCTS

2.1 ESCUTCHEONS

A. ONE–PIECE, CAST–BRASS TYPE: WITH POLISHED, CHROME–PLATED AND ROUGH–BRASS FINISH AND SETSCREW FASTENER.

2.2 FLOOR PLATES

A. ONE–PIECE FLOOR PLATES: CAST–IRON FLANGE WITH HOLES FOR FASTENERS.

PART 3 – EXECUTION

3.1 INSTALLATION

A. INSTALL ESCUTCHEONS FOR PIPING PENETRATIONS OF WALLS, CEILINGS, AND FINISHED FLOORS.

B. INSTALL ESCUTCHEONS WITH ID TO CLOSELY FIT AROUND PIPE, TUBE, AND INSULATION OF PIPING AND WITH OD THAT COMPLETELY COVERS OPENING.

1. ESCUTCHEONS FOR NEW PIPING:
a. PIPING WITH FITTING OR SLEEVE PROTRUDING FROM WALL: ONE–PIECE, DEEP–PATTERN TYPE.
b. INSULATED PIPING: ONE–PIECE, STAMPED–STEEL TYPE.
c. BARE PIPING AT WALL AND FLOOR PENETRATIONS IN FINISHED SPACES: ONE–PIECE, CAST–BRASS TYPE WITH POLISHED, CHROME–PLATED FINISH OR STAMPED–STEEL TYPE.
d. BARE PIPING AT CEILING PENETRATIONS IN FINISHED SPACES: ONE–PIECE, CAST–BRASS TYPE WITH POLISHED, CHROME–PLATED FINISH OR STAMPED–STEEL TYPE.

3.2 FIELD QUALITY CONTROL

A. REPLACE BROKEN AND DAMAGED ESCUTCHEONS AND FLOOR PLATES USING NEW MATERIALS.

END OF SECTION 230518

SECTION 230529 – HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT

1.1 PERFORMANCE REQUIREMENTS

A. DELEGATED DESIGN: DESIGN TRAPEZE PIPE HANGERS AND EQUIPMENT SUPPORTS, INCLUDING COMPREHENSIVE ENGINEERING ANALYSIS BY A QUALIFIED PROFESSIONAL ENGINEER, USING PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA INDICATED.

B. STRUCTURAL PERFORMANCE: HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT SHALL WITHSTAND THE EFFECTS OF GRAVITY LOADS AND STRESSES WITHIN LIMITS AND UNDER CONDITIONS INDICATED ACCORDING TO ASCE/SEI 7.

1. DESIGN SUPPORTS FOR MULTIPLE PIPES CAPABLE OF SUPPORTING COMBINED WEIGHT OF SUPPORTED SYSTEMS, SYSTEM CONTENTS, AND TEST WATER.

DESIGN EQUIPMENT SUPPORTS CAPABLE OF SUPPORTING COMBINED OPERATING WEIGHT OF SUPPORTED EQUIPMENT AND CONNECTED SYSTEMS AND 3.DESIGN SEISMIC–RESTRAINT HANGERS AND SUPPORTS FOR PIPING AND EQUIPMENT AND OBTAIN APPROVAL FROM AUTHORITIES HAVING JURISDICTION.

1.2 SUBMITTALS

A. SHOP DRAWINGS: SIGNED AND SEALED BY A PROFESSIONAL ENGINEER

1.3 QUALITY ASSURANCE

A. AWS D1.1/D1.1M, "STRUCTURAL WELDING CODE – STEEL."

1.4 COMPONENTS

A. METAL PIPE HANGERS AND SUPPORTS: CARBON OR STAINLESS STEEL

B. FIBERGLASS PIPE HANGERS: –CLEVIS, CENTURY COMPOSITES, COOPER B–LINE

D. METAL FRAMING SYSTEMS: MFMA MANUFACTURER

E. FIBERGLASS STRUT SYSTEMS: COOPER B–LINE

F. THERMAL–HANGER SHIELD INSERTS:

G. FASTENER SYSTEMS: POWDER–ACTUATED FASTENERS OR MECHANICAL–EXPANSION ANCHORS

H. PIPE STANDS: COMPACT, LOW TYPE, SINGLE PIPE, HIGH TYPE, SINGLE PIPE, HIGH TYPE, MULTIPLE PIPES, CURB–MOUNTED TYPE

I. EQUIPMENT SUPPORTS.

END OF SECTION 230529

SECTION 230548 – VIBRATION CONTROLS FOR HVAC PIPING AND EQUIPMENT

PART 1 – GENERAL

1.1 COMPONENTS

A. VIBRATION ISOLATORS:

1. ISOLATOR PADS: NEOPRENE, RUBBER, HERMETICALLY AND/OR SEALED COMPRESSED FIBERGLASS
2. MOUNTS: DOUBLE–DEFLECTION TYPE.
3. RESTRAINED MOUNTS: ALL DIRECTIONAL MOUNTINGS WITH SEISMIC RESTRAINT; CAST–DUCTILE–IRON HOUSING.
4. SPRING ISOLATORS: FREESTANDING, LATERALLY STABLE, OPEN–SPRING TYPE.
5. RESTRAINED SPRING ISOLATORS: FREESTANDING, STEEL, OPEN–SPRING TYPE WITH SEISMIC RESTRAINT.
6. HOUSED SPRING MOUNTS: DUCTILE–IRON OR STEEL HOUSING, WITH INTEGRAL, VERTICALLY ADJUSTABLE SEISMIC SNUBBERS.
7. ELASTOMERIC HANGERS: DOUBLE–DEFLECTION TYPE.
8. SPRING HANGERS: COMBINATION COIL–SPRING AND ELASTOMERIC–INSERT HANGERS WITH SPRING AND INSERT IN COMPRESSION.
9. SPRING HANGERS WITH VERTICAL–LIMIT STOP: COMBINATION COIL–SPRING AND ELASTOMERIC–INSERT HANGERS WITH SPRING AND INSERT IN COMPRESSION AND WITH VERTICAL–LIMIT STOP.
10.PIPE RISER RESILIENT SUPPORT: ALL–DIRECTIONAL, ACOUSTICAL PIPE ANCHOR.
11.RESILIENT PIPE GUIDES.

B. AIR–MOUNTING SYSTEMS:

1. AIR MOUNTS: FREESTANDING, SINGLE OR MULTIPLE, COMPRESSED–AIR BELLOWS.
2. RESTRAINED AIR MOUNTS: HOUSED COMPRESSED–AIR BELLOWS.

C. RESTRAINED VIBRATION ISOLATION ROOF–CURB RAILS: FACTORY–ASSEMBLED, FULLY ENCLOSED, INSULATED, AIR– AND WATERTIGHT CURB RAIL; WITH SPRING ISOLATORS MOUNTED ON ELASTOMERIC ISOLATION PADS, AND SNUBBER BUSHINGS.

D. VIBRATION ISOLATION EQUIPMENT BASES:

1. STEEL BASE: FACTORY–FABRICATED, WELDED, STRUCTURAL–STEEL BASES AND RAILS.
2. INERTIA BASE: FACTORY–FABRICATED, WELDED, STRUCTURAL–STEEL BASES AND RAILS READY FOR FIELD–APPLIED, CAST–IN–PLACE CONCRETE

1.2 FIELD QUALITY CONTROL

A. TESTING: BY EITHER: OWNER–ENGAGED AGENCY, CONTRACTOR–ENGAGED AGENCY, OR CONTRACTOR.

PART–2 PRODUCTS

1.1 VIBRATION ISOLATORS & SEISMIC–RESTRAINT DEVICES

A. AVAILABLE MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

B. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:

1. ACE MOUNTINGS CO., INC.
2. AMBER/BOOTH COMPANY, INC.
3. CALIFORNIA DYNAMICS CORPORATION.
4. HILTI, INC.
5. ISOLATION TECHNOLOGY, INC.
6. KINETICS NOISE CONTROL.
7. LOOS & CO.; CABLEWARE DIVISION.
8. MASON INDUSTRIES.
9. TOLCO INCORPORATED; A BRAND OF NIBCO INC.
10. UNISTRUT; TYCO INTERNATIONAL, LTD.

END OF SECTION 230548

SECTION 230593 – TESTING, ADJUSTING, AND BALANCING FOR HVAC

1.1 SUMMARY

A. TESTING, ADJUSTING, AND BALANCING FOR THE FOLLOWING:

1. AIR SYSTEMS: CONSTANT AND VARIABLE VOLUME SYSTEMS.
2. MOTORS.

1.2 QUALITY ASSURANCE

A. THE CONTRACTOR SHALL PROCURE THE SERVICES OF A TESTING, ADJUSTING AND BALANCING (TAB) SPECIALIST WHO SPECIALIZES IN HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS. THE TAB AGENT SHALL HAVE THE FOLLOWING QUALIFICATIONS: AABC, NEBB OR TABB CERTIFIED.

1.3 EXECUTION

A. THE TAB SPECIALIST SHALL PERFORM FLOW MEASUREMENTS OF ALL EXISTING AIR AND HYDRONIC SYSTEMS THAT ARE TO REMAIN OR TO BE INCORPORATED INTO NEW WORK PRIOR TO THE STARTING OF WORK IN THE PROJECT SCOPE. A REPORT OF THESE MEASUREMENTS, INDICATING ANY AND ALL DEFICIENCIES SHALL BE SUBMITTED FOR OWNER REVIEW.

B. THE TAB SPECIALIST SHALL PERFORM FLOW MEASUREMENTS OF ALL NEW AIR AND HYDRONIC SYSTEMS AS LISTED ABOVE IN THE PROJECT SCOPE. A REPORT OF THESE MEASUREMENTS, INDICATING ANY AND ALL DEFICIENCIES SHALL BE SUBMITTED FOR OWNER REVIEW.

C. THE REPORT SHALL INDICATE A SCHEMATIC DIAGRAM INDICATING LOCATIONS OF ALL EQUIPMENT TESTED AND MEASUREMENT LOCATIONS.

D. PRIOR TO FINAL INSPECTION OF THE WORK, THE TAB SPECIALIST SHALL BALANCE ALL SYSTEMS AS INDICATED ABOVE TO THE REQUIREMENTS OF THE DESIGN.

E. THE CONTRACTOR SHALL HAVE FURNISH AND INSTALL ALL ADDITIONAL BALANCING EQUIPMENT, PRESSURE TAPS, GAUGES AND OTHER EQUIPMENT AS REQUIRED FOR A PROPERLY BALANCED SYSTEM AT NO ADDITIONAL COST TO THE OWNER. SUCH ADDITIONAL EQUIPMENT SHALL ADHERE IN STRICT ACCORDANCE WITH THE RESPECTIVE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.

F. THE CONTRACTOR SHALL HAVE THE TESTING AND BALANCING SPECIALIST COORDINATE ALL WORK OF THIS S3ECTION WITH THE BUILDING MANAGER. BALANCING WORK SHALL NOT CONFLICT WITH OTHER WORK SO AS TO MAINTAIN COMPLETION WITHIN THE SPECIFIED TIME.

G. ALL INSTRUMENTS USED FOR TAB SHALL BE MAINTAINED IN GOOD WORKING CONDITION AND ACCURATELY CALIBRATED.

H. TOLERANCES: PLUS OR MINUS 5 PERCENT OF DESIGN VALUES.

I. INSPECTIONS: RANDOM CHECKS BY OWNER OR ARCHITECT TO VERIFY FINAL TESTING, ADJUSTING, AND BALANCING REPORT.

J. ADDITIONAL TESTS: RANDOM TESTS WITHIN 90 DAYS OF COMPLETING TAB TO VERIFY BALANCE CONDITIONS AND SEASONAL TESTS.

END OF SECTION 230593

SECTION 230713 – DUCT INSULATION

1.1 QUALITY ASSURANCE

SURFACE–BURNING CHARACTERISTICS: ALL INSULATION SHALL HAVE COMPOSITE (INSULATION JACKET OR FACING AND ADHESIVE USED TO ADHERE THE FACING OR JACKET TO THE INSULATION) A FLAME–SPREAD INDEX OF 25, AND SMOKE–DEVELOPED INDEX OF 50 FOR INSULATION INSTALLED INDOOR, 75, AND SMOKE–DEVELOPED INDEX OF 150 FOR INSULATION INSTALLED OUTDOORS; ACCORDING TO ASTME 84.

1.2 FIELD QUALITY CONTROL

A. FIELD INSPECTIONS: BY OWNER–ENGAGED AGENCY.

1.3 INDOOR DUCT AND PLENUM INSULATION SCHEDULE;

A. CONCEALED, RECTANGULAR, ROUND AND FLAT–OVAL, SUPPLY–RETURN, OUTDOOR–AND EXHAUST–AIR DUCT AND AIR PLENUM INSULATION:

B. FLEXIBLE ELASTOMERIC, MINERAL–FIBER BLANKET,

MINERAL–FIBER BOARD OR POLYOLEFIN WITH MINIMUM INSTALLED THERMAL RESISTANCE AS FOLLOWS:

	SA PLENUM	RA PLENUM
UNCONDITIONED SPACES:	R–4.2	R–4.2
UNVENTED ATTIC ABOVE INSULATED CEILING:	R–6	R–4.2
EXTERIOR OF BUILDING:	R–6	R–4.2

1.4 ITEMS NOT INSULATED:

1. FIBROUS–GLASS DUCTS.
2. METAL DUCTS WITH DUCT LINER OR SUFFICIENT THICKNESS TO COMPLY WITH ENERGY CODE ANDASHRAE/IESNA 90.1.
3. FACTORY–INSULATED FLEXIBLE DUCTS.
4. FACTORY–INSULATED PLENUMS AND CASINGS.
5. FLEXIBLE CONNECTORS.
6. VIBRATION–CONTROL DEVICES.
7. FACTORY–INSULATED ACCESS PANELS AND DOORS.
8. DUCTS THAT HAVE INTERNAL ACOUSTICAL LINING.

1.5 PRODUCTS

A. THE FOLLOWING INSULATION MANUFACTURERS WILL BE ACCEPTABLE:

1. JOHNS–MANVILLE
2. OWENS–CORNING

1.6 ACOUSTICAL TREATMENT

1. WHERE SHOWN ON THE DRAWINGS, LOW PRESSURE DUCTWORK SHALL BE LINED WITH 1.5" THICK R–6 AS MANUFACTURED BY DUCTMATE, 1–1/2 POUND MINIMUM DENSITY, NEOPRENE COATED, FLEXIBLE FIBERGLASS DUCT LINER. LINING SHALL COMPLY WITH NFPA 90A AND SHALL HAVE A FLAME SPREAD CLASSIFICATION OF NOT MORE THAN 25 AND A SMOKE DEVELOPED RATING NOT MORE THAN 50. DUCT SIZES WHERE LINING IS INDICATED ON PLANS ARE MINIMUM INSIDE CLEAR DIMENSIONS REQUIRED,

END OF SECTION 230713

SECTION 233113 – METAL DUCTS

1.1 CONSTRUCTION

A. EACH DUCT SYSTEM SHALL BE CONSTRUCTED FOR THE SPECIFIC SMACNA DUCT PRESSURE CLASSIFICATIONS SHOWN ON THE CONTRACT DRAWINGS. WHERE NO PRESSURE CLASSES ARE SPECIFIED BY THE DESIGNER, THE SMACNA 2–1/2 INCH WG PRESSURE CLASS IS THE BASIS OF COMPLIANCE WITH THESE STANDARDS, REGARDLESS OF THE VELOCITY IN THE DUCT.

B. ALL DUCTWORK SHALL BE CONSTRUCTED TO SMACNA 2" WG DESIGN AND NOT LESS THAN THE FOLLOWING STANDARDS:

1. DUCTWORK SHALL BE TRANSVERSELY JOINTED BY CONNECTING SEAMS OF COMPANION ANGLES, FORMED FROM 1–1/2"X1–1/2"X1/8" GALVANIZED ANGLES, TACK–WELDED OR RIVETED TO THE DUCT. THE ANGLE FRAME SHALL BE CONTINUOUSLY FLANGED UP INTO UPRIGHT OF ANGLE AND EACH CORNER SHALL BE FILLED IN AND GROUND SMOOTH. JOINTS SHALL BE GASKETED WITH 1/8" THICK REINFORCED GASKET, OVERLAPPED AT CORNERS, GASKET SIMILAR TO 3M–1202 OR APPROVED EQUAL.
2. RECTANGULAR FITTINGS AND ALL TRANSITION PIECES FROM RECTANGULAR TO ROUND SHALL BE NO. 16 GAUGE ALL WELDED CONSTRUCTION.
3. HORIZONTAL DUCTS SHALL BE SUPPORTED ON NOT MORE THAN 6' CENTERS. VERTICAL RISERS SHALL BE SUPPORTED AT EACH FLOOR.
4. LONGITUDINAL SEAMS FOR RECTANGULAR DUCTWORK SHALL BE PITTSBURGH LOCK SEAMS WITH SEALING COMPOUND, EQUAL TO BENJAMIN FOSTER NO. 30–03 INSERTED INTO SEAM. ALL SEAMS SHALL BE BRUSHED WITH NO. 30–02 AND COVERED WITH APPROVED SEALING TAPE.
5. RECTANGULAR DUCTWORK 18 GAUGE AND HEAVIER, FILLER RODS SHALL BE IN ACCORDANCE WITH SPECIFICATIONS FOR IRON AND STEEL GAS WELDING RODS, ASTM 215; AWG A5.2.
6. ALL FITTINGS SUCH AS ELBOWS, TEES, ETC., SHALL BE NO. 20 GAUGE ZINC COATED STEEL. ELBOWS SHALL BE OF FIVE (5) PIECE WELDED AIRTIGHT CONSTRUCTION.

C. WHERE LATEST EDITION OF SMACNA DOES NOT CLEARLY STATE GAUGES AND/OR STIFFENERS TO BE USED OR, WHERE SMACNA STANDARDS REQUIRE INTERPRETATION, THE FOLLOWING MINIMUM METAL GAUGES AND BRACING SHALL BE USED:

USG	MAX. SIDE INCHES	TRANSVERSE JOINTS AND BRACING
22	UP TO 12	S SLIP, DRIVE SLIP, ONE INCH POCKET LOCK ON 8 FOOT CENTERS
22	13 TO 24	1"X1"X1/8" ANGLES ON 4 FOOT CENTERS
20	25 TO 35	1"X1"X1/8" ANGLES ON 2 FOOT CENTERS

D. PROVIDE TAPPING IN DUCTS FOR THERMOMETERS WHERE SPECIFIED. IN ADDITION, PROVIDE AN AIRTIGHT PLUGGED TAPPING LOCATED AS FOLLOWS:

1. UPSTREAM OF EACH REHEAT COIL AND VAV BOX.
2. DOWNSTREAM OF EACH REHEAT COIL AND VAV BOX.

E. FLAT OVAL OR ROUND DUCTWORK MAY BE PROVIDED IN LIEU RECTANGULAR DUCTWORK WITH THE REINFORCEMENT FOR FLAT SIDES SAME AS SPECIFIED FOR THE RECTANGULAR DUCTWORK, AND AS PER SMACNA FLAT OVAL DUCT CONSTRUCTION STANDARDS SHOWN IN FIG. 3–6 AND AS SHOWN IN FIG. 3–1 AND 3–2 FOR ROUND DUCTWORK.

F. ALL DUCTWORK SHALL BE SEALED TO CLASS "A" AND LEAK TESTED TO MEAT SMACNA CLASS 6 FOR RECTANGULAR AND CLASS 3 FOR ROUND DUCTS.

1.2 MATERIALS

A. SINGLE–WALL RECTANGULAR DUCTS AND FITTINGS.

B. SINGLE–WALL ROUND AND FLAT–OVAL DUCTS AND FITTINGS.

C. SHEET METAL MATERIALS:

1. GALVANIZED SHEET STEEL.
2. STAINLESS–STEEL SHEETS.
3. ALUMINUM SHEETS.
4. FACTORY–APPLIED ANTI–MICROBIAL COATING.

D. DUCT LINER:

1. FIBROUS GLASS, TYPE I, FLEXIBLE.
a. WITH ANTI–MICROBIAL EROSION–RESISTANT COATING.
2. FLEXIBLE ELASTOMERIC.
3. NATURAL FIBER.

E. SEALANT MATERIALS:

1. TWO–PART TAPE SEALING SYSTEM.
2. WATER–BASED JOINT AND SEAM SEALANT.
3. SOLVENT–BASED JOINT AND SEAM SEALANT.
4. FLANGED JOINT SEALANT.
5. FLANGE GASKETS.
6. ROUND DUCT JOINT O–RING SEALS.

1.3 DUCT CLEANING

A. CLEAN EXISTING DUCT SYSTEM(S) BEFORE TESTING, ADJUSTING, AND BALANCING.

B. CLEAN THE FOLLOWING ITEMS:

1. AIR OUTLETS AND INLETS.
2. SUPPLY, RETURN, AND EXHAUST FANS.
3. AIR–HANDLING UNITS.
4. COILS AND RELATED COMPONENTS.
5. RETURN–AIR DUCTS, DAMPERS, ACTUATORS, AND TURNING VANES.
6. SUPPLY–AIR DUCTS, DAMPERS, ACTUATORS, AND TURNING VANES.
7. DEDICATED EXHAUST AND VENTILATION COMPONENTS AND MAKEUP AIR SYSTEMS.

1.4 DUCT SCHEDULE

A. ALL DUCTS SHALL BE GALVANIZED STEEL EXCEPT AS FOLLOWS:

8. MOIST ENVIRONMENT DUCT MATERIAL: ALUMINUM.

END OF SECTION 233113

SECTION 233713 – DIFFUSERS, REGISTERS, AND GRILLES

1.1 PRODUCTS

A. DIFFUSERS, REGISTERS AND GRILLES SHALL BE FURNISHED AND INSTALLED FOR CAPACITIES AND IN LOCATIONS INDICATED ON DRAWINGS. ALL REGISTERS AND DIFFUSERS SHALL BE PRIME COATED STEEL OR EXTRUDED ALUMINUM FINISHED UNLESS OTHERWISE NOTED IN BAKED WHITE ENAMEL.

B. MANUFACTURERS: TITUS

1. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCT BY ONE OF THE FOLLOWING:

a. CARNES.
b. HART & COOLEY INC.
c. KRUEGER.
d. METALAIRE, INC.
e. NAILOR INDUSTRIES INC.
f. RUSKIN

C. ALL DIFFUSERS SHALL HAVE CONTROLLING/EQUALIZING GRID AND OPPOSED BLADE DAMPER UNLESS OTHERWISE NOTED.

D. ALL DUCTED RETURN REGISTERS SHALL HAVE AN OPPOSED BLADE DAMPER UNLESS OTHERWISE NOTED.

END OF SECTION 233713

A. C403.2.4 HVAC SYSTEM CONTROLS.

EACH HEATING AND COOLING SYSTEM SHALL BE PROVIDED WITH THERMOSTATIC CONTROLS AS SPECIFIED IN SECTION C403.2.4.1, C403.2.4.1.3, C403.2.4.2, C403.2.4.3, C403.2.12.5, C403.3.1, C403.4, OR C403.4.4.

B. C403.2.4.1 THERMOSTATIC CONTROLS.

THE SUPPLY OF HEATING AND COOLING ENERGY TO EACH ZONE SHALL BE CONTROLLED BY INDIVIDUAL THERMOSTATIC CONTROLS CAPABLE OF RESPONDING TO TEMPERATURE WITHIN THE ZONE. WHERE HUMIDIFICATION OR DEHUMIDIFICATION OR BOTH IS PROVIDED, AT LEAST ONE HUMIDITY CONTROL DEVICE SHALL BE PROVIDED FOR EACH HUMIDITY CONTROL SYSTEM.

EXCEPTION: INDEPENDENT PERIMETER SYSTEMS THAT ARE DESIGNED TO OFFSET ONLY BUILDING ENVELOPE HEAT LOSSES, GAINS OR BOTH SERVING ONE OR MORE PERIMETER ZONES ALSO SERVED BY AN INTERIOR SYSTEM PROVIDED:

THE PERIMETER SYSTEM INCLUDES AT LEAST ONE THERMOSTATIC CONTROL ZONE FOR EACH BUILDING EXPOSURE HAVING EXTERIOR WALLS FACING ONLY ONE ORIENTATION (WITHIN ±45 DEGREES) (0.8 RAD) FOR MORE THAN 50 CONTIGUOUS FEET (15 240 MM); AND

THE PERIMETER SYSTEM HEATING AND COOLING SUPPLY IS CONTROLLED BY THERMOSTATS LOCATED WITHIN THE ZONES SERVED BY THE SYSTEM.

C. C403.2.4.1.2 DEADBAND.

WHERE USED TO CONTROL BOTH HEATING AND COOLING, ZONE THERMOSTATIC CONTROLS SHALL BE CAPABLE OF PROVIDING A TEMPERATURE RANGE OR DEADBAND OF AT LEAST 5°F (2.8°C) WITHIN WHICH THE SUPPLY OF HEATING AND COOLING ENERGY TO THE ZONE IS CAPABLE OF BEING SHUT OFF OR REDUCED TO A MINIMUM.

EXCEPTIONS:

THERMOSTATS REQUIRING MANUAL CHANGEOVER BETWEEN HEATING AND COOLING MODES.

OCCUPANCIES OR APPLICATIONS REQUIRING PRECISION IN INDOOR TEMPERATURE CONTROL AS APPROVED BY THE CODE OFFICIAL.

D. C403.2.4.1.3 SET POINT OVERLAP RESTRICTION.

WHERE A ZONE HAS A SEPARATE HEATING AND A SEPARATE COOLING THERMOSTATIC CONTROL LOCATED WITHIN THE ZONE, A LIMIT SWITCH, MECHANICAL STOP OR DIRECT DIGITAL CONTROL SYSTEM WITH SOFTWARE PROGRAMMING SHALL BE PROVIDED WITH THE CAPABILITY TO PREVENT THE HEATING SET POINT FROM EXCEEDING THE COOLING SET POINT AND TO MAINTAIN A DEADBAND IN ACCORDANCE WITH SECTION C403.2.4.1.2.

E. C403.2.4.2 OFF–HOUR CONTROLS.

EACH ZONE SHALL BE PROVIDED WITH THERMOSTATIC SETBACK CONTROLS THAT ARE CONTROLLED BY EITHER AN AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROL SYSTEM.

EXCEPTIONS:

ZONES THAT WILL BE OPERATED CONTINUOUSLY.

ZONES WITH A FULL HVAC LOAD DEMAND NOT EXCEEDING 6,800 BTU/H (2 KW) AND HAVING A READILY ACCESSIBLE MANUAL SHUTOFF SWITCH.

F. C403.2.4.2.1 THERMOSTATIC SETBACK CAPABILITIES.

THERMOSTATIC SETBACK CONTROLS SHALL HAVE THE CAPABILITY TO SET BACK OR TEMPORARILY OPERATE THE SYSTEM TO MAINTAIN ZONE TEMPERATURES DOWN TO 55°F (13°C) OR UP TO 85°F (29°C).

G. C403.2.4.2.2 AUTOMATIC SETBACK AND SHUTDOWN CAPABILITIES.

AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROLS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK AND RETAINING THEIR PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST 10 HOURS. ADDITIONALLY, THE CONTROLS SHALL HAVE A MANUAL OVERRIDE THAT ALLOWS TEMPORARY OPERATION OF THE SYSTEM FOR UP TO 2 HOURS; A MANUALLY OPERATED TIMER CAPABLE OF BEING ADJUSTED TO OPERATE THE SYSTEM FOR UP TO 2 HOURS; OR AN OCCUPANCY SENSOR.

H. C403.2.4.2.3 AUTOMATIC AND OPTIMUM START CAPABILITIES (MANDATORY).

AUTOMATIC START CONTROLS SHALL BE PROVIDED FOR EACH HVAC SYSTEM. THE CONTROLS SHALL BE CONFIGURED TO AUTOMATICALLY ADJUST THE DAILY START TIME OF THE HVAC SYSTEM IN ORDER TO BRING EACH SPACE TO THE DESIRED OCCUPIED TEMPERATURE IMMEDIATELY PRIOR TO SCHEDULED OCCUPANCY.

NDIVIDUAL HEATING AND COOLING SYSTEMS WITH SETBACK CONTROLS AND DIRECT DIGITAL CONTROL SHALL HAVE OPTIMUM START CONTROLS. THE CONTROL ALGORITHM SHALL, AS A MINIMUM, BE A FUNCTION OF THE DIFFERENCE BETWEEN SPACE TEMPERATURE AND OCCUPIED SET POINT, THE OUTDOOR TEMPERATURE, AND THE AMOUNT OF TIME PRIOR TO SCHEDULED OCCUPANCY. MASS RADIANT FLOOR SLAB SYSTEMS SHALL INCORPORATE FLOOR TEMPERATURE INTO THE OPTIMUM START ALGORITHM.

GREASE DUCT SPECIFICATIONS

1. PROVIDE CLEAN OUT AT ALL ELBOWS AND BOTTOM OF RISER AND EVERY 20 FEET HORIZONTAL KITCHEN EXHAUST DUCT.
2. COMMERCIAL KITCHEN GREASE DUCTS SHALL BE DESIGNED FOR THE TYPE OF COOKING APPLIANCE AND HOOD SERVED. COMMERCIAL KITCHEN GREASE DUCTS SHALL BE OF 16 GAUGE MINIMUM BLACK IRON OR PREFABRICATED SINGLE WALL GREASE DUCT WITH UL 1978 AND UL 2221 LISTING.
3. JOINTS, SEAMS AND PENETRATIONS OF GREASE DUCTS SHALL BE MADE WITH A CONTINUOUS LIQUID TIGHT WELD OR BRAZE MADE IN THE EXTERNAL SURFACE IF THE DUCT SYSTEMS.
4. DUCT TO EXHAUST FAN CONNECTIONS SHALL BE FLANGED, GASKETED AND BOLTED TO THE INLET AND OUTLET OF THE FAN FOR INLINE FANS. APPROVED FLEXIBLE CONNECTIONS MAY BE PROVIDED.
5. A VIBRATION ISOLATION CONNECTOR FOR CONNECTING A DUCT TO A FAN SHALL CONSIST OF NON–COMBUSTIBLE PACKING IN A METAL SLEEVE JOINT OF APPROVED DESIGN OR SHALL BE A COATED–FABRIC FLEXIBLE DUCT CONNECTOR LISTED AND LABELED FOR THE APPLICATION. VIBRATION ISOLATION CONNECTORS SHALL BE INSTALLED ONLY AT THE CONNECTION OF A DUCT TO A FAN INLET OR OUTLET.
6. PRIOR TO THE USE OR CONCEALMENT OF ANY PORTION OF A GREASE DUCT SYSTEM, A LEAKAGE TEST SHALL BE PERFORMED AS PER 2018 MECHANICAL CODE (2018 IMC) SECTION 506.3.2.5. DUCTS SHALL BE CONSIDERED TO BE CONCEALED WHERE INSTALLED IN SHAFTS OR COVERED BY COATINGS OR WRAPS THAT PREVENT THE DUCTWORK FROM BEING VISUALLY INSPECTED ON ALL SIDES. THE DUCT INSTALLER SHALL BE RESPONSIBLE TO PROVIDE THE NECESSARY EQUIPMENT AND PERFORM THE GREASE DUCT LEAKAGE TEST. A LIGHT TEST SHALL BE PERFORMED TO DETERMINE THAT ALL WELDED AND BRAZED JOINTS ARE LIQUID TIGHT. THE DUCT WORK SHALL BE PERMITTED TO BE TESTED IN SECTIONS, PROVIDED THAT EVERY JOINT IS TESTED. (IF TEST IS FAILED, CONTRACTOR TO PROVIDE NEW KITCHEN EXHAUST DUCT).
7. PERFORM LIGHT TEST TO VERIFY THE TIGHTNESS OF THE GREASE DUCT IN ACCORDANCE WITH SECTION 506.3.2.5 OF THE 2018 INTERNATIONAL MECHANICAL CODE (IMC).
8. GREASE DUCT BRACING AND SUPPORTS SHALL BE OF NON–COMBUSTIBLE MATERIAL SECURELY ATTACHED TO THE STRUCTURE AND DESIGNED TO CARRY GRAVITY AND SEISMIC LADS WITHIN THE STREET LIMITATIONS OF THE 2018 INTERNATIONAL BUILDING CODE(2018 IBC). BOLTS, SCREWS, RIVETS AND OTHER MECHANICAL FASTENERS SHALL NOT PENETRATE DUCT WALLS.
9. A RESIDUE TRAP SHALL BE PROVIDED AT THE BASE OF EACH VERTICAL RISER WITH PROVISION FOR CLEANOUT IN ACCORDANCE WITH NFPA 96.
10. CLEANOUT OPENINGS SHALL BE PROVIDED AT EVERY CHANGE IN DIRECTION, WITHIN 3 FEET OF THE EXHAUST FAN.
11. CLEANOUT OPENINGS SHALL BE EQUIPPED WITH TIGHT–FITTING DOORS CONSTRUCTED OF STEEL HAVING A THICKNESS NOT LESS THAN THAT REQUIRED FOR THE DUCT. DOORS SHALL BE EQUIPPED WITH A SUBSTANTIAL METHOD OF LATCHING, SUFFICIENT TO HOLD THE DOOR TIGHTLY CLOSED. DOOR ASSEMBLIES SHALL HAVE A GASKET OR SEALANT THAT IS NONCOMBUSTIBLE AND LIQUID TIGHT AND SHALL NOT HAVE FASTENERS THAT PENETRATED THE DUCT
12. A GREASE DUCT SERVING THE TYPE–1 HOOD THAT PENETRATED A CEILING, WALL OR FLOOR SHALL BE ENCLOSED FROM THE FIRE POINT OF PENETRATION TO THE OUTLET TERMINAL. DUCT ENCLOSURES SHALL HAVE A FIRE–RESISTANCE RATING NOT LESS THAN THAT OF THE FIRE–RESISTANCE RATED ASSEMBLY PENETRATED BUT NEED NOT EXCEED 2 HOURS.
13. PROVIDE PROVIDE MINIMUM 2HR INSULATION COVERING OF 2 INCHES AND SUCH MATERIAL SHALL BE IN ACCORDANCE WITH ASTM E2336. FIELD APPLIED GREASE DUCT ENCLOSURE SHALL COMPLY ALL REQUIREMENTS PER 2018 INTERNATIONAL MECHANICAL CODE SECTION 506.3.11.2.
14. DUCT INSTALLER MUST ENSURE THAT THE DUCT IS CONTINUOUSLY COVERED ON ALL SIDES WITH THE FIRE WRAP FROM ITS STARTING POINT TO THE OUTLET TERMINAL.

PIPING INSULATION NOTES

1. ALL INSULATION MATERIALS, INCLUDING JACKETS, FACING, ADHESIVE, COATINGS, AND ACCESSORIES ARE TO BE FIRE HAZARD RATED AND LISTED BY UNDERWRITERS LABORATORIES, INC. USING STEINER TUNNEL TEST METHOD FOR FIRE HAZARD CLASSIFICATION OF BUILDING MATERIALS, STANDARD UL 723 (ASTM E–84), (ASA A2.5–1963). FLAMESPREAD: MAXIMUM 25. FUEL CONTRIBUTED AND SMOKE DEVELOPED: MAXIMUM 50. FLAMEPROOFING TREATMENTS SUBJECT TO DETERIORATION FROM MOISTURE OR HUMIDITY ARE NOT ACCEPTABLE.
2. EXPOSED: INDOOR DUCTS, PIPING OR EQUIPMENT LOCATED IN MECHANICAL EQUIPMENT ROOMS AND IN AREAS WHICH WILL BE VISIBLE WITHOUT REMOVING CEILINGS OR OPENING ACCESS PANELS.
3. CONCEALED: INDOOR PIPING OR EQUIPMENT WHICH IS NOT EXPOSED.
4. OUTDOOR: PIPING OR EQUIPMENT WHICH IS EXPOSED TO THE WEATHER.

FLUID OPERATING TEMP. RANGE & USAGE (°F)	INSULATION CONDUCTIVITY		NOMINAL PIPE OR TUBE SIZE (IN.)				
	CONDUCTIVITY BTU.IN./(H.FT2.F)	MEAN RATING TEMP., °F	<1	1 TO <1–1/2	1–1/2 TO <4	4 TO <8	>=8
105 – 140	0.21 – 0.28	100	1.0	1.0	1.5	1.5	1.5
40 – 60	0.21 – 0.27	75	0.5	0.5	1.0	1.0	1.0
< 40	0.20 – 0.26	50	0.5	1.0	1.0	1.0	1.5

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CONTENT

MECHANICAL SPECIFICATIONS

SHEET NUMBER:

M-102

PROJECT STATUS:

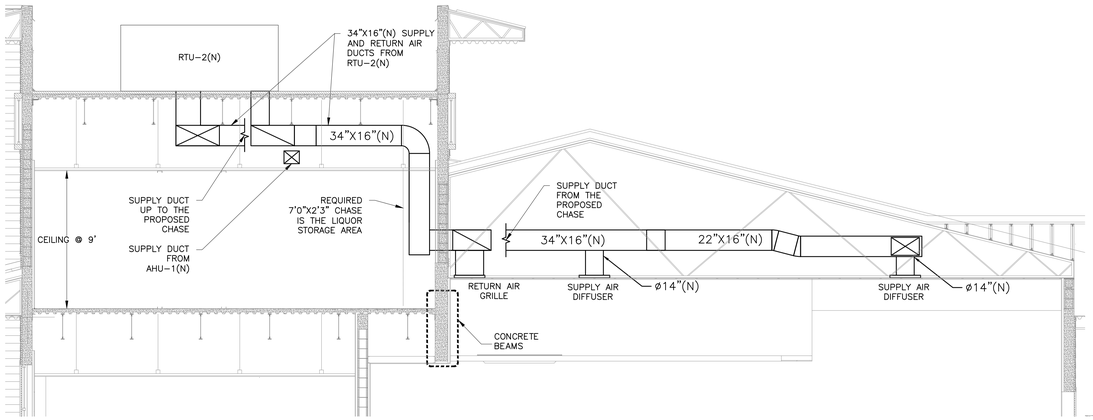
MECHANICAL GENERAL NOTES

A. CONTRACTOR TO VISIT SITE TO VERIFY ON FIELD CONDITION ALONG WITH THE DRAWINGS & INFORM THE ENGINEER FOR ANY DISCREPANCIES FOUND BEFORE COMMENCING BIDS.
B. CONTRACTOR SHALL BALANCE EACH AIR DIFFUSER WITH THE CFM SHOWN PLAN.
C. DUCTWORK SHOWN ON PLAN ARE SCHEMATIC ONLY. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES FOR DUCTWORK ROUTING. OFFSET AND RUN DUCTWORK INSIDE THE STRUCTURE IF REQUIRED. PROVIDE ANY EXTRA DUCTWORK, FITTINGS, INSULATIONS AND OTHER ACCESSORIES IN ORDER TO COMPLETE THE INSTALLATION.
D. COORDINATE LOCATIONS AND SIZES OF ROOF OPENINGS WITH LANDLORD AND LANDLORD'S STRUCTURAL ENGINEERS.
E. EQUIPMENT SIZES, DIMENSIONS AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE ACTUAL EQUIPMENT SELECTED VENDOR DRAWINGS BEFORE FABRICATION OF DUCTWORK, PIPING ETC.
F. DUCT SIZES SHOWN ON PLANS ARE CLEAR INSIDE AIR STREAM DIMENSIONS.
G. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS FOR ALL HVAC BASED ON ACTUAL EQUIPMENT SELECTED PRIOR TO INSTALLATION.
H. CONTRACTOR SHALL COORDINATE EQUIPMENT WEIGHTS AND SUPPORTS BASED ON ACTUAL EQUIPMENT SELECTED.
I. ALL EXPOSED ROUND DUCTWORK SHALL BE INTERNALLY INSULATED. ALL INTERNAL DUCTWORK SHALL BE EXTERNALLY INSULATED.
J. COORDINATE WITH ALL TRADES FOR MATERIALS IN RATED AND PLENUM SPACES.
K. ALL SOURCE OF MECHANICAL INTAKE SHALL MAINTAIN 10 LINEAR FEET SEPARATION BETWEEN ANY SOURCE OF EXHAUST. CONTRACTOR IS RESPONSIBLE TO ADJUST DUCT LENGTH AS NEEDED.
L. COORDINATE FINAL LOCATION OF EQUIPMENT WITH LANDLORD'S STRUCTURAL DRAWINGS.
M. TAKE NECESSARY PRECAUTIONS TO PREVENT DUST AND DIRT MIGRATING TO OCCUPIED AREAS OF THE BUILDING. THIS INCLUDES BLANKING OFF ANY RETURN AIR GRILLES/ DUCTS IN THE WORK AREA. PROVIDE TEMPORARY EXHAUST FANS, DUCTED DIRECTLY TO OUTDOORS, TO MAINTAIN NEGATIVE PRESSURE WITHIN THE WORK AREA.
N. KEEP ALL ADJOINING AREAS ADJACENT TO THE WORK AREAS CLEAN AND FREE OF DEBRIS.
O. MECHANICAL CONTRACTOR TO COORDINATE ALL DUCT WORK, CROSSINGS, OVERLAPPING AND PENETRATIONS WITH SITE CONDITIONS AND AS PER EXISTING JOIST LAYOUT, SKYLIGHT AND BEAM IN FIELD. MODIFY DUCT WORK WHEREVER REQUIRED.
P. CONTRACTOR TO VERIFY ON SITE ALL OUTSIDE AIR & EXHAUST AIR WALL PENETRATION/TERMINATION. INFORM ENGINEER IF ANY DISCREPANCY FOUND.
Q. PROVIDE FIRE OR FIRE+SMOKE DAMPER WHEREVER DUCTS ARE CROSSING FIRE/SMOKE RATED WALLS/BARRIERS/SLABS/SHAFTS. COORDINATE WITH ARCHITECTURAL DRAWING FOR FIRE RATING OF THE WALLS.
R. CONTRACTOR SHALL COORDINATE AND ADJUST THE DUCTWORK ROUTING ACCORDING TO SITE CONDITIONS, ENSURING THAT THE DUCTWORK IS LOCATED AS HIGH AS FEASIBLE.
S. UNLESS OTHERWISE NOTED, BRANCH DUCTS SERVING AIR DEVICES SHOULD MATCH THE NECK SIZE OF THE AIR DEVICE. IF THE SIZES DIFFER, A TRANSITION PIECE MUST BE PROVIDED BEFORE CONNECTING TO THE DIFFUSERS.

FLOOR PLAN KEY NOTES:–

1. LOCATION OF DIGITAL T–STAT CONTROL FOR RTU–1(N), RTU–2(N) & RTU–3(N). COORDINATE FINAL LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH–IN. PROVIDE LOCKABLE COVER.
2. PROVIDE REMOTE TEMP SENSOR MOUNTED IN THE SPACE AND WIRE BACK TO T–STAT OF RESPECTIVE RTUS. CONTRACTOR TO CONFIRM FINAL LOCATION/REQUIREMENT WITH OWNER/ARCHITECT PRIOR INSTALLING.
3. WATER HEATER PROVIDED BY PLUMBING CONTRACTOR. ø4" VENT PIPE & 4" INTAKE FOR WATER HEATER TO THE WALL OF THE BUILDING. CONTRACTOR TO RUN VENT AND INTAKE WITH MINIMUM BENDS.
4. INSTALL TYPE 1 GREASE EXHAUST HOOD. SUPPORT HOOD PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE TRAPEZE HANGERS FOR ALL THREAD SUPPORT UNDER DUCTWORK AS REQUIRED. TRANSITION FROM HOOD CONNECTION TO WELDED KITCHEN EXHAUST DUCT SIZES SHOWN.
5. GREASE DUCT WITH FIRE WRAP AS PER LOCAL CODE REQUIREMENTS TO BE PROVIDED WITH KITCHEN EQUIPMENT AND INSTALLED BY MECHANICAL CONTRACTOR. INSTALL PER MANUFACTURER'S INSTRUCTIONS.
6. 28"X14" KITCHEN EXHAUST GREASE DUCT WITH FIRE WRAP AS PER LOCAL CODE REQUIREMENTS UPTO THE KEF–1(N) ON MAIN ROOF THROUGH CHASE. CONTRACTOR TO FILED VERIFY/CONFIRM THE EXACT LOCATION AND SIZE OF THE CHASE WITH LANDLORD PRIOR ORDERING DUCTWORK AND INFORM ARCHITECT / ENGINEER IN CHARGE IF ANY DISCREPANCY FOUND.
7. ø14" KITCHEN EXHAUST GREASE DUCT WITH FIRE WRAP AS PER LOCAL CODE REQUIREMENTS UPTO THE KEF–2(N) ON MAIN ROOF THROUGH THE CHASE. CONTRACTOR TO FILED VERIFY/CONFIRM THE EXACT LOCATION AND SIZE OF THE CHASE WITH LANDLORD PRIOR ORDERING DUCTWORK AND INFORM ARCHITECT/ ENGINEER IN CHARGE IF ANY DISCREPANCY FOUND.
8. 20"X20" RETURN AIR DUCT UP TO RTU–3(N) THROUGH THE CHASE.
9. 20"X20" SUPPLY AIR DUCT UP TO RTU–3(N) THROUGH THE CHASE.
10. 18"X18" MAKEUP AIR DUCT UP THROUGH THE CHASE AND TRANSITION TO 20"X20" CONTRACTOR TO FILED VERIFY/CONFIRM THE EXACT LOCATION AND SIZE OF THE CHASE WITH LANDLORD PRIOR ORDERING DUCTWORK AND INFORM ARCHITECT / ENGINEER IN CHARGE IF ANY DISCREPANCY FOUND.
11. 14"X14" MAKE–UP AIR DUCT UP TO MAU–2(N) THROUGH THE CHASE.
12. ø8" EXHAUST DUCT UP TO DWEF–1 ON ROOF.
13. ø10" EXHAUST DUCT UP TO OVEN KEF ON ROOF.
14. CONTRACTOR TO COORDINATE THE DUCTWORK WITH THE JOIST BASED ON SITE CONDITIONS AND RUN THE DUCTWORK AS HIGH AS POSSIBLE THROUGH THE JOIST.
15. 14"X12" EXHAUST AIR DUCT UP.
16. SUPPLY AND RETURN AIR DUCTWORK UP THROUGH THE CHASE. REFER TO LEVEL 2 FLOOR PLAN ON SHEET M–202 FOR CONTINUATION.

BINDING EDGE



3 SECTION-2
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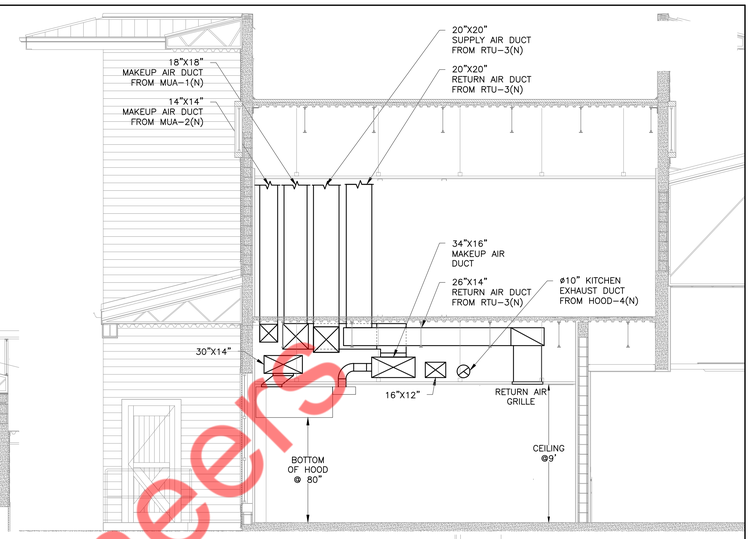

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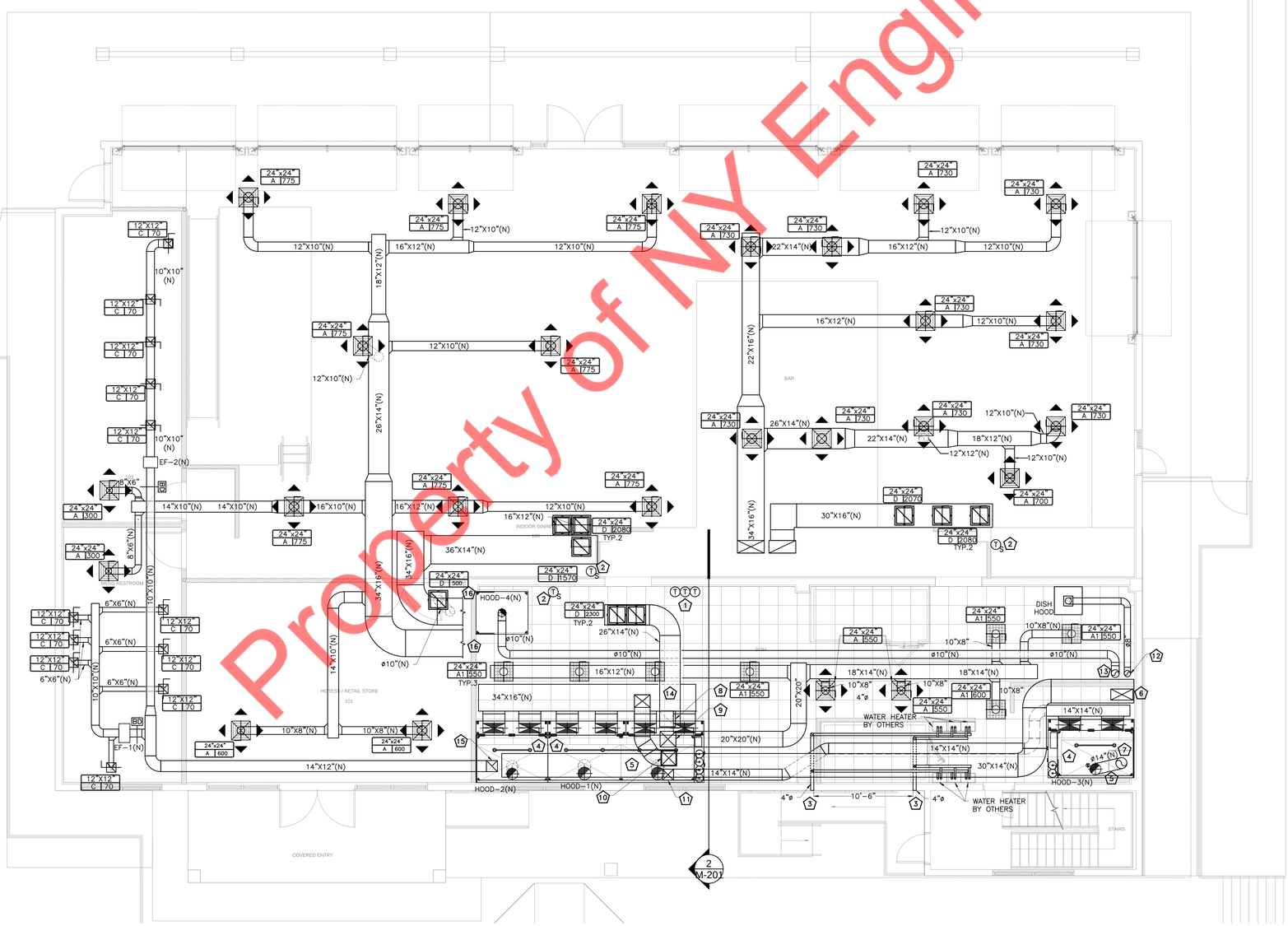

N

1 MECHANICAL FLOOR PLAN - GROUND LEVEL
SCALE: 3 / 16" = 1' - 0

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Señor Frog's FUN, FOOD & CLOTHES

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CONTENT

MECHANICAL FLOOR PLAN - GROUND LEVEL

SHEET NUMBER:

M-201

PROJECT STATUS:

MECHANICAL GENERAL NOTES

A. CONTRACTOR TO VISIT SITE TO VERIFY ON FIELD CONDITION ALONG WITH THE DRAWINGS & INFORM THE ENGINEER FOR ANY DISCREPANCIES FOUND BEFORE COMMENCING BIDS.
B. CONTRACTOR SHALL BALANCE EACH AIR DIFFUSER WITH THE CFM SHOWN PLAN.
C. DUCTWORK SHOWN ON PLAN ARE SCHEMATIC ONLY. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES FOR DUCTWORK ROUTING. OFFSET AND RUN DUCTWORK INSIDE THE STRUCTURE IF REQUIRED. PROVIDE ANY EXTRA DUCTWORK, FITTINGS, INSULATIONS AND OTHER ACCESSORIES IN ORDER TO COMPLETE THE INSTALLATION.
D. COORDINATE LOCATIONS AND SIZES OF ROOF OPENINGS WITH LANDLORD AND LANDLORD'S STRUCTURAL ENGINEERS.
E. EQUIPMENT SIZES, DIMENSIONS AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE ACTUAL EQUIPMENT SELECTED VENDOR DRAWINGS BEFORE FABRICATION OF DUCTWORK, PIPING ETC.
F. DUCT SIZES SHOWN ON PLANS ARE CLEAR INSIDE AIR STREAM DIMENSIONS.
G. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS FOR ALL HVAC BASED ON ACTUAL EQUIPMENT SELECTED PRIOR TO INSTALLATION.
H. CONTRACTOR SHALL COORDINATE EQUIPMENT WEIGHTS AND SUPPORTS BASED ON ACTUAL EQUIPMENT SELECTED.
I. ALL EXPOSED ROUND DUCTWORK SHALL BE INTERNALLY INSULATED. ALL INTERNAL DUCTWORK SHALL BE EXTERNALLY INSULATED.
J. COORDINATE WITH ALL TRADES FOR MATERIALS IN RATED AND PLENUM SPACES.
K. ALL SOURCE OF MECHANICAL INTAKE SHALL MAINTAIN 10 LINEAR FEET SEPARATION BETWEEN ANY SOURCE OF EXHAUST. CONTRACTOR IS RESPONSIBLE TO ADJUST DUCT LENGTH AS NEEDED.
L. COORDINATE FINAL LOCATION OF EQUIPMENT WITH LANDLORD'S STRUCTURAL DRAWINGS.
M. TAKE NECESSARY PRECAUTIONS TO PREVENT DUST AND DIRT MIGRATING TO OCCUPIED AREAS OF THE BUILDING. THIS INCLUDES BLANKING OFF ANY RETURN AIR GRILLES/ DUCTS IN THE WORK AREA. PROVIDE TEMPORARY EXHAUST FANS, DUCTED DIRECTLY TO OUTDOORS, TO MAINTAIN NEGATIVE PRESSURE WITHIN THE WORK AREA.
N. KEEP ALL ADJOINING AREAS ADJACENT TO THE WORK AREAS CLEAN AND FREE OF DEBRIS.
O. MECHANICAL CONTRACTOR TO COORDINATE ALL DUCT WORK, CROSSINGS, OVERLAPPING AND PENETRATIONS WITH SITE CONDITIONS AND AS PER EXISTING JOIST LAYOUT, SKYLIGHT AND BEAM IN FIELD. MODIFY DUCT WORK WHEREVER REQUIRED.
P. CONTRACTOR TO VERIFY ON SITE ALL OUTSIDE AIR & EXHAUST AIR WALL PENETRATION/TERMINATION. INFORM ENGINEER IF ANY DISCREPANCY FOUND.
Q. PROVIDE FIRE OR FIRE+SMOKE DAMPER WHEREVER DUCTS ARE CROSSING FIRE/SMOKE RATED WALLS/BARRIERS/SLABS/SHAFTS. COORDINATE WITH ARCHITECTURAL DRAWING FOR FIRE RATING OF THE WALLS.
R. COORDINATE LOCATIONS AND SIZES OF ROOF OPENINGS WITH OWNER AND STRUCTURAL ENGINEERS.
S. EQUIPMENT SIZES, DIMENSIONS AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE ACTUAL EQUIPMENT SELECTED VENDOR DRAWINGS BEFORE FABRICATION OF DUCTWORK, PIPING ETC.
T. DUCT SIZES SHOWN ON PLANS ARE CLEAR INSIDE AIR STREAM DIMENSIONS.
U. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS FOR ALL HVAC BASED ON ACTUAL EQUIPMENT SELECTED PRIOR TO INSTALLATION.
V. COORDINATE WITH ALL TRADES FOR MATERIALS IN RATED AND PLENUM SPACES.
W. ALL SOURCE OF MECHANICAL INTAKE SHALL MAINTAIN 10 LINEAR FEET SEPARATION BETWEEN ANY SOURCE OF EXHAUST. CONTRACTOR IS RESPONSIBLE TO ADJUST DUCT LENGTH AS NEEDED.
X. TEST AND BALANCE AIR SYSTEMS. PROVIDE REPORT TO GENERAL CONTRACTOR AND OWNER.
Y. M.C TO COORDINATE INSTALLATION OF WATER HEATER EXHAUST FLUE WITH PLUMBING CONTRACTOR.
Z. CONTRACTOR SHALL COORDINATE AND ADJUST THE DUCTWORK ROUTING ACCORDING TO SITE CONDITIONS, ENSURING THAT THE DUCTWORK IS LOCATED AS HIGH AS FEASIBLE.
AA. UNLESS OTHERWISE NOTED, BRANCH DUCTS SERVING AIR DEVICES SHOULD MATCH THE NECK SIZE OF THE AIR DEVICE. IF THE SIZES DIFFER, A TRANSITION PIECE MUST BE PROVIDED BEFORE CONNECTING TO THE DIFFUSERS.

