MECHANICAL SYMBOLS LIST

AC–1 / TXF-1	EQUIPMENT SYMBOL

AIR DEVICES

	CEILING DIFFUSER SUPPLY
	CEILING DIFFUSER RETURN
	CEILING DIFFUSER EXHAUST
	SIDEWALL/DUCT MOUNTED GRILLE–SUPPLY
	SIDEWALL/DUCT MOUNTED GRILLE–RETURN

DUCT ACCESSORIES

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

CONTROLS & SENSORS

T	CEILING DIFFUSER SUPPLY
S	MANUAL ON/OFF SWITCH
S D	DUCT SMOKE DETECTOR
CO	CO2 DETECTOR
T S	TEMPERATURE SENSOR

DUCTWORK

========	AIR DUCT W/ 1.5" ACOUSTICAL LINING
	FLEXIBLE DUCT
FC FC	FLEXIBLE CONNECTION
24X12	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

MECHANICAL ABBREVIATIONS

AL	ACOUSTIC LINING
CDS	CEILING DIFFUSER SUPPLY
CDR	CEILING DIFFUSER RETURN
CFM	CUBIC FEET OF AIR PER MINUTE
COD	CORD OPERATED DAMPER
DN	DOWN
EA	EXHAUST AIR
EDH	ELECTRIC DUCT HEATER
EF	EXHAUST FAN
FD/AD	FIRE DAMPER W/ACCESS DOOR
EG	EXHAUST GRILLE
MD	MOTORIZED DAMPER
RTU	ROOF TOP UNIT
RG	RETURN GRILLE
RA	RETURN AIR
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SG	SUPPLY GRILL
SA	SUPPLY AIR
VD	VOLUME DAMPER
TEF	TOILET EXHAUST FAN

MECHANICAL DRAWING LIST

ARKANSAS BUILDING DEPARTMENT MECHANICAL NOTES

ALL WORK SHALL COMPLY WITH APPLICABLE SECTIONS OF 2021–IBC AND RULES AND REGULATIONS OF THE ARKANSAS DEPARTMENT OF BUILDINGS TO DATE.

1. THE CONTRACTOR SHALL ENGAGE THE SERVICES OF A PROFESSIONAL ENGINEER TO PROVIDE THE REQUIRED SPECIAL INSPECTIONS AND TESTS.
2. 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 2021 INTERNATIONAL BUILDING CODE REQUIREMENTS AS OUTLINES IN SECTION [BC 1704].
3. THE FOLLOWING WORK ITEMS, COMPONENTS, MATERIALS, CAPACITIES, ETC. SHALL COMPLY WITH THE REFERENCED CODE OR STANDARD:
   a. STANDARDS OF HEATING – 2021 IMC 309.1
   b. DUCT CONSTRUCTION AND INSTALLATION– 2021 IMC 603
   c. AIR INTAKES, EXHAUSTS AND RELIEFS – 2021 IMC 401.5
   d. AIR FILTERS – 2021 IMC 605
4. MINIMUM TEMPERATURE TO BE MAINTAINED IN OCCUPIED SPACES DURING HEATING SEASON: 68 DEG. FAHRENHEIT.
5. VENTILATION FOR ALL AREA SHALL COMPLY WITH 2021 IMC 401.
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 2021 IMC 403.3
7. REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED FIRE–RATED WALL AND SMOKE WALL CONSTRUCTION AND LOCATION.
8. 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.
9. A WRITTEN REPORT DESCRIBING THE ACTIVITIES AND MEASUREMENTS COMPETED IN ACCORDANCE WITH THE SECTION 2009 INTERNATIONAL ENERGY CONVERSATION.
10. ALL HEATING AND COOLING LOADS CALCULATED PER ASHRAE/ACCA 183.
11. SMOKE DETECTOR SHALL MEET UL268A.

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.

NOTE TO CONTRACTOR

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 10' 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 DIFFUSERSARE 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 UNOBSTRUCTED ACCESS TO UNIT ACCESS PANELS, CONTROLS, AND VALVING.
15. PROVIDE FLEXIBLE CONNECTIONS IN ALL DUCTWORK SYSTEMS (SUPPLY, RETURN, AND EXHAUST) CONNECTED TO AIR HANDLING UNITS, FANS, AND OTHER EQUIPMENT THAT REQUIRE VIBRATION ISOLATION. FLEXIBLE CONNECTIONS SHALL BE PROVIDED AT THE POINT OF CONNECTION TO THE EQUIPMENT UNLESS OTHERWISE INDICATED.
16. UNLESS OTHERWISE NOTED, ALL DUCTWORK IS OVERHEAD, TIGHT TO THE UNDERSIDE OF THE STRUCTURE, WITH SPACE FOR INSULATION IF NEEDED.
17. RUNS OF FLEXIBLE DUCT SHALL NOT EXCEED 5 FT.
18. ALL DUCTWORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN DUCTS, INCLUDING DIVIDED DUCTS AND TRANSITIONS AROUND OBSTRUCTIONS, SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
19. PROVIDE ACCESS DOORS IN DUCTWORK TO PROVIDE ACCESS FOR ALL SMOKE DETECTORS, FIRE DAMPERS, SMOKE DAMPERS, VOLUME DAMPERS, COILS, AND OTHER ITEMS LOCATED IN THE DUCTWORK THAT REQUIRE SERVICE AND/OR INSPECTION.
20. PROVIDE ACCESS DOORS IN DUCTWORK FOR THE OPERATION, ADJUSTMENT, AND MAINTENANCE OF ALL FANS, VALVES, AND MECHANICAL EQUIPMENT.
21. ALL DUCTS SHALL BE GROUNDED ACROSS FLEXIBLE CONNECTIONS WITH FLEXIBLE COPPER GROUNDING STRAPS. GROUNDING STRAPS SHALL BE BOLTED OR SOLDERED TO BOTH THE EQUIPMENT AND THE DUCT.
22. SMOKE DETECTORS SHALL BE FURNISHED AND WIRED BY THE ELECTRICAL CONTRACTOR. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR MOUNTING THE SMOKE DETECTOR IN DUCTWORK AS SHOWN ON THE DRAWINGS AND IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS.
23. SEE SPECIFICATIONS FOR DUCTWORK GAUGES, BRACING, HANGERS, AND OTHER REQUIREMENTS.

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.	INTERNATIONAL BUILDING CODE 2021
b.	ARKANSAS MECHANICAL CODE 2021
c.	ARKANSAS PLUMBING CODE 2018
d.	ARKANSAS FUEL GAS CODE 2018
e.	INTERNATIONAL ENERGY CONSERVATION CODE 2009
f.	NATIONAL ELECTRICAL CODE 2020

NO.	DATE	ISSUE DESCRIPTION
02	06/04/2025	PERMIT SET
01	05/06/2025	REVISED CHECK SET
00	04/29/2025	CHECK SET

NY ENGINEERS
382 NE 191ST STREET
SUITE 49674,
MIAMI, FL 33179

PROJECT NAME

PHYSICAL LOCATION

DRAWING TITLE

MECHANICAL GENERAL NOTES, ABBREVIATIONS & SYMBOLS LIST

GRAPHIC SCALE

SEAL

PROJECT NO.	-
SCALE	AS NOTED
DRAWN BY	NYE
CHECKED BY	NYE
DATE	06/04/2025
SHEET NUMBER	M0.1

THERMOSTATIC CONTROLS

C403.4.1 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, NOT FEWER THAN 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 THAT BOTH OF THE FOLLOWING CONDITIONS ARE MET:

a. THE PERIMETER SYSTEM INCLUDES NOT FEWER THAN 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 (15.2 M).
b. THE PERIMETER SYSTEM HEATING AND COOLING SUPPLY IS CONTROLLED BY THERMOSTATS LOCATED WITHIN THE ZONES SERVED BY THE SYSTEM.

C403.4.1.2 DEADBAND
WHERE USED TO CONTROL BOTH HEATING AND COOLING, ZONE THERMOSTATIC CONTROLS SHALL BE CONFIGURED TO PROVIDE A TEMPERATURE RANGE OR DEADBAND OF NOT LESS THAN 5°F (2.8°C) WITHIN WHICH THE SUPPLY OF HEATING AND COOLING ENERGY TO THE ZONE IS SHUT OFF OR REDUCED TO A MINIMUM.

EXCEPTIONS:
a. THERMOSTATS REQUIRING MANUAL CHANGEOVER BETWEEN HEATING AND COOLING MODES.
b. OCCUPANCIES OR APPLICATIONS REQUIRING PRECISION IN INDOOR TEMPERATURE CONTROL AS APPROVED BY THE CODE OFFICIAL.

C403.4.1.3 SETPOINT 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 CONFIGURED TO PREVENT THE HEATING SETPOINT FROM EXCEEDING THE COOLING SETPOINT AND TO MAINTAIN A DEADBAND IN ACCORDANCE WITH SECTION C403.4.1.2.

C403.4.2 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:
a. ZONES THAT WILL BE OPERATED CONTINUOUSLY.
b. ZONES WITH A FULL HVAC LOAD DEMAND NOT EXCEEDING 6,800 BTU/H (2 KW) AND HAVING A MANUAL SHUTOFF SWITCH LOCATED WITH READY ACCESS.

C403.4.2.1 THERMOSTATIC SETBACK
THERMOSTATIC SETBACK CONTROLS SHALL BE CONFIGURED 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).

C403.4.2.2 AUTOMATIC SETBACK AND SHUTDOWN
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 NOT FEWER THAN 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 CONFIGURED TO OPERATE THE SYSTEM FOR UP TO 2 HOURS; OR AN OCCUPANCY SENSOR.

C403.4.2.3 AUTOMATIC START AND STOP
AUTOMATIC START AND STOP CONTROLS SHALL BE PROVIDED FOR EACH HVAC SYSTEM. THE AUTOMATIC START 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. AUTOMATIC STOP CONTROLS SHALL BE PROVIDED FOR EACH HVAC SYSTEM WITH DIRECT DIGITAL CONTROL OF INDIVIDUAL ZONES. THE AUTOMATIC STOP CONTROLS SHALL BE CONFIGURED TO REDUCE THE HVAC SYSTEM'S HEATING TEMPERATURE SETPOINT AND INCREASE THE COOLING TEMPERATURE SETPOINT BY NOT LESS THAN 2°F (1.11°C) BEFORE SCHEDULED UNOCCUPIED PERIODS BASED ON THE THERMAL LAG AND ACCEPTABLE DRIFT IN SPACE TEMPERATURE THAT IS WITHIN COMFORT LIMITS.

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 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:
UNCONDITIONED SPACES WITHIN BUILDING: R–5
OUTSIDE OF BUILDING: R–8

1.4 ITEMS NOT INSULATED:

1. FIBROUS–GLASS DUCTS.
2. METAL DUCTS WITH DUCT LINER OR SUFFICIENT THICKNESS TO

COMPLY WITH ENERGY CODE 2009 AND ASHRAE/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.

DUCTS THAT HAVE INTERNAL ACOUSTICAL LINING.

1.5 PRODUCTS
A. THE FOLLOWING INSULATION MANUFACTURERS WILL BE ACCEPTABLE:

1. JOHNS–MANVILLE
2. OWENS–CORNING

PIPING INSULATION

A. INSULATE ALL PIPING IN ACCORDANCE WITH INSULATION SCHEDULE EXCEPT AS OTHERWISE NOTED.

INSULATION SCHEDULE – PIPING

SERVICE	SIZE	THICKNESS	MATERIAL FINISH
REFRIGERANT PIPING	<1.5"	0.5"	P–6

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.

1.7 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.

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.

NO.	DATE	ISSUE DESCRIPTION
02	06/04/2025	PERMIT SET
01	05/06/2025	REVISED CHECK SET
00	04/29/2025	CHECK SET

NY ENGINEERS
382 NE 191ST STREET
SUITE 49674,
MIAMI, FL 33179

PROJECT NAME

PHYSICAL LOCATION

DRAWING TITLE
MECHANICAL SPECIFICATIONS (1 OF 2)

GRAPHIC SCALE

SEAL

PROJECT NO.	-
SCALE	AS NOTED
DRAWN BY	NYE
CHECKED BY	NYE
DATE	06/04/2025
SHEET NUMBER	M0.2

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.

KITCHEN EXHAUST DUCTWORK:

A. ALL HORIZONTAL AND VERTICAL KITCHEN EXHAUST DUCTWORK SHALL BE CONSTRUCTED OF 16 GAUGE MINIMUM BLACK IRON OR PREFABRICATED DOUBLE WALL GREASE DUCTWORK APPROVED FOR KITCHEN EXHAUST APPLICATION WITH ETL LISTED TO UL 1978 AND UL 2221 SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER INSTALLATION INSTRUCTIONS AND LOCAL CODES SHALL SEAMS AND JOINTS SHALL HAVE A LIQUID TIGHT CONTINUOUS EXTERNAL WELD AS PER NFPA 96 FOR BLACK IRON DUCTWORK. THE EXTERIOR OF ALL KITCHEN RANGE BLACK IRON EXHAUST DUCTS SHALL HAVE 1–1/2" X 1–1/2" X 1/8"WELDED ANGLES, PUNCHED FOR SECURING BLOCK INSULATION. WHERE KITCHEN RANGE BLACK IRON EXHAUST DUCT RISER PASSED VERTICALLY THROUGH FLOORS OF THE BUILDING, PROVIDE ANGLE CLIPS WELDED TO THE DUCT OF REQUIRED SIZES TO SUPPORT THE WEIGHT OF THE RISER SECTIONS ON THE BUILDING STRUCTURE AT EACH OF THE FLOOR LEVELS. PROVIDE AND INSTALL ALL SUPPLEMENTARY STRUCTURAL STEEL IN SHAFTS TO PROPERLY SUPPORT EXHAUST DUCTWORK FROM BUILDING CONSTRUCTION. PROVIDE MINIMUM 12"X12" ACCESE DOOR ON SIDE OF HORIZONTAL DUCTS AT 12' SPACING. ACCESS DOORS SHALL BE SIMILAR TO DESCRIPTION IN "ACCESS DOORS IN SHEET METAL WORK WORK" EXCEPT THAT DOOR GAUGE SHALL BE THE SAME AS DUCT GAUGE. ALL HORIZONTAL DUCTS SHALL BE PITCHED BACK TO HOODS 1/4 " PER FOOT OR MAXIMUM PITCH ATTAINABLE. THIS TRADE SHALL DRILL OR CUT ALL REQUIRED OPENING AS REQUIRED BY THE DUCTS EXTINGUISHING SYSTEM AND AS COORDINATED WITH THE TRADE SUPPLYING THE EXTINGUISHING SPRAY HEADS. MAINTAIN 6" CLEARANCE BETWEEN SHEET METAL DUCT AND ANY SURFACE SUCH AS SLAB , BEAM OR SHAFT ENCLOSURE.

B. ALL HORIZONTAL AND VERTICAL KITCHEN RANGE BLACK IRON EXHAUST DUCTWORK GAUGES SHALL BE AS FOLLOWS.

SIZE	GAUGE BLACK IRON
LESS THEN 155 SQIN	16
155–200 SQIN	14
201–255 SQIN	12

C. ALL EXHAUST DUCT WORK FROM DISHWASHERS, POT SINKS, OVENS, OR OTHER KITCHEN APPARATUS EMITTING HEAT OR VAPOR (OTHER THEN RANGE HOOD EXHAUST) SHALL BE CONSTRUCTED OF ALUMINUM WITH WELDED JOINTS (USING SMACNA STANDARDS) AND MADE WATERTIGHT. THIS INCLUDES ALL DUCTWORK FROM THE EQUIPMENTS TO THE EXHAUST FAN AND FROM THE EXHAUST FAN TO THE DISCHARGE AIR LOUVERS. THE DUCTS SHALL PITCH BACK TO THE DISHWASHER FROM THE VERTICAL RISER OR WHERE THE RUN OF DUCT IS TOO LONG SHALL CHANGE PITCH TO DRAIN TO THE BOTTOM OF THE RISER. WHERE DUCTS LEAVE SHAFT TO ENTER THE EXHAUST FAN THEY SHALL ALSO BE PITCHED TO A LOW POINT AWAY FROM THE WELD 3/4 " DRAINS AT ALL LOW POINTS AND RUN TO THE NEAREST DRAIN. THIS TRADE SHALL BE HELD RESPONSIBLE TO PROVIDE A WATERTIGHT AND DRAINED SYSTEM. REGARDLESS OF THE QUANTITY OF STEAM OR WATER VAPOR LEAVING THE EQUIPMENTS.

END OF SECTION 233113

NO.	DATE	ISSUE DESCRIPTION
02	06/04/2025	PERMIT SET
01	05/06/2025	REVISED CHECK SET
00	04/29/2025	CHECK SET

NY ENGINEERS
382 NE 191ST STREET
SUITE 49674,
MIAMI, FL 33179

PROJECT NAME

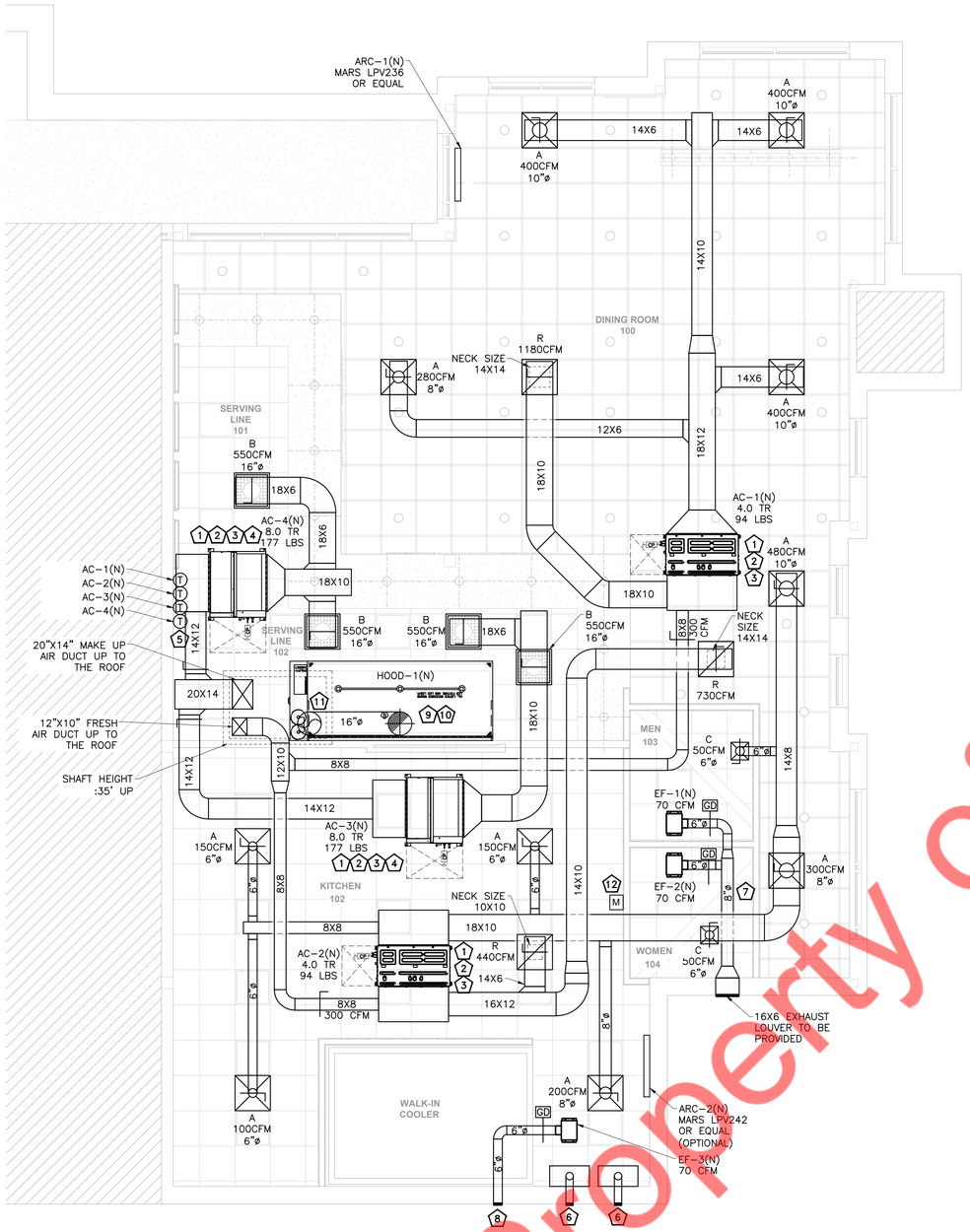
PHYSICAL LOCATION

DRAWING TITLE
MECHANICAL SPECIFICATIONS (2 OF 2)

GRAPHIC SCALE

SEAL

PROJECT NO. -
SCALE AS NOTED
DRAWN BY NYE
CHECKED BY NYE
DATE 06/04/2025
SHEET NUMBER M0.3



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

NORTH

MECHANICAL FLOOR PLAN KEY NOTES

1. 1" CONDENSATE DRAIN PIPE WITH CONDENSATE DRAIN PUMP TO LAVATORY WASTE W/AIR GAP FITTING. COORDINATE W/ PLUMBING CONTRACTOR IN FIELD.
2. CONTRACTOR SHALL PROVIDE FIELD MANUFACTURED FILTER RACK AT THE UNIT INLET. COORDINATE WITH ARCHITECT FOR ACCESS DOOR FOR FILTER.
3. INSTALL REFRIGERANT PIPING BETWEEN INDOOR AND OUTDOOR UNITS AS PER MANUFACTURERS RECOMENDATIONS. PROVIDE INSULATION TO REFRIGERANT PIPING AS PER 2009 IECC. CORDINATE PIPE ROUTING WITH ARCHITECT/OWNER.
4. THE AC-3(N) AND AC-4(N) SHALL BE INTERLOCKED WITH THE KITCHEN EXHAUST HOOD SYSTEM AND ENSURE THAT THE AC-3(N) AND AC-4(N) ONLY OPERATES WHEN THE EXHAUST FAN IS WORKING.
5. LOCATION OF DIGITAL THERMOSTAT CONTROL. INSTALL AND WIRE NEW 7-DAY PROGRAMMABLE THERMOSTAT. COORDINATE EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN.
6. PROVIDE AND INSTALL Ø3"/Ø5" CONCENTRIC VENT LINE FOR EXHAUST /COMBUSTION AIR INTAKE FROM WATER HEATER AND TERMINATE THROUGH SIDE WALL. PVC/CPVC APPROVED POLYPROPYLENE AND STAINLESS STEEL MATERIAL WITH TERMINATION KIT SHALL BE PROVIDED. INSTALL AS PER MANUFACTURERS INSTRUCTION.
7. ROUTE 8"Ø TOILET EXHAUST DUCT TERMINATED TOWARDS THE EXTERIOR WALL AND MAINTAIN 3 FEET FROM OPERABLE OPENINGS INTO BUILDINGS AND 10 FEET FROM MECHANICAL AIR INTAKES.
8. ROUTE 6"Ø EXHAUST DUCT TO SIDE EXTERIOR WALL AND MAINTAIN A MINIMUM MAINTAIN 3 FEET FROM OPERABLE OPENINGS INTO BUILDINGS AND 10 FEET FROM MECHANICAL AIR INTAKES.
9. CONTRACTOR TO FIELD VERIFY & INSTALL THE HOOD AS PER MANUFACTURER RECOMMENDATION.
10. GREASE DUCT TO BE PROVIDED WITH KITCHEN EQUIPMENT AND INSTALLED BY MECHANICAL CONTRACTOR. INSTALL AS PER MANUFACTURER'S INSTRUCTIONS. INSTALL OWNER FURNISHED UL-2221 LISTED DOUBLE-WALL GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL DW-2R ROUND 20 GAUGE 430 STAINLESS STEEL INNER DUCT INSULATED WITH A 24 GAUGE OUTER SHELL FROM HOOD COLLAR TO EXHAUST FAN ON ROOF. INSTALL EXHAUST DUCT AS PER MANUFACTURER'S INSTRUCTIONS. PROVIDE CLEANOUTS AT EVERY CHANGE OF DIRECTION IN THE DUCT AND EVERY 10 FEET WITH MINIMUM OF 3 FEET OF CLEARANCE IN FRONT OF CLEAN-OUT. COORDINATE EXACT DUCT LENGTHS REQUIRED BASED ON FIELD CONDITIONS WITH MANUFACTURER.
11. 16"ø GREASE EXHAUST DUCT FROM HOOD-1(N) UPTO ROOF LEVEL AND CONNECT WITH KEF-1(N). GREASE DUCT CONSTRUCTION SHALL BE STEEL HAVING A MINIMUM THICKNESS OF 0.0575 INCH (1.463 MM) (NO. 16 GAGE). BLACK IRON WELDED LIQUID TIGHT. PROVIDE TRANSITION AT HOOD COLLAR.
12. PROVIDE AND INSTALL EMERGENCY MANUAL SHUTDOWN PUSH BUTTON FOR HOOD-1(N). PUSH BUTTON SHALL BE IN THE PATH OF EGRESS, A MINIMUM OF 10 FT. AWAY FROM THE HOOD AND A MAXIMUM OF 20 FT.

GENERAL NOTES:

1. ALL WORK SHALL COMPLY WITH ALL LOCAL AND STATE CODES AND AUTHORITIES HAVING JURISDICTION.
2. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL REQUIRED PERMITS AND ARRANGE ALL REQUIRED INSPECTIONS.
3. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER CONTRACTORS AND TRADES.
4. THESE DRAWINGS, AS PREPARED, ARE DIAGRAMMATIC BUT SHALL BE FOLLOWED AS CLOSELY AS CONSTRUCTION OF THE PROJECT AND THE WORK OF THE TRADES WILL PERMIT. EQUIPMENT LOCATIONS INDICATED ARE APPROXIMATE. COORDINATE EXACT LOCATIONS AND REQUIRED CLEARANCES WITH EQUIPMENT SUPPLIER AND ALL TRADES PRIOR TO INSTALLATION.
5. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL THE EQUIPMENT INDICATED WITHIN THE MECHANICAL DRAWINGS UNLESS OTHERWISE NOTED. ALL EQUIPMENT SHALL BE UL LISTED. VERIFY LOCATION AND DIMENSIONS IN THE FIELD PRIOR TO FABRICATION AND / OR INSTALLATION.
6. DUCT SIZES SHOWN ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS.
7. PROVIDE MINIMUM R-5 INSULATION (INTERNAL FOR EXPOSED DUCTS AND EXTERNAL FOR CONCEALED DUCTS) FOR SUPPLY & RETURN AIR DUCTS. PROVIDE ACOUSTIC INSULATION ON MAIN SUPPLY AND RETURN DUCTS UP TO 10 FT. FROM HVAC UNIT.
8. ALL DUCTWORK SHALL BE FABRICATED, INSTALLED, SEALED, AND INSULATED PER THE LATEST ISSUE OF SMACNA LOW-VELOCITY DUCT MANUAL.
9. ALL SUPPLY, RETURN, EXHAUST GRILLES ON THE ABOVE FLOOR. EXACT LOCATION TO VERIFY WITH ARCHITECTURE.
10. THE CONTRACTOR IS TO MAKE ALL LOW-VOLTAGE WIRING CONNECTIONS FOR ALL HVAC EQUIPMENT INCLUDING TEMPERATURE CONTROLS, ROOF TOP UNITS, SMOKE DETECTORS AND CONTRACTOR PANEL.
11. PROVIDE FIRE OR FIRE+SMOKE DAMPER WHEREVER DUCTS ARE CROSSING FIRE/SMOKE RATED WALLS/ BARRIERS AS PER LOCAL CODE. COORDINATE WITH ARCHITECTURAL DRAWING FOR FIRE RATING OF THE WALLS.

NO.	DATE	ISSUE DESCRIPTION
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00	04/29/2025	CHECK SET

NY ENGINEERS
382 NE 191ST STREET
SUITE 49674,
MIAMI, FL 33179

PROJECT NAME

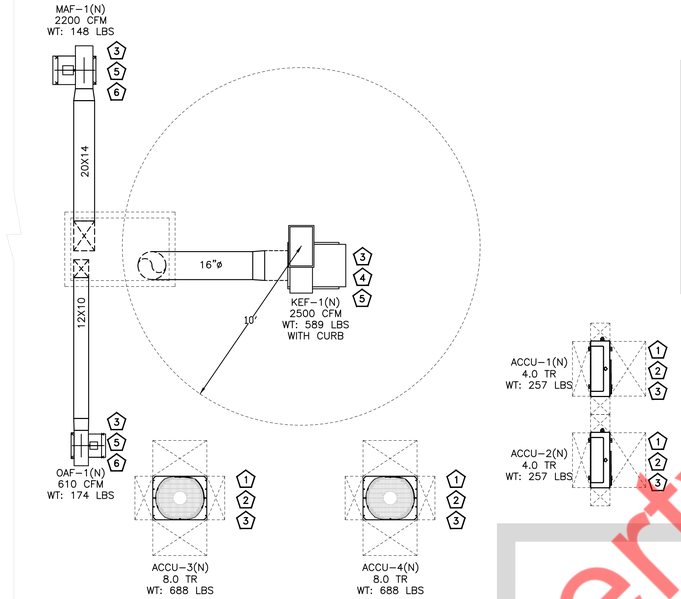
PHYSICAL LOCATION

DRAWING TITLE
MECHANICAL FLOOR PLAN

GRAPHIC SCALE

SEAL

PROJECT NO.	-
SCALE	AS NOTED
DRAWN BY	NYE
CHECKED BY	NYE
DATE	06/04/2025
SHEET NUMBER	M1.1



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

NORTH

MECHANICAL ROOF PLAN KEY NOTES

1. CONTRACTOR TO FURNISH AND INSTALL THE CONDENSING UNIT MOUNTING ON STEEL RAILS AS PER MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO COORDINATE FINAL LOCATION WITH CLIENT AND ARCHITECT.
2. INSTALL NEW REFRIGERANT PIPING BETWEEN INDOOR AND OUTDOOR UNIT AS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE WEATHER PROOF COATING FOR EXPOSED PIPING. PROVIDE INSULATION TO REFRIGERANT PIPING AS PER 2009 INTERNATIONAL ENERGY CONSERVATION CODE.
3. COORDINATE THE FINAL LOCATION OF THE MECHANICAL EQUIPMENT WITH THE STRUCTURAL DRAWINGS.
4. KITCHEN EXHAUST FAN KEF-1(N) DISCHARGE SHALL BE LOCATED NOT LESS THAN 10 FEET HORIZONTALLY FROM OR NOT LESS THAN 3 FEET ABOVE AIR INTAKE OPENINGS INTO ANY BUILDING. EXHAUST AIR DISCHARGE OPENING LOCATED 40 INCHES ABOVE THE ROOF SURFACE.
5. CONTRACTOR TO PROVIDE 6" HIGH CONCRETE PADS AND VIBRATIONS ISOLATORS FOR INSTALLING THE NEW FANS.
6. MECHANICAL OUTSIDE AIR INTAKE OPENING SHALL BE MAINTAINED 3 FEET BELOW CONTAMINANT SOURCE AND 10 FEET HORIZONTALLY FROM ANY HAZARDOUS CONTAMINANT SOURCE.

GENERAL NOTES

A. ALL ROOF PENETRATIONS AND REPAIRS SHALL BE BY THE GENERAL CONTRACTOR.

B. ROOFING WORK SHALL BE PERFORMED BY THE ROOFING CONTRACTOR.

C. PROVIDE FIRE OR FIRE+SMOKE DAMPER WHEREVER DUCTS ARE CROSSING FIRE/SMOKE RATED WALLS/ BARRIERS. COORDINATE WITH ARCHITECTURAL DRAWING FOR FIRE RATING OF THE WALLS.

D. PROVIDE WEATHER PROOF COATING FOR EXPOSE DUCTWORK AND PIPING.

E. COORDINATE ALL MD AND FSD WITH ELECTRICAL CONTRACTOR FOR POWER REQUIREMENT.

NO.	DATE	ISSUE DESCRIPTION
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00	04/29/2025	CHECK SET

NY ENGINEERS
382 NE 191ST STREET
SUITE 49674,
MIAMI, FL 33179

PROJECT NAME

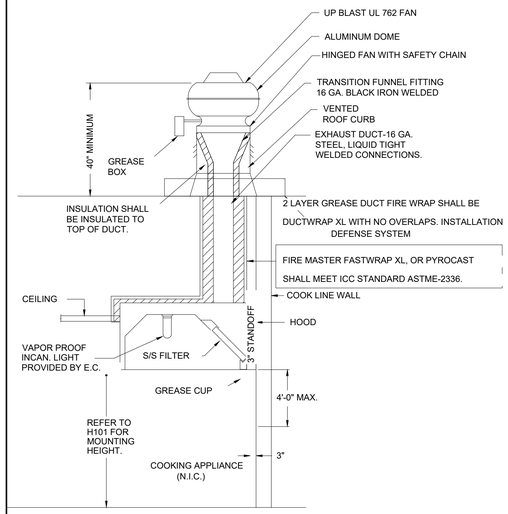
PHYSICAL LOCATION

DRAWING TITLE
MECHANICAL ROOF PLAN

GRAPHIC SCALE

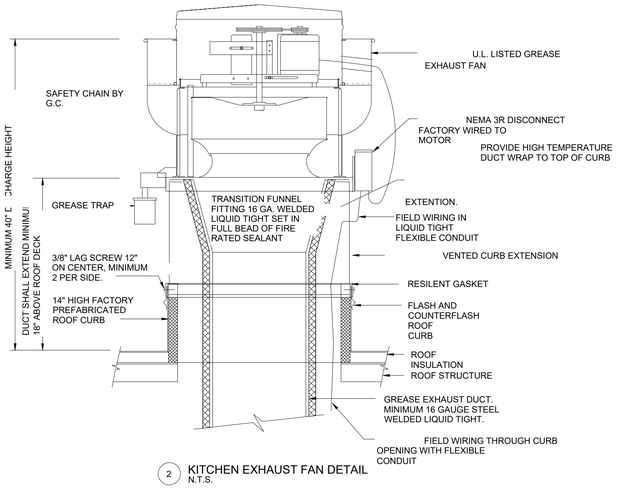
SEAL

PROJECT NO.	-
SCALE	AS NOTED
DRAWN BY	NYE
CHECKED BY	NYE
DATE	06/04/2025
SHEET NUMBER	M3.1

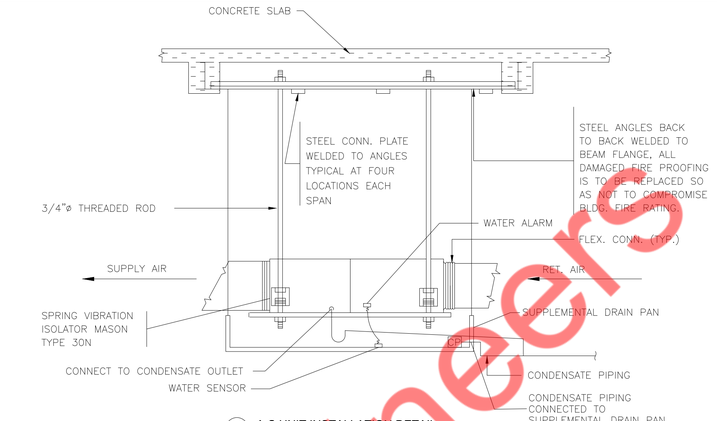


NOTE:
DUCT FIRE WRAP FURNISHED BY BWW, INSTALLED BY MECHANICAL CONTRACTOR

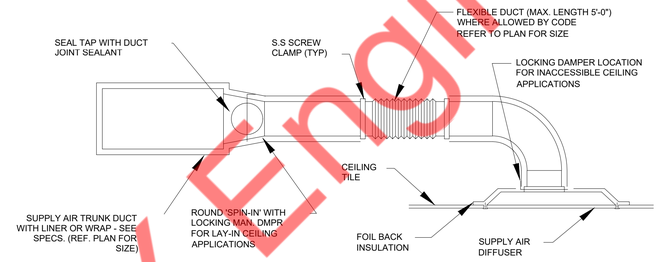
1 FIRE RATED CHASE DETAIL
N.T.S.



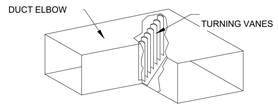
2 KITCHEN EXHAUST FAN DETAIL
N.T.S.