CO2 SENSOR AND INSTALLATION NOTES – DEMAND CONTROL VENTILATION FOR RTU–1(N), RTU–2(N) & RTU–3(N)

MODULATING OUTSIDE AIR DAMPER:

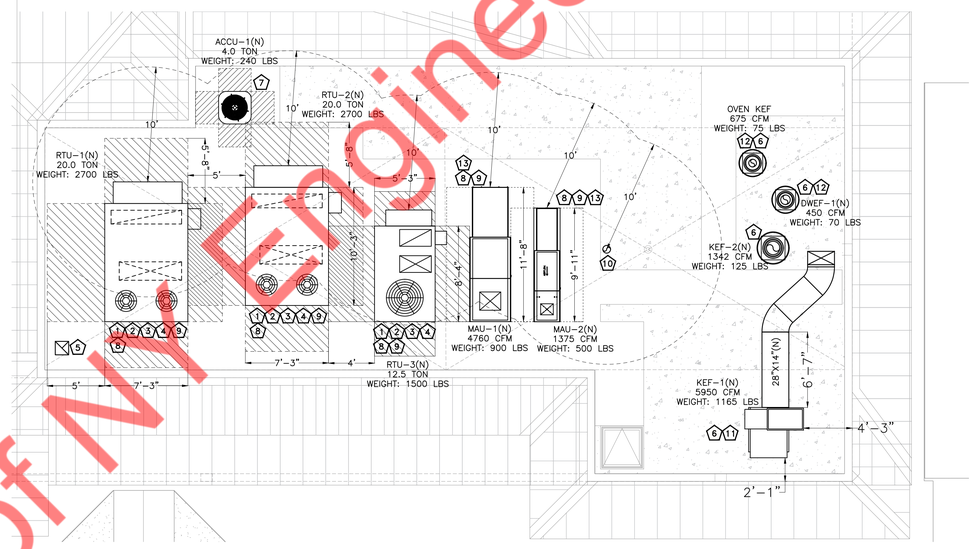
1. UNOCCUPIED MODE: SUPPLY OUTSIDE AIR AS PROVIDED IN THE OUTSIDE AIR DAMPER CONTROL LIMIT TABLE.
2. OCCUPIED MODE: ENERGIZED WHEN FAN IS RUNNING, DAMPER SHALL MODULATE BASED ON SIGNAL FROM CO2 SENSORS TO MAINTAIN LEVEL BETWEEN 600 PPM AND 1000 PPM BUT NOT EXCEEDING THE TOTAL DESIGN AIR FLOW RATE
3. COMMERCIAL SENSOR UTILIZES A SIGNAL BEAM ABSORPTION INFRARED DIFFUSION SAMPLE METHOD FOR CO2 DETECTION. USING CO2 AS AN INDICATOR OF OCCUPANCY WILL ALLOW VENTILATION BASED ON ACTUAL OCCUPANCY WHILE MAINTAINING CODE MINIMUM VENTILATION.
4. SENSOR WILL MODULE OUTSIDE AIR QUANTITIES THROUGH ECONOMIZER DAMPER ACTUATOR AND WILL CONTROL AMOUNT BETWEEN OCCUPIED AND UNOCCUPIED QUANTITY OF OUTSIDE AIR PER RESPECTIVE RTUS.
5. SENSOR SHALL BE PROVIDED WITH ROOFTOP AIR CONDITIONING UNIT AND INSTALL PER MANUFACTURERS REQUIREMENTS.
6. CO2 SENSORS SHALL BE DUCT MOUNTED IN THE RTU.

MECHANICAL ROOF PLAN KEY NOTES:

1. NEW ROOFTOP UNIT IS PROVIDED. PROVIDE FLEXIBLE CONNECTORS ON SUPPLY AND RETURN DUCT CONNECTIONS. SET OUTSIDE AIR AS INDICATED ON ROOFTOP UNIT SCHEDULES. MECHANICAL CONTRACTOR SHALL SCRIBE INTO UNIT POSITION OF OUTSIDE AIR DAMPER AND LABEL OUTSIDE AIR VOLUME AND PERCENT OF OUTSIDE AIR. TRANSITION AND CONNECT SUPPLY AND RETURN DUCTWORK FROM BELOW. COORDINATE ROUTING THROUGH STRUCTURAL TRUSSES AND OFFSET AS REQUIRED IN CURB SPACE.
2. COORDINATE/SUBMIT FINAL LOAD OF MECHANICAL UNITS, SUPPORT DETAILS WITH STRUCTURAL DRAWINGS. TAKE STRUCTURAL ENGINEER'S APPROVAL PRIOR TO CONSTRUCTION.
3. CONTRACTOR TO CONNECT DRAIN LINES TO THE NEAREST APPROVED PLACED OF DISPOSAL AS PER LOCAL CODE.
4. CONTRACTOR SHALL FILED VERIFY AND CONFIRM ALL OUTSIDE AIR INTAKE ARE MINIMUM 10' AWAY FROM ANY EXHAUST AIR.
5. TOILET EXHAUST DUCT TO GO UP THROUGH ROOF WITH GOOSENECK, WEATHER SKIRT, AND BIRD SCREEN. MAINTAIN A MINIMUM OF 10'–0" FROM ALL OUTSIDE AIR INTAKES AND TERMINATE 36" ABOVE ROOF.
6. ROOF MOUNTED EXHAUST FAN. VERIFY EXACT LOCATION OF STRUCTURAL MEMBERS PRIOR TO INSTALLATION.
7. COORDINATE FINAL LOCATION OF EQUIPMENT WITH STRUCTURAL DRAWINGS AND CONFIRM THE SAME WITH ARCHITECT/OWNER.
8. CONTRACTOR TO CONFIRM THE FINAL LOCATION OF UNIT ON THE MAIN ROOF WITH ARCHITECT/ OWNER. CONTRACTOR TO COORDINATE THE LOCATION OF THE UNIT ON THE MAIN ROOF WITH THE STRUCTURAL ENGINEER.
9. ALL OUTSIDE AIR INTAKE ON THE ROOF SHALL BE MINIMUM 10 FEET AWAY FROM ANY EXHAUST SOURCE.
10. 8"ø OUTSIDE AIR INTAKE THROUGH ROOF WITH WITH GOOSENECK, WEATHER SKIRT, AND BIRD SCREEN.
11. INSTALL EXHAUST AIR UTILITY FAN ON THE ROOF AS PER MANUFACTURERS RECOMMENDATIONS. CONNECT EXHAUST DUCT FROM EXHAUST HOODS TO THE UTILITY FAN ON MAIN ROOF. RUN STRAIGHT DUCT OF LENGTH MINIMUM 72" BEFORE ANY FITTINGS.
12. TYPE–II KITCHEN EXHAUST SHALL TERMINATE 3 FEET AWAY FROM THE OPENING INTO THE BUILDING, 10 FEET FROM PROPERTY LINE, 10 FEET ABOVE GRADE, 10 FEET FROM ANY OUTSIDE AIR INTAKE AND TERMINATE MINIMUM 30 INCHES ABOVE ROOF.
13. CONTRACTOR TO FIELD VERIFY THE SLOPE OF THE ROOF AND COORDINATE WITH HOOD VENDOR FOR THE PITCHED CURB FOR INSTALLING MAKE UP AIR UNIT AND STAND FOR INSTALLING KITCHEN EXHAUST FANS.

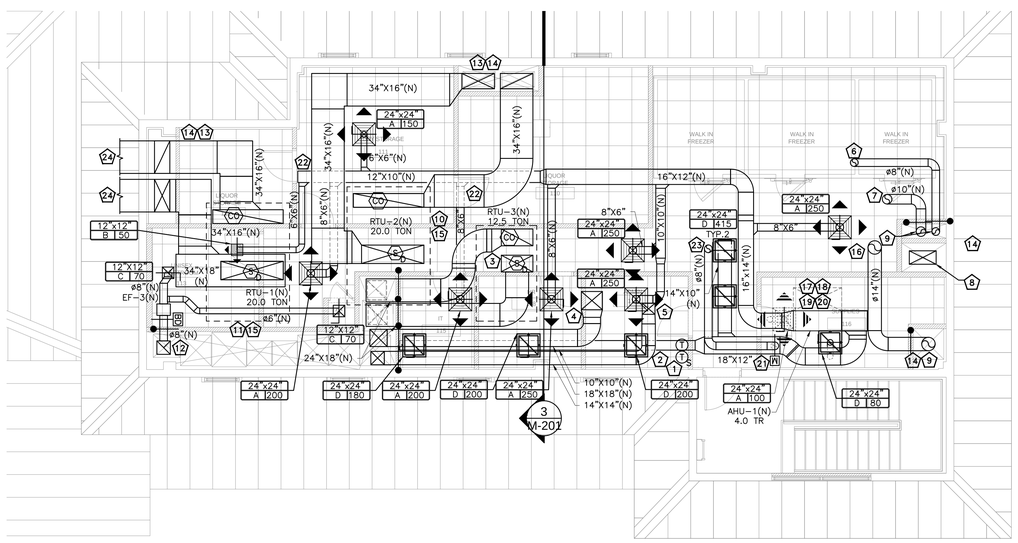
LEVEL 2 PLAN KEY NOTES:–

1. LOCATION OF DIGITAL T–STAT CONTROL FOR AHU–1(N), COORDINATE FINAL LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH–IN. PROVIDE LOCKABLE COVER.
2. PROVIDE REMOTE TEMP SENSOR MOUNTED IN THE SPACE AND WIRE BACK TO T–STAT OF RESPECTIVE AHUS. CONTRACTOR TO CONFIRM FINAL LOCATION/REQUIREMENT WITH OWNER/ARCHITECT PRIOR INSTALLING.
3. SUPPLY AND RETURN AIR DUCT UP TO RTU–3(N).
4. MAKE UP AIR DUCT TO MAU–1(N).
5. MAKE–UP AIR DUCT UP TO MAU–2(N).
6. ø8" EXHAUST DUCT UP TO DWEF–1 ON ROOF.
7. ø10" EXHAUST DUCT UP TO OVEN KEF ON ROOF.
8. 28"X14" EXHAUST DUCT UP TO KEF–1(N) ON ROOF.
9. KITCHEN EXHAUST DUCT FROM GROUND FLOOR THROUGH CHASE.
10. SUPPLY AND RETURN AIR DUCT UP TO RTU–2(N).
11. SUPPLY AND RETURN AIR DUCT UP TO RTU–1(N).
12. 14"X14" EXHAUST AIR DUCT UP TO ROOF.
13. SUPPLY AND RETURN AIR DUCT DN TO THE GROUND LEVEL.
14. CONTRACTOR TO PROVIDE THE CHASE AS PER THE SIZES PROVIDED ON THE PLAN.
15. EXTEND FULL SIZE SUPPLY & RETURN DUCTWORK FROM ROOFTOP UNITS TO SPACE. EXTEND AS SHOWN. ACOUSTICALLY LINE THE FIRST 10'–0" OF BOTH SUPPLY AND RETURN MAIN DUCTS.
16. ø14" KITCHEN EXHAUST DUCT UPTO KEF–2(N) LOCATED ON ROOF THROUGH CHASE OF SIZE 32"X32"
17. IF REQUIRED, PROVIDE CONDENSATE PUMP. CONNECT 1" CD FROM AHU TO APPROVED PLACE OF DISPOSAL.
18. PROVIDE SECONDARY DRIP PAN UNDER AC UNIT WITH WATER LEAKAGE SENSOR AND ALARM TO SHUT THE UNIT.
19. COORDINATE FINAL LOCATION OF EQUIPMENT WITH STRUCTURAL DRAWINGS AND CONFIRM THE SAME WITH ARCHITECT/OWNER
20. CONTRACTOR SHALL COORDINATE REFRIGERANT PIPE ROUTING BETWEEN CONDENSING UNITS AND AC UNITS IN FIELD. MAXIMUM REFRIGERANT PIPING LENGTH SHALL NOT EXCEED THE MANUFACTURER RECOMMENDATION.
21. MD TO BE INTERLOCKED WITH AHU–1(N).
22. CONTRACTOR TO COORDINATE THE DUCTWORK WITH THE JOIST BASED ON SITE CONDITIONS AND RUN THE DUCTWORK AS HIGH AS POSSIBLE THROUGH THE JOIST.
23. 8"ø(110 CFM) OA DUCT UP THROUGH ROOF.
24. CONTRACTOR TO RUN THE DUCTWORK THROUGH THE CHASE AND TRANSITION THE DUCTWORK INTO THE CEILING SPACE ABOVE THE RETAIL STORE REFER TO SHEET M–201 FOR CONTINUATION.



N

2 MECHANICAL ROOF PLAN
SCALE: 3 / 16" = 1' - 0



N

1 MECHANICAL FLOOR PLAN - LEVEL 2
SCALE: 3 / 16" = 1' - 0

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CONTENT

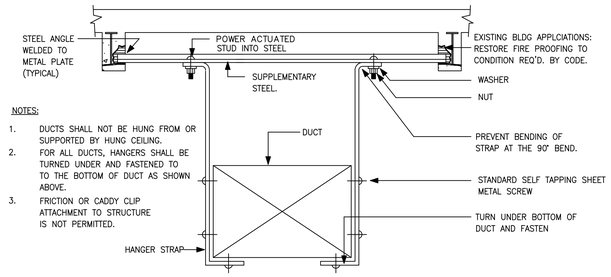
MECHANICAL FLOOR PLAN - LEVEL 2 & MECHANICAL ROOF PLAN

SHEET NUMBER:

M-202

PROJECT STATUS:

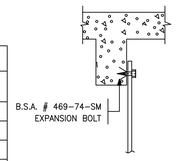
BINDING EDGE

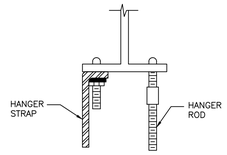


NOTES:

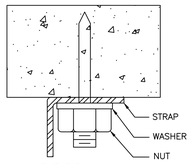
1. DUCTS SHALL NOT BE HUNG FROM OR SUPPORTED BY HUNG CEILING.
2. FOR ALL DUCTS, HANGERS SHALL BE TURNED UNDER AND FASTENED TO TO THE BOTTOM OF DUCT AS SHOWN ABOVE.
3. FRICTION OR CADDY CLIP ATTACHMENT TO STRUCTURE IS NOT PERMITTED.

DUCT HANGER SCHEDULE		
DUCT CROSS SECTIONAL AREA	STRAP HANGER SIZE	MAX, SPACING
UNDER 2 SQ FT.	1" X 1/16"	6'-0" O.C.
2 TO 4 SQ FT.	1" X 1/8"	8'-0" O.C.
4 TO 8 SQ FT.	1" X 1/8"	6'-0" O.C.
OVER 8 SQ FT.	1" X 1/8"	4'-0" O.C.

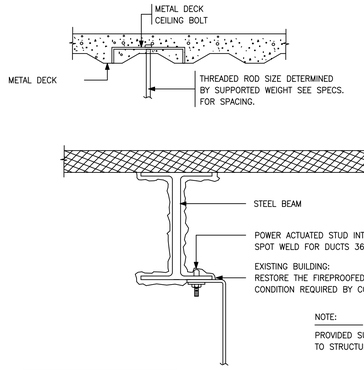




POWER ACTUATED STUDS INTO STEEL (STRUCTURE OR DECK)

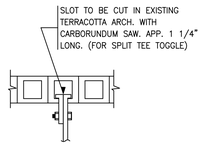


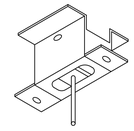
FLAT BAR CONCRETE INSERT



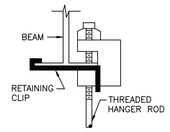
NOTE:

PROVIDED SUPPLEMENTARY ATTACHMENT TO STRUCTURE WHERE REQUIRED.





MANUFACTURED CONCRETE INSERT



"C" CLAMP W/LOCK NUT

1 M-301 DUCT HANGING DETAILS
N.T.S

NOTES:
DUCTS TO BE ACOUSTICALLY LINED SHALL BE DESIGNATED BY THE SYMBOL IN FIG. "C" TO THE EXTENT OF LINING. THICKNESS SHALL BE AS SPECIFIED.
DUCTS LINED WITH ACOUSTICAL MATERIAL SHOULD BE FASTENED WITH CLIPS, ADHESIVE, OR PINS

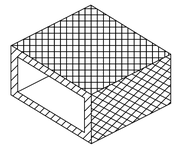


FIG. A

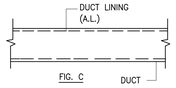


FIG. C

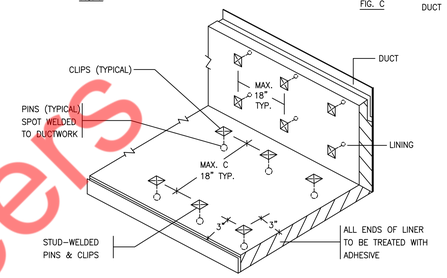
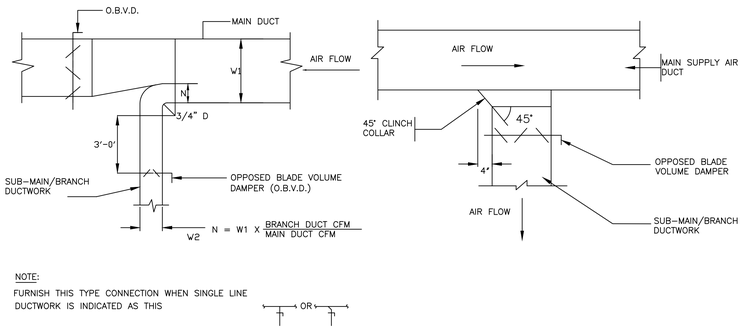


FIG. B

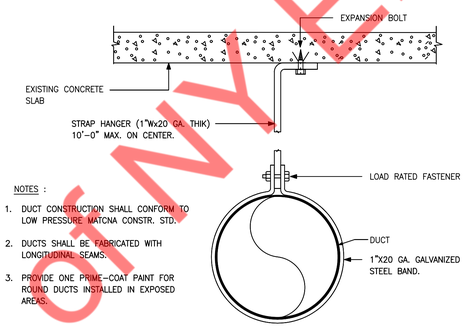
2 M-301 ACOUSTICAL TREATMENT DUCT LINING
N.T.S



NOTE:

FURNISH THIS TYPE CONNECTION WHEN SINGLE LINE DUCTWORK IS INDICATED AS THIS

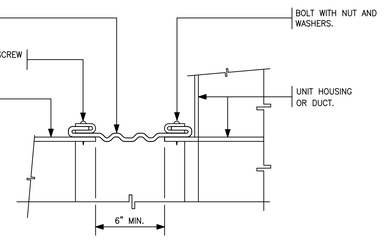
3 M-301 SUPPLY AIR DUCTWORK SUB-MAIN/BRANCH DUCT CONNECTION
N.T.S



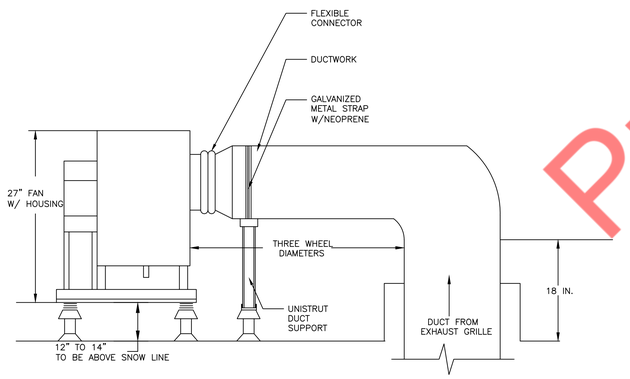
NOTES :

1. DUCT CONSTRUCTION SHALL CONFORM TO LOW PRESSURE MATCNA CONSTR. STD.
2. DUCTS SHALL BE FABRICATED WITH LONGITUDINAL SEAMS.
3. PROVIDE ONE PRIME-COAT PAINT FOR ROUND DUCTS INSTALLED IN EXPOSED AREAS.

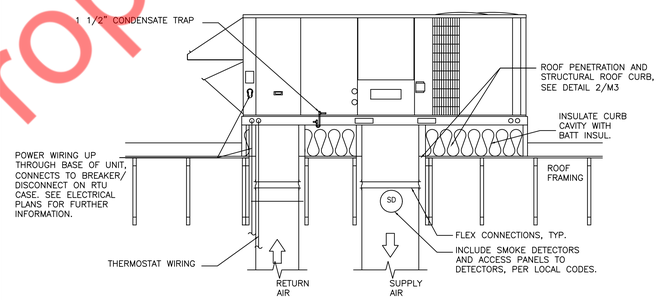
4 M-301 METHOD OF HANGING DUCTWORK
N.T.S



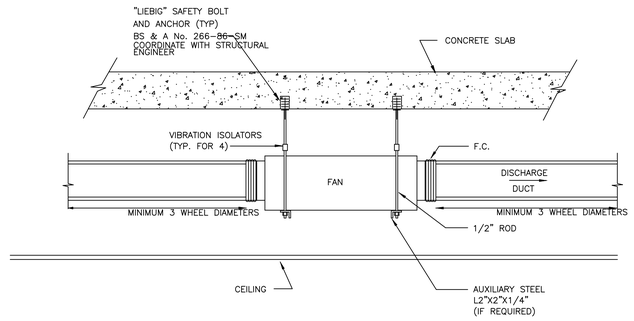
5 M-301 FLEXIBLE CONNECTION (DUCT-EQUIPMENT)
N.T.S



6 M-301 UTILITY FAN DETAIL
N.T.S



7 M-301 TYPICAL ROOF TOP UNIT DETAILS
N.T.S



NOTE:
1. DUCT LENGTH TO BE MINIMUM THREE WHEEL DIAMETER ON DISCHARGE AND INLET.

8 M-301 INLINE FAN SUPPORT DETAIL
N.T.S

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MIAMI , FL 33179
WWW.NY-ENGINEERS.COM

SCALE: AS NOTED

DATE: 11-15-2024

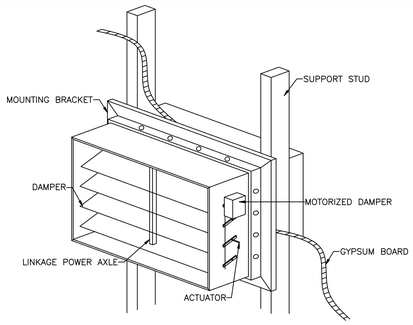
CONTENT

MECHANICAL DETAILS (1 OF 3)

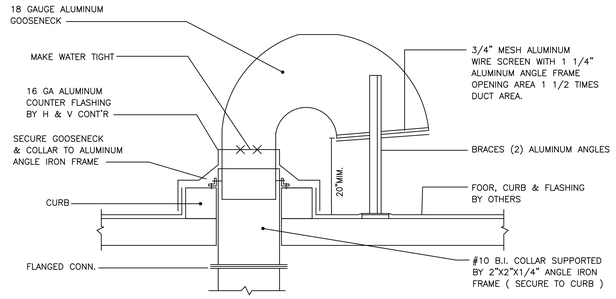
SHEET NUMBER:

M-301

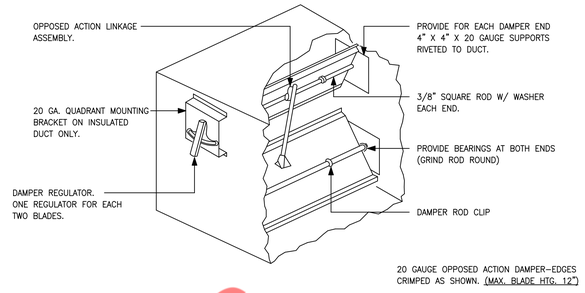
PROJECT STATUS:



1 M-302 MOTORIZED DAMPER DETAIL
N.T.S

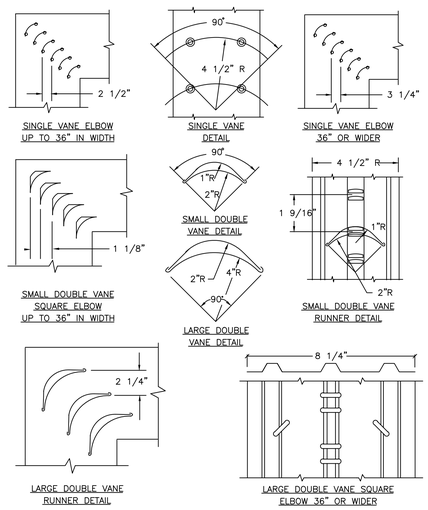


2 M-302 TYPICAL DETAIL OF ROOF GOOSENECK
N.T.S

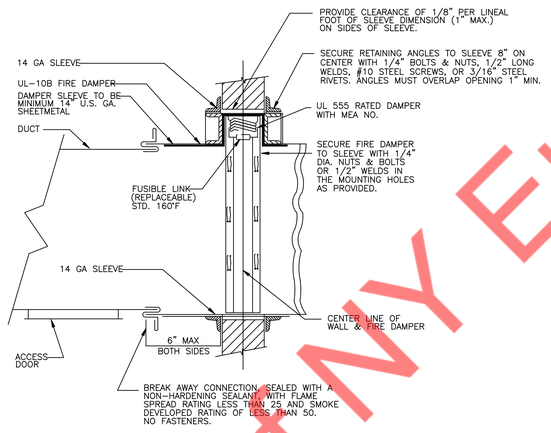


NOTE : 1. FOR DUCTS OVER 29" WIDE AND/OR OVER 12" HIGH.

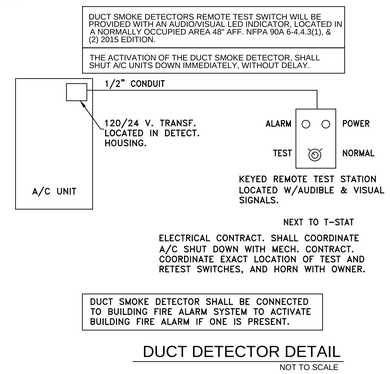
3 M-302 LOW PRESSURE BALANCING DAMPER
N.T.S



4 M-302 LOW VELOCITY DUCTWORK ELBOWS
N.T.S

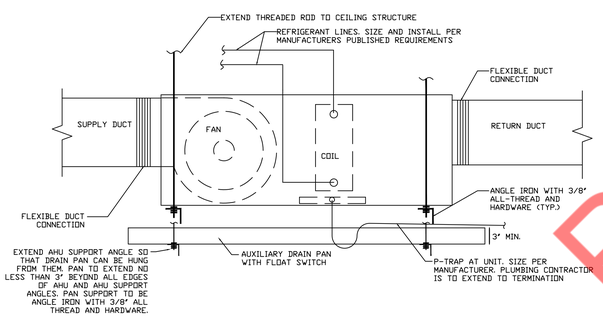


5 M-302 SHUTTER TYPE FIRE DAMPER
N.T.S

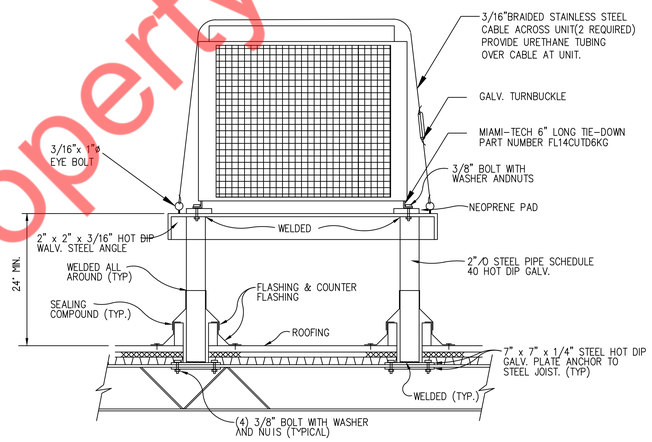


DUCT DETECTOR DETAIL
NOT TO SCALE

6 M-302 DUCT DETECTOR DETAIL
N.T.S

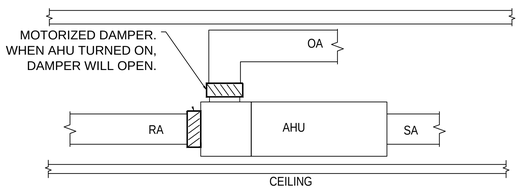


7 M-302 TYPICAL AIR HANDLER DETAIL
N.T.S



NOTE: 1. UNIT & STAND SHALL BE ANCHORED TO WITHSTAND FBCB (8TH EDITION) (2023)
2. CONTRACTOR SHALL INSTALL CONDENSER UNITS ON PRE-ENGINEERED AC STANDS.

8 M-302 CONDENSER MOUNTING DETAIL
N.T.S



9 M-302 AHU – TYPICAL OUTSIDE AIR DETAIL
N.T.S

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AUTHORIZED SIGNATURES:

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WWW.NY-ENGINEERS.COM

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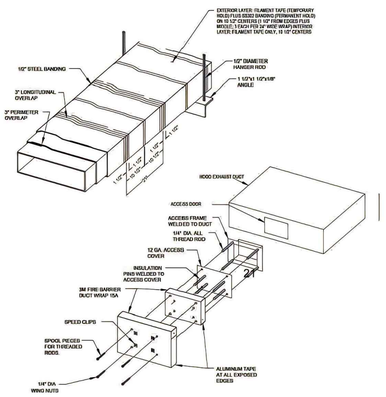
DATE: 11-15-2024

CONTENT
MECHANICAL DETAILS (2 OF 3)

SHEET NUMBER:
M-302

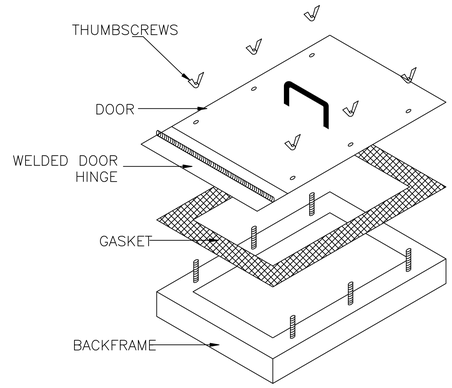
PROJECT STATUS:



TYPICAL GREASE DUCT WRAP DETAIL

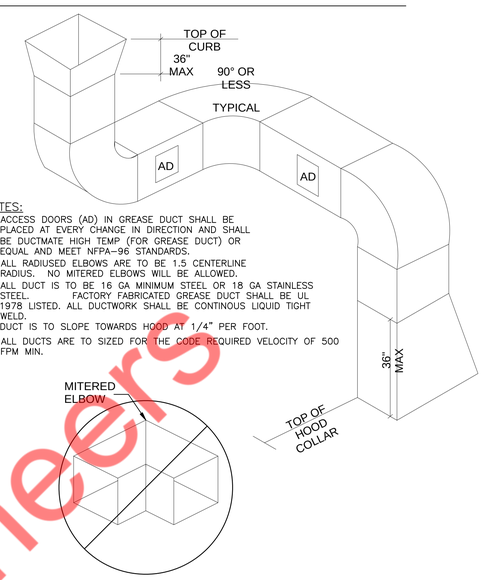
NOT TO SCALE

1 / M-303 TYPICAL GREASE DUCT WRAP DETAIL
N.T.S



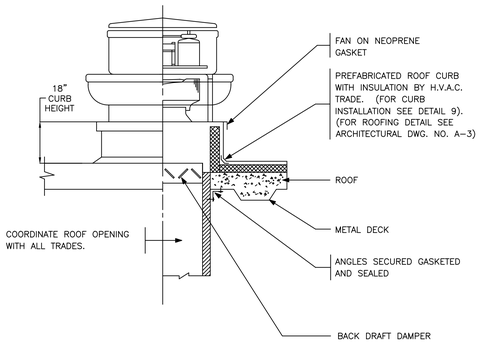
NOTES:
ACCESS DOOR IS TO BE DUCTMATE ULTIMATE DOOR II OR EQUAL.
ACCESS DOOR IS TO BE U.L. LISTED # 65X3.
ACCESS DOOR IS TO MEET OR EXCEED THE REQUIREMENTS OF NFPA 96, 2008 EDITION AT ALL LOCATIONS REQUIRED BY LOCAL CODE.

2 / M-303 TYPICAL GREASE DUCT ACCESS DOOR DETAIL
N.T.S

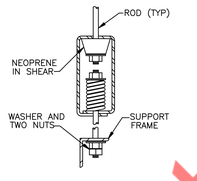


NOTES:
1. ACCESS DOORS (AD) IN GREASE DUCT SHALL BE PLACED AT EVERY CHANGE IN DIRECTION AND SHALL BE DUCTMATE HIGH TEMP (FOR GREASE DUCT) OR EQUAL AND MEET NFPA-96 STANDARDS.
2. ALL RADIUSED ELBOWS ARE TO BE 1.5 CENTERLINE RADIUS. NO MITERED ELBOWS WILL BE ALLOWED.
3. ALL DUCT IS TO BE 16 GA MINIMUM STEEL OR 18 GA STAINLESS STEEL. FACTORY FABRICATED GREASE DUCT SHALL BE UL 1978 LISTED. ALL DUCTWORK SHALL BE CONTINOUS LIQUID TIGHT WELD.
4. DUCT IS TO SLOPE TOWARDS HOOD AT 1/4" PER FOOT.
5. ALL DUCTS ARE TO SIZED FOR THE CODE REQUIRED VELOCITY OF 500 FPM MIN.

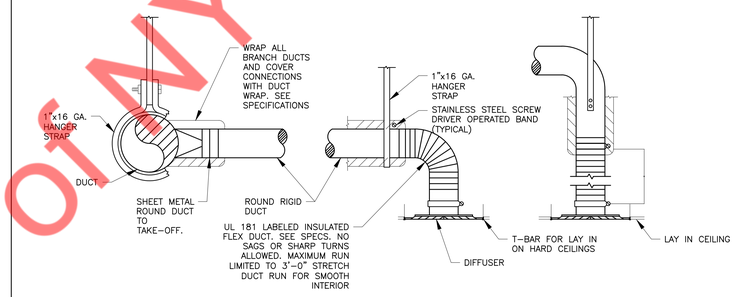
3 / M-303 TYPICAL GREASE DUCT DETAIL
N.T.S



4 / M-303 UP BLAST EXHAUST FAN DETAIL
N.T.S



5 / M-303 VIBRATION ISOLATOR DETAIL
N.T.S



6 / M-303 TYPICAL DIFFUSER CONNECTION DETAIL
N.T.S

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No.	DESCRIPTION	DATE

AUTHORIZED SIGNATURES:

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WWW.NY-ENGINEERS.COM

SCALE: AS NOTED

DATE: 11-15-2024

CONTENT

MECHANICAL DETAILS (3 OF 3)

SHEET NUMBER:

M-303

PROJECT STATUS:

ROOF TOP UNIT SCHEDULE

UNIT ID	MANUFACTURER	MODEL	AREA SERVED	NOMINAL TONS	SUPPLY FAN			HEATING CAPACITY		STEADY STATE EFFICIENCY	COOLING CAPACITY				ELECTRICAL				EER/IEER	OPERATING WEIGHT (LBS.)	REMARKS
					SUPPLY CFM	OUTSIDE AIR CFM	MAX. ESP (IN. OF W.G.)	INPUT MBH	OUTPUT MBH		TOTAL MBH	SENSIBLE MBH	AMBIENT TEMP. DB (°F)	ENTERING TEMP. DB / WB (°F)	VOLTS	PHASE	MCA (A)	MCB (A)			
RTU-1 (N)	TRANE (OR EQUIVALENT)	YHK240A3S0 (OR EQUIVALENT)	SEE PLAN	20.0	8000	1770	1.6	250.0	202.0	81%	247.2	183.1	92.6	80/67	208	3	108	150	11.0 /15.8	2700	I-XV
RTU-2 (N)	TRANE (OR EQUIVALENT)	YHK240A3S0 (OR EQUIVALENT)	SEE PLAN	20.0	8000	1770	1.6	250.0	202.0	81%	247.2	183.1	92.6	80/67	208	3	108	150	11.0 /15.8	2700	I-XV
RTU-3 (N)	TRANE (OR EQUIVALENT)	YSK150A3SBL (OR EQUIVALENT)	SEE PLAN	12.5	5000	400	1.2	150.0	121.5	81%	143.7	110.6	92.6	80/67	208	3	67	90	10.8 /14.0	1600	I-XV

INCLUDED SYSTEM OPTIONS
I. PROVIDE FULL PERIMETER 14" HIGH ROOF CURB.
II. PROVIDE 2" MERV-8 FILTERS.
III. PROVIDE HINGED PANELS FOR FILTER ACCESS, FAN MOTOR ACCESS, COMPRESSOR ACCESS AND CONTROL COMPARTMENT ACCESS.
IV. CONTRACTOR TO PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT FOR RTU WITH HUMIDITY CONTROL.
V. PROVIDE HAIL GUARD - FLD.
VI. PROVIDE WITH TUBE & FIN COIL SYSTEM.
VII. PROVIDE WITH DRAIN PAN OVERFLOW SWITCH.
VIII. PROVIDE WITH STANDARD CAP AND PHASE MONITOR SYSTEM.
IX. PROVIDE MULTISTAGE AIR VOLUME.
X. PROVIDE DRIVE TO MATCH THE STATIC PRESSURE MENTIONED IN SCHEDULE.
XI. PROVIDE LOW LEAK ENTHALPY ECONOMIZER WITH FDD AND BAROMETRIC RELIEF.
XII. PROVIDE SUPPLY AIR SMOKE DETECTOR.
XIII. PROVIDE DUCT MOUNTED CO2 SENSORS AND MODULATING OUTSIDE AIR DAMPER WITH DEMAND CONTROL VENTILATION SETUP.
XIV. PROVIDE HOT GAS REHEAT SYSTEM FOR HUMIDITY CONTROL.
XV. PROVIDE NON FUSED DISCONNECT SWITCH.

GENERAL RTU NOTES :
i. INSTALL AS PER MANUFACTURERS SPECIFICATIONS AND MAINTAIN ALL SERVICE CLEARANCES.
ii. PROVIDE CONDENSATE DRAIN 'P' TRAP MINIMUM 3" DEEP OR TWICE THE TOTAL STATIC PRESSURE WHICHEVER IS GREATER.
iii. COMPRESSOR SHALL HAVE A MINIMUM 5 YEAR WARRANTY ALL OTHER EQUIPMENT SHALL HAVE , MINIMUM 1 YEAR WARRANTY.
iv. RTUS ARE BASED ON AHRI STANDARD CONDITIONS OF 80°F DB, 67°F WB INDOOR ENTERING AIR TEMPERATURE AND 95°F DB ENTERING AIR FOR OUTDOOR UNIT.
v. MUST MEET THE EER'S MINIMUM EFFICIENCY CODE REQUIREMENTS.

AIR HANDLING UNIT SCHEDULE (INDOOR)

MAKE : TRANE (OR EQUIVALENT)

TAG	AREA SERVED	TYPE	TON	TOTAL COOLING CAP. (MBH)	SENSIBLE COOLING CAP. (MBH)	TOTAL HEATING CAP. (MBH) @ 47°F	SUPPLY AIRFLOW (CFM)	OUTDOOR AIR (CFM)	ELECTRICAL DATA			DIMENSIONS (HxWxD) (IN.)	REFRIGERANT PIPE SIZE (IN.)		WEIGHT (LBS.)	MODEL NO.
									PH/VOLT/HZ	MCA (A)	MOCP (A)		LIQUID	SUCTION		
AHU-1 (N)	SEE PLAN	MULTI-POSITION	4.0	47.7	35.7	46.5	1600	110	1/208/60	9.0	15.0	21-3/8"X21-1/2"X57-3/8"	3/8"	7/8"	174	TEM6A0C48H41

NOTES :-
1. SUPPLY AIR CFM BASED ON HIGH SPEED.
2. REFRIGERANT R-454B SHALL BE PROVIDED.
3. PROVIDE ALL ASSOCIATED ACCESSORIES.
4. ALL REFRIGERANT PIPING TO BE SIZED AS PER MANUFACTURERS RECOMMENDATIONS.
5. CONTRACTOR SHALL PROVIDE A LONG LINE SET FOR REFRIGERANT PIPING IN THE EVENT THAT TOTAL REFRIGERANT LENGTH EXCEEDS THE MANUFACTURER'S STANDARD RECOMMENDED LENGTH. CONTRACTOR TO FIELD VERIFY THE EXACT TOTAL REFRIGERANT LENGTH AND COORDINATE WITH THE MANUFACTURER PRIOR ORDERING UNIT
6. A WATER-LEVEL MONITORING DEVICE MUST BE PROVIDED WITHIN THE PRIMARY DRAIN PAN, WHICH WILL SHUT DOWN THE AIR HANDLING IF THE PRIMARY DRAIN BECOMES OBSTRUCTED.
7. PROVIDE DISCONNECT SWITCH.
8. CONNECT 1" CD FROM AHU TO NEAREST APPROVED PLACE OF DISPOSABLE. PROVIDE CONDENSATE PUMP, IF REQUIRED.

AIR BALANCE

UNIT	AREA SERVED	SUPPLY AIR	OUTSIDE AIR	RETURN AIR	EXHAUST AIR
RTU-1 (N)	SEE PLAN	8000 CFM	1770 CFM	6230 CFM	-
RTU-2 (N)	SEE PLAN	8000 CFM	1770 CFM	6230 CFM	-
RTU-3 (N)	SEE PLAN	5000 CFM	400 CFM	4600 CFM	-
AHU-1 (N)	SEE PLAN	1600 CFM	110 CFM	1490 CFM	-
MAU-1 (N)	SEE PLAN	4760 CFM	4760 CFM	-	-
MAU-2 (N)	SEE PLAN	1375 CFM	1375 CFM	-	-
EF-1 (N)	SEE PLAN	-	-	-	490 CFM
EF-2 (N)	SEE PLAN	-	-	-	350 CFM
EF-3 (N)	SEE PLAN	-	-	-	70 CFM
KEF-1 (N)	SEE PLAN	-	-	-	5950 CFM
KEF-2 (N)	SEE PLAN	-	-	-	1720 CFM
OWEN KEF (N)	SEE PLAN	-	-	-	675 CFM
DWEF-1 (N)	SEE PLAN	-	-	-	450 CFM
TOTAL:		28735 CFM	10185 CFM	18550 CFM	9705 CFM
BUILDING PRESSURE:		.....		480 CFM	**POSITIVE**

HEAT PUMP CONDENSING UNITS SCHEDULE (OUTDOOR)

MAKE : TRANE (OR EQUIVALENT)

TAG	LOCATION	INDOOR UNITS SERVED	CAPACITY (TON)	TOTAL COOLING CAP. (MBH)	SENSIBLE COOLING CAP. (MBH)	TOTAL HEATING CAP. (MBH) @ 47°F	UNIT DIMENSIONS IN.(HxWxD)	WEIGHT (LBS)	PIPING DIAMETER (IN.)		ELECTRICAL DATA			SOUND RATING (DBA)	SEER2	HSPF2	MODEL
									LIQUID	GAS	PH./V/Hz	MCA (A)	MOCP (A)				
ACCU-1 (N)	SEE PLAN	AHU-1 (N)	4.0	47.7	35.7	46.5	37-5/16"X34-3/16"X45-1/4"	292	3/8"	7/8"	3/208/60	18	30	74	17.5	9.0	4TWA7048A3 (OR EQUIVALENT)

NOTES :-
1. UNIT SHALL HAVE TEN YEAR EXTENDED WARRANTY FOR COMPRESSORS/PARTS.
2. PROVIDE COMPRESSOR CYCLE PROTECTOR.
3. PROVIDE CONCRETE PADS/STEEL RAILINGS AS REQUIRED. INSTALL OUTDOOR UNITS WITH THE HELP OF VIBRATION ISOLATORS.
4. CONTRACTOR SHALL PROVIDE A LONG LINE SET FOR REFRIGERANT PIPING IN THE EVENT THAT TOTAL REFRIGERANT LENGTH EXCEEDS THE MANUFACTURER'S STANDARD RECOMMENDED LENGTH. CONTRACTOR TO FIELD VERIFY THE EXACT TOTAL REFRIGERANT LENGTH AND COORDINATE WITH THE MANUFACTURER PRIOR ORDERING UNIT
5. OUTDOOR CONDENSING UNITS TO BE LOCATED WITH PROPER CLEARANCES AND MUST PREVENT RE-CIRCULATION OF AIR. COORDINATE WITH MANUFACTURER AND ARCHITECT.
6. CONDENSING UNIT TO BE SELECTED AT 95°F AMBIENT CONDITION.
7. REFRIGERANT R-410a SHALL BE PROVIDED.

AIR TERMINAL DEVICES SCHEDULE

TAG	SIZE (IN.)	DESCRIPTION	BASIS OF DESIGN		NOTES
			MANUFACTURER	MODEL	
A	24"X24"	SUPPLY AIR DIFFUSER	TITUS	TDC-AA	1,2,3,4,5
A1	24"X24"	PERFORATED SUPPLY AIR DIFFUSER	TITUS	PAS	1,2,3,4,5
B	12"X12"	SUPPLY AIR DIFFUSER	TITUS	250-AA (2/3 WAY)	1,2,3,4,5
C	12"X12"	DUCT MOUNTED EXHAUST GRILLE	TITUS	56FL	1,2,3,4,5
D	24"X24"	RETURN AIR GRILLE	TITUS	56FL	1,2,3,4,5

NOTES:-
1) PROVIDE STANDARD WHITE FINISH FOR ALL AIR DEVICES UNLESS NOTED OTHERWISE ON PLAN.
2) PROVIDE FRAME FOR MOUNTING AIR DEVICE IN LAY-IN GRID CEILING UNLESS REFLECTED CEILING PLAN INDICATES HARD CEILING. IN AREAS WITH HARD CEILINGS, PROVIDE FRAMES FOR SURFACE MOUNTING.
3) UNLESS OTHERWISE NOTED, BRANCH DUCTS SERVING AIR DEVICES SHALL BE SAME SIZE AS NECK OF AIR DEVICE.
4) COORDINATE FINAL COLOR/FINISH WITH ARCHITECT/OWNER.
5) MAXIMUM NOISE CRITERION RATING < 35 DBA.
FOR ROUND NECK DIFFUSERS: NECK SIZES SHALL BE:-
15" DIA: 901-1100 CFM
14" DIA: 601-900 CFM
12" DIA: 376-600 CFM
10" DIA: 226-375 CFM
8" DIA: 101-225 CFM
6" DIA: 0-100 CFM

VENTILATION CALCVULATUION AS PER FBC M 2023

ROOM NAME	AREA (SQ.FT.)	NUMBER OF PEOPLE/1000SQ.FT AS PER FBC M 2023	NUMBER OF PEOPLE AS PER FBC M 2023	NUMBER OF PEOPLE AS PER ARCHITECTURAL PLAN	FINAL PEOPLE NO.	MIN OUTSIDE AIR AS PER FBC M 2023		REQUIRED OA (CFM)	PROVIDED OA (CFM)	EXHAUST AIRFLOW RATE (CFM/SQ.FT OR /FIXT.)	TOTAL EXHAUST (CFM)	TOTAL EXHAUST (CFM)
						CFM/PEOPLE	CFM/SQ.FT					
BOH 100	1441	20	29	0	29	7.5	0.12	395	4050	0.7	1008.7	1010
HOSTESS/RETAIL STORE 101	640	30	20	0	20	5	0.06	140		-	-	-
MENS RESTROOM 102	337	0	0	0	0	0	0	0		70	490	490
WOMENS RESTROOM 103	443	0	0	0	0	0	0	0		70	350	350
BAR 104	601	100	61	27	61	7.5	0.18	570		-	-	-
INDOOR DINING 105	3995	70	280	224	280	7.5	0.18	2820		-	-	-
DRY STORAGE 111	184	0	0	0	0	0	0.12	25		-	-	-
UNISEX RESTROOM 113	82	0	0	0	0	0	0	0		70	70	70
IT 115	51	5	1	0	1	5	0.06	10		-	-	-
SUPPLIES 116	114	0	0	0	0	0	0.12	15		-	-	-
HR 118	71	6	1	0	1	5	0.06	10		-	-	-
ADMIN 119	71	7	1	0	1	5	0.06	10		-	-	-
HALLWAY	406	0	0	0	0	0	0.06	25		-	-	-
TOTAL	**8436**	**-**	**-**	**-**	**393**	**-**	**-**	**4020**	**4050**		**-**	**1920**

MAKEUP AIR UNIT SCHEDULE

TAG	UNIT	MANUFACTURER	STATUS	MODEL	AREA SERVED	HP	SUPPLY FAN		HEATING CAPACITY			ELECTRICAL				OPERATING WEIGHT (LBS.)
							SUPPLY CFM	ESP (IN. OF W.G.)	TOTAL IN MBH	TOTAL OUT MBH	BURNER EFF %	VOLTS	PHASE	MCA (A)	MOCP (A)	
MAU-1 (N)	GAS HEAT	ECON-AIR	NEW	EA3-D.500-24D	SEE PLAN	10.00	4760	1.5	198.9	182.9	92	208	3	33.8	60	975
MAU-2 (N)	GAS HEAT	ECON-AIR	NEW	A1-D.250-18Z	SEE PLAN	1.68	1375	1.5	57.4	52.8	92	208	1	13.2	20	564

NOTES FOR MUA-1 (N) & MUA-2 (N)
1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 24" MIXED FLOW DIRECT DRIVE FAN AND 12" BURNER.
2. INTAKE HOOD WITH EZ FILTERS.
3. DOWN DISCHARGE - AIR FLOW RIGHT -> LEFT.
4. DOWN DISCHARGE CONSTRUCTION FOR SIZE 3 DIRECT DRIVE AHUS.
5. GAS PRESSURE GAUGE, 0-35", 2.5" DIAMETER, 1/4" THREAD SIZE.
6. GAS PRESSURE GAUGE, -5 TO +15 INCHES WC., 2.5" DIAMETER, 1/4" THREAD SIZE.
7. BUTTERFLY MOD VALVE OPTION FOR MOD SIZE 3 (1" MOD VALVE).
8. SHIP LOOSE GAS STRAINER. TO BE INSTALLED UPSTREAM OF UNIT CONNECTION. 1" CONNECTION.
9. MOTORIZED BACK DRAFT DAMPER 30" X 30" FOR SIZE 3 STANDARD & MODULAR HEATER UNITS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LOW LEAKAGE, NFBUP-S ACTUATOR INCLUDED.
10. MIAMI DADE IMPACT AND WIND LOAD CERTIFICATION +30 / -130 PSF - MIAMI DADE COUNTY PRODUCT CONTROL APPROVED. FLORIDA BUILDING CODE APPROVAL. ROOF MOUNT EXHAUST CURBS UP TO 20" HIGH MUST BE 18 GAUGE ALUMNIZED.
11. SEPARATE 120VAC WIRING PACKAGE FOR MAKE-UP AIR UNITS. OPTION MUST BE SELECTED WHEN MOUNTING VFD IN PREWIRE PANEL OR WITH DCV PACKAGE. PROVIDES SEPARATE 120VAC INPUT TO SUPPLY FAN. THIS 120V SIGNAL MUST BE RUN BY ELECTRICIAN FROM DCV TO MUA SWITCH.
12. HINGED DOUBLE WALL INSULATED DOOR ASSEMBLY (BURNER/BLOWER SECTION).
13. EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET.
14. 2 YEAR PARTS WARRANTY.

MECHANICAL FAN SCHEDULE

TAG	FLOW RATE	STATIC PRESSURE		ELECTRIC DATA			MAXIMUM LOUDNESS	BASIS OF DESIGN		WEIGHT	REMARK
		EXTERNAL	SPEED	FLA (AMPS)	V/PH/HZ						
	CFM	IN W.G.	RPM				DBA/SONES	MANUFACTURER	MODEL	LBS	
KEF-1 (N)	5950	3.0	1062	28.4	208/60/3	39.2	ECON-AIR	EA-USBI30DD-RM		1304	2,3,4,8
KEF-2 (N)	1720	1.5	1528	6.9	208/60/1	14.6	ECON-AIR	EADU8SH		165	2,3,4,9
OVEN KEF (N)	675	1.0	1400	6.3	115/60/1	13.4	CAPTIVEAIRE	DU50HFA		129	2,3,4,10
DWEF-1 (N)	450	1.0	1510	4.3	115/60/1	15.8	CAPTIVEAIRE	DU33HFA		121	2,3,4,11
EF-1 (N)	490	1.0	1070	5.0	115/60/1	42.0	GREENHECK	CSP-A1050		75	1,2,4,5,6
EF-2 (N)	350	1.0	1600	3.3	115/60/1	44.0	GREENHECK	CSP-A780		50	1,2,4,5,6
EF-3 (N)	140	0.5	825	0.46	115/60/1	1.7	GREENHECK	CSP-200		30	1,2,4,5,7

NOTES:
1. PROVIDE DISCONNECT SWITCH.
2. PROVIDE THERMAL OVERLOAD PROTECTION, AMCA SEAL & UL CERTIFIED.
3. PROVIDE FACTORY MOUNTED AND INSTALLED WEATHER PROOF DISCONNECT SWITCH.
4. PROVIDE ALL NECESSARY ACCESSORIES AS PER MANUFACTURER'S RECOMMENDATIONS.
5. PROVIDE BACKDRAFT DAMPER.
6. INTERLOCK WITH RTU-1(N).
7. INTERLOCK WITH AHU-1(N).
8. INTERLOCK WITH HOOD-1(N) & HOOD-2(N).
9. INTERLOCK WITH HOOD-3(N).
10. INTERLOCK WITH HOOD-4(N).
11. INTERLOCK WITH DISH HOOD.

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Señor Frog's FUN, FOOD & CLOTHES

No.	DESCRIPTION	DATE

AUTHORIZED SIGNATURES:

NY ENGINEERS
382 NE 191 ST SUITE 49674
MIAMI , FL 33179
WWW.NY-ENGINEERS.COM

SCALE: AS NOTED

DATE: 11-15-2024

CONTENT

MECHANICAL SCHEDULES

SHEET NUMBER:

M-401

PROJECT STATUS:

FOR QUESTIONS, CALL THE
Brown-Forbes Mechanical
800.288.4
PHONE: (305) 751 - 4119
EMAIL: info@brownforbes.com

PATENT NUMBERS
AC-PSP CANTEX STATICS - US PATENT 7963836 B2
AC-PSP WALL CONNOISS - CA PATENT 2600929
AC-PSP ISLAND CONNOISS - CA PATENT 2520330.

HOOD INFORMATION -- SOBATOBEGS

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX EXERCISE TEMP	TYPE	APPLIANCE DUTY	DESIGN DUTY	TOTAL EXH CFM	MINIMUM ALLOWABLE DUCTWORK WIDTH	LENG	HEIGHT	DIA	CFM	VEL	SP	TOTAL EXPV CFM	HOOD CONSTRUCTION	GREASE CONTAIN.	DIM. TO END	RDW
1	Hood 1	6024 CU-2-PSP-F	ECON-AIR	10' 6"	600 DEG. F	I	HEAVY	2175	4250			4"	24"	2125	1326	-0.834"	2350	430 SS WORK EXPOSED	LEFT	ALONE	RDW
2	Hood 2	6024 CU-2-PSP-F	ECON-AIR	7' 6"	600 DEG. F	I	HEAVY	2125	3250			4"	14"	1496	1186	-0.669"	1400	430 SS (WORK EXPOSED)	RIGHT	ALONE	RDW
3	Hood 3	6024 CU-2-PSP-F	ECON-AIR	8' 0"	600 DEG. F	I	HEAVY	2125	1725			4"	14"	1725	1689	-0.636"	1375	430 SS (WORK EXPOSED)	ALONE	ALONE	RDW
4	DUCK WAX	2X-UCB EX-UCB	ECON-AIR	4' 6"	700 DEG. F	II	N/A	150	675			4"	10"	675	1238	-0.014"	0	430 SS (WORK EXPOSED)	ALONE	ALONE	ALONE

HOOD INFORMATION

HOOD NO	TAG	TYPE	FIRE SYSTEM SUPPRESSION	QTY	EFFICIENCY @ 7 MICRONS	QTY	LIGHTING TYPE	WIRE GUARD	LOCATION	SIZE	FIRE SYSTEM CHARACTERISTICS TYPE	SIZE	ELECTRICAL MODEL #	PANTHERA QUANTITY	FIRE SYSTEM	HOOD SHROUD
1	Hood 1	CANTRAFE SOLO FILTER	U	20" 36"	85% SEE FILTER SPEC	4	RECESSED ROUND	NO	LEFT	10"x60"x24"	TANK FS	4.0/4.0/4.0/4.0			YES	LIGHT LAS
2	Hood 2	CANTRAFE SOLO FILTER	S	20" 36"	85% SEE FILTER SPEC	2	RECESSED ROUND	NO							YES	HOOD LAS
3	Hood 3	CANTRAFE SOLO FILTER	S	20" 36"	85% SEE FILTER SPEC	2	RECESSED ROUND	NO	RIGHT	10"x60"x24"	TANK FS	4.0/4.0	DCV-100		YES	BOT LAS 1 LIGHT 1 FAN
4	DUCK WAX					0									NO	PAN LAS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1	Hood 1	FIELD WRAPPER 36X9' HIGH FRONT LEFT
		ENCAPSULATED 36X9' HIGH X 20'X36' LONG 430 SS VERTICAL
		WRAPPER FRONT RIGHT
2	Hood 2	FIELD WRAPPER 36X9' HIGH FRONT
		RIGHT SIDEPLANE 36X9' HIGH X 60X80' LONG 430 SS VERTICAL
		RIGHT END STANDOFF 2"INSIDE(S) 6" WIDE 60" LONG INSULATES
		RIGHT QUARTER END PANEL 20" TOP WIDTH, 20" BOTTOM WIDTH, 20" HIGH 430 SS
3	Hood 3	ENCAPSULATED 36X9' HIGH X 20'X36' LONG 430 SS VERTICAL
		LEFT SIDEPLANE 36X9' HIGH X 60X80' LONG 430 SS VERTICAL
		LEFT END STANDOFF 2"INSIDE(S) 6" WIDE 60" LONG INSULATES
		RIGHT QUARTER END PANEL 20" TOP WIDTH, 20" BOTTOM WIDTH, 20" HIGH 430 SS
4	OVEN 30X	LEFT QUARTER END PANEL 20" TOP WIDTH, 20" BOTTOM WIDTH, 20" HIGH 430 SS
		RIGHT QUARTER END PANEL 20" TOP WIDTH, 20" BOTTOM WIDTH, 20" HIGH 430 SS
		LEFT QUARTER END PANEL 20" TOP WIDTH, 20" BOTTOM WIDTH, 20" HIGH 430 SS

PERFORATED SUPPLY PLENUM(S)

HOOD NO	TAG	POS	LENGTH	WIDTH	HEIGHT	TYPE	OVERHEIGHT WIDTH	LENG	DIA	CFM	SP
1	Hood 1	Front	198"	18"	6"	MUA	12"	20'		840	0.250"
						MUA	12"	20'		840	0.250"
						MUA	12"	20'		840	0.250"
						MUA	12"	20'		840	0.250"
2	Hood 2	Front	96"	18"	6"	MUA	12"	20'		708	0.187"
						MUA	12"	20'		708	0.187"
3	Hood 3	Front	108"	14"	6"	MUA	12"	20'		497	0.104"
						MUA	12"	20'		497	0.104"

GREASE DUCT & CHIMNEY SPECIFICATIONS:
PROVIDE GREASE DUCT EQUAL TO ECON-AIR MODEL "EDW" ROUND 20 GAUGE 430 STAINLESS STEEL DUCTWORK. MODEL "EDW" IS LISTED TO UL-1978 AND IS INSTALLED USING "V" CLAMP LOCKING CONNECTIONS SEALED WITH 3M FIRE BARRIER 2000 PLUS. MODEL "EDW" DOES NOT REQUIRE WELDING PROVIDING IT HAS BEEN INSTALLED PER THE MANUFACTURES INSTALLATION GUIDE.
PROVIDE RATED ACCESS DOORS AT EVERY CHANGE IN DIRECTION AND EVERY 12' ON CENTER. PER MANUFACTURES LISTING MODEL "EDW" HORIZONTAL RUNS LESS THAN 75 FT. CAN BE SLOPED 1/16" PER 12", HORIZONTAL RUNS MORE THAN 75 FT. CAN BE SLOPED 3/16" PER 12". DUCT SHOULD BE SLOPED AS MUCH AS POSSIBLE TO REDUCE THE CHANCE OF GREASE ACCUMULATION IN HORIZONTAL RUNS.

IF THE DUCT OR CHIMNEY IS WITHIN 18 INCHES OF COMBUSTIBLE MATERIAL, PROVIDE UL-2221 OR UL-103 HT LISTED DOUBLE WALL GREASE DUCT OR DOUBLE WALL CHIMNEY EQUAL TO ECON-AIR MODEL "EDW- 20, 28 TYPE HT, 36, OR 32" ROUND 20 GAUGE 430 STAINLESS INNER DUCT INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL.

ECON-AIR RECOMMENDS THE USE OF LISTED, PRE-FABRICATED ROUND GREASE EXHAUST DUCT TO REDUCE STATIC PRESSURE IN THE SYSTEM, MINIMIZE INSTALLATION AND INSPECTION TIMES, AND ENSURE DUCT IS LIQUID TIGHT

HVAC DISTRIBUTION NOTE

HIGH VELOCITY DIFFUSERS OR HVAC RETURNS SHOULD NOT BE PLACED WITHIN TEN (10) FEET OF THE EXHAUST HOOD. PERFORATED DIFFUSERS ARE RECOMMENDED.

VERIFY CEILING HEIGHT

__' - __"

HEIGHT REQUIRED TO VERIFY THAT HOOD FITS SPACE AND TO SIZE THE ENCLOSURE PANELS

CUSTOMER APPROVAL TO MANUFACTURE:

APPROVED AS NOTED ☐
APPROVED WITH NO EXCEPTION TAKEN ☐
REVISE AND RESUBMIT ☐
SIGNATURE _____
YOUR TITLE _____ DATE _____

SPECIFICATION CANTRAFE® GREASE-STOP® SOLO FILTER

CANTRAFE GREASE-STOP® SOLO FILTER IS A STAINLESS STEEL FILTER FEATURING A UNIQUE 3-BAFFLE DESIGN INCORPORATED INTO A SLOPED REAR BAFFLE DESIGN, TO DELIVER EXCEPTIONAL FILTRATION EFFICIENCY.

FLOW SLOP HOOD SYSTEMS, CONSTRUCTION, AND SIZES TO FIT INTO STANDARD FILTER RACKS.

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

GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL MEASURE AT LEAST 75% OF GREASE PARTICLES 1 MICRON AND LARGER WITH A CLEAN PRESSURE DROP NOT TO EXCEED 0.25 INCHES OF WATER GAUGE, AND LARGER WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 1.0 INCHES OF WATER GAUGE.
THE CANTRAFE GREASE-STOP SOLO WAS TESTED TO ASTM STANDARD ASTM F2519-05.
THE CANTRAFE GREASE-STOP SOLO IS A SOLID FUEL, NON-COMBUSTIBLE, STAINLESS STEEL FILTER.
EFFICIENCY VS PARTICLE DIAMETER

PRESSURE DROP VS FLOW RATE

CANTRAFE FILTERS ARE BUILT IN COMPLIANCE WITH:
NFPA 96 CHAPTER 4
NSF STANDARD 40
UL-710 (CLASS 1)
UL-900(CLASS 1/MC)
ULC-S545

NG-2 Series with PSP Accessory Specification

The NG-2 Model has been certified by ITL This product has been tested to UL-710B and has met the requirements set forth in UL-710B. Upon successfully passing the UL-710B test, the product's factory standard, that the manufacturing site has been audited, and that the applicant has agreed to a program of periodic factory follow-up inspections to verify continued performance.

Models NG-2 are ETL Listed under file number 3086425SAT-001 and comply with UL-710 and ULC-S645 Standards.

This product may be covered by one or more of the following patent numbers: Canada: 2520330, or other U.S. and Foreign patents pending.

Hood was tested to ASTM F1704.

VHB Series Specification

The VHB Model has been certified by ITL This product has been tested to UL-710B and has met the requirements of a newly recognized commercial UL and Canadian standard for Commercial Grease Extraction Systems. Upon successfully passing the UL-710B test, the product's factory standard, that the manufacturing site has been audited, and that the applicant has agreed to a program of periodic factory follow-up inspections to verify continued performance.

Models VHB are ETL Listed under file number 3086425SAT-001 and comply with UL-710 and ULC-S645 Standards.

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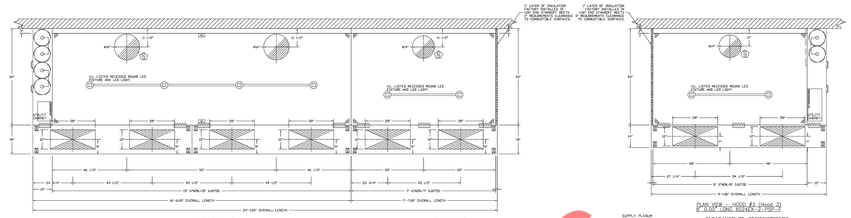
REVISIONS
A1 A2 A3 A4 A5

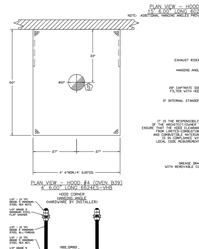
DATE: 11/6/2024
DWG.#: 7086269
DRAWN BY: J. Lee
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 1



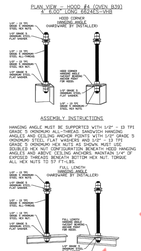
PLAN VIEW -- HOOD #1 (Image 1)
6' 0.5" LONG SQUARE 2-PSP-F

PLAN VIEW -- HOOD #2 (Image 2)
7' 0.5" LONG SQUARE 2-PSP-F

PLAN VIEW -- HOOD #3 (Image 3)
8' 0.5" LONG SQUARE 2-PSP-F

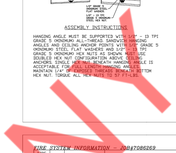


PLAN VIEW -- HOOD #4 (OVEN 30X)
4' 6.0" LONG SQUARE 1-PSP-F



ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SUPPORTS HANGING ANGLES AND CEILING ANCHOR POINTS WITH 5/8" GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. NUTS AND 5/8" GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. NUTS USE DOUBLED HEX NUT CONFIGURATION BENEATH HOOD HANGING ANGLE. ALL-THREAD MUST EXTEND BEYOND THE NUT AND EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 37 FT-LBS.



ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SUPPORTS HANGING ANGLES AND CEILING ANCHOR POINTS WITH 5/8" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 5/8" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. NUTS USE DOUBLED HEX NUT CONFIGURATION ABOVE HOOD ANCHOR POINTS. ALL-THREAD MUST EXTEND BEYOND THE NUT AND EXPOSED THREADS BENEATH HOOD ANCHOR POINTS MINIMUM 1/4". ALL-THREAD MUST EXTEND BEYOND BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 37 FT-LBS.

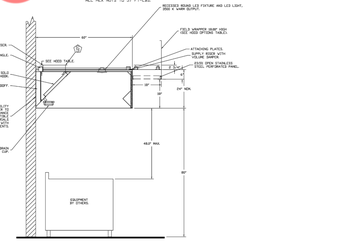
ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SUPPORTS HANGING ANGLES AND CEILING ANCHOR POINTS WITH 5/8" GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. NUTS USE DOUBLED HEX NUT CONFIGURATION ABOVE CEILING. ALL-THREAD MUST EXTEND BEYOND THE NUT AND EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 37 FT-LBS.

CLEARANCE TO COMBUSTIBLES

HOODS #	SURFACE	ACCEARANCE
1	TOP	18"
	FRONT	27"
	BACK	18"
	LEFT	18"
	RIGHT	18"
2	TOP	18"
	FRONT	27"
	BACK	18"
	LEFT	18"
	RIGHT	27"
3	TOP	18"
	FRONT	27"
	BACK	18"
	LEFT	27"
	RIGHT	27"

- ANY CLEARANCE TO COMBUSTIBLES CONFORMS TO ULTIO SPECIFICATION.
- HOOD MOUNTED UTILITY CABINETS REQUIRE 36" SERVICE CLEARANCE.



SECTION VIEW -- MODEL 6024EC-2-PSP-F
HOOD -- #1 (Image 1)

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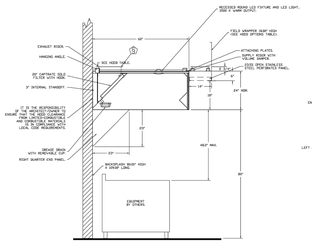
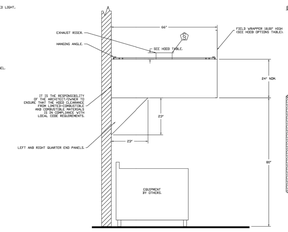
REVISIONS
A1 A2 A3 A4 A5

DATE: 11/6/2024
DWG.#: 7086269
DRAWN BY: J. Lee
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 2

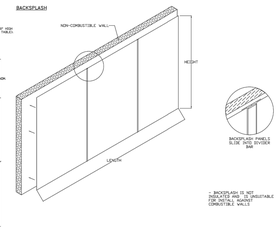


SECTION VIEW -- MODEL 6024EC-2-PSP-F
HOOD -- #2 (Image 2)



SECTION VIEW -- MODEL 6024EC-VHB
HOOD -- #4 (OVEN 30X)

BACKSPLASH



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REVISIONS
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DATE: 11/6/2024
DWG.#: 7086269
DRAWN BY: J. Lee
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 3

FIRE SYSTEM INFORMATION -- DWG#7086269

FIRE SYSTEM NO.	TAG	TYPE	SIZE	MAX FP	MESH FP	INSTALLATION SYSTEM	LOCATION IN HOOD
1		TANK FS	4.0/4.0/4.0/4.0	80	78	FIRE CABINET LEFT	LEFT, HOOD 1
2		TANK FS	4.0/4.0	40	23	FIRE CABINET RIGHT	RIGHT, HOOD 3

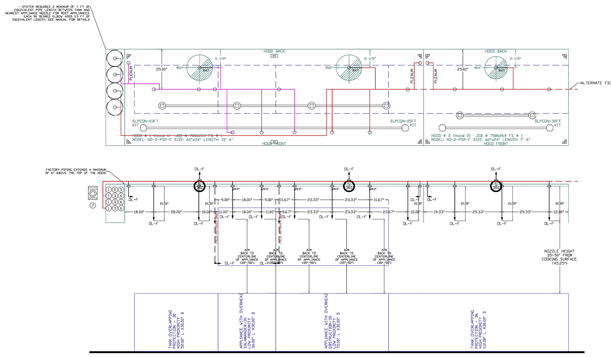
GAS SHUTOFF

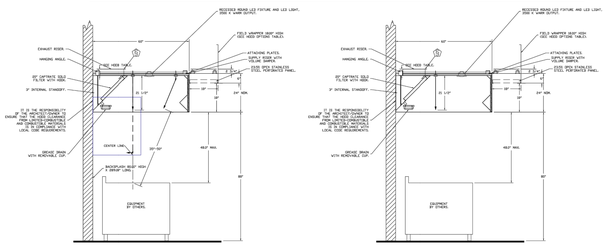
GAS SHUTOFF NO.	TAG	TYPE	SIZE	SUPPLIES ?=
1		NC ELECTRICAL	2.000	ECON-AIR
2		NC ELECTRICAL	2.000	ECON-AIR

FIRE SYSTEM PARTS LIST KEY

FIRE SYSTEM NO.	TAG	KEY NUMBER - PART DESCRIPTION	QTY BY FACTORY	QTY BY DIST
1		0 - 0 - TANK FIRE SUPPRESSION POST-DISCHARGE PROCEDURE UTILITY CABINET LABEL SHEET.	1	0
		0 - 0 - TANK FIRE SUPPRESSION MAINTENANCE GUIDE UTILITY CABINET LABEL SHEET.	1	0
		0 - 0 - 92-F2002-1024A-CP-NAA BAT FIRE THERMOSTAT WITH 12 FOOT WIRE LEADS. NO. CLOSE ON TEMP RISE AT 360°F. (WARDENSO).	3	0
		0 - 0 - 30-0000 SCR 304L - 1/2" (EA).	3	0
		0 - 0 - 30-0001 SCR BRASS 1/2" (EA).	3	0
		0 - 0 - 4AERH103 1/2" MALE NPT TO 1/2" FEMALE NPT ELBOW, BRASS.	4	0
		0 - 0 - 4AERH102 1/2" X 1/4" BRASS REDUCING BUSHING.	2	0
		0 - 0 - 7PA25 3/8" NPT FEMALE TO 1/2" MALE PREPRESS ADAPTER.	3	0
		0 - 0 - 7PB08 1/2" X 1/2" PRO-PRESS TEE X 1/2" NPT FEMALE CONNECTION, VIEGA.	2	0
		0 - 0 - 7PB08 1/2" X 1/2" PRO-PRESS TEE X 1/2"NPT FEMALE CONNECTION, VIEGA.	4	0
		0 - 0 - 87-1200H4-001 SECONDARY ACTUATOR VALVE, 120VAC - SINGLE ACTUATOR, REQUIRES PRIMARY RELEASE ACTUATOR, TANK FIRE SUPPRESSION.	3	0
		0 - 0 - 87-1200H5-001 SECONDARY ACTUATOR HOSE, 73" BRAIDED STAINLESS STEEL, TANK FIRE SUPPRESSION.	3	0
		0 - 0 - 87-3000L-001 TANK - PRESSURIZED TANK USED FOR TANK FIRE SUPPRESSION.	4	0
		0 - 0 - 87-3000D-001 PRIMARY ACTUATOR 60-PSWL - ACTUATOR AND RELEASE, SOLDERED ASSEMBLY,ONE-WAY, 60-PSI, 1/4" FEMALE NPT, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-3001U-00 HARDWARE, 316 BOLTS, TANK FIRE SUPPRESSION.	16	0
		0 - 0 - 9005405PC PRO PRESS 1/2 PRESS X PRESS 90 ELBOW LS.	25	0
		0 - 0 - 9001508PC PRO PRESS PULL-LV PRESS TEE LS.	16	0
		0 - 0 - 9003440S HARDWARE, DAYMALOCK LOCKING BRACKET SQUARE NUTS 5/16" ZINC. TANK FIRE SUPPRESSION.	8	0
		0 - 0 - 4AERH108 JUNCTION BOX FOR MANUAL PULL STATION,15" DEEP BACK BOX, RED COLOR.	1	0
		0 - 0 - A1B484 1/4" NPT SCHRADER VALVE AND CAP, JB INDUSTRIES. 1/4" FLARE X 1/4" NPT. 1/4" FLARE X 1/4" NPT. 1/4" FLARE X 1/4" NPT.	2	0
		0 - 0 - B145 3/8" BLACK IRON 90 ELL.	2	0
		0 - 0 - 87-FAMALOCK DISCHARGE ADAPTER TANK LOCKING PLATE FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	4	0
		0 - 0 - 87-3000L-001 TANK - PRESSURIZED TANK USED FOR TANK FIRE SUPPRESSION.	4	0
		0 - 0 - 7F3-U-CABRACKET TANK BRACKET FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - 4AERH102 1/2" X 1/4" BRASS REDUCING BUSHING.	2	0
		0 - 0 - C01-U07 CHROME PLATED PIPE FITTING 3/8" NPT 90 ZEDICS ELBOW.	2	0
		0 - 0 - C01-U07 CHROME PLATED PIPE FITTING 3/8" NPT ONION.	2	0
		0 - 0 - C01-U15 CHROME PLATED PIPE FITTING 3/8" NPT 30.5 DEGREE ELBOW.	5	0
		0 - 0 - 87-FAMALOCK DISCHARGE ADAPTER TANK LOCKING PLATE FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	4	0
		0 - 0 - 87-FCN-U-SLF SUPERVISED LOOP CONNECTION KIT, CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN THE FIRE SYSTEM TANK AND THE HOOD, WITH 1 FOOT OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS.	1	0
		0 - 0 - 87-FCN-U-SLF SUPERVISED LOOP CONNECTION KIT, CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN THE FIRE SYSTEM TANK AND THE HOOD, WITH 1 FOOT OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS.	1	0
		0 - 0 - 87-FCN-U-SLF SUPERVISED LOOP CONNECTION KIT, CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN THE FIRE SYSTEM TANK AND THE HOOD, WITH 1 FOOT OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS. (BLACK NO WIRE, UP FIXT OF TAN NO WIRE. 30 FIXT OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS.	1	0
		0 - 0 - TANK STEAM TANK STEAM - USED FOR TANK FIRE SUPPRESSION.	12	0
		0 - 0 - 7F3-U-CABRACKET TANK BRACKET FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	4	0
		0 - 0 - 7PA25 3/8" NPT FEMALE TO 1/2" MALE PREPRESS ADAPTER, TANK FIRE SUPPRESSION.	4	0
		0 - 0 - 7PB08 1/2" X 1/2" PRO-PRESS TEE X 1/2"NPT FEMALE CONNECTION, VIEGA.	19	0
		0 - 0 - 7PB08 1/2" X 1/2" PRO-PRESS TEE X 1/2" NPT MALE ADAPTER, VIEGA.	19	0
		0 - 0 - 9/8" - 3/4" NOZZLE - TANK PROTECTION APPLIANCE COVERAGE NOZZLE (INCLUDES METAL BLOW OFF CAP, LANYARD, USED WITH CHROME-PLATED PIPE).	19	0
		0 - 0 - 30A-3/8 SCR 304L - 3/8" (EA).	19	0
		0 - 0 - 87-1200H4-001 SECONDARY ACTUATOR VALVE, 120VAC - SINGLE ACTUATOR, REQUIRES PRIMARY RELEASE ACTUATOR, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-1200H5-001 SECONDARY ACTUATOR HOSE, 73" BRAIDED STAINLESS STEEL, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-3000L-001 TANK - PRESSURIZED TANK USED FOR TANK FIRE SUPPRESSION.	2	0
		0 - 0 - 87-3000D-001 PRIMARY ACTUATOR 60-PSWL - ACTUATOR AND RELEASE, SOLDERED ASSEMBLY,ONE-WAY, 60-PSI, 1/4" FEMALE NPT, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-3001U-00 HARDWARE, 316 BOLTS, TANK FIRE SUPPRESSION.	8	0
		0 - 0 - 9005405PC PRO PRESS 1/2 PRESS X PRESS 90 ELBOW LS.	4	0
		0 - 0 - 9001508PC PRO PRESS PULL-LV PRESS TEE LS.	4	0
		0 - 0 - 9003440S HARDWARE, DAYMALOCK LOCKING BRACKET SQUARE NUTS 5/16" ZINC. TANK FIRE SUPPRESSION.	4	0
		0 - 0 - 4AERH108 JUNCTION BOX FOR MANUAL PULL STATION,15" DEEP BACK BOX, RED COLOR.	1	0
		0 - 0 - A1B484 1/4" NPT SCHRADER VALVE AND CAP, JB INDUSTRIES. 1/4" FLARE X 1/4" NPT. 1/4" FLARE X 1/4" NPT. 1/4" FLARE X 1/4" NPT.	2	0
		0 - 0 - B145 3/8" BLACK IRON 90 ELL.	2	0
		0 - 0 - 87-FAMALOCK DISCHARGE ADAPTER TANK LOCKING PLATE FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - 87-3000L-001 TANK - PRESSURIZED TANK USED FOR TANK FIRE SUPPRESSION.	4	0
		0 - 0 - 7F3-U-CABRACKET TANK BRACKET FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - 4AERH102 1/2" X 1/4" BRASS REDUCING BUSHING.	2	0
		0 - 0 - 7PA25 3/8" NPT FEMALE TO 1/2" MALE PREPRESS ADAPTER, TANK FIRE SUPPRESSION.	5	0
		0 - 0 - 9/8" - 3/4" NOZZLE - TANK PROTECTION APPLIANCE COVERAGE NOZZLE (INCLUDES METAL BLOW OFF CAP, LANYARD, USED WITH CHROME-PLATED PIPE).	5	0
		0 - 0 - 30A-3/8 SCR 304L - 3/8" (EA).	5	0
		0 - 0 - 87-1200H4-001 SECONDARY ACTUATOR VALVE, 120VAC - SINGLE ACTUATOR, REQUIRES PRIMARY RELEASE ACTUATOR, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-1200H5-001 SECONDARY ACTUATOR HOSE, 73" BRAIDED STAINLESS STEEL, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-3000L-001 TANK - PRESSURIZED TANK USED FOR TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-3000D-001 PRIMARY ACTUAT

BINDING EDGE





SECTION VIEW – MODEL 6GRAEX-2-PSP-F
HOOD – B1

SECTION VIEW – MODEL 6GRAEX-2-PSP-F
HOOD – B6

NOTES
- FIELD PIPE DROPS AS SHOWN.
- FITTINGS, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS.
- FIELD INSTALLED DROPS FACTORY WILL PROVIDE 24" Ø, 6GIN LONG PIECES OF CHROME PLATED PIPING SHIPPED LOOSE TO BE FIELD-INSTALLED.
- FIELD INSTALLED DROPS FACTORY WILL PROVIDE 24" Ø, 6GIN LONG PIECES OF CHROME PLATED PIPING SHIPPED LOOSE TO BE FIELD-INSTALLED. THE EXACT CHROME PIPE LENGTH NEEDED SHIPPED LOOSE TO BE FIELD-INSTALLED.
- RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVING, EQUIPMENT, ETC.
- OVERLAPPING COVERAGE SHALL NOT BE USED ON ANY APPLIANCE WITH AN OBSTRUCTION.
- IF APPLICABLE, EXTENDED PRE-PIPED DROPS ARE SHIPPED LOOSE.
- FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.

- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE SIZE, NOT THE OVERALL APPLIANCE SIZE.

- THIS FIRE SYSTEM COMPLIES WITH UL 300 REQUIREMENTS.

- DLI NOZZLE PART NUMBER REPLACES 3070-3/8H-10-SS
JOB #: 7986269
JOB NAME: SENOR FROGS_R0

SYSTEM SIZE: TANK-SP-4 DESIGN FP: 78. MAXIMUM FP: 80.
HOOD # 1 (1) 6.00" LONG x 60" WIDE x 24" HIGH
RISER # 1 SIZE: 16" DIA
HOOD # 2 (1) 6.00" LONG
RISER # 2 SIZE: 16" DIA
HOOD # 3 (1) 7.00" LONG x 60" WIDE x 24" HIGH
RISER # 3 SIZE: 14" DIA
HOOD # 6 METAL BLOW-OFF CAPS INCLUDED.

- HEAVY-DUTY APPLIANCES (RATED 600°F) WILL REQUIRE AN ADDITIONAL DOWNSTREAM FIRESTAT IN THE EVENT THAT THE DUCTWORK CONTAINS ANY HORIZONTAL RUNS (OVER 25.FT IN LENGTH).
- MEDIUM TO LIGHT-DUTY APPLIANCES (RATED <500°F) WILL NOT REQUIRE ANY ADDITIONAL DOWNSTREAM DETECTION.

AGENT DISTRIBUTION PIPING LIMITATIONS	
PIPE SECTION	MAX PIPE LENGTH (FT)
MAX SUPPLY LINE TO FIRST OVERLAPPING NOZZLE	42
OVERLAPPING NOZZLE APPLIANCE BRANCH	10
DEDICATED NOZZLE APPLIANCE BRANCH	10

LEGEND – FIRE CABINET TANK SYSTEM
1 4 GALLON TANK.
2 PRIMARY ACTUATOR RELEASE.
3 SECONDARY ACTUATOR RELEASE.
4 PRESSURE SUPERVISION SWITCH.
5 PRIMARY HOSE ASSEMBLY.
6 SECONDARY HOSE ASSEMBLY.
7 REMOTE MANUAL ACTUATION DEVICE.

REVISIONS
A1 DESCRIPTION DATE
A2
A3
A4

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Brazos Valley Mechanical
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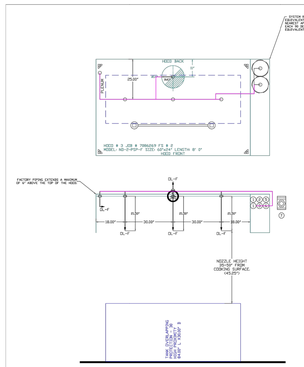
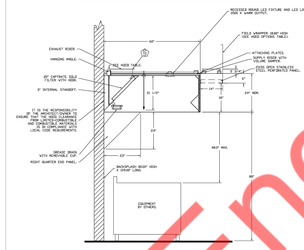
DATE: 11/6/2024
DWG.#: 7986269
DRAWN BY: J. Law
SCALE: 3/8" = 1'-0"
MASTER DRAWING
SHEET NO. 5





SECTION VIEW – MODEL 6GRAEX-2-PSP-F
HOOD – B7

NOTES
- FIELD PIPE DROPS AS SHOWN.
- FITTINGS, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS.
- FIELD INSTALLED DROPS FACTORY WILL PROVIDE 24" Ø, 6GIN LONG PIECES OF CHROME PLATED PIPING SHIPPED LOOSE TO BE FIELD-INSTALLED.
- FIELD INSTALLED DROPS FACTORY WILL PROVIDE 24" Ø, 6GIN LONG PIECES OF CHROME PLATED PIPING SHIPPED LOOSE TO BE FIELD-INSTALLED. THE EXACT CHROME PIPE LENGTH NEEDED SHIPPED LOOSE TO BE FIELD-INSTALLED.
- RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVING, EQUIPMENT, ETC.
- OVERLAPPING COVERAGE SHALL NOT BE USED ON ANY APPLIANCE WITH AN OBSTRUCTION.
- IF APPLICABLE, EXTENDED PRE-PIPED DROPS ARE SHIPPED LOOSE.
- FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.

- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE SIZE, NOT THE OVERALL APPLIANCE SIZE.

- THIS FIRE SYSTEM COMPLIES WITH UL 300 REQUIREMENTS.

- DLI NOZZLE PART NUMBER REPLACES 3070-3/8H-10-SS
JOB #: 7986269
JOB NAME: SENOR FROGS_R0

SYSTEM SIZE: TANK-SP-2 DESIGN FP: 23. MAXIMUM FP: 40.
HOOD # 1 (1) 6.00" LONG x 60" WIDE x 24" HIGH.
RISER # 1 SIZE: 14" DIA.
HOOD # 3 METAL BLOW-OFF CAPS INCLUDED.

- HEAVY-DUTY APPLIANCES (RATED 600°F) WILL REQUIRE AN ADDITIONAL DOWNSTREAM FIRESTAT IN THE EVENT THAT THE DUCTWORK CONTAINS ANY HORIZONTAL RUNS (OVER 25.FT IN LENGTH).
- MEDIUM TO LIGHT-DUTY APPLIANCES (RATED <500°F) WILL NOT REQUIRE ANY ADDITIONAL DOWNSTREAM DETECTION.

AGENT DISTRIBUTION PIPING LIMITATIONS	
PIPE SECTION	MAX PIPE LENGTH (FT)
MAX SUPPLY LINE TO FIRST OVERLAPPING NOZZLE	42
OVERLAPPING NOZZLE APPLIANCE BRANCH	10
DEDICATED NOZZLE APPLIANCE BRANCH	10

LEGEND – FIRE CABINET TANK SYSTEM
1 4 GALLON TANK.
2 PRIMARY ACTUATOR RELEASE.
3 SECONDARY ACTUATOR RELEASE.
4 PRESSURE SUPERVISION SWITCH.
5 PRIMARY HOSE ASSEMBLY.
6 SECONDARY HOSE ASSEMBLY.
7 REMOTE MANUAL ACTUATION DEVICE.

REVISIONS
A1 DESCRIPTION DATE
A2
A3
A4

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DATE: 11/6/2024
DWG.#: 7986269
DRAWN BY: J. Law
SCALE: 3/8" = 1'-0"
MASTER DRAWING
SHEET NO. 6

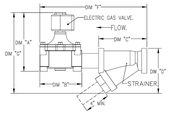
GAS VALVES AND STRAINERS

GAS VALVE SIZING						GAS VALVE DIMENSIONS						INSTALLATION		PART NUMBER	
TYPE	SIZE	VOLTAGE	MIN. INLET PRESSURE	MAX. INLET PRESSURE	FLOW AT 0.3 W.C. DROP (CFH/MBH)	FLOW AT 0.3 W.C. DROP (CFH/MBH)	DIM "A"	DIM "B"	DIM "C"	DIM "D"	DIM "E"	MOUNTING ORIENTATION	VENT VALVE	STRAINER PART NUMBER	VISE UNLOCKING KIT
GAS VALVE FOR FIgo, FIgO-HC	2"	120 VAC	5 PSI (14 W.C.)	2 PSI (55 W.C.)	2,440,000 BTU/HR	1,950,000 BTU/HR	11-5/8"	6-1/8"	7-1/4"	11-1/4"	5-11/16"	HORIZONTAL	8014280	4470168	0020240

NOTES AND INSTALLATION
- GAS VALVE SIZING CAN BE BASED WITH THE SLIDING IN ANY POSITION AND HORIZONTAL MOUNTING ORIENTATION. VERTICAL MOUNTING ORIENTATION IS NOT ALLOWED.
- VENT VALVE MUST BE MOUNTED WITH THE SLIDING VERTICAL WITH THE OPEN END DOWNWARD.
- ALL GAS VALVES MUST BE MOUNTED WITH THE SLIDING VERTICAL WITH THE OPEN END DOWNWARD.

ALL GAS VALVES/STRAINERS
PROPER CLEARANCE MUST BE PROVIDED IN ORDER TO SERVICE THE GAS VALVE/STRAINER. THE MINIMUM CLEARANCE REQUIRED IS 24" DEPENDING ON THE MODEL OF THE STRAINER. CLEARANCE MUST ALSO BE PROVIDED FOR THE VISE UNLOCKING KIT. DEPENDING ON THE MODEL OF THE STRAINER, PLUMBING PIPING MAY BE REQUIRED TO ACCOMMODATE THE VISE UNLOCKING KIT.

CALCULATION
TO CALCULATE GAS FLOW FOR OTHER THAN 1 W.C. PRESSURE DROP USE THE FOLLOWING FORMULA: NEW FLOW = SQRT(NEW PRESSURE DROP/0.3) * FLOW AT 0.3 W.C. DROP. TO CALCULATE GAS FLOW FOR OTHER THAN GAS SPECIFIC GRAVITY USE THE FOLLOWING FORMULA: NEW FLOW = SQRT(1/NEW SPECIFIC GRAVITY)* NEW FLOW = SQRT(1/0.6)* 0.3W.C.) ((1/0.6 = NEW SPECIFIC GRAVITY)**



REVISIONS
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SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 7

EXHAUST FAN INFORMATION – JOB#7986269

ITEM NO.	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	OTW	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	DISCHARGE VELOCITY	VESP* (LBS)	SONES
1	EXF-1	1	CA-USB2RED-RR	ECON-AIR	5950	1.000	1062	ODP/MEDIUM	10.000	5.0460	3	208	28.4	1396 FPM	1235	39.2
2	EXF-2	1	EAD450H	ECON-AIR	1700	1.500	1509	TEAO-ECM	1.000	0.6400	1	208	6.5	544 FPM	99	14.6
3	EVEN #EXF	1	SUB9HFA	CAPTIVEAIRE	675	1.000	1400	TEAO-ECM	0.500	0.2940	1	115	4.3	893 FPM	73	15.4
4	SWEF-1	1	SUB9HFA	CAPTIVEAIRE	450	1.000	1510	TEAO-ECM	0.333	0.2140	1	115	4.3	893 FPM	65	15.8

MUA FAN INFORMATION – JOB#7986269

ITEM NO.	TAG	QTY	FAN UNIT MODEL #	BLOWER	HOUSING	MIN OTW	DESIGN OTW	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	MCA	MOCP	VESP (LBS)	SONES
5	MAU-1	1	CAD-SIGU-24X	DWF-3-MOD	AI-S-SGS	2000	4760	1.500	1290	ODP/MEDIUM	10.000	3.9536	3	208	37.8	33.8A	60A	895	11.2
6	MAU-2	1	AI-SZSG-16Z	16Z-1-MOD	AI-S-SZSG	1000	1375	1.500	1758	ODP-ECM	1.475	1.9575	1	208	9.6	13.2A	20A	495	13.6

GAS FIRED MAKE-UP AIR UNITS2

ITEM NO.	TAG	INPUT BTUH	OUTPUT BTUH	TEMP RISE	REQUIRED INPUT GAS PRESSURE	GAS TYPE	BURNER # STAGING
5	MAU-1	298950	287598	36°F	7 IN. W.C. : 14 IN. W.C.	NATURAL	50
6	MAU-2	574350	528662	36°F	7 IN. W.C. : 14 IN. W.C.	NATURAL	50

FAN OPTIONS

ITEM NO.	TAG	QTY	DESCRIPTION
1	KEF-1	1	ECM - INLET DEFAULT DUCT CONNECTION. USED TO CONNECT TO STANDARD 24" GREASE DUCT. ECM FAN WILL BE SHIPPED WITH A 24" GREASE BELTS. IS A STANDARD INLET STOCK
		1	UTILITY SET GREASE CUP
		1	ECM - 24" DISCHARGE EXTENSION
		1	ECM - DISCONNECT SWITCH - MOUNTED INTERNAL UPPER LEFT - 7" ON INLET SIDE
		1	ECM - INLET CONNECTION STANDARD 24" FLANGED GREASE DUCT
		1	CURB MOUNTED SLED FOR USGE 36. USED TO MOUNT 24 SQ. L X KEEF W CURB
		1	HOOKS SIDE CERTIFICATION - NSF-2 BY CURB SLED UTILITY SET
		1	GREEN RUBBER VIBRATION ISOLATORS FOR BY UTILITY SET (SEL OF 6)
		1	2 YEAR PARTS WARRANTY
2	KEF-1	1	ECM - INLET DEFAULT DUCT CONNECTION
		1	FAN BASE CERAMIC SEAL - 3U/SPEED/SHF4 - INSTALLED AT PLANT - FOR GREASE DUCTS
		1	HOOKS SIDE CERTIFICATION - NSF-2 ALUMINUM UPBLAST
		1	HONGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
		1	ECM WIRING PACKAGE - PWM SIGNAL FROM EXPMOD PREVENE (TELLO MOTOR), CCW ROTATION
		1	2 YEAR PARTS WARRANTY
3	EVEN #EXF	1	FAN BASE CERAMIC SEAL - 3U/SPEED/SHF4 - INSTALLED AT PLANT - FOR GREASE DUCTS
		1	ECM WIRING PACKAGE - MANUAL OR 0-10VDC REFERENCE SPEED CONTROL -#TCI- (TELLO MOTOR), CCW ROTATION
		1	2 YEAR PARTS WARRANTY
		1	HOOKS SIDE CERTIFICATION - NSF-2 ALUMINUM UPBLAST
4	SWEF-1	1	FAN BASE CERAMIC SEAL - 3U/SPEED/SHF4 - INSTALLED AT PLANT - FOR GREASE DUCTS
		1	ECM WIRING PACKAGE - MANUAL OR 0-10VDC REFERENCE SPEED CONTROL -#TCI- (TELLO MOTOR), CCW ROTATION
		1	SCR-H. BOX SCREEN
		1	HOOKS SIDE CERTIFICATION - NSF-2 ALUMINUM UPBLAST
		1	2 YEAR PARTS WARRANTY
5	MAU-1	1	SIZE 1 TEMPERED COMMERCIAL 90cfm DISCHARGE FOR DIRECT DRIVE MAUS
		1	24X24 - 90 DEGREE ELBOW
		1	MAGNETOLA PRESSURE GAUGE -0 TO 20" WC
		1	BUTTERFLY MOD VALVE OPTION FOR MOD SIZE 3.5" MOD VALVE)
		1	DROP LOOSE GAS STRAINER 3"
		1	MOTORIZED BACKDRAFT DAMPER FOR AI-S HOUSING - MEETS AMCA CLASS 1A RATING
		1	HOOKS SIDE CERTIFICATION - NSH-3 SUPPLY
		1	EXPMOD 120V WIRING PACKAGE REQUIRED AND USED ONLY FOR 3CV OR PREVAIRE WITH VFD - THREE PHASE ONLY
		1	2 YEAR PARTS WARRANTY
		1	EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET
6	MAU-2	1	SIZE 1 TEMPERED COMMERCIAL 90cfm DISCHARGE FOR DIRECT DRIVE MAUS
		1	INLET PRESSURE GAUGE: 0-20"
		1	MAGNETOLA PRESSURE GAUGE -0 TO 20" WC
		1	DROP LOOSE GAS STRAINER 3/4"
		1	CACLOW BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED
		1	MOTORIZED BACKDRAFT DAMPER FOR AI-S HOUSING - MEETS AMCA CLASS 1A RATING
		1	HOOKS SIDE CERTIFICATION - NSH-3 SUPPLY
		1	ECM WIRING PACKAGE-SUPPLY - PWM SIGNAL FROM EXPMOD PREVAIRE 0 - 7 PHASE IDEAL MOTOR
		1	2 YEAR PARTS WARRANTY
		1	EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET

FAN ACCESSORIES

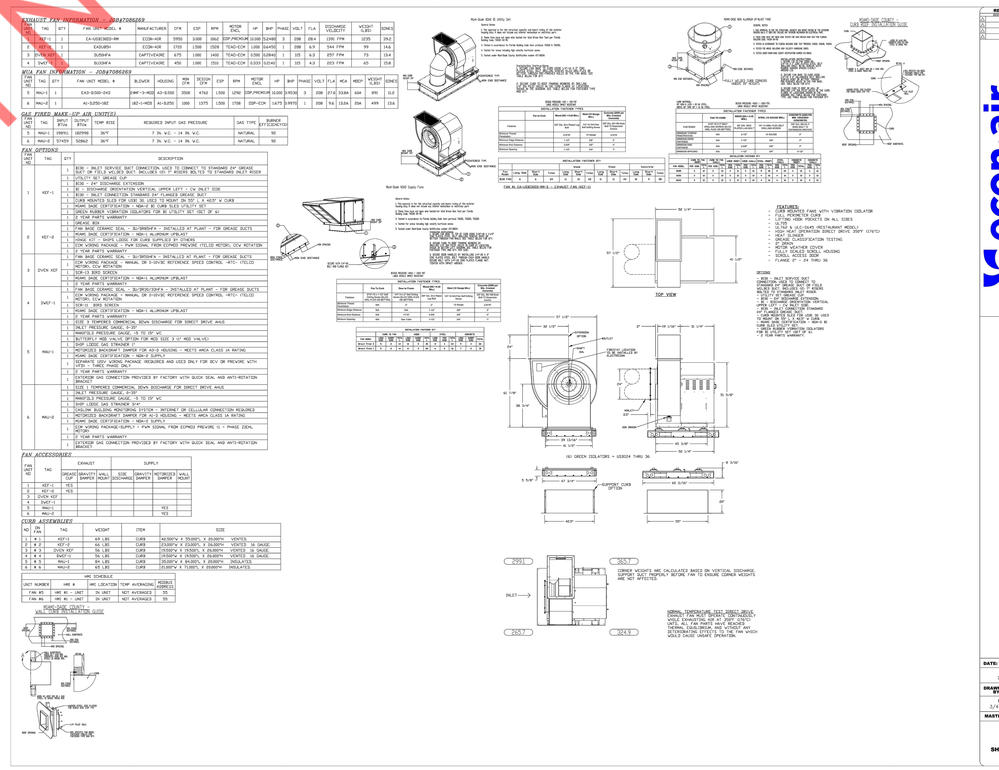
ITEM NO.	TAG	EXHAUST				SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL INDANT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL INDANT
1	KEF-1	YES						
2	KEF-2	YES						
3	EVEN #EXF							
4	SWEF-1							
5	MAU-1						YES	
6	MAU-2						YES	