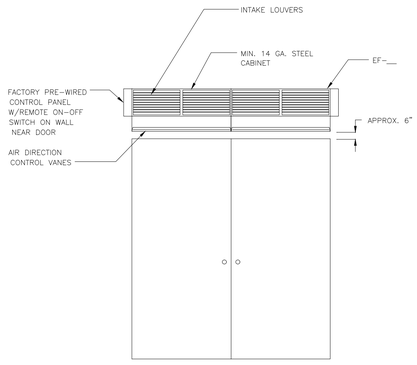
3 A.C UNIT INSTALLATION DETAIL
N.T.S.



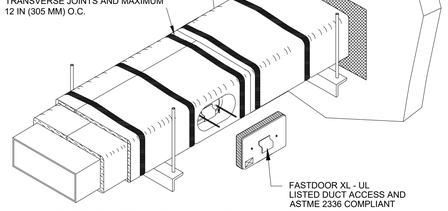
6 DIFFUSER CONNECTION DETAIL
N.T.S.



7 MITERED ELBOW DETAIL
N.T.S.



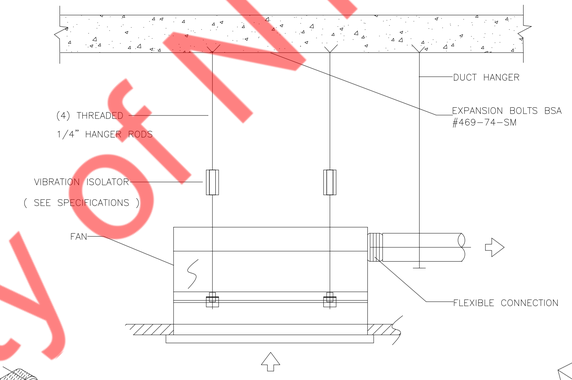
5 AIR CURTAIN FAN DETAIL
N.T.S.



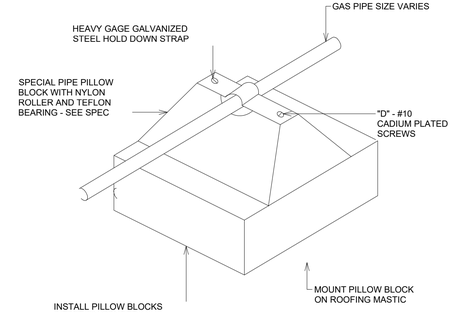
DUCT FIRE WRAP FURNISHED BY BWW, INSTALLED BY MECHANICAL CONTRACTOR

NOTE:

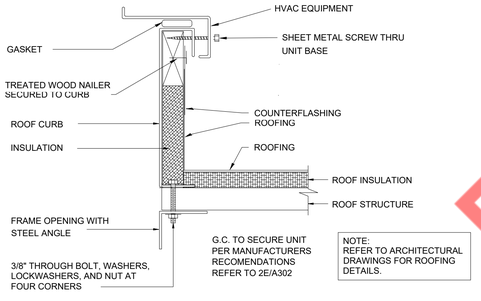
4 GREASE DUCT WRAP DETAIL
N.T.S.



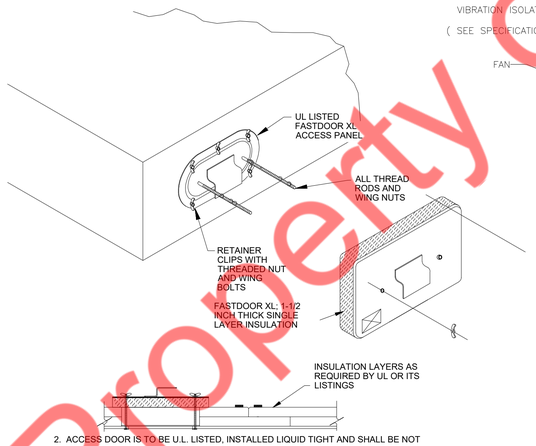
7 CEILING FAN HANGING SUPPORT DETAIL
N.T.S.



8 GAS PIPE ROOF SUPPORT DETAIL
N.T.S.



8 ROOFTOP CURB DETAIL
N.T.S.



2. ACCESS DOOR IS TO BE U.L. LISTED, INSTALLED LIQUID TIGHT AND SHALL BE NOT

NOTES:

1. ACCESS DOOR IS TO BE FASTDOOR XL OR EQUAL.

LESS 12 INCHES ON ONE (1) SIDE.

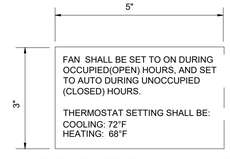
3. ACCESS DOOR IS TO MEET OR EXCEED THE REQUIREMENTS OF NFPA 96, 2008 EDITION

DUCT FIRE WRAP FURNISHED BY BWW, INSTALLED BY MECHANICAL CONTRACTOR

4. PROVIDE ANU INSTALL ACCESS DOOR AT 20 F.T. ON CENTER, EACH CHANGE OF DIRECTION OF DUCT AND AT ALL LOCATIONS REQUIRED BY LOCAL CODE.

NOTE:

9 GREASE DUCT ACCESS DOOR DETAIL
N.T.S.



1. SIGN TO BE FABRICATED FROM LAMACOID PLASTIC WITH

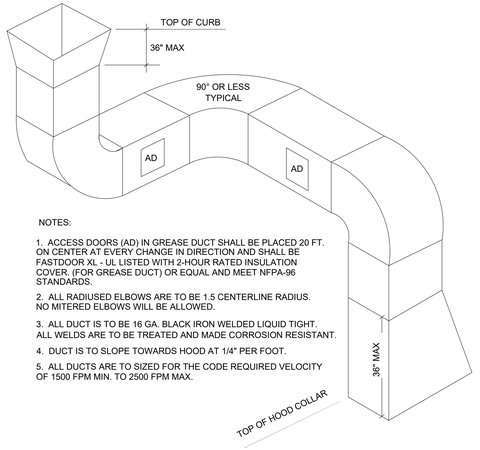
BLACK OUTER LAMINATIONS AND A WHITE INNER LAMINATION

2. LETTERS SHALL BE 1/4" HIGH UPPER CASE ENGRAVED LETTERS TO EXPOSE THE WHITE LAMINATION, WORDING

TO BE THE SAME AS SHOWN ABOVE. D ON SIGN.

MANAGER. REMOVE ALL PAINT AND CLEAN MOUNTING SURFACE FOR MOUNTING SIGN WITH A CONTACT CEMENT.

10 THERMOSTAT SETTING DETAIL
N.T.S.



NOTES:

1. ACCESS DOORS (AD) IN GREASE DUCT SHALL BE PLACED 20 FT. ON CENTER AT EVERY CHANGE IN DIRECTION AND SHALL BE FASTDOOR XL - UL LISTED WITH 2-HOUR RATED INSULATION COVER. (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. BLACK IRON WELDED LIQUID TIGHT. ALL WELDS ARE TO BE TREATED AND MADE CORROSION RESISTANT.

4. DUCT IS TO SLOPE TOWARDS HOOD AT 1/4" PER FOOT.

5. ALL DUCTS ARE TO SIZED FOR THE CODE REQUIRED VELOCITY OF 1500 FPM MIN. TO 2500 FPM MAX.

11 TYPICAL GREASE DUCT DETAIL
N.T.S.

NO.	DATE	ISSUE DESCRIPTION
02	06/04/2025	PERMIT SET
01	05/06/2025	REVISED CHECK SET
00	04/29/2025	CHECK SET

NY ENGINEERS
382 NE 191ST STREET
SUITE 49674,
MIAMI, FL 33179

PROJECT NAME

PHYSICAL LOCATION

DRAWING TITLE
MECHANICAL DETAILS

GRAPHIC SCALE

SEAL

PROJECT NO.	-
SCALE	AS NOTED
DRAWN BY	NYE
CHECKED BY	NYE
DATE	06/04/2025

SHEET NUMBER
M4.1

INDOOR UNITS SCHEDULE

MAKE:- | LG OR EQUIVALENT

UNIT TAG	LOCATION	TYPE	CAP. (TON)	COOLING (MBH)	HEATING (MBH)	OA CFM	TOTAL CFM	MAX RATED ESP. (IN. WG)	MAX. SOUND PRESS.(DBA)	ELECTRICAL DATA		DIMENSIONS (HXWXD) (IN.)	PIPE SIZE			WEIGHT (LBS.)	MODEL NO.
										AMPS	PH/VOLT/HZ	UNIT	LIQ.	SUCTION	DRAIN (ID)		
AC-1(N)	SEE PLAN	R32 MULTI V™ MID STATIC DUCTED	4	48.1	54.2	300	1480	0.79	42	2.5	208-230 / 60 / 1	14"x27"x51"	3/8"	5/8"	1"	94	ZRNU483M3AA
AC-2(N)	SEE PLAN	R32 MULTI V™ MID STATIC DUCTED	4	48.1	54.2	310	1480	0.79	42	2.5	208-230 / 60 / 1	14"x27"x51"	3/8"	5/8"	1"	94	ZRNU483M3AA

NOTES:

1. SUPPLY AIR CFM BASED ON HIGH SPEED.
2. REFRIGERANT R32 SHALL BE PROVIDED.
3. PROVIDE ALL MOUNTING BRACKET AND ALL ASSOCIATED ACCESSORIES.
4. ALL REFRIGERANT PIPING SHALL BE SIZED AS PER MANUFACTURERS RECOMMENDATIONS.
5. PROVIDE FILTER ON ALL RETURNS TO UNIT.
6. SEE FLOOR PLAN FOR QUANTITIES.
7. INDOOR UNIT ACCESS PANEL FILED-PROVIDED.
8. CONTRACTOR SHALL PROVIDE A LONG LINE SET FOR REFRIGERANT PIPING IN THE EVENT THAT TOTAL REFRIGERANT LENGTH EXCEED THE MANUFACTURER'S STANDARD RECOMMENDED LENGTH.
9. PROVIDE ELECTRICAL POWER TO THE INDOOR UNIT FROM THE OUTDOOR UNIT AS PER MANUFACTURER RECOMMENDATIONS.

OUTDOOR UNITS SCHEDULE

MAKE: LG OR EQUIVALENT

UNIT TAG	NUMBER OF MODULES	LOCATION	INDOOR UNIT SERVED	CAP.TR	COOLING MBH	HEATING MBH	COMPRESSOR TYPE	UNIT DIMENSIONS IN.(HXWXD)	WEIGHT (LBS)	PIPING DIMENSION		ELECTRICAL			SOUND LEVEL (dBA)	DUCTED		MODEL NO.
										LIQUID-HI PRESSURE	GAS HIGH-PRESSURE	(V/Hz/Ph)	MCA (A)	MOP (A)		EER2	SEER2	
ACCU-1(N)	1	SEE PLAN	AC-1(N)	4	48	54	HERMETICALLY SEALED SCROLL	54"x13"x37"	257	3/8"	5/8"	208-230V/60/1	31	40	54	12.2	17	ZRUM048GSS0
ACCU-2(N)	1	SEE PLAN	AC-2(N)	4	48	54	HERMETICALLY SEALED SCROLL	54"x13"x37"	257	3/8"	5/8"	208-230V/60/1	31	40	54	12.2	17	ZRUM048GSS0

NOTES:

1. UNIT SHALL HAVE 10 YEAR EXTENDED WARRANTY FOR COMPRESSOR PARTS.
2. PROVIDE LOW AMBIENT CONTROL FOR CONDENSING UNIT OPERATION DOWN TO MINUS 10 DEG.F.
3. PROVIDE COMPRESSOR CYCLE PROTECTOR.
4. PROVIDE STEEL RAILS FOR CONDENSER MOUNTING.
5. STEEL RAILS TO BE PROVIDED BY MECH CONTRACTOR.
6. CONTACT SHALL PROVIDE A LONG LINE SET FOR A REFRIGERANT PIPING IN THE EVENT THAT THE TOTAL REFRIGERANT LEND EXCEEDS THE MANUFACTURER STANDARDS RECOMMENDED LENGTH.
7. AIR CONDITIONER UNIT SHALL PROCESS PRODUCE NOISE LEVELS IN EXCESS OF 42DB FOR SINGLE AIR CIRCULATING DEVICE AND 45 DECIBELS FOR THE CUMULATIVE NOISE LEVEL OF MULTIPLE AIR CIRCULATING DEVICES AS MEASURED THREE FEET FROM THE NOISE SOURCE AT AN OPEN DOOR WINDOW OF THE NEARBY RESIDENCE.

100% OA SPLIT HEAT PUMP TYPE CONDENSING UNITS SCHEDULE

MAKE: TRANE MITSUBISHI OR EQUIVALENT

UNIT TAG	NUMBER OF MODULES	LOCATION	INDOOR UNITS SERVED	CAP.TR	COOLING MBH	HEATING MBH	COMPRESSOR TYPE	UNIT DIMENSIONS IN.(HXWXD)	WEIGHT (LBS)	PIPING DIMENSION		ELECTRICAL			SOUND LEVEL (Dba)	EER	IEER	COP	MODEL NO.
										LIQUID-HI PRESSURE	GAS LOW-PRESSURE	(V/Hz/Ph)	MCA	MOP					
ACCU-3 (N)	1	SEE PLANS	AC-3 (N)	8	96	108	INVERTER SCROLL HERMATIC	72X50X30	688	3/8"	7/8"	460/60/3	29	45	56	12.3	21	4	TUHYH0964AN41AN
ACCU-4 (N)	1	SEE PLANS	AC-4 (N)	8	96	108	INVERTER SCROLL HERMATIC	72X50X30	688	3/8"	7/8"	460/60/3	29	45	56	12.3	21	4	TUHYH0964AN41AN

NOTES:

1. UNIT SHALL HAVE TEN YEAR EXTENDED WARRANTY FOR COMPRESSORS/PARTS.
2. PROVIDE LOW AMBIENT CONTROL FOR CONDENSING UNIT OPERATION DOWN TO -10°F.
3. PROVIDE COMPRESSOR CYCLE PROTECTOR.
4. PROVIDE STEEL RAILS AND VIBRATION ISOLATORS FOR MOUNTING THE UNIT.
6. CONTRACTOR SHALL PROVIDE A LONG LINE SET FOR REFRIGERANT PIPING IN THE EVENT THAT TOTAL REFRIGERANT LENGTH EXCEED THE MANUFACTURER'S STANDARD RECOMMENDED LENGTH.
7. AIR CONDITIONER UNIT SHALL NOT PRODUCE NOISE LEVELS IN EXCESS OF 42 dB FOR A SINGLE AIR CIRCULATING DEVICE AND 45 DECIBELS FOR THE CUMULATIVE NOISE LEVEL OF MULTIPLE AIR CIRCULATING DEVICES AS MEASURED 3 FEET FROM THE NOISE SOURCE AT AN OPEN DOOR OR WINDOW OF A NEARBY RESIDENCE.

100% OA SPLIT SYSTEM INDOOR SCHEDULE

MAKE: TRANE MITSUBISHI OR EQUIVALENT

UNIT TAG	LOCATION	UNIT TYPE	CAP. (TON)	COOLING MBH	HEATING MBH	TOTAL CFM (MAX.)	OA CFM	MAX. ESP. (IN. WG)	MAX. SOUND	ELECTRICAL DATA			DIMENTIONS (HXWXD) (IN.)	PIPE SIZE			WEIGHT (LBS.)	MODEL NO.	REMARKS
										VOLT/PH/HZ	MCA	MOP		LIQ.	SUCTION	DRAIN (ID)			
AC-3 (N)	SEE PLANS	DUCTED FCU FOR 100% OA APPLICATIOONS	8.0	96.0	57.0	1200	1100	0.8	41	208-230/1/60	4.80	15	18X49X44	3/8"	7/8"	1-1/4"	177	TPEFYP096OA140A	
AC-4 (N)	SEE PLANS	DUCTED FCU FOR 100% OA APPLICATIOONS	8.0	96.0	57.0	1200	1100	0.8	41	208-230/1/60	4.80	15	18X49X44	3/8"	7/8"	1-1/4"	177	TPEFYP096OA140A	

NOTES:

1. SUPPLY AIR CFM BASED ON HIGH SPEED.
2. REFRIGERANT R410A SHALL BE PROVIDED.
3. PROVIDE MOUNTING BRACKETS AND ALL ASSOCIATED ACCESSORIES.
4. ALL REFRIGERANT PIPING TO BE SIZED PER MANUFACTURERS RECOMMENDATIONS.
5. PROVIDE FACTORY SPECIFIED FILTER ON ALL RETURNS TO UNIT.
6. INDOOR UNIT ACCESS PANEL FIELD-PROVIDED.
7. CONTRACTOR SHALL PROVIDE A LONG LINE SET FOR REFRIGERANT PIPING IN THE EVENT THAT TOTAL REFRIGERANT LENGTH EXCEEDS THE MANUFACTURER'S STANDARD RECOMMENDED LENGTH.
8. PROVIDE ELECTRICAL POWER TO THE INDOOR UNIT FROM THE OUTDOOR UNIT AS PER MANUFACTURER RECOMMENDATIONS.

EXHAUST FAN SCHEDULE

MARK	MANUFACTURER	MODEL	TYPE	AREA SERVED	FAN				ELECTRICAL					APPROXIMATE WEIGHT	ACCESSORIES	NOTES
					EXHAUST AIRFLOW (CFM)	EXTERNAL STATIC (IN. W.G.)	DRIVE TYPE	MOTOR HP	VOLTAGE	PHASE	MCA	MOCP	FLA			
KEF-1 (N)	CAPTIVEAIRE	DU85HFA	ROOF MOUNTED	HOOD-1	2500	0.909	DIRECT	1.00	115	1	15	25	11.6	94	RC, FSC, GDC, WP	1,2
EF-1 (N)	GREENHECK	SP-LP0511-1	CEILING	MEN'S RESTROOM	70	0.5	DIRECT	0.01	115	1	0.4	15	0.29	8	BD, DP, FSC, VI	3,4
EF-2 (N)	GREENHECK	SP-LP0511-1	CEILING	WOMEN'S RESTROOM	70	0.5	DIRECT	0.01	115	1	0.4	15	0.29	8	BD, DP, FSC, VI	3,4
EF-3 (N)	GREENHECK	SP-LP0511-1	CEILING	MOP SINK	70	0.5	DIRECT	0.01	115	1	0.4	15	0.29	8	BD, DP, FSC, VI	3,4
OAF-1 (N)	GREENHECK	USF-08-B7	ROOF MOUNTED	SEE PLAN	610	0.8	DIRECT	0.13	460	3	1.4	15	1.1	148	MD	1,3,4
MAF-1 (N)	GREENHECK	USF-15-B7	ROOF MOUNTED	SEE PLAN	2200	0.8	DIRECT	0.5	460	3	3.8	15	3	174	MD	1,3,4

ACCESSORIES:
BD-BACKDRAFT DAMPER, DP-DISCONNECT PLUG, GDC- GREASE DRAIN CUPRC-FACTORY FURNISHED 18" ROOF CURB, FSC-FACTORY MOUNTED AND WIRED VARIABLE SPEED CONTROL, VI-VIBRATION ISOLATION, WP-NEMA 3R DISCONNECT SWITCH, MD-MOTORISED DAMPER

NOTES:

1. FAN SHALL BE CONTROLLED BY HOOD CONTROLS. INTERLOCK AC-3(N) & 4(N) TO OPERATE IN OCCUPIED MODE WHILE KITCHEN EXHAUST FAN IS ENERGIZED.
2. REFER TO CAPTIVEAIRE DRAWINGS FOR ADDITIONAL INFORMATION.
3. INTERLOCK FAN OPERATION WITH RESTROOM LIGHTING.
4. ACCEPTED ALTERNATE MANUFACTURER'S SHALL BE CARNES, COOK, AND PENN.

VENTILATION CALCULATION

ROOM NAME	AREA (SQ.FT.)	NUMBER OF PEOPLE/1000sq.ft AS PER IMC 2021	NUMBER OF PEOPLE AS PER IMC 2021	NUMBER OF PEOPLE AS PER ARCH LAYOUT	FINAL PEOPLE NO.	MIN OUTSIDE AIR AS PER		REQ. OSA	PROVIDED OSA	EXHAUST AIRFLOW RATE (CFM)/(CFM/SQ.FT)	PROVIDED EXHAUST AIR CFM
						CFM/PEOPLE	CFM/SQ.FT				
100 DINING AREA	924	70	65	37	37	7.5	0.18	445	450	0	0
101 SERVING LINE	171	15	3	0	3	7.5	0.12	45	50	0	0
102 SERVING LINE	246	15	4	0	3	0	0	0	**0**	0	0
103 MEN RESTROOM	51	0	0	0	0	0	0	0	0	70	70
104 WOMEN RESTROOM	51	0	0	0	0	0	0	0	0	70	70
105 KITCHEN / MOP SINK	650	20	13	0	4	7.5	0.12	110	110	70	70
TOTAL	**2093**				**47**				**610**	**210**	**210**

AIR TERMINALS SCHEDULE

MARK	MANUFACTURER	MODEL	SERVICE	CORE VEL. FPM	N.C. LEVEL	NECK SIZE	FACE SIZE	DESCRIPTION
A CFM	TITUS	TMS-AA	SUPPLY	700 MAX.	21 MAX.	SEE NOTES	24X24	4-WAY FIXED LOUVER DIFFUSER
B CFM	TITUS	PAS-AA	SUPPLY	400 MAX.	21 MAX.	16" DIA	24X24	PERFORATED CEILING DIFFUSER
C CFM	TITUS	TMS-AA	SUPPLY	400 MAX.	-	SEE NOTES	12X12	4-WAY FIXED LOUVER DIFFUSER
R CFM	TITUS	50F	RETURN	300 MAX	-	SEE PLAN	24X24	EGGCRATE RETURN GRILLE

NOTES:

1. COORDINATE WITH ARCHITECT FOR FINAL FINISH.
2. PROVIDE ALL AIR DEVICES WITH MANUAL BALANCING DAMPERS.
3. PROVIDE MOUNTING FRAMES FOR ALL AIR DEVICES MOUNTED IN GYPBOARD CEILINGS.
4. UNLESS OTHERWISE NOTED, BRANCH DUCT SERVING AIR DEVISE SHALL BE SAME SIZE AS NECK OF AIR

FOR ROUND NECK DIFFUSER: NECK SIZES SHALL BE	
001 - 100 CFM	6" DIA.
101 - 200 CFM	8" DIA.
201 - 400 CFM	10" DIA.
401 - 600 CFM	12" DIA.
601 - 900 CFM	14" DIA.

TYPE I- HOOD SCHEDULE

UNIT ID	MANUFACTURER	LENGTH (FEET-INCH)	MODEL	SERVICE	COOKING	EXHAUST				CONSTRUCTION	WEIGHT (LBS)
					TEMPERATURE (DEG F)	TYPE	AIR (CFM)	PLENUM DIA	E.S.P (IN. W.G.)		
HOOD-1 (N)	CAPTIVEAIRE	10'-6"	5424 ND-2	SEE PLAN	600	I	2500	16"	-1.214	430 STAINLESS STEEL	1012

NOTES / ACCESSORIES:

1. PROVIDE MANUFACTURER RECOMMENDED ACCESSORIES & INSTALL AS PER MANUFACTURER'S RECOMMENDATION.
2. REFER MECHANICAL HOOD DATA ON M6.1 SHEET FOR FURTHER DETAILS.

AIR BALANCE

UNIT	AREA SERVED	SUPPLY AIR	OUTSIDE AIR	RETURN AIR	EXHAUST AIR
AC-1(N)	SEE PLAN	1480 CFM	0 CFM	1175 CFM	0 CFM
AC-2(N)	SEE PLAN	1480 CFM	0 CFM	1175 CFM	0 CFM
AC-3 (N)	102 SERVING LINE	1100 CFM	0 CFM	0 CFM	0 CFM
AC-4 (N)	102 SERVING LINE	1100 CFM	0 CFM	0 CFM	0 CFM
KEF-1 (N)	KITCHEN	-	-	-	2500 CFM
EF-1 (N)	MEN'S RESTROOM	-	-	-	70 CFM
EF-2 (N)	MOP SINK	-	-	-	70 CFM
EF-3 (N)	WOMEN'S RESTROOMS	-	-	-	70 CFM
OAF-1 (N)	SEE PLAN	-	610 CFM	-	-
MAU-1 (N)	102 SERVING LINE	-	2200 CFM	-	-
	TOTAL:	5160 CFM	2810 CFM	2350 CFM	2710 CFM
	BUILDING PRESSURE:	.....		**100 CFM**	**POSITIVE**

AIR CURTAIN SCHEDULE

TAG	MANUFACTURER	MODEL	AIRFLOW CFM	ELECTRICAL DATA			MOTOR QUANITY	Motor HP	AMPS	FINISH	NOTES
				VOLT	PHASE	HZ					
ARC-1 (N)	MARS	LPV236-1U-OB	900	115	1	60	1	1/6	2.4	OBSIDIAN BLACK	1,2,3
ARC-2 (N)	MARS	LPV242-1U-OB	1050	115	1	60	1	1/6	2.4	OBSIDIAN BLACK	1,2,3

NOTES / ACCESSORIES:

1. PROVIDE MANUFACTURER RECOMMENDED ACCESSORIES.
2. COORDINATE WITH ELECTRICAL CONTRACTOR FOR POWER REQUIREMENT.
3. FINAL REQUIREMENT SHALL BE CONFIRMED WITH ARCHITECT/OWNER

NO.	DATE	ISSUE DESCRIPTION
02	06/04/2025	PERMIT SET
01	05/06/2025	REVISED CHECK SET
00	04/29/2025	CHECK SET

NY ENGINEERS
382 NE 191ST STREET
SUITE 49674,
MIAMI, FL 33179

PROJECT NAME

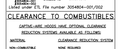
PHYSICAL LOCATION

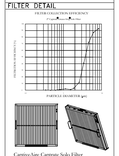
DRAWING TITLE
MECHANICAL SCHEDULES

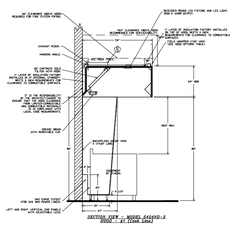
GRAPHIC SCALE

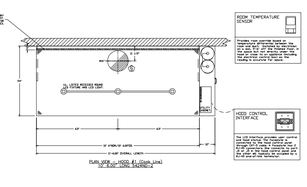
SEAL

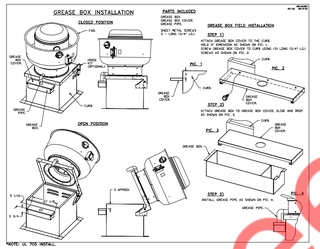
PROJECT NO. -
SCALE AS NOTED
DRAWN BY NYE
CHECKED BY NYE
DATE 06/04/2025
SHEET NUMBER M5.1

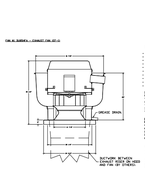


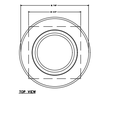


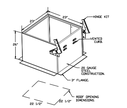


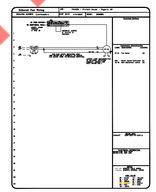












HANGING ANGLE LOCATIONS

HOOD STYLE	DIM FROM REAR	DIM FROM FRONT (24"H)	DIM FROM FRONT (30"H)
CANOPY ND2	4.166"	2.246"	2.246"
ND2-PSP-F	4.166"	2.246"	2.246"
BACKSHELF BD-2	4.166"	2.246	–
VHB/VHB-G	36"x36"	42"x42"	48"x48"
FRONT/BACK DIMS BY SIZE	2.246"	2.246"	2.246"

CALCULATIONS UTILIZED

EXHAUST CFM=LENGTH OF HOOD X CFM/LIN.FT. (LOAD)
SUPPLY CFM=EXHAUST CFM X PERCENTAGE REQUIRED
TOTAL DUCT AREA=144 X CFM / FPM(*)
DUCT LENGTH= TOTAL DUCT AREA / DUCT DEPTH
CAPTIVE-AIRE DUCT CONNECTION SIZES ARE CALCULATED USING AN EXHAUST VELOCITY OF 1500-1800 FPM AND A SUPPLY VELOCITY OF 300-400 FPM.

BUILDING CODES

CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH:
#3054804-001
#3054804-002
STANDARD 710
Listed under ETL File number 3054804-001/002

CLEARANCE TO COMBUSTIBLES

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

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

GENERAL NOTES

INSTALLATION
ALL ELECTRICAL "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY ELECTRICAL CONTRACTORS.
ALL PLUMBING "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY PLUMBING CONTRACTORS.
HANGING BRACKETS LOCATED AND WELDED AS SHOWN ON PLANS. ALL OTHER HANGER MATERIALS PROVIDED BY INSTALLING CONTRACTORS.
ALL CONNECTIONS FROM CAPTIVE-AIRE DUCT PER MECHANICAL CONTRACTORS'S PLANS.
COOKING EQUIPMENT TO SHUTOFF IN EVENT OF FIRE.
EXHAUST FANS TO TURN ON IN EVENT OF FIRE.
ALL LIGHTS FIXTURE SHOWN INSTALLED BY CAPTIVE-AIRE ARE FACTORY PREWIRED. INTERCONNECTIONS BETWEEN HOODS AND TO SWITCHES BY ELECTRICAL CONTRACTORS.
LAMPS FOR LIGHT FIXTURES BY INSTALLING CONTRACTORS.
SEISMIC RESTAINTS ARE RESPONSIBILITY OF INSTALLING CONTRACTOR.
INSTALLING CONTRACTORS ASSUME ALL RELATED RESPONSIBILITY FOR VERIFICATION OF DIMENSIONAL DATA CONTAINED ON THESE DOCUMENTS FOR ACCURACY, INTEGRATION, AND ADMINISTRATION OF CODE REQUIREMENTS IN EFFECT PRIOR TO ANY RELEASE FOR PRODUCTION OF EQUIPMENT SHOWN.
BALANCE
KITCHEN HOODS MUST BE BALANCED WITH KITCHEN.
KITCHEN SHALL BE NEGATIVE WITH RESPECT TO DINING AREA.
RESTAURANT SHALL BE POSITIVE WITH RESPECT TO AMBIENT PRESSURE.
ADDITIONAL
WRITTEN HOOD DIMENSIONS HAVE PRECEDENCE OVER SCALE.
SIGNED AND "APPROVED" COPIES OF THIS DOCUMENT MUST BE RECEIVED BY THE FACTORY PRIOR TO COMMENCEMENT OF FABRICATION.

FILTER DETAIL

CaptiveAire Captrate Solo Filter
ETL Listed Grease Extracting Filters
Made From 430 Stainless Steel

HOOD INFORMATION - JOB#7414051

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM WIDTH	LENG	HEIGHT	RISER(S) DIA	CFM	VEL	SP	HOOD CONSTRUCTION	HOOD CONFIG END TO END	ROW
1	Cook Line	5424 ND-2	CAPTIVEAIRE	10' 6"	600 DEG	I	HEAVY	238	2500			4"	16"	2500	1790	-1.214"	430 SS WHERE EXPOSED	ALONE	ALONE

HOOD INFORMATION

HOOD NO	TAG	FILTER(S) TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	LIGHT(S) QTY	TYPE	WIRE GUARD	LOCATION	SIZE	FIRE SYSTEM TYPE	FIRE SYSTEM SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY	FIRE SYSTEM PIPING	HOOD HANGING WEIGHT
1	Cook Line	CAPTRATE SOLO FILTER	7	20"	16"	85% SEE FILTER SPEC	3	RECESSED ROUND	NO	RIGHT	12"x54"x24"	TANK FS	4.0/4.0	SC-110110MA	1 LIGHT 1 FAN	YES	1012 LBS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1	Cook Line	FIELD WRAPPER 17.00" HIGH FRONT, LEFT, RIGHT. BACKSPLASH 122.00" HIGH X 174.00" LONG 430 SS VERTICAL. INSULATION FOR TOP OF HOOD. INSULATION FOR BACK OF HOOD. RIGHT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS. LEFT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS.

CLEARANCE TO COMBUSTIBLES

HOODS #	SURFACE	*CLEARANCE
1	TOP	0"
	FRONT	0"
	BACK	0"
	LEFT	18"
	RIGHT	0"

- *0" CLEARANCE TO COMBUSTIBLES CONFORMS TO UL710 STANDARD.
- HOOD MOUNTED UTILITY CABINETS REQUIRE 36" SERVICE CLEARANCE.

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 ________

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

CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH
NFPA #96
UL 710 & ULC710 STANDARDS
E.T.L. LISTED 3054804-001

SEQUENCE OF OPERATION (FIRE SYSTEM ACTIVATION)

UPON ACTIVATION OF FIRE SUPPRESSION SYSTEM:

A. ALL GAS EQUIPMENT SHALL SHUT OFF, THROUGH THE USE OF A MECHANICAL OR ELECTRICAL GAS SHUT-OFF VALVE. TYPICALLY FURNISHED BY FIRE SUPPRESSION CONTRACTOR AND INSTALLED BY PLUMBING CONTRACTOR. ELECTRICAL VALVE WIRING BY E.C. TO FIRE SUPPRESSION SYSTEM OR HOOD CONTROLLER AND REQUIRES A MANUAL PUSH TO RESET SAFETY SWITCH. COMPLY WITH SECTION 505.1.1 PERTAINING TO FLORIDA GAS CODE AND EQUIPMENT INTERLOCK.

B. ALL ELECTRIC EQUIPMENT UNDER THE KITCHEN HOOD AND ANY OUTLETS SHALL SHUT OFF. TYPICALLY DONE WITH A SHUNT TRIP BREAKER FOR CIRCUITS AND WIRED TO MICRO-SWITCH IN FIRE SUPPRESSION SYSTEM OR SIGNAL FROM HOOD CONTROLLER. ALTERNATIVELY DONE WITH USE OF CONTACTOR ON CIRCUIT.

C. BUILDING FIRE ALARM OR STAND-A-LONE HORN & STROBE DEVICE SHALL ANNUNCIATE. TYPICALLY DONE WITH MICRO-SWITCH IN FIRE SUPPRESSION OEM RELEASE.

D. SUPPLY / MAKE-UP-AIR TO THE KITCHEN HOOD OR ANY A/C AIR WITHIN 10' WHICH COULD POTENTIALLY FEED A FLAME SHALL SHUT OFF. TYPICALLY THE HOOD CONTROL PANEL DOES THIS FUNCTION OR DONE USING THE MICRO-SWITCH IN THE FIRE SUPPRESSION OEM RELEASE. BUILDING FIRE ALARM (IF PRESENT) WILL TURN OF A/C.

E. EXHAUST FAN SHALL TURN ON TO HELP EXTRACT THE SMOKE CREATED FROM THE FIRE SUPPRESSION SYSTEM. FIRE MODE REQUIRES EXHAUST FAN TO OPERATE CONTINUALLY AND STOP SUPPLY FAN.

GENERAL NOTES :

1. ELECTRICAL HOOK-UP TO CAS MOTOR CONTROLS (MOTOR STARTERS, FAN SWITCHES, FAN DISCONNECTS, RELAYS, ETC.) BY OTHERS.
2. FIRE CHASE BY OTHERS, IF REQUIRED.
3. ALL PHASES OF INSTALLATION SHALL COMPLY WITH NFPA 96.
4. WRITTEN MEASUREMENTS HAVE PRECEDENCE OVER SCALE.
5. PROVIDE CLEANOUTS IN EXHAUST AIR DUCTS AS INDICATED TO ALLOW CLEANING AT ALL BENDS AND HORIZONTAL RUNS.
6. EXHAUST DUCT TO BE 16 GA. GALV STEEL ALL SEAMS AND JOINTS TO HAVE A LIQUID TIGHT CONTINUOUS EXTERNAL WELD.
7. FAN TO HAVE A MINIMUM OF 10 FT. OF CLEARANCE FROM THE OUTLET TO ADJACENT BUILDINGS, PROPERTY LINES, AIR INTAKES OR 3 FT. VERTICAL CLEARANCE PER NFPA96
8. HORIZONTAL EXHAUST DUCT TO SLOPE NOT LESS THAN 1/4" PER FOOT TOWARD HOOD FOR DUCT LESS THAN 75' LONG. 1" PER FOOT SLOPE FOR DUCT LONGER THAN 75'
9. HOOD TO OVERHANG COOKING EQUIPMENT 6" ON ALL OPEN SIDES.
10. EXHAUST DUCT TO BE PROTECTED FROM COMBUSTIBLES PER NFPA96 AND LOCAL CODE.
11. BUILDING PRESSURE SHALL NOT EXCEED 0.02" WATER COLUMN AT EXTERIOR DOORS.
12. KITCHEN SHALL BE BALANCED TO BE NEGATIVE WITH RESPECT TO THE DINING ROOM.

ACTUAL FIRE SYSTEM PIPING SCHEMATIC TO BE PROVIDED BY CONTRACTED FIRE SYSTEM DISTRIBUTOR AT TIME OF PERMITTING

CAPTIVEAIRE
Florida Gulf Coast Office
4519 George Road, Suite 150, Tampa, FL 33634 PHONE: (813) 435 - 3388 FAX: 9197475642 EMAIL: reg62@captiveaire.com
www.captiveaire.com

DATE: 4/09/2025
DWG.#: 7414051
DRAWN BY: JB
SCALE: 1/2" = 1'-0"
MASTER DRAWING
SHEET NO. 1

EXHAUST FAN INFORMATION - JOB#7414051

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SONES
1	EF-1	1	DU85HFA	CAPTIVEAIRE	2500	0.909	1593	TEAO-ECM	1.000	0.7040	1	115	11.6	791 FPM	94	18

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	EF-1	1	GREASE BOX
		1	FAN BASE CERAMIC SEAL - DU/DR85HFA - INSTALLED AT PLANT - FOR GREASE DUCTS
		1	ECM WIRING PACKAGE - EXHAUST - MODBUS CONTROL -MSC- (TELCO), CCW ROTATION
		1	2 YEAR PARTS WARRANTY

FAN ACCESSORIES

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

CURB ASSEMBLIES

NO	ON FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	EF-1	44 LBS	CURB	23.000"W X 23.000"L X 26.000"H VENTED HINGED.

PARTS INCLUDED
GREASE BOX.
GREASE BOX COVER.
GREASE PIPE.
SHEET METAL SCREWS 3 - LONG (3/4" LG.).

GREASE BOX FIELD INSTALLATION
STEP 1)
ATTACH GREASE BOX COVER TO THE CURB. HOLD 3" DIMENSION AS SHOWN ON PIC. 1. SCREW GREASE BOX COVER TO CURB USING (3) LONG (3/4" LG.) SCREWS AS SHOWN ON PIC. 2.
STEP 2)
ATTACH GREASE BOX TO GREASE BOX COVER, SLIDE AND DROP. AS SHOWN ON PIC. 3.
STEP 3)
INSTALL GREASE PIPE AS SHOWN ON PIC. 4.

*NOTE: UL 705 INSTALL.

FEATURES:
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND ULC-S645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT SWITCH.

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

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

OPTIONS
- GREASE BOX
- FAN BASE CERAMIC SEAL - DU/DR85HFA - INSTALLED AT PLANT - FOR GREASE DUCTS
- ECM WIRING PACKAGE - EXHAUST - MODBUS CONTROL -MSC- (TELCO), CCW ROTATION.
- 2 YEAR PARTS WARRANTY.

Exhaust Fan Wiring
JOB 7414051 - Protein House - Rogers, AR

CAPTIVEAIRE
Florida Gulf Coast Office
4519 George Road, Suite 150, Tampa, FL 33634 PHONE: (813) 435 - 3388 FAX: 9197475642 EMAIL: reg62@captiveaire.com
www.captiveaire.com

DATE: 4/09/2025
DWG.#: 7414051
DRAWN BY: JB
SCALE: 1/2" = 1'-0"
MASTER DRAWING
SHEET NO. 2

ELECTRICAL PACKAGE - JOB#7414051

NO	TAG	PACKAGE #	LOCATION	SWITCHES LOCATION	QUANTITY	OPTION	FAN TAG	TYPE	#	HP	VOLT	FLA
1		SC-110110MA	UTILITY CABINET RIGHT	UTILITY CABINET RIGHT HOOD # 1	1 LIGHT 1 FAN	SMART CONTROLS THERMOSTATIC CONTROL W/ RELAY ON/OFF WITH SUPPLY	EF-1	EXHAUST	1	1.000	115	11.6

FIRE SYSTEM INFORMATION - JOB#7414051

FIRE SYSTEM NO	TAG	TYPE	SIZE	MAX FP	DESIGN FP	INSTALLATION SYSTEM	LOCATION ON HOOD
1		TANK FS	4.0/4.0	40	28	FIRE CABINET RIGHT	RIGHT, HOOD 1

GAS VALVE(S)

FIRE SYSTEM NO	TAG	TYPE	SIZE	SUPPLIED BY
1		SC ELECTRICAL	2.000	CAPTIVEAIRE SYSTEMS

42 TO 48 INCHES ABOVE FLOOR LEVEL TO CENTER OF PUSH STATION

ELECTRICIAN NOTES :

All Hood/Fan/EMS/UDS/PCU electrical connections and interconnections to be provided and installed by Electrician. Electrician to provide, install, and land wiring between hood lights, hood temp sensors, remote Ansul system microswitches, and any other component requiring an electrical connection to the Captive-Aire electrical package. Failure by the Electrician to make ALL required electrical connections and interconnections will result in the electrical controls not working properly. Any loss or failed test as a result of electrical controls not working properly is the responsibility of the Electrician. Light bulbs for kitchen hoods to be provided and installed by electrician.

FOR ELECTRICAL & LOW VOLTAGE WIRING QUESTIONS CALL 1-866-784-6900

CAPTIVEAIRE
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MASTER DRAWING
SHEET NO. 3

NO.	DATE	ISSUE DESCRIPTION
02	06/04/2025	PERMIT SET
01	05/06/2025	REVISED CHECK SET
00	04/29/2025	CHECK SET

NY ENGINEERS
382 NE 191ST STREET
SUITE 49674,
MIAMI, FL 33179

PROJECT NAME

PHYSICAL LOCATION

DRAWING TITLE
MECHANICAL HOOD DATA

GRAPHIC SCALE

SEAL

PROJECT NO. -
SCALE AS NOTED
DRAWN BY NYE
CHECKED BY NYE
DATE 06/04/2025
SHEET NUMBER
M6.1

PLUMBING LEGEND

SYMBOL	DESCRIPTION
SAN	SANITARY WASTE (ABOVE FLOOR)
·SAN·	SANITARY SEWER (UNDER FLOOR)
GSAN	GREASE SANITARY PIPING (UNDER FLOOR)
	VENT PIPING
G	GAS PIPING
G	EXISTING GAS PIPING
	COLD WATER
	HOT WATER
	HOT WATER RETURN
	P-TRAP
	PIPE DROP
	PIPE UP
	BALANCING VALVE
	SHUT-OFF VALVE
	GAS PLUG VALVE
	GAS PRESSURE REGULATOR
	POINT OF NEW CONNECTION

PLUMBING ABBREVIATIONS

CO	CLEANOUT
CODP	CLEAN OUT DECK PLATE
CW	COLD WATER
HW	HOT WATER
HWR	HOT WATER RETURN
SAN	SANITARY
GSAN	GREASE SANITARY WASTE
S	SOIL
W	WASTE
LAV	LAVATORY
WC	WATER CLOSET
TYP.	TYPICAL
DN	DOWN
EXIST.	EXISTING
AFF	ABOVE FINISH FLOOR
FD	FLOOR DRAIN
BFP	BACK FLOW PREVENTER
WH	HOT WATER HEATER
SV	SHUTOFF VALVE
RCP	RECIRCULATION PUMP
ET	EXPANSION TANK
HB	HOSE BIBB
MS	MOP SINK

PLUMBING DRAWING LIST

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.	ARKANSAS BUILDING CODE 2021
b.	ARKANSAS MECHANICAL CODE 2021
c.	ARKANSAS PLUMBING CODE 2018
d.	ARKANSAS FUEL GAS CODE 2018
e.	INTERNATIONAL ENERGY CONSERVATION CODE 2009
f.	INTERNATIONAL ELECTRICAL CODE 2020

BUILDING DEPARTMENT PLUMBING NOTES

1. ALL PLUMBING SYSTEMS (SANITARY, WASTE, VENT, WATER) AND ASSOCIATED EQUIPMENT SHALL BE INSTALLED, OPERATED AND MAINTAINED IN ACCORDANCE WITH THE REQUIREMENTS OF 2018 ARKANSAS PLUMBING CODE (2018 IPC AMENDED).
2. INSTALLATION OF UNDERGROUND PIPING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION PC 702.2
3. PROTECTION OF PIPING AND PLUMBING SYSTEM COMPONENTS AS PER SECTION PC 305.
4. TRENCHING, EXCAVATION AND BACKFILL AS PER SECTION PC 306.
5. RODENT PROOFING AS PER PC 304
6. MATERIALS USED IN PLUMBING SYSTEMS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION PC 303, PC 605, PC 702, PC 902,PC 1102.
7. EQUIPMENT CONNECTIONS AND JOINING OF PIPING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTERS 4, 5, 6, 7 AND 9.
8. DEEP SEAL TRAPS FOR FLOOR DRAINS SHALL BE PROVIDED AS PER PC 1002, AND CLEAN-OUTS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION PC 708
9. DRAINAGE PIPE CLEANOUTS AS PER SECTION PC 708.
10. VERTICAL AND HORIZONTAL PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION PC 308
11. WATER SUPPLY SYSTEMS SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 6 SECTION PC 601–603, 604, 606, 607, 608, 610
12. THE SANITARY DRAINAGE SYSTEM SHALL BE SIZED AND INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 7 SECTION PC 701, 704, 705, 706, 707, 708, 711.
13. VENT PIPING FOR THE SANITARY DRAINAGE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 9 SECTIONS PC 901 THROUGH PC 912 THROUGH PC 917
14. INSPECTION AND TESTING OF PLUMBING SYSTEMS SHALL BE IN ACCORDANCE WITH SECTION PC 107.

PLUMBING SPECIFICATIONS:

1. BASIC PLUMBING REQUIREMENTS, MATERIALS AND METHODS

1.01 SCOPE

A. PROVIDE ALL MATERIAL, TOOLS, SUPERVISION AND LABOR INCLUDING ALL MISCELLANEOUS AND INCIDENTAL ITEMS REQUIRED FOR COMPLETE AND OPERABLE PLUMBING INSTALLATIONS AS SHOWN OR DESCRIBED ON THE DRAWINGS AND IN THESE SPECIFICATIONS.

B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING AND NEW CONDITIONS AND MATERIALS WITHIN THE CONSTRUCTION AREA. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED TO THE OWNER'S SATISFACTION.

C. OBTAIN ALL PERMITS, PAY ALL PERMIT FEES AND SCHEDULE ALL REQUIRED INSPECTIONS. COPIES OF ALL PERMITS AND INSPECTION CERTIFICATES SHALL BE FORWARDED TO THE OWNER FOR RECORD.

D. THE GENERAL CONDITIONS OF THE CONTRACT AND ALL DIVISION 1 REQUIREMENTS APPLY TO THE WORK OF THIS SECTION.

E. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING BID TO DETERMINE CONDITIONS AND THE EXTENT OF THE WORK. BY COMMENCING WORK, THE CONTRACTOR ACKNOWLEDGES HIS CONFIRMATION OF ALL CONDITIONS AS ACCEPTABLE WITH REFERENCE TO HIS CONTRACT, SCOPE OF WORK AND BID PRICE SUCH THAT NO ADDITIONAL COMPENSATION SHALL BE FORTHCOMING FOR UNFORESEEN EXISTING CONDITIONS.

F. IN ALL AREAS SUBJECT TO FREEZING CONDITIONS, THE CONTRACTOR SHALL PROVIDE FREEZE PROTECTION FOR ALL DOMESTIC WATER PIPING INSTALLED UNDER HIS CONTRACT.

G. ALL ELECTRICAL REQUIREMENTS SHALL BE COORDINATED WITH THE CONTRACTOR FOR ELECTRICAL WORK. THIS CONTRACTOR IS RESPONSIBLE FOR ALL LOW VOLTAGE WIRING FOR EQUIPMENT INSTALLED UNDER HIS CONTRACT. THE CONTRACTOR FOR ELECTRICAL WORK IS RESPONSIBLE FOR LINE VOLTAGE POWER WIRING ONLY.

H. COLOR AND FINISH SELECTIONS FOR ALL MATERIALS, INCLUDING PAINTING OF PIPING, SHALL BE AS DIRECTED AND/OR APPROVED BY THE ARCHITECT.

I. MINOR DETAILS NOT SHOWN OR SPECIFIED, BUT NECESSARY FOR THE PROPER AND ACCEPTABLE CONSTRUCTION, INSTALLATION OR OPERATION OF ANY PART OF THE WORK AS DETERMINED BY THE ENGINEER SHALL BE INCLUDED AS IF SPECIFIED OR INDICATED ON THE DRAWINGS.

J. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIREMENTS FOR THE INSTALLATION, CONNECTION, EXTENSION OR MODIFICATION TO ALL UTILITY SERVICES WITH RESPECTIVE PROVIDERS INCLUDING PAYMENT OF ALL ASSOCIATED FEES.

K. THE CONTRACTOR IS RESPONSIBLE FOR ALL PAINTING ASSOCIATED WITH CUTTING AND PATCHING. ALL PAINTING IN AREAS WITH COMPLETE FINISH RENOVATIONS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR.

1.02 SUBMITTALS

A. SUBMITTAL REQUIREMENTS SHALL BE COORDINATED WITH THE ARCHITECT AND AUTHORITIES HAVING JURISDICTION. UNLESS OTHERWISE DIRECTED, CONTRACTOR SHALL PROVIDE SUBMITTALS AS LISTED BELOW.

1. PIPE AND FITTINGS
2. VALVES
3. HANGERS AND SUPPORTS
4. PLUMBING PIPING LAYOUT
5. TESTS
6. PLUMBING FIXTURES
7. WATER HEATERS & ACCESSORIES
8. MIXING VALVES
9. ALL SCHEDULED PLUMBING EQUIPMENT

B. SUBMITTALS FROM SUPPLIERS OR MANUFACTURERS WHICH DO NOT BEAR THE STAMP OF THE SUBMITTING CONTRACTOR INDICATING THAT THE CONTRACTOR HAS REVIEWED THE SUBMITTAL FOR CONFORMANCE WITH THE PROJECT REQUIREMENTS WILL BE RETURNED REJECTED.

C. THE ENGINEER'S REVIEW OF SUBMITTALS IS A COURTESY WHICH DOES NOT RELIEVE THE CONTRACTOR FROM CONFORMING WITH THE CONSTRUCTION DOCUMENTS, REGARDLESS OF THE ACTION INDICATED BY THE SHOP DRAWINGS STAMP.

D. REVIEW OF SHOP DRAWINGS BY THE ENGINEER SHALL BE LIMITED TO THE INITIAL REVIEW, AND A SECOND REVIEW OF ANY REQUIRED RESUBMITTED DATA. IF THE ENGINEER IS REQUIRED TO REVIEW SHOP DRAWINGS FOR A THIRD (OR MORE) SUBMISSION OF THE SAME ITEM, THE CONTRACTOR SHALL BE LIABLE FOR COMPENSATING THE ENGINEER FOR THESE SUBSEQUENT REVIEWS AS PER THE ENGINEER'S CURRENT HOURLY RATE SCHEDULE.

E. SUBMIT PROOF OF APPROVAL AND/OR CONFIRMATION OF SATISFACTORY TEST RESULTS TO THE OWNER AND THE ARCHITECT.

F. SUBMIT TO THE OWNER'S MAINTENANCE PERSONNEL OPERATION AND MAINTENANCE DATA FOR ALL SYSTEM COMPONENTS, SERVICING REQUIREMENTS, INSPECTION DATA, REPLACEMENT PART NUMBERS AND AVAILABILITY AND CONTACT INFORMATION FOR SERVICE/SUPPLY COMPANY.

G. FOR ALL BELOW GRADE PIPING WHERE ACTUAL INSTALLATION DEVIATES FROM CONSTRUCTION DRAWINGS, THE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS INDICATING BELOW GRADE PIPE LOCATIONS DIMENSIONED TO NEAREST COLUMN LINES.

H. RECORD AS-BUILT DRAWINGS SHALL BE SUPPLIED TO THE OWNER/TENANT AFTER COMPLETION OF THE WORK SHOWING ANY ALTERATIONS, ADDITIONS AND/OR DELETIONS TO THE SYSTEM(S) INSTALLED.

1.03 SUBSTITUTIONS

A. ALL EQUIPMENT SHALL BE PRODUCTS OF THE SPECIFIED MANUFACTURER OR MANUFACTURERS. ALL BIDS SHALL BE BASED ON THE SPECIFIED MANUFACTURER OR MANUFACTURER'S EQUIPMENT. FOR SUBSTITUTIONS OF OTHER MANUFACTURER'S EQUIPMENT TO BE CONSIDERED, THE SUBSTITUTION MUST BE INDICATED PRIOR TO BIDDING WITH THE REASON FOR THE PROPOSED SUBSTITUTION IDENTIFIED, AND THE PROPOSED CREDIT TO THE OWNER INDICATED. THE ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF ANY PROPOSED SUBSTITUTIONS.

B. THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR COORDINATING THE WORK OF OTHER TRADES WHICH MAY BE AFFECTED BY SUBSTITUTIONS, INCLUDING ALL RELATED COSTS.

1.05 DEFINITIONS

A. FURNISH: TO PURCHASE, PROCURE, ACQUIRE AND DELIVER, COMPLETE WITH RELATED ACCESSORIES.

B. INSTALL: TO ERECT, MOUNT AND CONNECT, COMPLETE WITH RELATED ACCESSORIES.

C. PROVIDE: TO FURNISH AND INSTALL.

D. PLUMBING CONTRACTOR, THE CONTRACTOR, THIS CONTRACTOR: THE CONTRACTOR FOR PLUMBING WORK WHICH IS SPECIFIED HEREIN AND SHOWN ON THESE DRAWINGS.

1.06 DRAWINGS

A. THE DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO ILLUSTRATE THE GENERAL ARRANGEMENT AND ROUTING OF PIPING AND GENERAL LOCATIONS OF EQUIPMENT. PRECISE LOCATIONS OF EQUIPMENT, RISERS AND STACKS, AND ROUTING AND ELEVATION OF ALL PIPING SYSTEMS SHALL BE COORDINATED IN THE FIELD WITH THE ARCHITECT, ARCHITECTURAL DRAWINGS, THE WORK OF OTHER TRADES, EXISTING AND NEW BUILDING CONDITIONS AND/OR THE PREFERENCES OF THE OWNER/TENANT AS CONSTRUCTION PROCEEDS. ALL PIPING SHALL BE INSTALLED CONCEALED IN FINISHED SPACES, UNLESS NOTED OTHERWISE.

B. PROVIDE ALL NECESSARY INCIDENTAL MATERIALS AND ACCESSORIES REQUIRED TO MAKE THE WORK COMPLETE IN ALL RESPECTS, EVEN IF NOT PARTICULARLY SHOWN OR SPECIFIED.

C. REFER TO PLUMBING EQUIPMENT/FIXTURE SCHEDULE ON THE DRAWINGS FOR ALL FIXTURE AND EQUIPMENT SPECIFICATIONS.

D. REFER TO FIXTURE CONNECTION SIZE SCHEDULE FOR ALL FIXTURE ROUGHING SIZE REQUIREMENTS.

E. VERIFY ALL INDICATED CONDITIONS BEFORE STARTING WORK AND REPORT ANY DISCREPANCIES. THE DRAWINGS REFLECT CONDITIONS WHICH CAN BE REASONABLY INTERPRETED FROM THE EXISTING VISIBLE CONDITIONS OR FROM DRAWINGS AND INFORMATION FURNISHED BY THE OWNER.

F. LOCATE ALL FIXTURES AND EQUIPMENT AS PER THE FINAL ARCHITECTURAL DRAWINGS.

1.07 PRODUCTS

A. SANITARY AND VENT PIPING:

1. ABOVE GRADE AND UNDERGROUND PIPING SHALL BE POLYVINYL CHLORIDE (PVC) PIPE AS PER ASTM D2665, ASTM F891, ASTM F1488, CSA B181.2 AS PER 2018 ARKANSAS PLUMBING CODE, TABLE 702.1 AND TABLE 702.2. OR PIPING SHALL BE HUBLESS CAST IRON PIPE WITH STAINLESS STEEL COUPLINGS AND ELASTOMERIC GASKETS WITH A MINIMUM 4 BANDS PER COUPLING.
2. SLOPE OF DRAINAGE SYSTEM SHALL BE 1/8" PER FOOT OF RUN FOR PIPE 3" (I.D.) OR LARGER AND 1/4" PER FOOT OF RUN FOR PIPE 2½" AND SMALLER (I.D.). VENT PIPING SHALL BE PITCHED TO DRAIN.
3. SLOPE OF GREASE WASTE SYSTEM SHALL BE 1/4" PER FOOT UNIFORM SLOPE THROUGHOUT ALL PIPE SIZES.
4. ALL CAST IRON SOIL PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE (CISPI) AND BE LISTED BY NSF INTERNATIONAL.

B. DOMESTIC WATER PIPING:

1. ABOVE GRADE WATER PIPING SHALL BE TYPE 'L' HARD-DRAWN COPPER TUBE. PEX PIPING IS AN ACCEPTABLE SUBSTITUTE AS PER ASTM F876 AWWA C904 AND CSA B137.5
2. FITTINGS IN DOMESTIC WATER PIPING SHALL BE WROUGHT COPPER OR CAST BRASS.
3. JOINTS SHALL BE MADE WITH LEAD-FREE SOLDER.
4. THE ENTIRE DOMESTIC WATER DISTRIBUTION SYSTEM SHALL BE INSULATED INCLUDING ALL VALVES, FITTINGS, ETC.
5. COMPLY WITH NSF 61 FOR MATERIALS FOR WATER-SERVICE PIPING AND SPECIALTIES FOR DOMESTIC WATER.
6. AS PER IECC 2009 EDITION, SECTION 504.2, WATER HEATING EQUIPMENT AND HOT WATER STORAGE TANKS SHALL MEET THE REQUIREMENTS OF TABLE 504.2. THE EFFICIENCY SHALL BE VERIFIED THROUGH DATA FURNISHED BY THE MANUFACTURER OR THROUGH CERTIFICATION UNDER AN APPROVED CERTIFICATION PROGRAM.
7. AS PER IECC 2009 EDITION, SECTION 503.2.8, ALL PIPING SERVING AS PART OF A HEATING SYSTEM SHALL BE THERMALLY INSULATED IN ACCORDANCE WITH TABLE 503.2.8

MINIMUM PIPE INSULATION (THICKNESS IN INCHES)		
FLUID	NOMINAL PIPE DIAMETER	
	<=1.5"	>1.5"
HOT WATER	1-1/2	2

8. AS PER IECC 2009 EDITION, SECTION 504.6, AUTOMATIC-CIRCULATING HOT WATER SYSTEM PUMPS OR HEAT TRACE SHALL BE ARRANGED TO BE CONVENIENTLY TURNED OFF AUTOMATICALLY OR MANUALLY WHEN THE HOT WATER SYSTEM IS NOT IN OPERATION.

C. WATER HEATER

C.1 WATER HEATER (GAS FIRED)

1. NEW TANKLESS GAS FIRED WATER HEATERS PROPOSED, PLEASE REFER WATER HEATER SCHEDULES FOR DETAILS.
2. BURNER SHALL BE ALUMINIZED STEEL OR CAST IRON, ADJUSTABLE, OR SELF-ADJUSTING AIR-GAS MIXTURE CONTROL.
3. INSTALL THE WORK OF THIS SECTION IN ACCORDANCE WITH INTERNATIONAL ENERGY CONSERVATION CODE 2009 AND THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS, UNLESS OTHERWISE SPECIFIED.
4. THE OUTER JACKET SHALL BE STEEL WITH BAKED ENAMEL/ACRYLIC FINISH AND SHALL BE PROVIDED WITH ACCESS DOOR FOR SERVICING CONTROLS AND BURNER.
5. 5. THE DRAIN VALVE SHALL BE LOCATED IN THE FRONT FOR EASE OF SERVICING.

D. GAS PIPING

1 PROVIDE A COMPLETE GAS PIPING SYSTEM TO SERVE GAS FIRED EQUIPMENT AND EQUIPMENT FURNISHED BY OTHERS, AS NOTED ON DRAWINGS AS PER 2018 ARKANSAS FUEL GAS CODE.

2 NATURAL GAS PIPING SHALL BE AS FOLLOWS:

ASTM A-53 SCHEDULE 40 STEEL PIPE PAINTED WITH YELLOW ANTI-CORROSIVE PAINT, SCREWED OR WELDED IN ACCORDANCE WITH CODE REQUIREMENT (FITTINGS FOR LINES LARGER THAN 2" SHALL BE WELDED STEEL FITTINGS FOR LINES 2" AND SMALLER, EXCEPT WHEN LOCATED IN AIR PLENUMS, SHALL BE SCREWED STANDARD WEIGHT BLACK MALLEABLE).

3 PROVIDE ALL UNIONS, SHUT-OFF VALVES AND DIRT LEGS REQUIRED BY NFPA-54 AND GOVERNING LOCAL CODES AND AT EACH GAS APPLIANCE CONNECTION..

4 PROVIDE ALL TESTS, METERS, INSPECTIONS, HANGERS AND EQUIPMENT CONNECTIONS REQUIRED FOR A COMPLETE AND OPERATING SYSTEM.

5 PAINT ALL GAS PIPING EXPOSED TO WEATHER WITH ONE COAT OF PRIMER, AND TWO COATS OF RUST-PROOF PAINT. COLOR OF PIPE ON ROOF SHALL BE YELLOW. COORDINATE COLOR OF PIPE ON EXTERIOR OF BUILDING WITH GC TO MATCH BUILDING COLORS.

6 GAS COCKS 1-1/2" AND SMALLER SHALL BE ALL BRONZE, SCREWED, FLAT HEAD, BRASS PLUG AND WASHER 200 LB NOG PROVIDE LINE SIZE 6" LONG DIRT LEG DOWN STREAM OF GAS COCK AT ALL EQUIPMENT CONNECTIONS.

7 NO VALVES ARE TO BE LOCATED IN AIR PLENUMS.

8 PROVIDE GAS PIPE SUPPORTS IN ACCORDANCE WITH 2018 ARKANSAS FUEL GAS CODE REQUIREMENTS.

E. MIXING VALVES

1. VALVE BODY SHALL BE MADE OF CAST BRASS. THE INTERNAL COMPONENTS SHALL BE MADE OF BRASS OR STAINLESS STEEL.
2. TYPES A, C & D VALVES: VALVE SHUTS OFF IN FULL COLD POSITION AND MUST PASS THROUGH COLD RANGE BEFORE DELIVERING WARM, AND/OR HOT WATER. TEMPERATURE LIMIT SET AT 105°F MAXIMUM DELIVERY TEMPERATURE. IF ONE SUPPLY SHOULD FAIL, THE OTHER WILL AUTOMATICALLY AND INSTANTLY SHUT DOWN. DELIVERY CAPACITY IS 5GPM @ 45 PSIG DIFFERENTIAL.
3. TYPES OF VALVES: TYPE A- THERMOSTATICALLY OPERATED BY MEANS OF BI-METALLIC STRIP, OR EXPANSION BELLOWS; TYPE B- SINGLE HANDLE MECHANICAL MIXER, OR INDIVIDUAL HOT AND COLD CONTROL VALVES; TYPE C- PRESSURE BALANCING SHOWER VALVE/PISTON OPERATED MIXING VALVE; TYPE D- BALANCED PRESSURE OPERATION, WITH INTEGRAL DIAL THERMOMETER INDICATING DELIVERED WATER TEMPERATURE.
4. EACH ELEMENT SHALL BE CONTROLLED BY AN INDIVIDUALLY MOUNTED THERMOSTAT AND HIGH TEMPERATURE CUT-OFF SWITCH. ALL INTERNAL CIRCUITS SHALL BE FUSED. THE OUTER JACKET SHALL BE OF BAKED ENAMEL FINISH AND SHALL BE PROVIDED WITH FULL SIZE CONTROL COMPARTMENT FOR PERFORMANCE OF SERVICE AND MAINTENANCE THROUGH HINGED FRONT PANEL AND SHALL ENCLOSE THE TANK WITH FOAM INSULATION. ELECTRICAL JUNCTION BOX WITH HEAVY DUTY TERMINAL BLOCK SHALL BE PROVIDED. THE DRAIN VALVE SHALL BE LOCATED IN THE FRONT FOR EASE OF SERVICING.

F. HANGERS AND SUPPORTS:

1. HANGERS SHALL BE STANDARD STEEL, MALLEABLE OR WROUGHT IRON, AS MANUFACTURED BY GRINNELL OR APPROVED EQUAL, SUITABLE FOR THE TYPE OF CONSTRUCTION. PIPING SHALL NOT BE HUNG FROM OTHER PIPE.
2. SECTIONS OF INDIVIDUAL PIPE RUNS SHALL BE SUPPORTED BY CLEVIS HANGERS.
3. ALL EQUIPMENT SHALL BE PROVIDED WITH APPROVED SUPPORTS.
4. PROVIDE SEISMIC RESTRAINTS IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND STANDARDS AND THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
5. SUPPORTS SHALL BE PROVIDED IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE PIPING MANUFACTURER.

D. VALVES:

1. PROVIDE GATE VALVES, BUTTERFLY OR BALL VALVES FOR SHUT-OFF DUTY ON MAIN AND BRANCH SUPPLY LINES. FOR ALL PIPE RUNS 2" AND SMALLER, PROVIDE BALL FOR ALL PIPE RUNS LARGER THAN 2" AND SMALLER THAN 4", PROVIDE GATE VALVES. PIPING 4" AND LARGER, PROVIDE BUTTERFLY VALVES FOR SHUT-OFF DUTY.
2. ALL FIXTURES WITH THE EXCEPTION OF FLUSHOMETER-EQUIPPED WATER CLOSETS AND URINALS SHALL HAVE STOP VALVES TO CONTROL SUPPLY TO THE FIXTURE. WHERE SUPPLIES ARE EXPOSED PROVIDE CHROME-PLATED STOPS WITH CHROME-PLATED ESCUTCHEONS ON PIPING PENETRATIONS.
3. ALL PLUMBING FIXTURES AND EQUIPMENT TO HAVE SHUT-OFF VALVES ON SUPPLY LINES.
4. ALL BRANCH LINES TO HAVE SHUT-OFF VALVES.
5. ALL VALVES SHALL BE ACCESSIBLE. PROVIDE ACCESS DOORS WHERE REQUIRED FOR VALVE ACCESS.

G. 6. PROVIDE GLOBE VALVES FOR THROTTLING/BALANCING OF THE HOT WATER CIRCULATING SYSTEM.

H INSTALL PIPING TO CONSERVE BUILDING SPACE. DO NOT INTERFERE WITH USE OF BUILDING SPACE AND THE WORK OF OTHER TRADES. ALL PIPING RUN IN CEILING SHALL BE INSTALLED TIGHT TO THE STRUCTURE ABOVE.

I. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS OR CONNECTED EQUIPMENT. PROVIDE PIPE ANCHORS, GUIDES AND EXPANSION JOINTS OR LOOPS IN ALL HOT WATER AND HOT WATER CIRCULATING MAIN SUPPLY PIPING AND SEGMENTS OF SUCH PIPE THAT EXCEED 30'-0" IN LENGTH.

J. IN ALL AREAS WITH FINISHED SURFACES, SYSTEM PIPING AND COMPONENTS SHALL BE CONCEALED ABOVE OR WITHIN FINISHED SURFACES.

K. REDUCTIONS IN PIPE SIZES SHALL BE MADE WITH ONE-PIECE REDUCING FITTINGS. BUSHINGS ARE NOT ACCEPTABLE. USE FLANGED FITTINGS AT THE BASE OF RISERS.

L. VENT PENETRATIONS THROUGH THE ROOF SHALL BE FLASHED.

M. IF WATER PRESSURE EXCEEDS 80 PSI, A WATER PRESSURE REDUCING VALVE SHALL BE INSTALLED IN WATER PIPING AT CONNECTION TO MAIN.

N. PROVIDE DIELECTRIC FITTINGS BETWEEN DISSIMILAR METALS.

O. PIPE BACKFLOW PREVENTER DRAINS TO FLOOR DRAIN OR OTHER APPROVED INDIRECT WASTE SOURCE.

P. PROVIDE ACCESS DOORS/PANELS FOR SERVICE AND ACCESS TO ALL VALVES AND OTHER SYSTEM COMPONENTS ENCLOSED IN WALLS AND CEILINGS. ACCESS DOORS SHALL BE FURNISHED BY THIS CONTRACTOR, INSTALLED BY THE GENERAL CONTRACTOR.

Q. ALL FIXTURES REQUIRING VACUUM BREAKERS SHALL BE EQUIPPED WITH INTEGRAL VACUUM BREAKERS.

R. ANY PENETRATIONS THROUGH FIRE RATED PARTITIONS, FLOORS, OR CEILINGS SHALL BE STEEL SLEEVED AND SEALED WITH 3M BRAND UL RATED FIRE BARRIER CAULK OR APPROVED EQUAL.

S. WHEN THE WATER PIPING SYSTEM IS COMPLETE, THOROUGHLY FLUSH ALL DIRT, SEDIMENT, SOLDER, ETC., OUT OF THE SYSTEM, REMOVING ALL STRAINERS, VALVE STEM SEATS, ETC., REQUIRED TO ACCOMPLISH THE FLUSHING.

T. AT ALL INDIRECT WASTE DRAINS, MAINTAIN AIR GAP AS REQUIRED BY CODE.

INSTALL SLEEVES FOR ALL PIPES WHICH PASS THROUGH WALLS, FLOORS, AND CEILINGS. WHERE PIPES ARE TO BE INSULATED, THE SLEEVE SHALL BE LARGE ENOUGH TO ACCOMMODATE INSULATION. SLEEVES SHALL BE FLUSH WITH FINISHED SURFACES AT BOTH ENDS. ON FINISHED SURFACES IN EXPOSED AREAS PROVIDE ESCUTCHEONS COMPATIBLE WITH FINISH.

NO.	DATE	ISSUE DESCRIPTION
02	06/04/2025	PERMIT SET
01	05/06/2025	REVISED CHECK SET
00	04/29/2025	CHECK SET

NY ENGINEERS
382 NE 191ST STREET
SUITE 49674,
MIAMI, FL 33179

PROJECT NAME

PHYSICAL LOCATION

DRAWING TITLE

PLUMBING SYMBOLS, ABBREVIATION,NOTES & SPECIFICATION

GRAPHIC SCALE

SEAL

PROJECT NO. -

SCALE AS NOTED

DRAWN BY NYE

CHECKED BY NYE

DATE 06/04/2025

SHEET NUMBER P0.1

2. INSTALLATION

2.01 GENERAL

A. ALL WORK WHICH REQUIRES DISRUPTION OF THE ROOFING SHALL BE DONE BY A CONTRACTOR CERTIFIED BY THE ROOFING MANUFACTURER AS REQUIRED TO MAINTAIN ANY EXISTING ROOF WARRANTIES.

B. EXTERIOR INSTALLATIONS TO BE WEATHER PROOF IN ALL RESPECTS.

C. EXTERIOR MATERIALS AND EQUIPMENT SHALL BE PAINTED TO PREVENT CORROSION, COLOR PER ARCHITECT.

D. COORDINATE THE PLUMBING WORK WITH ALL OTHER AFFECTED WORK AND THE CONSTRUCTION SCHEDULE.

E. REAM PIPE AND TUBE ENDS. REMOVE BURRS. BEVEL PLAIN AND FERROUS END PIPE.

F. REMOVE SCALE AND FOREIGN MATERIAL, FROM INSIDE AND OUTSIDE, BEFORE ASSEMBLY.

G. PREPARE PIPING CONNECTIONS TO EQUIPMENT WITH FLANGES AND UNIONS.

H. COORDINATION WITH THE WORK OF OTHER TRADES IS REQUIRED. PROVIDE OFFSETS IN PIPING SYSTEMS OR MINOR DEVIATIONS TO THE INDICATED PIPE ROUTING IN ORDER TO COORDINATE THE PLUMBING WORK WITH THE WORK OF ALL OTHER TRADES AND THE GENERAL BUILDING CONDITIONS.