CURB ASSEMBLIES

ITEM NO.	QTY. PER UNIT	TAG	WEIGHT	ITEM	SIZE
1	1	KEF-1	69 LBS	CURB	24.500"W X 35.000"L X 20.000"H - VENTED
2	1	KEF-2	84 LBS	CURB	24.500"W X 35.000"L X 36.000"H - VENTED - 16 GAUGE
3	1	EVEN #EXF	56 LBS	CURB	19.500"W X 28.000"L X 26.000"H - VENTED - 16 GAUGE
4	1	SWEF-1	56 LBS	CURB	19.500"W X 28.000"L X 26.000"H - VENTED - 16 GAUGE
5	1	MAU-1	84 LBS	CURB	25.000"W X 84.000"L X 20.000"H - INSULATED
6	1	MAU-2	65 LBS	CURB	22.000"W X 71.000"L X 20.000"H - INSULATED

HRE SCHEDULE

UNIT NUMBER	HRE #	HRE LOCATION	TEMP AVERAGING	MODBUS ADDRESS
FAN #5	HRE #5 - UNIT	IN UNIT	NEXT AVERAGES	55
FAN #6	HRE #6 - UNIT	IN UNIT	NEXT AVERAGES	55



FEATURES:
- CURB MOUNTED FANS WITH VIBRATION ISOLATOR
- SPIRAL LOCK SEAM CASING
- LIFTING HOOK MOUNTS ON ALL SIZES
- ALL WELD
- ULTRA & ULC-S645 CERTIFICATION
- DIRECT DRIVE PLENUM DIRECT DRIVE 200°F (176°C) HIGH SLOPE
- GREASE CLASSIFICATION TESTING
- ALL WELD
- WEAR WEATHER COVER
- FULLY SEALED MODEL HOUSING
- ALL WELD CONSTRUCTION
- FLANGE 2" - 24 THRU 36

OPTIONS:
- ECM - INLET DEFAULT DUCT CONNECTION. USED TO CONNECT TO STANDARD 24" GREASE DUCT. ECM FAN WILL BE SHIPPED WITH A 24" GREASE BELTS. IS A STANDARD INLET STOCK
- ECM - 24" DISCHARGE EXTENSION
- ECM - DISCONNECT SWITCH - MOUNTED INTERNAL UPPER LEFT - 7" ON INLET SIDE
- ECM - INLET CONNECTION STANDARD 24" FLANGED GREASE DUCT
- CURB MOUNTED SLED FOR USGE 36. USED TO MOUNT 24 SQ. L X KEEF W CURB
- HOOKS SIDE CERTIFICATION - NSF-2 BY CURB SLED UTILITY SET
- GREEN RUBBER VIBRATION ISOLATORS FOR BY UTILITY SET (SEL OF 6)
- 2 YEAR PARTS WARRANTY
- ECM WIRING PACKAGE
- FAN BASE CERAMIC SEAL - 3U/SPEED/SHF4 - INSTALLED AT PLANT - FOR GREASE DUCTS
- HOOKS SIDE CERTIFICATION - NSH-3 ALUMINUM UPBLAST
- HONGE KIT - SHIPS LOOSE FOR CURB SUPPLIED BY OTHERS
- ECM WIRING PACKAGE - PWM SIGNAL FROM EXPMOD PREVAIRE (TELLO MOTOR), CCW ROTATION
- 2 YEAR PARTS WARRANTY
- FAN BASE CERAMIC SEAL - 3U/SPEED/SHF4 - INSTALLED AT PLANT - FOR GREASE DUCTS
- ECM WIRING PACKAGE - MANUAL OR 0-10VDC REFERENCE SPEED CONTROL -#TCI- (TELLO MOTOR), CCW ROTATION
- SCR-H. BOX SCREEN
- HOOKS SIDE CERTIFICATION - NSH-3 ALUMINUM UPBLAST
- 2 YEAR PARTS WARRANTY
- SIZE 1 TEMPERED COMMERCIAL 90cfm DISCHARGE FOR DIRECT DRIVE MAUS
- 24X24 - 90 DEGREE ELBOW
- MAGNETOLA PRESSURE GAUGE -0 TO 20" WC
- BUTTERFLY MOD VALVE OPTION FOR MOD SIZE 3.5" MOD VALVE)
- DROP LOOSE GAS STRAINER 3"
- MOTORIZED BACKDRAFT DAMPER FOR AI-S HOUSING - MEETS AMCA CLASS 1A RATING
- HOOKS SIDE CERTIFICATION - NSH-3 SUPPLY
- EXPMOD 120V WIRING PACKAGE REQUIRED AND USED ONLY FOR 3CV OR PREVAIRE WITH VFD - THREE PHASE ONLY
- 2 YEAR PARTS WARRANTY
- EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET
- SIZE 1 TEMPERED COMMERCIAL 90cfm DISCHARGE FOR DIRECT DRIVE MAUS
- INLET PRESSURE GAUGE: 0-20"
- MAGNETOLA PRESSURE GAUGE -0 TO 20" WC
- DROP LOOSE GAS STRAINER 3/4"
- CACLOW BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED
- MOTORIZED BACKDRAFT DAMPER FOR AI-S HOUSING - MEETS AMCA CLASS 1A RATING
- HOOKS SIDE CERTIFICATION - NSH-3 SUPPLY
- ECM WIRING PACKAGE-SUPPLY - PWM SIGNAL FROM EXPMOD PREVAIRE 0 - 7 PHASE IDEAL MOTOR
- 2 YEAR PARTS WARRANTY
- EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET
- 2 YEAR PARTS WARRANTY

REVISIONS
A1 DESCRIPTION DATE
A2
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DATE: 11/6/2024
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DRAWN BY: J. Law
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 8

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Señor Frog's FUN, FOOD & CLOTHES

No.	DESCRIPTION	DATE

AUTHORIZED SIGNATURES:

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382 NE 191 ST SUITE 49674
MIAMI , FL 33179
WWW.NY-ENGINEERS.COM

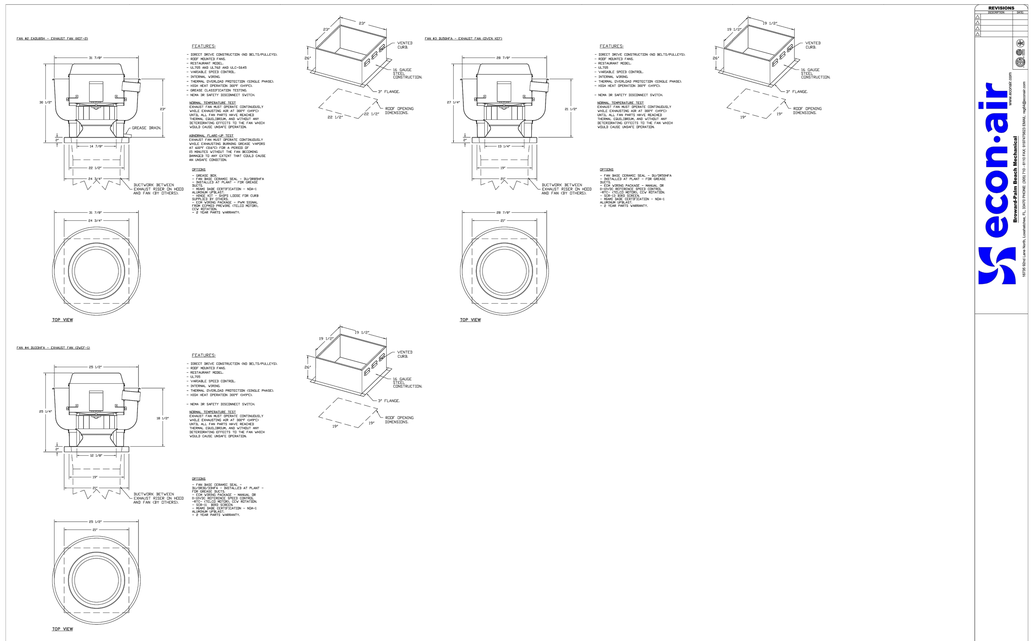
SCALE: AS NOTED
DATE: 11-15-2024

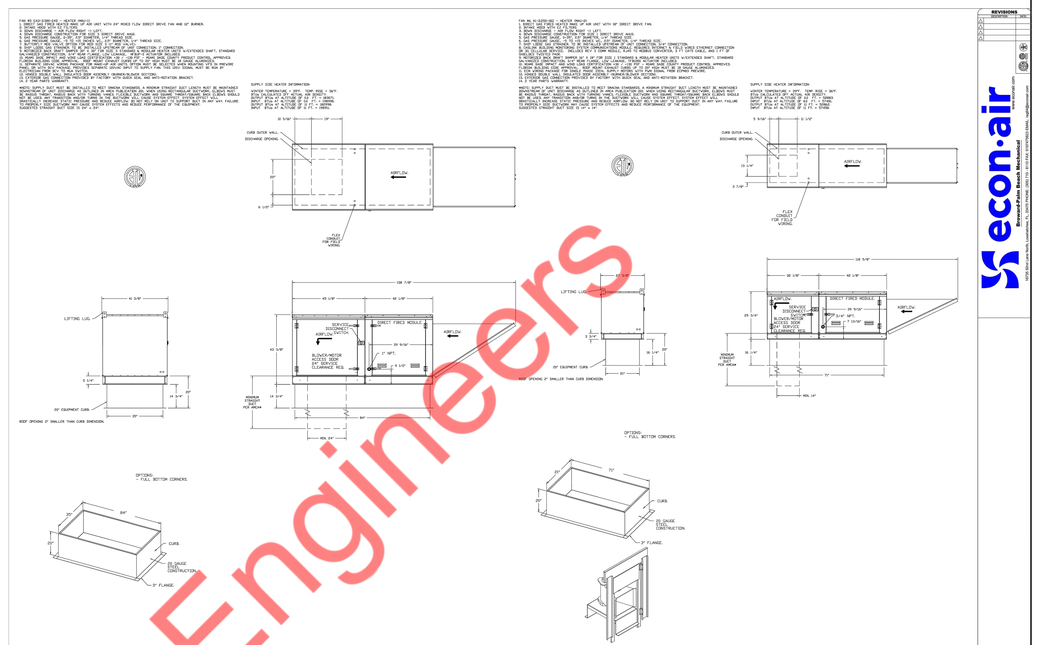
CONTENT
HOOD DETAILS (2 0F 5)

SHEET NUMBER:
M-502

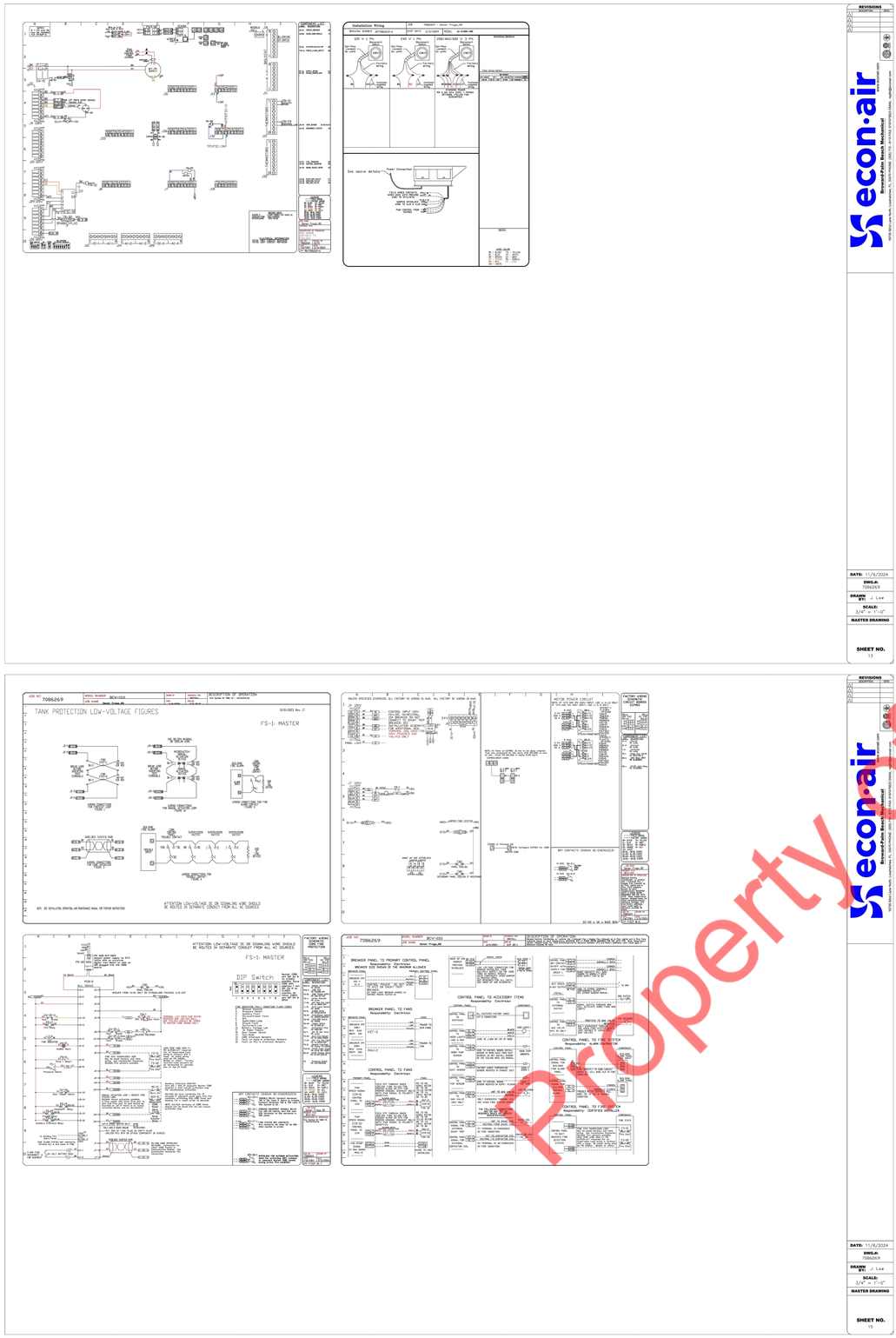
PROJECT STATUS:

BINDING EDGE




FAN #5 ELEGRILL - (HEATER MAKE-UP)
FAN #6 ELEGRILL - (HEATER MAKE-UP)
SUPPLY SIDE HEATER INFORMATION
AIRFLOW
CURB OUTER WALL
DISCHARGE OPENING
FLEX CONNECT FOR FIELD WIRING
LIFTING LUG
SERVICE DISCONNECT
ELECTRICAL CONTROL
BLOWER MOTOR ACCESS DOOR
DIRECT FIRED MODULE
20" EQUIPMENT CURB
ROOF OPENING 2" SMALLER THAN CURB DIMENSION.
OPTIONS
- FULL BOTTOM CORNERS.
DIRECT FIRED GFI PROFILE PLATE ASSEMBLY
DIRECT FIRED PROFILE PLATE SPECIFICATIONS
GENERAL
- DIRECT FIRED PROFILE PLATE SHALL BE CONSTRUCTED OF 304 STAINLESS STEEL.
- PLATE SHALL BE MADE FROM 1/4" THICK STEEL AND HAVE SUFFICIENT WIDTH TO ALLOW PROPER FLAME SPREAD AND COVERAGE OF THE BURNER FACE.
- PLATE SHALL BE SUPPORTED ON THE BURNER SIDE BY A SUITABLE FLANGE.
- PLATE SHALL BE DESIGNED TO ALLOW FOR THERMAL EXPANSION WITHOUT DISTORTION OR DAMAGE TO THE PLATE OR BURNER WHEN SUBJECTED TO THE MANUFACTURER'S MAX. LEVEL OF EXPOSED TEMPERATURE.
- PLATE SHALL BE SUPPORTED ON THE BURNER SIDE BY A SUITABLE FLANGE.
- PLATE SHALL BE DESIGNED TO ALLOW FOR THERMAL EXPANSION WITHOUT DISTORTION OR DAMAGE TO THE PLATE OR BURNER WHEN SUBJECTED TO THE MANUFACTURER'S MAX. LEVEL OF EXPOSED TEMPERATURE.
- PLATE SHALL BE SUPPORTED ON THE BURNER SIDE BY A SUITABLE FLANGE.
- PLATE SHALL BE MADE FROM 1/4" THICK STEEL.
- PLATE SHALL BE MADE FROM 304 STAINLESS STEEL

BINDING EDGE



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SCALE: AS NOTED

DATE: 11-15-2024

CONTENT

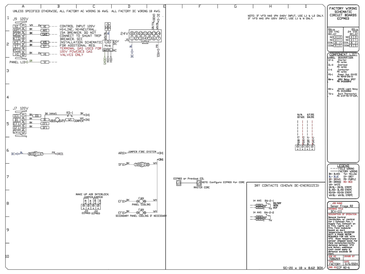
HOOD DETAILS (4 0F 5)

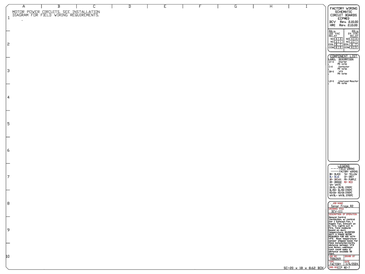
SHEET NUMBER:

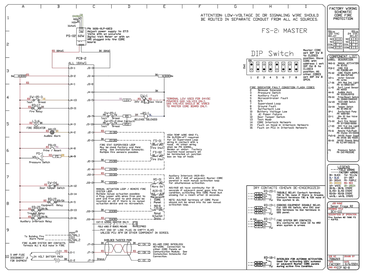
M-504

PROJECT STATUS:

BINDING EDGE







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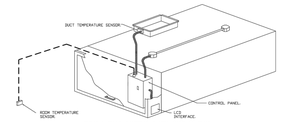
DATE: 11/6/2024
DWG.#: 7006269
DRAWN BY: J. Lee
SCALE: 3/8" = 1'-0"
MASTER DRAWING
SHEET NO. 17

DEMAND CONTROL VENTILATION HOOD CONTROL PANEL SPECIFICATIONS:

- CONTROLS SHALL BE LISTED BY ETL, UL 508A3 AND SHALL COMPLY WITH DEMAND VENTILATION SYSTEM TURNDOWN REQUIREMENTS OUTLINED IN IECC 403.7.3 (2021).
- 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 TEMPERATURES 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 (VFD'S) SHALL BE PROVIDED FOR FANS AS REQUIRED. THE DIGITAL CONTROLLER SHALL MODULATE THE VFDS BETWEEN A MINIMUM SETPOINT AND A MAXIMUM SETPOINT ON A FIXED DIFFERENTIAL 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 MEEP MODE DURING LIGHT COOKING LOAD OR COOL DOWN MODE WHEN ALL FAN VFDS ARE AT THEIR MINIMUM SPEED AND THE ROOM TEMPERATURE IS WITHIN THE SET COMFORT 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 MAKEUP AIR UNIT(S) AND DISABLE AN ELECTRIC GAS VALVE AUTOMATICALLY WHEN FIRE CONDITION IS DETECTED IN A DIVERSE 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:
  A. ON/OFF PUSH BUTTON FAN & LIGHT SWITCH ACTIVATION.
  B. INTEGRATED GAS VALVE RESET FOR ELECTRONIC GAS VALVES (NO RESET RELAY REQUIRED).
  C. VFD FAULT DISPLAY WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
  D. ROOM TEMPERATURE SENSOR DETECTION WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
  E. HOOD DUCT TEMPERATURE SENSOR DETECTION WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
  F. A SINGLE LOW VOLTAGE CAT-5 RJ45 WIRING CONNECTION.
  G. AN ENERGY SAVINGS INDICATOR THAT UTILIZES MEASURED KWH FROM THE VFDS.



TYPICAL HOOD CONTROL PANEL INSTALLATION

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 MAY BE ON A SEPARATE VFD OR GROUPED WITH OTHER FANS ON A SINGLE VFD. FANS MAY BE EC 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 (SUCH AS EC MOTORS OR VFD DRIVEN MOTORS) WHILE THE FANS ARE ENABLED. MODULATING EXHAUST AND MAKE UP AIR FAN SPEEDS PER THE REQUIREMENTS OUTLINED IN IECC 403.7.3 (2021).
- 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 (SUCH AS BMS OR HARD-WIRED INTERLOCK).
- FIRE: UPON ACTIVATION OF THE HOOD FIRE SUPPRESSION SYSTEM, THE EXHAUST FAN WILL COME ON OR CONTINUE TO TO RUN. THE HOOD MAKEUP AIR WILL BE DISABLED AND A SIGNAL WILL BE SENT FOR ACTIVATING THE SMART TRIP BREAKER PROVIDED BY THE ELECTRICIAN. FINALLY, GAS WILL SHUT OFF VIA A MECHANICAL/ELECTRICAL GAS VALVE ACTUATED BY THE HOOD FIRE SUPPRESSION SYSTEM.

REVISIONS

	DESCRIPTION	DATE
A1		
A2		
A3		
A4		

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DATE: 11/6/2024
DWG.#: 7006269
DRAWN BY: J. Lee
SCALE: 3/8" = 1'-0"
MASTER DRAWING
SHEET NO. 18

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.

REVISIONS

	DESCRIPTION	DATE
A1		
A2		
A3		
A4		

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Señor Frog's FUN, FOOD & CLOTHES

No.	DESCRIPTION	DATE

AUTHORIZED SIGNATURES:

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382 NE 191 ST SUITE 49674
MIAMI , FL 33179
WWW.NY-ENGINEERS.COM

SCALE: AS NOTED

DATE: 11-15-2024

CONTENT

HOOD DETAILS (5 0F 5)

SHEET NUMBER:

M-505

PROJECT STATUS:

System Checksums

By Trial

RTU **Single Zone**

COOLING COIL PEAK

Peaked at Time: Mo/Hr: 8 / 19
Outside Air: OADB/WB/HR: 87 / 76 / 116

	Space Sens. + Lat. Btu/h	Plenum Sens. + Lat Btu/h	Net Total Btu/h	Percent Of Total (%)
Envelope Loads				
Skylite Solar	0	0	0	0
Skylite Cond	0	0	0	0
Roof Cond	0	16,562	16,562	3
Glass Solar	33,031	0	33,031	6
Glass/Door Cond	10,699	0	10,699	2
Wall Cond	25,924	17,417	43,342	7
Partition/Door	0		0	0
Floor	0		0	0
Adjacent Floor	0	0	0	0
Infiltration	34,902		34,902	6
Sub Total ==>	104,557	33,980	138,536	24
Internal Loads				
Lights	30,540	7,635	38,175	7
People	170,047	0	170,047	29
Misc	62,071	0	62,071	11
Sub Total ==>	262,658	7,635	270,292	46
Ceiling Load	7,059	-7,059	0	0
Ventilation Load	0	0	188,641	32
Adj Air Trans Heat	0		0	0
Dehumid. Ov Sizing			0	0
Ov/Undr Sizing	0		0	0
Exhaust Heat		-10,995	-10,995	-2
Sup. Fan Heat			0	0
Ret. Fan Heat		0	0	0
Duct Heat Pkup		0	0	0
Underflr Sup Ht Pkup			0	0
Supply Air Leakage		0	0	0
Grand Total ==>	374,273	23,561	586,475	100.00

CLG SPACE PEAK

Mo/Hr: Sum of
OADB: Peaks

	Space Sensible Btu/h	Percent Of Total (%)
Envelope Loads		
Skylite Solar	0	0
Skylite Cond	0	0
Roof Cond	0	0
Glass Solar	37,914	15
Glass/Door Cond	10,811	4
Wall Cond	26,387	10
Partition/Door	0	0
Floor	0	0
Adjacent Floor	0	0
Infiltration	10,952	4
Sub Total ==>	86,065	33
Internal Loads		
Lights	30,480	12
People	74,659	29
Misc	61,982	24
Sub Total ==>	167,121	64
Ceiling Load	7,150	3
Ventilation Load	0	0
Adj Air Trans Heat	0	0
Ov/Undr Sizing	0	0
Grand Total ==>	260,335	100.00

HEATING COIL PEAK

Mo/Hr: Heating Design
OADB: 36

	Space Peak Space Sens Btu/h	Coil Peak Tot Sens Btu/h	Percent Of Total (%)
Envelope Loads			
Skylite Solar	0	0	0.00
Skylite Cond	0	0	0.00
Roof Cond	0	-9,537	3.57
Glass Solar	0	0	0.00
Glass/Door Cond	-27,853	-27,853	10.44
Wall Cond	-16,948	-28,589	10.72
Partition/Door	0	0	0.00
Floor	-8,872	-8,872	3.33
Adjacent Floor	0	0	0
Infiltration	-34,545	-34,545	12.95
Sub Total ==>	-88,218	-109,396	41.00
Internal Loads			
Lights	0	0	0.00
People	0	0	0.00
Misc	0	0	0.00
Sub Total ==>	0	0	0.00
Ceiling Load	-3,680	0	0.00
Ventilation Load	0	-163,680	61.35
Adj Air Trans Heat	0	0	0
Ov/Undr Sizing	0	0	0.00
Exhaust Heat		6,473	-2.43
OA Preheat Diff.		-87	0.03
RA Preheat Diff.		-108	0.04
Additional Reheat		0	0.00
Underflr Sup Ht Pkup		0	0.00
Supply Air Leakage		0	0.00
Grand Total ==>	-91,899	-266,798	100.00

TEMPERATURES

	Cooling	Heating
SADB	51.3	79.3
Ra Plenum	77.6	70.6
Return	77.6	70.6
Ret/OA	81.1	58.2
Fn MtrTD	0.0	0.0
Fn BldTD	0.0	0.0
Fn Frict	0.0	0.0

AIRFLOWS

	Cooling	Heating
Diffuser	11,314	11,314
Terminal	11,314	11,314
Main Fan	11,314	11,314
Sec Fan	0	0
Nom Vent	4,050	4,045
AHU Vent	4,050	4,045
Infil	679	854
MinStop/Rh	0	0
Return	11,385	11,537
Exhaust	4,121	4,268
Rm Exh	608	631
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS

	Cooling	Heating
% OA	35.8	35.8
cfm/ft²	1.33	1.33
cfm/ton	201.30	
ft²/ton	151.89	
Btu/hr·ft²	79.00	-39.06
No. People	393	

COOLING COIL SELECTION

	Total Capacity ton	Total Capacity MBh	Sens Cap. MBh	Coil Airflow cfm	Enter DB/WB/HR °F	°F	gr/lb	Leave DB/WB/HR °F	°F	gr/lb
Main Clg	56.2	674.5	398.6	11,314	82.0	68.3	82.2	51.3	48.5	46.4
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
Total	56.2	674.5								

AREAS

	Gross Total	Glass ft²	Glass (%)
Floor	8,537		
Part	0		
Int Door	0		
ExFlr	335		
Roof	6,999	0	0
Wall	6,345	1,047	17
Ext Door	274	274	100

HEATING COIL SELECTION

	Capacity MBh	Coil Airflow cfm	Ent °F	Lvg °F
Main Htg	-333.5	11,314	58.1	79.3
Aux Htg	0.0	0	0.0	0.0
Preheat	0.0	0	0.0	0.0
Humidif	0.0	0	0.0	0.0
Opt Vent	0.0	0	0.0	0.0
Total	-333.5			

Project Name:
Dataset Name:

TRACE® 700 v6.3.3 calculated at 02:37 AM on 11/08/2024
Alternative - 1 System Checksums Report Page 1 of 1

BINDING EDGE

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No.	DESCRIPTION	DATE

AUTHORIZED SIGNATURES:

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382 NE 191 ST SUITE 49674
MIAMI , FL 33179
WWW.NY-ENGINEERS.COM

SCALE: AS NOTED
DATE: 11-15-2024

CONTENT
HVAC HEAT LOAD SUMMARY

SHEET NUMBER:
M-601

PROJECT STATUS:

SCOPE OF WORK

1. PROVIDE NEW 1200A, 120/208V, 3-PHASE, 4-WIRE ELECTRICAL SERVICE FROM UTILITY FOR THE TENANT SPACE.
2. PROVIDE NEW 1200A, 120/208V, 3-PHASE, 4-WIRE METER AND DISCONNECT FOR THE TENANT SPACE.
4. PROVIDE NEW (1) 1200A(MCB), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "MDP".
5. PROVIDE NEW (1) 200A(MLO), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "A".
6. PROVIDE NEW (1) 200A(MLO), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "B".
7. PROVIDE NEW (1) 200A(MLO), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "C".
8. ALL NECESSARY EQUIPMENT, WIRING AND LIGHTING FOR THE PROJECT SPACE INCLUDING WIRING FOR VENTILATION EQUIPMENT. COORDINATE WITH G.C FOR LOW VOLTAGE WIRING.

GENERAL NOTES

1. ALL WORK TO COMPLY TO ALL STATE, LOCAL, NEC, & NFPA CODES.
2. ELECTRICAL CONTRACTOR TO VISIT THE SITE PRIOR TO SUBMITTING A BID & INCLUDE IN THEIR BID ANY ITEMS NECESSARY FOR A COMPLETE & OPERATIONAL SYSTEM.
3. DRAWINGS ARE SCHEMATIC IN NATURE. ELECTRICAL CONTRACTOR IS TO ADD ANY ITEMS THAT ARE REQUIRED FOR A COMPLETE & OPERATIONAL SYSTEM IN THEIR PROPOSAL.
4. ELECTRICAL CONTRACTOR IS TO COORDINATE THEIR INSTALLATION WITH THE OTHER TRADES. IF A CONFLICT OCCURS AND IT IS DUE TO THE ELECTRICAL CONTRACTOR'S LACK OF COORDINATION, ALL WORK INVOLVED IN RESOLVING THE CONFLICT WILL BE AT THE EXPENSE OF THE ELECTRICAL CONTRACTOR.
5. ELECTRICAL CONTRACTOR TO PAY ALL FEES AND PERMITS.

ELECTRICAL NOTES

1. ELECTRICAL CONTRACTOR SHALL REVIEW ALL DRAWINGS OF THIS SET.
2. CONTRACTOR TO VERIFY THAT ALL EQUIPMENT SHOWN AS EXISTING MATCHES THE DESCRIPTIONS AND SPECIFICATIONS SHOWN ON DRAWINGS AND SCHEDULES. IF DIFFERENT, NOTIFY ARCHITECT/ENGINEER BEFORE BIDDING, ORDERING, OR PROCEEDING WITH WORK.
3. ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL ALL NEW ELECTRICAL WORK INDICATED. CONSTRUCTION SHALL BE IN ACCORDANCE WITH DRAWINGS AND APPLICABLE SPECIFICATIONS. IF A PROBLEM IS ENCOUNTERED IN COMPLYING WITH THIS REQUIREMENT, CONTRACTOR SHALL NOTIFY THE OWNER OR HIS REPRESENTATIVE AS SOON AS POSSIBLE AFTER DISCOVERY OF THE PROBLEM AND SHALL NOT PROCEED WITH THAT PORTION OF THE WORK UNTIL OWNER HAS DIRECTED CORRECTIVE ACTION TO BE TAKEN.
4. ELECTRICAL CONTRACTOR SHALL VISIT JOB SITE AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING ELECTRICAL AND COMMUNICATIONS INSTALLATION AND MAKE PROVISIONS AS TO THE COST THEREOF. EXISTING CONDITIONS OF ELECTRICAL EQUIPMENT, LIGHT FIXTURES, ETC., THAT ARE PART OF THE FINAL SYSTEM SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO SUBMITTING HIS BID.
5. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE 2020 EDITION OF THE NATIONAL ELECTRIC CODE AND ALL CODES AND ORDINANCES OF THE AUTHORITY HAVING JURISDICTION.
6. DO NOT SCALE THE ELECTRICAL DRAWINGS. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATION FOR ALL EQUIPMENT. CONFIRM WITH OWNER'S REPRESENTATIVE.
7. ALL ELECTRICAL NOT BEING REUSED MUST BE REMOVED IN ITS ENTIRETY.
8. ALL CONDUIT IN OR UNDERGROUND OR IN CONCRETE MUST BE RIGID GALVANIZED STEEL.
9. CIRCUIT BREAKERS AND PANELS TO BE BOLT ON TYPE
10. ALL EQUIPMENT SHALL BE APPROVED BY UL OR OTHER NATIONALLY RECOGNIZED TESTING COMPANY.
11. ALL RECEPTACLES SHALL BE GROUNDED AS REQUIRED BY NEC
12. SUBMIT SERVICE ENTRANCE EQUIPMENT FOR SEPARATE APPROVAL.
13. ALL LOW VOLTAGE MUST BE IN CONDUIT TO ABOVE THE DROP CEILING. BRIDAL RINGS OR "J" HOOKS REQUIRED.
14. SEPARATE PERMITS ARE REQUIRED FOR ALL LOW VOLTAGE SUCH AS TELEPHONE, DATA, THERMOSTAT, MUSIC, ALARMS ETC.
15. SEPARATE PERMIT REQUIRED FOR SIGNAGE.
16. PRIOR TO ANY CONSTRUCTION WORK BEGINNING AN ON-SITE MEETING WITH GENERAL CONTRACTORS IS REQUIRED.
17. ELECTRICIAN MUST BE ON SITE FOR ALL INSPECTIONS.
18. MINIMUM WIRE SIZE SHALL BE #12 A.W.G. EXCLUDING CONTROL WIRING. ALL CONDUCTORS SHALL BE COPPER AND UNLESS OTHERWISE NOTED THHN INSULATION.
19. OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS, PLASTIC AND CAST ALLOY WITH THREADED HUBS IN WET OR DAMP LOCATIONS, AND SPECIAL ENCLOSURES FOR OTHER CLASSIFIED AREAS.
20. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PROVIDE ALL REQUIREMENTS NECESSARY FOR EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.
21. ELECTRICAL SYSTEM SHALL BE COMPLETE AND EFFECTIVELY GROUNDED AS REQUIRED BY THE N.E.C. OR LOCAL CODES.
22. ALL MATERIALS SHALL BE NEW AND BEAR UNDERWRITERS' LABELS WHERE APPLICABLE.
23. ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE AND ACCEPTED BY ENGINEER/ARCHITECT.
24. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION.
25. ELECTRICAL CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE YEAR FROM DATE THAT CERTIFICATE OF OCCUPANCY IS ISSUED. WARRANTY SHALL BE PROVIDED IN WRITING. PROVIDE COPY TO LL.
26. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED THEREBY.
27. ALL REQUIRED INSURANCE SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK.
28. CONTRACTOR SHALL PAY FOR ALL PERMITS, FEES, INSPECTIONS AND TESTING. CONTRACTOR TO OBTAIN PERMIT AND APPROVED SUBMITTALS PRIOR TO BEGINNING WORK OR ORDERING EQUIPMENT.
29. THE ELECTRICAL INSTALLATION SHALL MEET ALL STANDARD REQUIREMENTS OF POWER AND TELEPHONE COMPANIES.
30. CONTRACTOR SHALL COORDINATE WITH MECHANICAL DRAWINGS AND PROVIDE ALL NECESSARY CONTROL WIRING.
31. ALL CIRCUIT BREAKERS FEEDING MECHANICAL EQUIPMENT SHALL BE HACR TYPE CIRCUIT BREAKERS.
32. PROVIDE AND INSTALL CONDUIT, CONDUCTORS, PULL WIRES, BOXES, COVER PLATES, DEVICES, ETC. FOR ALL OUTLETS AS INDICATED.
33. MATERIALS, PRODUCTS, AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW AND SUCH AS APPEAR ON THE UL LIST OF APPROVED ITEMS AND SHALL MEET OR EXCEED THE REQUIREMENTS OF N.E.C. NEMA, AND IECE.
34. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OR CUT SHEETS OF LIGHTING FIXTURES, SWITCHES, AND OTHER ELECTRICAL ITEMS FOR APPROVAL BY ENGINEER/ARCHITECT.
35. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING, PATCHING AND FIRED CAULKING REQUIRED OF HIS WORK.
36. ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELS W/TYPE WRITTEN DIRECTORIES.
37. ALL ELECTRICAL OUTLETS SHALL BE AT 18" A.F.F. UNLESS NOTED OTHERWISE, AND VERTICALLY MOUNTED.
38. ALL LIGHT SWITCHES TO BE AT 48" A.F.F.
39. ALL ELECTRICAL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. ALL ELECTRICAL WIRING FOR HVAC SYSTEM INCLUDING CONTROLS, THERMOSTATS, POWER, ETC. SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
40. BREAKER AND PANELS -- ALL CURRENT CARRYING BUSSES SHALL BE COPPER. ALL GROUND BUS BARS SHALL BE COPPER. PANEL BOARD ENCLOSURES SHALL BE FURNISHED WITHOUT PRE-PUNCHED CONCENTRIC HOLES A.I.C. RATINGS SHALL BE AS INDICATED ON PANEL BOARD SCHEDULES.
41. DISCONNECT SWITCHES SHALL BE H.P. RATED, GENERAL DUTY, QUICK-MAKE, QUICK-BREAK ENCLOSURES AS REQUIRED BY EXPOSURE.
42. MOTOR STARTERS SHALL BE MANUAL OR MAGNETIC, WITH OVERLOAD RELAYS IN EACH HOT LEG.
43. THE TERM "PROVIDE" USED IN THE CONSTRUCTION DOCUMENTS AND SPECIFICATIONS INDICATES THE CONTRACT SHALL FURNISH AND INSTALL.
44. CONTRACTOR SHALL CONFIRM WITH ANY AND ALL REQUIREMENTS SUCH AS: LUG SIZE RESTRICTIONS, CONDUIT ENTRY, TRANSFORMER SIZE, SCHEDULED DOWN TIME FOR OWNERS CONFIRMATION, ETC. ANY CONFLICTS SHALL BE BROUGHT TO ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH ANY WORK.
45. VOLTAGE DROP FOR ALL BRANCH CONDUCTORS SHALL NOT EXCEED 3%. WHERE VOLTAGE DROP EXCEEDS 3%, CONTRACTOR SHALL INCREASE SIZE OF CONDUCTORS.
46. CONTRACTOR SHALL PROVIDE GFI TYPE BREAKER FOR ALL EXTERIOR 120V CIRCUITS OR GFI PROTECTION – FOR THE WHOLE CIRCUIT.
47. GAS PIPING SHALL BE BONDED.
48. ALL OUTDOOR EQUIPMENT SHALL BE WEATHERPROOF.
49. CONSTRUCTION "AS BUILT" DRAWINGS AND DOCUMENTS SHALL BE PROVIDED TO THE OWNER WITHIN 30 DAYS AFTER THE DATE OF ACCEPTANCE. PROVIDE A COPY TO LL.
50. OPERATION MANUALS AND MAINTENANCE MANUALS SHALL BE PROVIDED TO THE BUILDING OWNER.
51. ABSOLUTELY NO FLEXIBLE CONDUIT IS PERMITTED IN DEMISING WALLS. FLEXIBLE CONDUIT IS PERMITTED FOR SHORT FINAL CONNECTIONS ONLY (6'-0" OR LESS).
52. EXPOSED CONDUIT SHALL BE INSTALLED IN STRAIGHT LINES, PARALLEL OR IN RIGHT ANGLES TO THE BUIDING STRUCTURE. DO NOT LOOP EXCESS FLEXIBLE CONDUIT IN CEILING SPACE OR WALL CAVITY. NO CONDUIT TO BE SUPPORTED FROM THE ROOF DECK.
53. CABLE TYPES AC AND NM CABLES ARE NOT ACCEPTABLE. TYPE MC CABLE, ELECTRIC METALLIC TUBING (EMT) AND RIGID GALVANIZED CONDUIT ARE PERMITTED.
54. ALL EQUIPMENT, DEVICES AND FIXTURES SHALL BE GROUNDED IN COMPLIANCE WITH NEC AND UL REQUIREMENTS.
55. ALL NEW PANELS TO BE UL LABELED WITH BOLT-ON TYPE CIRCUIT BREAKERS.
56. 7-DAY 24-HOUR TIME CLOCK IS REQUIRED TO CONTROL STOREFRONT ENTRY LIGHTS, SHOW WINDOW LIGHTS, SHOW WINDOW RECEPTACLES AND STOREFRONT SIGNAGE. ILLUMINATED STOREFRONT SIGNS MUST REMAIN LIT DURING ALL MALL BUSINESS HOURS.
57. TENANT IS REQUIRED TO MAKE A FIELD SURVEY OF THE EXISTING ELECTRICAL SERVICE TO ENSURE THAT THE TOTAL CONNECTED LOAD DOES NOT EXCEED THE ELECTRIC SERVICE. ANY/ALL MODIFICATIONS OR UPGRADES NEEDED ARE SUBJECT TO LANDLORD'S PRIOR APPROVAL AND WILL BE COMPLETED BY TENANT/TENANT'S GC AT TENANT'S SOLE EXPENSE.
58. ALL ELECTRICAL PANELS TO BE MOUNTED ON PLYWOOD BACKER BOARD.
59. PANEL PHASE LOADS TO BE BALANCED WITHIN 10%.
60. ELECTRICAL PANELS MAY NOT BE RECESSED IN DEMISING PARTITIONS. SURFACE MOUNT OR FULL FUR OUT WALL TO ACHIEVE FLUSH FINAL APPEARANCE.
61. COORDINATE ALL CONCRETE TRENCHING/CORING TO ENSURE THAT ANY UNDER SLAB UTILITIES, ETC. ARE NOT DAMAGED DURING FLOOR CUT. ANY DAMAGE TO BE REPAIRED AT TENANT'S EXPENSE. PRIOR APPROVAL AND COORDINATION WITH PROPERTY MANAGEMENT IS REQUIRED FOR ALL CONCRETE CUTTING.

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	EXHAUST FAN
	JUNCTION BOX
	BATTERY BACK UP EXIT LIGHT
	BATTERY BACK UP EMERGENCY LIGHT
$	WALL SWITCH (SINGLE)
$T	WALL SWITCH (TIMER)
$OS	OCCUPANCY SENSOR WALL
	DUPLEX RECEPTACLE
CR	DUPLEX CONTROL RECEPTACLE
	DEDICATED GFI DUPLEX RECEPTACLE
	DUPLEX RECEPTACLE WITH ISOLATED GROUND
	QUADRUPLEX RECEPTACLE
CL	CEILING MOUNTED DUPLEX RECEPTACLE
F	FLOOR MOUNTED DUPLEX RECEPTACLE
ER	CEILING MOUNTED RECEPTACLE EXTENSION CORD REEL
	230V RECEPTACLE
	ELECTRICAL PANEL
	DISCONNECT SWITCH
OS	CEILING MOUNTED OCCUPANCY SENSOR
	CAMERA -WALL MOUNT 8" BELOW CEILING -OR- CEILING MOUNT
	TELEVISION OUTLET
CL	CEILING MOUNTED TELEVISION OUTLET
	TELEPHONE/DATA OUTLET
	DATA OUTLET
CL	CEILING MOUNTED DATA OUTLET
FL	FLOOR MOUNTED DATA OUTLET
AP	ACCESSES POINT
A	30A/240V NON FUSED DISCONNECT SWITCH
B	60A/240V NON FUSED DISCONNECT SWITCH
C	100A/240V NON FUSED DISCONNECT SWITCH
D	200A/240V NON FUSED DISCONNECT SWITCH

ABBREVIATIONS:

ABOVE FINISH FLOOR= A.F.F.	BELOW COUNTER= BC
COUNTER TOP LEVEL= C	PUSH BUTTON= PB
GROUND FAULT INTERRUPTER= GFCI	UNDER CABINET= UC
VERIFY PRIOR TO INSTALL= VH	VAPOR PROOF= VP
WEATHER PROOF= WP	ELECTRICAL CONTRACTOR=E.C.
EXHAUST FAN = EF	BATHROOM EXHAUST FAN=BEF
WATER HEATER= WH	REQIRCULATION PUMP=RCP
AUTHORITY HAVING JURISDICTION= A.H.J.	ROOF TOP UNIT= RTU

LIGHTING FIXTURE SCHEDULE

SYMBOL	TYPE	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	VOLT	LAMP TYPE	LAMP WATTS	MOUNTING
	LD - 01	BUCKET LIGHT PENDANT (H= 7'-7")	TCP-BASELITE	FT1005D2527E26SCL95-BUC10/60BLC 2"40W INC	120	LED	3 WATTS	SUSPENDED
	LD - 02	LICENSE PLATE PENDANT (H= 7'-1")	TCP-BASELITE	FT19D402TE26SFR95-LCPBLC60WINC	120	LED	4.5 WATTS	RECESSED
	LD - 03	EXTERIOR WALL SCONCE (H= 7'-7")	SATCO-BASELITE	S39188-SS/CA57/41.5/SM20/41.56WINC	120	LED	6.5 WATTS	RECESSED
	D2	4" ENVIRO DOWNLIGHTS	SPECTRUM LIGHTING	SR4MOTA5LDO101/H12/RDD4FTA5LAMB**SO	120	LED	15.5 WATTS	RECESSED
	D3	4" ENVIRO DOWNLIGHTS	SPECTRUM LIGHTING	SR4MOXT13LDS2W1/H12/RDD4F27K**SO	120	LED	15 WATTS	RECESSED
	PL	2X2 LAY-IN FLAT PANEL	BEST LIGHTING PRODUCTS	PNL2x2 40L LKFS PRM	120	LED	32 WATTS	RECESSED
	T1	TRACK LIGHT	ELCO	ET830CT5**	120	LED	10 WATTS	SUSPENDED
	TL1	RGBW FLEXIBLE TAPE LIGHT	CORE LIGHTING	LNT45-F-RGBW-27K	120	LED	4.4 WATTS/ FT	BATHROOM MIRRORS
	TL2	RGBW FLEXIBLE TAPE LIGHT	CORE LIGHTING	LNT45-F-RGBW-27K	120	LED	4.4 WATTS/ FT	BAR COUNTER AND BAR UPPER CABINET
	TL3	RGBW FLEXIBLE TAPE LIGHT	CORE LIGHTING	LNT45-F-RGBW-27K	120	LED	4.4 WATTS/ FT	CEILING MOUNTED
$	-	SINGLE POLE SWITCH	LUTRON	CLARO, 15A	120	-	-	WALL MOUNTED
OS	-	OCCUPANCY CEILING SENSOR	LEVITON	O2C10-DW	120	-	-	CEILING MOUNTED
$OS	-	OCCUPANCY WALL SWITCH	LUTRON	MS-OPS6M2-DV-BL	120	-		WALL MOUNTED

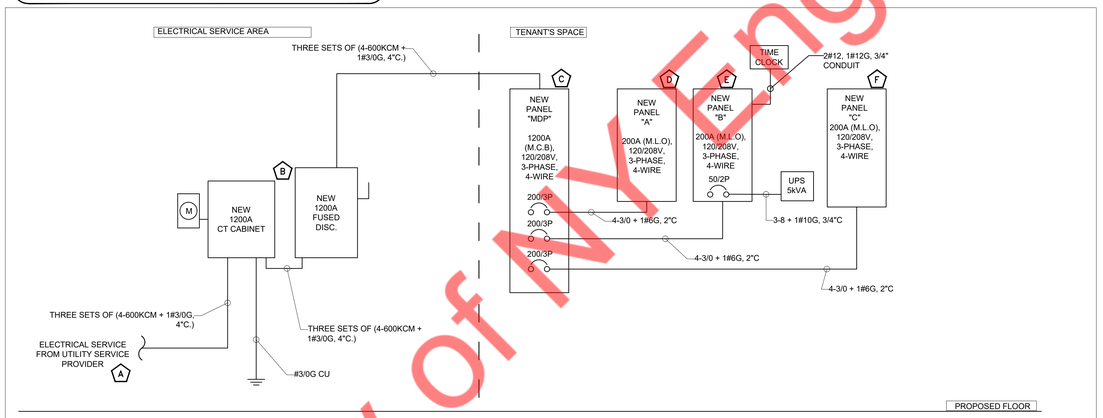
LIGHTING SPECIFICATION NOTES

- ALL LIGHT FIXTURES SHALL BE FURNISHED ON NEW JUNCTION BOXES.
- ALL LIGHTING TO BE PURCHASED FROM NEEDHAM -LIGHTING & ELECTRICAL SOLUTIONS. CONTACT: ANN MARIE SCHIAVITTI-SMITH (781) 571-8239 | EMAIL: WAYBACKBURGERS@NEEDHAMELECTRIC.COM
- E.C. SHALL COORDINATE WITH ARCHITECT FOR FINAL FIXTURE COUNT AND TYPE.
- COORDINATE EXACT CONTROL REQUIREMENTS WITH OWNER.
- E.C SHALL PROVIDE REQUIRED POWER PACKS AND RELAYS SUITABLE FOR THE ABOVE LIGHT FIXTURES IN COORDINATION WITH THE LIGHTING VENDOR. BASE BID ACCORDINGLY.

GENERAL LIGHTING NOTES

A. UPPER CASE LETTER NEXT TO LIGHT FIXTURE DENOTES FIXTURE TYPE .

B. ALL EMERGENCY FIXTURES SHALL BE CONNECTED TO AN UNSWITCHED HOT CONDUCTOR.



ELECTRICAL RISER KEYED NOTES:

A. NEW 1200A, 120/208V, 3-PHASE, 4-WIRE ELECTRICAL SERVICE FOR THE PROJECT SPACE. E.C. SHALL VERIFY THE EXACT LOCATION WITH LANDLORD/OWNER/UTILITY COMPANY AND VERIFY THE EXACT LOCATION AND INSTALLATION IN FIELD. E.C SHALL COORDINATE WITH UTILITY COMPANY FOR EXACT INCOMING SERVICE CONDUCTOR SIZE AND CONDUIT SIZE IN FIELD. INFORM ENGINEER ON RECORD IF ANY DISCREPANCY FOUND.

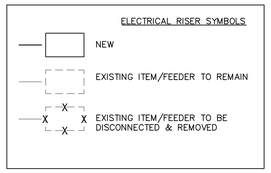
B. NEW 1200A, 120/208V, 3-PHASE, 4-WIRE ELECTRICAL METER, CT CABINET AND DISCONNECT SWITCH FOR THE TENANT SPACE. E.C. SHALL VERIFY THE EXACT LOCATION OF ELECTRICAL METER, AND DISCONNECT SWITCH WITH LANDLORD/OWNER/UTILITY COMPANY IN FIELD. BASE BID ACCORDINGLY.

C. NEW 1200A(M.C.B), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "MDP". E.C SHALL COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER. THE INSTALLATION SHALL MEET THE REQUIREMENTS OF N.E.C. ARTICLE 110.26(A) AND (B) AND 240.24.

D. NEW 200A(M.L.O), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "A". E.C SHALL COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER. THE INSTALLATION SHALL MEET THE REQUIREMENTS OF N.E.C. ARTICLE 110.26(A) AND (B) AND 240.24.

E. NEW 200A(M.L.O), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "B". E.C SHALL COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER. THE INSTALLATION SHALL MEET THE REQUIREMENTS OF N.E.C. ARTICLE 110.26(A) AND (B) AND 240.24.

F. NEW 100A(M.L.O), 120/208V, 1-PHASE, 3-WIRE ELECTRICAL PANEL "C". E.C SHALL COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER. THE INSTALLATION SHALL MEET THE REQUIREMENTS OF N.E.C. ARTICLE 110.26(A) AND (B) AND 240.24.



ELECTRICAL GENERAL NOTE:

A. ABOVE RISER DIAGRAM IS FOR REFERENCE PURPOSES ONLY. E.C. SHALL VERIFY EXACT POWER DISTRIBUTION IN FIELD AND INFORM ENGINEER ON RECORD FOR ANY DISCREPANCY.

B. E.C. SHALL VERIFY INCOMING SERVICE AMPERAGE, WIRE SIZING AND DISTRIBUTION.

C. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OWNER/LANDLORD/BASE BUILDING FOR THE EXACT DETAILS/LIABILITIES TO UNDERSTAND THE SCOPE OF WORK.