I. NO DOMESTIC WATER PIPING SHALL BE INSTALLED IN UNHEATED SPACES.

J. PRIOR TO DISCONNECTING AND CONNECTING NEW WORK TO EXISTING SYSTEMS, THE PLUMBING CONTRACTOR SHALL NOTIFY THE PROPERTY MANAGER AND OFFER A PROPOSED SCHEDULE OF WORK. ESB WILL AUTHORIZE CONNECTIONS AND COORDINATE NECESSARY SHUT DOWNS AND DRAIN DOWNS AS REQUIRED. SHUT DOWNS AND DRAIN DOWNS MAY BE PERFORMED BY THE PLUMBING CONTRACTOR ONLY AFTER RECEIVING ESB AUTHORIZATION, AND SHOULD BE PERFORMED UNDER SUPERVISION OF ESB PERSONNEL. THREE (3) DAYS ADVANCE NOTICE TO THE PROPERTY MANAGER IS REQUIRED.

K. THE PLUMBING CONTRACTOR IS ADVISED THAT DUE TO THE NATURE OF THE OPERATIONS AND TENANT REQUIREMENTS, CONNECTIONS TO EXISTING SYSTEMS MAY HAVE TO BE MADE AFTER REGULAR WORKING HOURS. THE PROPERTY MANAGER WILL ADVISE THE PLUMBING CONTRACTOR OF THE TIME CONSTRAINTS UPON RECEIPT AND APPROVAL OF THE PLUMBING CONTRACTOR'S REQUEST FOR SHUT DOWN AND CONNECTION TO EXISTING SYSTEMS.

L. WHEN CONNECTING TO EXISTING STACKS AND RISERS, PROVISION IS TO BE MADE FOR FUTURE CONNECTIONS BY PROVIDING CAPPED AND VALVED OUTLETS ON DOMESTIC WATER RISERS AND PLUGGED OUTLETS ON THE SANITARY AND VENT STACKS.

2.02 ABOVE GRADE

A. INSTALL PLUMBING PIPING IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT PIPING COMPLIES WITH REQUIREMENTS AND SERVES INTENDED PURPOSES.

B. ROUTE PIPING IN AN ORDERLY MANNER, PLUMB AND PARALLEL TO BUILDING STRUCTURE. MAINTAIN GRADIENT. SLOPE PIPING AND ARRANGE SYSTEMS TO DRAIN. IN DOMESTIC WATER SYSTEMS, PROVIDE DRAIN VALVES AT MAIN SHUT-OFF VALVES AND ALL LOW POINTS IN PIPING.

C. USE EXISTING CONNECTIONS AT MAINS WHERE AVAILABLE FOR NEW BRANCH PIPING. LOCATE ALL RISERS AND PIPING BEFORE CONSTRUCTION COMMENCES AND TAKE CARE NOT TO DAMAGE SAME. ANY DAMAGE OCCURRING TO THE EXISTING PIPING WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

3. TESTING

A. AT THE COMPLETION OF THE PLUMBING WORK, COMPLETELY TEST THE ENTIRE INSTALLATION OF ALL SYSTEMS FOR PROPER OPERATION AND COMPLIANCE WITH APPLICABLE CODES AND LOCAL REQUIREMENTS. CORRECT ALL DEFICIENCIES FOUND.

B. TESTING OF THE INSTALLED SYSTEMS SHALL BE MADE BY THE CONTRACTOR IN THE PRESENCE OF A REPRESENTATIVE OF THE OWNER.

C. THE CONTRACTOR SHALL NOT COVER UP OR PERMANENTLY CONCEAL PIPING, DEVICES OR ANY PORTION OF NEWLY CONSTRUCTED PLUMBING SYSTEM(S) UNTIL SUCH SYSTEM, OR PORTION OF THE SYSTEM, HAS BEEN TESTED IN THE PRESENCE OF A REPRESENTATIVE OF THE OWNER AND INSPECTED BY THE LOCAL INSPECTOR AND APPROVED IN WRITING, EXCEPT PIPING PASSING THROUGH FLOORS, WALLS, PARTITIONS, OR BEAMS, FOR DISTANCES EQUAL TO THE THICKNESS OF SUCH FLOOR, WALL, PARTITION OR BEAM.

D. THIS CONTRACTOR SHALL NOTIFY THE VARIOUS DEPARTMENTS, BUREAUS AND INDIVIDUALS AT LEAST TWO WEEKS IN ADVANCE OF THE TIME THAT THE TESTS ARE TO BE CONDUCTED.

E. ALL DEFECTIVE PARTS SHALL BE REPLACED OR CORRECTED BY THIS CONTRACTOR AND AN EXTRA TEST OR TESTS SHALL BE MADE UNTIL THE OPERATION IS SATISFACTORY. ALL ARRANGEMENTS AND EXPENSES NECESSARY TO CONDUCT ALL TESTS REQUIRED BY THESE SPECIFICATIONS AND THE VARIOUS AGENCIES HAVING JURISDICTION OVER THE WORK INSTALLED UNDER THIS CONTRACT SHALL BE MADE BY THIS CONTRACTOR. NO EXTRA COMPENSATION WILL BE ALLOWED FOR THESE TESTS, THE COST THEREOF BEING INCLUDED IN THE LUMP SUM BID FOR THIS CONTRACT.

F. WHERE ANY EVIDENCE OF STOPPAGE IS FOUND IN PIPING OR EQUIPMENT, THIS CONTRACTOR SHALL DISCONNECT, CLEAN, REPAIR AND RECONNECT ALL OBSTRUCTED PIPING OR EQUIPMENT AND SHALL ALSO PAY FOR ALL NECESSARY CUTTING AND REPAIRS TO ADJOINING WORK.

G. ALL PIPING AND EQUIPMENT SHALL BE THOROUGHLY CLEANED INSIDE AND OUT, OF DIRT, CUTTINGS, OILS AND OTHER FOREIGN SUBSTANCES AND SHALL BE LEFT CLEAN.

H. ALL REQUIRED TESTS SHALL BE WITNESSED BY LOCAL AUTHORITIES AND THE OWNER'S REPRESENTATIVE.

I. ALL EQUIPMENT WILL BE FACTORY TESTED.

J. CONTRACTOR SHALL IDENTIFY TO THE OWNER'S REPRESENTATIVE ANY LEAKS OR DAMAGE THAT OCCURS AS A RESULT OF SYSTEM TESTING. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO LIMIT ANY POTENTIAL DAMAGE. CORRECTIVE ACTION REQUIRED AS A RESULT OF TESTING SHALL BE PERFORMED IMMEDIATELY AND AT THE CONTRACTOR'S EXPENSE.

K. REPORT IN WRITING TO AUTHORITIES HAVING JURISDICTION, THE ARCHITECT AND THE OWNER THE RESULTS OF ALL TESTING.

L. TESTING REQUIREMENTS
   a. UPON COMPLETION OF SECTION OF OR THE ENTIRE SUPPLY SYSTEM, THE SYSTEM, OR THE PORTION COMPLETED, SHALL BE TESTED AND PROVED TIGHT UNDER A WATER PRESSURE NOT LESS THAN THE WORKING PRESSURE OF THE SYSTEM.
   b. TESTS SHALL BE WITNESSED BY THE BUILDING ENGINEER.
   c. THE PLUMBING CONTRACTOR WILL BE HELD RESPONSIBLE FOR ALL DAMAGE DUE TO TEST FAILURES AND LEAKAGE IN THE TEST AREA AND ADJACENT TENANT OR ESB SPACES.

M. REFILL ENTIRE POTABLE HOT AND COLD WATER SUPPLY SYSTEM WITH CHLORINE SOLUTION (HTH OLIN CHEMICAL CORP.) AT A STRENGTH TO MEET STANDARDS OF THE DEPARTMENT OF HEALTH, AND FOR A PERIOD OF RETENTION AS STIPULATED.

N. THOROUGHLY FLUSH PIPING SYSTEM WITH FRESH WATER IMMEDIATELY PRIOR TO FINAL ACCEPTANCE.

4. WARRANTY

A. EQUIPMENT, MATERIALS AND WORKMANSHIP FURNISHED UNDER THIS CONTRACT SHALL BE GUARANTEED BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK BY THE OWNER. THE CONTRACTOR SHALL KEEP THE WORK IN GOOD REPAIR FOR ONE YEAR AFTER THE DATE OF FINAL APPROVAL. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, PROMPTLY CORRECT AND REPAIR ANY AND ALL BREAKS, FAILURES OR WEAR DUE TO FAULTY MATERIALS, WORKMANSHIP OR EQUIPMENT. ALL SETTLEMENTS OF SURFACES THAT MAY OCCUR WITHIN THAT PERIOD SHALL ALSO BE PROMPTLY REPAIRED.

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00	04/29/2025	CHECK SET

NY ENGINEERS
382 NE 191ST STREET
SUITE 49674,
MIAMI, FL 33179

PROJECT NAME

PHYSICAL LOCATION

DRAWING TITLE
PLUMBING SPECIFICATION

GRAPHIC SCALE

SEAL

PROJECT NO. -
SCALE AS NOTED
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CHECKED BY NYE
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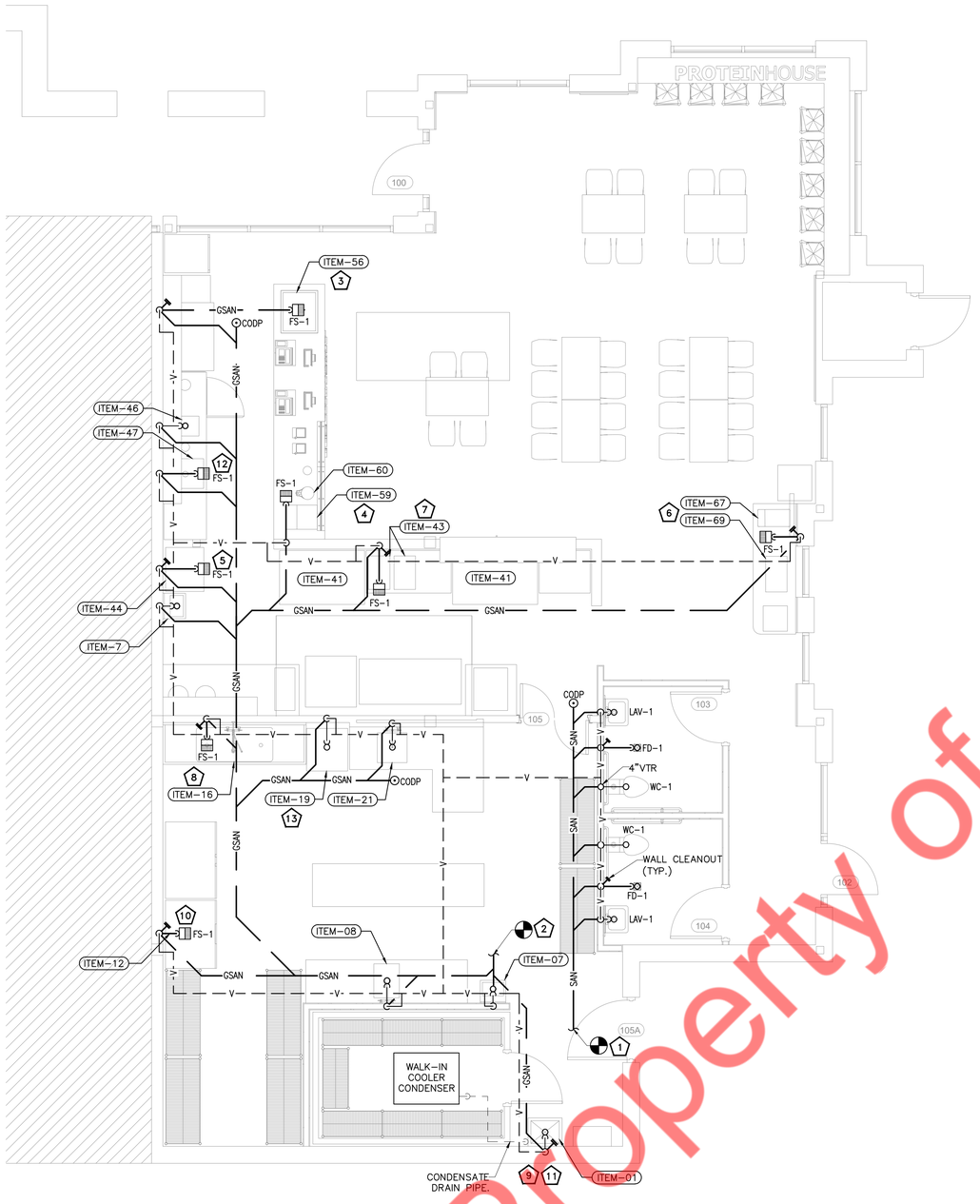
SHEET NUMBER P0.2



1 PLUMBING SANITARY & VENT PLAN
1/4" = 1'-0"

NORTH

SANITARY GENERAL NOTES:

1. UNLESS OTHERWISE NOTED, SLOPE OF DRAINAGE SYSTEM TO BE 1/8" PER FOOT OF RUN FOR PIPE 3" OR LARGER AND 1/4" PER FOOT FOR PIPE 2½ OR SMALLER.
2. CONTRACTOR TO FIELD VERIFY FEASIBILITY OF SLAB PENETRATION AS PER STRUCTURAL REQUIREMENT.
2. REFER RISER DIAGRAMS FOR ALL PIPE SIZES.
3. ALL MATERIAL INDICATED AND IMPLIED ON THESE DRAWINGS SHALL BE NEW UNLESS OTHERWISE NOTED.
4. ALL CLEANOUTS TO BE ACCESSIBLE.
5. ANY ROOF PENETRATION SHALL BE PERFORMED BY LANDLORD'S ROOFERS AT LANDLORD OPTION, A BONDED ROOFER APPROVED IN ADVANCE BY LANDLORD.
6. PROVIDE TRAP PRIMER/ SEAL ON FLOOR DRAIN AS PER LOCAL JURISDICTION.

(#) PLUMBING SANITARY KEYED NOTES:

1. CONNECT NEW 4" SANITARY LINE TO EXISTING 4" SANITARY WASTE LINE IN SPACE. CONTRACTOR TO FIELD VERIFY EXISTING SANITARY LINE SIZE, LOCATION AND INVERT. RE-ROUTE PIPING AS PER SITE CONDITION IF REQUIRED. BASE BID ACCORDINGLY.
2. CONNECT NEW 4" GREASE WASTE LINE TO EXISTING 4" GREASE WASTE STUB IN SPACE. CONTRACTOR TO FIELD VERIFY EXISTING GREASE LINE SIZE, LOCATION AND INVERT. RE-ROUTE PIPING AS PER SITE CONDITION IF REQUIRED. BASE BID ACCORDINGLY.
3. ROUTE INDIRECT WASTE FROM DROP-IN REFRIGERATED WELL TO FLOOR SINK WITH APPROVED AIR GAP.
4. ROUTE INDIRECT WASTE FROM ESPRESSO MACHINE TO FLOOR SINK WITH APPROVED AIR GAP.
5. ROUTE INDIRECT WASTE FROM ICE-CREAM FREEZER TO FLOOR SINK WITH APPROVED AIR GAP.
6. ROUTE INDIRECT WASTE FROM ICE DISPENSER & BEVERAGE DISPENSER TO FLOOR SINK WITH APPROVED AIR GAP.
7. ROUTE INDIRECT WASTE FROM FOOD WARMER & REFRIGERATED SANDWICH MACHINE TO FLOOR SINK WITH APPROVED AIR GAP.
8. ROUTE INDIRECT WASTE FROM 3 COMP SINK DRAIN TO FLOOR SINK WITH APPROVED AIR GAP.
9. ROUTE INDIRECT WASTE FROM WALK IN COOLER TO MOP SINK WITH APPROVED AIR GAP.
10. ROUTE INDIRECT WASTE FROM ICE MAKER TO FLOOR SINK WITH APPROVED AIR GAP.
11. ROUTE INDIRECT WASTE FROM WATER HEATER (WH-1,2) TO MOP SINK.
12. ROUTE INDIRECT WASTE FROM DROP IN ICE BIN TO FLOOR DRAIN WITH APPROVED AIR GAP.
13. CONTRACTOR SHALL PROVIDE ALL NECESSARY PLUMBING FITTINGS FOR DISHWASHER INSTALLATION. CONTRACTOR TO COORDINATE WITH DISHWASHER MANUFACTURER FOR PLUMBING REQUIREMENTS. PROVIDE WATER SUPPLY PIPING & WATER TAMPERING VALVE IF & AS REQUIRED BY MANUFACTURER, BID BASE ACCORDINGLY.

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PROJECT NAME

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PLUMBING SANITARY & VENT PLAN

GRAPHIC SCALE

SEAL

PROJECT NO.	-
SCALE	AS NOTED
DRAWN BY	NYE
CHECKED BY	NYE
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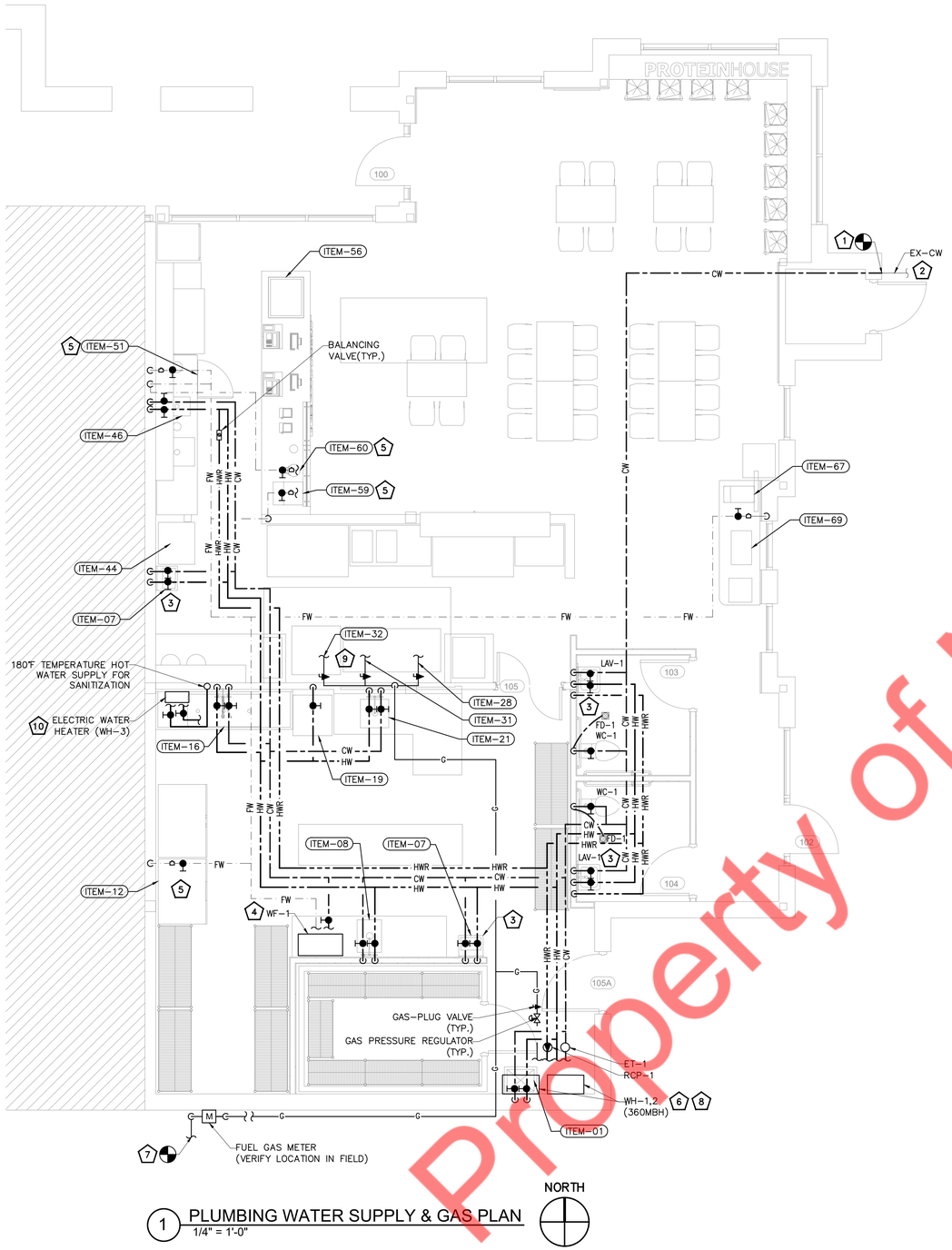
SHEET NUMBER	P1.1



1 PLUMBING WATER SUPPLY & GAS PLAN
1/4" = 1'-0"

WATER PIPING GENERAL NOTES:

1. CW/HW PIPING TO BE PROVIDED WITH INSULATION AS PER 2009 INTERNATIONAL ENERGY CONSERVATION CODE (REFER SHEET P0.1)
2. PROVIDE BRANCH PRV IF PRESSURE EXCEEDS 80 PSI.
3. CONTRACTOR TO FIELD VERIFY FEASIBILITY OF SLAB PENETRATION AS PER STRUCTURAL REQUIREMENT.
4. PROVIDE ACCESS PANELS FOR WATER HAMMER ARRESTOR, CLEANOUTS & SHUT-OFF VALVES AS REQUIRED.
5. REFER RISER DIAGRAMS FOR ALL PIPE SIZES.
6. ANY ROOF PENETRATION SHALL BE PERFORMED BY LANDLORD'S ROOFERS AT LANDLORD OPTION, A BONDED ROOFER APPROVED IN ADVANCE BY LANDLORD.
7. PROVIDE TRAP PRIMER/ SEAL ON FLOOR DRAIN AS PER LOCAL JURISDICTION.
8. ALL MATERIAL INDICATED AND IMPLIED ON THESE DRAWINGS SHALL BE NEW UNLESS OTHERWISE NOTED.
9. PROVIDE ASSE 1070 APPROVED LOCAL THERMOSTATIC MIXING VALVE FOR HAND SINK AND LAVATORIES.

(#) PLUMBING WATER SUPPLY KEYED NOTES:

1. CONNECT NEW 2" CW PIPING TO THE EXISTING 2-1/2" WATER LINE IN SPACE. CONTRACTOR TO FIELD VERIFY ROUTING AND LOCATION OF EXISTING CW LINE. CONTRACTOR TO FIELD VERIFY LOCATION AND IF REQUIRED PROVIDE NEW APPROVED SECONDARY BACKFLOW PREVENTION DEVICE AND WATER METER ON DOMESTIC WATER SERVICE AS PER LOCAL CODE AND STATE AUTHORITIES. BID BASE ACCORDINGLY.
2. CONTRACTOR TO FIELD VERIFY INCOMING WATER PRESSURE IS GREATER THAN 65 PSI. PROVIDE WATER BOOSTER PUMP IF PRESSURE IS LESS THAN 65 PSI. BID BASE ACCORDINGLY.
3. PROVIDE ASSE 1070 OR SIMILAR THERMOSTATIC MIXING VALVE AT ALL HAND SINK AND LAVATORIES. SET AT 110°F MAXIMUM.
4. PROPOSED NEW WALL MOUNTED WATER FILTRATION SYSTEM.
5. PROVIDE A PRESSURE REDUCING VALVE, BACK FLOW PREVENTER AND SHUT-OFF VALVE AT PLUMBING CONNECTIONS TO KITCHEN EQUIPMENTS.
6. NEW GAS FIRED TANK-LESS WATER HEATER (WH-1,2). REFER SCHEDULE FOR GAS FIRED WATER HEATER (WH-1,2).
7. NEW FUEL GAS METER WITH PRESSURE REGULATOR. COORDINATE EXACT LOCATION OF GAS METER WITH CIVIL UTILITY COMPANY AND MAKE NECESSARY CONNECTIONS AS REQUIRED. PLUMBING CONTRACTOR SHALL FIELD VERIFY PIPE ELEVATIONS AND PENETRATIONS PRIOR TO GAS LINE INSTALLATION. ARRANGE AND PAY FOR ANY REQUIRED UPGRADE TO GAS METER AND SERVICE REQUIRED TO MEET DESIGN GAS LOAD.
8. 2" GAS PIPE CONNECT TO WATER HEATER. PROVIDE SHUT-OFF VALVE, PRESSURE REGULATOR AND 6" DIRT LEG. GAS CONTRACTOR TO ENSURE THE EQUIPMENT RECEIVE SUFFICIENT GAS PRESSURE FOR EFFICIENT OPERATION.
9. CONTRACTOR TO FIELD VERIFY EXISTING AVAILABLE GAS PRESSURE AND MAKE SURE TO PROVIDE ADEQUATE INLET PRESSURE REQUIRED FOR ITEM-28, ITEM-31 AND ITEM-32 SHALL NOT EXCEED MAXIMUM GAS PRESSURE REQUIREMENT OF EQUIPMENT. REFER TO EQUIPMENT CUT SHEET FOR MAXIMUM AND MINIMUM ALLOWABLE NATURAL GAS PRESSURE AND PROVIDE REGULATOR IF REQUIRED. PROVIDED ANSUL FIRE PROTECTION SYSTEM AT HOOD.
10. NEW ELECTRIC TANK-LESS WATER HEATER (WH-3) FOR 3 COMP. SINK SANITIZATION BOWL. REFER SCHEDULE FOR ELECTRIC WATER HEATER (WH-3).

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SUITE 49674,
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PLUMBING WATER SUPPLY & GAS PLAN

GRAPHIC SCALE

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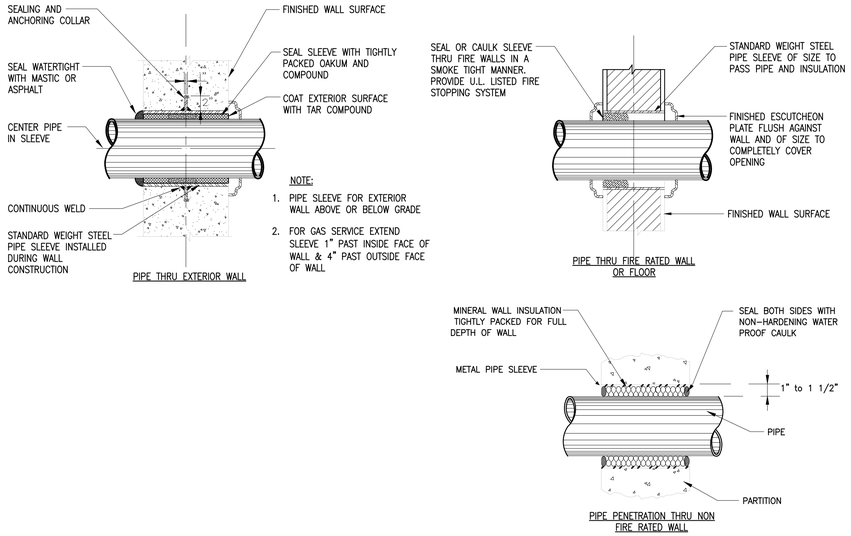
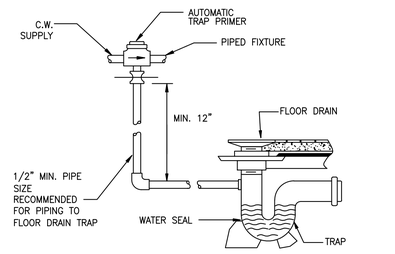
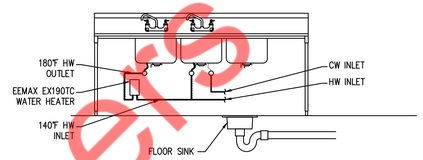


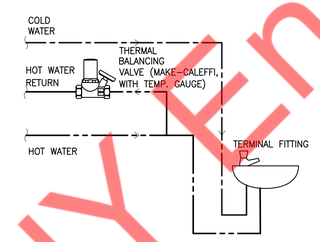
1 PIPE SLEEVE THRU WALL SECTION
N.T.S



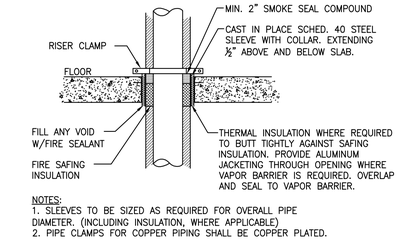
2 FLOW CONTROLLED TRAP PRIMER DETAIL
N.T.S



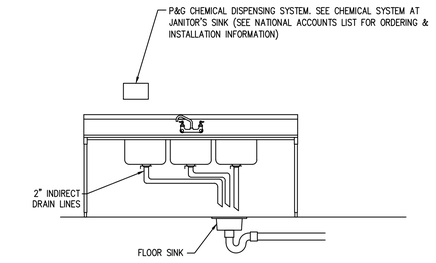
3 UNDER SINK WATER HEATER INSTALLATION DETAILS
N.T.S



4 BALANCING VALVE PIPING DETAIL
N.T.S



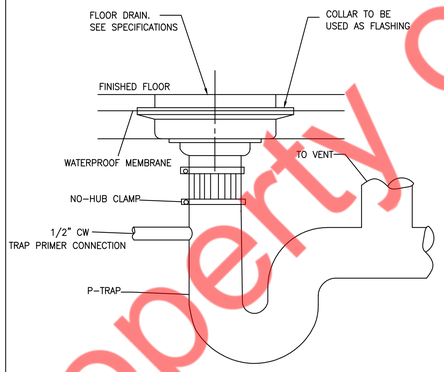
5 FLOOR PENETRATION DETAIL
N.T.S



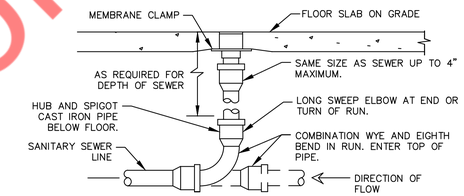
COMMENTS:

1. ARRANGEMENT SHOWN IS SCHEMATIC. ADJUST TO SUIT FIELD CONDITIONS OR MEET LOCAL CODE REQUIREMENTS. HUBLESS CAST IRON PIPE, FITTINGS AND CONNECTORS ALL AROUND SINK AND TRAP.
2. CONNECT GREASE TRAP FROM CENTER COMPARTMENT.
3. COORDINATE INDIVIDUAL BAY DRAINAGE , AIR GAP, & DRAIN FUNNEL WITH LOCAL CODE REQUIREMENTS.

6 3 COMPARTMENT SINK DETAILS
N.T.S



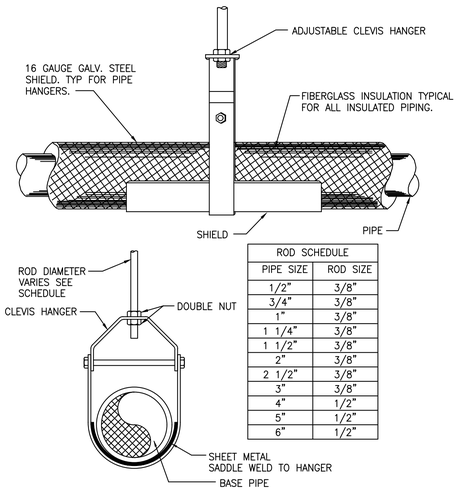
7 FLOOR DRAIN DETAIL
N.T.S



COMMENTS:

1. LOCATE AT BUILDING EXIT, AT ENDS OF RUNS, AT TURNS OF PIPE GREATER THAN 45 DEGREES, AT 50' INTERVALS ON STRAIGHT RUNS, AND/OR WHERE SHOWN ON PLANS. PROVIDE BACKFILL PER ARCHITECTURAL SPECIFICATIONS. LOCATE CLEANOUTS WHERE THERE IS 18" CLEAR AROUND. CONSULT LOCAL CODES FOR OTHER FCO REQUIREMENTS.
2. ROUND SECURED GASKETED NICKEL BRONZE ADJUSTABLE TOP WITH "CO" CAST IN COVER. PROVIDE CLEANOUT TOP WITH VARIATIONS SUITABLE FOR FLOOR COVERING (CARPET MARKER, RECESSED FOR TILE, SCORIATED FOR UNFINISHED FLOORS). PROVIDE GASKETED PLASTIC PLUG IN CAST IRON BODY. USE TEFLON JOINT COMPOUND ON PLUG THREADS. CLEAN THE TOP OF EXPOSED FCO AFTER INSTALLATION.

8 FLOOR CLEANOUT DETAIL
N.T.S



ROD SCHEDULE	
PIPE SIZE	ROD SIZE
1/2"	3/8"
3/4"	3/8"
1"	3/8"
1 1/4"	3/8"
1 1/2"	3/8"
2"	3/8"
2 1/2"	3/8"
3"	3/8"
4"	1/2"
5"	1/2"
6"	1/2"

9 HANGER DETAIL
N.T.S

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NY ENGINEERS
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PROJECT NAME

PHYSICAL LOCATION

DRAWING TITLE
PLUMBING DETAILS
(1 OF 2)

GRAPHIC SCALE

SEAL

PROJECT NO. -
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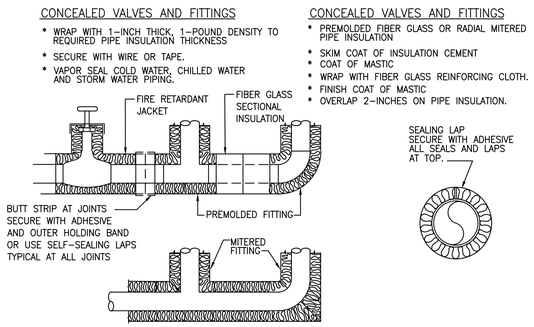
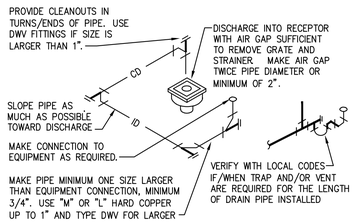
SHEET NUMBER P4.1



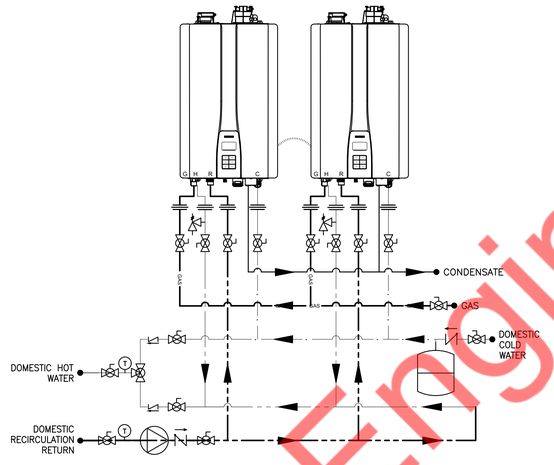
1 INSULATION OF PIPING, VALVES AND FITTINGS FOR EXPOSED AND CONCEALED LOCATIONS

N.T.S



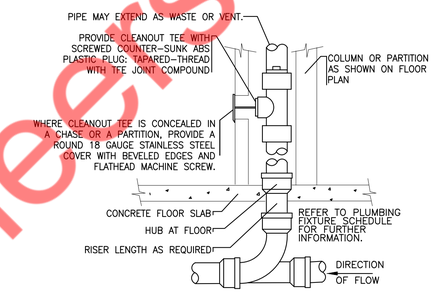
2 INDIRECT/CONDENSATE DRAIN

N.T.S



3 GAS FIRED INSTANTANEOUS WATER HEATER DETAIL

N.T.S

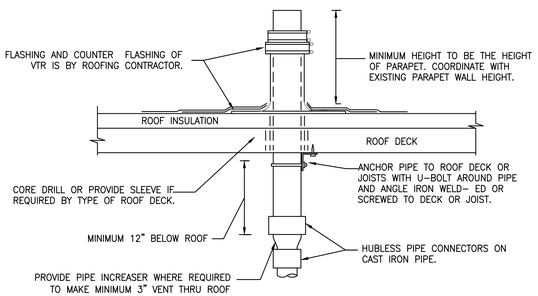


WALL CLEANOUT DETAIL NOTES:

1. PROVIDE WCO WHERE SHOWN ON PLAN, AND ON SANITARY WASTE BRANCHES NOT SERVED WITH A FLOOR CLEANOUT.
2. LOCATE ABOVE FIXTURE FLOOR RIM WITHIN 4' OF FLOOR.
3. CONSULT LOCAL CODES FOR OTHER WCO REQUIREMENTS.
4. LONG SWEEP AT END OF LINE OR COMBINATION WYE AND EIGHT BEND IN RUN OF LINE.
5. CLEAN OUT FACE SHALL BE WITHIN 4" OF WALL SURFACE. PROVIDE A PIPE EXTENSION IF REQUIRED.

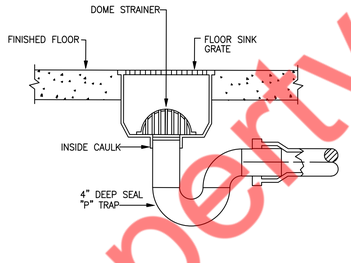
4 WALL CLEANOUT DETAIL

N.T.S



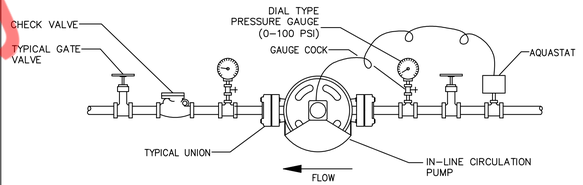
5 VENT THROUGH ROOF (VTR) DETAILS

N.T.S



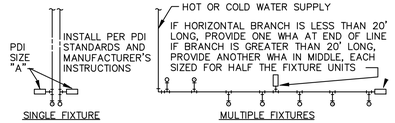
6 FLOOR SINK DETAILS

N.T.S



7 INLINE RECIRCULATING PUMP DETAIL

N.T.S



PDI SIZE	PIPE SIZE	FIXTURE UNIT LOAD
A	1/2"	1-11
B	3/4"	12-32
C	1"	33-60
D	1-1/4"	61-113
E	1-1/2"	114-154
F	2"	154-330

FIXTURE UNIT TABULATION		
FIXTURE	COLD	HOT
VALVE WATER CLOSET	10	--
TANK WATER CLOSET	5	--
URINAL	5	--
LAVATORY/SINK	1.5	1.5
JANITOR'S SINK	3	3
SHOWER/BATHTUB	2	2

PC TO PROVIDE WATER HAMMER ARRESTERS BY SIOUX CHIEF, PRECISION PLUMBING PRODUCTS, WATTS OR APPROVED EQUIVALENT WITH PISTON AND O-RING CONSTRUCTION, HAVING PDI #WH-201, ASSE #1010 AND ANSI #A112.26.1M CERTIFICATION. INSTALL IN HORIZONTAL OR VERTICAL POSITION, BUT NEVER UPSIDE DOWN. INSTALL IN LINE WITH WATER FLOW DIRECTION IF POSSIBLE. SIZE THE UNITS AS SHOWN ON THE DRAWINGS AND/OR PER THE TABLES SHOWN ABOVE.

8 WATER HAMMER ARRESTORS

N.T.S

NO.	DATE	ISSUE DESCRIPTION
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00	04/29/2025	CHECK SET

NY ENGINEERS
382 NE 191ST STREET
SUITE 49674,
MIAMI, FL 33179

PROJECT NAME

PHYSICAL LOCATION

DRAWING TITLE

PLUMBING DETAILS (2 OF 2)

GRAPHIC SCALE

SEAL

PROJECT NO. -

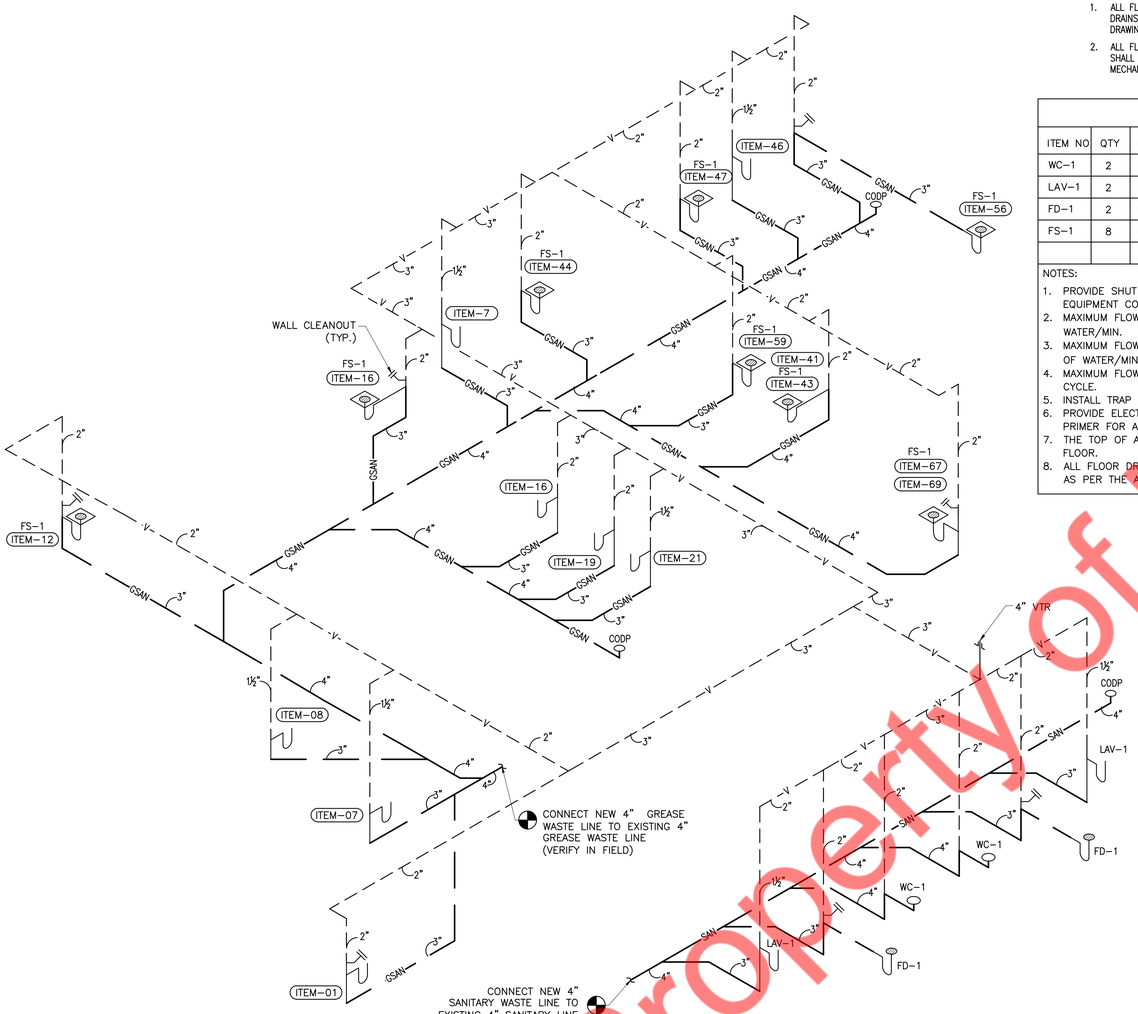
SCALE AS NOTED

DRAWN BY NYE

CHECKED BY NYE

DATE 06/04/2025

SHEET NUMBER P4.2



1 PLUMBING SANITARY RISER
N.T.S.

DRAIN ACCESSORIES & SCHEDULE

BODY																				STRAINER																					REMARKS
DESIGNATION	REQUIRED	SERIES NO.	ZURN	WADE	SMITH	JOSAM	CAST IRON	GALVANIZED	ALL BRONZE	HIGH DENSITY POLYETHYLENE	SECONDARY CLAMP	CLAMPING DEVICE	DECK CLAMP	BACK WATER VALVE	SUMP RECIEVER	FLASHING COLLAR	CAST IRON	GALVANIZED	ALL BRONZE	NICKEL BRONZE(ADJUSTABLE)	CHROME PLATED	SEDIMENT BUCKET	SECONDARY STRAINER	POLISHED FINISH	SATIN FINISH	TRACTOR GRATE	ST. STEEL	FUNNEL TOP	FLAT TOP	DOME	RAISED LIP	EXTENSION(WHERE REQUIRED)	LESS GRATE	BRONZE TOP	IRON GRATE	POLYETHYLENE	SOLID HINGED COVER	LOCATION
FD-1	•	ZURN-Z505	•				•					•										•																		REFER PLANS

NOTES:

1. ALL FLOOR DRAINS IN FINISHED AREAS AND ALL ROOF DRAINS SHALL BE LOCATED AS PER THE ARCHITECTURAL DRAWINGS.
2. ALL FLOOR DRAINS IN MECHANICAL EQUIPMENT ETC., SHALL BE LOCATED IN COORDINATION WITH THE MECHANICAL CONTRACTOR.
3. THE CONTRACTOR SHALL VERIFY THE COMPATIBILITY OF THE DRAINS WITH THE APPROVED ROOFING AND/OR WATER PROOFING SYSTEMS PRIOR TO SUBMITTING SHOP DRAWINGS.
4. THE TOP OF ALL FLOOR DRAINS SHALL BE FLUSH WITH THE ADJACENT FINISHED FLOOR.
5. PROVIDE ELECTRONIC TRAP PRIMER FOR MECHANICAL/TRASH ROOM FLOOR DRAINS & FUNNEL DRAIN. PROVIDE FLOW CONTROL TRAP PRIMER FOR ALL OTHER ROOM FLOOR DRAINS.

PLUMBING FIXTURE SCHEDULE

ITEM NO	QTY	DESCRIPTION	CW	HW	HWR	DRAINAGE DIRECT	DRAINAGE INDIRECT	VENT
WC-1	2	WATER CLOSET	1"	–	–	4"	–	2"
LAV-1	2	LAVATORY	½"	½"	½"	1½"	–	1½"
FD-1	2	FLOOR DRAIN	–	–	–	3"	–	2"
FS-1	8	FLOOR SINK	–	–	–	3"	–	2"

NOTES:

1. PROVIDE SHUT OFF VALVES FOR ALL WATER LINES AT PLUMBING FIXTURES AND EQUIPMENT CONNECTIONS.
2. MAXIMUM FLOW FROM A SINK FAUCET SHALL NOT EXCEED 2.2 GPM AT 60 PSI OF WATER/MIN.
3. MAXIMUM FLOW FROM A LAVATORY FAUCET SHALL NOT EXCEED 0.5 GPM AT 60 PSI OF WATER/MIN.
4. MAXIMUM FLOW FROM WATER CLOSET SHALL NOT EXCEED 1.6 GPM PER FLUSHING CYCLE.
5. INSTALL TRAP PRIMER FOR FLOOR DRAIN THAT SERVE THE RESTROOM.
6. PROVIDE ELECTRONIC TRAP PRIMER FOR HUB DRAIN. PROVIDE FLOW CONTROL TRAP PRIMER FOR ALL OTHER ROOM FLOOR DRAINS.
7. THE TOP OF ALL FLOOR DRAINS SHALL BE FLUSH WITH THE ADJACENT FINISHED FLOOR.
8. ALL FLOOR DRAINS IN FINISHED AREAS AND ALL ROOF DRAINS SHALL BE LOCATED AS PER THE ARCHITECTURAL DRAWINGS.

KITCHEN EQUIPMENT SCHEDULE

ITEM NO	QTY	DESCRIPTION	CW	HW	HWR	FW	DRAINAGE DIRECT	DRAINAGE INDIRECT	VENT
1	1	MOP SINK	¾"	¾"	–	–	3"	–	2"
8	1	PREP SINK	½"	½"	–	–	1½"	–	1½"
12	1	ICE MAKER	–	–	–	½"	–	1"	–
7	2	HAND SINK	½"	½"	–	–	2"	–	1½"
21	1	SOILED DISHTABLE	½"	½"	–	–	2"	–	2"
19	1	DISHWASHER	–	½"	–	–	2"	–	2"
16	1	3 COMP. SINK	¾"	¾"	–	–	–	2"	–
41	2	SALAD PREPARATION REFRIGERATOR	–	–	–	–	–	1"	–
43	2	FOOD PAN WARMER	–	–	–	–	–	2"	–
60	1	COFFEE GRINDER	–	–	–	½"	–	1"	–
59	1	ESPRESSO MACHINE	–	–	–	½"	–	1"	–
46	1	BACK COUNTER W/SINK	½"	½"	–	–	2"	–	1½"
44	1	ICE CREAM FREEZER	–	–	–	–	–	1"	–
47	1	DROP-IN ICE BIN	–	–	–	–	–	1"	–
56	1	DROP-IN REFRIGERATED WELL	–	–	–	–	–	1"	–
67	1	ICE DISPENSER	–	–	–	–	–	1"	–
69	1	BEVERAGE DISPENSER	–	–	–	½"	–	1"	–

KITCHEN EQUIPMENT NOTES:

1. IT SHALL BE THE PLUMBING CONTRACTORS RESPONSIBILITY TO MAKE ALL FINAL CONNECTIONS FROM KITCHEN EQUIPMENT TO THE PLUMBING MAINS SHOWN ON PLAN/RISER.
2. THE PLUMBING CONNECTION SCHEDULE RELATES REQUIRED CONNECTIONS TO INDIVIDUAL EQUIPMENT ONLY.
3. PLUMBING CONTRACTOR SHALL REFER TO "KITCHEN EQUIPMENT COMPANY" CUT SHEETS FOR ALL ROUTING OF FINAL CONNECTION TO EQUIPMENT AND EXACT ROUGH-IN LOCATION.
4. PLUMBING CONTRACTOR SHALL MOUNT ALL FLOOR SINKS FLUSH WITH FINISHED FLOOR ELEVATION AND A MINIMUM OF 16" OFF THE FINISH FACE OF THE WALL.
5. INSTALL SECONDARY BFP ASSE 1056 IF CHEMICAL DISPENSER USED WITH MOP SINK.

GREASE INTERCEPTOR SIZING CALCULATION

ITEM NO.	FIXTURE	QTY.	GREASE DFU PER FIXTURE	GREASE TOTAL DFU
FS-1	FLOOR SINK	8	5	40
1	MOP SINK	1	2	2
8	PREP SINK	1	2	2
7	HAND SINK	2	2	4
21	SOILED DISHTABLE	1	2	2
19	DISHWASHER	1	2	2
46	BACK COUNTER W/SINK	1	2	2
TOTAL:				54

REQUIRED GRAVITY GREASE INTERCEPTOR CAPACITY = 54X30 (RETENTION TIME) = 1620 GALLONS. (CALCULATION AS PER ARKANSAS PLUMBING CODE 2018, SECTION 1003.3.7)

EXISTING GRAVITY GREASE INTERCEPTOR CAPACITY = 3000 GALLONS.

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MIAMI, FL 33179

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DRAWING TITLE
PLUMBING SANITARY RISER AND SCHEDULES

GRAPHIC SCALE

SEAL

PROJECT NO. -
SCALE AS NOTED
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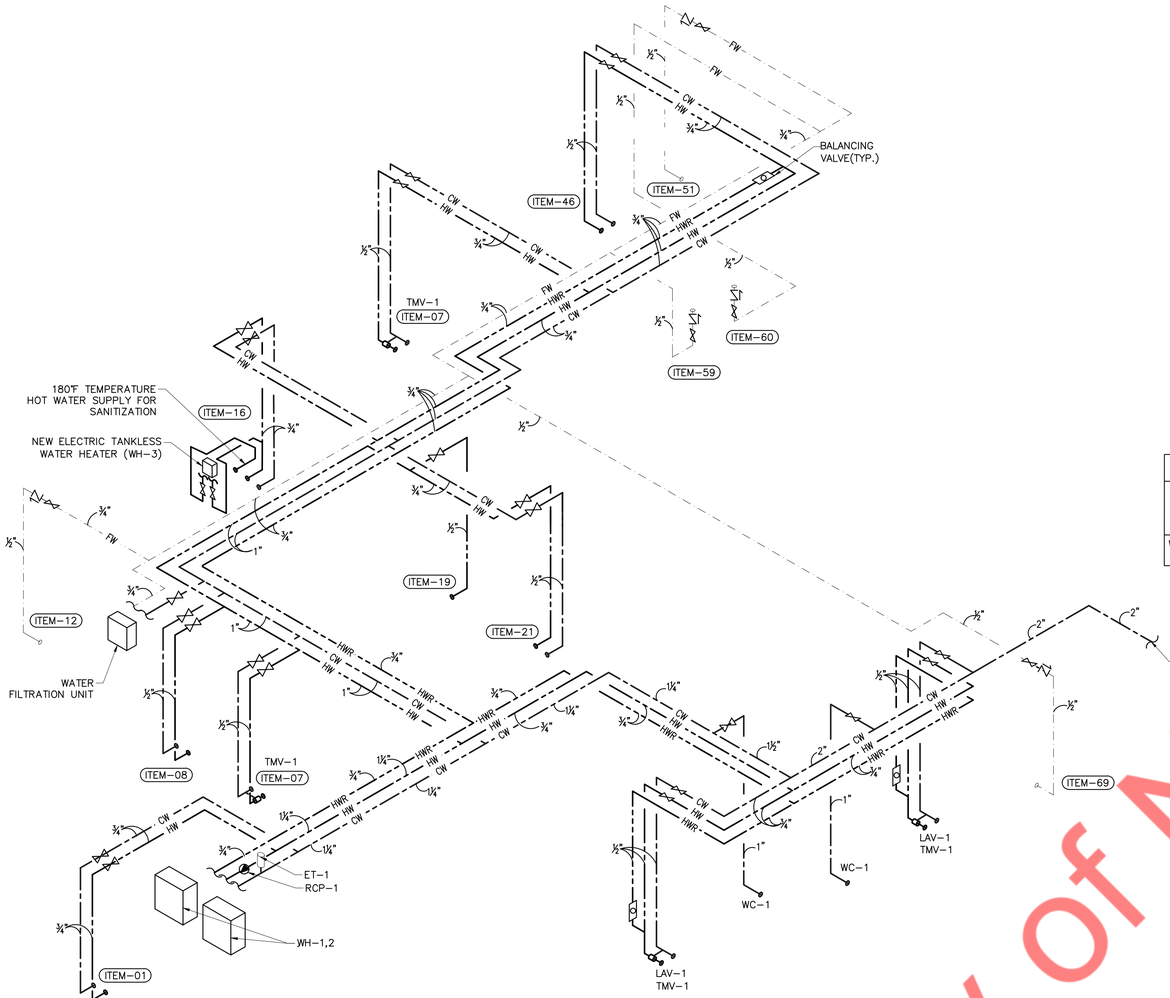
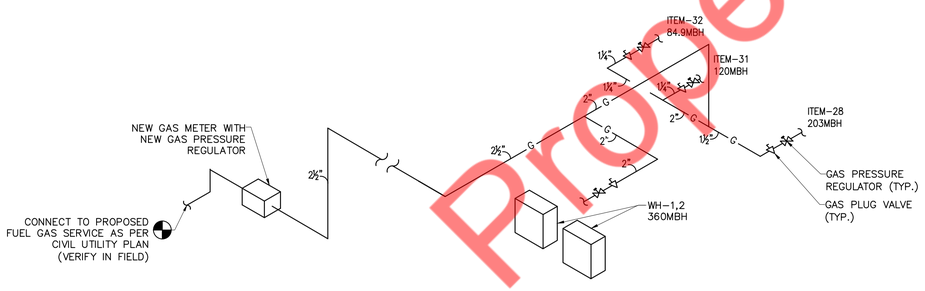
CHECKED BY NYE
DATE 06/04/2025
SHEET NUMBER P5.1



1 PLUMBING WATER SUPPLY RISER
N.T.S.



2 PLUMBING GAS SUPPLY RISER
N.T.S.

GAS FIRED INSTANTANEOUS HOT WATER HEATER SCHEDULE

TAG	QUANTITY	FLOW RATE GPM @ RISE	TYPE	NATURAL GAS		UNIFORM ENERGY FACTOR (UEF)	MANUFACTURER & MODEL NO.	REMARK
				INPUT(BTU/H) PER HEATER	RECOVERY GPM @80° F RISE			
WH-1,2	2	4.4 GPM @ 80°F	GAS POINT OF USE WATER HEATER	180,000 BTU/H	4.4	0.96	NAVIEN NPE-210S2	DIMENSIONS 27.4"(H) X 17.3"(W) X 13.2"(D)

PUMP SCHEDULE

TAG	DESCRIPTION	TYPE	CAPACITY		ELECTRICAL DATA				SELECTION BASED ON		REMARKS/OPTIONS
			GPM	HEAD (ft.)	HP	V	PH	HZ	MANUFACTURER	MODEL NUMBER	
RCP-1	HOT WATER RECIRC. PUMP	IN-LINE	2.0	9	1/12	120	1	60	BELL & GOSSETT	PL-30-B	NOTE 1,2

OPTIONS (ALL RCP UNITS)
- AQUA-STAT & NIGHT TIMER
- FLANGED PUMP
- BALANCING VALVE & CHECK VALVE
- MAINTENANCE BALL VALVES ON BOTH SIDES OF PUMP

NOTES:
1. SET AQUA-STAT WITH SET POINT 10 DEGREES BELOW SYSTEM SUPPLY TEMP. 2. INSTALL RECIRCULATION PUMP PER MANUFACTURERS REQUIREMENTS.

ELECTRICAL INSTANTANEOUS HOT WATER HEATER SCHEDULE

TAG	LOCATION	SERVING	QUANTITY	FLOW RATE GPM @ RISE	TYPE	ELECTRICAL				MANUFACTURER & MODEL NO.	REMARK
						VOLTS	PHASE	HERTZ	INPUT KW		
WH-3	BELOW 3 COMP. SINK	3 COMP. SINK	1	2.5 @ 44°F	ELECTRIC POINT OF USE WATER HEATER	277	1	60	16	EEMAX EX160TC FS	DIMENSIONS 10.25"(H) X 10.75"(W) X 4.5"(THICKNESS)

EXPANSION TANKS

UNIT	NUMBER	MANUFACTURER & MODEL NUMBER	SERVICE	TANK VOLUME (GAL)	ACCEPTANCE VOLUME (GAL)	PRESSURE RATING (PSI)	DIMENSIONS		OPERATING WEIGHT (LBS)	NOTES
							DIAMETER (INCH)	HEIGHT (INCH)		
ET-1	1	AMTROL	ST-5C-DD	2	0.9	150	8	14	26	1,2

GENERAL NOTES:
1. SET THE TANK PRESSURE TO EQUAL THE SYSTEM OPERATING PRESSURE. TANK MUST BE DRAINED BEFORE ADJUSTING SET PRESSURE.
2. INSTALL PER MANUFACTURER'S RECOMMENDATIONS ON INCOMING COLD WATER LINE.

GAS EQUIPMENT SCHEDULE

ITEM NO.	QTY.	DESCRIPTION	MANUFACTURER	MODEL	BTU/HR.
31	1	CHARBROILER GAS	STAR	6136RCBF	120,000
32	1	GRIDDLE GAS	STAR	636TF	84,900
28	1	RANGE, 36" OPEN BURNERS	SOUTHBEND	S36D	203,000
WH-1	2	WATER HEATER	NAVIEN	NPE-210S2	360,000
				TOTAL LOAD	767,900

GAS PIPE SIZING

TOTAL MBH	767,900 MBH
DEVELOPED LENGTH	500 FEET
SIZE	MBH
¾"	43
1"	82
1¼"	168
1½ "	251
2 "	484
2½ "	771
3 "	1,360

NEW GAS PIPING – LOW PRESSURE SYSTEM

INLET PRESSURE < 2.0PSI

PRESSURE DROP– 0.5 IN W.C

LONGEST EQUIVALENT LENGTH – APPROX. 500'

GAS PIPE SIZING AS PER TABLE 402.4(2), ARKANSAS FUEL GAS CODE, 2018. REQUIRED GAS PIPE SIZE IS – 2–1/2"

GAS NOTES:

1. CONTRACTOR TO FIELD VERIFY EXISTING AVAILABLE GAS PRESSURE AND MAKE SURE TO PROVIDE ADEQUATE INLET PRESSURE REQUIRED FOR MECHANICAL AND KITCHEN EQUIPMENTS.
2. PROVIDE SHUT–OFF VALVE AT ACCESSIBLE LOCATION.
3. CONTRACTOR SHALL VERIFY ACTUAL GAS PRESSURE AND LONGEST LENGTH OF RUN FROM METER TO FARTHEST APPLIANCE PRIOR TO INSTALLATION AND NOTIFY ENGINEER IF CONDITIONS DIFFER FROM THOSE SHOWN ON THE PLAN.

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00	04/29/2025	CHECK SET

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SUITE 49674,
MIAMI, FL 33179

PROJECT NAME

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DRAWING TITLE
PLUMBING WATER SUPPLY, GAS RISER & SCHEDULES

GRAPHIC SCALE

SEAL

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DATE 06/04/2025
SHEET NUMBER P5.2

ELECTRICAL SYMBOLS LIST

LIGHTING

□	LIGHTING FIXTURE AND OUTLET BOX
A ○ 2 a	LUMINAIRE TYPE: INDICATE BY UPPERCASE LETTER SEE LIGHTING FIXTURE SCHEDULE. CIRCUIT NUMBER : INDICATED BY NUMBER SWITCHING INDICATED BY LOWER CASE LETTERS.
	EXIT SIGN WITH EMERGENCY LIGHT & BATTERY UNIT
	EMERGENCY BATTERY UNIT WITH ATTACHED EMERGENCY FIXTURES AND OUTLET BOX.

SWITCHES AND CONTROLS

$^{D}_{Pa}$	WALL BOX DIMMER SWITCH, LUTRON MAESTRO SERIES. "a" DENOTES LIGHTING FIXTURE CONTROLLED.
$_{POS}$	WALL OCCUPANCY SENSOR.
$_{Pa}$	20A SPST TOGGLE SWITCH U.O.N. "a" DENOTES LIGHTING FIXTURE CONTROLLED.
$^{3}_{Pa}$	20A 3-WAY TOGGLE SWITCH U.N.O. "a" DENOTES LIGHTING FIXTURE CONTROLLED
$_{OV}$	MANUAL OVERRIDE SWITCH

WIRING SYSTEM

3 UP–	1#12 ø, 1#12 N. & 1#12 G. IN 3/4"C, UNLESS OTHERWISE NOTED. NUMBER WHERE USED INDICATES CIRCUIT NUMBER. IT SHALL CONSISTS OF POWER OR LIGHTING CIRCUITRY HOMERUN WITH PANELBOARD DESIGNATION,
3 5 UP–	POWER OR LIGHTING CIRCUITRY HOMERUN WITH PANELBOARD DESIGNATION, NUMBER WHERE USED INDICATES CIRCUIT NUMBER. IT SHALL CONSISTS OF 2#12 ø, 2#12 N. & 2#12 G. IN 3/4"C, UNLESS OTHERWISE NOTED.
3 5 7 UP–	NUMBER WHERE USED INDICATES CIRCUIT NUMBER. IT SHALL CONSISTS OF POWER OR LIGHTING CIRCUITRY HOMERUN WITH PANELBOARD DESIGNATION, 3#12 ø, 3#12 N. & 3#12 G. IN 3/4"C, UNLESS OTHERWISE NOTED.
	CONDUIT AND WIRE TO BUILDING GROUND.
	EXISTING
	NEW

ELECTRICAL DRAWING LIST

E0.1	ELECTRICAL NOTES, ABBREVIATIONS, SYMBOLS
E0.2	ELECTRICAL SPECIFICATIONS SHEET 1 OF 2
E0.3	ELECTRICAL SPECIFICATIONS SHEET 2 OF 2
E1.1	ELECTRICAL POWER PLAN
E2.1	ELECTRICAL LIGHTING PLAN
E3.1	ELECTRICAL ROOF POWER PLAN
E4.1	ELECTRICAL DETAILS
E5.1	ELECTRICAL RISER DIAGRAM
E5.2	ELECTRICAL PANEL SCHEDULE

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.	ARKANSAS BUILDING CODE 2021
b.	ARKANSAS MECHANICAL CODE 2021
c.	ARKANSAS PLUMBING CODE 2018
d.	ARKANSAS FUEL GAS CODE 2018
e.	INTERNATIONAL ENERGY CONSERVATION CODE 2009
f.	NATIONAL ELECTRICAL CODE 2020

POWER AND TELECOMMUNICATION

(J)	JUNCTION BOX WITH BLANK COVER PLATE, FLUSH IN FLOOR/CEILING.
A	SIMPLEX RECEPTACLE, +18" AFF OR AS NOTED. SUFFIXE DENOTES FOLLOWING: A– NEMA 5–15R B– NEMA 6–15R C– NEMA 14–30R D– NEMA 14–50R
GFI	DUPLEX GFI RECEPTACLE, +18" AFF OR AS NOTED.
	DUPLEX RECEPTACLE, +18" AFF OR AS NOTED.
CL	CEILING MOUNTED RECEPTACLE
	DUPLEX CONVENIENCE RECEPTACLE, CONTROLLED FROM WALL SWITCH. HALF SWITCHED, HALF CONSTANT HOT.
	DOUBLE DUPLEX RECEPTACLE – 20A–1P, 125V, NEMA 5–20R.
I	DUPLEX DEDICATED RECEPTACLE
	TELEPHONE/DATA OUTLET, 4"SQUARE OUTLET BOX WITH SINGLE GANG COLLAR AND BLANK PLATE. PROVIDE 3/4" E.C., U.O.N., UP TO HUNG CEILING AND TERMINATE WITH 90° ELBOW, BUSHING AND DRAG WIRE.
▽	DATA OUTLET – (1) PORT UNO, +18" AFF, UNO TEL / DATA OUTLET TO BE PROVIDED WITH 1" CONDUIT U.O.N. TO H.C. AND TERMINATED WITH 90 DEGREE ELBOW AND BUSHING. TEL / DATA OUTLET PLATE SHALL BE PROVIDED WITH 1 1/4" DIAMETER GROMMETED OPENING.

MOTORS AND CONTROLS

M SW	AC INDOOR UNIT MOTOR AS NOTED WITH LIQUID TIGHT FLEXIBLE CONNECTION WITH JUNCTION BOX AND MOTOR SWITCH.
M WP	AC OUTDOOR UNIT MOTOR AS NOTED WITH CONTROLLER AND DISCONNECT SWITCH WITH WEATHER PROOF.
	FUSED DISCONNECT SWITCH AMPERAGE, AND NUMBER OF POLES AS NOTED.
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
	COMBINATION MAGNETIC STARTER AND DISCONNECT SWITCH, FURNISHED BY HVAC/CONTRACTOR, INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR.
S_M	MANUAL MOTOR SWITCH
1.5 kW	ELECTRICAL HEATER, NUMBER DENOTES HEATER RATING

ANNOTATION

+24"	INDICATES MOUNTING HEIGHT, CENTER LINE TO FINISHED FLOOR.
X	KEYED NOTE REFERENCE
1 E–4.1	DETAIL REFERENCE: DETAIL NUMBER INDICATED ON TOP; DRAWING NUMBER INDICATED ON BOTTOM

POWER DISTRIBUTION

	DISTRIBUTION PANELBOARD, 208Y/120V–SURFACE OR FLUSH MOUNTED.
	DISTRIBUTION PANELBOARD, 480Y/277V–SURFACE OR FLUSH MOUNTED
	MAJOR ELECTRICAL COMPONENT OR DEVICE. VOLTAGE AND AMPERAGE AS NOTED.

ELECTRICAL ABBREVIATIONS

A	AMPERES	EA	EACH
A/C, AC	AIR CONDITIONING UNIT	EC	ELECTRICAL CONTRACTOR
AF	AMPERE FRAME/AMP FUSE	EM	EMERGENCY
AFF	ABOVE FINISHED FLOOR	EMT	ELECTRICAL METALLIC TUBING
AS	AMP SWITCH	EQUIP	EQUIPMENT
AIC	AMPS INTERRUPTING CAPACITY	ER	EXISTING TO BE RELOCATED
AT	AMP TRIP	E	EXISTING
ATS	AUTOMATIC TRANSFER SWITCH	FA	FIRE ALARM
AUTO	AUTOMATIC	FIXT	FIXTURE
AWG	AMERICAN WIRE GAUGE	FL	FLOOR
C	CONDUIT	G	GROUND
C/B,CB	CIRCUIT BREAKER	GFI	GROUND FAULT INTERRUPTER
CKT	CIRCUIT	GP	GENERAL PURPOSE
CLG	CEILING	HP	HORSEPOWER
COMM	COMMUNICATION	HWH	HOW WATER HEATER
CT	CURRENT TRANSFORMER	HZ	HERTZ
CU	COPPER	IC	INTERRUPTING CAPACITY
DIA	DIAMETER	PP	POWER PANEL
DISC	DISCONNECT	PVC	POLYVINYL CHLORIDE
DN	DOWN	PWR	POWER
DP	DISTRIBUTION PANEL	R	REMOVE
DWG	DRAWING	RE	RELOCATED EXISTING
IG	ISOLATED GROUNDING	REC	RECEPTACLE
JB	JUNCTION BOX	RGS	RIGID GALVANIZED STEEL
KCMIL	ONE THOUSAND CIRCULAR MILS	RR	REMOVE & RELOCATE
KV	KILOVOLT	SECT	SECTION
KVA	KILOVOLT–AMPERES	SPDT	SINGLE POLE DOUBLE THROW
KW	KILOWATTS	SPST	SINGLE POLE SINGLE THROW
LTG	LIGHTING	SPEC	SPECIFICATION
MAX	MAXIMUM	SW	SWITCH
MC	MOTOR CONTROLLER	SWBD	SWITCHBOARD
MCB	MAIN CIRCUIT BREAKER	SYM	SYMMETRICAL
MLO	MAIN LUGS ONLY	SYS	SYSTEMS
MTD	MOUNTED	TELE	TELEPHONE
MTS	MANUAL TRANSFER SWITCH	TEMP	TEMPERATURE
N	NEUTRAL	TXF	TOILET EXHAUST FAN
NE	NEW DEVICE TO REPLACE EXISTING	TYP	TYPICAL
NIC	NOT IN CONTRACT	UON	UNLESS OTHERWISE NOTED
NL	NIGHT LIGHT	V	VOLT/VOLTAGE
NTS	NOT TO SCALE	VA	VOLT AMPERE
OC	ON CENTER	VAV	VARIABLE AIR VOLUME
PC	PERSONAL COMPUTER	VP	VAPORPROOF
ø	PHASE	WP	WEATHER PROOF
PNL	PANEL	XFMR	TRANSFORMER
W	WATT		
W	WIRE		
WH	WALL HEATER		
E	EXISTING		

GENERAL NOTES

(APPLY TO ALL "E" DRAWINGS)

1. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE CURRENT VERSION OF THE NATIONAL ELECTRICAL CODE AND INTERNATIONAL ENERGY CONSERVATION CODE, LOCAL JURISDICTION REQUIREMENTS, AND ALL GOVERNING LOCAL CODES, LAWS, AND REGULATIONS.
2. CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS THAT MAY AFFECT THE WORK. NO ADDITIONAL COMPENSATION WILL BE CONSIDERED FOR FAILURE TO DO SO.
3. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, TEST REPORTS, AND CERTIFICATIONS FOR TEMPORARY AND FINAL CERTIFICATE OF OCCUPANCY.
4. FIRE STOP ALL PENETRATIONS OF FIRE RATED CONSTRUCTION IN A CODE APPROVED MANNER IN ORDER TO MAINTAIN FIRE RATING. ALL PENETRATIONS SHALL BE SLEEVED AND SEALED WATERTIGHT.
5. SECURE ALL SUPPORTS TO BUILDING STRUCTURE UTILIZING TOGGLE BOLTS (HOLLOW MASONRY), EXPANSION SHIELDS OR INSERTS (CONCRETE AND BRICK), MACHINE SCREWS (METAL), BEAM CLAMPS (FRAMEWORK), WOOD SCREWS (WOOD) OR PAN THRU STRAPS (METAL DECK). NAILS, RAWL PLUGS AND WOOD PLUGS ARE NOT PERMITTED. WHERE REQUIRED BY STRUCTURE, PROVIDE THRU BOLTS AND TRAPEZES. SUPPORT HORIZONTAL RUNS OF METALLIC RACEWAYS NOT MORE THAN 10 FT APART. SUPPORT RACEWAY RISERS AT EACH FLOOR LEVEL. RUN EXPOSED RACEWAYS PARALLEL WITH OR AT RIGHT ANGLES TO WALLS.
6. LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS. RACEWAYS OVER 10 FT LONG IN WHICH WIRING IS NOT INSTALLED: FURNISH WIRE.
7. VERIFY LOCATIONS OF OUTLETS AND SWITCHES IN FINISHED ROOMS WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISH. IN CENTERING OUTLETS AND LOCATING BOXES AND OUTLETS, ALLOW FOR OVERHEAD PIPES, DUCTS AND MECHANICAL EQUIPMENT, EQUIPMENT, VARIATIONS IN FIREPROOFING AND PLASTERING, WINDOW AND DOOR TRIM, PANELING, HUNG CEILINGS AND THE LIKE. CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT EXPENSE TO OWNER.
8. CONTRACTOR SHALL PROVIDE A WARRANTY ON ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE.
9. ALL UNUSED MATERIALS AND DEBRIS SHALL BE LEGALLY REMOVED AND DISPOSED OF AWAY FROM THE PREMISES ON A DAILY BASIS.
10. CONTRACTOR SHALL PATCH, PAINT, AND RESTORE EXISTING SURFACES DAMAGED DURING THE COURSE OF THIS CONSTRUCTION TO PRE–EXISTING CONDITIONS OR BETTER.
11. MINIMUM SIZE OF CONDUIT SHALL BE ¾", AND TYPE SHALL BE ELECTRICAL METALLIC TUBING (EMT), UNLESS OTHERWISE NOTED. PROVIDE NYLON DRAG LINE AND CONDUIT CAP FOR ALL EMPTY CONDUITS.
12. CONNECT CONDUIT TO MOTOR CONDUIT TERMINAL BOXES WITH FLEXIBLE CONDUIT (MINIMUM 18 IN. LENGTH AND 50% SLACK). DO NOT TERMINATE IN OR FASTEN RACEWAYS TO MOTOR FOUNDATION.
13. PULL AND JUNCTION BOXES WHERE INDICATED ON THE DRAWINGS, SHALL BE CONSIDERED SHOWN AT THEIR APPROXIMATE LOCATION. THE CONTRACTOR SHALL LOCATE THEM AS FIELD CONDITIONS DICTATE. ADDITIONAL PULL AND JUNCTION BOXES NOT SHOWN ON DRAWINGS SHALL BE PROVDED WHERE REQUIRED BY APPLICABLE CODE PROVISIONS OR WHERE CALLED FOR BY FIELD CONDITIONS. PULL AND JUNCTION BOXES SHALL BE SURFACE TYPE IN UNFINISHED AREAS AND INSTALLED CANCEALED IN FINISHED AREAS, AND ALL COVERS TO PULL & JUNCTION BOXES SHALL BE READILY ACCESSIBLE.
14. SUPPORT PANEL, JUNCTION AND PULLBOXES INDEPENDENTLY TO BUILDING STRUCTURE WITH NO WEIGHT BEARING ON RACEWAYS.
15. FOR EXACT LOCATION AND MOUNTING HEIGHT OF LIGHTING FIXTURES AND SWITCH/RECEPTACLE OUTLETS, REFER TO ARCHITECTURAL REFLECTED CEILING AND POWER PLANS.
16. ALL ELECTRICAL ACCESSORIES AND EQUIPMENT INSTALLED OUTSIDE OR EXPOSED TO WEATHER SHALL HAVE NEMA 3R ENCLOSURES AND SHALL BE TIGHTLY GASKETED FOR A COMPLETE RAINTIGHT INSTALLATION. ALL BUILDING EXTERIOR MOUNTED RECEPTACLES SHALL BE GFCI RATED AND MOUNTED IN WEATHERPROOF ENCLOSURE.
17. ALL ACCESS PANEL LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.
18. ELECTRICAL CONTRACTOR SHALL COORDINATE THE LOCATION AND INSTALLATION OF NEW WORK WITH THE GENERAL CONTRACTOR AND OTHER ASSOCIATED TRADES IN A TIMELY MANNER. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION. REFER TO ALL GENERAL, MECHANICAL, AND ELECTRICAL, DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
19. ALL CONDUITS AND EQUIPMENT TO BE CONCEALED IN FINISHED SPACES UNLESS OTHERWISE NOTED. CONDUITS SHALL BE ENCASED IN THE CONCRETE FLOOR SLAB.
20. ALL EQUIPMENT AND MATERIALS INSTALLED IN PLENUM CEILINGS SHALL BE APPROVED FOR THAT APPLICATION.
21. OUTLET BOXES AND JUNCTION BOXES ON OPPOSITE SIDES OF FIRE–RATED WALLS SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES, UNLESS FIRE–RATED BOXES OR PUTTY PADS ARE UTILIZED.
22. COORDINATE ALL FLOOR PENETRATIONS WITH THE STRUCTURAL AND ARCHITECTURAL DRAWINGS. CONFIRM PENETRATION LOCATIONS WITRH THE ENGINEER AND OWNER BEFORE INSTALLATION.
23. COORDINATE THE MOUNTING HEIGHT AND LOCATION OF RACEWAYS, COMMUNICATIONS OUTLETS, AND RECEPTACLES WITH THE ARCHITECTURAL CASEWORK DRAWINGS AND DETAILS. COORDINATE LOCATIONS OF LIGHT FIXTURES, SWITCHES, AND RELATED DEVICES WITH THE ARCHITECTURAL DRAWINGS AND DETAILS.
24. REFER TO ARCHITECTURAL PLANS FOR FINAL LOACTIONS OF ALL LUMINARIES AND SWITCHES, AND FOR ALL FINISHED CEILING HEIGHTS.
25. REFER TO ARCHITECTURAL PLANS FOR FINAL LOCATIONS OF ALL ELECTRICAL DEVICES, AND FOR FINAL CEILING AND WALL HEIGHTS AND LAYOUTS.
26. LIGHTING FIXTURES PROVIDED WITH EMERGENCY BATTERY PACKS AND INDICATED WITH SWITCH CONTROL SHALL BE WIRED WITH BATTERY CHARGING/SENSING CIRCUIT WIRED AHEAD OF SWITCH CONTROL.
27. NUMBER(S) SHOWN AT RECEPTACLES, JUNCTION BOXES AND EQUIPMENT INDICATES CIRCUIT NUMBERS IN PANELBOARD. PROVIDE WIRE AND CONDUIT TO INTERCONNECT EQUIPMENT AND DEVICES WITH SAME CIRCUIT NUMBERS AND RUN TO PANELBOARD.

NO.	DATE	ISSUE DESCRIPTION
02	06/04/2025	PERMIT SET
01	05/06/2025	REVISED CHECK SET
00	04/29/2025	CHECK SET

NY ENGINEERS
382 NE 191ST STREET
SUITE 49674,
MIAMI, FL 33179

PROJECT NAME

PHYSICAL LOCATION

DRAWING TITLE

ELECTRICAL NOTES, ABBREVIATIONS, SYMBOLS

GRAPHIC SCALE

SEAL

PROJECT NO.	-
SCALE	AS NOTED
DRAWN BY	NYE
CHECKED BY	NYE
DATE	06/04/2025
SHEET NUMBER	E0.1

ELECTRICAL SPECIFICATIONS

1. GENERAL:

A. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION," AIA DOCUMENT A201, LATEST EDITION, AND THESE SPECIFICATIONS AS APPLICABLE ARE PART OF THIS CONTRACT.

B. DRAWING ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CONDUIT ROUTING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF CONDUIT TO AVOID OBSTRUCTIONS. COORDINATION WITH EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES, IS REQUIRED, MAINTAIN HEADROOM AND SPACE CONDITIONS.

C. BIDDERS, BEFORE SUBMITTING PROPOSALS, SHALL VISIT AND CAREFULLY EXAMINE THE AREA AFFECTED BY THIS WORK TO FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS AND THE DIFFICULTIES THAT WILL ATTEND THE EXECUTION OF THIS WORK. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE, AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT, OR MATERIALS, REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.

D. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOROPERATION,MAINTANANCE AND REPAIR, MINOR DEVIATIONS FROM DRAWING MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.

E. REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK MAY BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES AND CHARGES IN MAKING UP THE WORK PROPOSAL.

F. CONNECTIONS TO EXISTING WORK: INSTALL NEW WORK AND CONNECT TO EXISTING WORK WITH MINIMUM INTERFERENCE TO EXISTING FACILITIES. TEMPORARY SHUTDOWNS OF EXISTING SERVICES SHALL BE PERFORMED AT NO ADDITIONAL CHARGES. AT TIMES NOT TO INTERFERE WITH NORMAL OPERATION OF EXISTING FACILITIES AND ONLY WITH WRITTEN CONSENT OF OWNER. ALARM AND EMERGENCY SYSTEMS SHALL NOT BE INTERRUPTED. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES AS REQUIRED WITH NECESSARY TEMPORARY CONNECTIONS BETWEEN NEW AND EXISTING WORK. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND ACCEPTABLE MANNER. RESTORE EXISTING DISTURBED WORK TO ORIGINAL CONDITION, INCLUDING MAINTENANCE OF WIRING CONTINUITY AS REQUIRED.

G. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW WORK.

H. 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.

I. SEAL OPENINGS THROUGH PARTITIONS, WALLS AND FLOORS WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL, UNLESS OTHERWISE NOTED.

J. PROVIDE ALL NECESSARY FLASHING AND COUNTER FLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THE BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF CONDUIT AND EQUIPMENT, PROVIDE EQUIPMENT CURBS AS REQUIRED.

K. ALL EXISTING MATERIAL, EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT ND APPARATUS REQUESTED BY THE BUILDING REPRESENTATIVE, ARCHITECT OR AS NOTED TO BE RELOCATED ON THE DRAWINGS. REMOVED EQUIPMENT SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR.

L. 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 DURING OVERTIME HOURS AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.

M. UNLESS OTHERWISE SPECIFICALLY NOTED OR 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.

N. ALL MATERIAL AND EQUIPMENT SHALL BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.

O. INSURANCE: PROVIDE IN ACCORDANCE WITH OWNER/BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.

P. THE FINAL ACCEPTANCE SHALL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, TESTED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATED OF INSPECTION AND APPROVAL.

2. GENERAL PROVISIONS FOR ELECTRICAL WORK:

A. DEFINITIONS:

1) "PROVIDE": TO FURNISH, 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.

4) "WORK": LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION.

5) "WIRING": RACEWAY. FITTINGS, WIRE, BOXES, AND RELATED ITEMS.

6) "CONCEALED": EMBEDDED IN MASONRY OR OTHER CONSTRUCTION, INSTALLED IN FURRED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, OR IN ENCLOSURES.

7) "EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE.

8) "SIMILAR" OR "EQUAL": EQUAL IN MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF SPECIFIED PRODUCT.

B. TEMPORARY LIGHT AND POWER: PROVIDE TEMPORARY LIGHT AND POWER SYSTEMS AT EARLIEST POSSIBLE DATE WITHIN THE CONSTRUCTION AREAS FOR THE REQUIREMENTS OF ALL TRADES AS HEREIN DESCRIBED. EXTEND SYSTEMS TO NEW CONSTRUCTION AS SOON AS PHYSICALLY POSSIBLE. MAINTAIN SYSTEM DURING WORKING OWNER. PROVIDE ALL REQUIRED MAINTENANCE, INCLUDING LAMPS AND SOCKETS.

C. QUALITY ASSURANCE

1) QUALITY OF MATERIALS: ALL EQUIPMENT SHALL BE NEW SPECIFICATION GRADE, FREE FROM DEFECTS AND LISTED BY APPROVED TESTING AGENCY AND BEARING THEIR LABEL MATERIALS AND EQUIPMENT OF SIMILAR APPLICATION SHALL BE OF SAME MANUFACTURER, EXCEPT AS NOTED.

2) GUARANTEE: ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED AS DEFINED IN PARAGRAPH 2.C.

3) CURRENT CHARACTERISTICS:

a. SERVICE: 120/208 VOLT, 3 PHASE, 4 WIRE, 60 HERTZ WITH GROUNDED NEUTRAL.

b. DISTRIBUTION: 120/208 VOLT, 3 PHASE, 4 WIRE, 60 HERTZ WITH GROUNDED NEUTRAL.

4) HEIGHTS OF OUTLETS:

a. FROM FINISHED FLOOR TO CENTERLINE OF OUTLETS FOR:

– RECEPTACLES AND TELEPHONES: 1 FT–6 IN.

– WALL SWITCHES: 4 FT–0 IN.

– WALL FIXTURES: 7 FT–0 IN.

– MOTOR CONTROLLERS: 5 FT–0 IN.

– CLOCKS: 7 FT 6 IN

b. EXCEPTIONS: AT JUNCTION OF DIFFERENT WALL FINISH MATERIALS, ON MOLDING OR BREAK IN WALL SURFACE, IN VIOLATION OF CODE, OR AS NOTED OR DIRECTED.

D. PRODUCT DELIVERY, STORAGE AND HANDLING

1) MOVING OF EQUIPMENT: WHERE NECESSARY, SHIP IN CARTED SECTIONS OF SIZE TO PERMIT PASSING THROUGH AVAILABLE SPACES.

2) ACCESSIBILITY: FOR OPERATION, MAINTENANCE AND REPAIR, MINOR DEVIATIONS SHALL BE PERMITTED, CHANGES OF MAGNITUDE OR INVOLVING EXTRA COST ARE NOT PERMISSIBLE WITHOUT REVIEW. GROUP CONCEALED ELECTRICAL EQUIPMENT REQUIRING ACCESS WITH EQUIPMENT FREELY ACCESSIBLE THROUGH ACCESS DOORS.

E. MATERIALS

1) NAMEPLATES: PROVIDE BLACK LAMICOID SHEET WITH 3/4 IN. WHITE LETTERING, FASTENED WITH EPOXY CEMENT FOR EACH DISCONNECT SWITCH, CIRCUIT BREAKER, PANEL, CABINET, TRANSFORMER, ENCLOSURE, MOTOR CONTROLLER AND THE LIKE. NAMEPLATES SHALL DESCRIBE THE NAME AND NUMBER OF EACH COMPONENT.

2) CABLE TAGS: TAG EACH CONDUCTOR PASSING THROUGH SPLICE OR PULLBOX WITH A WHITE LINEN TAG, INDICATING POINT OF ORIGIN AND TERMINATION OF THE CIRCUIT.

3) INSERTS AND SUPPORTS:

a. INSERTS: STEEL, SLOTTED TYPE, FACTORY PAINTED.

– SINGLE ROD: SIMILAR TO GRINNELL FIG. 281.

– MULTI–ROD: SIMILAR TO FEE AND MASON SERIES 9000 WITH END CAPS AND CLOSURE STRIPS.

– CLIP FORM NAILS FLUSH WITH INSERTS.

– MAXIMUM LOADING 75 PERCENT OF RATING.

b. SUPPORTS FROM BUILDING CONSTRUCTION: INSERTS, BEAM CLAMPS, STEEL FISHPLATES (IN CONCRETE FILL ONLY), CANTILEVER BRACKETS OR OTHER MEANS. SUBMIT FOR REVIEW.

c. GROUPED LINES AND SERVICES: TRAPEZE HANGERS OF BOLTED ANGLES OR CHANNELS.

d. WHERE BUILDING CONSTRUCTION IS INADEQUATE: PROVIDE ADDITIONAL FRAMING. SUBMIT FOR REVIEW.

F. PAINT SHALL BE THE BEST GRADE FOR ITS PURPOSE. DELIVER IN ORIGINAL SEALED CONTAINERS AND APPLY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. COLOR SHALL BE AS SELECTED BY ARCHITECT OR ENGINEER. UTILIZE GALVANIZED IRON PRIMER ON PANEL AND PULL BOXES, AFTER FABRICATION. UTILIZE HOT DIPPED GALVANIZED OR DIPPED IN ZINC BASED PRIMER FOR: OUTLET BOXES, JUNCTION BOXES, CONDUIT HANGERS, RODS, INSERTS AND SUPPORTS. ZINC BASED PRIMER WITH FINISH TO MATCH SURROUNDINGS SHALL BE USED FOR MARRED SURFACES OF STEEL EQUIPMENT AND RACEWAYS. A FIELD–APPLIED ZINC BASED PRIME COAT SHALL BE UTILIZED FOR STEEL OR IRONWORK.

G. BRUSH AND CLEAN WORK PRIOR TO CONCEALING, PAINTING AND ACCEPTANCE. PAINTED EXPOSED WORK SOILED OR DAMAGED; CLEAN AND REPAIR TO MATCH ADJOINING WORK BEFORE FINAL ACCEPTANCE. REMOVE DEBRIS FROM INSIDE AND OUTSIDE OF MATERIAL AND EQUIPMENT.

H. FINAL LOCATIONS AND MOUNTING ORIENTATIONS OF ALL SWITCHES, RECEPTACLES AND LIGHT FIXTURES SHALL BE VERIFIED WITH ARCHITECT.

I. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.

3. SCOPE OF WORK:

A. SCOPE OF WORK SHALL CONSIST OF PROVIDING LABOR, MATERIALS, EQUIPMENT, SERVICES AND FEES NECESSARY FOR COMPLETE AND SAFE INSTALLATION IN CONFORMING WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL OTHER APPLICABLE INDUSTRY, NATIONAL AND LOCAL CODES AND AUTHORITIES HAVING JURISDICTION, AS INDICATED ON DRAWINGS AND HEREIN SPECIFIED.

B. ALL DRAWINGS, PLANS, DETAILS, SPECIFICATIONS AND SPECIFICATION ADDENDA ARE MADE PART OF THIS CONTRACT AND SHALL APPLY TO ALL WORK UNDER THE CONTRACT UNLESS OTHERWISE AMENDED, MODIFIED, SUPPLIED OR SPECIFIED HEREIN.

C. 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 PROVIDED THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR

D. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH ALL DEPARTMENTS HAVING JURISDICTION, 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.

E. CONTRACTOR SHALL PERFORM ALL CONTROLLED INSPECTIONS IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE 2021. SECURE ALL REQUIRED PERMITS AND APPROVALS AND TRANSMIT SAME TO OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES.

F. AREAS WITH NO ELECTRICAL WORK SHALL REMAIN AS IS. CONTRACTOR SHALL MAINTAIN CONTINUITY OF ALL ELECTRICAL SYSTEMS TO ALL AREAS NOT COVERED BY THIS RENOVATION AND SHALL PROVIDE 48 HOUR NOTICE TO LANDLORD OF ANY PLANNED POWER INTERRUPTIONS OR SIGNAL SYSTEM OUTAGES.

4. SHOP DRAWINGS

A. PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT, CONTRACTOR SHALL PROVIDE COMPLETE SETS OF COORDINATED SHOP DRAWINGS OF ALL EQUIPMENT, INDICATING CAPACITY, DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT AND ENGINEER.

B. INDICATE ON EACH SHOP DRAWINGS SUBMITTED:

1) PROJECT NAME AND LOCATION

2) NAME OF ARCHITECT AND ENGINEER

3) ITEM IDENTIFICATION

4) APPROVAL STAMP OF PRIME CONTRACTOR

C. SUBMISSIONS:

1) SUBMISSIONS 11 IN. X 17 IN. OR SMALLER: IF THE SUBMISSION IS A CATALOG CUT, THEN THE CONTRACTOR SHALL SUBMIT ONE ORIGINAL AND TWO COPIES. OTHERWISE, HE SHALL SUBMIT THREE COPIES. THE ARCHITECT WILL FORWARD THE ORIGINAL AND ONE COPY (TWO COPIES WHEN NO ORIGINAL IS RECEIVED) TO THE ENGINEER. ALL CATALOG CUTS SHALL BE COMPLETE.

2) SUBMISSIONS LARGER THAN 11 IN. X 17 IN.: SUBMIT TWO PRINTS AND ONE PAPER SEPIA TO THE ARCHITECT. THE ARCHITECT WILL FORWARD ONE PRINT AND THE PAPER SEPIA TO THE ENGINEER.

D. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:

1) SAFETY/DISCONNECT SWITCHES

2) FUSES

3) CIRCUIT BREAKERS

4) PANELBOARDS/LOADCENTER (INCLUDING DIMENSIONS, SCHEDULES, AND CATALOG CUTS).

5) RACEWAYS

6) WIRE AND CABLE

7) WALL SWITCHES

8) INSERTION RECEPTACLES

9) MOMENTARY CONTACT SWITCHES

10) TIME SWITCHES

11) LIGHTING FIXTURES.

E. ASSIST AND PROVIDE ALL NECESSARY INFORMATION, DIAGRAMS, SKETCHES, ETC. TO THE HVAC CONTRACTOR, FOR THE PREPARATION OF COORDINATED SHOP DRAWINGS INDICATING ROUTING OF FEEDERS, CONTROL CONDUITS, RECESSED FIXTURES AND ADJACENT NEARBY PIPING AND DUCTWORK WHERE APPLICABLE, CERTIFIED BY ALL TRADES THAT COORDINATION HAS BEEN ESTABLISHED. SUBMIT FOUR(4) BOOKBOUND OPERATING AND SERVICE MANUALS WHICH SHALL INCLUDE COPIES OF ALL SHOP DRAWING. PROVIDE SHOP DRAWINGS FOR PANELS, FIXTURES, WIRING DEVICES, CONDUIT, CABLE, DISCONNECT SWITCH, RELAYS, CONTRACTORS, AND OTHER SYSTEMS AS DIRECTED BY THE ENGINEER.

5. AS–BUILT DRAWINGS AND EQUIPMENT OPERATIONAL INSTRUCTIONS

A. UPON COMPLETION AND ACCEPTANCE OF WORK, CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS AND 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. CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE COPY TO THE ENGINEER.

C. THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE PROJECT, ARCHITECT AND ENGINEER.

D. REPRODUCIBLE "AS–BUILT" DRAWINGS SHALL BE PROVIDED INDICATING THE AS INSTALLED CONDITIONS OF THE WORK. "AS–BUILT" DRAWINGS SHALL BE PROVIDED TO THE ARCHITECT AFTER COMPLETION OF THE INSTALLATION.

6. LOW–VOLTAGE DISTRIBUTION EQUIPMENT:

A. PROVIDE COMPLETE EQUIPMENT INCLUDING: SWITCHES, FUSES, CIRCUIT BREAKERS, PANELS AND TRANSFORMERS.

B. ALL EQUIPMENT SHALL CONFORM TO NEMA, ANSI AND IEEE STANDARDS.

C. DISCONNECT SWITCHES SHALL BE FUSED OR NONFUSED AS NOTED. VOLTAGE SHALL BE AS REQUIRED. SWITCHES SHALL BE HEAVY DUTY, EXCEPT AS NOTED, AND HORSEPOWER RATED FOR MOTOR LOADS. TOGGLE TYPE SWITCHES SHALL BE NONFUSED, LOAD BREAK, HAVING MAXIMUM RATINGS OF 20 AMP AT 600 VOLTS AND 30 AMP AT 240 VOLTS. TWO–POLE SWITCHES SHALL BE SIMILAR TO HART AND HEGEMAN NO. 6808F. THREE–POLE SWITCHES SHALL BE SIMILAR TO HART AND HEGEMAN NO. 7810F. KNIFE–BLADE TYPE SWITCHES SHALL BE LOAD BREAK, QUICK–MAKE– QUICK–BREAK, UL CLASS R UP TO 600 AMP. MAXIMUM RATING EXCEPT AS NOTED SHALL BE 800 AMP. ARC QUENCHERS SHALL BE PROVIDED. SWITCHES SHALL BE SIMILAR TO GENERAL ELECTRIC QMR. ALL SWITCH ENCLOSURES SHALL BE DEAD FRONT, NEMA TYPE 1, EXCEPT AS NOTED.

7. FUSES:

A. CIRCUITS 0 TO 600 AMPERES SHALL BE PROTECTED BY FUSES SIMILAR TO CURRENT LIMITING BUSSMAN LOW–PEAK DUAL–ELEMENT TIME–DELAY LPN–RK (AMP)SP (250V) /LPS–RK (AMP)SP (600V) OR LPJ (AMP)SP (600V) (UL CLASS RK1 OR CLASS J), AND BE LISTED BY UL WITH AN INTERRUPTING RATING OF 300,000 AMPERES RMS SYMMETRICAL.

B. MOTOR CIRCUITS – ALL INDIVIDUAL MOTOR CIRCUITS WITH FULL LOAD AMPERE RATINGS (FLA) OF 480 AMPERES OR LESS SHALL BE PROTECTED BY FUSES SIMILAR TO CURRENT LIMITING BUSSMANN LOW–PEAK DUAL–ELEMENT TIME–DELAY LPN–RK (AMP)SP (250V) /LPS–RK (AMP)SP (600V) OR LPJ (AMP)SP (600V) (UL CLASS RK1 OR CLASS J), AND BE LISTED BY UL WITH AN INTERRUPTING RATING OF 300,000 AMPERES RMS SYMMETRICAL.

C. ALL FUSES SHALL BE PROVIDED BY SAME MANUFACTURER.

D. PROVIDE 1 SPACE MATCHING FUSE FOR EACH SET OF 3.

E. CIRCUIT BREAKERS: MOLDED CASE BREAKERS SHALL BE THERMAL–MAGNETIC, QUICK–MAKE–QUICK–BREAK, BOLT–ON TYPE, MANUALLY OPERATED WITH INSULATED TRIP–FREE HANDLE. MULTI–POLE TYPE BREAKERS SHALL CONTAIN INTERNAL TRIP BAR. TERMINALS SHALL BE SUITABLE FOR COPPER OR ALUMINUM CABLE. FURNISH AUXILIARY DEVICES WHERE REQUIRED FOR SHUNT–TRIPPING, OPEN AND CLOSE MOTOR OPERATOR AND ALARM INDICATION. ENCLOSURES SHALL BE DEAD FRONT, NEMA TYPE 1, EXCEPT AS NOTED. FRAMES, IC AND INTERCHANGEABLE TRIPS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:

1) 120 VOLTS, 100–AMP FRAME: 10,000 AMPS, 1 POLE.

2) 120/240 VOLTS, 225–AMP FRAME: 22,000 AMPS MINIMUM.

3) AIC RATING SHALL BE COORDINATED WITH THE UTILITY COMPANY. BASE BID ACCORDINGLY.

8. RACEWAYS:

A. PROVIDE RACEWAYS COMPLETE WITH BOXES, FITTINGS AND ACCESSORIES. CONDUIT OR TUBING SIZES REFERRED TO IN SPECIFICATIONS AND ON DRAWINGS ARE NOMINAL DIAMETERS. MINIMUM DIAMETER SHALL BE 3/4 IN.

B. MATERIALS

1) RACEWAYS:

a. RIGID STEEL CONDUIT: FULL–WEIGHT PIPE, GALVANIZED, THREADED.

b. ELECTROMETALLIC TUBING (EMT): THIN WALL PIPE, GALVANIZED, THREADLESS.

c. FLEXIBLE STEEL CONDUIT: CONTINUOUS SINGLE STRIP, GALVANIZED.

d. WIREWAYS: WIRE SHALL BE AS NOTED, MINIMUM NO. 16 GAUGE STEEL WITH GROUND CONTINUITY. FINISH SHALL BE BAKED ENAMEL. COVERS SHALL BE SCREW–ON.

e. SURFACE METAL RACEWAY: SIZE AS NOTED. BASE 0.04 IN., COVER 0.25 IN. MATERIAL SHALL BE STEEL. FINISH SHALL BE BAKED ENAMEL. COVERS SHALL BE SCREW–ON.

2) FITTINGS AND ACCESSORIES:

a. RIGID STEEL: NONSPLIT, THREADED, STEEL OR MALLEABLE IRON. ZINC DIE CAST NOT PERMITTED.

b. ELECTROMETALLIC TUBING: COMPRESSION TYPE. GALVANIZED RIGID STEEL ELBOWS, 2 IN. OR LARGER.

c. FLEXIBLE METALLIC CONDUIT: ANGLE WEDGE TYPE WITH INSULATED THROAT.

3) BOXES:

a. OUTLET BOXES: EXCEPT AS OTHERWISE REQUIRED BY CONSTRUCTION, DEVICES OR WIRING, BOXES SHALL BE STAMPED STEEL, 4 IN. SQUARE OR OCTAGON FOR FIXTURES. BOXES ABOVE CEILING SHALL BE 1–1/2 IN. DEEP. BOXES IN CEILING OR SLAB SHALL BE 3 IN. DEEP. BOXES IN WALL FOR FIXTURES SHALL BE 2–3/4 IN. DEEP. BOXES IN WALL FOR RECEPTACLES AND SWITCHES SHALL BE 1–1/2 IN. DEEP. FURNISH WITH RAISED COVERS AND FIXTURE STUDS WHERE REQUIRED. WITHOUT FIXTURE OR DEVICE: FURNISH BLANK COVER. OFFSET BACK–TO–BACK OUTLETS WITH MINIMUM 6 IN. SEPARATION.

b. JUNCTION AND PULL BOXES: GALVANIZED SHEET STEEL WITH SCREW–ON COVERS, EXCEPT AS NOTED. FURNISH WITH INSULATED SUPPORTS FOR CABLES. LOCATIONS SHALL BE AS NOTED OR REQUIRED AND ACCESSIBLE. PROVIDE BARRIERS IN NEW AND RENOVATED BOXES BETWEEN 120/208 VOLT AND 265/460 VOLT WIRING AND BETWEEN EMERGENCY AND NORMAL WIRING. FLOOR BOXES SHALL BE SUITABLE FOR CONDUIT AND DEVICES NOTED. RAISED OUTLETS SHALL BE HUBBELL #B2414 SERIES WITH ABOVE FLOOR FITTING. TELEPHONE: BUSHED HOLE. POWER: DUPLEX RECEPTACLE OR OTHER AS NOTED. INCREASE SIZE TO SUIT AS NECESSARY. FLUSH OUTLETS SHALL BE HUBBELL #B2414 SERIES WITH FLUSH FLOOR FITTING FOR TELEPHONE AND FLUSH DUAL FLAP COVER WITH DUPLEX RECEPTACLE FOR POWER AS NOTED. INCREASE SIZE TO SUIT AS NECESSARY.

NO.	DATE	ISSUE DESCRIPTION
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NY ENGINEERS
382 NE 191ST STREET
SUITE 49674,
MIAMI, FL 33179

PROJECT NAME

PHYSICAL LOCATION

DRAWING TITLE
ELECTRICAL SPECIFICATIONS SHEET 1 OF 2

GRAPHIC SCALE

SEAL

PROJECT NO.	-
SCALE	AS NOTED
DRAWN BY	NYE
CHECKED BY	NYE
DATE	06/04/2025

SHEET NUMBER
E0.2

ELECTRICAL SPECIFICATIONS (CONT.)

C. PROVIDE RACEWAYS ONLY AS HEREIN SPECIFIED, EXCEPT AS NOTED. RACEWAYS SHALL BE RUN CONCEALED, EXCEPT AS NOTED.

PROVIDE RACEWAY SUPPORT UTILIZING CEILING TRAPEZE, STRAP HANGERS, OR WALL BRACKETS. PROVIDE U-BOLTS AT EACH FLOOR LEVEL OF RISER RACEWAYS AND CONNECTED TO ACCEPTABLE SUPPORTS. PROVIDE RISER CLAMPS AT EACH FLOOR LEVEL OF RISER RACEWAYS AND RESTING ON SLAB. FOR THROUGH-THE-FLOOR SYSTEMS, UTILIZE AN ASSEMBLY SIMILAR TO HUBBELL FIRE RATED POKE-THROUGH-FLOOR BOX SYSTEM. FOR ABOVE FLOOR FITTINGS TELEPHONE SHALL BE BUSHED HOLE AND POWER SHALL BE DUPLEX RECEPTACLE OR OTHER AS NOTED. PROVIDE SEPARATION BARRIER BETWEEN POWER AND TELEPHONE COMPARTMENTS. PROVIDE JUNCTION BOX ON UNDERSIDE OF FLOOR. PACK FITTING TO RESTORE FIRE RATING OF FLOOR.

SECURE ALL RACEWAYS TO SUPPORTS WITH PIPE STRAPS OR U-BOLTS. SPACING OF SUPPORTS SHALL BE A MINIMUM OF 10 FT ON CENTER FOR METALLIC RACEWAY AND AS REQUIRED FOR NONMETALLIC RACEWAY. SPACING SHALL BE 5 FT ON CENTER FOR WIREWAYS AND PER CODE AND AS NOTED FOR OTHERS. MOUNT SUPPORTS TO STRUCTURE MASONRY WITH TOGGLE BOLTS ON HOLLOW MASONRY, EXPANSION SHIELDS OR INSERTS IN CONCRETE AND BRICK, MACHINE SCREWS ON METAL, BEAM CLAMPS ON FRAMEWORK, WOOD SCREWS ON WOOD, AND PAN THROUGH STRAPS IN METAL DECK. NAILS, RAWL PLUGS OR WOOD PLUGS SHALL NOT BE PERMITTED. WHERE REQUIRED BY STRUCTURE, FURNISH THROUGH BOLTS AND FISHPLATES.

EXPOSED RACEWAYS SHALL BE RUN PARALLEL WITH OR AT RIGHT ANGLES TO WALLS. PROVIDE CLEARANCE WITH WATER, STEAM OR OTHER PIPING (MINIMUM 3 IN. SEPARATION FROM STEAM AND HOT WATER PIPES, EXCEPT 1 IN. FROM PIPE COVER AT CROSSINGS AND 18 IN. FOR PARALLEL RUNS). FOR HUNG CEILING OUTLETS, RUN IN HUNG CEILING AND CONNECT TO CEILING SUPPORT CHANNELS. IN MASONRY AND POURED CONCRETE, RUN VERTICALLY ONLY.

MAINTAIN GROUNDING CONTINUITY OF INTERRUPTED METALLIC RACEWAYS WITH GROUND CONDUCTOR, AND IN FLEXIBLE CONDUIT FOR FEEDERS AND MOTOR TERMINAL CONNECTIONS.

EMPTY RACEWAYS OVER 10 FT LONG: PROVIDE FISH OR PULL WIRE, GALVANIZED OR NYLON ROPE.

RIGID STEEL CONDUIT SHALL BE PERMITTED FOR FEEDERS AND BRANCH CIRCUITS. PAINT MALE THREADS OF FIELD-THREADED CONDUIT WITH GRAPHITE-BASE PIPE COMPOUND AND BUTT CONDUIT ENDS. TOUCH UP MARRED SURFACES AND FIELD-CUT THREADS, CRC-COLD GALVANIZED. EMT SHALL BE PERMITTED FOR BRANCH CIRCUITS ONLY, IN DRY LOCATIONS, DRY WALLS, HUNG CEILINGS, HOLLOW BLOCK WALLS AND FURRED SPACES. EMT SHALL NOT BE PERMITTED IN RAISED FLOORS. FLEXIBLE STEEL CONDUIT SHALL BE UTILIZED FOR SHORT CONNECTIONS WHERE RIGID CONDUIT IS IMPRACTICAL. FROM OUTLET BOX TO RECESSED LIGHTING FIXTURE: PROVIDE MINIMUM 4 FT AND MAXIMUM 6 FT LENGTHS. FOR FINAL CONNECTION TO MOTOR TERMINAL BOX, TRANSFORMER AND OTHER VIBRATING EQUIPMENT: PROVIDE WITH POLYVINYL SHEATHING AND GROUND CONDUCTOR. MINIMUM LENGTH: 18 IN. WITH SLACK. CONNECT GROUND CONDUCTOR TO ENCLOSURE OR RACEWAY AT EACH END. FOR EXPANSION JOINT CROSSINGS, CROSS AT RIGHT ANGLES AND ANCHOR ENDS.

CUT CONDUIT ENDS SQUARE. REAM SMOOTH. PAINT MALE THREADS OF FIELD THREADED RACEWAYS WITH GRAPHITE BASE PIPE COMPOUND. DRAW UP TIGHT WITH RACEWAY COUPLING.

ALL COUPLINGS SHALL BE COMPRESSION TYPE. NO SET SCREW FITTINGS.

EXPANSION FITTINGS SHALL BE INSTALLED AT RIGHT ANGLES WITH CLIP JOINT CENTERED IN EXPANSION JOINT. PROVIDE A LENGTH OF RUN IN ACCORDANCE MANUFACTURER'S RECOMMENDATIONS. PRESET FITTINGS SHALL ALLOW FOR TEMPERATURE VARIATION.

RACEWAYS PASSING THROUGH FIRE-RATED CONSTRUCTION: SEAL OPENING WITH FIRE SEALANT.

D. PROVIDE CABLE SUPPORTS IN ACCORDANCE WITH NATIONAL ELECTRIC CODE ARTICLE 300.19. CABLE SUPPORTS SHALL UTILIZE A ONE-PIECE PLUG WITH POZI-GRIP WEDGING PLUG AS MANUFACTURED BY OZ-GEDNEY.