N

1 ELECTRICAL RISER DIAGRAM
SCALE: NTS

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CONTENT

ELECTRICAL NOTES AND RISER DIAGRAM

SHEET NUMBER:

E-001

PROJECT STATUS:

ELECTRICAL LIGHTING PLAN GENERAL NOTES:

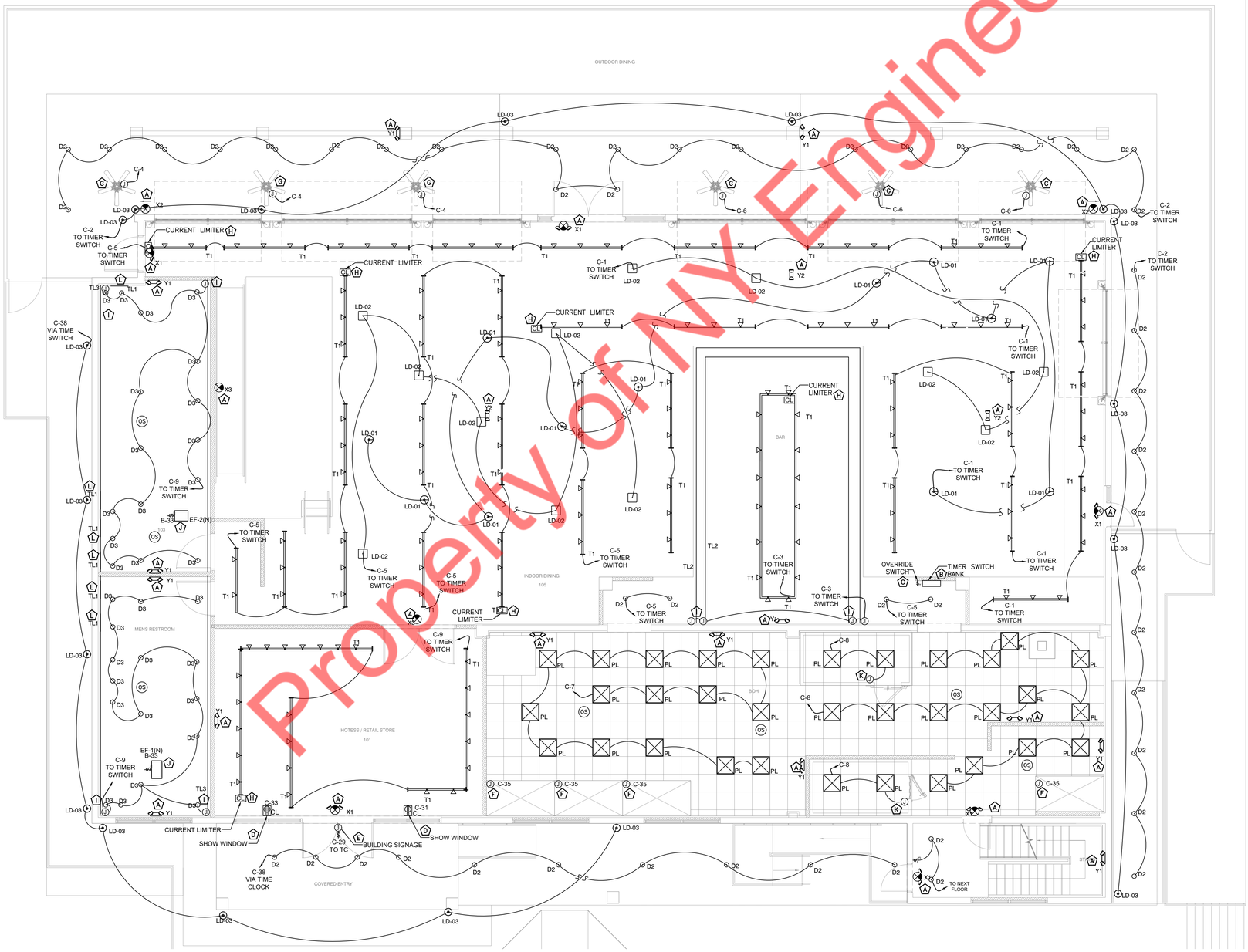
1. SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT FIXTURE LOCATIONS AND ORIENTATIONS.
2. REFER TO ARCHITECTURAL ELEVATIONS AND SECTIONS FOR ADDITIONAL LIGHTING FIXTURE MOUNTING DETAILS AND INFORMATION.
3. THIS LIGHTING PLAN IS FOR TENANT ONLY.
4. VERIFY ALL MOUNTING HEIGHTS AND LED LENGTHS WITH ARCHITECT AND ENGINEER PRIOR TO ORDERING FIXTURES.
5. E.C. SHALL COORDINATE WITH OWNER/ARCHITECT FOR EXACT CONTROLLING. INFORM ENGINEER ON RECORD IF DIFFERENT THAT WHAT IS SHOWN ON THE DRAWINGS TO CHECK THE COMPATIBILITY WITH -ENERGY CONSERVATION CODE CODES.
6. PROVIDE EMERGENCY LIGHTS WITH BATTERY BACKUP AS SHOWN ON THE DRAWING.
7. LIGHTS SHALL BE SHIELDED, COATED, OR OTHERWISE SHATTER-RESISTANT IN AREAS WHERE THERE IS EXPOSED FOOD; CLEAN EQUIPMENT, UTENSILS, AND LINENS; OR UNWRAPPED SINGLE-SERVICE.
8. A MINIMUM OF 50 FOOT CANDLES OF LIGHT ARE REQUIRED WHERE FOOD EMPLOYEES WORK WITH FOOD OR WORK WITH UTENSILS OR EQUIPMENT SUCH AS KNIVES, SLICERS, OR GRINDERS WHERE EMPLOYEE SAFETY IS A FACTOR. A MINIMUM OF 10 FOOT CANDLES OF LIGHT IS REQUIRED IN A FULLY LOADED WALK IN.
9. CONTRACTOR ADVISED TO UPDATE THE EMERGENCY LIGHT FIXTURES LOCATIONS/QUANTITY PER SITE REQUIREMENT UP ON FINAL INSPECTION OR PER LOCAL AHJ REQUIREMENT.
10. E.C SHALL COORDINATE WITH LIGHTING VENDOR/MANUFACTURER FOR EXACT POWER AND OTHER ACCESSORY REQUIREMENT OF EACH LIGHT PRIOR TO BID.
11. E.C SHALL COORDINATE WITH ARCHITECT FOR EXACT LOCATION AND MAKE/MODEL OF EACH LIGHT PRIOR TO BID.

ELECTRICAL LIGHTING PLAN KEYED WORK NOTES:

- (A) CONNECT ALL EMERGENCY EGRESS FIXTURES TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING AND CONTROLS PER STATE AND LOCAL CODES.
- (B) E.C. SHALL COORDINATE EXACT LOCATION, QUANTITY OF TIMER SWITCH BANK WITH ARCHITECT/OWNER. E.C. SHALL CONFIRM CLEAR SPACE FOR SWITCH, NO OBJECT INFRONT ON SWITCH LOCATION. E.C SHALL COORDINATE WITH THE TIMER SWITCH MANUFACTURER FOR MAXIMUM LOAD PER SWITCH BEFORE COMMENCING ANY WORK.
- (C) MANUAL OVERRIDE SWITCH. E.C. TO COORDINATE THE LOCATION WITH ARCHITECT/OWNER. AS PER NEC C405.2.2.2.
- (D) PROVIDED CEILING MOUNTED RECEPTACLE FOR SHOW WINDOW AS REQUIRED BY CODE. VERIFY WITH LOCAL ENERGY AGENCY. VERIFY EXACT LOCATION WITH ARCHITECT.
- (E) PROVIDE A DISCONNECT SWITCH AT FEEDER OR BRANCH CIRCUIT ENTERS THE SIGN PER NEC, VERIFY MOUNTING HEIGHT FOR SIGNAGE POWER WITH ARCHITECTURAL ELEVATIONS, SIGN VENDOR, AND LANDLORD. ROUTE CIRCUIT TO PANEL VIA TIME CLOCK AS INDICATED ON PLAN.
- (F) PROVIDE 120V DEDICATED CIRCUIT FOR NEW HOOD LIGHTING & CONTROL PANEL. COORDINATE FOR LIGHTING CONNECTION & ALL OTHER REQUIREMENT WITH CAPTIVE AIRE HOOD DRAWINGS/MANUFACTURER IN FIELD.
- (G) PROVIDE VARIABLE SPEED CONTROL SWITCH FOR FAN. E.C. TO COORDINATE WITH MANUFACTURER/VENDOR FOR EXACT POWER REQUIREMENT PRIOR TO INSTALL. BASE BID ACCORDINGLY.
- (H) PROVIDE CURRENT LIMITER FOR TRACK LIGHT. E.C. TO COORDINATE WITH LIGHTING MANUFACTURER FOR SUITABLE MODEL OF CURRENT LIMITER FOR TRACK LIGHTS. BASE BID ACCORDINGLY.
- (I) PROVIDE JUNCTION BOX ABOVE CEILING TO FEED LED TAPE LIGHT (TL2,TL3) REMOTE TRANSFORMER PROVIDED BY THE LIGHT VENDOR. TYPICAL FOR EACH INDIVIDUAL LED TAPE RUN. E.C TO COORDINATE FOR EXACT LOCATION AND POWER REQUIREMENT WITH LIGHT VENDOR/OWNER BEFORE COMMENCING ANY WORK. REPORT TO ENGINEER FOR ANY DISCREPANCIES. BASE BID ACCORDINGLY.
- (J) INTERCONNECT EXHAUST FANS EF-1(N),EF-2 WITH RTU-1. E.C SHALL COORDINATE VERIFY FINAL REQUIREMENT AND INTERCONNECTION DETAILS WITH MECHANICAL CONTRACTOR/OWNER BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.

ELECTRICAL LIGHTING PLAN KEYED WORK NOTES:

- (K) E.C SHALL COORDINATE WITH WALK-IN BOX FREEZER MANUFACTURER/VENDOR FOR LIGHT FIXTURE CONNECTION AND CONTROLS. PROVIDE AS REQUIRED. BASE BID ACCORDINGLY.
- (L) REFER TO POWER PLAN FOR MIRROR LIGHT(TL1) PROVISION.



N

1 GROUND FLOOR LIGHTING PLAN
SCALE: 3 / 16" = 1' - 0

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CONTENT

GROUND FLOOR LIGHTING PLAN

SHEET NUMBER:

E-101

PROJECT STATUS:

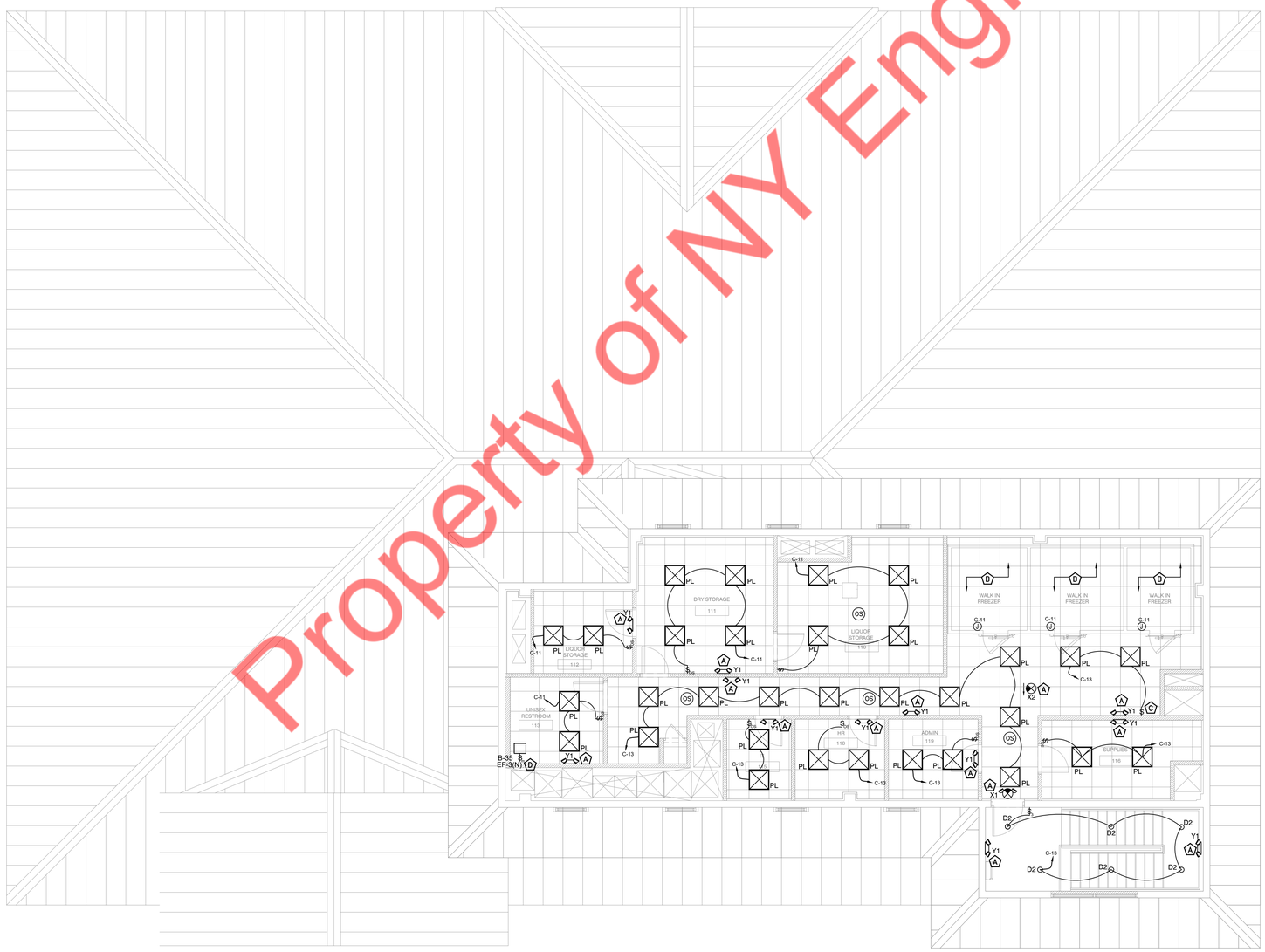
BINDING EDGE

ELECTRICAL LIGHTING PLAN GENERAL NOTES:

1. SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT FIXTURE LOCATIONS AND ORIENTATIONS.
2. REFER TO ARCHITECTURAL ELEVATIONS AND SECTIONS FOR ADDITIONAL LIGHTING FIXTURE MOUNTING DETAILS AND INFORMATION.
3. THIS LIGHTING PLAN IS FOR TENANT ONLY.
4. VERIFY ALL MOUNTING HEIGHTS AND LED LENGTHS WITH ARCHITECT AND ENGINEER PRIOR TO ORDERING FIXTURES.
5. E.C. SHALL COORDINATE WITH OWNER/ARCHITECT FOR EXACT CONTROLLING. INFORM ENGINEER ON RECORD IF DIFFERENT THAT WHAT IS SHOWN ON THE DRAWINGS TO CHECK THE COMPATIBILITY WITH -ENERGY CONSERVATION CODE CODES.
6. PROVIDE EMERGENCY LIGHTS WITH BATTERY BACKUP AS SHOWN ON THE DRAWING.
7. LIGHTS SHALL BE SHIELDED, COATED, OR OTHERWISE SHATTER-RESISTANT IN AREAS WHERE THERE IS EXPOSED FOOD; CLEAN EQUIPMENT, UTENSILS, AND LINENS; OR UNWRAPPED SINGLE-SERVICE.
8. A MINIMUM OF 50 FOOT CANDLES OF LIGHT ARE REQUIRED WHERE FOOD EMPLOYEES WORK WITH FOOD OR WORK WITH UTENSILS OR EQUIPMENT SUCH AS KNIVES, SLICERS, OR GRINDERS WHERE EMPLOYEE SAFETY IS A FACTOR. A MINIMUM OF 10 FOOT CANDLES OF LIGHT IS REQUIRED IN A FULLY LOADED WALK IN.
9. CONTRACTOR ADVISED TO UPDATE THE EMERGENCY LIGHT FIXTURES LOCATIONS/QUANTITY PER SITE REQUIREMENT UP ON FINAL INSPECTION OR PER LOCAL AHJ REQUIREMENT.
10. E.C SHALL COORDINATE WITH LIGHTING VENDOR/MANUFACTURER FOR EXACT POWER AND OTHER ACCESSORY REQUIREMENT OF EACH LIGHT PRIOR TO BID.
11. E.C SHALL COORDINATE WITH ARCHITECT FOR EXACT LOCATION AND MAKE/MODEL OF EACH LIGHT PRIOR TO BID.

ELECTRICAL LIGHTING PLAN KEYED WORK NOTES:

A. CONNECT ALL EMERGENCY EGRESS FIXTURES TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING AND CONTROLS PER STATE AND LOCAL CODES.
B. E.C SHALL COORDINATE WITH WALK-IN BOX FREEZER MANUFACTURER/VENDOR FOR LIGHT FIXTURE CONNECTION AND CONTROLS. PROVIDE AS REQUIRED. BASE BID ACCORDINGLY.
C. LIGHTING CONTROL NEAR THE ELECTRICAL PANEL SHALL NOT BE WITH ONLY AUTOMATIC MEANS AS PER NEC 110.26(D).
D. INTERCONNECT EXHAUST FANS EF-3(N) WITH AHU-1. E.C SHALL COORDINATE VERIFY FINAL REQUIREMENT AND INTERCONNECTION DETAILS WITH MECHANICAL CONTRACTOR/OWNER BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.
E. REFER TO POWER PLAN FOR MIRROR LIGHT(TL1) PROVISION.



N

1 LEVEL 02 LIGHTING PLAN
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LEVEL 02
LIGHTING PLAN

SHEET NUMBER:

E-101

PROJECT STATUS:

BINDING EDGE

ELECTRICAL POWER PLAN GENERAL NOTES:

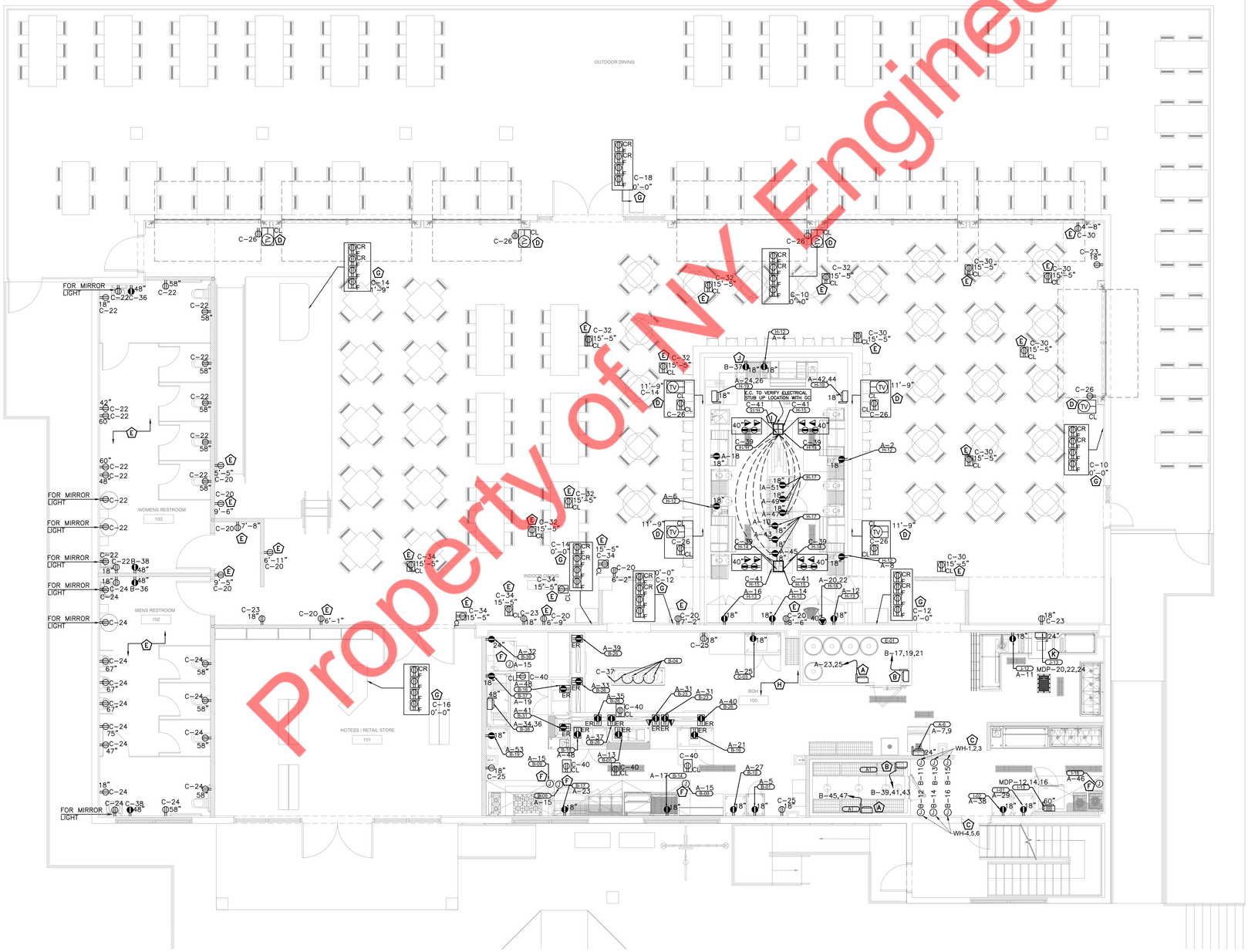
1. PROVIDE GFCI PROTECTION FOR PERSONNEL FOR ALL SINGLE PHASE RECEPTACLES RATED 50AMP OR LESS & THREE PHASE RECEPTACLES RATED 100AMP OR LESS INSTALLED IN KITCHEN AREA PER NEC 210.8(B)2. GFI PROTECTION SHALL BE PROVIDED AT BREAKER WHERE RECEPTACLES ARE NOT READILY ACCESSIBLE PER NEC 210.8 DUE TO STATIONARY KITCHEN EQUIPMENT.
2. REFER TO "KITCHEN EQUIPMENT SCHEDULE" FOR DESCRIPTION AND POWER REQUIREMENTS OF EACH DEVICE IN KITCHEN. COORDINATE EXACT LOCATION OF ALL JUNCTION BOXES, RECEPTACLES, ETC. WITH KITCHEN EQUIPMENT VENDOR PRIOR TO ROUGH-IN.
3. E.C. SHALL MAKE ALL FINAL CONNECTIONS TO KITCHEN EQUIPMENT, FURNISH AND INSTALL ALL JUNCTION BOXES, RECEPTACLES, COVER PLATES, PULL BOXES, CONDUIT AND WIRING AS REQUIRED. COORDINATE WITH FOOD SERVICE DRAWINGS AND MANUFACTURER'S INSTRUCTIONS FOR LOCATION OF ALL EQUIPMENT CONNECTION LOCATIONS AND REQUIREMENTS.
4. E.C. SHALL PULL ALL LOW VOLTAGE WIRING FOR POS SYSTEM, AND PHONE. COORDINATE WITH OWNER'S VENDOR.
5. FLEXIBLE CONDUIT INSTALLED IN KITCHEN FOR FINAL EQUIPMENT CONNECTION SHALL BE LIQUID TIGHT CONDUIT WITH NEOPRENE JACKET.
6. ENCLOSURES FOR ALL ELECTRICAL PANELS, CIRCUIT BREAKER ENCLOSURES, DISCONNECT SWITCHES, WALL SWITCHES, CONTRACTOR ENCLOSURES, PUSHBUTTONS, ETC WITHIN KITCHEN AREA SHALL BE FOOD GRADE, RECESSED MOUNTED, UNLESS OTHERWISE NOTED.
7. E.C. SHALL COORDINATE WITH THE ARCHITECT/OWNER FOR THE EXACT HEIGHT/LOCATIONS OF THE RECEPTACLES FOR THE KITCHEN EQUIPMENT PRIOR TO ROUGH-IN.
8. COORDINATE POWER REQUIREMENTS FOR SECURITY SYSTEM WITH OWNER/SECURITY VENDOR.
9. COORDINATE POWER REQUIREMENTS FOR MUSIC SYSTEM WITH OWNER/L.V. VENDOR.

POWER PLAN KEYED NOTES:

- (A) PROVIDE DISCONNECT AND CIRCUIT FOR WALK IN BOX EVAPORATOR. E.C. SHALL COORDINATE WITH WALK IN BOX VENDOR FOR EXACT LOCATION AND POWER REQUIREMENT OF WALK IN BOX EQUIPMENTS. PROVIDE BREAKERS AND BRANCH CIRCUITS ACCORDINGLY. BASE BID ACCORDINGLY.
- (B) PROVIDE DISCONNECT AND CIRCUIT FOR WALK IN BOX CONDENSER. E.C. SHALL COORDINATE WITH WALK IN BOX VENDOR FOR EXACT LOCATION AND POWER REQUIREMENT OF WALK IN BOX EQUIPMENTS. PROVIDE BREAKERS AND BRANCH CIRCUITS ACCORDINGLY.
- (C) ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE PLUMBING CONTRACTOR FOR EXACT LOCATION AND POWER REQUIREMENT OF WH-1 TO WH-6 IN THE FIELD. PROVIDE CIRCUIT AND CONTROL AS REQUIRED.
- (D) ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OWNER/ARCHITECT FOR EXACT LOCATION OF TV AND PROVIDE POWER REQUIREMENT ACCORDINGLY. BASE BID ACCORDINGLY.
- (E) E.C SHALL COORDINATE WITH THE ARCHITECT/OWNER FOR EXACT LOCATION, MOUNTING HEIGHT & PROVISION OF RECEPTACLES/OUTLETS FOR THE NEON SIGN. E.C SHALL COORDINATE WITH POWER REQUIREMENT OF THE NEON SIGN WITH VENDOR. BASE BID ACCORDINGLY.
- (F) ELECTRICAL CONTRACTOR TO CO-ORDINATE WITH FIRE SUPPRESSION SYSTEM VENDOR FOR ITS POWER REQUIREMENT AND OTHER DETAILS BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.
- (G) E.C SHALL COORDINATE WITH THE ARCHITECT/OWNER FOR EXACT LOCATION, MOUNTING DETAILS & PROVISION OF RECEPTACLES/REGULATED CONTACT OUTPUTS ON THE FLOOR. BASE BID ACCORDINGLY.
- (H) E.C TO COORDINATE WITH KITCHEN EQUIPMENT VENDOR/ MANUFACTURER FOR EXACT POWER REQUIREMENTS, EXACT MOUNTING HEIGHT, LOCATION BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.
- (I) ALL THE P&D WILL BE FEED FROM THE CENTRAL COUNTER AND WILL HAVE THE CONNECTIONS UNDER THE TABLE. E.C TO VERIFY EXACT LOCATION WITH OWNER/ARCHITECHT AND OTHER REQUIREMENTS AT FIELD.

POWER PLAN KEYED NOTES:

- (J) THE ELECTRICAL CONTRACTOR (E.C.) SHALL COORDINATE WITH THE OWNER/ARCHITECT TO CONFIRM THE EXACT LOCATION, MOUNTING HEIGHT, AND POWER REQUIREMENTS FOR THE SORBETEER EQUIPMENT BEFORE STARTING ANY WORK. BASE BID ACCORDINGLY.
- (K) E.C SHALL COORDINATE WITH #B16 HALOSAUNA VENDOR/ OWNER/ MANUFACTURER FOR EXACT LOCATION, MOUNTING HEIGHT & POWER REQUIREMENT BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.



N

1 GROUND FLOOR POWER PLAN
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CONTENT

GROUND FLOOR POWER PLAN

SHEET NUMBER:

E-201

PROJECT STATUS:

ELECTRICAL POWER PLAN GENERAL NOTES:

1. PROVIDE GFCI PROTECTION FOR PERSONNEL FOR ALL SINGLE PHASE RECEPTACLES RATED 50AMP OR LESS & THREE PHASE RECEPTACLES RATED 100AMP OR LESS INSTALLED IN KITCHEN AREA PER NEC 210.8(B)2. GFI PROTECTION SHALL BE PROVIDED AT BREAKER WHERE RECEPTACLES ARE NOT READILY ACCESSIBLE PER NEC 210.8 DUE TO STATIONARY KITCHEN EQUIPMENT.
2. REFER TO "KITCHEN EQUIPMENT SCHEDULE" FOR DESCRIPTION AND POWER REQUIREMENTS OF EACH DEVICE IN KITCHEN. COORDINATE EXACT LOCATION OF ALL JUNCTION BOXES, RECEPTACLES, ETC. WITH KITCHEN EQUIPMENT VENDOR PRIOR TO ROUGH-IN.
3. E.C. SHALL MAKE ALL FINAL CONNECTIONS TO KITCHEN EQUIPMENT, FURNISH AND INSTALL ALL JUNCTION BOXES, RECEPTACLES, COVER PLATES, PULL BOXES, CONDUIT AND WIRING AS REQUIRED. COORDINATE WITH FOOD SERVICE DRAWINGS AND MANUFACTURER'S INSTRUCTIONS FOR LOCATION OF ALL EQUIPMENT CONNECTION LOCATIONS AND REQUIREMENTS.
4. E.C. SHALL PULL ALL LOW VOLTAGE WIRING FOR POS SYSTEM, AND PHONE. COORDINATE WITH OWNER'S VENDOR.
5. FLEXIBLE CONDUIT INSTALLED IN KITCHEN FOR FINAL EQUIPMENT CONNECTION SHALL BE LIQUID TIGHT CONDUIT WITH NEOPRENE JACKET.
6. ENCLOSURES FOR ALL ELECTRICAL PANELS, CIRCUIT BREAKER ENCLOSURES, DISCONNECT SWITCHES, WALL SWITCHES, CONTRACTOR ENCLOSURES, PUSHBUTTONS, ETC WITHIN KITCHEN AREA SHALL BE FOOD GRADE, RECESSED MOUNTED, UNLESS OTHERWISE NOTED.
7. E.C. SHALL COORDINATE WITH THE ARCHITECT/OWNER FOR THE EXACT HEIGHT/LOCATIONS OF THE RECEPTACLES FOR THE KITCHEN EQUIPMENT PRIOR TO ROUGH-IN.
8. COORDINATE POWER REQUIREMENTS FOR SECURITY SYSTEM WITH OWNER/SECURITY VENDOR.
9. COORDINATE POWER REQUIREMENTS FOR MUSIC SYSTEM WITH OWNER/L.V. VENDOR.

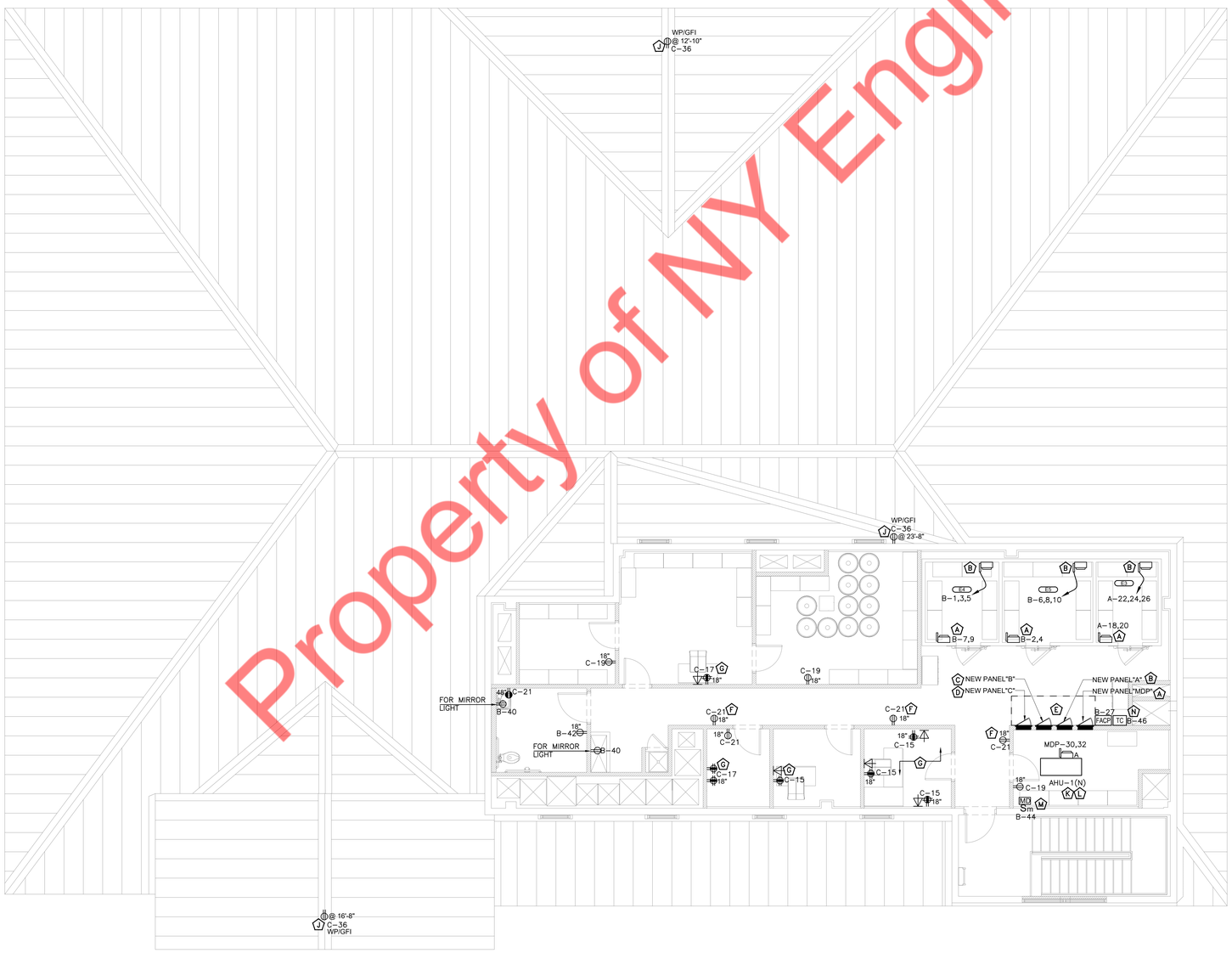
POWER PLAN KEYED NOTES:

- (A) NEW 1200A, 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "MDP". E.C. SHALL COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER.
- (B) NEW 200A(M.L.O), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "A". E.C. SHALL COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER.
- (C) NEW 200A(M.L.O), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "B". E.C. SHALL COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER.
- (D) NEW 200A(M.L.O), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "C". E.C. SHALL COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER.
- (E) E.C SHALL VERIFY THE INSTALLATION OF ELECTRICAL EQUIPMENTS ARE IN COMPLIANCE WITH N.E.C. ARTICLE 110.26(A) AND (B). E.C. SHALL FIELD VERIFY THAT THE PANELS ARE UNOBSTRUCTED AND THE AREA WHERE THE PANELS ARE PLACED SHALL NOT BE USED AS A STORAGE SPACE.
- (F) ALL 15/20A, 125V AND 250V NON LOCKING TYPE RECEPTACLES IN LOBBY/ HALLWAY SHALL BE LISTED TAMPER RESISTANCE AS PER NEC 406.12.
- (G) QUAD RECEPTACLE OUTLET FOR PC/OFFICE DESK. ELECTRICAL CONTRACTOR TO CO-ORDINATE WITH ARCHITECT/OWNER FOR EXACT POWER REQUIREMENT, LOCATION, MOUNTING HEIGHT OF OUTLET/DATA AND OTHER DETAILS BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.
- (H) PROVIDE DISCONNECT AND CIRCUIT FOR WALK IN BOX EVAPORATOR. E.C. SHALL COORDINATE WITH WALK IN BOX VENDOR FOR EXACT LOCATION AND POWER REQUIREMENT OF WALK IN BOX EQUIPMENTS. PROVIDE BREAKERS AND BRANCH CIRCUITS ACCORDINGLY. BASE BID ACCORDINGLY.
- (I) PROVIDE DISCONNECT AND CIRCUIT FOR WALK IN BOX CONDENSER. E.C. SHALL COORDINATE WITH WALK IN BOX VENDOR FOR EXACT LOCATION AND POWER REQUIREMENT OF WALK IN BOX EQUIPMENTS. PROVIDE BREAKERS AND BRANCH CIRCUITS ACCORDINGLY.
- (J) E.C SHALL COORDINATE WITH THE ARCHITECT/OWNER FOR EXACT LOCATION, MOUNTING HEIGHT & PROVISION OF RECEPTACLES/OUTLETS FOR THE NEON SIGN. E.C SHALL COORDINATE WITH POWER REQUIREMENT OF THE NEON SIGN WITH VENDOR. BASE BID ACCORDINGLY.

POWER PLAN KEYED NOTES:

- (K) ELECTRICAL CONTRACTOR SHALL COORDINATE DISCONNECT AND FUSE REQUIREMENT FOR MECHANICAL UNIT WITH MECHANICAL CONTRACTOR AND EQUIPMENT MANUFACTURER PRIOR TO ROUGH-IN AND PROVIDE AS REQUIRED. LOCATE AS REQUIRED TO MAINTAIN NEC CLEARANCES. BASE BID ACCORDINGLY.
- (L) ELECTRICAL CONTRACTOR SHALL COORDINATE FOR EXACT LOCATION OF MECHANICAL EQUIPMENTS WITH MECHANICAL DRAWINGS.
- (M) MD TO BE INTERLOCKED WITH AHU-1(N). E.C SHALL COORDINATE VERIFY FINAL REQUIREMENT AND INTERCONNECTION DETAILS WITH MECHANICAL CONTRACTOR/OWNER BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.
- (N) TIME CLOCK FOR EXTERIOR LIGHTING. E.C SHALL COORDINATE WITH ARCHITECT/ OWNER FOR EXACT LOCATION AND MOUNTING HEIGHT IN FIELD. BASE BID ACCORDINGLY.

BINDING EDGE



N

1 LEVEL 02 POWER PLAN
SCALE: 3 / 16" = 1' - 0

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Señor Frog's FUN, FOOD & CLOTHES

No.	DESCRIPTION	DATE

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CONTENT

LEVEL 02
POWER PLAN

SHEET NUMBER:

E-202

PROJECT STATUS:

BINDING EDGE

ROOF PLAN KEYED WORK NOTES:

A. ELECTRICAL CONTRACTOR SHALL COORDINATE DISCONNECT AND FUSE REQUIREMENT FOR MECHANICAL UNIT WITH MECHANICAL CONTRACTOR AND EQUIPMENT MANUFACTURER PRIOR TO ROUGH-IN AND PROVIDE AS REQUIRED. LOCATE AS REQUIRED TO MAINTAIN NEC CLEARANCES. BASE BID ACCORDINGLY.

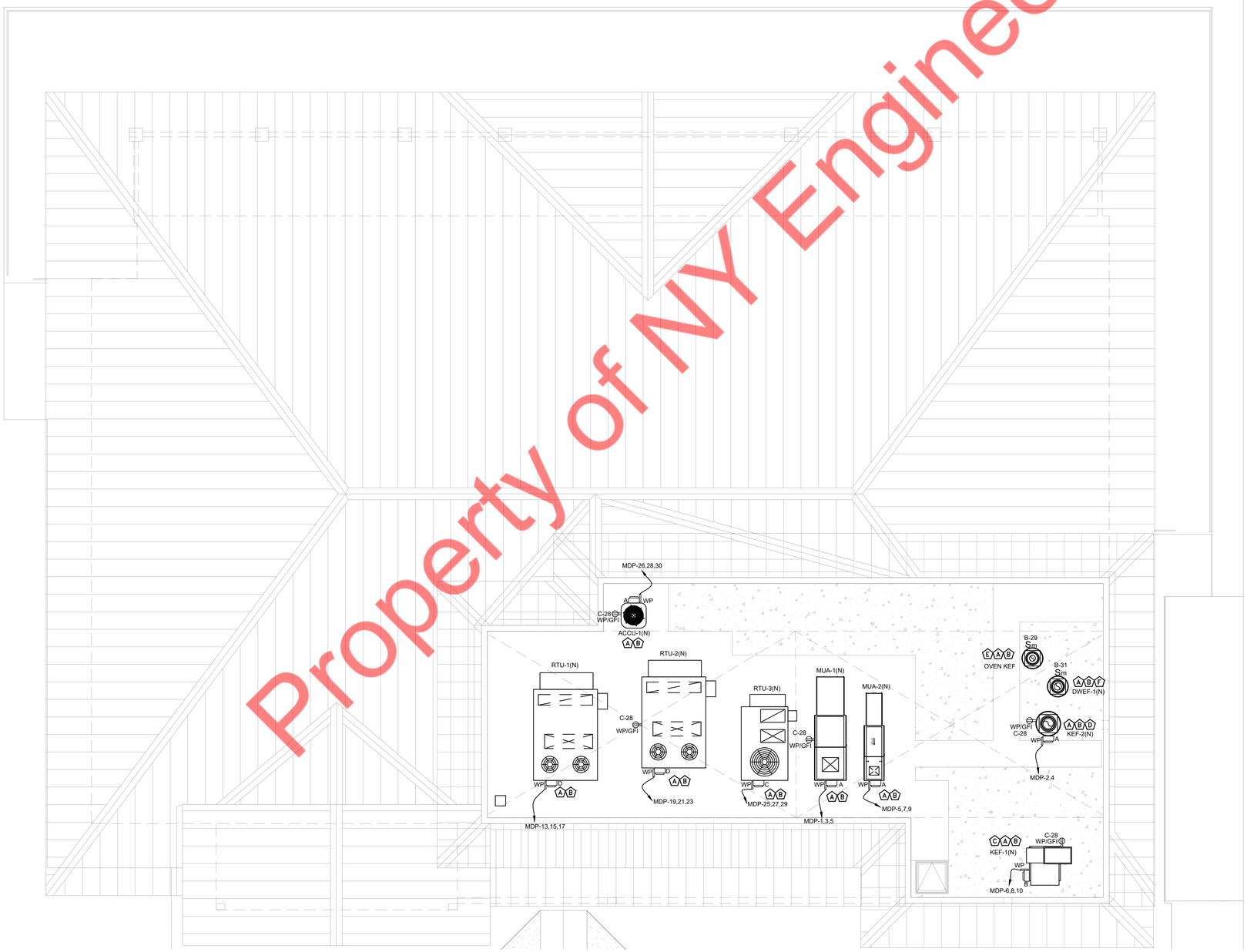
B. ELECTRICAL CONTRACTOR SHALL COORDINATE FOR EXACT LOCATION OF MECHANICAL EQUIPMENTS WITH MECHANICAL DRAWINGS.

C. INTERCONNECT EXHAUST FANS KEF-1(N) WITH HOOD-1 AND HOOD-2. E.C SHALL COORDINATE VERIFY FINAL REQUIREMENT AND INTERCONNECTION DETAILS WITH MECHANICAL CONTRACTOR/OWNER BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.

D. INTERCONNECT EXHAUST FANS KEF-2(N) WITH HOOD-3. E.C SHALL COORDINATE VERIFY FINAL REQUIREMENT AND INTERCONNECTION DETAILS WITH MECHANICAL CONTRACTOR/OWNER BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.

E. INTERCONNECT EXHAUST FANS OVEN KEF (N) WITH HOOD-4. E.C SHALL COORDINATE VERIFY FINAL REQUIREMENT AND INTERCONNECTION DETAILS WITH MECHANICAL CONTRACTOR/OWNER BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.

F. INTERCONNECT EXHAUST FANS DWEF-1(N) WITH DISH HOOD. E.C SHALL COORDINATE VERIFY FINAL REQUIREMENT AND INTERCONNECTION DETAILS WITH MECHANICAL CONTRACTOR/OWNER BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY



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1 ROOF POWER PLAN
SCALE: 3 / 16" = 1' - 0

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CONTENT

ROOF POWER PLAN

SHEET NUMBER:

E-203

PROJECT STATUS:

BINDING EDGE

LOW VOLTAGE PLAN KEYED WORK NOTES:

A. E.C. TO COORDINATE EXACT LOCATION/MOUNTING DETAILS & ELECTRICAL/L.V. REQUIREMENTS FOR SECURITY CAMERA ON FIELD WITH ARCHITECT/OWNER IN COORDINATION WITH LV VENDOR AND PROVIDE CONNECTIONS ACCORDINGLY.

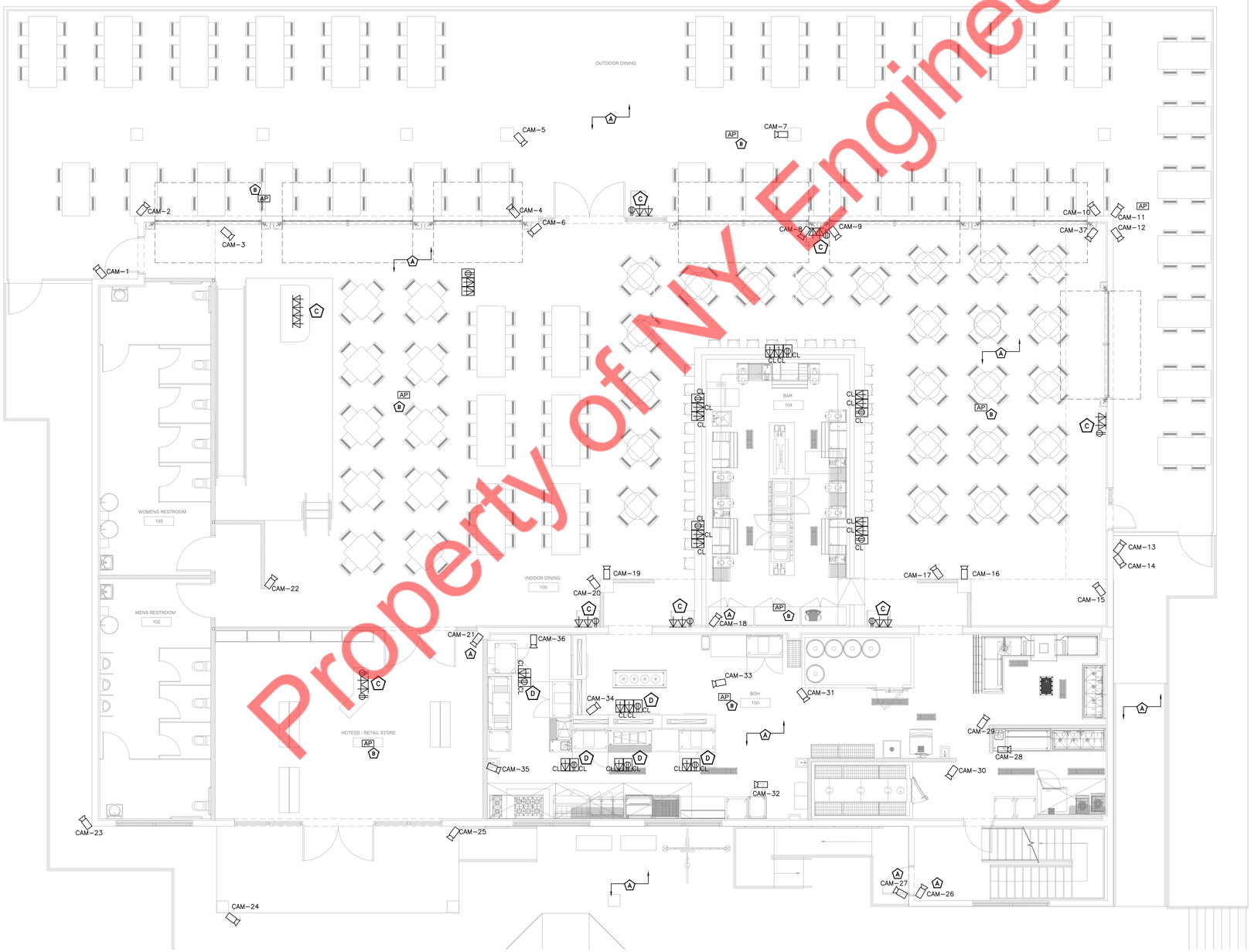
B. E.C. TO COORDINATE EXACT LOCATION/MOUNTING DETAILS OF ACCESS POINT ON FIELD WITH ARCHITECT/OWNER IN COORDINATION WITH LV VENDOR AND PROVIDE CONNECTIONS ACCORDINGLY.

C. DATA OUTLET FOR PC/OFFICE DESK. ELECTRICAL CONTRACTOR TO CO-ORDINATE WITH ARCHITECT/OWNER/LOW VOLTAGE VENDOR FOR EXACT POWER REQUIREMENT, LOCATION, MOUNTING HEIGHT OF DATA OUTLET AND OTHER DETAILS BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.

D. E.C TO COORDINATE EXACT LOCATION/MOUNTING HEIGHT OF DATA AND RECEPTACLE AND OTHER DETAILS BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.

LOW VOLTAGE PLAN GENERAL NOTE:

1. E.C. TO COORDINATE WITH G.C./L.V. VENDOR FOR EXACT QUANTITY AND POWER REQUIREMENTS FOR LOW VOLTAGE EQUIPMENTS BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.
2. VERIFY FINAL LOCATIONS OF ALL INTERIOR AND EXTERIOR CAMERA'S AND SECURITY EQUIPMENT WITH OWNER.



N

1 GROUND FLOOR LOW VOLTAGE PLAN
SCALE: 3 / 16" = 1' - 0

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CONTENT

GROUND FLOOR
LOW VOLTAGE PLAN

SHEET NUMBER:

E-301

PROJECT STATUS:

BINDING EDGE

LOW VOLTAGE PLAN KEYED WORK NOTES:

A. E.C. TO COORDINATE EXACT LOCATION/MOUNTING DETAILS & ELECTRICAL/L.V. REQUIREMENTS FOR SECURITY CAMERA ON FIELD WITH ARCHITECT/OWNER IN COORDINATION WITH LV VENDOR AND PROVIDE CONNECTIONS ACCORDINGLY.

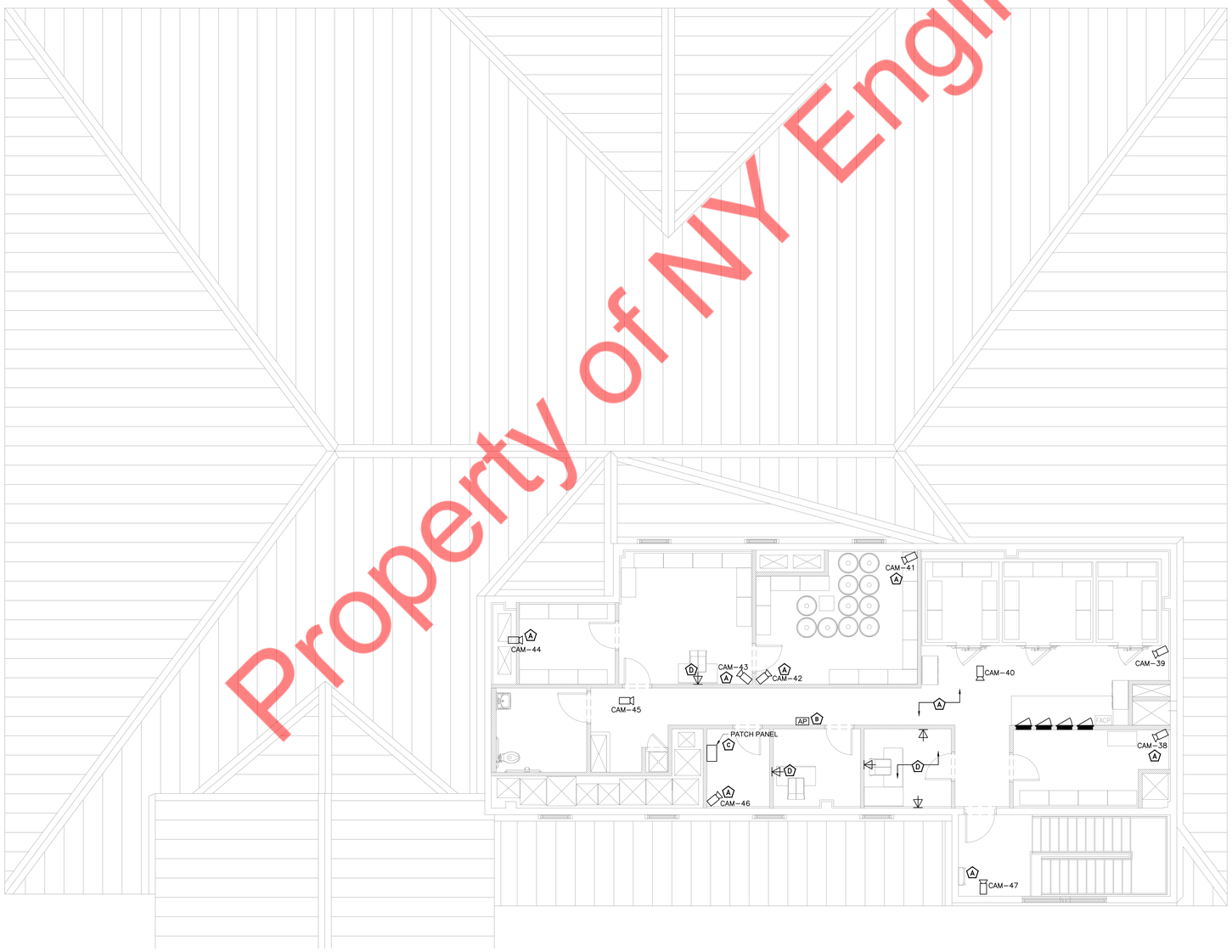
B. E.C. TO COORDINATE EXACT LOCATION/MOUNTING DETAILS OF ACCESS POINT ON FIELD WITH ARCHITECT/OWNER IN COORDINATION WITH LV VENDOR AND PROVIDE CONNECTIONS ACCORDINGLY.