INSTALL CABLE SUPPORTS AT THE TOP OF A VERTICAL RISE AND PROVIDE INTERMEDIATE ADDITIONAL SUPPORTS AS REQUIRED TO LIMIT SUPPORTED CONDUCTOR LENGTHS TO NOT GREATER THAN THOSE SPECIFIED IN TABLE 300.19(A).

ERECT WALL AND SWITCH OUTLETS IN ADVANCE OF FURRING AND FIREPROOFING. OUTLET BOXES SHALL BE SET SQUARE AND TRUE WITH BUILDING FINISH. SECURE TO BUILDING STRUCTURE BY ADJUSTABLE STRAP IRON OR GROUT IN WITH MASONRY. VERIFY OUTLET LOCATIONS IN FINISHED SPACES WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISHES. PROVIDE BARRIERS BETWEEN SWITCHES CONNECTED TO DIFFERENT PHASES FOR VOLTAGES EXCEEDING 150 VOLTS TO GROUND.

PANEL, JUNCTION AND PULL BOXES SHALL BE LOCATED CLEAR OF OTHER TRADES. CONCEAL JUNCTION AND PULL BOXES IN FINISHED SPACES. WHERE NECESSARY, REROUTE RACEWAYS OR MAKE OTHER ARRANGEMENTS FOR CONCEALMENT. BOXES SHALL BE ACCESSIBLE. SUPPORT BOXES FROM BUILDING STRUCTURE, INDEPENDENT OF CONDUIT. PROVIDE FLOOR-TO-CEILING CHANNELS FOR MOUNTING ON DRYWALL AND LIGHTWEIGHT CONSTRUCTION. OUTLET BOXES FOR FIXTURES RECESSED IN HUNG CEILINGS SHALL BE ACCESSIBLE THROUGH OPENING CREATED BY REMOVAL OF FIXTURE. SECURE TO BLACK IRON SUPPORT. MOTOR TERMINAL BOXES: COORDINATE WITH MOTOR BRANCH CIRCUIT CONDUIT AND WIRING; ADD BOX VOLUME WHERE REQUIRED.

E. FIRE SEALANTS: PROVIDE FOR RACEWAYS AND WIRE PASSING THROUGH FLOOR SLOTS, SLEEVES OR OPENINGS IN FIRE-PARTITIONS ROOMS.

F. PERFORM CONTINUITY TESTS OF RESISTANCE OF FEEDER CONDUITS FROM SERVICE TO POINT OF FINAL DISTRIBUTION USING 1 CONDUCTOR RETURN. MAXIMUM RESISTANCE SHALL BE 25 OHMS.

10. WIRE AND CABLE:

A. PROVIDE WIRE AND CABLE COMPLETE WITH ACCESSORIES. SIZE REFERENCE SHALL BE AWG EXCEPT AS NOTED.

B. CONDUCTORS SHALL BE COPPER, ASTM STANDARD SOLID (NO. 10 AND SMALLER) OR STRANDED (NO. 8 AND LARGER). GENERAL USE CABLING SHALL BE NO. 12 MINIMUM. AT 120 VOLTS AND OVER 100 FT CIRCUIT LENGTH PROVIDE NO. 10 MINIMUM. AT 265 VOLTS AND OVER 200 FT CIRCUIT LENGTH PROVIDE NO. 10 MINIMUM.

C. CONTROL AND ALARM CABLING, EXCEPT AS NOTED, SHALL BE NO. 14 MINIMUM. AT 120 VOLTS AND OVER 200 FT CIRCUIT LENGTH PROVIDE NO. 12 MINIMUM. OTHER VOLTAGES AND PHASES: ADJUST CABLE SIZING AS REQUIRED TO MAINTAIN VOLTAGE DROP. INCREASE RACEWAY SIZES FOR LARGER WIRE AS REQUIRED.

D. INSULATION SHALL BE RUBBER AND THERMOPLASTIC MEETING ASTM AND IPCEA STANDARDS. TYPE THW OR THWN SHALL BE UTILIZED FOR FEEDERS AND BRANCH CIRCUITS EXCEPT AS NOTED. TYPE SFF-2 SHALL BE UTILIZED FOR BRANCH CIRCUITS LOCATED IN WIRING CHANNELS OF CONTINUOUS FLUORESCENT FIXTURES AND IN AMBIENT TEMPERATURES OVER 90 DEG C. FOR UNGROUNDED ISOLATED BRANCH CIRCUITS PROVIDE CROSS-LINKED POLYETHYLENE INSULATION (TYPE XHHW).

E. FLEXIBLE METAL CONDUIT SHALL BE UTILIZED FOR BRANCH CIRCUITS IN DRY HOLLOW LOCATIONS, HUNG CEILINGS, AND BLOCK WALLS. NO ARMOURED CABLE, BX MC CABLE AND ROMEX ARE PERMITTED TO USE. THESE SPECIFIED CABLED AER TO BE AVOIDED AS THESE ARE NOT APPROVED TO USE.

F. COLOR CODING SHALL BE AS FOLLOWS:

120/208 VOLT SYSTEM:
BLACK FOR A PHASE
RED FOR B PHASE
BLUE FOR C PHASE

1) NEUTRAL WIRE SHALL UTILIZE WHITE OUTER COVERING THROUGHOUT. EQUIPMENT GROUND WIRE SHALL UTILIZE GREEN OUTER COVERING THROUGHOUT.

WHERE COLOR-CODED CABLE IS NOT AVAILABLE, CERTIFY IN WRITING AND REQUEST PERMISSION TO OVERLAP CONDUCTORS WITH 6 IN. OF COLOR TAPING IN ACCESSIBLE LOCATIONS.

G. PROVIDE FLAMEPROOF LINEN OR FIBER TAGS IN ACCESSIBLE LOCATIONS. FOR FEEDERS INDICATE FEEDER NUMBER, SIZE, PHASE AND POINTS OF ORIGIN AND TERMINATIONS. FOR CONTROL AND ALARM WIRING INDICATE TYPE (CONTROL OR ALARM), SIZE OF WIRE, AND POINTS OF ORIGIN AND TERMINATIONS.

H. TERMINATIONS, SPLICES AND TAPS UNDER 600 VOLTS: COPPER CONDUCTORS NO. 10 AND SMALLER SHALL UTILIZE COMPRESSION-TYPE OF TWIST-ON SPRING-LOADED CONNECTORS AND CLEAR NYLON-INSULATED COVERING. COPPER CONDUCTORS NO. 8 AND LARGER SHALL UTILIZE MECHANICAL BOLTED PRESSURE OR HYDRAULIC COMPRESSION TYPE USING MANUFACTURER'S RECOMMENDED TOOLING. CABLE LUGS AND CONNECTORS SHALL UTILIZE COMPRESSION TYPE OF SAME METAL AS CONDUCTOR. PROVIDE TO MATCH CABLE, WITH MARKING INDICATING SIZE AND TYPE. COPPER LUG CONNECTIONS TO BUS BARS: USE ANTISEIZE COMPOUND ON TANG.

I. NOT MORE THAN 3 LIGHTING OR CONVENIENCE OUTLET CIRCUITS SHALL BE INSTALLED IN ONE CONDUIT UNLESS OTHERWISE INDICATED. PULL NO THERMOPLASTIC WIRES AT TEMPERATURES LOWER THAN 32 DEG F. PROVIDE SEPARATE RACEWAYS FOR CONDUCTORS OF 120/208 AND 265/460 VOLT SYSTEMS, EXCEPT 460 VOLT MOTOR BRANCH CIRCUIT WIRING AND RELATED 120 VOLT CONTROL WIRING. THERMOPLASTIC WIRES SHALL NOT BE INSTALLED IN COMPUTER AREA RAISED FLOORS.

J. LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS.

K. PERFORM CONTINUITY AND INSULATION TESTS. MEGGER TEST 100 PERCENT OF FEEDERS, 10 PERCENT OF BRANCH CIRCUITS AND ALL MOTOR BRANCH CIRCUITS OVER 25 HP.

L. PERFORM TESTS PRIOR TO CONNECTING EQUIPMENT AND IN PRESENCE OF AUTHORIZED REPRESENTATIVES. SUBMIT WRITTEN REPORT OF RESULTS. CORRECT OR REPLACE CABLE TESTING BELOW MANUFACTURER'S STANDARDS.

11. WIRING DEVICES:

A. WIRING DEVICES SHALL BE SPECIFICATION GRADE UNLESS OTHERWISE SPECIFIED. ALL DEVICES SHALL BE FLUSH MOUNTED, UNLESS OTHERWISE NOTED. PROVIDE COMPLETE MATERIAL AND ACCESSORIES AS NOTED.

B. LOCAL WALL SWITCHES SHALL BE ROCKER TYPE, QUIET OPERATING, RATED 20 AMP, 120/277 VOLT, AC. SIMILAR TO LEVITON DECORA SERIES A5621 (SINGLE POLE), A5623 (3-WAY) AND A5624 (4-WAY).

C. DEVICE PLATES: SEE ARCHITECT FOR TYPE. FOR RECEPTACLES WITH OTHER THAN 120 VOLT, INSCRIBED VOLTAGE AVAILABLE.

D. COLORS: COORDINATE COLORS WITH ARCHITECT.

E. MOUNTING ORIENTATION OF RECEPTACLES (HORIZONTAL OR VERTICAL): COORDINATE WITH ARCHITECT.

12. LIGHTING FIXTURES:

A. FIXTURES TO BE AS SPECIFIED BY ARCHITECT AND SHALL BE COMPLETELY FACTORY ASSEMBLED, WIRED AND EQUIPPED WITH ALL NECESSARY SOCKETS, BALLASTS, SUPPORTING HARDWARE AND ACCESSORIES. REFER TO DRAWINGS FOR INDIVIDUAL FIXTURE DESCRIPTIONS.

B. FIXTURE CATALOG NUMBERS USED TO ILLUSTRATE EQUIPMENT TYPE DO NOT NECESSARILY DENOTE REQUIRED MOUNTING EQUIPMENT OR ACCESSORIES. PROVIDE ACCESSORIES TO SUIT.

C. LED DRIVERS SHALL BE ELECTRONIC TYPE, LABELED AS COMPLIANT WITH RADIO FREQUENCY INTERFERENCE (RFI) REQUIREMENTS OF FCC TITLE 47, PART 15 AND COMPLY WITH NEMA SSL 1 "ELECTRONIC DRIVERS FOR LED DEVICES, ARRAYS OR SYSTEMS". LED DRIVERS SHALL HAVE A SOUND RATING OF "A", HAVE A MINIMUM EFFICIENCY OF 85% AND BE RATED FOR A THD OF LESS THAN 20% AT ALL INPUT VOLTAGES.

D. DIMMABLE LED DRIVERS SHALL BE CAPABLE OF DIMMING WITHOUT LED STROBING OR FLICKER ACROSS THEIR FULL DIMMING RANGE. PROVIDE TYPE OF LED DRIVER AS PER LIGHTING FIXTURE SCHEDULE. DIMMABLE LED DRIVERS SHALL BE 0-10V WHERE NOT INDICATED./COORDINATE WIRH LIGHTING VENDOR FOR TYPE OF DIMMER. BASE BID ACCORDINGLY.

E. CONTINUOUS ROW, TWO LAMP STRIP FIXTURES SHALL BE STAGGERED TYPE.

F. EXIT SIGNS SHALL BE PRECISION DIE-CAST ALUMINUM HOUSING WITH LASER-FORMED ACRYLIC LEGEND. EXIT SIGNS SHALL COMPLY WITH UL 924 AND APPROVED AS REQUIRED. AC POWERED WITH PREMIUM LONG-LIFE NICKEL CADMIUM BATTERY WITH STANDARD UL LISTED 3-HOUR RUN TIME. PROVIDE WITH INTEGRAL AUTOMATIC CHARGER IN A SELF CONTAINED POWER PACK. LED INDICATOR WITH PUSH TO TEST SWITCH.

13. GROUNDING AND BONDING:

A. PROVIDE GROUNDING SYSTEM IN ACCORDANCE WITH (NATIONAL ELECTRICAL CODE AND THESE SPECIFICATIONS. THE WIRING SYSTEM SHALL BE INSTALLED AS REQUIRED TO PROVIDE A CONTINUOUSLY GROUNDED SYSTEM. WHERE FLEXIBLE CONDUIT IS USED FOR PART OF A CONDUIT RUN, EXCEPT LIGHTING BRANCH CIRCUITS, AN INSULATED GROUNDING CONDUCTOR SHALL BE PROVIDED IN THE CONDUIT AND CONNECTED TO GROUNDING BUSHINGS AT EACH END OF THE RUN.

B. USE EXOTHERMIC WELDING PROCESS FOR INACCESSIBLE CONNECTIONS.

C. EXTEND SYSTEM GROUND TO INCLUDE ALL THE ELECTRICAL EQUIPMENT IN THE SCOPE OF WORK.

D. WHERE FLEXIBLE METALLIC CONDUIT IS USED AN INTERNAL BONDING CONDUCTOR SHALL BE INSTALLED.

E. IN ADDITION, FURNISH A SEPARATE INSULATED GREEN EQUIPMENT GROUND CONDUCTOR WHERE INDICATED ON DRAWINGS AND FOR THE FOLLOWING BRANCH CIRCUITS:
1) CIRCUITS SERVING ANY WALL BOX DIMMER.

2) CIRCUITS SERVING ANY ISOLATED GROUND RECEPTACLES. TERMINATE GROUND DIRECTLY AT AN EQUIPMENT GROUNDING CONDUCTOR TERMINAL OF THE SOURCE AT THE SOURCE , OR AS OTHER WISE NOTED ON DRAWINGS.

3) CIRCUITS SERVING ANY DUPLEX OR SIMPLEX COMPUTER RECEPTACLES

4) ANY CIRCUIT SERVED VIA AN ISOLATION TRANSFORMER OR COMPUTER POWER DISTRIBUTION UNIT.

14. PANELBOARDS:

A. PANELBOARDS SHALL BE OF THE DEAD FRONT TYPE MANUFACTURED IN CODE GAUGE AND SIZE BOXES FOR MOUNTING AS INDICATED ON PLANS COMPLETE WITH TRIM, DOORS AND LOCKS. ALL LOCKS SHALL BE KEYED ALIKE.

B. CIRCUIT BREAKERS SHALL BE OF THE BOLT-ON THERMAL MAGNETIC MOLDED CASE TYPE, AND SHALL HAVE THE TRIP RATINGS AND NUMBER OF POLES SHOWN IN SCHEDULES ON THE CONTRACT DRAWINGS. FOR BLANK (SPACE) COMPARTMENTS, PROVIDE FULL RATED BUS. MINIMUM GUTTER SPACES SHALL BE 5-3/4". SIDES, TOP AND BOTTOM, INCREASE FOR THROUGH FEEDERS. PROVIDE 25% COPPER GROUND BUS AND 100% COPPER NEUTRAL BUS AND INCREASE NEUTRAL BUS INDICATED.

C. LOCKING TABS SHALL BE PROVIDED ON ALL CIRCUIT BREAKERS SERVING EMERGENCY LIGHTING, FIRE ALARM SYSTEM, SECURITY SYSTEMS AND OTHER EMERGENCY OR CRITICAL EQUIPMENT AND AS NOTED ON THE CONTRACT DRAWINGS. A TOTAL OF 5 SPARE LOCKING TABS SHALL BE FURNISHED TO THE OWNER.

D. BUSES SHALL BE HARD DRAWN COPPER OF 98 PERCENT CONDUCTIVITY AND SHALL HAVE CROSS SECTIONAL AREAS LARGE ENOUGH TO LIMIT THE TEMPERATURE RISE, WHEN CARRYING FULL LOAD, TO 35 DEGREES C. ABOVE AN AMBIENT INSIDE THE ENCLOSURE OF 55 DEGREES C. AS DEFINED IN IEEE STANDARD RULES. MAIN BUS CAPACITY SHALL BE AS SHOWN ON THE CONTRACT DRAWINGS.

E. ENCLOSURES SHALL BE SURFACE OR FLUSH AS INDICATED. TRIMS SHALL BE SECURED TO PANEL WITH MACHINE SCREWS. COVERS SHALL BE HINGED DOOR-IN-DOOR CONSTRUCTION WITH CYLINDER LOCKS AND CATCHES. LOCKS MUST BE COMPATIBLE WITH BUILDING STANDARD KEY SYSTEM AND WHEN NONE EXISTS, THEY SHALL BE SIMILAR TO A YALE NO. 911 KEY.

F. DISTRIBUTION AND SUB-DISTRIBUTION PANELBOARD SHALL BE A MINIMUM OF 30" WIDE AND 10" DEEP.

G. ALL STANDARD PANELBOARDS SHALL BE A MINIMUM OF 20" WIDE AND 5 3/4" DEEP.

H. FURNISH ALL PANELBOARDS WITH FEED-THRU LUGS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

I. ALL NEW PANELBOARDS SHALL BE PROVIDED WITH AN ENGRAVED WHITE CORE LAMACOID NAMEPLATE, WITH 3/4 IN. WHITE LETTERING ON A BLACK BACKGROUND, WITH DESIGNATION LISTED (PANELBOARD NAME), FASTENED WITH EPOXY CEMENT OR OVAL HEAD CHROME PLATED MACHINE SCREWS.

J. THE CIRCUIT DIRECTORY SHALL BE TYPEWRITTEN AND PROVIDED INSIDE EACH PANEL DOOR TO INDICATE EQUIPMENT AND/OR AREA SERVED. DIRECTORY HOLDER SHALL BE METAL FRAME WITH CLEAR PLASTIC, TRANSPARENT COVER. THE TYPEWRITTEN LIST INDICATING CIRCUIT NUMBERS, OUTLETS SUPPLIED AND THEIR LOCATIONS SHALL BE PROVIDED.

K. TIE-BARS SHALL NOT BE USED TO CREATE MULTI-POLE CIRCUITS. MAXIMUM 42 CIRCUITS ALLOWED.

L. ONLY ONE WIRE SHALL BE INSTALLED UNDER EACH CIRCUIT BREAKER LUG.

M. SHORT CIRCUIT RATING OF PANELBOARDS SHALL NOT BE LESS THAN AS INDICATED ON THE CONTRACT DRAWINGS OR SPECIFIED HEREIN. WHERE NOT INDICATED OR SPECIFIED THE MINIMUM SHORT CIRCUIT RATING SHALL BE EQUAL TO THE INTERRUPTING CAPACITY OF THE LOWEST RATED CIRCUIT BREAKER IN THE PANELBOARD, BUT IN NO CASE LESS THAN 10,000 AMPERES R.M.S. SYMMETRICAL FOR 208Y/120 VOLT SYSTEM AND 14,000 AMPERES R.M.S. SYMMETRICAL FOR 480Y/277 VOLT SYSTEM. SERIES RATED PANELBOARDS SHALL BE USED TO ACHIEVE REQUIRED SHORT CIRCUIT RATINGS.

15. TELEPHONE/ DATA/ TELEVISION CABLING SYSTEM

A. PROVIDE COMPLETE SYSTEM CONSISTING OF CABLING/ WIRING, OUTLETS BOXES, SLEEVES AND FISHWIRES AS REQUIRED.

B. EQUIPMENT SHALL BE LATEST MODEL YEAR AVAILABLE IN ACCORDANCE WITH UTILITY COMPANY AND TV PROVIDE REQUIREMENTS.

C. OUTLETS SHALL BE:

1) WALL: 4 IN. SQUARE WITH REDUCING COVER

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ELECTRICAL SPECIFICATIONS SHEET 2 OF 2

GRAPHIC SCALE

SEAL

PROJECT NO. -
SCALE AS NOTED
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1 ELECTRICAL POWER PLAN
1/4" = 1'-0"

ELECTRICAL POWER PLAN KEYED WORK NOTES

1. PROVIDE NEW 200A, 120/208V "PANEL A" AND 100A, 120/208V "PABEL B'. E.C. SHALL COORDINATE THE EXACT LOCATION AND REQUIREMENT PRIOR TO ROUGH-IN.
2. E.C. SHALL VERIFY THAT THE PANEL AREA IS UNOBSRUCTED AND SHALL HAVE CLEARANCE AS PER 110.26(A)&(B).
3. PROVIDE SHOW WINDOW RECEPTACLE AS PER NEC 210.62. VERIFY EXACT LOCATION WITH ARCHITECT/OWNER.
4. J-BOX FOR WALK-IN COOLER HEATER. E.C. SHALL COORDINATE EXACT LOCATION AND ELECTRICAL REQUIREMENT WITH ELECTRICAL MANUFACTURER.
5. MOUNT RECEPTACLE UNDER COUNTER TOP. PROVIDE (2) POWER CIRCUIT AS SHOWN. E.C. SHALL PROVIDE TWO CAT 6 CABLING FOR DESK. PROVIDE AN ADDITIONAL 6 FEET OF CABLING AT EITHER END OF CONNECTION. E.C. SHALL COORDINATE WITH IT DRAWINGS/SPECIALIST FOR EXACT LOCATION, POWER REQUIREMENTS AND MAKE PROVISIONS ACCORDINGLY. BASE BID ACCORDINGLY.
6. ELECTRICAL SUPPLY PROVISION FOR THE WATER HEATER(WH-1), WATER FILTRATION SYSTEM (WFS) & RECIRCULATION PUMP(RCP-1). E.C. SHALL COORDINATE WITH THE PLUMBING CONTRACTOR FOR THE EXACT POWER REQUIREMENTS PRIOR TO ROUGH-IN. BASE BID ACCORDINGLY.
7. PROVIDE LOCK ON TYPE CIRCUIT BREAKER FOR HAND DRYER JB IN ACCORDANCE WITH THE NEC 422.31. E.C SHALL COORDINATE EXACT POWER CONNECTION REQUIREMENT FOR HAND DRYERS WITH EQUIPMENT MANUFACTURER AND LOCATION WITH ARCHITECT/ OWNER. BASE BID ACCORDINGLY.
8. 15/1P CIRCUIT FOR WALK-IN COOLER EVAPORATOR. E.C SHALL COORDINATE EXACT LOCATION AND ELECTRICAL REQUIREMENT WITH ELECTRICAL MANUFACTURER.
9. E.C SHALL PROVIDE POWER AND NECESSARY WIRING FOR THE HOOD CONTROL PANEL & FIRE SUPPRESSION SYSTEM. E.C TO COORDINATE WIT MANUFACTURER FOR POWER AND CONTROL REQUIREMENTS AND PROVIDE AS REQUIRED. BASE BID ACCORDINGLY.
10. LOCATION OF TIME CLOCK AND LIGHTING CONTACTOR. REFER TO CONTROL DIAGRAM ON DETAIL SHEET.
11. E.C. SHALL COORDINATE DISCONNECT AND FUSE REQUIREMENT FOR MECHANICAL UNIT WITH MECHANICAL CONTRACTOR AND EQUIPMENT MANUFACTURER PRIOR TO ROUGH-IN AND PROVIDE AS REQUIRED. COORDINATE LOCATION OF DISCONNECT WITH MANUFACTURER AND MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. LOCATE AS REQUIRED TO MAINTAIN NEC CLEARANCES.
12. E.C SHALL COORDINATE WITH THE OWNER/VENDOR FOR THE DISHWASHER POWER REQUIREMENTS.
13. ELECTRICAL CONTRACTOR SHALL STUB ALL ELECTRICAL CABLES FROM THE NEAREST WALL UNDER THE CABINET THROUGH UNDERGROUND CONDUITS AND PULL TO THE REQUIRED LOCATIONS. BASE BID ACCORDINGLY.
14. EXHAUST FAN INTERLOCKED WITH THE LIGHTING. E.C. SHALL COORDINATE THE EXACT POWER AND CONTROL REQUIREMENT FOR THE EXHAUST FAN IN COORDINATION WITH THE MECHANICAL CONTRACTOR. BASE BID ACCORDINGLY. REFER SHEET M-5.1 FOR MORE DETAIL.
15. PROVIDE TAMPER RESISTANT RECEPTACLES IN ACCORDANCE WITH THE NEC 406.12. E.C. SHALL COORDINATE EXACT REQUIREMENT AND LOCATION. BASE BID ACCORDINGLY.
16. E.C. TO RELOCATE EXISTING 277/480V, 200A "RETAIL PANEL RB4" AS SHOWN, VERIFY THE OPERABLE CONDITION AT THE SITE AND PROVIDE NEW IF FOUND IN-OPERABLE. REPORT ENGINEER IF ANY DISCREPANCY FOUND RELATED TO EXISTING PANELS. BASE BID ACCORDINGLY. REFER RISER DIAGRAM ON E-5.1 SHEET FOR MORE INFORMATION
17. E.C. TO VERIFY EXISTING 277/480V, WIREWAY EXACT LOCATION AND CONDITION AT THE SITE AND PROVIDE AS REQUIRED IF FOUND IN-OPERABLE. REPORT ENGINEER IF ANY DISCREPANCY FOUND RELATED TO EXISTING PANELS. BASE BID ACCORDINGLY.
18. E.C. SHALL PROVIDE NEW 75 KVA, PRIMARY 480V AND SECONDRY 120/208V, CEILING SUSPENDED TRANSFORMER AS PER 450.13(B) & 450.21(A). E.C. SHALL COORDINATE WITH THE ARCHITECT/OWNER AS PER SITE CONDITION. BASE BID ACCORDINGLY.
19. E.C. TO COORDINATE WITH FURNITURE VENDOR FOR THE CONDUIT ROUTING AND OUTLET INSTALLATION. BASE BID ACCORDINGLY.
20. E.C. TO COORDINATE THE EXACT LOCATION, POWER REQUIREMENT AND MOUNTING HEIGHT WITH THE ARCHITECT/EQUIPMENT VENDOR. BASE BID ACCORDINGLY.
21. INDOOR HVAC UNITS POWERED FROM THE OUTDOOR UNIT. E.C. SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR FOR EXACT LOCATION AND WIRING REQUIREMENT. BASE BID ACCORDINGLY.
22. E.C. SHALL COORDINATE THE EXACT LOCATION OF CONDENSER WITH THE WALK-IN-COOLER VENDOR AND PROVIDE POWER AS REQUIRED. BASE BID ACCORDINGLY.
23. E.C. SHALL PROVIDE RECEPTACLE ON NEARBY WALL FOR BEVERAGE DISPENSER AND PROVIDE POWER TO THE EQUIPMENT. E.C. TO COORDINATE EXACT LOCATION AND MOUNTING OF RECEPTACLE WITH OWNER/ARCHITECT PRIOR TO COMMENCEMENT OF WORK. BASE BID ACCORDINGLY.

ELECTRICAL POWER PLAN GENERAL NOTES

1. E.C. SHALL COORDINATE WITH OTHER TRADE CONTRACTORS FOR EXACT LOCATION AND POWER REQUIREMENT OF THE EQUIPMENT FROM OTHER TRADES. PROVIDE WIRING AND CONTROLS AS REQUIRED (IF NOT PROVIDED BY THEM), PRIOR TO BID. BASE BID ACCORDINGLY.
2. THE CLEAR WORKING SPACE SHALL BE PROVIDED FOR THE METERS, PANEL BOARDS, AND OTHER ELECTRICAL EQUIPMENT AS PER SECTION 110.26 OF NEC.
3. E.C. SHALL COORDINATE WITH THE UTILITY/ARCHITECT/OWNER FOR EXACT LOCATION OF THE NEW SERVICE METER AND OTHER ELECTRICAL DEVICES. PRIOR TO BID. BASE BID ACCORDINGLY.
4. ALL 125-VOLT THROUGH 250-VOLT RECEPTACLES IN KITCHEN OR AREAS WITH SINK, BATHROOMS AND ROOFTOPS SUPPLIED BY SINGLE-PHASE BRANCH CIRCUITS RATED 150 VOLTS OR LESS TO GROUND, 50 AMPERES OR LESS, AND ALL RECEPTACLES SUPPLIED BY THREE-PHASE BRANCH CIRCUITS RATED 150 VOLTS OR LESS TO GROUND, 100 AMPERES OR LESS SHALL HAVE GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTION FOR PERSONNEL PER NEC 210.8(B).
5. ALL THE CIRCUITS SUPPLYING KITCHEN EQUIPMENT AND SHOWN "GFI" ON POWER PLAN SHALL BE PROTECTED EITHER AT A PANEL WITH GFI RATED BREAKER OR RECEPTACLE WITH GFI AS PER NEC 210.8. IF GFI RECEPTACLES ARE USED, CONTRACTOR SHALL LOCATE THE GFI RECEPTACLES SUCH THAT THESE ARE READILY ACCESSIBLE PER CODE.
6. E.C. SHALL FOLLOW GROUNDING/BONDING AS PER NEC ARTICLE 250.
7. ALL THE RECEPTACLES SHALL BE RATED PER CIRCUIT. E.C. SHALL VERIFY AND MAKE FINAL CONNECTIONS ACCORDINGLY.
8. E.C. SHALL PROVIDE GFCI PROTECTION FOR ALL THE FLOOR OUTLETS AS PER NEC ARTICLE 406.4(D)(3).
9. E.C. SHALL PROVIDE TYPED PANEL DIRECTORY FOR ALL THE ELECTRICAL PANELS AS PER NEC 408.4(A).
10. ALL CONDUITS PENETRATING COOLER WALLS SHALL BE PROVIDED WITH CONDUIT SEALS.
11. E.C. SHALL COORDINATE THE POWER REQUIREMENTS WITH EQUIPMENT MANUFACTURER FOR ALL THE EQUIPMENTS SHOWN ON THE PLAN AND FINAL NEMA RATINGS OF THE RECEPTACLES SHALL BE BASED ON THE FINAL MODEL SELECTED. COORDINATE EQUIPMENT MODEL NUMBERS WITH ARCHITECT/OWNER. CONTRACTOR SHALL CONSIDER THIS ALLOWANCE IN THE BID.
12. E.C SHALL PROVIDE POWER TO THE GAS SHUT OFF VALVE (SOLENOID) VIA FIRE SUPPRESSION SYSTEM CIRCUIT. BASE BID ACCORDINGLY.

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00	04/29/2025	CHECK SET

NY ENGINEERS
382 NE 191ST STREET
SUITE 49674,
MIAMI, FL 33179

PROJECT NAME

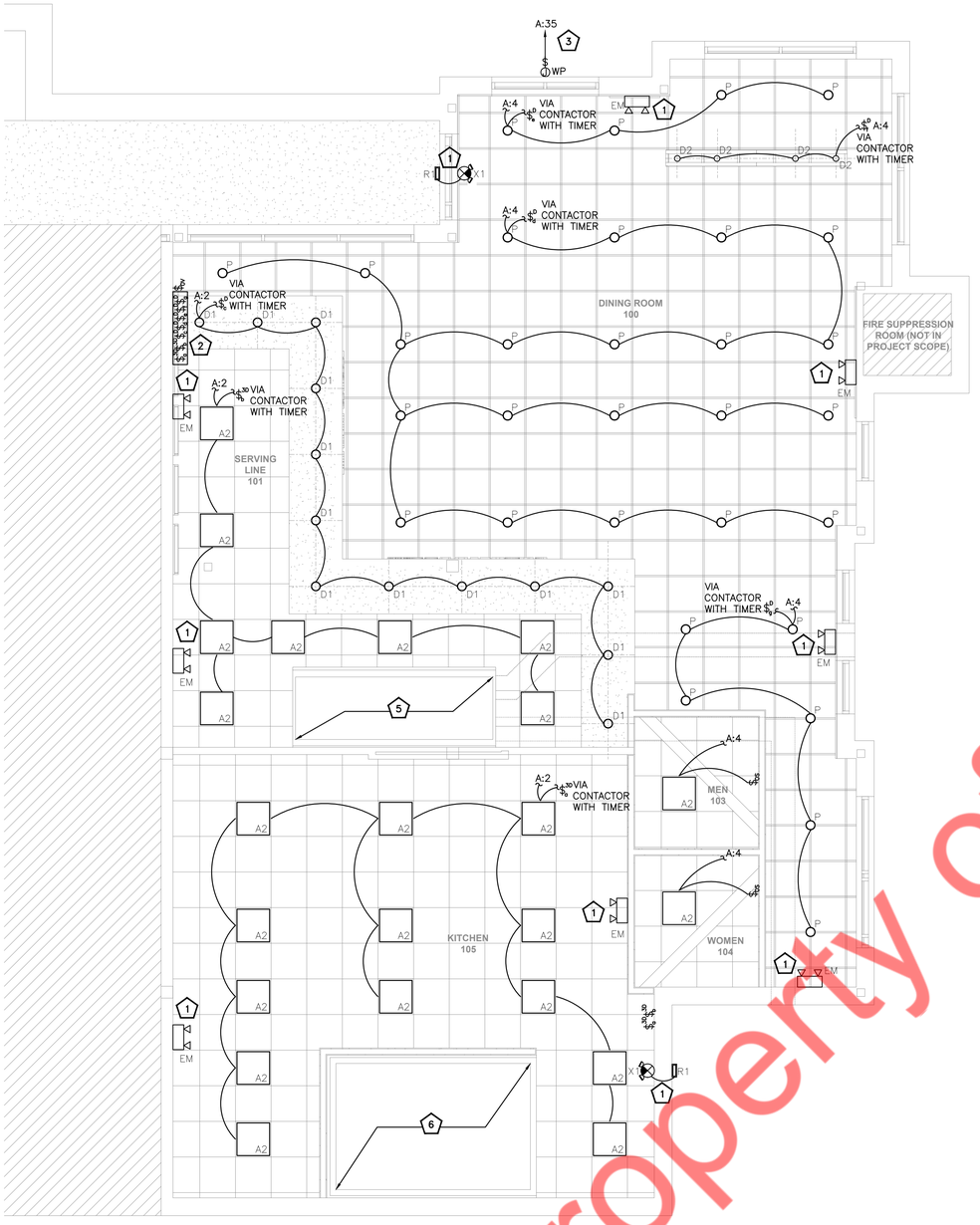
PHYSICAL LOCATION

DRAWING TITLE
ELECTRICAL POWER PLAN

GRAPHIC SCALE

SEAL

PROJECT NO.	-
SCALE	AS NOTED
DRAWN BY	NYE
CHECKED BY	NYE
DATE	06/04/2025
SHEET NUMBER	E1.1



1 ELECTRICAL LIGHTING PLAN
1/4" = 1'-0"

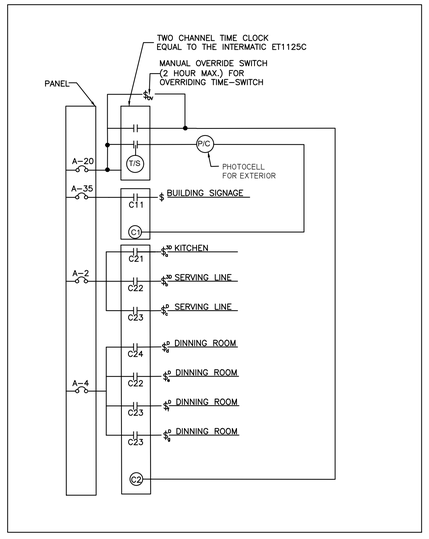
NORTH

ELECTRICAL LIGHTING PLAN KEYED WORK NOTES

1. CONNECT ALL EMERGENCY EGRESS LIGHTING FIXTURES TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING AND CONTROLS PER STATE AND LOCAL CODES.
2. COORDINATE EXACT LOCATION OF DIMMER SWITCH BANK WITH OWNER/ARCHITECT. PROVIDE DIMMERS IN COORDINATION WITH LIGHTING VENDOR AS PER DIMMER TYPE BASE BID ACCORDINGLY.
3. E.C. TO COORDINATE THE BUILDING SIGNAGE CONNECTION REQUIREMENTS WITH SIGN VENDOR. BASE BID ACCORDINGLY.
4. E.C. SHALL PROVIDE POWER CONNECTIONS TO THE WALK-IN BOX LIGHT FIXTURES IN COORDINATION WITH WALKIN BOX MANUFACTURER. BASE BID ACCORDINGLY.
5. E.C.SHALL PROVIDE POWER CONNECTIONS TO THE HOOD LIGHTING IN COORDINATION WITH HOOD MANUFACTURER. BASE BID ACCORDINGLY.
6. E.C. SHALL PROVIDE LIGHTING CONTROLS FOR WALK-IN-COOLER IN COORDINATION WITH WALK-IN-COOLER VENDOR. BASE BIDE ACCORDINGLY.