C. E.C. TO COORDINATE EXACT LOCATION & MOUNTING DETAILS OF PATCH PANEL ON FIELD WITH ARCHITECT/OWNER IN COORDINATION WITH LV VENDOR AND PROVIDE CONNECTIONS ACCORDINGLY.

D. DATA OUTLET FOR PC/OFFICE DESK. ELECTRICAL CONTRACTOR TO CO-ORDINATE WITH ARCHITECT/OWNER/LOW VOLTAGE VENDOR FOR EXACT POWER REQUIREMENT, LOCATION, MOUNTING HEIGHT OF DATA OUTLET AND OTHER DETAILS BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.

LOW VOLTAGE PLAN GENERAL NOTE:

1. E.C. TO COORDINATE WITH G.C./L.V. VENDOR FOR EXACT QUANTITY AND POWER REQUIREMENTS FOR LOW VOLTAGE EQUIPMENTS BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.
2. VERIFY FINAL LOCATIONS OF ALL INTERIOR AND EXTERIOR CAMERA'S AND SECURITY EQUIPMENT WITH OWNER.



N

1 LEVEL 02 LOW VOLTAGE PLAN
SCALE: 3 / 16" = 1' - 0

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CONTENT

LEVEL 02
LOW VOLTAGE PLAN

SHEET NUMBER:

E-302

PROJECT STATUS:

ELECTRICAL PANEL SCHEDULE:-

PANEL:	MDP(N)					MOUNTING:	RECESSED
208Y/120	VOLTS,	3	PHASE,	4	WIRE	PANEL LOCATION:	LEVEL 02 HALLWAY
MAIN CB	1200A	MLO:	NA	BUS:	1200A MIN,	FED FROM:	NEW METER/DISCONNECT

NOTE: L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	30-3P	MAU-1(N)	H	4.06	3#10, #10G, 3/4"C	4.60			2#12, #12G, 3/4"C	0.54	H	KEF - 2(N)	20-2P	2
3			H	4.06			4.60			0.54	H			4
5			H	4.06				7.47	3#8, #10G, 3/4"C	3.41	H	KEF - 1(N)	40-3P	6
7	20-2P	MAU-2(N)	H	1.37	2#12, #12G, 3/4"C	4.78				3.41	H			8
9			H	1.37			4.78			3.41	H			10
11	20	SPARE						12.00		12.00	E			12
13	150-3P	RTU-1(N)	H	12.97	3#1/0, #6G, 1 1/2"C	24.97			3#1, #6G,1 1/2"C	12.00	E	ELECTRIC COMBI OVEN_#I13	125-3P	14
15			H	12.97			24.97			12.00	E			16
17			H	12.97				12.97				SHUNT TRIP		18
19	150-3P	RTU-2(N)	H	12.97	3#1/0, #6G, 1 1/2"C	19.27			3#6, #10G, 3/4"C	6.30	E	HOOD TYPE DISH WASHER_#J13	60-3P	20
21			H	12.97			19.27			6.30	E			22
23			H	12.97				19.27		6.30	E			24
25	90-3P	RTU-3(N)	H	8.05	3#3, #8G, 1"C	10.21			3#10, #10G, 3/4"C	2.16	H	ACCU-1(N)	30-3P	26
27			H	8.05			10.21			2.16	H			28
29			H	8.05				10.21		2.16	H			30
31	200-3P	PANEL "B"	O	19.29	4#3/0, #6G, 2"C	20.22			2#12, #12G, 3/4"C	0.94	H	AHU- 1(N)	20-2P	32
33			O	19.29			20.22			0.94	H			34
35			O	19.29				32.63	4#3/0, #6G, 2"C	13.34	O	PANEL "C"	200-3P	36
37	200-3P	PANEL "A"	O	11.56	4#3/0, #6G, 2"C	24.91				13.34	O			38
39			O	11.56			24.91			13.34	O			40
41			O	11.56				11.56						42
TOTAL CONNECTED LOAD (KVA)						####	####	106.11						

PANEL:	C(N)					MOUNTING:	RECESSED
208Y/120	VOLTS,	3	PHASE,	4	WIRE	PANEL LOCATION:	LEVEL-02 HALLWAY
MAIN CB	NA	MLO:	200A	BUS:	225A MIN,	FED FROM:	PANEL "MDP"

NOTE: L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20	LIGHTING-DINING, SEATING	L	0.50	2#12, #12G, 3/4"C	1.50			2#12, #12G, 3/4"C	1.00	L	LIGHTING OUTDOOR DINING	20	2
3	20	LIGHTING-DINING, SEATING	L	0.50	2#12, #12G, 3/4"C		1.00		2#12, #12G, 3/4"C	0.50	L	CEILING FAN-OUTDOOR DINING	20	4
5	20	LIGHTING-DINING, SEATING	L	0.50	2#12, #12G, 3/4"C			1.00	2#12, #12G, 3/4"C	0.50	L	CEILING FAN-OUTDOOR DINING	20	6
7	20	LIGHTING-BOH	L	0.50	2#12, #12G, 3/4"C	1.00			2#12, #12G, 3/4"C	0.50	L	LIGHTING-BOH	20	8
9	20	LIGHTING- REST ROOM,RETAIL STORES	L	0.50	2#12, #12G, 3/4"C		1.94		2#12, #12G, 3/4"C	1.44	R	FLOOR RECEPTACLE-DINING	20	10
11	20	LIGHTING- LQ.STORAGE,DRY STORAGE,RR,WIF	L	0.50	2#12, #12G, 3/4"C			1.94	2#12, #12G, 3/4"C	1.44	R	FLOOR RECEPTACLE-DINING	20	12
13	20	LIGHTING- HR,ADMIN,IT,SUPPLIES.HALLWAY,STAIR	L	0.50	2#12, #12G, 3/4"C	1.94			2#12, #12G, 3/4"C	1.44	R	FLOOR RECEPTACLE-DINING	20	14
15	20	RECEPTACLE-ADMIN,HR,IT	R	1.44	2#12, #12G, 3/4"C		2.16		2#12, #12G, 3/4"C	0.72	R	FLOOR RECEPTACLE-RETAIL STORES	20	16
17	20	RECEPTACLE-PATCH PANEL	R	0.72	2#12, #12G, 3/4"C			1.44	2#12, #12G, 3/4"C	0.72	R	FLOOR RECEPTACLE-OUTDOOR DINING	20	18
19	20	RECEPTACLE-STORAGE,SUPPLIES	R	0.72	2#12, #12G, 3/4"C	2.52			2#12, #12G, 3/4"C	1.80	R	RECEPTACLE FOR NEON SIGN_DINING AREA	20	20
21	20	RECEPTACLE-RR,HALL WAY	R	0.72	2#12, #12G, 3/4"C		2.52		2#12, #12G, 3/4"C	1.80	R	RECEPTACLE FOR NEON SIGN_REST ROOM	20	22
23	20	GENERAL RECEPTACLE-DINING	R	0.72	2#12, #12G, 3/4"C			2.52	2#12, #12G, 3/4"C	1.80	R	RECEPTACLE FOR NEON SIGN_REST ROOM	20	24
25	20	GENERAL RECEPTACLE-KITCHEN	R	0.72	2#12, #12G, 3/4"C	2.16			2#12, #12G, 3/4"C	1.44	R	TV UNIT-DINING AREA	20	26
27	20	SITE LIGHTING	L	1.00	2#12, #12G, 3/4"C		1.90		2#12, #12G, 3/4"C	0.90	R	RECEPTACLE ROOF	20	28
29	20	SIGNAGE	L	1.20	2#12, #12G, 3/4"C			2.28	2#12, #12G, 3/4"C	1.08	R	CEILING RECEPTACLE-DINING	20	30
31	20	SHOW WINDOW	R	1.40	2#12, #12G, 3/4"C	2.48			2#12, #12G, 3/4"C	1.08	R	CEILING RECEPTACLE-DINING	20	32
33	20	SHOW WINDOW	R	1.40	2#12, #12G, 3/4"C		2.30		2#12, #12G, 3/4"C	0.90	R	CEILING RECEPTACLE-DINING	20	34
35	20	HOOD LIGHTING	L	0.50	2#12, #12G, 3/4"C			1.04	2#12, #12G, 3/4"C	0.54	R	RECEPTACLE FOR NEON SIGN_SECOND FLOOR	20	36
37	20	CEILING MOUNTED INFRARED LAMP_#B04	L	1.00	2#12, #12G, 3/4"C	1.50			2#12, #12G, 3/4"C	0.50	L	LIGHTING EXTERIOR	20	38
39	20	POS SYSTEM_#H14	R	0.72	2#12, #12G, 3/4"C		1.62		2#12, #12G, 3/4"C	0.90	R	RECEPTACLE KITCHEN	20	40
41	20	TICKET PRINTER_#H15	R	0.72	2#12, #12G, 3/4"C			0.72				SPARE	20	42
TOTAL CONNECTED LOAD (KVA)						13.10	13.44	10.94						

PANEL:	A(N)					MOUNTING:	RECESSED
208Y/120	VOLTS,	3	PHASE,	4	WIRE	PANEL LOCATION:	LEVEL-02 HALLWAY
MAIN CB	NA	MLO:	200A	BUS:	225A MIN,	FED FROM:	PANEL "MDP"

NOTE: L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20	SPARE				1.50			2#12, #12G, 3/4"C	1.50	E	BAR BLENDER WITH SOUND ENCLOSURE_#H12	20	2
3	20	SPARE					1.50		2#12, #12G, 3/4"C	1.50	E	BAR BLENDER WITH SOUND ENCLOSURE_#H12	20	4
5	20	REACH IN FREEZER_#B01	E	0.31	2#12, #12G, 3/4"C			1.81	2#12, #12G, 3/4"C	1.50	E	BAR BLENDER WITH SOUND ENCLOSURE_#H12	20	6
7	20-2P	MODULAR ICE CUBER MAKER_#A6	E	1.12	2#12, #12G, 3/4"C	2.62			2#12, #12G, 3/4"C	1.50	E	BAR BLENDER WITH SOUND ENCLOSURE_#H12	20	8
9			E	1.12			1.81		2#12, #12G, 3/4"C	0.69	E	SLUSH MACHINE_#H17	20	10
11	20	FOOD DISPOSER_#J12	E	1.33	2#12, #12G, 3/4"C			1.64	2#12, #12G, 3/4"C	0.31	E	BACKBAR REFRIGERATOR_#H13	20	12
13	30	ELECTRIC BAIN MARIE CABINET 4 SECTIONS_#B5	E	2.00	2#10, #12G, 3/4"C	2.31			2#12, #12G, 3/4"C	0.31	E	BACKBAR REFRIGERATOR_#H13	20	14
15	20	HOOD CONTROL PANEL/FIRE SUPRESSESION SYSTEM_#B9	E	0.50	2#12, #12G, 3/4"C		0.81		2#12, #12G, 3/4"C	0.31	E	BACKBAR REFRIGERATOR_#H13	20	16
17	20	72" CHAF REFRIGERATED BASE_#B14	E	1.14	2#12, #12G, 3/4"C			1.51	2#12, #12G, 3/4"C	0.37	E	GNERAL PERPOSE RECEPTACLE	20	18
19	20	72" CHAF REFRIGERATED BASE_#B37	E	1.14	2#12, #12G, 3/4"C	2.21			2#12, #12G, 3/4"C	1.07	E	COMMERCIAL NESPRESSO COFFEE MAKER_#H18	20-2P	20
21	20	SANDWICH & SALAD PREP REFRIGERATOR BASE_#B16	E	0.67	2#12, #12G, 3/4"C		1.74			1.07	E			22
23	20	SANDWICH & SALAD PREP REFRIGERATOR BASE_#B16	E	0.35	2#12, #12G, 3/4"C			3.52	2#8, #10G, 3/4"C	3.17	E	DISHWAHER_#H19	40-2P	24
25	20	WORK TOP REFRIGERATOR BASE_#C3	E	0.35	2#12, #12G, 3/4"C	3.52				3.17	E			26
27	20	REACH IN REFRIGERATOR_#B19	E	0.25	2#12, #12G, 3/4"C		0.25					SPARE	20	28
29	20	REACH IN REFRIGERATOR_#I1	E	0.25	2#12, #12G, 3/4"C			0.25				SPARE	20	30
31	20	TICKET PRINTER_#B23	E	0.36	2#12, #12G, 3/4"C	1.28			2#12, #12G, 3/4"C	0.92	E	SINGLE DECK GAS CONVECTION OVEN_#B39	20	32
33	20	48" HEAT STRIP LAMP_#B26	E	1.10	2#12, #12G, 3/4"C		4.22		2#8, #10G, 3/4"C	3.12	E	ELECTRIC CONVEYOR OVEN TABLE TOP_#B38	40-2P	34
35	20	48" HEAT STRIP LAMP_#B26	E	1.10	2#12, #12G, 3/4"C			4.22		3.12	E			36
37	20	48" HEAT STRIP LAMP_#B26	E	1.10	2#12, #12G, 3/4"C	1.55			2#12, #12G, 3/4"C	0.44	E	REACH IN FREEZER_#I2	20	38
39	20	48" HEAT STRIP LAMP_#B26	E	1.10	2#12, #12G, 3/4"C		2.21		2#12, #12G, 3/4"C	1.10	E	48" HEAT STRIP LAMP_#B26	20	40
41	20	ELECTRIC BAIN MARIE CABINET 4 SECTIONS_#B31	E	1.00	2#12, #12G, 3/4"C			4.17	2#8, #10G, 3/4"C	3.17	E	DISHWAHER_#H19	40-2P	42
43	20	SLUSH MACHINE_#H17	E	0.69	2#12, #12G, 3/4"C	3.86				3.17	E			44
45	20	SLUSH MACHINE_#H17	E	0.69	2#12, #12G, 3/4"C		1.19		2#12, #12G, 3/4"C	0.50	E	HOOD CONTROL PANEL/FIRE SUPRESSESION SYSTEM_#I21	20	46
47	20	SLUSH MACHINE_#H17	E	0.69	2#12, #12G, 3/4"C			1.36	2#12, #12G, 3/4"C	0.67	E	SANDWICH & SALAD PREP REFRIGERATOR BASE_#B16	20	48
49	20	SLUSH MACHINE_#H17	E	0.69	2#12, #12G, 3/4"C	1.36			2#12, #12G, 3/4"C	0.67	E	SANDWICH & SALAD PREP REFRIGERATOR BASE_#B16	20	50
51	20	SLUSH MACHINE_#H17	E	0.69	2#12, #12G, 3/4"C		0.69					SPARE	20	52
53	20	REACH IN REFRIGERATOR_#B19	E	0.25	2#12, #12G, 3/4"C			0.25				SPARE	20	54
TOTAL CONNECTED LOAD (KVA)						20.21	14.43	18.73						

PANEL:	B(N)					MOUNTING:	RECESSED
208Y/120	VOLTS,	3	PHASE,	4	WIRE	PANEL LOCATION:	LEVEL-02 HALLWAY
MAIN CB	NA	MLO:	200A	BUS:	225A MIN,	FED FROM:	PANEL "MDP"

NOTE: L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20-3P	WALK-IN FREEZER CONDENSER_#E4	O	1.80	3#12, #12G, 3/4"C	3.36			2#12, #12G, 3/4"C	1.56	O	WALK IN COOLER EVAPORATOR_#E5	20-2P	2
3			O	1.80			3.36			1.56	O			4
5			O	1.80				3.60		1.80	O	WALK-IN COOLER CONDENSER_#E5	20-3P	6
7	20-2P	WALK IN FREEZER EVAPORATOR_#E4	O	1.56	2#12, #12G, 3/4"C	3.36			3#12, #12G, 3/4"C	1.80	O			8
9			O	1.56			3.36			1.80	O			10
11	20	WATER HEATER-1	O	0.60	2#12, #12G, 3/4"C			1.20	2#12, #12G, 3/4"C	0.60	O	WATER HEATER-4	20	12
13	20	WATER HEATER-2	O	0.60	2#12, #12G, 3/4"C	1.20			2#12, #12G, 3/4"C	0.60	O	WATER HEATER-5	20	14
15	20	WATER HEATER-3	O	0.60	2#12, #12G, 3/4"C		1.20		2#12, #12G, 3/4"C	0.60	O	WATER HEATER-6	20	16
17	20-3P	WALK-IN COOLER CONDENSER_#E1	O	1.80	3#12, #12G, 3/4"C			3.36	2#12, #12G, 3/4"C	1.56	O	WALK IN COOLER EVAPORATOR_#E3	20-2P	18
19			O	1.80		3.36				1.56	O			20
21			O	1.80			3.60		3#12, #12G, 3/4"C	1.80	O	WALK-IN COOLER CONDENSER_#E3	20-3P	22
23	20-2P	WALK IN COOLER EVAPORATOR_#E1	O	1.56	2#12, #12G, 3/4"C			3.36		1.80	O			24
25			O	1.56		3.36				1.80	O			26
27	20	FACP PANEL	O	0.50	2#12, #12G, 3/4"C		3.00		3#8, #10G, 3/4"C	2.50	O	UPS PANEL	50-2P	28
29	20	OVEN KEF	M	0.10	2#12, #12G, 3/4"C			2.60		2.50	O			30
31	20	DWEF-1	M	0.10	2#12, #12G, 3/4"C	1.10			2#12, #12G, 3/4"C	1.00	O	HAND DRYER_MENS REST ROOM	20	32
33	20	EF-1,EF-2	M	0.10	2#12, #12G, 3/4"C		1.10		2#12, #12G, 3/4"C	1.00	O	HAND DRYER_WOMENS REST ROOM	20	34
35	20	EF-3	M	0.10	2#12, #12G, 3/4"C			1.10	2#12, #12G, 3/4"C	1.00	O	HAND DRYER_MENS REST ROOM	20	36
37	20	SORBETEER	E	1.84	2#12, #12G, 3/4"C	2.84			2#12, #12G, 3/4"C	1.00	O	HAND DRYER_WOMENS REST ROOM	20	38
39	20-3P	WALK-IN COOLER CONDENSER_#A1	O	1.80	3#12, #12G, 3/4"C		2.16		2#12, #12G, 3/4"C	0.36	R	RECEPTACLE MIRROE LIGHT	20	40
41			O	1.80				1.98	2#12, #12G, 3/4"C	0.18	R	SERVICE RECEPTACLE RESTROOM	20	42
43			O	1.80		2.30			2#12, #12G, 3/4"C	0.50	H	MOTORIZED DAMPER	20	44
45	20-2P	WALK IN COOLER EVAPORATOR_#A1	O	1.56	2#12, #12G, 3/4"C		2.06		2#12, #12G, 3/4"C	0.50	O	TIME CLOCK	20	46
47			O	1.56				1.56				SPARE	20	48
49	20	SPARE				0.00						SPARE	20	50
51	20	SPARE					0.00					SPARE	20	52
53	20	SPARE						0.00				SPARE	20	54
TOTAL CONNECTED LOAD (KVA)						20.89	19.85	18.77						

PANEL SCHEDULE GENERAL NOTES:

1. ALL CIRCUITING SHOWN IS FOR REFERENCE PURPOSE ONLY.
2. ELECTRICAL CONTRACTOR TO VERIFY THE EXACT PANEL SIZES AND INCOMING FEEDER SIZE.
3. E.C. SHALL VERIFY THE EQUIPMENT LOAD & RATINGS IN FIELD AND ACCORDINGLY CONSIDER THE ELECTRICAL LOAD IN PANEL BOARD SCHEDULE.

ITEM NO.	DESCRIPTION	VOLTAGE	PHASE	AMPS	kW	ROUGH-IN @
A1	WALK IN COOLER(CONDENSER)	208	3	15	5.40	VERIFY WITH VENDOR
A1	WALK IN COOLER (EVAPORATOR)	208	1	15	3.12	VERIFY WITH VENDOR
A6	MODULAR ICE CUBER MAKER	208	1	10.8	2.25	24" AFF
B1	REACH IN FREEZER	115	1	3.7	0.43	18" AFF
B4	CEILING MOUNTED INFRARED LAMP	120	1	2.08	0.25	-
B5	ELECTRIC BAIN MARIE CABINET 4 SECTION	120	1	16.66	2.00	-
B9	FIRE SUPRESSION SYSTEM	120	1	5	0.60	-
B14	72" CHAF REFRIGERATED BASE	115	1	9.9	1.14	18" AFF
B16	SANDWICH AND SALAD PREP REFRIGERATOR BASE	115	1	5.8	0.67	-
B17	WORK TOP REFRIGERATOR BASE	115	1	3	0.35	18" AFF
B19	REACH IN REFRIGERATOR	115	1	2.2	0.25	18" AFF
B23	TICKET PRINTER	115	1	4	0.46	-
B26	48" HEAT STRIP LAMP	120	1	9.2	1.10	-
B31	ELECTRIC BAIN MARIE CABINET 4 SECTION	120	1	8.3	1.00	-
B37	72" CHAF REFRIGERATED BASE	115	1	9.9	1.14	18" AFF
B38	ELECTRIC CONVEYOR OVEN TABLE TOP	240	1	26	6.24	48" AFF
B39	SINGLE DECK GAS CONVECTION OVEN	120	1	7.7	0.92	24" AFF
C3	WORK TOP REFRIGERATOR BASE	115	1	3	0.35	18" AFF
E1	WALK IN COOLER(CONDENSER)	208	3	15	5.40	VERIFY WITH VENDOR
E1	WALK IN COOLER (EVAPORATOR)	208	1	15	3.12	VERIFY WITH VENDOR
E3	WALK IN COOLER 2ND LEVEL (CONDENSER)	208	3	15	5.40	VERIFY WITH VENDOR
E3	WALK IN COOLER 2ND LEVEL (EVAPORATOR)	208	1	15	3.12	VERIFY WITH VENDOR
E4	WALK IN FREEZER 2ND LEVEL (CONDENSER)	208	3	15	5.40	VERIFY WITH VENDOR
E4	WALK IN FREEZER 2ND LEVEL (EVAPORATOR)	208	1	15	3.12	VERIFY WITH VENDOR
E5	WALK IN COOLER 2ND LEVEL (CONDENSER)	208	3	15	5.40	VERIFY WITH VENDOR
E5	WALK IN COOLER 2ND LEVEL (EVAPORATOR)	208	1	15	3.12	VERIFY WITH VENDOR
H12	BAR BLENDER WITH SOUND ENCLOSURE	120	1	12.5	1.50	18" AFF
H13	BACK BAR REFRIGERATOR	115	1	2.7	0.31	18" AFF
H14	POS SYSTEM	115	1	4	0.46	-
H15	TICKET PRINTER	115	1	4	0.46	-
H17	SLUSH MACHINE	115	1	6	0.69	18" AFF
H18	COMMERCIAL ESPRESSO COFFEE MAKER	208	-	-	2.14	40" AFF
H19	UNDER COUNTER DISH & GLASS WASHER	208	1	30.5	6.34	18" AFF
I1	REACH IN REFRIGERATOR	115	1	2.2	0.25	18" AFF
I2	REACH IN FREEZER	115	1	3.7	0.43	18" AFF
I13	ELECTRIC COMBI OVEN	208	3	103.25	37.20	60" AFF
I16	FIRE SUPRESSION SYSTEM	120	1	5	0.60	-
J12	FOOD DISPOSER	115	1	11.6	1.33	18" AFF
J13	HOOD TYPE DISH WASHER	208	3	52.5	10.92	24" AFF

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No.	DESCRIPTION	DATE

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SCALE: AS NOTED

DATE: 11-15-2024

CONTENT

ELECTRICAL PANEL SCHEDULE

SHEET NUMBER:

E-401

PROJECT STATUS:

BINDING EDGE

BUILDING DATA													
PROJECT DESCRIPTION		BUILDING OCCUPANCY				BUILDING DESCRIPTION						FIRE ALARM SYSTEM FEATURES	
X	NEW BUILDING	X	ASSEMBLY GROUP A (A1,A2,A3,A4 AND A5)		RESIDENTIAL GROUP R2	2	TOTAL NUMBER OF LEVELS		ATRIUM		STAIR PRESSURIZATION		NON–VOICE EVACUATION
	FIRE ALARM SYSTEM UPGRADE		BUSINESS GROUP B		STORAGE GROUP S (S1 AND S2)	2	ABOVE GROUND LEVELS	FIRST FLOOR	FIRE DEPARTMENT ACCESS		POST FIRE SMOKE PURGE		VOICE EVACUATION
	LIFE SAFETY SYSTEM UPGRADE		EDUCATIONAL GROUP E		UTILITY AND MISCELLANEOUS GROUP U	0	BELOW GROUND LEVELS	X	FULLY SPRINKLERED		GENERATOR		PARTIAL/SELECTIVE EVACUATION
	RENOVATION		FACTORY INDUSTRIAL GROUP F (F1 AND F2)		OTHER:	0	NUMBER OF ELEVATOR BANKS		PARTIALLY SPRINKLERED		SPRINKLER BOOSTER PUMP	X	GENERAL EVACUATION
	EMERGENCY REPAIR		HIGH–HAZARD GROUP H (H1,H2,H3,H4 AND H5)			1	NUMBER OF EGRESS STAIRS		NON–SPRINKLERED		OTHER:		DIGITAL ALARM COMMUNICATOR
	TENANT ADDITION		INSTITUTIONAL GROUP I (I1,I2 AND I3)			X	LOW RISE BUILDING		PRE–ACTION SPRINKLER		OTHER:		PRE–SIGNAL SYSTEM
	OTHER:		MERCANTILE GROUP M			34'–1"	BUILDING HEIGHT						FIRE FIGHTER'S TELEPHONE SYSTEM

FIRE ALARM DRAWING LIST

FA–001 FIRE ALARM BUILDING DATA
FA–002 FIRE ALARM GENERAL NOTES.
FA–101 FIRST FLOOR FIRE ALARM PLAN.
FA–102 SECOND FLOOR FIRE ALARM PLAN.
FA–201 FIRE ALARM RISER DIAGRAM.

TYPE OF DESIGN

INSTALLATION OF ADDRESSABLE FIRE ALARM SYSTEM THROUGH MANUAL, AUTOMATIC SMOKE DETECTION.

FIRE ALARM NOTES:

1. ALL EQUIPMENT AND WIRING INDICATED ON THESE PLANS IS NEW (U.O.N.).
2. PROVIDE WIRING AS REQUIRED BETWEEN ALL DEVICES AND EQUIPMENT AS REQUIRED TO PERFORM FIRE ALARM SYSTEM FUNCTIONS.
3. WIRING FOR FIRE ALARM DEVICES IN FINISHED SPACES WITHOUT HUNG CEILING SHALL BE INSTALLED IN EMT CONDUIT.
4. FOR WALL MOUNTED F.A. DEVICES PROVIDE 3/4" CONDUIT TERMINATED IN NEAREST ACCESSIBLE CEILING.
5. WIRING FOR FIRE ALARM DEVICES IN UNFINISHED SPACES SHALL BE INSTALLED IN RGS CONDUIT UP TO 8'–0" AFF AND THEN IN EMT CONDUIT ABOVE 8'–0" AFF.
6. FOR LOCATIONS AND QUANTITIES OF DEVICES REFER TO FIRE ALARM FLOOR PLANS. WHERE THERE ARE DISCREPANCIES BETWEEN THE PLANS AND THE RISER DIAGRAM, THE GREATER QUANTITY SHALL BE USED.
7. CONTRACTOR SHALL VERIFY ALL WIRING WITH FIRE ALARM VENDOR AND OBTAIN WIRING DIAGRAMS BEFORE PROCEEDING WITH THE START OF ANY WORK.
8. ALL WIRING SHALL BE IN ACCORDANCE WITH THE FLORIDA ELECTRICAL CODE.
9. PROVIDE ALL REQUIRED EXPANSION PANELS, PC BOARDS, POWER SUPPLIES, BATTERIES, FUSE CUTOUTS AND BRANCH CIRCUITS, ETC, FOR A COMPLETE AND OPERATIONAL FIRE ALARM SYSTEM.
10. CONTRACTOR SHALL PERFORM ALL PHILADELPHIA BUILDING DEPT. FILINGS AND OBTAIN ALL APPROVALS. CONTRACTOR SHALL OBTAIN ALL REQUIRED SIGNED & SEALED PHILADELPHIA BUILDING DEPT. FORMS AND ALL REQUIRED SETS OF DRAWINGS FROM ENGINEER OF RECORD AND BUILDING DEPT. EXPEDITOR.
11. UPON COMPLETION OF INSTALLATION THE SYSTEM SHALL BE 100% PRE–TESTED BY THE FIRE ALARM VENDOR AND THE LICENSED ELECTRICAL CONTRACTOR PRIOR TO FDNY INSPECTION.
12. CONTRACTOR SHALL SUBMIT TO THE ENGINEER A MARKUP OF FA DRAWINGS INDICATING "AS–BUILT" CONDITIONS FOR ENGINEER'S REFERENCE. IN PREPARING "AS–BUILT" DRAWINGS FOR FILING, CONTRACTOR SHALL SIGN "AS–BUILT" STATING A FUNCTIONAL TEST HAS BEEN CONDUCTED OF THE FIRE ALARM SYSTEM AND THE SYSTEM OPERATES AS DESIGNED.

ABBREVIATIONS	
AFF	ABOVE FINISHED FLOOR
C	CONDUIT
E	EXISTING
ER	EXISTING TO BE RELOCATED
FA	FIRE ALARM
FCS	FIRE COMMAND STATION
FACP	FIRE ALARM CONTROL PANEL
FDS	FUSED DISCONNECT SWITCH
G	GROUND
N	NEW
NTS	NOT TO SCALE
R	REMOVE
RCU	REMOTE COMPUTER UNIT
RE	RELOCATED EXISTING
RP	RELOCATED POSITION
UON	UNLESS OTHERWISE NOTED
W	WIRE
LF	LOW FREQUENCY
CD	CANDELA

FIRE ALARM SYMBOL LIST	
SYMBOL	DESCRIPTION
FACP	FIRE ALARM CONTROL PANEL
RAP	REMOTE ANNUNCIATOR PANEL
S	CEILING MOUNTED AREA SMOKE DETECTOR
F	FIRE ALARM MANUAL PULL STATION, WALL MOUNTED (48" AFF)
H	FIRE ALARM SYSTEM STROBE/ HORN DEVICE WALL MOUNTED (80" AFF)
F	STROBE LIGHT WALL MOUNTED (80" AFF)
B	SOUNDER BASE & BEACON
K	KNOX BOX
TS	TAMPER SWITCH
WF	WATER FLOW SWITCH
MM	MONITOR MODULE
FSS	FIRE SUPPRESSION SYSTEM
R	FIRE ALARM RELAY

I/O MATRIX:

SYSTEM OUTPUTS / INDICATING/CONTROLLED DEVICES	CONTROL UNIT ANNUNCIATION						NOTIFICATION							REQUIRED FIRE SAFETY CONTROL (IF APPLICABLE)			
SYSTEM INPUTS / INITIATING DEVICES	ACTIVATE COMMON ALARM SIGNAL INDICATOR ON LCD OF FIRE ALARM CONTROL PANEL & OUTLYING ANNUNCIATORS	ACTIVATE COMMON SUPERVISORY SIGNAL INDICATOR ON LCD OF FIRE ALARM CONTROL PANEL & OUTLYING ANNUNCIATORS.	ACTIVATE COMMON TROUBLE SIGNAL INDICATOR ON LCD OF FIRE ALARM CONTROL PANEL & OUTLYING ANNUNCIATORS.	SOUND INTERNAL BUZZER AT FIRE ALARM CONTROL PANEL & OUTLYING ANNUNCIATORS.	TEXT MESSAGE DISPLAY DEVICE TYPE & LOCATION OF THE ACTIVATING DEVICES ON LCD OF FIRE ALARM CONTROL PANEL & OUTLYING ANNUNCIATORS.	ACTIVATE AUDIBLE SIGNAL DISPLAY "FLOOR WARDEN STATION" AT FIRE ALARM CONTROL PANEL.	ACTIVATE EVACUATION SIGNAL THROUGH HORNS AND FLASH THE STROBES ON ALARM FLOOR, FLOOR ABOVE & FLOOR BELOW.	TRANSMIT "MANUAL" ALARM SIGNAL TO FIRE DEPARTMENT VIA AN APPROVED CENTRAL STATION MONITORING COMPANY.	TRANSMIT "SMOKE/HEAT ALARM SIGNAL TO FIRE DEPARTMENT VIA AN APPROVED CENTRAL STATION MONITORING COMPANY.	TRANSMIT "WATERFLOW" ALARM SIGNAL TO FIRE DEPARTMENT VIA AN APPROVED CENTRAL STATION MONITORING COMPANY.	TRANSMIT "SUPERVISORY" ALARM SIGNAL TO FIRE DEPARTMENT VIA AN APPROVED CENTRAL STATION MONITORING COMPANY.	TRANSMIT "TROUBLE" ALARM SIGNAL TO FIRE DEPARTMENT VIA AN APPROVED CENTRAL STATION MONITORING COMPANY.	DURING PERIODS WHEN NOT USED BY THE PUBLIC AS AN ASSEMBLY OCCUPANCY, SOUND STANDARD ALARM SIGNAL AND FLASH ALL FIRE ALARM SIGNAL STROBES) THROUGHOUT THE COVERED AREA.	INITIATE THE AUTOMATIC FIRE MODE CONDITIONS FOR FAN (AC UNIT)OPERATION. PROCEED AC UNIT SHUTDOWN SEQUENCE.	RELEASE ALL ELECTRICALLY HELD OPEN FIRE & SMOKE DOORS.	RELEASE ALL ELECTRIC STRIKES ON STAIRWAY RE–ENTRY DOORS & ALL OTHER DOORS IN BUILDING IN THE PATHS OF EGRESS TO THE EXIT STAIRWAYS.	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
1 MANUAL PULL STATION	●			●	●		●	●					●		●	●	1
2 WATERFLOW SWITCH	●			●	●		●			●			●	●	●	●	2
3 DUCT SMOKE DETECTOR	●			●	●		●		●				●	●	●	●	3
4 AREA SMOKE DETECTOR	●			●	●		●		●				●	●	●	●	4
5 SPRINKLER CONTROL VALVE/TAMPER SWITCH		●		●	●						●						5
6 FIRE ALARM AC POWER FAILURE			●	●	●							●					6
7 FIRE ALARM SYSTEM LOW BATTERY			●	●	●							●					7
8 OPEN CIRCUIT			●	●	●							●					8
9 GROUND CIRCUIT			●	●	●							●					9
10 NOTIFICATION APPLIANCE CIRCUIT SHORT			●	●	●							●					10

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DATE: 11-15-2024

CONTENT

FIRE ALARM BUILDING DATA

SHEET NUMBER:

FA-001

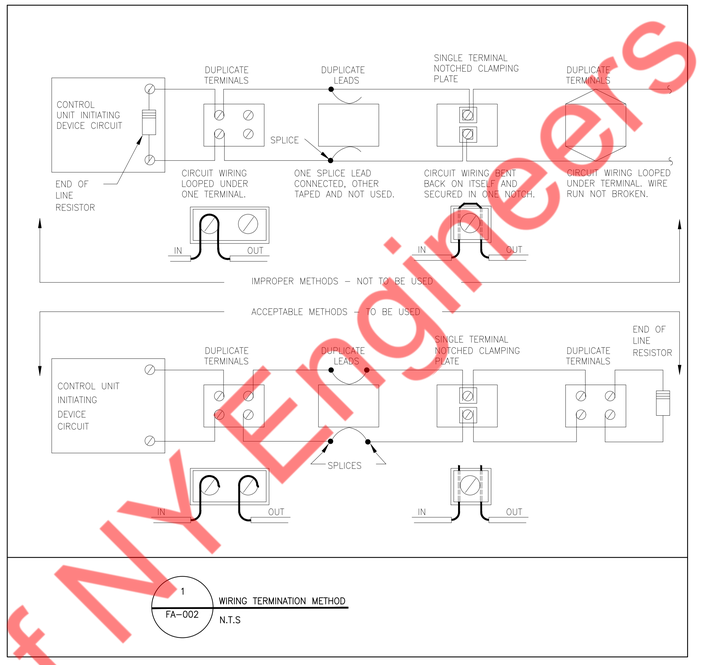
PROJECT STATUS:

BINDING EDGE

FIRE ALARM SYSTEM GENERAL NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE FLORIDA BUILDING CODE AND IN ACCORDANCE WITH APPENDIX Q AND 2019 NFPA 72 AS AMENDED BY APPENDIX Q.
2. ALL FIRE ALARM DEVICE SHALL BE LOCAL AHJ APPORVED.
3. ALL FIRE ALARM CIRCUITS SHALL BE SIZED TO A MAXIMUM OF 80% OF CAPACITY.
4. CONDUITS MAY NOT ENTER THE TOP OF ANY FIRE ALARM EQUIPMENT CABINET.
5. ALL FIRE ALARM EQUIPMENT SHALL BE INSTALLED WITH AESTHETICS IN MIND. CABINETS SHALL BE SEMI FLUSH MOUNTED AND CABLE TRAYS SHALL BE HIDDEN.
6. ALL FIRE ALARM CABINETS AND JUNCTION BOXES SHALL BE PAINTED FIRE DEPARTMENT RED. ALL FIRE ALARM CABINETS SHALL BE CLEARLY LABELED WITH A APPROVED LAMINATE ENGRAVED LABEL.
7. ALL FIRE ALARM WIRE SHALL BE CLEARLY LABELED IN JUNCTION BOXES AND CABINETS. ALL TERMINALS SHALL BE NUMBERED AND LABELED. ALL CONNECTIONS SHALL BE EITHER SOLDERED, APPROVED TERMINAL STRIPS OR SCOTCH LOCKS.
8. ALL LOW VOLTAGE FIRE ALARM CONDUCTORS SHALL BE PROTECTED BY EITHER BUILDING CONSTRUCTION OR CONDUIT TO 8 FEET ABOVE THE FINISHED FLOOR. LOADING DOCKS, GARAGES, SUPPRESSION AND EXTINGUISHING SYSTEM WIRING, MECHANICAL AND ELECTRICAL ROOMS AND OTHER LOCATIONS SUBJECT TO MECHANICAL DAMAGE SHALL BE IN FULL RIGID CONDUIT. IN ALL OTHER AREAS, APPROVED WIRE MAY BE RUN WITHOUT CONDUIT ABOVE 8 FT.
9. FIRE ALARM CABLES SHALL NOT BE MIXED WITH NON FIRE ALARM CABLING. LOW VOLTAGE FIRE ALARM CABLING SHALL NOT BE MIXED OR WIRED NEAR ANY AC CIRCUIT.
10. POLARITY SHALL BE OBSERVED ON ALL CIRCUITS. T–TAPPING SHALL NOT BE ALLOWED ON ANY NOTIFICATION CIRCUITS (HORN, STROBE OR SPEAKER). T–TAPPING SHALL NOT BE PERMITTED ON ADDRESSABLE CIRCUITS WITHOUT THE EXPRESS PERMISSION OF THE ENGINEER. DO NOT SPLICE FA CONNECTIONS.
11. ALL WIRING SHALL BE INSPECTED TO ASSURE THERE ARE NO OPENS, SHORTS OR EARTH GROUNDS.
12. SHIELDED CONDUCTORS OR RUNNING IN SEPARATE RACEWAY SHALL BE AS INSTRUCTED BY THE FIRE ALARM MANUFACTURER'S DOCUMENTATION. ALL NON–POWER LIMITED WIRING, INCLUDING CIRCUITS FOR CENTRALIZED AMPLIFIERS SHALL BE RUN IN A SEPARATE RACEWAY (NOTE: CENTRALIZED AMPLIFIERS "AMP RACKS" ARE NOT PERMITTED ON NEW SYSTEMS).
13. FIRE ALARM EQUIPMENT SHALL BE POWERED THROUGH AN APPROVED FUSE DISCONNECT SWITCH (FDS) CONNECTED AHEAD OF THE MAIN SERVICE SWITCH. THE FDS SHALL BE HEAVY DUTY (200,000 RMS SHORT CIRCUIT AMPS) SAFETY SWITCH @30 AMPS MINIMUM, PAINTED RED, INCLUDE A GROUND AND NEUTRAL KIT WITH GROUNDING SCREW (TO BOND NEUTRAL). ALL WIRING SHALL BE #10 MINIMUM THHN OR EQUIVALENT RUN IN ¾ INCH EMT/RGS AND IN ACCORDANCE WITH CITY REQUIREMENTS. THE GROUND WIRE TO THE FDS SHALL BE #8 MINIMUM (LARGER IF NECESSARY TO MEET FEED SIZE). THE EQUIPMENT GROUND LEAVING FROM THE FDS CONNECTING TO THE FIRE ALARM EQUIPMENT SHALL INCLUDE A #10 GREEN GROUND. THE FDS PANEL SHALL BEAR AN ENGRAVED WHITE–CORE PHENOLIC OR BAKELITE IDENTIFICATION NAMEPLATE STATING IN MINIMUM ONE–QUARTER INCH (1/4') HIGH WHITE LETTERS ON A RED BACKGROUND "FIRE ALARM FUSED DISCONNECT".
14. WHERE ADDITIONAL CIRCUITS ARE REQUIRED BY THE FIRE ALARM SYSTEM, A FUSED CUTOUT, PROPERLY SIZED SHALL BE INCLUDED, WIRED AFTER THE FDS. THE SIZE OF THE FUSES SHALL BE SIZED APPROPRIATELY BUT BE TWENTY (20) AMPERES MINIMUM AND EACH CIRCUIT SHALL ONLY FEED ONE "INDIVIDUAL" FIRE ALARM SYSTEM COMPONENT. THE FUSED CUT–OUT PANEL SHALL BEAR AN ENGRAVED WHITE–CORE PHENOLIC OR BAKELITE IDENTIFICATION NAMEPLATE STATING IN MINIMUM ONE–QUARTER INCH (1/4') HIGH WHITE LETTERS ON A RED BACKGROUND "FIRE ALARM FUSED CUT–OUT". THE NEUTRAL SHALL NOT BE BONDED IN THE FUSED CUTOUT.
15. A CENTRAL STATION DIALER AND TWO DEDICATED PHONE LINES SHALL BE PROVIDED INTEGRAL TO THE FIRE ALARM CONTROL PANEL. THE DIALER SHALL BE CAPABLE OF SENDING THE FOLLOWING EVENTS: ALARM, MANUAL STATION, WATERFLOW, SUPERVISORY, CARBON MONOXIDE, TROUBLE, PUMP RUNNING AND PUMP TROUBLE.
16. ALL AREA DETECTORS SHALL BE PHOTO–ELECTRIC TYPE.
17. SMOKE DETECTORS MUST BE MOUNTED AT LEAST 3 FT AWAY FROM ANY AIR REGISTER.
18. ALL CEILING MOUNT DEVICES MUST BE SECURELY FASTENED TO BUILDING CONSTRUCTION.
19. DEVICE LOCATIONS MUST BE READILY ACCESSIBLE TO ALLOW FOR MAINTENANCE AND REPAIR.
20. MANUAL STATIONS SHALL BE MOUNTED 48 INCHES ABOVE THE FINISHED FLOOR TO THE HANDLE OF THE STATION AND SHALL BE PAINTED FIRE DEPARTMENT RED. ALL MANUAL STATION SHALL BE INSTALLED SO THAT THEY ARE KEPT UN–OBSTRUCTED AT ALL TIMES.
21. ALL AUXILIARY RELAYS FOR FAN SHUTDOWN, DOOR RELEASE, DAMPER CONTROL, ELEVATOR CONTROL, ETC SHALL BE WIRED A MAXIMUM OF 3 FT FROM THE CONTROLLED DEVICE. THE AUXILIARY RELAY SHALL FUNCTION WITHIN THE REQUIRED VOLTAGE AND CURRENT OF THE CONTROLLED DEVICE. SLAVE OR INTERPOSING RELAYS SHALL BE INCLUDED AND POWERED BY THE FIRE ALARM CONTROL PANEL IN A FAIL–SAFE (FIRE FUNCTION) POSITION. POWER TO THE INTERPOSING RELAY SHALL BE MONITORED BY THE FIRE ALARM SYSTEM.
22. THE FLORIDA FIRE DEPARTMENT SHALL APPROVE THE PLANS PRIOR TO THE BEGINNING OF ANY WORK.
23. LOCATIONS OF ALL FIRE ALARM EQUIPMENT SHALL BE SUBJECT TO THE PHILADELPHIA DEPARTMENT OF BUILDINGS AND FIRE DEPARTMENT APPROVAL. NO CHANGE OR MODIFICATION TO THE SYSTEM OR PLANS SHALL BE PERMITTED WITHOUT WRITTEN APPROVAL FROM THE ENGINEER OF RECORD. IF ANY CHANGES ARE MADE TO THE DRAWINGS PRIOR TO OR DURING INSTALLATION, AS BUILT PLANS SHALL BE PREPARED BY THE ENGINEER AND FILED WITH THE APPROPRIATE CITY AGENCIES FOR FINAL ACCEPTANCE.
24. ALL REMOTE FIRE ALARM CONTROL CABINETS (DATA GATHERING PANELS, TTBS ETC) SHALL INCLUDE AN INTERNAL TAMPER SWITCH. EACH SHALL ALSO INCLUDE A SMOKE DETECTOR MOUNTED ON THE CEILING DIRECTLY ABOVE IT SHOULD ONE OR MORE NOT ALREADY BE SHOWN ON THE PLANS IN THE ROOM THE PANEL IS MOUNTED IN.
25. WIRING FOR FIRE ALARM DEVICES IN FINISHED SPACES WITHOUT HUNG CEILING SHALL BE INSTALLED IN EMT CONDUIT.
26. WIRING FOR FIRE ALARM DEVICES IN UNFINISHED SPACES SHALL BE INSTALLED IN RGS CONDUIT UP TO 8'–0" AFF AND THEN IN EMT CONDUIT ABOVE 8'–0" AFF.
27. FOR LOCATIONS AND QUANTITIES OF DEVICES REFER TO FIRE ALARM FLOOR PLANS. WHERE THERE ARE DISCREPANCIES BETWEEN THE PLANS AND THE RISER DIAGRAM, THE GREATER QUANTITY SHALL BE USED.
28. DO NOT SPLICE FIRE ALARM CONDUCTORS.
29. PROVIDE ALL REQUIRED EXPANSION PANELS, PC BOARDS, POWER SUPPLIES, BATTERIES, FUSED DISCONNECT SWITCHES, FUSE CUTOUTS AND BRANCH CIRCUITS, ETC., FOR A COMPLETE AND OPERATIONAL FIRE ALARM SYSTEM.
30. CONTRACTOR SHALL PERFORM ALL FLORIDA BUILDING DEPT. FILINGS AND OBTAIN ALL APPROVALS. CONTRACTOR SHALL OBTAIN ALL REQUIRED SIGNED & SEALED CITY OF FLORIDA BUILDING DEPT. FORMS AND ALL REQUIRED SETS OF DRAWINGS FROM ENGINEER OF RECORD AND BUILDING DEPT. EXPEDITOR.
31. CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE FIRE ALARM MATRIX AND AN "AS–BUILT" RISER DIAGRAM ON 11"X17" SHEET SIGNED & SEALED BY THE LICENSED ELECTRICIAN OR FIRE ALARM VENDOR STATING THAT THE FIRE ALARM SYSTEM HAS BEEN TESTED AND IS OPERATING IN ACCORDANCE WITH THE SEQUENCE OF OPERATION.
32. ALL COMPONENTS REQUIRED TO MAKE SYSTEM WORKABLE SHALL BE INCLUDED IN BID PRICE.
33. FOR WALL MOUNTED F.A. DEVICES PROVIDE 3/4" CONDUIT TERMINATED IN NEAREST ACCESSIBLE CEILING.
34. ALL FIRE ALARM WIRING SHALL BE TEFLON "RED". WIRING INSTALLED IN NON ACCESSIBLE CEILING, EXPOSED BELOW 8' OR IN MECHANICAL ROOM AREA (NO CEILING) ROUTE IN CONDUIT.
35. COORDINATE FINAL MEANS AND METHODS, AND SCOPE OF WORK WITH THE ARCHITECTURAL, MECHANICAL AND PLUMBING DRAWINGS. BASE BID ACCORDINGLY.
36. CONTRACTOR SHALL FURNISH AND INSTALL ALL ROUGH–IN EQUIPMENT AND APPURTENANCES PER THE FLORIDA ELECTRICAL CODE AS REQUIRED.
37. COORDINATE ALL WORK WITH ALL INVOLVED TRADE CONTRACTORS, EQUIPMENT VENDORS, UTILITIES AND THE OWNER AS REQUIRED. CONTRACTOR SHALL BASE HIS BID ACCORDINGLY.
38. FINAL CONDUIT/CABLE ROUTING SHALL BE DETERMINED IN–FIELD, AND PRIOR TO THE COMMENCEMENT OF WORK, COORDINATED WITH OTHER TRADE CONTRACTORS AND THE OWNER.
39. ALL EQUIPMENT SHALL BE INSTALLED AS PER MANUFACTURER'S INSTRUCTIONS.
40. REFER TO DWG. FA–001 FOR FIRE ALARM NOTES, SYMBOL LIST, ABBREVIATIONS AND FIRE ALARM RISER DIAGRAM.
41. ALL FIRE ALARM DEVICES ARE NEW, U.O.N.

FIRE ALARM DETAILS:



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Señor Frog's FUN, FOOD & CLOTHES

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DATE: 11-15-2024

CONTENT

FIRE ALARM GENERAL NOTES

SHEET NUMBER:

FA-002

PROJECT STATUS:

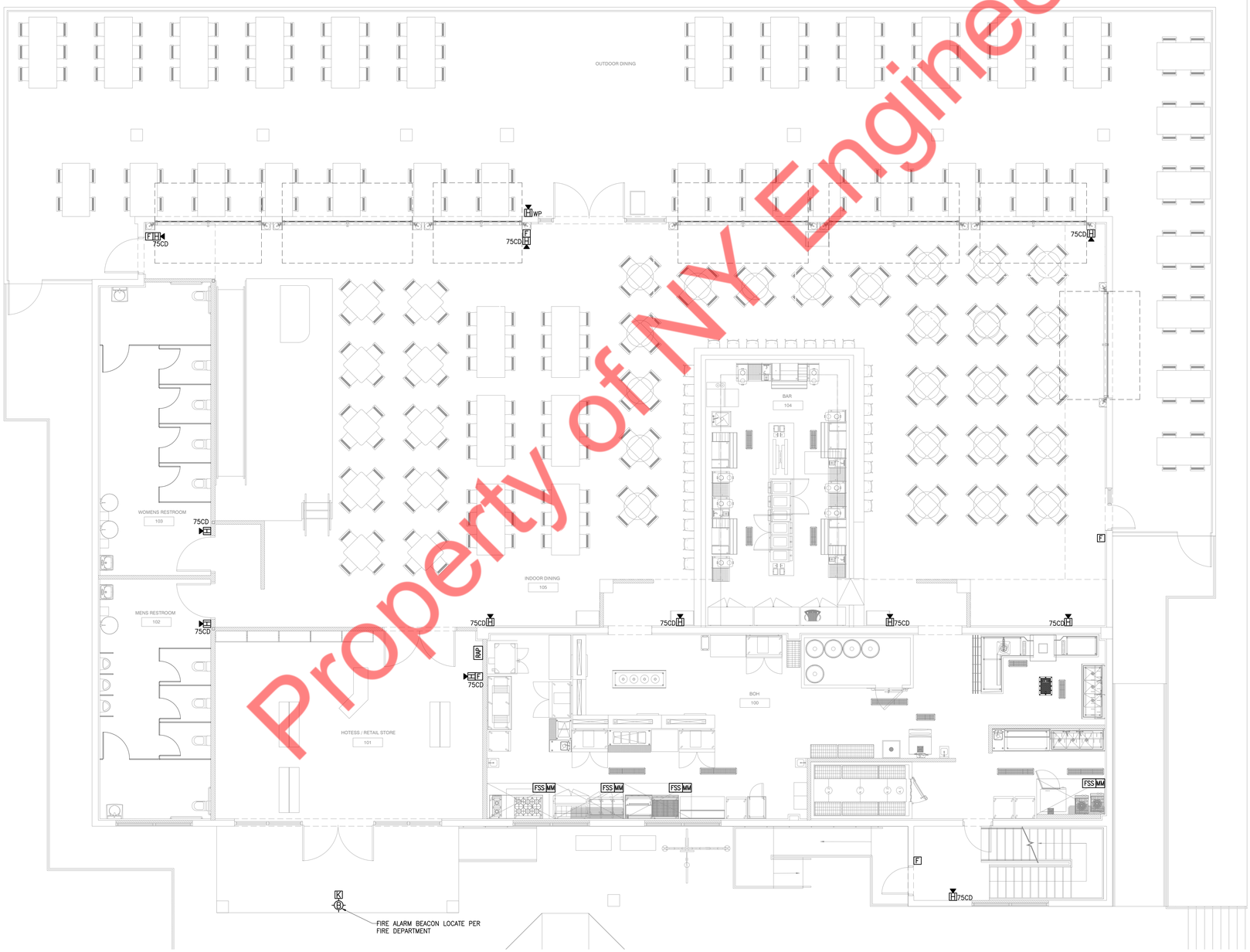
BINDING EDGE

LOW VOLTAGE PLAN KEYED WORK NOTES:

A. REFER TO DWG. FA-001 FOR FIRE ALARM NOTES, SYMBOL LIST, ABBREVIATIONS AND FA-201 FOR FIRE ALARM RISER DIAGRAM.

B. FINAL CONDUIT/CABLE ROUTING SHALL BE DETERMINED IN-FIELD, AND PRIOR TO THE COMMENCEMENT OF WORK, COORDINATED WITH OTHER TRADE CONTRACTORS AND THE OWNER.