ELECTRICAL LIGHTING PLAN GENERAL NOTES

1. VERIFY ALL LUMINARIE COLORS, TRIMS, LENGTHS, ETC. WITH THE ARCHITECT PRIOR TO PLACING FINAL PURCHASE ORDERS. SUBMISSION PF SHOP DRAWINGS WILL BE INTERPRETED AS HAVING BEEN COORDINATED WITH THE ARCHITECTURAL DRAWINGS.
2. PROVIDE ALL LENGTHS, FEEDS, ACCESSORIES, CONNECTORS, WIRING, POWER SUPPLIES, DRIVERS ETC. FOR A COMPLETE INSTALLATION. THE E.C. SHALL VERIFY THE COMPLETE BILL OF MATERIAL WITH MANUFACTURER'S REPRESENTATIVE AND ENSURE ALL EQUIPMENT ARE INCLUDED IN BID PRICE. COORDINATE INSTALLATION WITH ARCHITECTURAL DETAILS.
3. VERIFY FINAL LUMINARIE LOCATIONS WITH OTHER CEILING MOUNTED EQUIPMENTS SUCH AS DIFFUSER WITH ARCHITECTURAL REFLECTED CEILING PLANS.
4. VERIFY EXACT MOUNTING HEIGHT AND LOCATIONS OF ALL WALL MOUNTED LUMINAIRE WITH ARCHITECTURAL PLANS AND ELEVATIONS PRIOR TO ROUGH-IN.
5. E.C. TO COORDINATE EXACT LOCATION WITH ARCHITECT FOR LIGHTING DETAILS.
6. OCCUPANCY SENSORS SHALL BE PROVIDED AS SHOWN AND ALSO CONSIDER POWER PACKS AS REQUIRED IN COORDINATION WITH LIGHTING VENDOR.
7. E.C. SHALL PROVIDE THE AUTOMATIC LIGHTING CONTROLS AS PER IECC C405.2.



2 TIME CLOCK CONTACTOR WIRING DIAGRAM
NTS

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NY ENGINEERS
382 NE 191ST STREET
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MIAMI, FL 33179

PROJECT NAME

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DRAWING TITLE
ELECTRICAL
LIGHTING PLAN

GRAPHIC SCALE

SEAL

PROJECT NO.	-
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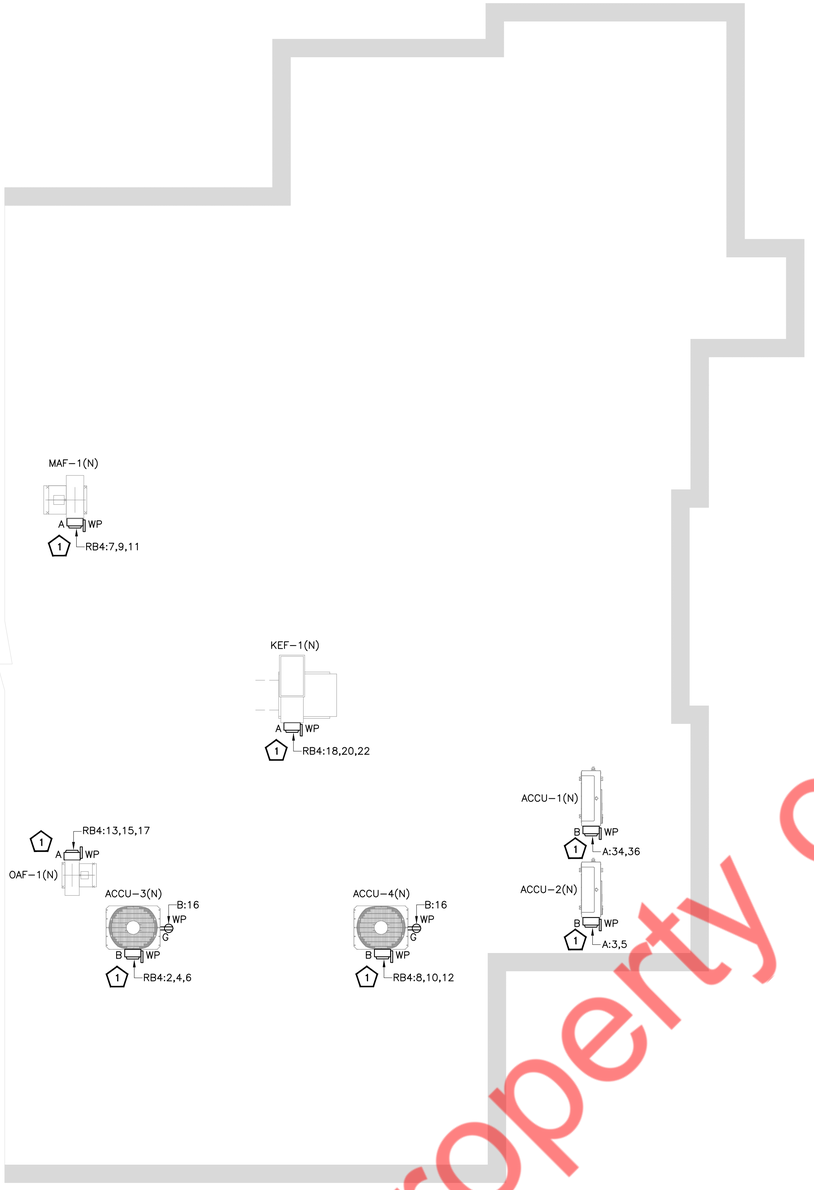
CHECKED BY	NYE
DATE	06/04/2025
SHEET NUMBER	E2.1



1 ELECTRICAL ROOF POWER PLAN
1/4" = 1'-0"

NORTH

ELECTRICAL ROOF POWER PLAN KEYED NOTES

1. 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. COORDINATE LOCATION OF DISCONNECT WITH MANUFACTURER AND MECHANICAL CONTRACTOR PRIOR TO ROUGH–IN. LOCATE AS REQUIRED TO MAINTAIN NEC CLEARANCES.

ELECTRICAL ROOF POWER PLAN GENERAL NOTES

1. COORDINATE EXACT LOCATION OF HVAC EQUIPMENTS WITH MECHANICAL CONTRACTOR.
2. ELECTRICAL CONTRACTOR SHALL PROVIDE WEATHER PROOF GFI RECEPTACLE AS PER NEC 210.63.

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NY ENGINEERS
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SUITE 49674,
MIAMI, FL 33179

PROJECT NAME

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ELECTRICAL ROOF POWER PLAN

GRAPHIC SCALE

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SCALE AS NOTED
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CHECKED BY NYE
DATE 06/04/2025
SHEET NUMBER E3.1

MANUAL MODE OPERATION:

1. PUSHBUTTON PRESS IS REQUIRED TO TURN LOAD ON.
2. LOAD TURNS OFF WHEN SENSOR TIMES OUT OR BY PRESSING PUSH BUTTON.
3. IF DAYLIGHT SENSOR IS ENABLED AND LIGHT LEVEL IS ABOVE SETPOINT, LOAD WILL NOT TURN ON.

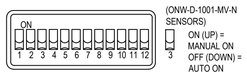
AUTOMATIC MODE OPERATION:

1. WHEN SENSOR ACTIVATES LOAD TURNS ON.
2. PUSHBUTTON CAN BE USED TO TURN LOAD ON OR OFF. IF PUSHBUTTON IS USED TO TURN LOAD OFF, SENSOR MUST TIME OUT FIRST, BEFORE LOAD CAN TURN BACK ON AUTOMATICALLY.
3. IF DAYLIGHT SENSOR IS ENABLED AND LIGHT LEVEL IS ABOVE SETPOINT, LOAD WILL NOT TURN ON.

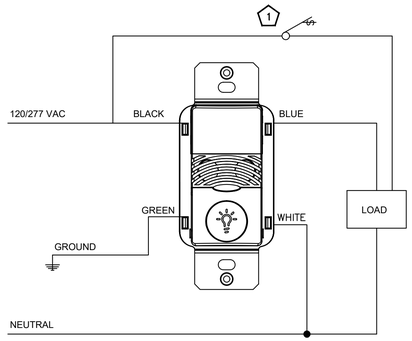
SENSOR TYPES INCLUDE:

ONW-D-1001-MV-N

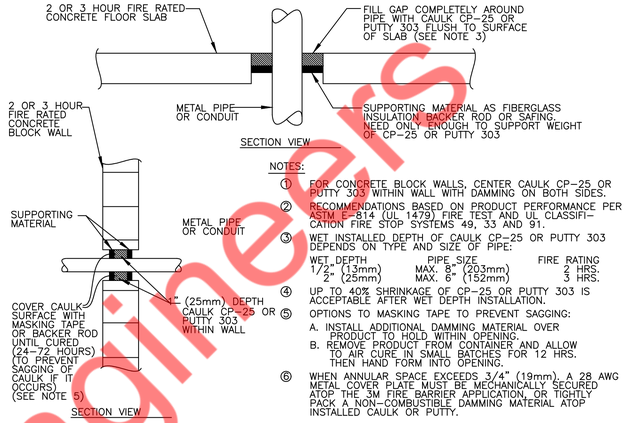
(1) PROVIDE SENSING CONDUCTOR TAPPED AHEAD OF ANY SWITCHES WHERE SWITCH SERVES EMERGENCY FIXTURES.



(ONW-D-1001-MV-N SENSORS)
ON (UP) = MANUAL ON
OFF (DOWN) = AUTO ON



3 / E4.1 CONNECTION) OCCUPANCY/VACANCY-SINGLE LEVEL WIRING DIAGRAM-LOW VOLTAGE WALL SWITCH SENSOR(NEUTRAL
N.T.S



NOTES:

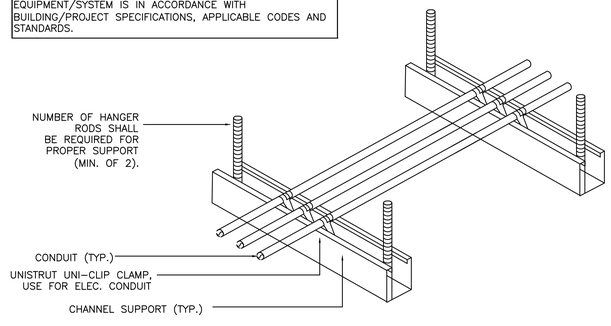
1. FOR CONCRETE BLOCK WALLS, CENTER CAULK CP-25 OR PUTTY 303 WITHIN WALL WITH DAMMING ON BOTH SIDES.
2. RECOMMENDATIONS BASED ON PRODUCT PERFORMANCE PER ASTM E-814 (UL 1479) FIRE TEST AND UL CLASSIFICATION FIRE STOP SYSTEMS 49, 33 AND 91.
3. WET INSTALLED DEPTH OF CAULK CP-25 OR PUTTY 303 DEPENDS ON TYPE AND SIZE OF PIPE:

WET DEPTH	PIPE SIZE	FIRE RATING
1/2" (13mm)	MAX. 8" (203mm)	2 HRS.
2" (25mm)	MAX. 6" (152mm)	3 HRS.

4. UP TO 40% SHRINKAGE OF CP-25 OR PUTTY 303 IS ACCEPTABLE AFTER WET DEPTH INSTALLATION.
5. OPTIONS TO MASKING TAPE TO PREVENT SAGGING:
   A. INSTALL ADDITIONAL DAMMING MATERIAL OVER PRODUCT TO HOLD WITHIN OPENING.
   B. REMOVE PRODUCT FROM CONTAINER AND ALLOW TO AIR CURE IN SMALL BATCHES FOR 12 HRS. THEN HAND FORM INTO OPENING.
6. WHEN ANNULAR SPACE EXCEEDS 3/4" (19mm), A 28 AWG METAL COVER PLATE MUST BE MECHANICALLY SECURED ATOP THE 3M FIRE BARRIER APPLICATION, OR TIGHTLY PACK A NON-COMBUSTIBLE DAMMING MATERIAL ATOP INSTALLED CAULK OR PUTTY.

2 / E4.1 FIRE STOP DETAIL
N.T.S

NOTE:
THIS INFORMATION MAY NOT CONTAIN ALL DETAILS REQUIRED FOR CONSTRUCTION. APPROPRIATE MODIFICATION MAY BE REQUIRED TO ENSURE SUITABILITY OF THESE DRAWINGS FOR THE SPECIFIC APPLICATION. IT IS THE USER'S RESPONSIBILITY TO ENSURE INSTALLATION OF THE EQUIPMENT/SYSTEM IS IN ACCORDANCE WITH BUILDING/PROJECT SPECIFICATIONS, APPLICABLE CODES AND STANDARDS.



NOTES:

1. ALL CONDUIT MAY BE COMBINED ON SAME SUPPORT CHANNEL WHERE PRACTICAL.
2. SUPPORT CHANNEL LENGTH SHALL NOT BE DETERMINED UNTIL ALL PIPING, CONDUIT, ETC. TO BE SUPPORTED IS COORDINATED.
3. SUPPORT CHANNEL SPACING SHALL BE NO MORE THAN 10'-0".
4. UNISTRUT AND CONDUIT INSTALLATION MAY BE REVERSED.

1 / E4.1 CONDUIT SUPPORT DETAIL
N.T.S

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NY ENGINEERS
382 NE 191ST STREET
SUITE 49674,
MIAMI, FL 33179

PROJECT NAME

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DRAWING TITLE
ELECTRICAL DETAILS

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LIGHTING FIXTURE SCHEDULE

TAG	QTY	REMARKS	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	LAMPS	WATTAGE	SUPPLIED BY	INSTALLED BY
A2	23	2x2 LIGHT FIXTURES	LITHONIA/EQUIVALENT	2GTL2-3300LM-LP835/EQUIVALENT	2x2 LED LAY-IN TROFFER	LED	28 W	EC	EC
D1	13	LED RECESSED DOWNLIGHT	LITHONIA/EQUIVALENT	LDN6-3000LM-30K-L06-XX-XX-90CRI	ROUND LED LIGHT	LED	38 W	EC	EC
D2	4	SPHERE MINI PENDANT	LIGHTOLOGY	ZAN776819	PEWTER FINISH- 1 X EDISON GLOBE/MEDIUM (E26)/6W/120V LED WITH GREEN SUSPENSION WIRE	LED	6 W	EC	EC
P	31	PENDANT FIXTURE	WARELIGHT	WL-CYL6-25W-SCT-0-10V-UNV-S-BK	6" SUSPENDED-CYLINDRICAL CAN LIGHTS	LED	25 W	EC	EC
EM	6	EMERGENCY LIGHTING	LITHONIA	ELM2-LED-XX-XX	SURFACE MOUNTED BATTERY UNIT WITH SELF DIAGNOSTICS	LED	3 W	EC	EC
X1	3	EXIT LIGHT WITH DUAL EMERGENCY HEADS	LITHONIA	LHQM-LED-XX-R-SD	LED EXIT LIGHT WITH DUAL EMERGENCY HEADS	LED	3 W	EC	EC
R1	3	REMOTE EMERGENCY LIGHT	SIGNETIX	MUE-BBB-10-XX-XX-XX	REMOTE EMERGENCY LIGHT	LED	1.5 W	EC	EC

KITCHEN EQUIPMENT POWER SCHEDULE

REMARKS:
1. PROVIDE SO CORD DROP WITH STRAIN RELIEF. REFER TO ELECTRICAL POWER PLAN.
2. FURNISHED WITH CONTROL BOX. CONNECT ALL COMPONENTS.
3. PROVIDE WP DISCONNECT SWITCH. VERIFY RATING WITH ACTUAL EQUIPMENT

TAG	EQUIPMENT DESCRIPTION	VOLT	PH	LOAD	REMARKS
2	WALK-IN COOLER REF. SYSTEM	120 V	1	180 VA	
3	WALK-IN COOLER CONDENSER	208 V	3	1686 VA	
4	WALK-IN COOLER EVAPORATOR	120 V	1	98 VA	
12	ICE MAKER W/BIN	120 V	1	1416 VA	
13	REACH-IN FREEZER	120 V	1	1032 VA	
19	DISHWASHER	120 V	1	1920 VA	
24	EXHAUST HOOD CONTROL PANEL	120 V	1	180 VA	
27	FIRE SUPPRESSION SYSTEM	120 V	1	180 VA	
28	RANGE 36" OPEN BURNERS	120 V	1	708 VA	
29	EQUIP. STAND REFRIGERATED BASE	120 V	1	276 VA	
31	CHARBROILER	120 V	1	200 VA	
32	GRIDDLE	120 V		200 VA	
33	COUNTERTOP CONVECTION OVEN	208 V	1	4200 VA	1
34	RICE/GRAIN COOCKER	120 V	1	1560 VA	
41	SANDWICH/SALAD PREP. TABLE	120 V	1	276 VA	
43	FOOD PAN WARMER/RETHERMALIZER	120 V	1	1440 VA	
44	ICE CREAM FREEZER	120 V	1	156 VA	
48	TRASH RECEPTACLE	120 V	1	180 VA	
49	JUICER	120 V	1	1296 VA	
51	UNDERCOUNTER FREEZER	120 V	1	216 VA	
52	SANDWICH/SALAD PREP. TABLE	120 V	1	276 VA	
56	DROP-IN REFRIGERATED WELL	120 V	1	300 VA	
57	POS SYSTEM	120 V	1	276 VA	
59	ESPRESSO MACHINE	208 V	1	6024 VA	
60	ESPRESSO GRINDER	120 V	1	276 VA	
61	BLENDOR BAR	120 V	1	1800 VA	
66	REACH-IN DISPLAY REFRIGERATOR	120 V	1	192 VA	
67	ICE DISPENSER	120 V	1	336 VA	
69	BEVERAGE DISPENSER	120 V	1	1020 VA	

(#) RISER DIAGRAM KEYED NOTES:

1. EXISTING GEC, E.C. SHALL VERIFY AT SITE, REPORT IF ANY DISCREPANCIES OBSERVED PRIOR TO BID.
2. EXISTING 800A, 3 PHASE, 4 WIRE SERVICE FROM THE UTILITY COMPANY. E.C. TO VERIFY IN FIELD AND COORDINATE ALL SERVICE INSTALLATION REQUIREMENTS WITH UTILITY COMPANY PRIOR TO BID. SCOPE OF WORK TO BE COORDINATED WITH UTILITY COMPANY/OWNER/LAND LORD. PROVIDE NEW IF INOPERABLE. REPORT IF ANY DISCREPANCIES OBSERVED PRIOR TO BID.
3. RE-USE EXISTING ELECTRICAL 200A, 277/480V, 3-PHASE, 4-WIRE ELECTRICAL METER & DISCONNECT SWITCH FOR THE TENANT SPACE. E.C. SHALL VERIFY THE OPERABLE CONDITION AND REPLACE WITH NEW OR RECTIFY IF INOPERABLE. SCOPE OF WORK TO BE COORDINATED WITH UTILITY COMPANY/OWNER/LAND LORD. REPORT IF ANY DISCREPANCIES OBSERVED PRIOR TO BID.
4. NEW 200A MCB, 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "A". E.C. SHALL COORDINATE WITH ARCHITECT/OWNER FOR EXACT LOCATION OF ELECTRICAL PANEL IN FIELD.
5. NEW 100A MLO, 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "B". E.C. SHALL COORDINATE WITH ARCHITECT/OWNER FOR EXACT LOCATION OF ELECTRICAL PANEL IN FIELD.
6. E.C. SHALL PROVIDE THE CEILING SUSPENDED NEW 75KVA TRANSFORMER AS PER 450.13(B) & 450.21(A). E.C SHALL COORDINATE WITH THE ARCHITECT/OWNER AS PER SITE CONDITIONS. BASE BID ACCORDINGLY.
7. E.C. SHALL VERIFY THE EXISTING FEEDER AND EXTEND WITH NEW FEEDER TO THE RELOCATED LOCATION OF THE PANEL. BASE BID ACCORDINGLY.
8. REUSE AND RELOCATE EXISTING 225A MLO, 277/480V, 3-PHASE, 4-WIRE ELECTRICAL RETAIL PANEL "RB4". E.C. SHALL COORDINATE WITH ARCHITECT/OWNER FOR EXACT LOCATION AND OPERATING CONDITION OF ELECTRICAL PANEL IN FIELD. PROVIDE AS REQUIRED. BASE BID ACCORDINGLY.

GENERAL PANEL NOTES

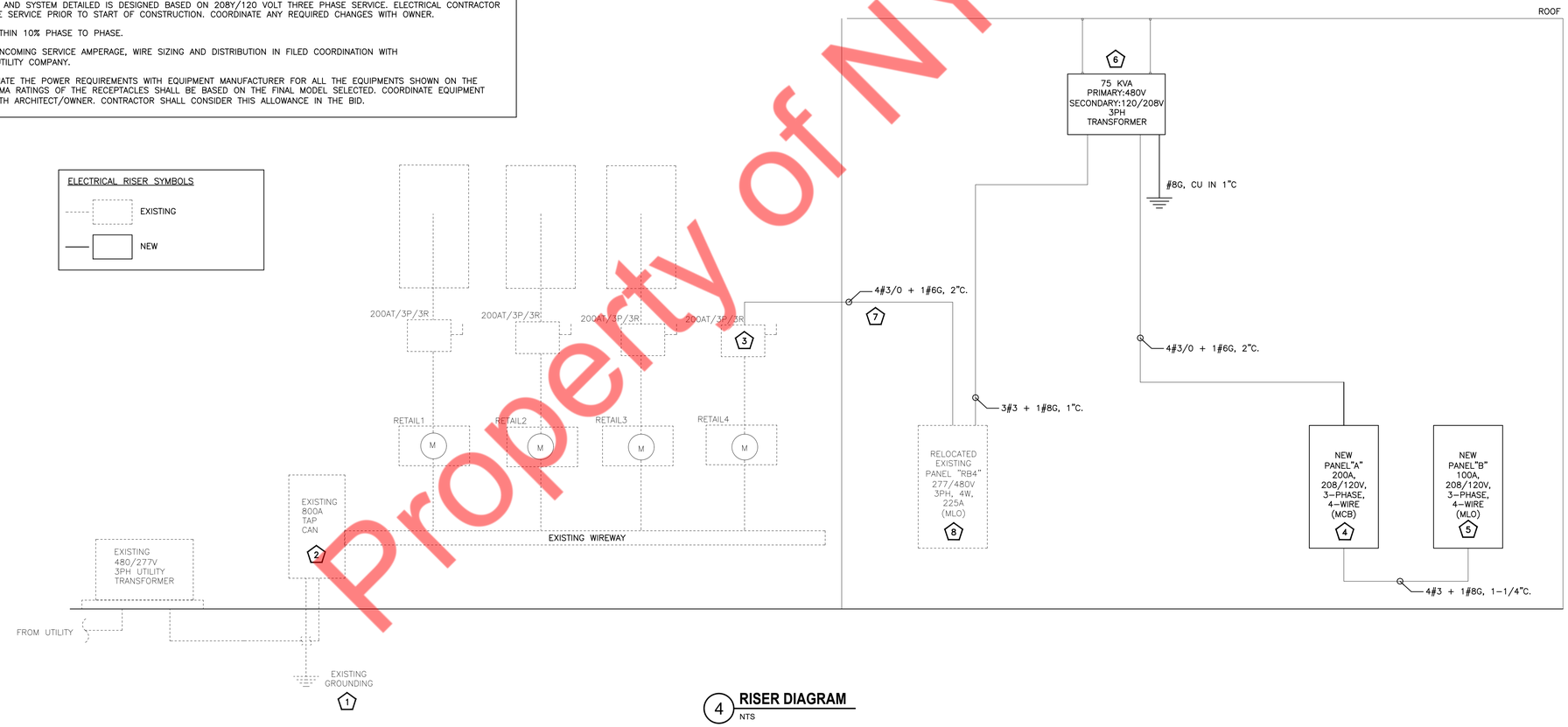
A. AIC RATING FOR PANEL AND ALL BRANCH CIRCUIT BREAKERS: CONTRACTOR SHALL OBTAIN THE AVAILABLE FAULT CURRENT AT THE SERVICE POINT FROM THE LOCAL UTILITY. PROVIDE THE AIC RATING OF THE PANEL AS NECESSARY.

B. ELECTRICAL SERVICE AND SYSTEM DETAILED IS DESIGNED BASED ON 208Y/120 VOLT THREE PHASE SERVICE. ELECTRICAL CONTRACTOR TO VERIFY AVAILABLE SERVICE PRIOR TO START OF CONSTRUCTION. COORDINATE ANY REQUIRED CHANGES WITH OWNER.

C. BALANCE PANELS WITHIN 10% PHASE TO PHASE.

D. E.C. SHALL VERIFY INCOMING SERVICE AMPERAGE, WIRE SIZING AND DISTRIBUTION IN FILED COORDINATION WITH OWNER/LANDLORD/UTILITY COMPANY.

E. E.C. SHALL COORDINATE THE POWER REQUIREMENTS WITH EQUIPMENT MANUFACTURER FOR ALL THE EQUIPMENTS SHOWN ON THE PLAN AND FINAL NEMA RATINGS OF THE RECEPTACLES SHALL BE BASED ON THE FINAL MODEL SELECTED. COORDINATE EQUIPMENT MODEL NUMBERS WITH ARCHITECT/OWNER. CONTRACTOR SHALL CONSIDER THIS ALLOWANCE IN THE BID.



4 **RISER DIAGRAM**
NTS

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NY ENGINEERS
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SUITE 49674,
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PROJECT NAME

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ELECTRICAL
RISER DIAGRAM

GRAPHIC SCALE

SEAL

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SCALE	AS NOTED
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PANEL:	RB4 (EXISTING)						NEMA ENCLOSURE	EXISTING
480Y/277	VOLTS,	3	PHASE	4	WIRE		MOUNTING	RECESSED
MAIN CB:		MLO	225A	BUS:	225A	MIN,	LOC	R.R. CORRIDOR

NOTE: L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC, E : KITCHEN EQUIPMENT

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			O	17.86		25.56				7.70	H			2
3	100/3P*	PANEL A THRU XFMR	O	17.86	3#3, #8G, 1"C.		25.56		3#8, #10G, 3/4"C.	7.70	H	ACCU-3 (N)	45/3P*	4
5			O	17.86				25.56		7.70	H			6
7			H	1.01		8.71				7.70	H			8
9	15/3P*	MAF-1 (N)	H	1.01	3#12, #12G, 3/4"C		8.71		3#8, #10G, 3/4"C.	7.70	H	ACCU-4 (N)	45/3P*	10
11			H	1.01				8.71		7.70	H			12
13			H	0.37		8.40			2#10, #10G, 3/4"C.	8.03	O	WH-3 (N)	30*	14
15	15/3P*	OAF-1 (N)	H	0.37	3#12, #12G, 3/4"C		8.40		2#10, #10G, 3/4"C.	8.03	O		30*	16
17			H	0.37				1.14		0.77	H			18
19	20	SPARE				0.77			3#12, #12G, 3/4"C	0.77	H	KEF-1 (N)	15/3P*	20
21	20	SPARE					0.77			0.77	H			22
23	20	SPARE						0.00				SPARE	20	24
25	20	SPARE				0.00						SPARE	20	26
27	20	SPARE					0.00					SPARE	20	28
29	20	SPARE						0.00				SPARE	20	30
31	20	SPARE				0.00						SPARE	20	32
33	20	SPARE					0.00					SPARE	20	34
35	20	SPARE						0.00				SPARE	20	36
37	20	SPARE				0.00						SPARE	20	38
39	20	SPARE					0.00					SPARE	20	40
41	20	SPARE						0.00				SPARE	20	42
				TOTAL CONNECTED LOAD (KVA)		43.44	43.44	35.41				"* INDICATES NEW BREAKER"		

PANEL:	A (NEW)						NEMA ENCLOSURE	TYPE 1
208Y/120	VOLTS,	3	PHASE	4	WIRE		MOUNTING	SURFACE
MAIN CB:	200A	MLO		BUS:	200A	MIN,	LOC	BOH

NOTE: L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC, E : KITCHEN EQUIPMENT

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	12-ICE MAKER W/BIN	E	1.42	2#12, #12G, 3/4"C	2.30			2#12, #12G, 3/4"C	0.88	L	LIGHTING KITCHEN AREA	20	2
3	40/2P	ACCU-2 (N)	H	3.22	2#8, #10G, 3/4"C		3.88		2#12, #12G, 3/4"C	0.65	L	LIGHTING DINNING AREA	20	4
5			H	3.22				3.58	2#12, #12G,#12IG, 1/2"C	0.36	R	57-POS SYSTEM	20	6
7	20	19-DISHWASHER	E	1.84	2#12, #12G, 3/4"C	2.20			2#12, #12G,#12IG, 1/2"C	0.36	R	57-POS SYSTEM	20	8
9	20	27-FIRE SUPRESSION SYSTEM	E	0.20	2#12, #12G, 3/4"C		0.92		2#12, #12G, 3/4"C	0.72	E	60-ESPRESSO GRINDER	20	10
11	20	28-6 BURNER RANGE	E	0.71	2#12, #12G, 3/4"C			3.83	2#10, #10G, 3/4"C	3.12	E	59-ESPRESSO MACHINE	30/2P	12
13		SHUNT TRIP BREAKER				3.12				3.12	E			14
15	20	31-CHARBROILER, GAS, COUNTERTOP	E	0.20	2#12, #12G, 3/4"C		2.00		2#12, #12G, 3/4"C	1.80	E	61-BLENDOR BAR	20	16
17		SHUNT TRIP BREAKER						1.80	2#12, #12G, 3/4"C	1.80	E	61-BLENDOR BAR	20	18
19	20	41-SANDWICH / SALAD PREPARATION REFRIGERATOR	E	0.28	2#12, #12G, 3/4"C	0.48			2#12, #12G, 3/4"C	0.20	L	TIME CLOCK	20	20
21	20	43-FOOD PAN WARMER/RETHERMALIZER, COUNTERTOP	E	1.44	2#12, #12G, 3/4"C		2.74		2#12, #12G, 3/4"C	1.30	E	49-JUICER	20	22
23	20	43-FOOD PAN WARMER/RETHERMALIZER, COUNTERTOP	E	1.44	2#12, #12G, 3/4"C			3.14	2#12, #12G, 3/4"C	1.70	R	SHOW WINDOW RECEPTACLE	20	24
25	20	41-SANDWICH / SALAD PREPARATION REFRIGERATOR	E	0.28	2#12, #12G, 3/4"C	1.54			2#12, #12G, 3/4"C	1.26	R	GENERAL RECEPTACLES	20	26
27	20	34-RICE/GRAIN COOKER	E	1.55	2#12, #12G, 3/4"C		1.83		2#12, #12G, 3/4"C	0.28	E	29-REFRIGERATED EQUIPMENT STAND	20	28
29	20	34-RICE/GRAIN COOKER	E	1.55	2#12, #12G, 3/4"C			1.55				SHUNT TRIP BREAKER		30
31	20/2P	33-COUNTERTOP CONVECTION OVEN	E	2.10	2#12, #12G, 3/4"C	3.12			2#12, #12G, 3/4"C	1.02	E	69-BEVERAGE DISPENSER	20	32
33			E	2.10			5.32		2#8, #10G, 3/4"C	3.22	H	ACCU-1 (N)	40/2P	34
35	20	EXTERIOR SIGNAGE	L	1.00	2#12, #12G, 3/4"C			4.22		3.22	H			36
37	100/3P	PANEL B	O	4.91	4#3, #8G, 1-1/4"C	5.27			2#12, #12G, 3/4"C	0.36	R	GENERAL RESTROOM RECEPTACLES	20	38
39			O	4.91			5.11		2#12, #12G, 3/4"C	0.20	E	32-GRIDDLE GAS, COUNTERTOP	20	40
41			O	4.91				4.91				SHUNT TRIP BREAKER		42
				TOTAL CONNECTED LOAD (KVA)		18.02	21.79	23.03						

PANEL:	B (NEW)						NEMA ENCLOSURE	TYPE 1
208Y/120	VOLTS,	3	PHASE	4	WIRE		MOUNTING	SURFACE
MAIN CB:		MLO	100A	BUS:	125A	MIN,	LOC	BOH

NOTE: L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC, E : KITCHEN EQUIPMENT

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	15	WALK-IN COOLER EVAPORATOR	O	0.10	2#12, #12G, 3/4"C	0.60			2#12, #12G, 3/4"C	0.50	R	JB FOR MEN RESTROOM HAND DRYER	#20	2
3	20	KITCHEN CONV. RECEPTACLES	R	1.08	2#12, #12G, 3/4"C		1.58		2#12, #12G, 3/4"C	0.50	R	JB FOR WOMEN RESTROOM HAND DRYER	#20	4
5	20	WALK-IN COOLER REFRIGERATION SYSTEM	O	0.29	2#12, #12G, 3/4"C			0.29				SPARE	20	6
7	20	WATER FILTRATION SYSTEM	E	0.20	2#12, #12G, 3/4"C	0.20						SPARE	20	8
9	15/3P	WALK-IN COOLER CONDENSER	O	0.56	3#12, #12G, 3/4"C		0.85		2#12, #12G, 3/4"C	0.29	H	ARC-1 (N)	20	10
11			O	0.56				0.85	2#12, #12G, 3/4"C	0.29	H	ARC-2 (N)	20	12
13			O	0.56		0.76			2#12, #12G, 3/4"C	0.20	R	HOOD CONTROL PANEL	20	14
15	20	SPARE					0.36		2#12, #12G, 3/4"C	0.36	R	HVAC EQUIPMENT SERVICE RECEPTACLES	20	16
17	20	13-REACH-IN FREEZER	E	1.03	2#12, #12G, 3/4"C			1.03				SPARE	20	18
19	20	66-REACH-IN REFRIGERATOR	E	0.19	2#12, #12G, 3/4"C	0.19						SPARE	20	20
21	20	SPARE					0.23		2#12, #12G, 3/4"C	0.23	M	RECIRCULATION PUMP-1	20	22
23	20	SPARE						0.20	2#12, #12G, 3/4"C	0.20	O	WH-1	20	24
25	15	EF-1 (N)	M	0.05	2#12, #12G, 3/4"C	0.05						SPARE	20	26
27	15	EF-2 (N)	M	0.05	2#12, #12G, 3/4"C		0.05					SPARE	20	28
29	15	EF-3 (N)	M	0.05	2#12, #12G, 3/4"C			0.25	2#12, #12G, 3/4"C	0.20	O	WH-2	20	30
31	20	SCREEN OUTLETS	R	0.90	2#12, #12G, #12IG, 3/4"C	1.24			2#12, #12G, 3/4"C	0.34	E	67-ICE DISPENSER	20	32
33	20	47-DROP IN ICE BIN	E	1.20	2#12, #12G, 3/4"C		1.50		2#12, #12G, 3/4"C	0.30	E	REACH-IN REFRIGERATOR	20	34
35	20	SHOW WINDOW RECEPTACLE	R	1.30	2#12, #12G, 3/4"C			1.52	2#12, #12G, 3/4"C	0.22	E	51-REACH-IN UNDERCOUNTER FREEZER	20	36
37	20	SHOW WINDOW RECEPTACLE	R	1.30	2#12, #12G, 3/4"C	1.46			2#12, #12G, 3/4"C	0.16	E	44-ICE CREAM FREZEER	20	38
39	20	SHOW WINDOW RECEPTACLE	R	1.70	2#12, #12G, 3/4"C		2.00		2#12, #12G, 3/4"C	0.30	E	56-DROP IN REFRIGERATED COLD WELL	20	40
41	20	SHOW WINDOW RECEPTACLE	R	0.72	2#12, #12G, 3/4"C			1.00	2#12, #12G, 3/4"C	0.28	E	52-REFRIGERATED PREP TABLE	20	42
				TOTAL CONNECTED LOAD (KVA)		4.49	6.57	5.14	"#- INDICATES LOCK-ON BREAKER TO PROVIDED".					

NO.	DATE	ISSUE DESCRIPTION
02	06/04/2025	PERMIT SET
01	05/06/2025	REVISED CHECK SET
00	04/29/2025	CHECK SET

NY ENGINEERS
382 NE 191ST STREET
SUITE 49674,
MIAMI, FL 33179

PROJECT NAME

PHYSICAL LOCATION

DRAWING TITLE
ELECTRICAL PANEL SCHEDULE

GRAPHIC SCALE

SEAL

PROJECT NO. -
SCALE AS NOTED
DRAWN BY NYE
CHECKED BY NYE
DATE 06/04/2025
SHEET NUMBER E5.2