C. ALL AUDIBLE FIRE ALARM SYSTEM APPLIANCES IN SLEEPING AREAS SHALL PRODUCE A LOW FREQUENCY ALARM SIGNAL THAT IS A SQUARE WAVE (OR PROVIDE EQUIVALENT AWAKENING CAPABILITY.) WITH A FUNDAMENTAL FREQUENCY OF 520 HZ +/-10%.



N

1 GROUND FLOOR FIRE ALARM PLAN
SCALE: 3 / 16" = 1' - 0

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GROUND FLOOR FIRE ALARM PLAN

SHEET NUMBER:

FA-101

PROJECT STATUS:

BINDING EDGE

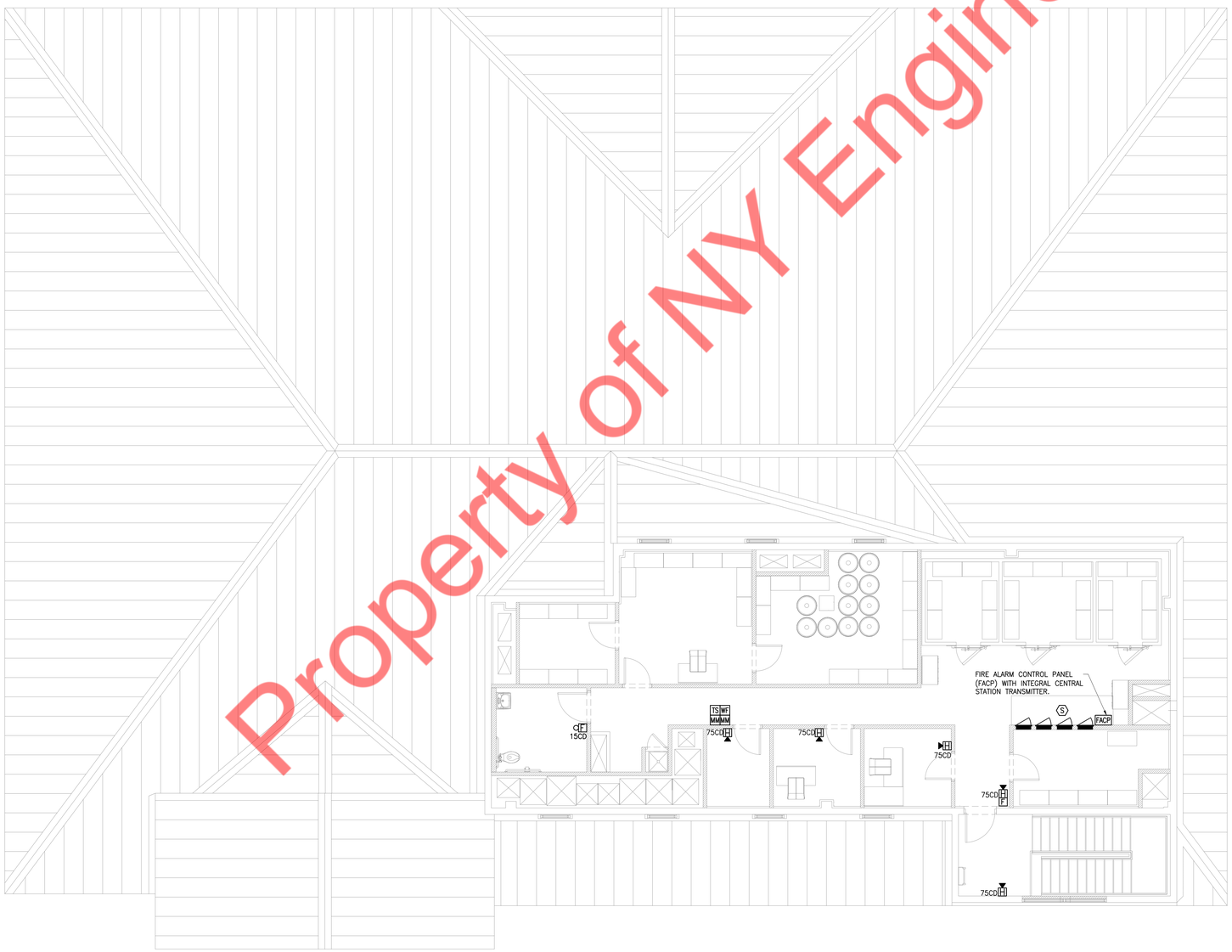
FIRE ALARM PLAN GENERAL NOTES:

A. REFER TO DWG. FA-001 FOR FIRE ALARM NOTES, SYMBOL LIST, ABBREVIATIONS AND FA-201 FOR FIRE ALARM RISER DIAGRAM.

B. FINAL CONDUIT/CABLE ROUTING SHALL BE DETERMINED IN-FIELD, AND PRIOR TO THE COMMENCEMENT OF WORK, COORDINATED WITH OTHER TRADE CONTRACTORS AND THE OWNER.

C. ALL TENANT APARTMENTS SHALL BE PRE-WIRED TO ACCOMMODATE STROBE LIGHTS TO BE INSTALLED IN EVERY BEDROOM & LIVING ROOM.

D. ALL AUDIBLE FIRE ALARM SYSTEM APPLIANCES IN SLEEPING AREAS SHALL PRODUCE A LOW FREQUENCY ALARM SIGNAL THAT IS A SQUARE WAVE (OR PROVIDE EQUIVALENT AWAKENING CAPABILITY.) WITH A FUNDAMENTAL FREQUENCY OF 520 HZ +/-10%.



N

1 LEVEL 02 FIRE ALARM PLAN
SCALE: 3 / 16" = 1' - 0

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CONTENT

LEVEL 02
FIRE ALARM PLAN

SHEET NUMBER:

FA-102

PROJECT STATUS:

BINDING EDGE

FIRE ALARM RISER NOTES:

1. ALL COMPONENTS REQUIRED TO MAKE SYSTEM WORKABLE SHALL BE INCLUDED IN BID PRICE.
2. EACH FA RELAY SHALL HAVE MINIMUM OF THREE SETS OF 2 CONTACT 10A RATED @ 120V (TYPICAL).
3. FOR WALL MOUNTED F.A. DEVICES PROVIDE 3/4" CONDUIT TERMINATED IN NEAREST ACCESSIBLE CEILING.
4. ALL FIRE ALARM WIRING SHALL BE INSTALLED IN CONDUIT WHERE REQUIRED BY PENNSYLVANIA ELECTRICAL CODE.
5. THIS RISER DIAGRAM IS A SCHEMATIC REPRESENTATION OF THE FIRE ALARM SYSTEM. REFER TO FLOOR PLANS FOR EXACT QUANTITY OF DEVICES.
6. ALL FIRE ALARM CONDUITS SHALL BE MINIMUM ¾".

FIRE ALARM KEYED WORK NOTE:

1. THE FIRE ALARM CONTROL PANEL CABINET SHALL BE GROUNDED SECURELY TO EITHER A COLD WATER PIPE OR A GROUNDING ROD.
2. THE CIRCUIT BREAKER FEEDING THE FACP SHALL BE IDENTIFIED RED WITH CIRCUIT BREAKER LOCK INSTALLED.
3. PROVIDE REMOTE ANNUNCIATOR PANEL. COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER PRIOR TO ROUGH.
4. FIRE ALARM CONTROL PANEL. CONTRACTOR SHALL COORDINATE WITH BASE BUILDING/OWNER FOR MORE DETAILS.

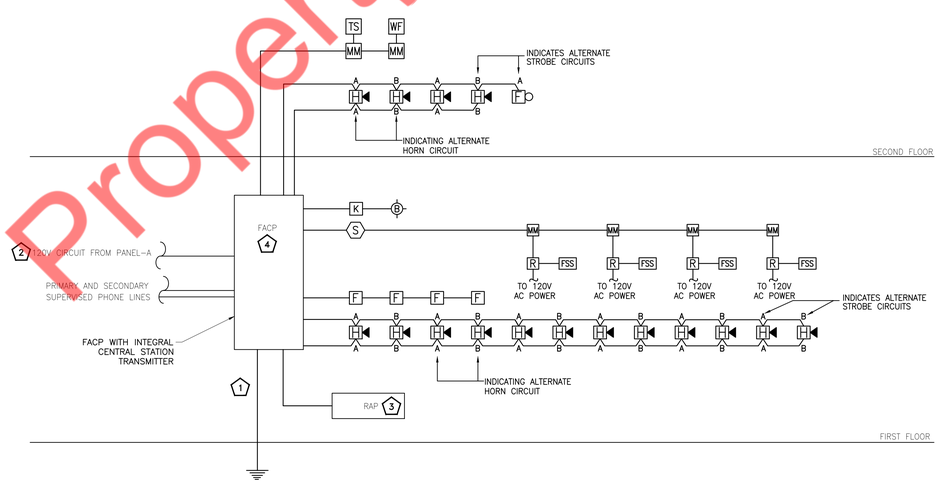
FIRE ALARM DESIGN CRITERIA:

FURNISH AND INSTALL FIRE ALARM CONTROL SYSTEM THAT CAN DO THE FOLLOWING:

- DETECT FIRE, SMOKE, AND WATER FLOW
- INITIATING AN ALARM OF FIRE
- INITIATING OTHER ACTION AS ARRANGED

FIRE ALARM CIRCUITS SHALL CONSIST OF VISUAL AND/OR AUDIBLE WARNING. UPON ACTIVATION, SYSTEM SHALL DEACTIVATE DESIGNATED KITCHEN EQUIPMENT AND SEND SIGNAL TO EACH LIGHTING CONTROL UNIT. SYSTEM SHALL ALSO INCLUDE MANUAL ACTIVATION.

SYSTEM SHALL BE ABLE TO TRANSMIT REQUIRE DATA TO LOCAL FIRE DEPARTMENT AND SHALL FUNCTION IN OVERRIDE MANUAL MODE BY OFFICIALS FOR MANDATORY ROUTINE INSPECTION.



N

1 FIRE ALARM RISER
SCALE: 3 / 16" = 1' - 0

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CONTENT

FIRE ALARM RISER

SHEET NUMBER:

FA-201

PROJECT STATUS:

BINDING EDGE

SCOPE OF WORK

PROVIDE ALL PLUMBING FOR NEW RESTAURANT INCLUDING ALL WATER, GREASE, SANITARY AND VENT LINE AND CONNECT TO UTILITIES. PROVIDE NEW TANKLESS GAS TYPE WATER HEATER.

COORDINATE WITH GC AND MECHANICAL CONTRACTOR FOR ANY REQUIRED CONDENSATE LINES.

PLUMBING NOTES

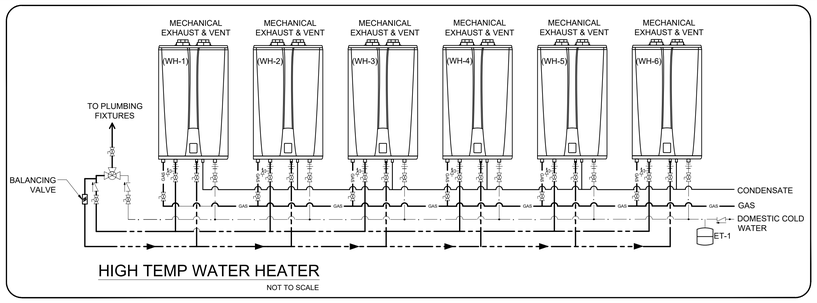
1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN STRICT ACCORDANCE WITH APPLICABLE LOCAL CODES, RULES AND ORDINANCES.
2. PLUMBING CONTRACTOR SHALL REVIEW ALL DRAWINGS OF THIS SET. CONTRACTOR TO VERIFY THAT ALL EQUIPMENT SHOWN AS EXISTING MATCHES THE DESCRIPTIONS AND SPECIFICATIONS SHOWN ON DRAWINGS AND SCHEDULES. IF DIFFERENT NOTIFY ARCHITECT/ENGINEER BEFORE BIDDING, ORDERING OR PRECEDING WITH WORK.
3. ALL EQUIPMENT WHICH IS TO REMAIN MUST BE REFURBISHED TO A LIKE NEW CONDITION.
4. PLUMBING CONTRACTOR SHALL VISIT THE JOB SITE AND THOROUGHLY FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS.
5. ALL MATERIALS SHALL BE NEW.
6. ALL WORK SHALL BE PERFORMED BY A LICENSED PLUMBING CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE. ALL EXCAVATION AND BACKFILL AS REQUIRED FOR THIS PHASE OF CONSTRUCTION SHALL BE A PART OF THIS CONTRACT.
7. REQUIRED INSURANCE SHALL BE PROVIDED BY THE PLUMBING CONTRACTOR FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK.
8. PLUMBING CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES, INSPECTION AND TESTS. PLUMBING CONTRACTOR TO OBTAIN PERMIT AND APPROVED SUBMITTALS PRIOR TO BEGINNING WORK OR ORDERING EQUIPMENT. PLUMBING CONTRACTOR MUST BE PRESENT FOR ALL INSPECTIONS OF HIS WORK BY REGULATORY AUTHORITIES.
9. DRAWINGS ARE DIAGRAMMATIC. DO NOT SCALE FOR THE EXACT LOCATION OF FIXTURES, PIPING, EQUIPMENT, ETC.
10. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION. REPORT ANY DISCREPANCY TO ENGINEER/ARCHITECT PRIOR TO BEGINNING CONSTRUCTION.
11. VERIFY LOCATION, SIZE, DIRECTION OF FLOW AND INVERTS OF ALL EXISTING UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION. ADVISE ENGINEER OF ANY DISCREPANCIES.
12. WATER PIPING SHALL BE CPVC AS PER THE 2023 FLORIDA BUILDING CODE, PLUMBING, 8TH EDITION.
13. SOIL, WASTE, VENT AND RAINWATER PIPING SHALL BE PVC BUT MAY NOT RUN THRU RATED ASSEMBLIES OR IN PLENUMS.
14. ALL FIXTURES MUST BE PROVIDED WITH READILY ACCESSIBLE STOPS AND APPROPRIATELY MARKED ACCESS PANELS. COORDINATE LOCATIONS WITH GENERAL CONTRACTOR PRIOR TO INSTALLATION.
15. FURNISH AND INSTALL APPROVED AIR CHAMBERS AT EACH PLUMBING FIXTURE GROUP AS PER CODE AND WITH GOOD ENGINEERING PRACTICE.
16. DIELECTRIC COUPLINGS ARE REQUIRED BETWEEN ALL DISSIMILAR METAL IN PIPING AND EQUIPMENT CONNECTIONS; EXCEPT AT WATER HEATER AS PER CODE.
17. ISOLATE COPPER PIPE FROM HANGER OR SUPPORTS WITH ISOLATOR PAD.
18. ALL FIRE RATED FLOOR AND WALL PENETRATIONS SHALL BE PROPERLY PROTECTED FROM FIRE, SMOKE AND WATER PENETRATION BY FILLING VOIDS BETWEEN PIPE AND WALL/FLOOR SLEEVES WITH FIRE RATED FOAM, TO ACHIEVE THE SAME RATING AS WALLS OR FLOORS AS PART OF THE PLUMBER'S WORK.
19. PLUMBING CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR FROM DATE OF CERTIFICATE OF OCCUPANCY. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE WITHIN 72 HOURS OF NOTIFICATION AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED. PROVIDE COPY TO LL.
20. STUDOR MINI/MAXI AIR ADMITTANCE VALVES MAY NOT BE USED AS AN ALTERNATE TO VENT PIPING THRU ROOF.
21. PROVIDE CHROME PLATED COMBINATION COVER PLATE AND CLEAN OUT PLUG OR ACCESS PANEL FOR ALL CLEANOUTS.
22. NO COMBUSTIBLE MATERIAL TO BE USED IN MECHANICAL ROOMS OR IN CEILING SPACES WHERE USED AS RETURN AIR PLENUMS.
23. NO WATER, SANITARY OR DRAINAGE PIPING PERMITTED IN ELECTRICAL OR ELEVATOR EQUIPMENT ROOMS.
24. WATER PIPING INSULATION SHALL BE 1" THICK ARMAFLEX INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS FOR ALL HOT WATER PIPING, WHERE DOMESTIC WATER TEMPERATURES CAN CAUSE SWEATING, ALL COLD WATER PIPING SHALL BE INSULATED WITH 1/2" THICK ARMAFLEX INSULATION.
25. CONDENSATE DRAIN LINES TO BE RUN UNDER SLAB IN PVC SCH40 PIPE AND STUBBED OUT OF WALL TO UNIT. TIE-IN OF A/C TO BE BY OTHERS. PVC PIPING WITH 1/2" THICK ARMAFLEX INSULATION MAY BE USED IN LOCATIONS WHERE ALLOWED BY LOCAL CODES. SEE PLUMBING DRAWINGS FOR SIZE AND LOCATION OF PIPING. PVC WILL BE MIN. SCHEDULE 40 FOR SIZE AND LOCATION OF PIPING. PVC WILL BE MIN. SCHEDULE 40.
26. PROVIDE ANGLE STOPS ON ALL WATER SERVICE LINES TO FIXTURES FOR INDIVIDUAL SHUT-OFF.
27. NO JOINTS UNDERGROUND FOR COPPER.
28. PLUMBING FIXTURES SHALL COMPLY WITH 2023 FLORIDA BUILDING CODE, PLUMBING, 8TH EDITION.
29. WATER HAMMER ARRESTORS AS PER 2023 FLORIDA BUILDING CODE, PLUMBING, 8TH EDITION.
30. PLUMBING CONTRACTOR SHALL REVIEW ALL BID DOCUMENTATION.
31. PLUMBING CONTRACTOR SHALL REVIEW WALL FINISHES @ LOCATION REQUIRING BARRIER-FREE COMPLIANCE (EXAMPLE: CENTER LINE TO TOILET).
32. CONSTRUCTION "AS BUILT" DRAWINGS AND DOCUMENTS SHALL BE PROVIDED TO THE OWNER WITHIN 30 DAYS AFTER THE DATE OF ACCEPTANCE. PROVIDE A COPY TO LL.
33. OPERATION MANUALS AND MAINTENANCE MANUALS SHALL BE PROVIDED TO THE BUILDING OWNER. PROVIDE A COPY TO LL.

ENERGY CONSERVATION NOTES

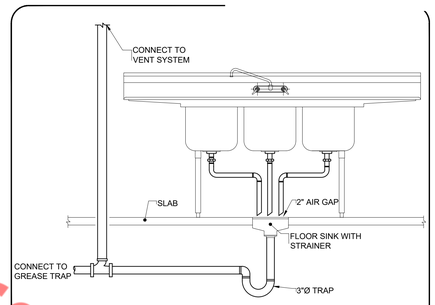
1. AS PER 2023 FBC-ENERGY CONSERVATION CODE SECTION C404.4. PIPING FROM A WATER HEATER TO THE TERMINATION OF HEATED WATER FIXTURE SUPPLY PIPE SHALL BE INSULATED IN ACCORDANCE WITH TABLE C403.2.10 OF MINIMUM PIPE INSULATION THICKNESS.

MINIMUM PIPE INSULATION THICKNESS							
FLUID OPERATING TEMPERATURE RANGE AND USAGE (°F)	INSULATION CONDUCTIVITY		NOMINAL PIPE OR TUBE SIZE (INCHES)				
	CONDUCTIVITY BTU·IN./(H·FT2·°F)	MEAN RATING TEMPERATURE °F	<1	1 TO <1½	1½ TO <4	4 TO <8	≥8
141-200	0.25-0.29	125	1.5	1.5	2	2	2
105-140	0.21-0.28	100	1.0	1.0	1.5	1.5	1.5
40-60	0.21-0.27	75	0.5	0.5	1.0	1.0	1.0

2. AS PER 2023 FBC-ENERGY CONSERVATION CODE SECTION C404.6.1, AUTOMATIC CONTROLS SHALL BE INSTALLED THAT LIMITS THE OPERATION OF A RECIRCULATING PUMP AND THE SYSTEM RETURN PIPE SHALL BE A DEDICATED RETURN PIPE OR A COLD WATER SUPPLY PIPE.
3. AS PER 2023 FBC-ENERGY CONSERVATION CODE SECTION C404.7, PUMPS SHALL HAVE CONTROLS THAT COMPLY WITH BOTH OF THE FOLLOWING:
   A. THE CONTROL SHALL START THE PUMP UPON RECEIVING A SIGNAL FROM THE ACTION OF A USER OF A FIXTURE OR APPLIANCE, SENSING THE PRESENCE OF A USER OF A FIXTURE OR SENSING THE FLOW OF HOT OR TEMPERED WATER TO A FIXTURE FITTING OR APPLIANCE.
   B. THE CONTROL SHALL LIMIT THE TEMPERATURE OF THE WATER ENTERING THE COLD-WATER PIPING TO 104°F (40°C).



HIGH TEMP WATER HEATER
NOT TO SCALE



RECESSED FLUSH IN FLOOR WITH FLOOR SINK
NOT TO SCALE

PLUMBING LEGENDS

—SAN—	SANITARY SEWER PIPING
—V—V—	VENT PIPING
—GSAN—	GREASE SANITARY SEWER PIPING
	DOMESTIC COLD WATER PIPING
	HOT WATER PIPING
	HOT WATER RETURN PIPING
—G—	GAS PIPING
	PIPE UP
	PIPE DROP
FCO	FLOOR CLEAN OUT
	P-TRAP
CW	COLD WATER
HW	HOT WATER
HWR	HOT WATER RETURN
DCVA	DOUBLE CHECK VALVE ASSEMBLY
	GATE VALVE
	CHECK VALVE
	BALANCING VALVE
FD	FLOOR DRAIN
I.W.	INDIRECT WASTE
FS	FLOOR SINK
	POINT OF CONNECTION
	THERMOSTATIC MIXING VALVE

RESTROOM FIXTURE SCHEDULE

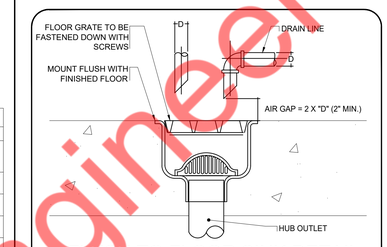
Item No.	Qty.	Description	Manufacturer	Model/Material	WATER Hot	WATER Cold	Waste	Vent
AS-01	9	SANITARY (WATER CLOSET)	CASTEL	CASTEL MELIA MODEL		3/4"	4"	2"
AS-02	3	MINGITORY (URINAL)	HELVEX	MOJAVE MODEL			2"	1-1/2"
AS-03	3	WASHBASIN (LAVATORY)	CASTEL	SAMOA COUNTERTOP WASHBASIN MODEL WHITE COLOR			2"	1-1/2"
AS-05	5	SINGLE-HANDLE 02 (LAVATORY FAUCET)	GILSA	TRISNIC SINGKE LEVER BASIN MIXER BLACK MATTE COLOR	1/2"	1/2"	2"	1-1/2"

KITCHEN EQUIPMENT PLUMBING SCHEDULE

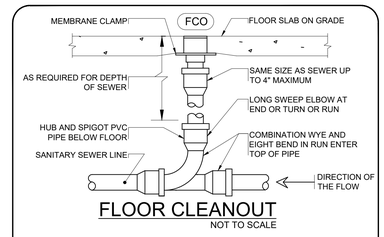
Item No.	Qty.	Description	MANUFACTURER	MODEL	WATER Hot	WATER Cold	WASTE Direct	WASTE Indirect
A5	1	FLOOR TROUGH & GRATE	ADVANCE TABCO	FTG-724			3"	1½"
A6	1	MODULAR ICE CUBE MAKER	KOOLAIRE	KDT-1000A	1/2"	1/2"		¾"
A7	1	570 LBS. ICE BIN	KOOLAIRE	K570				¾"
A9	1	WATER HAND SINK	ADVANCE TABCO	7-PS-63	1/2"	1/2"	1½"	
A12	1	MOP SINK	-	-	1/2"	1/2"	3"	
B02	1	OPEN CABINET WITH SINGLE SINK	CUSTOM	CUSTOM	1/2"	1/2"	1½"	
B2.1	1	DECK MOUNTED FAUCET	FISHER	26123	1/2"	1/2"		
B2.2	1	BASKET DRAIN	FISHER	24848				1½"
B28	3	FLOOR TROUGH & GRATE	ADVANCE TABCO	FTG-748			3"	
B32	1	WALL HAND SINK	ADVANCE TABCO	7-PS-63	1/2"	1/2"	1½"	
C08	1	WALL HAND SINK	ADVANCE TABCO	7-PS-63	1/2"	1/2"	1½"	
E7	3	FLOOR TROUGH & GRATE	ADVANCE TABCO	FTG-748			3"	
H3	4	FLOOR TROUGH & GRATE	ADVANCE TABCO	FTG-724			3"	
H4	6	DRAINBOARD CABINET	GLASTENDER	DBGR-18				½"
H7	4	COCKTAIL STATION	GLASTENDER	CBB-36L-CP10				1"
H10	4	BLENDER STATION WITH SINK	GLASTENDER	C-BSB-12	1/2"	1/2"	1½"	
H19	2	UNDER COUNTER DISH & GLASS WASHER	HOBART	LXeH	1/2"	1/2"		¾"
H24	1	BAR SINGLE SINK TABLE	CUSTOM	CUSTOM	1/2"	1/2"	1½"	
I4	2	WALL FAUCET	FISHER	13269	1/2"	1/2"		
I5	3	BASKET DRAIN	FISHER	24848				1½"
I6	1	TRIPLE SINK TABLE	CUSTOM	CUSTOM				
I8	1	OPEN CABINET WITH SINGLE SINK	CUSTOM	CUSTOM				
I9	1	BASKET DRAIN	FISHER	24848				1½"
I10	1	DECK MOUNTED FAUCET	FISHER	26123	1/2"	1/2"		
I15	2	FLOOR TROUGH & GRATE	ADVANCE TABCO	FTG-748			3"	
J1	2	WALL FAUCET	FISHER	13269	1/2"	1/2"		
J2	3	BASKET DRAIN	FISHER	24848				1½"
J3	1	TRIPLE SINK TABLE	ADVANCE TABCO	FC-3-1824-18L				1½"
J11	1	PRE RINSE HOSE	FISHER	2110-WB	1/2"	1/2"		
J13	1	HOOD TYPE DISH WASHER	HOBART	AM16-BASX-2	3/4"	3/4"		¾"
MS-1	1	MOP SINK	-	-	1/2"	1/2"	3"	

ROOF DRAIN SCHEDULE

DESCRIPTION	MANUFACTURER	MODEL	SIZE
RD	J. R. SMITH	1010	4"



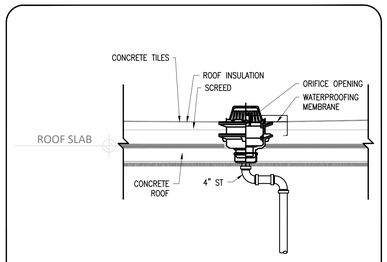
FLUSH TO FLOOR SINK DETAIL
NOT TO SCALE
*NOTE- COORDINATE WITH ARCHITECT FOR PATCHING/TRENCHING THE SLAB.



FLOOR CLEANOUT
NOT TO SCALE
*NOTE- COORDINATE WITH ARCHITECT FOR PATCHING/TRENCHING THE SLAB.

FLOOR CLEANOUT DETAIL NOTES

1) LOCATE CLEANOUT AT THIS LOCATIONS:
   A) BUILDING EXIT.
   B) AT TURNS OF PIPES GREATER THAN 45 DEGREES
   C) AT 90' INTERVALS ON STRAIGHT RUNS
   D) WHERE IS SHOWN ON PLANS
   E) WHERE IS 18" CLEAR AROUND



ROOF DRAIN DETAILS
NOT TO SCALE

GREASE INTERCEPTOR SIZING

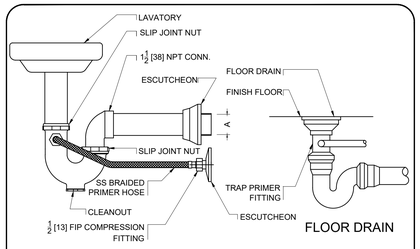
DESCRIPTION	QTY	DFU	TOTAL DFU
BASKET DRAIN	01	2	2
HAND SINK	04	2	8
BAR SINK	01	2	2
BLENDER STATION	04	2	8
MOP SINK	01	5	5
FLOOR SINK	17	5	85
FLOOR TROUGH	12	5	60
FLOOR DRAIN	2	5	10
		TOTAL DFU	180

NOTE- DFU VALUE AS PER TABLE 1014.3.6 UNIFORM PLUMBING CODE 2021.

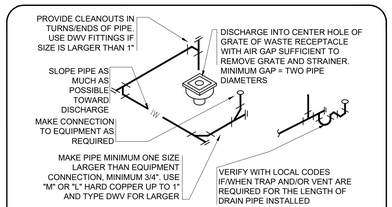
2000 GALLONS EXTERIOR GREASE INTERCEPTOR IS REQUIRED. COORDINATE WITH CIVIL.

FIXTURE BRANCH SCHEDULES

FIXTURE	COLD WATER	HOT WATER	WASTE	VENT
WATER CLOSET	3/4"	--	4"	2"
URINAL	--	--	2"	1-1/2"
LAVATORY	--	--	2"	1-1/2"
LAVATORY FAUCET	1/2"	1/2"	--	--
TRIPLE WASH SINK	--	--	I.D.	--
FLOOR TROUGH & GRATE	--	--	3"	2"
FLOOR DRAIN	--	--	3" / 4"	2"
FLOOR SINK	--	--	3"	2"
BAR SINK	1/2"	1/2"	1-1/2"	1-1/2"
WATER HAND SINK	1/2"	1/2"	1-1/2"	1-1/2"
MOP SINK	1/2"	1/2"	3"	2"



TRAP RESEAL DETAIL
NOT TO SCALE



ROUTE PIPE INCONSPICUOUSLY AND UNOBTRUSIVELY. HANG PIPE AS REQUIRED. DO NOT INSULATE INDIRECT DRAIN PIPE WHEN INSTALLED EXPOSED IN FOOD SERVICE FACILITY. REFER TO LOCAL CODES FOR FURTHER INFORMATION.

INDIRECT WASTE CONNECTION DETAIL
NOT TO SCALE

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Señor Frog's FUN, FOOD & CLOTHES

No.	DESCRIPTION	DATE

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SCALE: AS NOTED
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CONTENT
GENERAL NOTES, SCHEDULES & DETAILS

SHEET NUMBER:
P-101

PROJECT STATUS:

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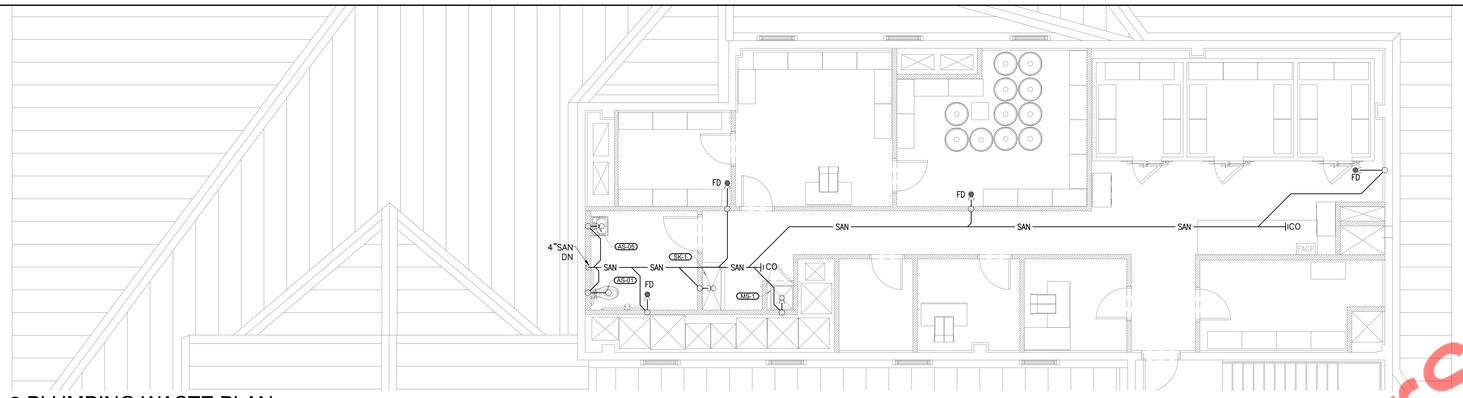
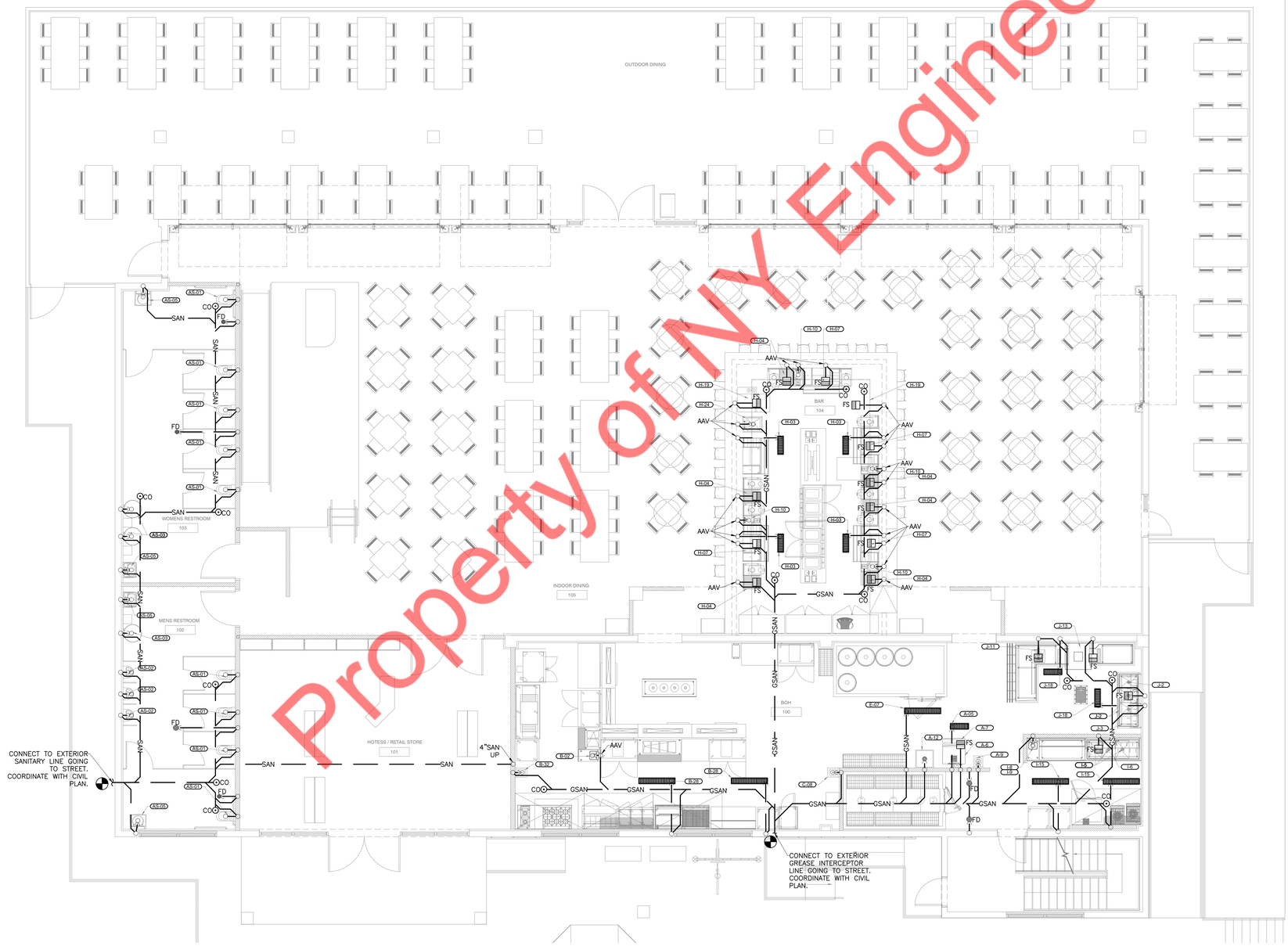


2 LEVEL 2 PLUMBING WASTE PLAN
SCALE: 3 / 16" = 1' - 0

GENERAL NOTES

1. SLOPE OF DRAINAGE PIPING SHALL BE 1/16" PER FOOT OF RUN FOR PIPE 8" & LARGER, 1/8" PER FOOT OF RUN FOR PIPE 3" TO 6" AND 1/4" PER FOOT OF RUN FOR PIPE 2-1/2" & SMALLER. VENT PIPING SHALL BE PITCHED TO DRAIN.
2. CONTRACTOR TO FIELD VERIFY FEASIBILITY OF SLAB PENETRATION AS PER STRUCTURAL REQUIREMENT.
3. ALL MATERIAL INDICATED AND IMPLIED ON THESE DRAWINGS SHALL BE NEW UNLESS OTHERWISE NOTED.
4. ALL CLEANOUTS TO BE ACCESSIBLE.
5. REFER SANITARY RISER DIAGRAM FOR ALL PIPE SIZES.



N 1 GROUND LEVEL PLUMBING WASTE PLAN
SCALE: 3 / 16" = 1' - 0

BINDING EDGE

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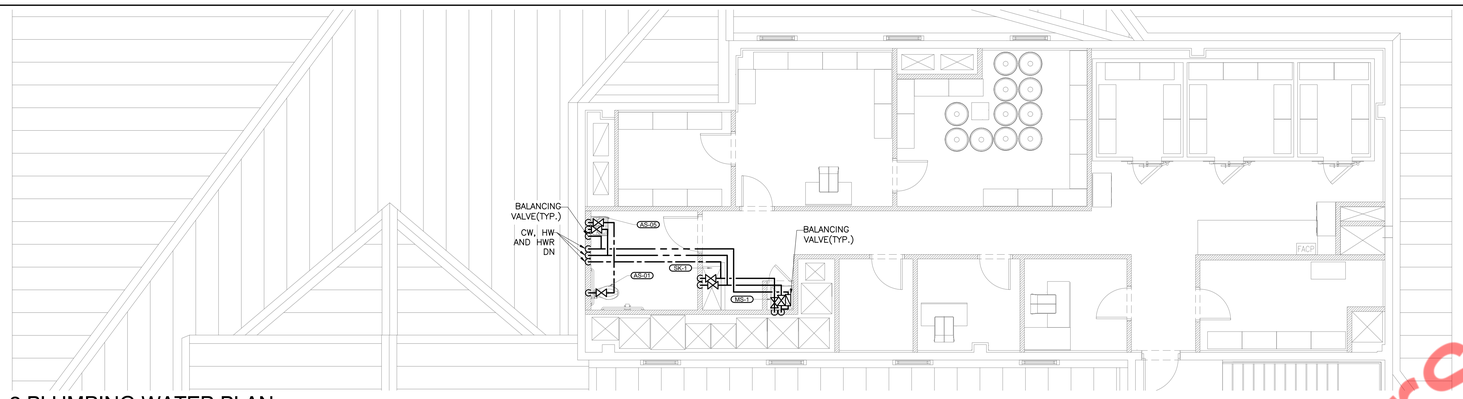
CONTENT
PLUMBING WASTE PLANS

SHEET NUMBER:
P-102

PROJECT STATUS:



2 LEVEL 2 PLUMBING WATER PLAN
SCALE: 3 / 16" = 1' - 0

WATER HEATER SCHEDULE

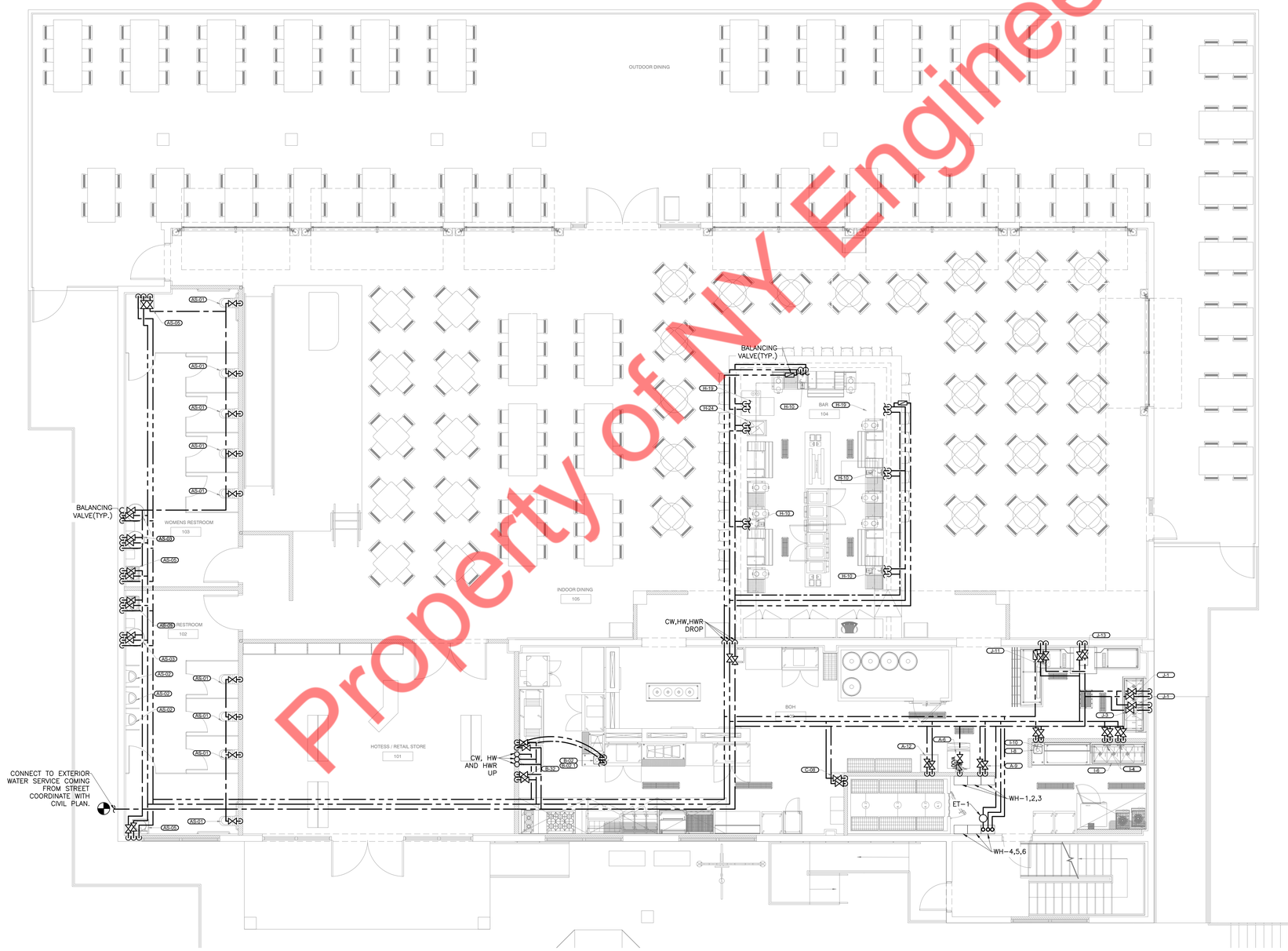
MANUFACTURER	NAVIEN
MODEL	NPE-240A2
EQUIPMENT TAG	WH-1,2,3,4,5,6
STATUS	NEW
QUANTITY	6
CAPACITY	TANKLESS
FUEL	GAS
BTU/HR	199,900. @EACH
FLOW RATE	4.9 GPM* @ EACH
UNIFORM ENERGY FACTOR	0.95
AIR INTAKE / EXHAUSTVENT	2"Ø / 2"Ø
VOLTAGE	120/1/60
AMPERAGE	4
WEIGHT (EMPTY)	77 LBS.@EACH

NOTES:

1. *80°F TEMPERATURE RISE.
2. INSTALL NEW EXPANSION TANK (ET-1) AMTROL MODEL THERM-X-TROL ST-5C-DD AS PER LOCAL CODE REQUIREMENTS.
3. CONTRACTOR TO PROVIDE WATER HEATER SPECIFICATION SHEET TO THE INSPECTOR IF REQUIRED.

GENERAL NOTES

1. CW/HW/HWR PIPING TO BE PROVIDED WITH INSULATION AS PER 2023 FLORIDA BUILDING CODE, ENERGY CONSERVATION, 8TH EDITION (REFER SHEET P-1).
2. PROVIDE BRANCH PRV IF PRESSURE EXCEEDS 80 PSI.
3. PROVIDE ACCESS PANELS FOR WATER HAMMER ARRESTOR & SHUT-OFF VALVES AS REQUIRED.
4. REFER WATER RISER DIAGRAM FOR ALL PIPE SIZES.
5. NEW WATER HEATER DRAIN SPILLS TO FLOOR DRAIN.



N

1 GROUND LEVEL PLUMBING WATER PLAN
SCALE: 3 / 16" = 1' - 0

BINDING EDGE

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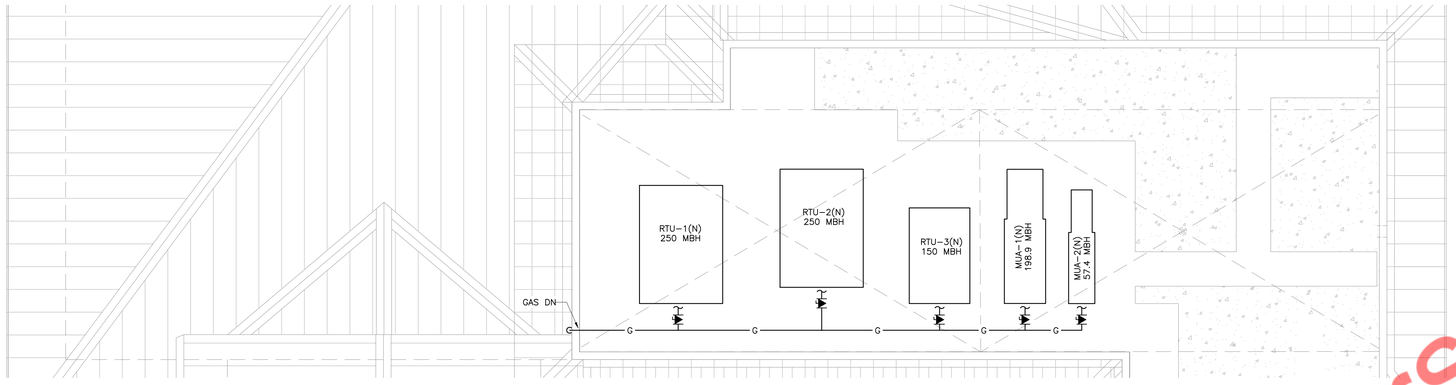
PLUMBING WATER PLANS

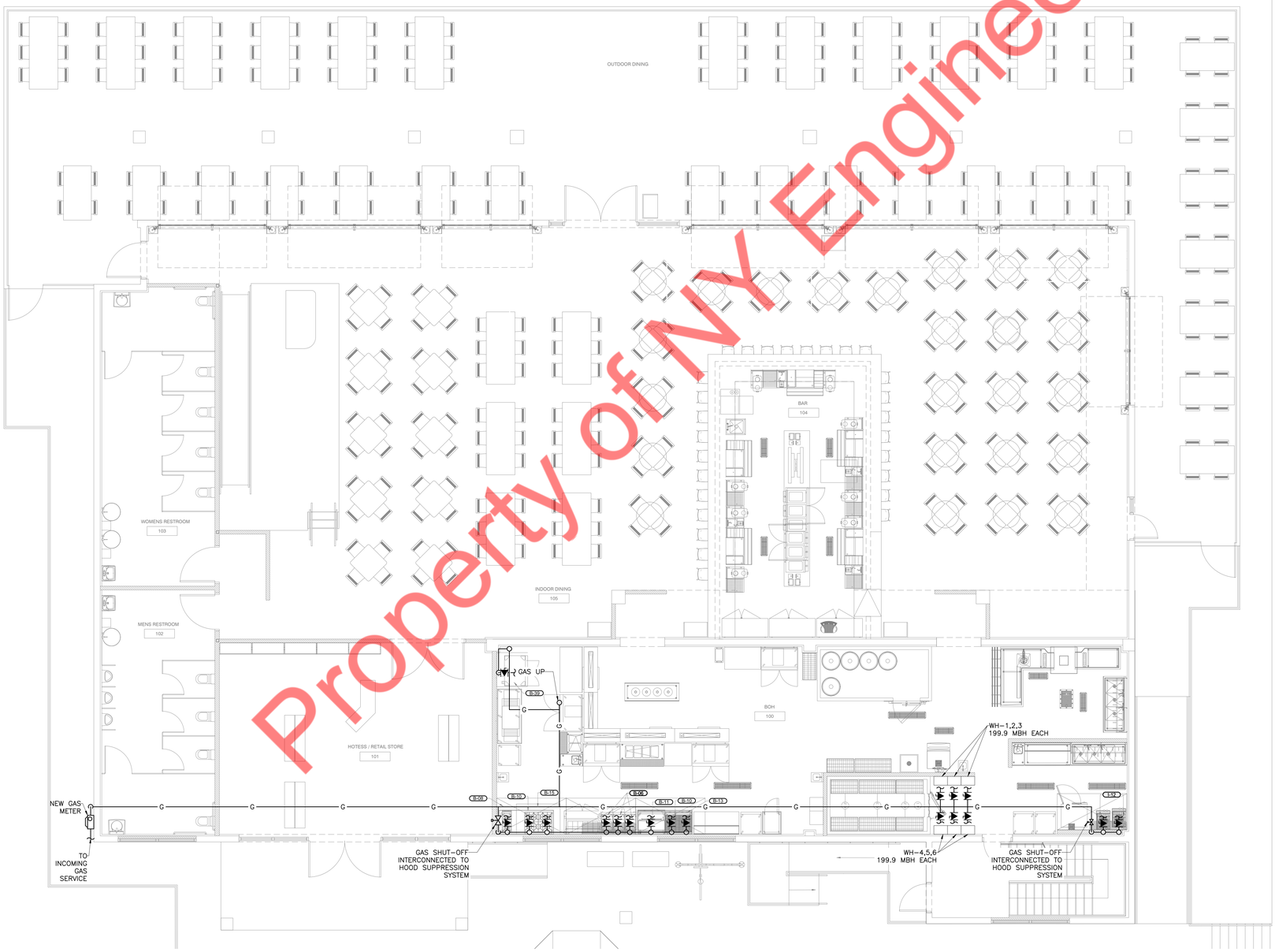
SHEET NUMBER:

P-103

PROJECT STATUS:



2 ROOF PLUMBING GAS PLAN
SCALE: 3 / 16" = 1' - 0



N 1 GROUND LEVEL PLUMBING GAS PLAN
SCALE: 3 / 16" = 1' - 0

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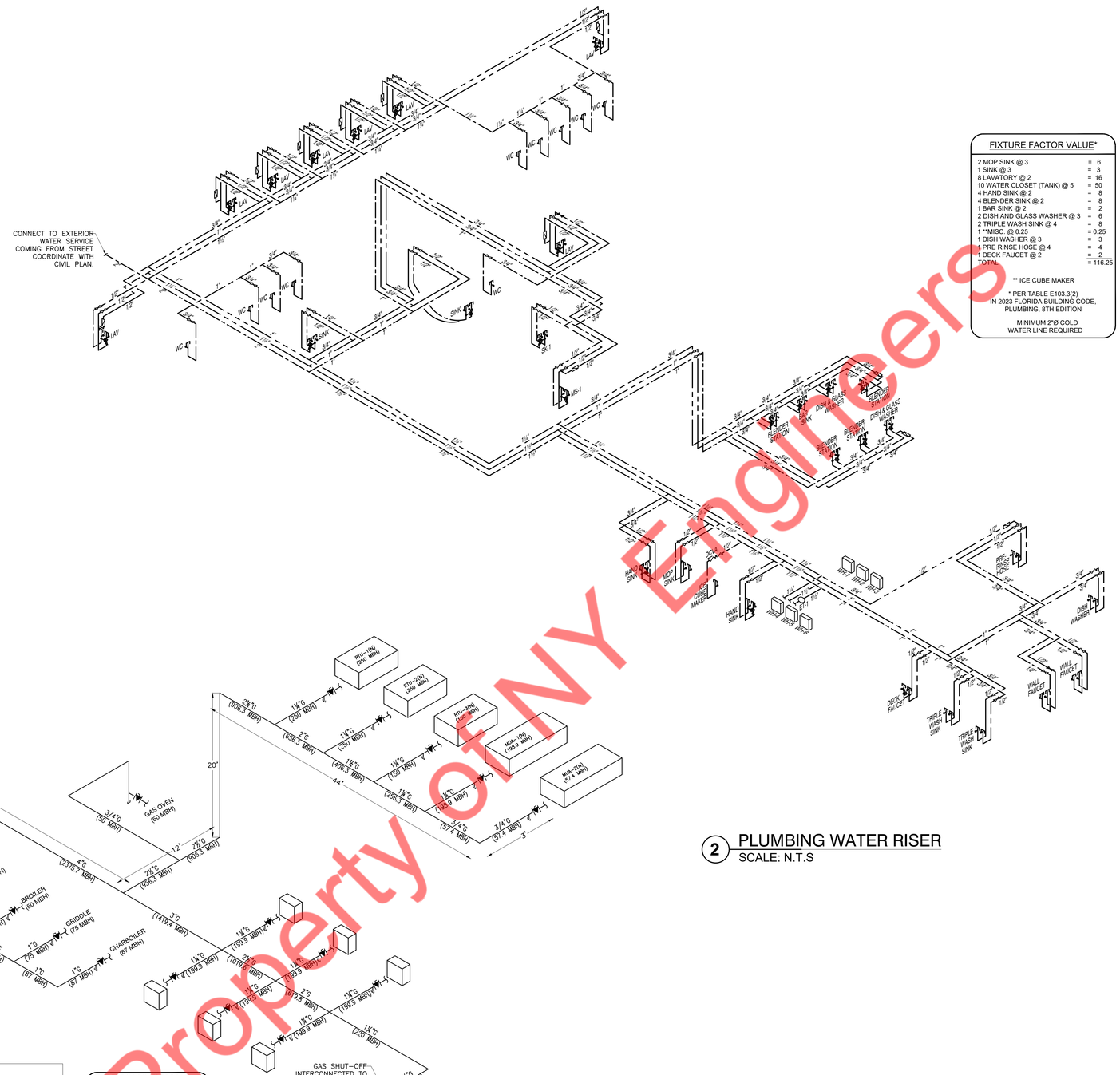
PLUMBING GAS PLANS

SHEET NUMBER:

P-104

PROJECT STATUS:

BINDING EDGE



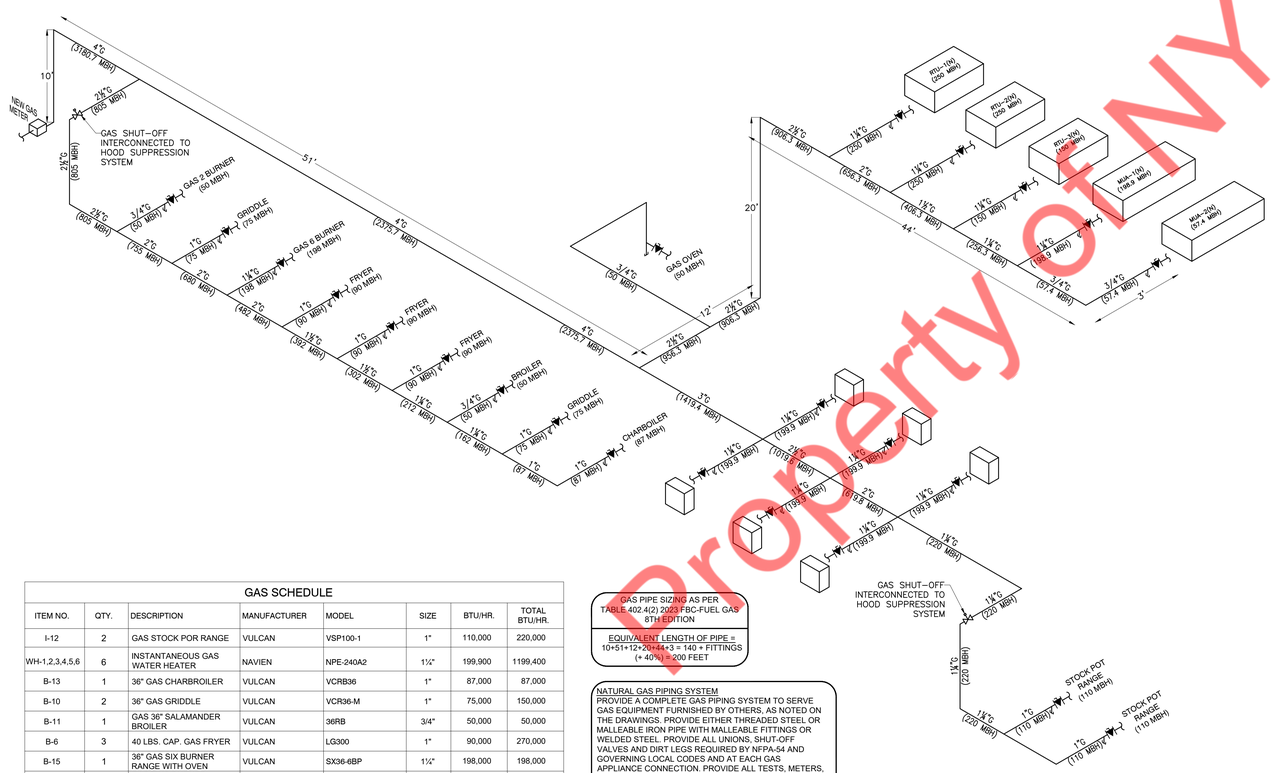
2 PLUMBING WATER RISER
SCALE: N.T.S

FIXTURE FACTOR VALUE*		
2 MOP SINK @ 3	=	6
1 SINK @ 3	=	3
8 LAVATORY @ 2	=	16
10 WATER CLOSET (TANK) @ 5	=	50
4 HAND SINK @ 2	=	8
4 BLENDER SINK @ 2	=	8
1 BAR SINK @ 2	=	2
2 DISH AND GLASS WASHER @ 3	=	6
2 TRIPLE WASH SINK @ 4	=	8
1 **MISC. @ 0.25	=	0.25
1 DISH WASHER @ 3	=	3
1 PRE RINSE HOSE @ 4	=	4
1 DECK FAUCET @ 2	=	2
TOTAL	=	116.25

** ICE CUBE MAKER

* PER TABLE E103.3(2) IN 2023 FLORIDA BUILDING CODE, PLUMBING, 8TH EDITION

MINIMUM 2"Ø COLD WATER LINE REQUIRED



1 PLUMBING GAS RISER
SCALE: N.T.S

GAS SCHEDULE							
ITEM NO.	QTY.	DESCRIPTION	MANUFACTURER	MODEL	SIZE	BTU/HR.	TOTAL BTU/HR.
I-12	2	GAS STOCK POR RANGE	VULCAN	VSP100-1	1"	110,000	220,000
WH-1,2,3,4,5,6	6	INSTANTANEOUS GAS WATER HEATER	NAVIEN	NPE-240A2	1¼"	199,900	1199,400
B-13	1	36" GAS CHARBROILER	VULCAN	VCRB36	1"	87,000	87,000
B-10	2	36" GAS GRIDDLE	VULCAN	VCR36-M	1"	75,000	150,000
B-11	1	GAS 36" SALAMANDER BROILER	VULCAN	36RB	3/4"	50,000	50,000
B-6	3	40 LBS. CAP. GAS FRYER	VULCAN	LG300	1"	90,000	270,000
B-15	1	36" GAS SIX BURNER RANGE WITH OVEN	VULCAN	SX36-6BP	1¼"	198,000	198,000
B-08	1	GAS TWO BURNER HOTTOP	VULCAN	VCRH12	3/4"	50,000	50,000
B-39	1	SINGLE DECK GAS CONVECTION OVEN	VULCAN	VC4GD-1	3/4"	50,000	50,000
RTU-1(N)	1	MECHANICAL EQUIPMENT	REFER TO MECHANICAL PLAN	REFER TO MECHANICAL PLAN	1¼"	250,000	250,000
RTU-2(N)	1	MECHANICAL EQUIPMENT	REFER TO MECHANICAL PLAN	REFER TO MECHANICAL PLAN	1¼"	250,000	250,000
RTU-3(N)	1	MECHANICAL EQUIPMENT	REFER TO MECHANICAL PLAN	REFER TO MECHANICAL PLAN	1¼"	150,000	150,000
MUA-1(N)	1	MECHANICAL EQUIPMENT	REFER TO MECHANICAL PLAN	REFER TO MECHANICAL PLAN	1¼"	198,900	198,900
MUA-2(N)	1	MECHANICAL EQUIPMENT	REFER TO MECHANICAL PLAN	REFER TO MECHANICAL PLAN	3/4"	57,400	57,400
						TOTAL LOAD	3180,700

GAS PIPE SIZING AS PER TABLE 402.4(2) 2023 FBC-FUEL GAS 8TH EDITION

EQUIVALENT LENGTH OF PIPE = 10+51+12+20+44+3 = 140 + FITTINGS (+ 40%) = 200 FEET

NATURAL GAS PIPING SYSTEM
PROVIDE A COMPLETE GAS PIPING SYSTEM TO SERVE GAS EQUIPMENT FURNISHED BY OTHERS, AS NOTED ON THE DRAWINGS. PROVIDE EITHER THREADED STEEL OR MALLEABLE IRON PIPE WITH MALLEABLE FITTINGS OR WELDED STEEL. PROVIDE ALL UNIONS, SHUT-OFF VALVES AND DIRT LEGS REQUIRED BY NFPA-54 AND GOVERNING LOCAL CODES AND AT EACH GAS APPLIANCE CONNECTION. PROVIDE ALL TESTS, METERS, PRESSURE REGULATORS, INSPECTIONS, HANGERS AND EQUIPMENT CONNECTIONS REQUIRED FOR A COMPLETE AND OPERATING SYSTEM.

NOTES:
1. GAS PIPING TO BE SCHEDULE 40 STEEL PIPE W/125 CAST IRON SCREWD FITTINGS
2. GAS SYSTEM TO BE INSTALLED BY QUALIFIED LICENSED CONTRACTOR.
3. VERIFY ALL EQUIPMENT BTU'S PRIOR TO INSTALLATION. ADJUST PIPE SIZE ACCORDING 2023 FBC-FUEL GAS 8TH EDITION FUEL GAS TABLE 402.4(2)

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CONTENT

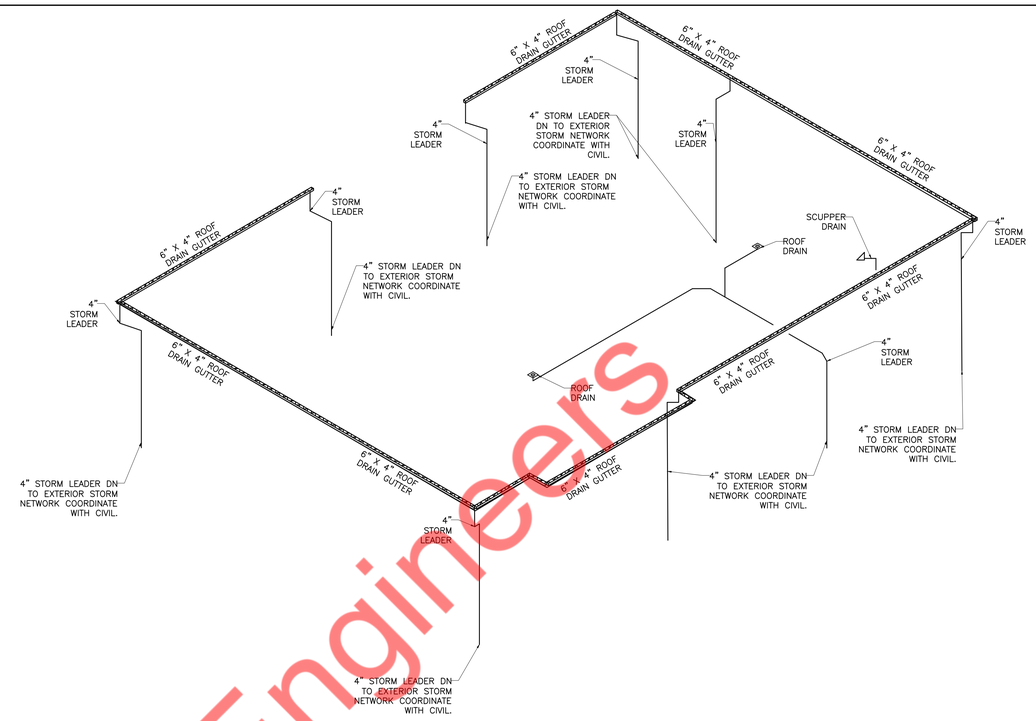
PLUMBING WATER AND GAS RISERS

SHEET NUMBER:

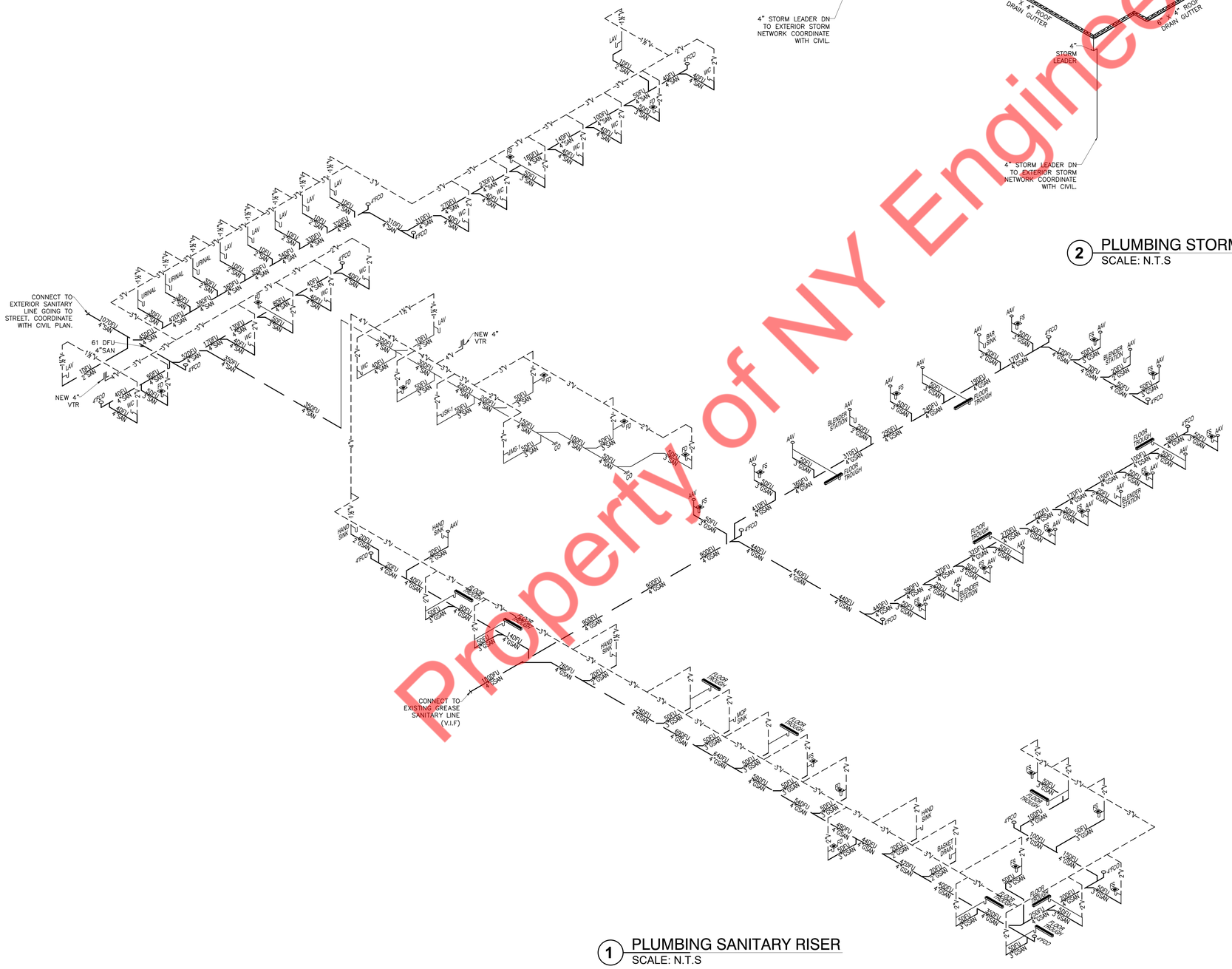
P-105

PROJECT STATUS:

BINDING EDGE



2 PLUMBING STORM RISER
SCALE: N.T.S



1 PLUMBING SANITARY RISER
SCALE: N.T.S

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CONTENT

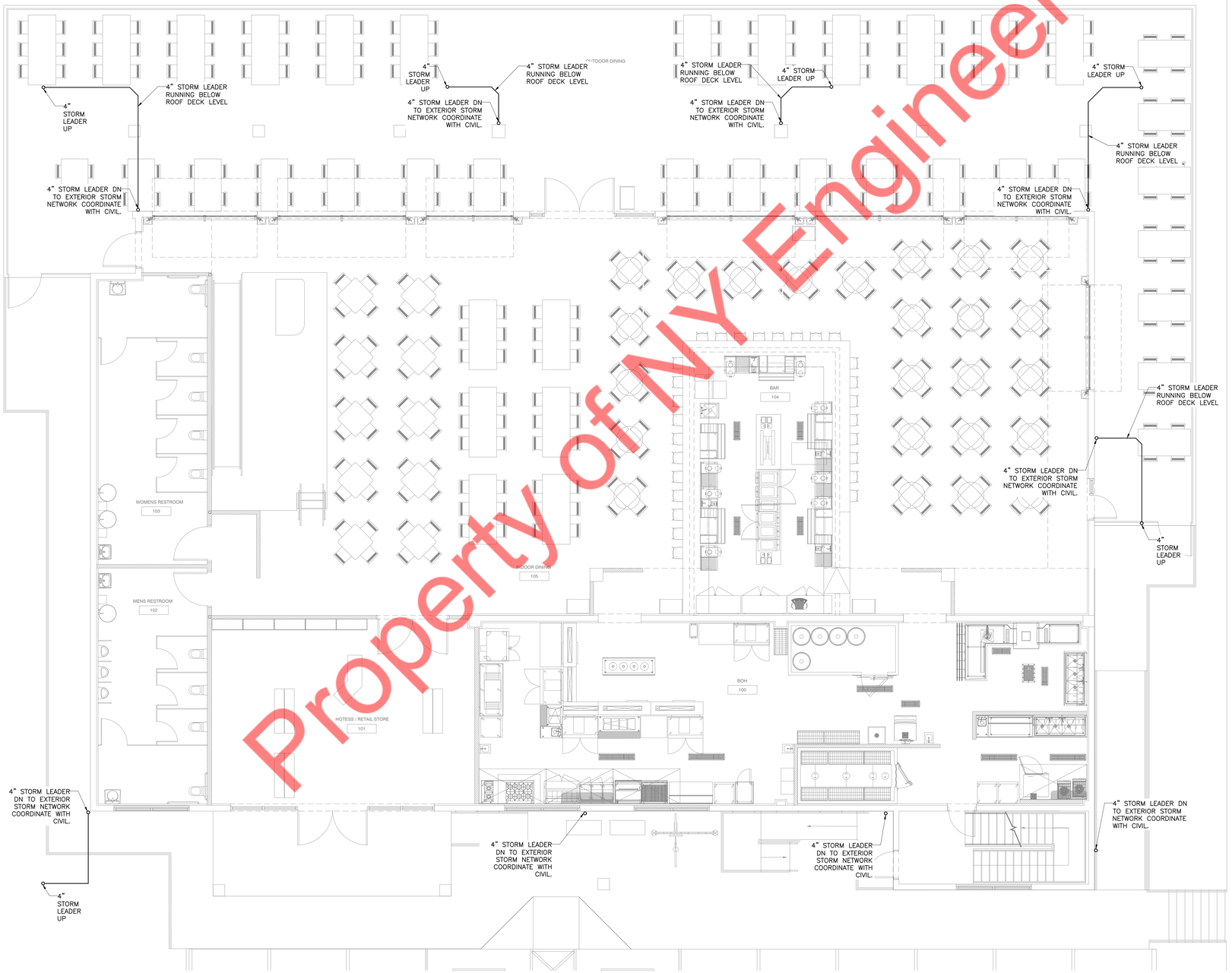
PLUMBING
SANITARY AND
STORM RISERS

SHEET NUMBER:

P-106

PROJECT STATUS:

BINDING EDGE



N

1 GROUND LEVEL STORM WATER PLAN
SCALE: 3 / 16" = 1' - 0

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CONTENT

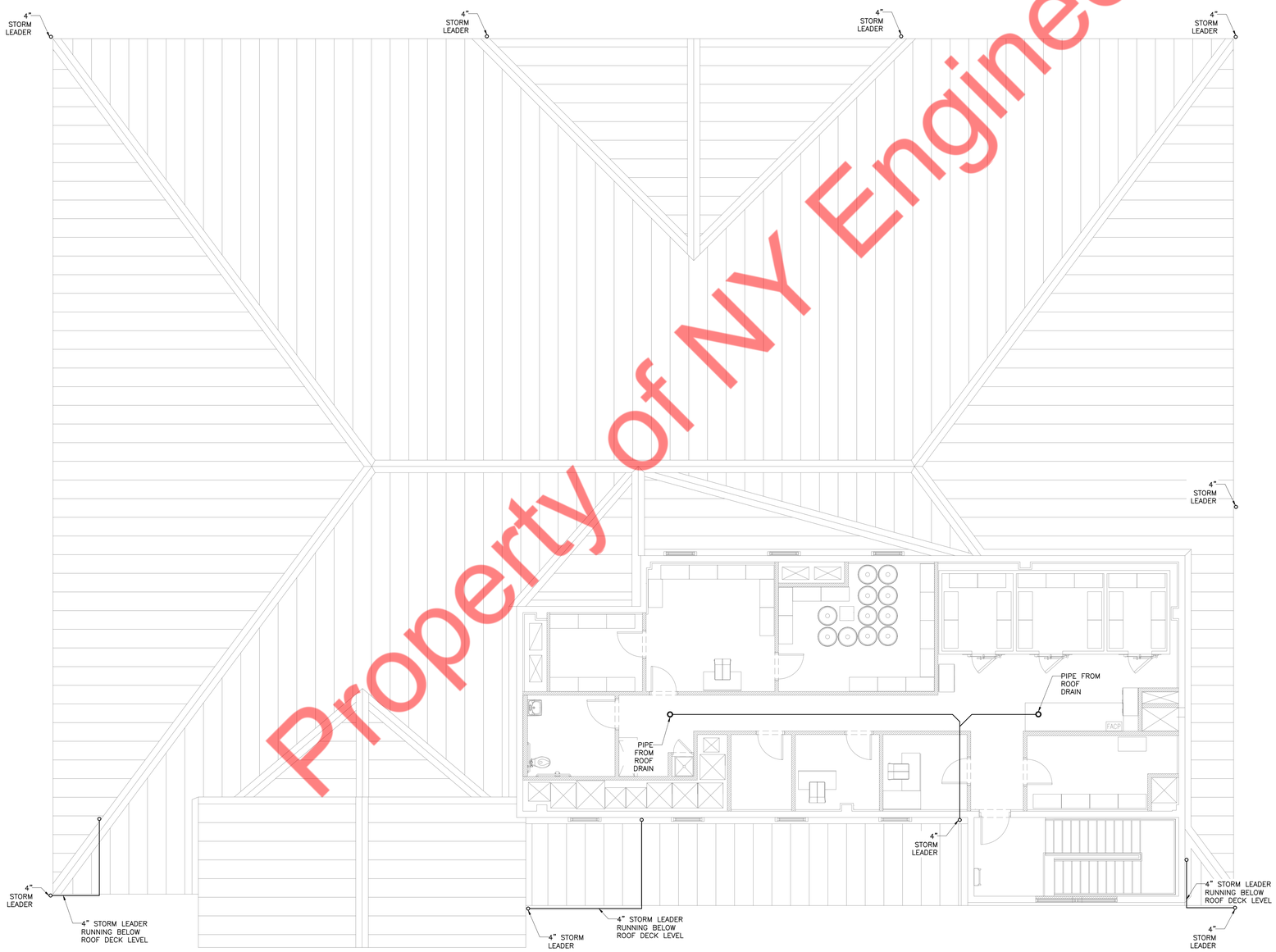
PLUMBING GROUND LEVEL STORM WATER PLAN

SHEET NUMBER:

P-107

PROJECT STATUS:

BINDING EDGE



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N

1 LEVEL 2 STORM WATER PLAN
SCALE: 3 / 16" = 1' - 0

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CONTENT

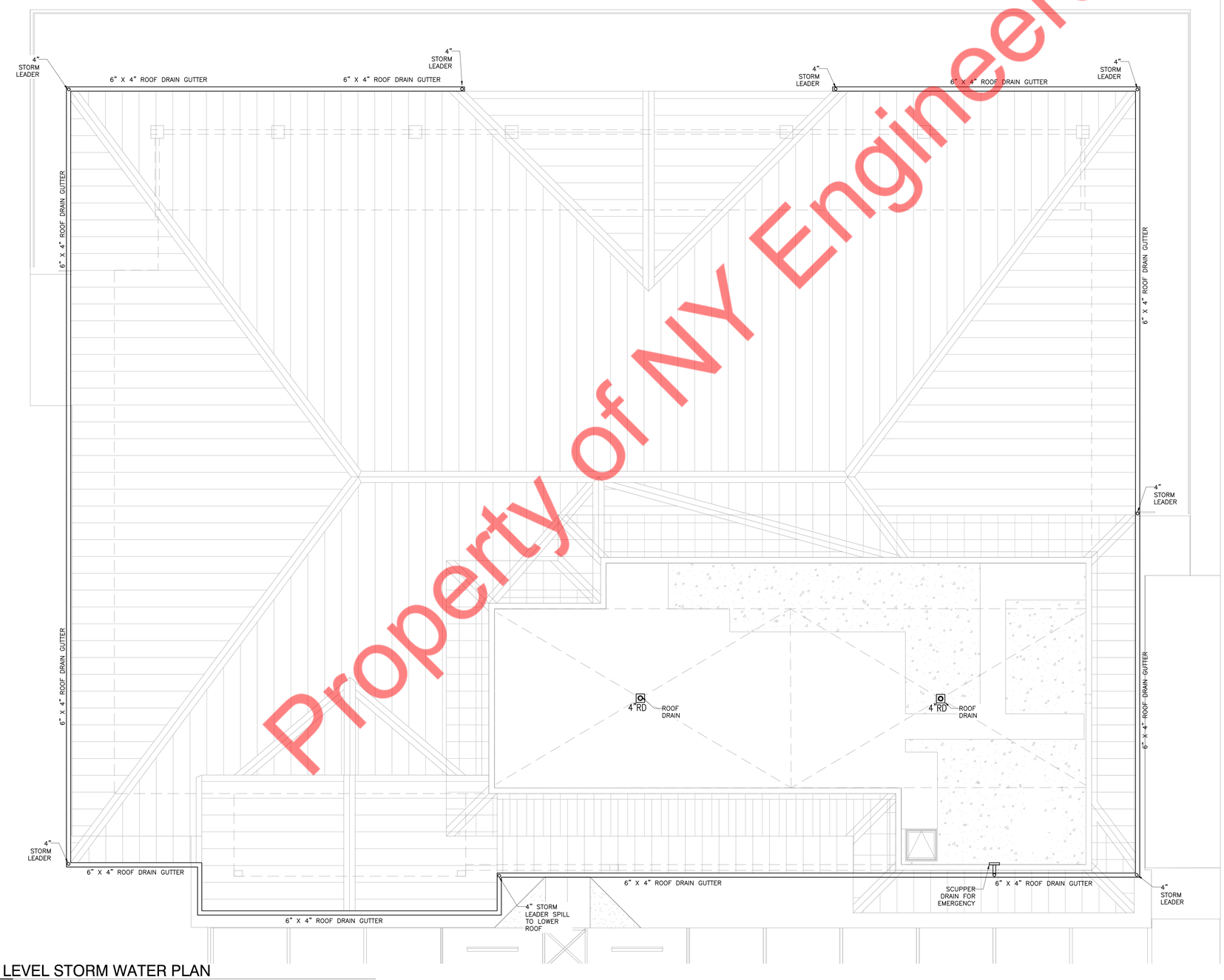
PLUMBING LEVEL 2
STORM WATER PLAN

SHEET NUMBER:

P-108

PROJECT STATUS:

BINDING EDGE



N

1 ROOF LEVEL STORM WATER PLAN
SCALE: 3 / 16" = 1' - 0

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PLUMBING ROOF LEVEL STORM WATER PLAN

SHEET NUMBER:

P-109

PROJECT STATUS:

BINDING EDGE

SCOPE OF WORK

PROVIDE ALL SPRINKLER FOR NEW RESTAURANT INCLUDING ALL PIPING AND CONNECT TO UTILITIES.

SPRINKLER NOTES

1. ALL SPRINKLER WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF N.F.P.A.-13 AND ALL LOCAL AUTHORITIES.
2. ALL SPRINKLER WORK SHALL COMPLY WITH BUILDING STANDARDS AND REQUIREMENTS.
3. ALL SPRINKLER HEADS SHALL BE INSTALLED AT CENTER OF TILE IF CEILING IS PROVIDED.
4. THE SPRINKLER SYSTEMS ARE TO BE HYDROSTATIC TESTED PER LOCAL CODE REQUIREMENT. PRESSURE AND ARE TO BE WITNESSED BY AUTHORIZED BUILDING PERSONNEL. COORDINATE ALL TESTING WITH BUILDING MANAGER.
5. G.C. SHALL BE RESPONSIBLE FOR ALL FINAL TESTS AND INSPECTIONS OF COMPLETED WORK REQUIRED BY THE BUILDING MANAGEMENT PRIOR TO OCCUPANCY OF SPACE.
6. ALL SPRINKLER WORK SHALL BE TESTED AND MADE OPERATIONAL PRIOR TO CARPET AND FURNITURE INSTALLATION. G.C. SHALL REPAIR AND/OR REPLACE ALL FINISHES DAMAGED BY DEFECTIVE SPRINKLER WORK AT HIS EXPENSE.
7. ALL BURNING, CUTTING, SOLDERING AND WELDING SHALL BE COORDINATED WITH BUILDING FIRE SYSTEMS WITH BUILDING MANAGEMENT, AS REQUIRED.
8. G.C. SHALL BE RESPONSIBLE FOR OBTAINING PERMITS AND APPROVALS REQUIRED BY BUILDING INSPECTOR AND FIRE MARSHALL.
9. REFER TO ENGINEERING DRAWINGS FOR SPRINKLER HEADS, LIGHT SENSORS AND FIRE DETECTION DEVICES.
10. UPON COMPLETION OF ALL SPRINKLER WORK, CONTRACTOR SHALL TEST AND INSPECT ENTIRE SPRINKLER SYSTEM. ENTIRE SYSTEM SHALL BE FULLY OPERATIONAL AND APPROVED IN COMPLIANCE WITH ALL AHJ.
11. UPON SUCCESSFUL COMPLETION OF ALL TESTING, CONTRACTOR SHALL PRIME AND PAINT ALL EXPOSED SPRINKLER PIPING. COLOR AND FINISH SHALL BE AS PER ARCHITECT.
12. CONTRACTOR SHALL INCLUDE IN HIS BID THE COST TO PROVIDE (5) FIVE ADDITIONAL SPRINKLERS INSTALLED. EXACT LOCATIONS OF THESE SPRINKLER HEADS SHALL BE DETERMINED IN FIELD.
13. FOR SPRINKLER WORK DONE IN ACCORDANCE WITH THE REQUIREMENTS OF N.F.P.A.-13, HYDROSTATIC TESTS IN ACCORDANCE WITH REFERENCE STANDARD N.F.P.A.-13.
14. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AND SHALL INSTALL NEW WORK TO CLEAR DUCTWORK AND LIGHTING FIXTURES.
15. ALL SPRINKLER WORK SHALL COMPLY WITH BUILDING STANDARDS AND REQUIREMENTS.
16. DRAWING INDICATES SPRINKLER SYSTEM DESIGN ONLY. CONTRACTOR RESPONSIBLE FOR OFFSETS, DROPS AND RISES FOR COORDINATION WITH OTHER TRADES.
17. PROVIDE AUXILIARY DRAINS AT TRAPPED SECTIONS OF PIPING AS REQUIRED BY NFPA.
18. GENERAL CONTRACTOR SHALL COORDINATE FINAL FURNITURE/ EQUIPMENT HEIGHT ELEVATIONS AND LOCATIONS WITH SPRINKLER INSTALLATION. ENGINEER SHALL BE NOTIFIED WHEN FURNITURE/EQUIPMENT IS LESS THAN 18" TO UNDERSIDE OF CEILING PRIOR TO INSTALLATION.
19. COMPOSITE DRAWINGS CONTRACTOR SHALL BE GIVEN A SEPIA TRANSPARENCIES TO IMPOSE THEIR WORK FOR A COORDINATED ALLOCATION OF SPACE. PROCEDURE SHALL INCLUDE HVAC CONTRACTOR TO INDICATE DUCT WORK, PIPING, STRUCTURAL AND ARCHITECTURAL DETAILS. SEPIAS SHALL BE GIVEN TO PLUMBING, SPRINKLER AND ELECTRICAL TRADES WHO WILL DRAW HIS WORK ON DRAWINGS. HVAC CONTRACTORS SHALL HOLD A COORDINATION MEETING WITH ALL CONTRACTORS TO ELIMINATE INTERFERENCE OR CONFLICTS IN INSTALLING WORK. IF UNABLE TO EACH AGREEMENT ISSUE, ARCHITECT SHALL MAKE BINDING DECISION.
20. CONTRACTOR SHALL COORDINATE SPRINKLER MAIN AND BRANCHES WITH NEW CONSTRUCTION TO AVOID CONFLICTS WITH CEILING HEIGHTS, DUCTWORK, LIGHTING FIXTURES, BEAMS. CONTRACTOR TO ADJUST PIPING ACCORDINGLY TO ACCOMMODATE NEW CONSTRUCTION.
21. WET SPRINKLER SYSTEM SUBJECTED TO FREEZING SHOULD COMPLY WITH NFPA 13 SEC. 8.16.4.1.
22. CONTRACTOR SHALL BE RESPONSIBLE FOR THE FAILURE OF ANY SPRINKLER SYSTEM OR EQUIPMENT TO FUNCTION PROPERLY UPON COMPLETION OF HIS WORK UPON SAID SYSTEM OR EQUIPMENT.

SPRINKLER REQUIREMENTS

A. ALL SPRINKLER PIPING SHALL BE SCHEDULE 40 IN ACCORDANCE WITH NFPA 13-2016. PIPE SHALL BE UL/FM APPROVED.

B. STEEL PIPE SHALL BE BETHLEHEM STEEL CO., ALLIED TUBE, BERGER INDUSTRIES OR APPROVED.

C. AS PER NFPA 13, PIPE OR TUBE USED IN SPRINKLER SYSTEMS SHALL BE OF THE MATERIALS SPECIFIED IN TABLE 6.3.1.1.

D. AS PER NFPA 13-2016, FITTINGS USED IN SPRINKLER SYSTEMS SHALL BE OF THE MATERIALS LISTED IN TABLE 6.4.1. FITTING SHALL BE UL/FM APPROVED.

E. NONMETALLIC PIPES & FITTINGS USED IN MULTIPURPOSE PIPING SYSTEMS NOT EQUIPPED WITH A FIRE DEPARTMENT CONNECTION SHALL BE DESIGNED TWITHSTAND A WORKING PRESSURE OF NOT LESS THAN 130PSI AT 120°F

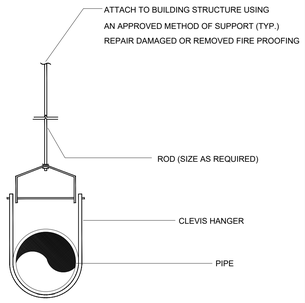
SPACING BETWEEN SPRINKLER HEADS

LIGHT HAZARD: 15' MAX.
ORDINARY HAZARD: 15' MAX

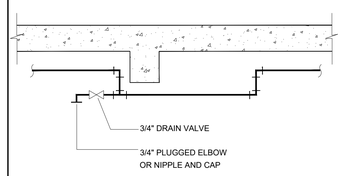
NOTE: MAXIMUM DISTANCE BETWEEN SPRINKLER HEADS & WALLS IS ½ THE DISTANCE BETWEEN HEADS.

PROTECTION AREA OF SPRINKLER HEADS

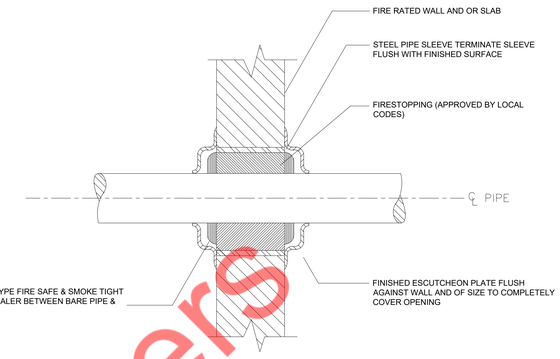
LIGHT HAZARD : 225 SQ. FT.
ORDINARY HAZARD: 130 SQ. FT.



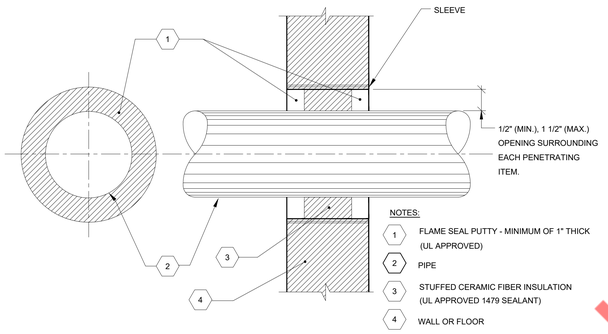
HANGER DETAILS TYPICAL
NOT TO SCALE



TYPICAL DRAIN CONNECTION FOR TRAPPED LINES
NOT TO SCALE

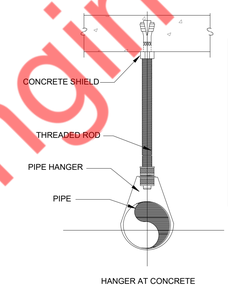


PIPE THROUGH RATED WALL TYPICAL DETAILS
NOT TO SCALE



NOTES:
1. FLAME SEAL PUTTY - MINIMUM OF 1" THICK (UL APPROVED)
2. PIPE
3. STUFFED CERAMIC FIBER INSULATION (UL APPROVED 1479 SEALANT)
4. WALL OR FLOOR

FIRE STOPPING DETAILS FOR FIRE/SMOKE RATED WALL/FLOOR OPENINGS
NOT TO SCALE



HANGER DETAIL

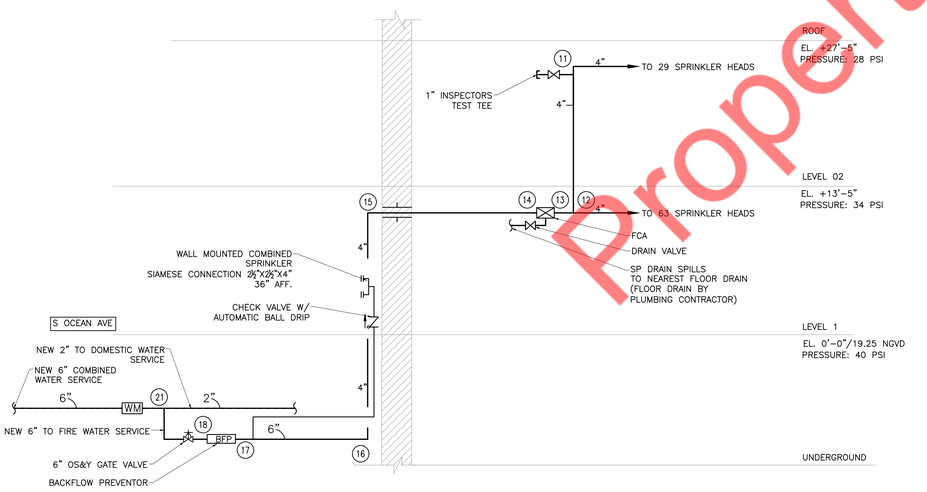
ROD SCHEDULE

PIPE SIZE	ROD SIZE	MAXIMUM SPACING	PIPE SIZE	ROD SIZE	MAXIMUM SPACING
1"	3/8"	5'-8'	2 1/2"	1/2"	10'-12'
1 1/4"	3/8"	6'-10'	3"	1/2"	10'-12'
1 1/2"	3/8"	8'-10'	4"	5/8"	12'-15'
2"	3/8"	10'-12'			

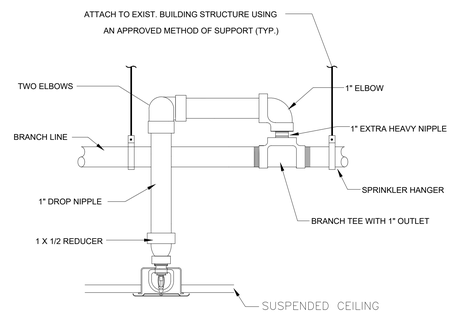
TYPICAL HANGER DETAILS AND ROD SCHEDULE
NOT TO SCALE

SPRINKLER LEGENDS

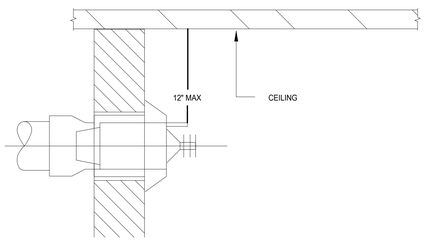
—— SP ——	SPRINKLER PIPE
●	CONCEALED SPRINKLER HEAD
⊙	UPRIGHT SPRINKLER HEAD
○ (D)	DRY PENDENT SPRINKLER HEAD



SPRINKLER RISER DIAGRAM
NOT TO SCALE



SPRINKLER HEAD IN SUSPENDED CEILING DETAILS
NOT TO SCALE



SIDEWALL SPRINKLER HEAD
NOT TO SCALE

SPRINKLER SCHEDULE

SYMBOL	NAME	COVERAGE	AREA	METAL	TEMPERATURE (°F)	K-FACTOR	NPT	MFG	MODEL#	APPROVALS
●	CONCEALED	STANDARD	LH/OH AREAS WITH CEILING	BRASS	155	5.6	½"	TYCO	SERIES RF-II TY3531	UL
◀	SIDEWALL	STANDARD	LH/OH AREAS WITHOUT CEILING	BRASS	155	5.6	½"	TYCO	SERIES TY-FRB TY3331	UL
⊙	UPRIGHT	STANDARD	LH/OH AREAS WITHOUT CEILING	BRASS	155	5.6	½"	TYCO	SERIES TY-FRL TY3121	UL
○ (D)	DRY PENDANT	STANDARD	WALK IN FREEZER	BRASS	155	5.6	1"	TYCO	SERIES DS-1 TY3255	UL

NOTE: COORDINATE ALL SPRINKLER COLOR FINISHES WITH ARCHITECT.

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Señor Frog's FUN, FOOD & CLOTHES

No.	DESCRIPTION	DATE

AUTHORIZED SIGNATURES:

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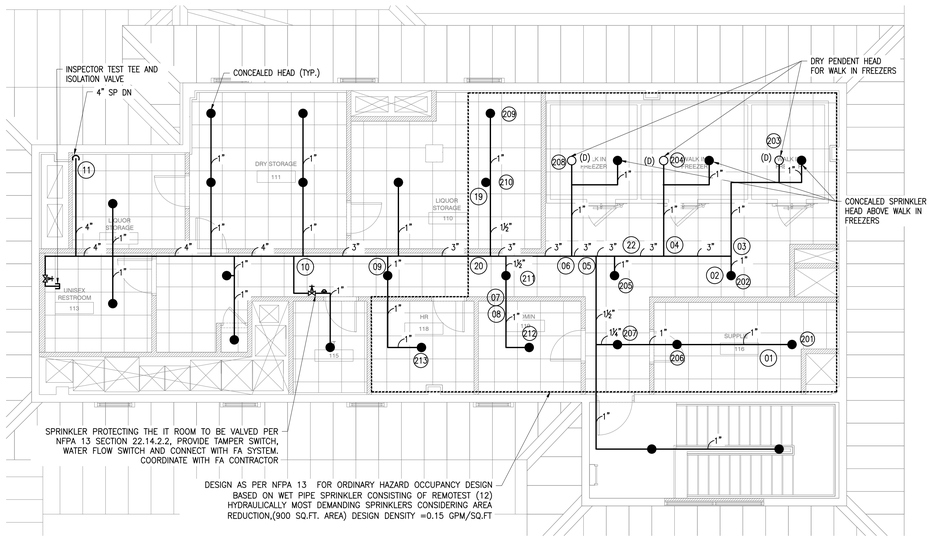
382 NE 191 ST SUITE 49674
MIAMI , FL 33179
WWW.NY-ENGINEERS.COM

SCALE: AS NOTED
DATE: 11-15-2024

CONTENT
GENERAL NOTES, SCHEDULES, DETAILS AND RISER DIAGRAM

SHEET NUMBER:
SP-101

PROJECT STATUS:



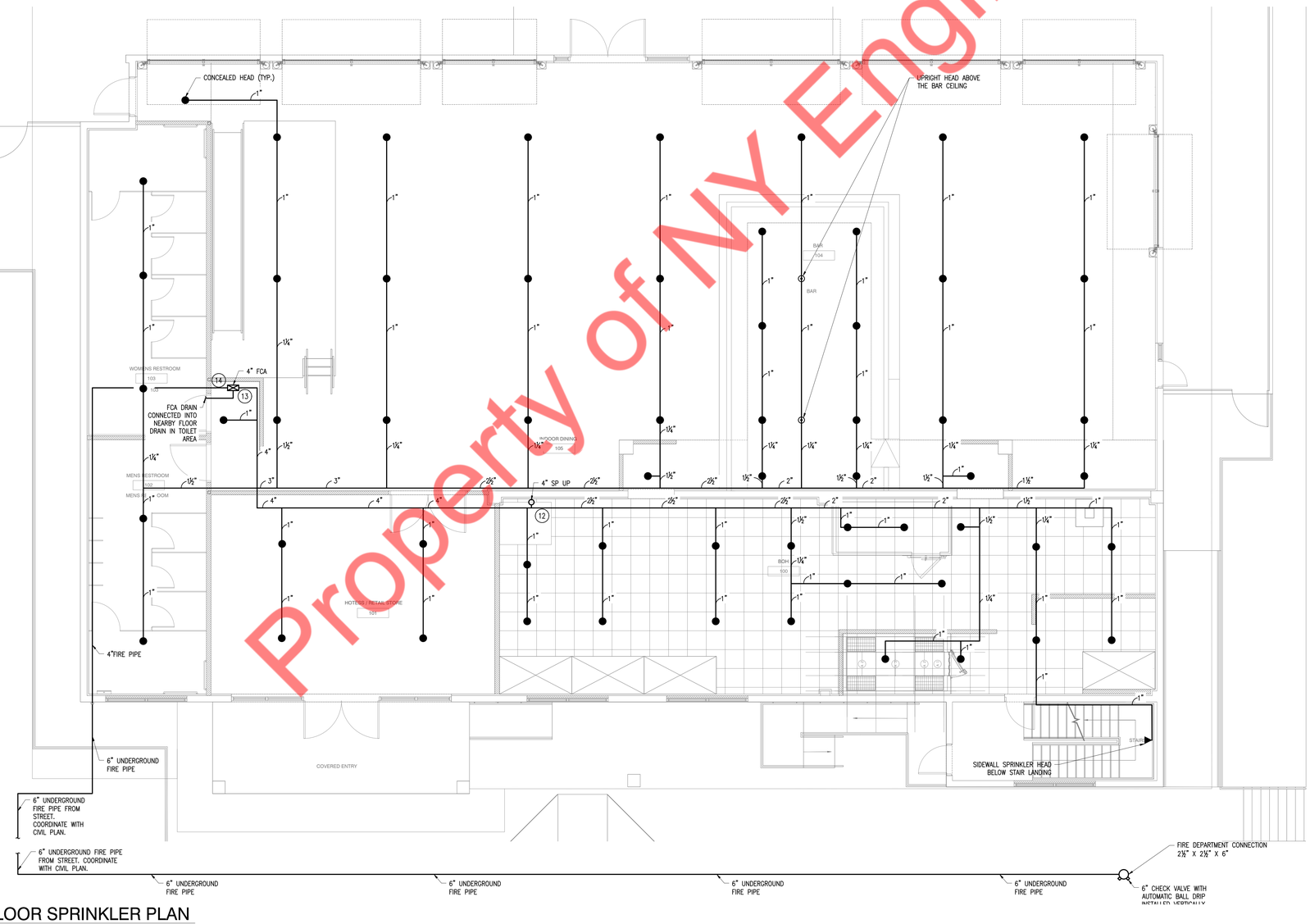
N

2 LEVEL 02 SPRINKLER PLAN
SCALE: 3 / 16" = 1' - 0

HAZARD CLASSIFICATION AND DESIGN DENSITY
AREA : DINING AREA AND OFFICE SPACE
OCCUPANCY: LIGHT HAZARD MINIMUM DESIGN DENSITY: 0.10 GPM/SQ. FT.
AREA : KITCHEN AND STORAGE SPACE
OCCUPANCY: ORDINARY HAZARD MINIMUM DESIGN DENSITY: 0.15 GPM/SQ. FT.

SPRINKLERS QUANTITY–GROUND FLOOR	
NEW CONCEALED SPRINKLER HEADS	60
SIDEWALL SPRINKLER HEADS	01
UPRIGHT SPRINKLER HEADS	02

SPRINKLERS QUANTITY–LEVEL 02	
NEW CONCEALED SPRINKLER HEADS	26
NEW DRY PENDENT SPRINKLER HEADS	03



N

1 GROUND FLOOR SPRINKLER PLAN
SCALE: 3 / 16" = 1' - 0

BINDING EDGE

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Señor Frog's FUN, FOOD & CLOTHES

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MIAMI , FL 33179
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CONTENT

SPRINKLER FLOOR PLAN

SHEET NUMBER:

SP-102

PROJECT STATUS: