MECHANICAL GENERAL NOTES

1. GENERAL

A. THE GENERAL CONDITIONS OF THE GENERAL SPECIFICATIONS, AND ALL APPLICABLE INSTRUCTIONS TO BIDDERS SHALL BE PART OF THESE SPECIFICATIONS.
B. "PROVIDE" AS USED HEREIN MEANS TO FURNISH AND INSTALL COMPLETE.
C. "FURNISH" AS USED HEREIN MEANS TO PURCHASE AND DELIVER TO THE PROJECT SITE IN UNDAMAGED CONDITION. WHERE APPLICABLE, SUBMIT FOR REVIEW AND APPROVAL AND COORDINATE WITH THE CONTRACT DOCUMENTS.
D. "INSTALL" AS USED HEREIN MEANS TO STORE AND PROTECT FROM DAMAGE, INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS, AND MAKE ALL CONNECTIONS COMPLETE.
E. THE TERM "CONTRACTOR" AS USED HEREIN MEANS ANY CONTRACTOR OR SUBCONTRACTOR CONTRACTED TO PERFORM WORK INCLUDED IN AND DEFINED BY THIS SECTION.
F. MECHANICAL WORK SHALL BE PROVIDED IN STRICT COMPLIANCE WITH THE LOS ANGELES CITY MECHANICAL CODE CMC 2022, AND ALL APPLICABLE LOCAL ORDINANCES, STATE LAWS AND FEDERAL LAWS.

2. PRIOR TO BIDDING:

A. THOROUGHLY REVIEW THE BID INSTRUCTIONS INCLUDING ALL CIVIL, ARCHITECTURAL, STRUCTURAL, AND MEP CONSTRUCTION DOCUMENTS. OBTAIN AND THOROUGHLY EXAMINE THE MANUFACTURERS' WRITTEN INSTALLATION INSTRUCTIONS, DETAILS, AND REQUIREMENTS FOR THE SCHEDULED AND SPECIFIED EQUIPMENT AND MATERIALS. FOR AMBIGUOUS, CONTRADICTORY, OR CONFLICTING ITEMS WITHIN THE CONSTRUCTION DOCUMENTS, THE CONTRACTOR SHALL REQUEST CLARIFICATION IN A WRITTEN "REQUEST FOR INFORMATION" (RFI), AT LEAST FIVE (5) WORKING DAYS PRIOR TO BID DATE. RFI-RELATED WORK NOT CLARIFIED PRIOR TO BID SHALL BE PROVIDED PER THE ARCHITECT (ENGINEER) IN STRICT ACCORDANCE WITH THE MOST STRINGENT MATERIALS, EQUIPMENT, AND SCOPE OF WORK.
B. IF THE CONTRACTOR BELIEVES THE DRAWINGS AND SPECIFICATIONS CONFLICT WITH CODE REQUIREMENTS, IMMEDIATELY NOTIFY THE ARCHITECT (ENGINEER) IN WRITING.
C. NO ALLOWANCES WILL BE MADE DUE TO CONTRACTOR'S UNFAMILIARITY WITH THE CONSTRUCTION DOCUMENTS OR FOR THE FAILURE OF THE CONTRACTOR TO OBTAIN CLARIFICATIONS PRIOR TO BID.
D. VISIT THE JOB SITE AND THOROUGHLY INVESTIGATE CONDITIONS. THE LACK OF SPECIFIC INFORMATION ON THE DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR OF ANY RESPONSIBILITY.
E. REFER TO APPLICABLE CODES CITED IN CONSTRUCTION DOCUMENTS, EXAMINE GOVERNING STATE AND LOCAL CODES, AND LOCAL REGULATIONS AND ORDINANCES, AND PROVIDE ALL EQUIPMENT AND INSTALLATION IN STRICT ACCORDANCE WITH SAME.
F. REFER TO CONSTRUCTION DOCUMENTS FOR SCHEDULED AND SPECIFIED MATERIALS AND EQUIPMENT. INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS AND DETAILS.
G. ALL WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH THE LANDLORD'S CONSTRUCTION CRITERIA AND TENANT/LANDLORD AGREEMENT. THIS CONTRACTOR SHALL EXAMINE THE LANDLORD CRITERIA AND TENANT/LANDLORD AGREEMENT AND THEY SHALL BE PART OF THESE SPECIFICATIONS. NO ALLOWANCES WILL BE MADE DUE TO CONTRACTOR'S UNFAMILIARITY WITH THESE DOCUMENTS.

3. BIDDING

A. SUBMISSION OF A BID ACKNOWLEDGES THAT THE CONTRACTOR HAS REVIEWED THE BID INSTRUCTIONS, HAS VISITED THE SITE, EXAMINED ALL CONSTRUCTION DOCUMENTS, AND AGREES TO ALL ITEMS AND CONDITIONS WITHIN THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR'S BID SHALL INCLUDE ALL MECHANICAL WORK IN THE CONSTRUCTION DOCUMENTS, INCLUDING MECHANICAL WORK RELATED TO EQUIPMENT FURNISHED/PROVIDED BY OTHERS.

4. PERMITS

A. SECURE AND PAY FOR ALL PERMITS, LICENSES, AND INSPECTIONS REQUIRED BY THE AHJ FOR THIS WORK.

5. SUBSTITUTIONS

A. MANUFACTURERS' EQUIPMENT, APPLIANCES, AND MATERIALS SCHEDULED, NOTED, AND SPECIFIED IN THE CONSTRUCTION DOCUMENTS ARE THE DESIGN STANDARD. NO SUBSTITUTIONS WILL BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL BY THE ARCHITECT OR ENGINEER. IN BIDDING, CONTRACTOR SHALL NOT ASSUME ACCEPTANCE OF SUBSTITUTIONS. CONTRACTOR MUST STATE IN SUBSTITUTION REQUEST: "PROPOSED SUBSTITUTIONS ARE OF EQUAL OR HIGHER QUALITY, EFFICIENCY AND DEPENDABILITY COMPARED TO THE SPECIFIED EQUIPMENT AND MATERIAL. CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR ADDITIONAL ENGINEERING COSTS AND COSTS TO OTHER CONTRACTORS DUE TO SUBSTITUTIONS." IF DEEMED NECESSARY BY THE ARCHITECT OR ENGINEER, SUBSTITUTIONS WHICH ARE NOT APPROVED OR NOT EQUAL TO DESIGN STANDARD SHALL BE REMOVED AND THE SCHEDULED, NOTED, AND SPECIFIED EQUIPMENT AND MATERIALS SHALL BE INSTALLED AT CONTRACTOR'S EXPENSE. SUBMITTING CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR ADDITIONAL ENGINEERING COSTS AND COSTS TO OTHER CONTRACTORS DUE TO SUBSTITUTIONS.

6. UTILITIES

A. THE UTILITY INFORMATION NOTED AND SPECIFIED IN THE CONSTRUCTION DOCUMENTS ARE THE DESIGN STANDARD AND AS ACCURATE AS COULD BE SECURED BUT IS NOT GUARANTEED. PRIOR TO INSTALLING ANY UTILITY-RELATED WORK, THIS CONTRACTOR SHALL CONTACT THE LOCAL UTILITY - IN WRITING - TO COORDINATE AND CONFIRM THE SERVICE AND CONNECTION REQUIREMENTS WITH THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL REQUEST THE UTILITY SERVICE AND CONNECTION IN AMPLE TIME TO MEET THE CONSTRUCTION SCHEDULE. ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND THE ACTUAL UTILITY SERVICE CONNECTION SHALL BE SUBMITTED WITHOUT DELAY TO THE ARCHITECT (ENGINEER) IN WRITING, AS A "REQUEST FOR INFORMATION" (RFI). RFI-SUBJECT UTILITY WORK MUST BE RESOLVED WITH THE ARCHITECT (ENGINEER) PRIOR TO INSTALLATION. THE CONTRACTOR ASSUMES FULL RESPONSIBILITY AND ALL COSTS FOR WORK NOT COORDINATED WITH THE UTILITY AND NOT SUBMITTED TO THE ARCHITECT (ENGINEER) FOR RESOLUTION.

7. SCHEDULING

A. ALL PERFORMANCE OF CONSTRUCTION SHALL BE AS REQUIRED BY THE PACE OF THE GENERAL CONSTRUCTION, AS SCHEDULED BY THE GC. PROVIDE COMPLETE INFORMATION AND FULL COOPERATION WITH OTHER CONTRACTORS AND TRADES, AS REQUIRED FOR THE TIMELY COMPLETION AND COORDINATION OF THE COMPLETE PROJECT.
B. PROVIDE ALL TESTS AND INSPECTIONS REQUIRED BY AHJ.
C. PROVIDE A SIGNED CERTIFICATE OF INSPECTION AT THE PROJECT COMPLETION.

8. SCOPE

A. PROVIDE PERMIT(S), INSPECTIONS, FINAL CERTIFICATE(S) OF INSPECTION BY AHJ, PERMIT AND INSPECTION FEES, AND ALL MATERIALS, EQUIPMENT, RIGGING, AND LABOR NECESSARY FOR A COMPLETE AND FULLY OPERATING HVAC SYSTEM.
B. STRUCTURAL ENGINEERING FOR THE SUPPORT AND MOUNTING OF THE SCHEDULED AND SPECIFIED MATERIALS AND EQUIPMENT IS THE RESPONSIBILITY OF OTHERS . THE MECHANICAL CONSTRUCTION DOCUMENT DO NOT INCLUDE STRUCTURAL ENGINEERING FOR SUPPORT OF MECHANICAL EQUIPMENT, APPLIANCES, OR SYSTEMS.
C. THROUGHOUT CONSTRUCTION, THIS CONTRACTOR'S WORK SHALL INCLUDE ONGOING COORDINATION OF THIS WORK WITH THE CONSTRUCTION DOCUMENTS, THE WORK OF ALL OTHER TRADES, AND WITH UTILITY SERVICE(S) AND UTILITY CONNECTION(S). FOR AMBIGUOUS, CONTRADICTORY, OR CONFLICTING ITEMS WITHIN THE CONSTRUCTION DOCUMENTS, INCLUDING BUT NOT LIMITED TO THE ACTUAL UTILITY SERVICE AND CONNECTION REQUIREMENTS, THE CONTRACTOR SHALL REQUEST CLARIFICATION IN A WRITTEN "REQUEST FOR INFORMATION" (RFI). RFI SHALL BE ISSUED WITHOUT DELAY AND PRIOR TO PROCEEDING WITH ANY RFI-SUBJECT WORK. RFI NOT CLARIFIED PRIOR TO BID SHALL BE PROVIDED PER THE ARCHITECT (ENGINEER) IN STRICT ACCORDANCE WITH THE MOST STRINGENT MATERIALS, EQUIPMENT, AND SCOPE OF WORK, AT NO ADDITIONAL COST TO THE OWNER.
D. PROVIDE HOISTING FOR ALL MATERIALS AND EQUIPMENT FURNISHED AND/OR INSTALLED, IN ACCORDANCE WITH ALL CITY, STATE AND FEDERAL RULES AND REGULATIONS.
E. INSTALL ALL WORK AND EQUIPMENT RIGID, DEAD LEVEL, PLUMB, AND TRUE-TO-LINE. UNLESS NOTED OTHERWISE, SUPPORT AND MOUNTING OF EQUIPMENT, DUCT, PIPING, ETC., ARE THIS CONTRACTOR'S MEANS AND METHODS. THE CONTRACTOR SHALL UNDERSTAND THE SPECIFIED AND SCHEDULED EQUIPMENT AND MATERIALS AND MEANS AND METHODS OF INSTALLATION. THIS CONTRACTOR SHALL PROVIDE ALL ACCESSORIES REQUIRED FOR PROPER SUPPORT WHETHER SHOWN ON THE DRAWINGS OR NOT. IF SUPPORTS ARE REQUIRED, CONTRACTOR SHALL SUBMIT DRAWINGS TO THE ARCHITECT FOR APPROVAL.
F. PROVIDE ACCESSORY MOUNTING HARDWARE INCLUDING BUT NOT LIMITED TO STRUCTURAL STEEL, STRUT SYSTEMS, ALL THREAD RODS, AND BRACES, AS REQUIRED TO MOUNT EQUIPMENT. PROVIDE STEEL SHAPES AND FRAMES TO SUPPORT EQUIPMENT WHERE NEEDED. ALL SYSTEMS SHALL BE SUPPORTED INDEPENDENT OF AND ISOLATED FROM EQUIPMENT VIBRATION.
G. PRODUCTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' PRINTED INSTALLATION AND MAINTENANCE LITERATURE. COMPONENTS REQUIRING PERIODIC MAINTENANCE OR ADJUSTMENTS SHALL BE INSTALLED AS TO PERMIT ACCESS WITHOUT DAMAGE TO STRUCTURE, FINISHES, OR OTHER EQUIPMENT.
H. PROVIDE ALL LABOR, EQUIPMENT AND MATERIAL REQUIRED FOR THE REINSTALLATION AND RE-SUPPORT OF EXISTING SERVICES (DUCTWORK, ELECTRICAL CONDUIT, PIPING, EXISTING EQUIPMENT, ETC.) DISTURBED BY THE INSTALLATION OF NEW WORK UNDER THIS CONTRACT, INCLUDING THE WORK OF OTHER TRADES.
I. DEMOLITION: REFER TO THE ARCHITECTURAL DRAWINGS FOR THE GENERAL SCOPE OF DEMOLITION. THIS CONTRACTOR SHALL DISCONNECT AND CAREFULLY REMOVE ALL EXISTING HVAC EQUIPMENT LOCATED IN DEMOLISHED AREAS INCLUDING ROOF, PLENUMS, CEILINGS, WALLS, AND FLOORS. U.N.O., DISCONNECT AND REMOVE EXISTING HVAC SYSTEMS COMPLETE, INCLUDING EQUIPMENT, CURBS, DUCTS, INSULATION, AIR DEVICES, AND PIPING LOCATED IN THESE AREAS. ALL HVAC SYSTEM COMPONENTS INCLUDING AIR TERMINAL UNITS, FANS, MOTORS, CONTROL DEVICES AND SENSORS, DAMPERS, ACTUATORS, HANGERS, RESTRAINTS, MOUNTING HARDWARE, ETC., SHALL BE REMOVED AND LEGALLY DISPOSED OF BY THIS CONTRACTOR.
J. UNLESS NOTED OTHERWISE, ABANDONMENT IN PLACE (AIP) IS NOT ACCEPTABLE. UNUSED EQUIPMENT, DUCT, PIPING, AND OTHER COMPONENTS WITHIN OR SERVING THIS SPACE MUST BE COMPLETELY REMOVED TO POINT OF ORIGIN. ENDS OF SYSTEMS BEYOND GENERAL SCOPE OF DEMOLITION MAY BE ABANDONED ONLY WITH WRITTEN APPROVAL OF ARCHITECT (ENGINEER). WHERE THESE ABANDONED ENDS TERMINATE, TRIM CLEANLY AND PROPERLY CAP OR SEAL IN AN APPROVED MANNER, LEAVING TERMINATION SAFE AND SECURE BEHIND NEW FINISHES. MAINTAIN SYSTEM CONTINUITY TO HVAC SYSTEMS SERVING AREAS BEYOND GENERAL DEMOLITION, AS NEEDED. THIS INCLUDES BUT IS NOT LIMITED TO REMOVAL, MODIFICATION AND/OR REINSTALLATION OF EQUIPMENT, AS NEEDED. COMPLETION OF THIS PROJECT SHALL INCLUDE RETURNING THESE ADJACENT AREAS TO FULLY FUNCTIONING OPERATION.
K. CONTRACTOR SHALL PROVIDE DAILY CLEAN-UP, REMOVAL AND LEGAL DISPOSAL OF ALL RUBBISH GENERATED BY THIS WORK.
L. AS-BUILT DRAWINGS: DURING CONSTRUCTION, AS WORK PROCEEDS, MAINTAIN AS-BUILT MARK-UPS OF ACTUAL INSTALLATION. AT CONSTRUCTION COMPLETION AND PRIOR TO TURNOVER TO OWNER , PROVIDE FINAL MARK-UPS IN PDF AND DWG FORMAT TO ARCHITECT AND ENGINEER.
M. PROVIDE FINAL CONNECTIONS TO EQUIPMENT FURNISHED/PROVIDED BY OTHERS, AS NOTED (GAS FIRED EQUIPMENT, COMMERCIAL KITCHEN EQUIPMENT, LAUNDRY EQUIPMENT, ETC.).
N. DO NOT ROUTE ANY PIPING OR DUCTWORK ABOVE ELECTRICAL PANELS.
O. UNLESS NOTED OTHERWISE, ALL DUCT AND PIPE SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES TO WALLS, BEAMS, OR COLUMNS. PIPE SHALL BE RUN AS DIRECT AS POSSIBLE - AVOID UNNECESSARY OFFSETS AND MAXIMIZE HEADROOM.
P. PRIOR TO ORDERING EQUIPMENT, THIS CONTRACTOR SHALL PROVIDE FINAL COORDINATION OF ELECTRICAL POWER REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR.
Q. CONTRACTOR SHALL MAINTAIN ACTIVITIES WITHIN AREA APPROVED BY OWNER OR GC. CONTRACTOR'S ACTIVITIES SHALL NOT INTERFERE WITH THE OWNER'S OPERATIONS, EXCEPT AS APPROVED.
R. EXCEPT THOSE COORDINATED AND APPROVED BY THE G.C., CONTINUITY OF ALL BUILDING SERVICES AND UTILITIES SERVING BUILDING FACILITIES SHALL BE MAINTAINED UNINTERRUPTED AT NO ADDITIONAL COST. PROVIDE ALL NECESSARY CROSS CONNECTIONS AND TEMPORARY CONNECTIONS REQUIRED TO PERFORM THE CONSTRUCTION, AS DETERMINED BY THE G.C., AND NEEDED TO MAINTAIN CONTINUITY OF THE BUILDING SERVICE(S). THIS CONTRACTOR SHALL SCHEDULE WORK SUCH THAT ANY AND ALL CONNECTIONS, AND/OR REARRANGEMENT OF EXISTING EQUIPMENT, PIPING, ETC., SHALL ASSURE FULL RESUMPTION OF SERVICE(S) AT THE G.C.'S DESIGNATED TIME.

9. CODE REQUIREMENTS

A. ALL WORK SHALL COMPLY WITH THE CONSTRUCTION DOCUMENTS OR, AS A DIRECTED BY THE ARCHITECT (ENGINEER), AND SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, ORDINANCES, AND REGULATIONS OF THE AHJ, WHETHER SO SHOWN OR NOT. CONTRACTOR SHALL BE FAMILIAR WITH PROVISIONS OF ALL APPLICABLE CODES AND SHALL ENSURE THE WORK COMPLIES WITH ALL LOCAL, STATE AND FEDERAL CODES, TRADE STANDARDS AND MANUFACTURER'S RECOMMENDATIONS. IF CONTRACTOR BELIEVES THE DRAWINGS AND/OR SPECIFICATIONS CONFLICT WITH CODE REQUIREMENTS, IMMEDIATELY NOTIFY THE G.C. IN WRITING. DO NOT INSTALL WORK NOT COMPLYING WITH CODE REQUIREMENTS. IN CASE OF CONFLICT BETWEEN THE CONSTRUCTION DOCUMENTS AND THE CODES AND ORDINANCES, THE HIGHEST STANDARD SHALL APPLY. AS A MINIMUM STANDARD, CONTRACTOR SHALL SATISFY CODE REQUIREMENTS. ALL MODIFICATIONS REQUIRED BY AHJ SHALL BE MADE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. BEFORE COMMENCING WORK NOT SHOWN IN DOCUMENTS BUT REQUIRED TO ACHIEVE FULL COMPLIANCE WITH CODES, CONTRACTOR SHALL NOTIFY ARCHITECT (ENGINEER).

10. CUTTING & PATCHING

A. CORE-DRILL OR SAW-CUT EXISTING FLOORS, WALLS, ROOF, ETC., AS A. REQUIRED FOR EQUIPMENT, PIPE, OR DUCTWORK. PRIOR TO CUTTING, PERFORM NON-DESTRUCTIVE TESTING TO VERIFY LOCATION OF PIPING, CONDUIT, AND STRUCTURAL COMPONENTS. NOTIFY ARCHITECT (ENGINEER) OF ANY DISCREPANCIES. PATCH SURROUNDING AREAS FLUSH WITH ADJACENT SURFACE AND READY TO RECEIVE FINISH. PATCH AND REPAIR ROOF TO MATCH EXISTING ROOFING.

11. FIRE STOPPING

A. PROVIDE FIRE STOPPING FOR PENETRATIONS OF DUCT, PIPING, AND A. OTHER MECHANICAL EQUIPMENT THROUGH FIRE-RATED VERTICAL BARRIERS (WALLS AND PARTITIONS), HORIZONTAL BARRIERS (FLOOR/CEILING ASSEMBLIES), AND VERTICAL SERVICE SHAFT WALLS AND PARTITIONS. (WHERE THIS WORK IS BEING PERFORMED UNDER A GC, PRIOR TO INSTALLATION, THIS CONTRACTOR SHALL COORDINATE FIRESTOPPING WITH GC). FIRESTOP SYSTEM INSTALLATION MUST MEET REQUIREMENTS OF ASTM E 814 OR UL 1479 TESTED ASSEMBLIES THAT PROVIDE A FIRE RATING EQUAL TO OR GREATER THAN THAT OF CONSTRUCTION BEING PENETRATED. INSTALL IN STRICT ACCORDANCE WITH UL FIRE RESISTANCE DIRECTORY, AHJ, AND MANUFACTURER'S SPECIFIED REQUIREMENTS. ONLY TESTED FIRESTOP SYSTEMS BY "3M", "HILTI", OR EQUAL SHALL BE USED. REFER TO ARCHITECTURAL DRAWINGS FOR ASSEMBLY RATING.

12. MATERIALS AND WORKMANSHIP

A. ALL MANUFACTURED ARTICLES, MATERIALS, AND EQUIPMENT SHALL BE NEW U.N.O., FREE OF DEFECTS, AND INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS AND DETAILS, AND INDEPENDENTLY TESTED AND LABELED BY A NATIONALLY RECOGNIZED TESTING LABORATORY - UNDERWRITERS LABORATORIES (UL) OR INTERTEK (ETL). ALL LIKE MATERIALS USED SHALL BE OF THE SAME MANUFACTURE AND QUALITY U.N.O.
B. ALL MATERIALS WITHIN PLENUMS SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E84 OR UL 723. ALL MATERIALS INSTALLED IN PLENUM SPACES SHALL BE LISTED AND LABELED FOR SUCH APPLICATION.
C. ALL WORK SHALL BE SUPERVISED BY THE INSTALLING CONTRACTOR'S COMPETENT AND SKILLED FOREMAN. ALL WORK SHALL BE PERFORMED BY COMPETENT AND SKILLED WORKERS, WITH ALL TRADE AND MANUFACTURER REQUIRED TRAINING, AND EXECUTED IN A NEAT AND WORKMANLIKE MANNER. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE BEST QUALITY STANDARDS OF THE TRADE AND IN CONFORMANCE WITH ALL FEDERAL, STATE, AND LOCAL CODES AND STANDARDS, INCLUDING APPLICABLE OSHA REGULATIONS. PROPERLY PROTECT WORK DURING CONSTRUCTION. AT CONSTRUCTION COMPLETION, THOROUGHLY CLEAN WORK AND REMOVE ALL DEBRIS FROM THE PREMISES.

13. PROTECTION OF WORK AND PROPERTY

A. PROTECT ALL WORK FROM DAMAGE AND PROTECT THE OWNER'S PROPERTY FROM DIRT, DAMAGE, OR LOSS ARISING FROM CONTRACTOR WORK.
B. COMPLY WITH OSHA REQUIREMENTS AND TAKE ALL NECESSARY PRECAUTIONS FOR EMPLOYEE SAFETY.
C. PROTECT ALL OPEN PIPING, DUCT, AND EQUIPMENT, EXISTING AND NEW FROM CONSTRUCTION DIRT AND DUST. COVER, CAP, OR PLUG OPEN ENDS OF PIPING AND DUCT. KEEP EQUIPMENT CLOSED OR COVER AND SEAL EQUIPMENT OPENINGS. ANY MECHANICAL SYSTEMS, NEW AND/OR EXISTING OPERATED DURING CONSTRUCTION SHALL BE PROTECTED BY COVERING EACH RETURN AIR DUCT OPENING WITH MERV 13 FILTERS AND INSTALLING MERV 13 FILTER(S) IN EQUIPMENT FILTER RACK. PRIOR TO TESTING AND BALANCING, REMOVE FILTERS FROM FILTER RACKS AND INSTALL NEW MERV 13 FILTERS.
D. AT COMPLETION OF WORK, PRIOR TO EQUIPMENT START-UP, REMOVE COVERS, CAPS, OR PLUGS ON DUCT AND PIPING.

14. DAMAGE BY LEAKS

A. THIS CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL DAMAGES TO THE PROPERTY (GROUNDS, WALKS, ROADS, BUILDING COMPONENTS, FINISHES, PIPING SYSTEMS, ELECTRICAL SYSTEMS, HVAC SYSTEMS, AND THEIR EQUIPMENT AND CONTENT) CAUSED BY LEAKS IN THE SYSTEMS BEING INSTALLED OR HAVING BEEN INSTALLED AS PART OF THIS WORK. ALL REPAIRS WILL BE MADE AT THIS CONTRACTOR'S EXPENSE.

15. DRAWINGS AND SPECIFICATIONS

A. DRAWINGS ARE DIAGRAMMATIC AND INTENDED TO SHOW GENERAL LOCATIONS OF DUCTS, PIPES, AND EQUIPMENT AND THE METHODS OF CONNECTING AND CONTROL. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONDITIONS AND THE WORK OF OTHER TRADES PERMIT. THE DRAWINGS ARE NOT INTENDED TO SHOW EVERY CONNECTION IN DETAIL OR ALL OFFSETS, TRANSITIONS, OR FITTINGS REQUIRED FOR A COMPLETE SYSTEM NOR IS IT IMPLIED THAT ALL CONFLICTS BETWEEN BUILDING ELEMENTS AND/OR OTHER TRADES ARE INDICATED. DO NOT SCALE DRAWINGS. EXAMINE FIELD CONDITIONS AND SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR EXACT LOCATION OF DOORS, WINDOWS, LIGHTS, ETC.
B. THE DRAWINGS AND SPECIFICATIONS ARE MUTUALLY COMPLEMENTARY, AND ANY WORK REQUIRED BY ONE BUT NOT BY THE OTHER SHALL BE REQUIRED BY BOTH.
C. PRIOR TO INSTALLING EQUIPMENT, DUCT, OR PIPE COORDINATE PROPOSED LOCATIONS WITH EACH TRADE/DISCIPLINE AND GC. EXAMINE EACH DISCIPLINE'S DRAWINGS FOR CONSTRUCTION DETAILS, CEILING HEIGHTS, REQUIRED CLEARANCES, AND SPACE CONSTRAINTS. PROVIDE SYSTEMS INSTALLATION BASED ON THIS EXAMINATION AND COORDINATION. IMMEDIATELY REPORT INSTALLATION CONFLICTS IN WRITING TO THE GC. RESOLVE ALL CONFLICTS WITH GC AND OTHER TRADES PRIOR TO PROCEEDING. INSTALLING CONTRACTOR IS FULLY RESPONSIBLE FOR CORRECT INTERPRETATION AND APPLICATION OF ALL SIZES AND DIMENSIONS.
D. SIGNIFICANT DEVIATIONS OR CHANGES FROM THE DRAWINGS, WHICH ARE REQUIRED TO ACCOMPLISH THE INTENT OF THE CONTRACT DOCUMENTS MUST BE REVIEWED AND APPROVED BY THE ARCHITECT (ENGINEER) BEFORE PROCEEDING. IF THE CONTRACTOR BELIEVES CHANGES TO THE CONTRACT DRAWINGS ARE NECESSARY, SHOP DRAWINGS WITH WRITTEN DESCRIPTIONS OF THE PROPOSED CHANGES SHALL BE SUBMITTED TO THE ARCHITECT (ENGINEER) FOR APPROVAL.
E. ALL PIPE, DUCTS, VENTS, ETC., EXTENDING THROUGH WALLS AND ROOF SHALL BE FLASHED WATERPROOF. PROVIDE ALL FLASHING FOR PIPE AND DUCTWORK PENETRATING BUILDING ENVELOPE. PROVIDE DUCT AND/OR PIPE SLEEVES AT WALL PENETRATIONS. SEAL ANNULAR SPACE WEATHER TIGHT.

16. CONTROLS

A. PROVIDE COMPLETE EQUIPMENT CONTROLS, INCLUSIVE OF ALL COMPONENTS, VOLTAGES, PROGRAMMING, WIRING ETC. FOR COMPLETE AND OPERATIONAL SYSTEMS. MOUNT THERMOSTATS AND SWITCHES 4'-0" ABOVE FINISHED FLOOR. MOUNT OTHER SENSORS (HUMIDITY, CO2, CO, NOX, ETC.) PER MANUFACTURER'S IOM. PRIOR TO MOUNTING, COORDINATE THERMOSTAT LOCATION(S) WITH FINAL FIXTURE AND EQUIPMENT. DO NOT MOUNT THERMOSTATS IN DIRECT SUNLIGHT, IN DISCHARGE OR EQUIPMENT, ON WALLS WITH INTERNAL HEAT SOURCES (DUCT OR OR ON EXTERIOR WALLS. IF EXTERIOR WALL MOUNTING IS NECESSARY, PROVIDE INSULATED MOUNTING BASE. WHERE THERMOSTAT LOCATION IS SUBJECT TO DAMAGE, PROVIDE LOCKABLE HIGH-IMPACT GUARD.

17. PIPING

A. IN FINISHED AREAS, ALL PIPING SHALL BE CONCEALED UNLESS NOTED OTHERWISE.
B. SEE PIPE SCHEDULE FOR PIPE MATERIALS AND PIPE INSULATION.
C. DO NOT INSTALL PVC PIPING IN PLENUM AREAS.
D. PAINT PIPE TO MATCH OWNER'S OR BUILDING STANDARD.
E. PROVIDE PIPE LABELS AND FLOW DIRECTION PER BUILDING OR FACILITY'S STANDARD OR AS SCHEDULED. ORIENT ALL MARKERS SO AS TO BE VISIBLE FROM FLOOR LEVEL. AT A MINIMUM PIPE LABELS AND FLOW DIRECTION MARKERS SHALL BE LOCATED:
   - AT LEAST ONCE IN EACH ROOM
   - AT EQUIPMENT CONNECTIONS
   - AT ACCESS DOORS
   - AT BRANCH MAINS
   - ON ALL ACCESSIBLE PIPE A MAXIMUM OF 25' BETWEEN MARKERS.
F. BRANCH TAKE-OFFS SHALL BE MADE WITH SWING CONNECTIONS AS REQUIRED T AVOID STRESS AT THESE POINTS.
G. DO NOT INSTALL ANY PIPING ABOVE ELECTRICAL PANELS AND/OR TRANSFORMERS.
H. INSTALL AND SIZE REFRIGERANT PIPE IN STRICT ACCORDANCE WITH EQUIPMENT/APPLIANCE MANUFACTURER'S IOM. DO NOT INSTALL REFRIGERANT PIPE BELOW GROUND. REFRIGERANT PIPE INSTALLED ON BUILDING EXTERIOR SHALL BE ROUTED TO MINIMIZE EXTERIOR EXPOSURE. INSULATE REFRIGERANT PIPE PER MANUFACTURER'S IOM. PROVIDE INSULATION EXPOSED TO AMBIENT CONDITIONS WITH A CONTINUOUS 30 MIL PVC JACKET.
I. ROUTE PIPE THROUGH ROOF WITH ALUMINUM PIPE HOOD, PATE CURB MODEL "PHA-2" WITH 14" TALL MODEL "PC-2" CURB. SEAL PIPE THROUGH CURB WEATHER-TIGHT.
J. ON HYDRONIC PIPING, PROVIDE MANUAL AIR VENTS AT ALL HIGH POINTS TO ALLOW BLEEDING OF AIR FROM THE SYSTEM, AND BALL VALVES WITH HOSE END DRAIN FITTINGS AT ALL LOW POINTS TO ALLOW DRAINING THE SYSTEM.
K. PRIOR TO INSTALLING EQUIPMENT/APPLIANCES, CAREFULLY CONSIDER FALL REQUIREMENTS OF CONDENSATE DRAIN PIPE. PROVIDE MINIMUM 1/8" / FOOT SLOPE. EXTEND CONDENSATE DRAIN PIPE TO AN APPROVED RECEPTOR AND TERMINATE VIA AN INDIRECT CONNECTION.
L. ALL HOLES REQUIRED THROUGH EXISTING FLOORS AND MASONRY WALLS SHALL BE CORE DRILLED.

18. DUCT MOUNTED SMOKE DETECTORS

A. DUCT MOUNTED SMOKE DETECTORS SHALL BE PROVIDED BY E.C. AND UPON DETECTING SMOKE, SHALL SHUT DOWN PROTECTED AIR SYSTEM.

19. SHOP DRAWINGS

A. SUBMIT SHOP DRAWINGS ON SCHEDULED AND NOTED EQUIPMENT AND MATERIALS. PRIOR TO SUBMITTAL, EACH SHOP DRAWING SHALL BE REVIEWED BY THE CONTRACTOR TO ASSURE THAT THE PROPOSED EQUIPMENT IS CLEARLY MARKED, HIGHLIGHTED, AND NOTED. ALL DIMENSIONS, QUANTITIES, CONNECTIONS, CAPACITATES AND ACCESSORIES SHALL BE CLEARLY SHOWN IN CONFORMANCE WITH THE CONTRACT DOCUMENTS, AND SHALL BE MARKED OR STAMPED TO CONFIRM THAT SUCH REVIEW WAS MADE AND COMPLIANCE WAS CONFIRMED. SHOP DRAWING SUBMITTED WITHOUT BEING MARKED, HIGHLIGHTED, AND NOTED WILL BE REJECTED WITHOUT REVIEW.
B. PROVIDE ADEQUATE TIME FOR SUBMITTAL REVIEW AND CORRECTIONS, IF ANY, T PREVENT CONSTRUCTION DELAY. DO NOT PERFORM ANY PORTION OF WORK WHICH REQUIRES APPROVED SUBMITTALS UNTIL THE RESPECTIVE SUBMITTALS HAVE BEEN APPROVED BY THE ENGINEER.
C. REVIEW OF SHOP DRAWINGS BY THE OWNER, OWNER'S AGENT, ARCHITECT, OR ENGINEER IS FOR GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR IS SOLELY RESPONSIBILITY FOR COMPLYING WITH ALL TERMS OF THE CONTRACT DOCUMENTS AND FOR PERFORMANCE OF ALL EQUIPMENT AND MATERIALS PURCHASED, FOR QUANTITIES, PROPER FIT, AND OTHER DIMENSIONAL REQUIREMENTS.

20. DUCTWORK

A. REFER TO KEYED NOTES FOR CLARIFICATION OF DUCT DIMENSIONS. PROVIDE ALL DUCTWORK IN STRICT ACCORDANCE WITH THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE", LATEST EDITION. U.N.O. ALL RIGID DUCTWORK SHALL BE GALVANIZED SHEET METAL. ALL EXPOSED DUCTWORK SHALL HAVE A MILL-PHOSPHATIZED FINISH FOR PAINT ADHESION. EXPOSED ROUND DUCT SHALL BE SPIRAL SEAM TYPE. NO FIBERGLASS DUCTBOARD WILL BE ALLOWED.
B. PROVIDE TURNING VANES AT ALL CHANGES IN DIRECTION.
C. UNLESS NOTED OTHERWISE, EACH DUCTED AIR DEVICE SHALL BE PROVIDED WITH A VOLUME DAMPER, WHETHER SHOWN ON THE PLANS OR PROVIDE A VOLUME DAMPER AT EACH BRANCH DUCT SERVING AN AIR DEVICE AND/OR AS SHOWN, DETAILED, AND SPECIFIED. WHERE A DUCT MOUNTED VOLUME DAMPER WOULD BE INACCESSIBLE, PROVIDE A VOLUME DAMPER IN THE AIR DEVICE GRILLE NECK OR A DAMPER WITH REMOTE CABLE CONTROL. PROVIDE EACH ROUND BRANCH DUCT TAKE-OFF FROM MAIN DUCT WITH SPIN-IN FITTING AND VOLUME BALANCING DAMPER. VOLUME DAMPERS SHALL BE YOUNG REGULATOR MODEL 5020R LOCKING QUADRANT VOLUME DAMPER WITH 2" HANDL

LOS ANGLES, CA BUILDING DEPARTMENT NOTES

ALL WORK SHALL COMPLY WITH APPLICABLE SECTIONS OF THE CALIFORNIA BUILDING CODE 2022, WITH ALL AMENDMENTS AND RULES AND REGULATIONS OF THE DEPARTMENT OF BUILDINGS TO DATE.

1. ALL HEATING AND COOLING LOADS CALCULATED PER ASHRAE/ACCA 183.
2. VENTILATION FOR ALL AREA SHALL COMPLY WITH CALIFORNIA ENERGY CODE 2022, SECTION 120.1-REQUIREMENTS FOR VENTILATION AND INDOOR AIR QUALITY.
3. MINIMUM TEMPERATURE TO BE MAINTAINED IN OCCUPIED SPACES DURING HEATING SEASON: 68 DEG. FAHRENHEIT.
4. 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.
5. TESTS OF MECHANICAL SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING SECTIONS OF THE LOS ANGELES CITY MECHANICAL CODE CMC 2022 WITH AMENDMENTS:
   A. VENTILATION SYSTEM BALANCING CMC 2022 - 402
6. THE FOLLOWING WORK ITEMS, COMPONENTS, MATERIALS, CAPACITIES, ETC. SHALL COMPLY WITH THE REFERENCED CODE OR STANDARD:
   A. STANDARDS OF HEATING - CBC 2022 WITH AMENDMENTS- 1203
   B. DUCT CONSTRUCTION AND INSTALLATION- CMC 2022 WITH AMENDMENTS - 602 & 603
   C. AIR INTAKES, EXHAUSTS AND RELIEF - CMC 2022 WITH AMENDMENTS - 407.
   D. AIR FILTERS - CMC 2022 WITH AMENDMENTS - 401 (FILTERS SHALL BE A MINIMUM OF MERV 13 AS REQUIRED BY CENC 120.1(C))
   E. MANUAL AND AUTOMATIC FIRE AND SMOKE CONTROLS FOR AIR DISTRIBUTION SYSTEMS - CMC 2022 WITH AMENDMENTS - 606
7. OPERATION AND CONTROL REQUIREMENTS FOR MINIMUM QUANTITIES OF OUTDOOR AIR. TIMES OF OCCUPANCY - THE MINIMUM RATE OF OUTDOOR AIR REQUIRED BY SECTION 120.1(C) SHALL BE SUPPLIED TO EACH SPACE AT ALL TIMES WHEN THE SPACE IS USUALLY OCCUPIED.
8. ALL MECHANICAL EQUIPMENT SHALL BE TESTED BY A CALIFORNIA CERTIFIED ACCEPTANCE TEST TECHNICIAN.
9. VENTILATION SYSTEMS SHALL BE BALANCED TO MAINTAIN THE MINIMUM VENTILATION AIRFLOW RATE AS SHOWN IN VENTILATION REQUIREMENT TABLE. THIS SYSTEM SHALL BE BALANCED BY APPROVED METHOD. CONTRACTOR TO SUBMIT THE AIR - BALANCE REPORT TO INSPECTOR.
10. PORTION OF SUPPLY-AIR AND RETURN-AIR DUCTS CONVEYING HEATED OR COOLED AIR LOCATED IN ONE OR MORE OF THE FOLLOWING SPACES SHALL BE INSULATED TO A MINIMUM INSTALLED LEVEL OF R-6:
    A. OUTDOOR; OR
    B. IN A SPACE BETWEEN THE ROOF AND AN INSULATED CEILING; OR
    C. IN A SPACE DIRECTLY UNDER A ROOF WITH FIXED VENTS OR OPENING TO THE OUTSIDE OR UNCONDITIONED SPACE; OR
    D. IN AN UNCONDITIONED CRAWLSPACE ; OR
    E. IN OTHER UNCONDITIONED SPACES.

BUILDING 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. LOS ANGELES CITY BUILDING CODE 2023 - CBC 2022 WITH AMENDMENTS
b. CALIFORNIA ENERGY CODE 2022 - CEC 2022
c. LOS ANGELES CITY MECHANICAL CODE 2023 - CMC 2022 WITH AMENDMENTS
d LOS ANGELES CITY FIRE CODE 2022 - CFC 2022 WITH AMENDMENTS
e. LOS ANGELES CITY PLUMBING CODE 2023 - CPC 2022 WITH AMENDMENTS
f. LOS ANGELES CITY ELECTRICAL CODE 2023 - CA ELC 2022 WITH AMENDMENTS

THERMOSTATIC CONTROL NOTES

120.2(A) THERMOSTATIC CONTROLS FOR EACH ZONE.

THE SUPPLY OF HEATING AND COOLING ENERGY TO EACH SPACE-CONDITIONING ZONE OR DWELLING UNIT SHALL BE CONTROLLED BY AN INDIVIDUAL THERMOSTATIC CONTROL THAT RESPONDS TO TEMPERATURE WITHIN THE ZONE AND THAT MEETS THE APPLICABLE REQUIREMENTS OF SECTION 120.2(B). AN ENERGY MANAGEMENT CONTROL SYSTEM (EMCS) MAY BE INSTALLED TO COMPLY WITH THE REQUIREMENTS OF ONE OR MORE THERMOSTATIC CONTROLS IF IT COMPLIES WITH ALL APPLICABLE REQUIREMENTS FOR EACH THERMOSTATIC CONTROL.

EXCEPTION TO SECTION 120.2(A): AN INDEPENDENT PERIMETER HEATING OR COOLING SYSTEM MAY SERVE MORE THAN ONE

ZONE WITHOUT INDIVIDUAL THERMOSTATIC CONTROLS IF:

1. ALL ZONES ARE ALSO SERVED BY AN INTERIOR COOLING SYSTEM; AND

1.1 THE PERIMETER SYSTEM IS DESIGNED SOLELY TO OFFSET ENVELOPE HEAT LOSSES OR GAINS; AND

2. THE PERIMETER SYSTEM HAS AT LEAST ONE THERMOSTATIC CONTROL FOR EACH BUILDING ORIENTATION OF 50 FEET OR

   MORE; AND

3. THE PERIMETER SYSTEM IS CONTROLLED BY AT LEAST ONE THERMOSTAT LOCATED IN ONE OF THE ZONES SERVED BY THE SYSTEM.

120.2(B) CRITERIA FOR ZONAL THERMOSTATIC CONTROLS.

THE INDIVIDUAL THERMOSTATIC CONTROLS REQUIRED BY SECTION 120.2(A) SHALL

MEET THE FOLLOWING REQUIREMENTS AS APPLICABLE:

1. WHERE USED TO CONTROL COMFORT HEATING, THE THERMOSTATIC CONTROLS SHALL BE CAPABLE OF BEING SET, LOCALLY OR REMOTELY, DOWN TO 55°F OR LOWER.
2. WHERE USED TO CONTROL COMFORT COOLING, THE THERMOSTATIC CONTROLS SHALL BE CAPABLE OF BEING SET, LOCALLY OR REMOTELY, UP TO 85°F OR HIGHER.
3. WHERE USED TO CONTROL BOTH COMFORT HEATING AND COMFORT COOLING, THE THERMOSTATIC CONTROLS SHALL MEET ITEMS 1 AND 2 AND SHALL BE CAPABLE OF PROVIDING A TEMPERATURE RANGE OR DEAD BAND OF AT LEAST 5°F WITHIN WHICH THE SUPPLY OF HEATING AND COOLING ENERGY TO THE ZONE IS SHUT OFF OR REDUCED TO A MINIMUM.

   EXCEPTION 1 TO SECTION 120.2(B)3: SYSTEMS WITH THERMOSTATS THAT REQUIRE MANUAL CHANGEOVER BETWEEN HEATING AND COOLING MODES.

   EXCEPTION 2 TO SECTION 120.2(B)3: SYSTEMS SERVING HEALTHCARE FACILITIES.
4. THERMOSTATIC CONTROLS FOR ALL SINGLE ZONE, AIR CONDITIONERS AND HEAT PUMPS SHALL COMPLY WITH THE REQUIREMENTS OF SECTIONS 110.2(C) AND 110.12(A) AND, IF EQUIPPED WITH DDC TO THE ZONE LEVEL, WITH THE AUTOMATIC DEMAND SHED CONTROLS OF SECTION 110.12(B).

   EXCEPTION 1 TO SECTION 120.2(B)4: SYSTEMS SERVING EXEMPT PROCESS LOADS THAT MUST HAVE CONSTANT TEMPERATURES TO PREVENT DEGRADATION OF MATERIALS, A PROCESS, PLANTS OR ANIMALS.

   EXCEPTION 2 TO SECTION 120.2(B)4: PACKAGE TERMINAL AIR CONDITIONERS, PACKAGE TERMINAL HEAT PUMPS, ROOM AIR CONDITIONERS AND ROOM AIR CONDITIONER HEAT PUMPS.

   EXCEPTION 3 TO SECTION 120.2(B)4: SYSTEMS SERVING HEALTHCARE FACILITIES.

120.2(D) HEAT PUMP CONTROLS.

ALL HEAT PUMPS WITH SUPPLEMENTARY ELECTRIC RESISTANCE HEATERS SHALL BE INSTALLED WITH CONTROLS THAT COMPLY WITH SECTION 110.2(B).

120.2(E) SHUT-OFF AND RESET CONTROLS FOR SPACE-CONDITIONING SYSTEMS.

EACH SPACE-CONDITIONING SYSTEM SHALL BE INSTALLED WITH CONTROLS THAT COMPLY WITH THE FOLLOWING:

1. THE CONTROL SHALL BE CAPABLE OF AUTOMATICALLY SHUTTING OFF THE SYSTEM DURING PERIODS OF NONUSE AND SHALL HAVE:

A. AN AUTOMATIC TIME SWITCH CONTROL DEVICE COMPLYING WITH SECTION 110.9 WITH AN ACCESSIBLE MANUAL OVERRIDE THAT ALLOWS OPERATION OF THE SYSTEM FOR UP TO 4 HOURS; OR

B. AN OCCUPANCY SENSOR; OR

C. A 4-HOUR TIMER THAT CAN BE MANUALLY OPERATED.

EXCEPTION TO SECTION 120.2(E)1: MECHANICAL SYSTEMS SERVING RETAIL STORES AND ASSOCIATED MALLS, RESTAURANTS, GROCERY STORES, CHURCHES AND THEATERS EQUIPPED WITH 7-DAY PROGRAMMABLE TIMERS.

2. THE CONTROL SHALL AUTOMATICALLY RESTART AND TEMPORARILY OPERATE THE SYSTEM AS REQUIRED TO MAINTAIN:

A. A SETBACK HEATING THERMOSTAT SETPOINT IF THE SYSTEM PROVIDES MECHANICAL HEATING; AND

EXCEPTION TO SECTION 120.2(E)2A: THERMOSTAT SETBACK CONTROLS ARE NOT REQUIRED IN NONRESIDENTIAL BUILDINGS IN AREAS WHERE THE WINTER MEDIAN OF EXTREMES OUTDOOR AIR TEMPERATURE DETERMINED IN ACCORDANCE WITH SECTION 140.4(B)3 IS GREATER THAN 32°F.

B. A SETUP COOLING THERMOSTAT SETPOINT IF THE SYSTEM PROVIDES MECHANICAL COOLING.

EXCEPTION TO SECTION 120.2(E)2B: THERMOSTAT SETUP CONTROLS ARE NOT REQUIRED IN NONRESIDENTIAL BUILDINGS IN AREAS WHERE THE SUMMER DESIGN DRY BULB 0.5 PERCENT TEMPERATURE DETERMINED IN ACCORDANCE WITH SECTION 140.4(B)3 IS LESS THAN 100°F.

3. OCCUPANT SENSING ZONE CONTROLS. WHERE THE SYSTEM PROVIDING SPACE CONDITIONING ALSO PROVIDES THE VENTILATION REQUIRED BY SECTION 120.1 AND INCLUDES OCCUPANT SENSOR VENTILATION CONTROL AS SPECIFIED IN SECTION 120.1(D)5, THE OCCUPANT SENSING ZONE CONTROLS SHALL ADDITIONALLY COMPLY WITH THE FOLLOWING:

A. IN 5 MINUTES OR LESS AFTER ENTERING OCCUPIED-STANDBY MODE AS DESCRIBED IN SECTION 120.1(D).

i. AUTOMATICALLY SET UP THE OPERATING COOLING TEMPERATURE SET POINT BY 2°F OR MORE AND SET BACK THE OPERATING HEATING TEMPERATURE SET POINT BY 2°F OR MORE; OR

ii. FOR MULTIPLE ZONE SYSTEMS WITH DIRECT DIGITAL CONTROLS (DDC) TO THE ZONE LEVEL, SETUP THE OPERATING COOLING TEMPERATURE SETPOINT BY 0.5°F OR MORE AND SETBACK THE OPERATING HEATING TEMPERATURE SETPOINT BY 0.5°F OR MORE.

B. IN 5 MINUTES OR LESS AFTER ENTERING OCCUPIED-STANDBY MODE, MECHANICAL VENTILATION TO THE ZONE SHALL REMAIN OFF WHENEVER THE SPACE TEMPERATURE IS BETWEEN THE ACTIVE HEATING AND COOLING SETPOINTS.

EXCEPTION 1 TO SECTIONS 120.2(E)1, 2, 3: WHERE IT CAN BE DEMONSTRATED TO THE SATISFACTION OF THE ENFORCING AGENCY THAT THE SYSTEM SERVES AN AREA THAT MUST OPERATE CONTINUOUSLY.

EXCEPTION 2 TO SECTIONS 120.2(E)1, 2, 3: SYSTEMS WITH FULL LOAD DEMANDS OF 2 KW OR LESS, IF THEY HAVE A READILY ACCESSIBLE MANUAL SHUT-OFF SWITCH.

EXCEPTION 3 TO SECTIONS 120.2(E) 1 AND 2: SYSTEMS SERVING HOTEL/MOTEL GUEST ROOMS, IF THEY HAVE A READILY ACCESSIBLE MANUAL SHUT-OFF SWITCH.

120.2(G) ISOLATION AREA DEVICES.

4. EACH SPACE-CONDITIONING SYSTEM SERVING MULTIPLE ZONES WITH A COMBINED CONDITIONED FLOOR AREA OF MORE THAN 25,000 SQUARE FEET SHALL BE DESIGNED, INSTALLED, AND CONTROLLED TO SERVE ISOLATION AREAS.
1. EACH ZONE, OR ANY COMBINATION OF ZONES NOT EXCEEDING 25,000 SQUARE FEET, SHALL BE A SEPARATE ISOLATION AREA.
2. EACH ISOLATION AREA SHALL BE PROVIDED WITH ISOLATION DEVICES, SUCH AS VALVES OR DAMPERS, THAT ALLOW THE SUPPLY OF HEATING OR COOLING TO BE REDUCED OR SHUT OFF INDEPENDENTLY OF OTHER ISOLATION AREAS.
3. EACH ISOLATION AREA SHALL BE CONTROLLED BY A DEVICE MEETING THE REQUIREMENTS OF SECTION 120.2(E)1.
   EXCEPTION TO SECTION 120.2(G): ZONES DESIGNED TO BE CONDITIONED CONTINUOUSLY.

120.2(H) AUTOMATIC DEMAND SHED CONTROLS.
SEE SECTION 110.12 FOR REQUIREMENTS FOR AUTOMATIC DEMAND SHED CONTROLS.

120.2(K) OPTIMUM START/STOP CONTROLS.
SPACE CONDITIONING SYSTEMS WITH DDC TO THE ZONE LEVEL SHALL HAVE OPTIMUM START/STOP CONTROLS. THE CONTROL ALGORITHM SHALL, AS A MINIMUM, BE A FUNCTION OF THE DIFFERENCE BETWEEN SPACE TEMPERATURE AND OCCUPIED SETPOINT, THE OUTDOOR AIR TEMPERATURE, AND THE AMOUNT OF TIME PRIOR TO SCHEDULED OCCUPANCY. MASS RADIANT FLOOR SLAB SYSTEMS SHALL INCORPORATE FLOOR TEMPERATURE ONTO THE OPTIMUM START ALGORITHM.
EXCEPTION TO SECTION 120.2(K): SYSTEMS THAT MUST OPERATE CONTINUOUSLY.

120.2(F) DAMPERS FOR AIR SUPPLY AND EXHAUST EQUIPMENT.
OUTDOOR AIR SUPPLY AND EXHAUST EQUIPMENT SHALL BE INSTALLED WITH DAMPERS THAT AUTOMATICALLY CLOSE UPON FAN SHUTDOWN.
EXCEPTION 1 TO SECTION 120.2(F): EQUIPMENT THAT SERVES AN AREA THAT MUST OPERATE CONTINUOUSLY.
EXCEPTION 2 TO SECTION 120.2(F): GRAVITY AND OTHER NONELECTRICAL EQUIPMENT THAT HAS READILY ACCESSIBLE MANUAL DAMPER CONTROLS.
EXCEPTION 3 TO SECTION 120.2(F): AT COMBUSTION AIR INTAKES AND SHAFT VENTS.
EXCEPTION 4 TO SECTION 120.2(F): WHERE PROHIBITED BY OTHER PROVISIONS OF LAW.

NY Engineers
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DATES

RELEASE:
P.M. UPDATES:
SUBMITTAL DATE:
1: APR. 10, 2025
2:
3:
BID:
CONSTRUCTION:

REVISIONS

△	03/25/25-CHECK SET
△	04/22/25-PERMIT SET
△	
△	
△	
△	

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PROFFESSIONAL SEAL

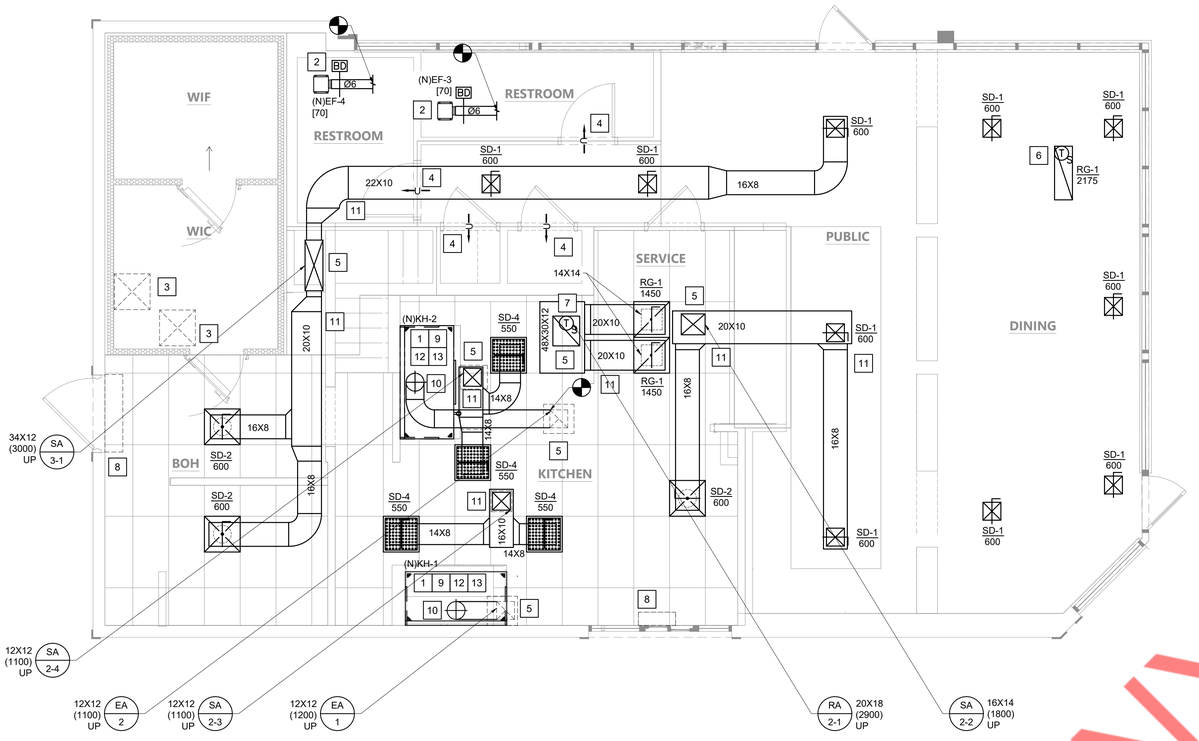
SITE INFORMATION

MK TYPE: MK2X
JIB #: 327
ADDRESS:
13648 VAN NUYS BLVD
PACOIMA, CA
91331

DRAWN BY: NYE
PROJECT #: 12079-24
SCALE:

MECHANICAL SPECIFICATIONS
(2 OF 2)

M0.2



MECHANICAL FLOOR PLAN - 1ST FLOOR

1/4" = 1'-0"

KEYED NOTES:

1. PROVIDE NEW KITCHEN HOODS (N)KH-1 & (N)KH-2 AND INSTALL AS PER MANUFACTURER'S INSTRUCTIONS. INSTALL STEEL WRAPPER AT TOP PERIMETER OF HOOD TO ABOVE T-BAR CEILING. SUPPORT HOOD AND DUCT PER KITCHEN HOOD MANUFACTURER'S INSTRUCTIONS. REFER TO HOOD SPECIFICATION AND DETAIL SHEET FOR ADDITIONAL INFORMATION.
2. PROVIDE NEW CEILING MOUNTED EXHAUST FAN WITH GRAVITY DAMPER & CONNECT TO EXISTING DUCTWORK FROM THE NEW CONNECTION POINT MARKED. COORDINATE EXACT LOCATION, DISTANCE, & CONNECTION POINT IN FIELD. ENSURE TERMINATION OF THE EXHAUST DUCT AT ROOF PROVIDED WITH GOOSENECK AND INSECT SCREEN AND MINIMUM 10' AWAY FROM ANY FRESH AIR INTAKE.
3. DEMOLISH AND SCRAP OUT THE EXISTING SUPPLY AIR DIFFUSER AND CLOSE THE ROOF OPENING IN SAME KIND. COORDINATE WITH ARCHITECT/OWNER FOR ON FINAL REQUIREMENT. ANY DISCREPANCIES MUST BE IMMEDIATELY REPORTED TO THE ARCHITECT/EOR.
4. PROVIDE 1" DOOR UNDERCUT FOR AIR TRANSFER.
5. CONTRACTOR TO RE-USE THE VERTICAL EXHAUST GREASE DUCT AS MARKED, EXTEND/MODIFY AS REQUIRED, VERIFY THE EXISTING SHAFT SIZES, SHAFT LENGTHS AND SHAFT CONDITIONS IN FIELD PRIOR BIDDING AND DISCREPANCIES MUST BE IMMEDIATELY REPORTED TO THE ARCHITECT/EOR.
6. PROVIDE REMOTE TEMP./HUMIDITY SENSOR MOUNTED IN RETURN DUCT AND WIRE BACK TO T-STAT.
7. EXISTING REMOTE TEMP./HUMIDITY SENSOR FOR (E)RTU-2 TO BE REUSED, CLEAN AND REFURBISH IT LIKE NEW CONDITION, REPAIR AS/IF REQUIRED AND REPLACE IN KINDS IF DAMAGED.
8. EXISTING AIR CURTAINS WITH ALL ASSOCIATED SUPPORTS AND CONTROLS TO REMAIN. CLEAN AND REFURBISH LIKE NEW CONDITION. REPAIR AS/IF REQUIRED. REPLACE IN KINDS IF DAMAGED.
9. CONTRACTOR TO INSTALL DOUBLE WALL WITH 2-LAYERS REDUCED CLEARANCE AND STAINLESS STEEL OUTER SHELL PER CAPTIVEAIRE KITCHEN HOOD MANUFACTURER RECOMMENDATION. REFER TO HOOD SPECIFICATION AND DETAILS FOR ADDITIONAL INFORMATION. SUPPORT NEW EXHAUST DUCTWORK FROM EXISTING STRUCTURE USING NONCOMBUSTIBLE MATERIAL SECURELY ATTACHED TO THE EXISTING STRUCTURE. BOLTS, SCREWS, RIVETS AND OTHER MECHANICAL FASTENERS SHALL NOT PENETRATE EXHAUST DUCT WALLS. INSTALLED IN ACCORDANCE WITH THE DISTRIBUTOR'S PUBLISHED INSTALLATION INSTRUCTIONS.
10. WRAP KITCHEN EXHAUST DUCTWORK WITH TWO-LAYER OF 3M FIRE BARRIER DUCT WRAP 615+ AS REQUIRED TO ACHIEVE 2-HOUR FIRE RATING AND ALLOW 0" TO COMBUSTIBLE MATERIALS PER THE CURRENT CALIFORNIA MECHANICAL CODE. SUPPORT FROM EXISTING ROOF USING NONCOMBUSTIBLE MATERIAL SECURELY ATTACHED TO THE EXISTING STRUCTURE. BOLTS, SCREWS, RIVERTS AND OTHER MECHANICAL FASTENERS SHALL NOT PENETRATE EXHAUST DUCT WALLS. INSTALLED IN ACCORDANCE WITH THE DISTRIBUTOR'S PUBLISHED INSTALLATION INSTRUCTIONS.
11. CONTRACTOR TO FIELD VERIFY SPACE AVAILABLE FOR ALL THE HORIZONTAL DUCTWORK ABOVE CEILING FOR DUCT ROUTING BEFORE BID, MODIFY AS/IF REQUIRED BASED ON FIELD CONDITION. REPORT ANY DISCREPANCIES TO ARCHITECT/EOR IMMEDIATELY.
12. PROVIDE AND INSTALL EMERGENCY MANUAL ACTIVATION DEVICE FOR HOOD. AT LEAST ONE MANUAL ACTUATION DEVICE SHALL BE LOCATED IN A MEANS OF EGRESS OR AT A LOCATION ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION. THE MANUAL ACTUATION DEVICE SHALL CLEARLY IDENTIFY THE HAZARD PROTECTED. AN AUTOMATIC SPRINKLER SYSTEM SHALL NOT REQUIRE A METHOD OF MANUAL ACTUATION. [NFPA 96:10.5.1 — 10.5.2]
13. HOOD CONTROL PANEL AND FIRE SUPPRESSION SYSTEM FURNISHED BY HOOD SUPPLIER AND INSTALLED ON WALL BY HVAC CONTRACTOR. HOOD FIRE SUPPRESSION SYSTEM FURNISHED AND INSTALLED BY LICENSED FIRE SUPPRESSION CONTRACTOR. F.S. CONTRACTOR TO SUBMIT PLAN AND OBTAIN APPROVAL UNDER SEPARATE PERMIT APPLICATION PRIOR TO COMMENCEMENT OF WORK. CONTRACTOR TO COORDINATE & CONFIRM FINAL LOCATION OF CONTROL & FIRE SUPPRESSION PANEL ON FIELD.

KITCHEN EXHAUST SYSTEM NOTES

1. PROVIDE CLEAN OUT AT ALL ELBOWS AND BOTTOM OF RISER AND EVERY 12 FEET HORIZONTAL KITCHEN EXHAUST DUCT.
2. COMMERCIAL KITCHEN GREASE DUCTS SHALL BE DESIGNED FOR THE TYPE OF COOKING APPLIANCE AND HOOD SERVED.
3. JOINTS, SEAMS AND PENETRATIONS OF GREASE DUCTS SHALL BE MADE WITH A CONTINUOUS LIQUID TIGHT WELD OR BRAZE MADE IN THE EXTERNAL SURFACE IF THE DUCT SYSTEMS.
4. DUCT TO EXHAUST FAN CONNECTIONS SHALL BE FLANGED, GASKETED AND BOLTED TO THE INLET OF THE FAN. APPROVED FLEXIBLE CONNECTIONS MAY BE PROVIDED.
5. A VIBRATION ISOLATION CONNECTOR FOR CONNECTING A DUCT TO A FAN SHALL CONSIST OF NON-COMBUSTIBLE PACKING IN A METAL SLEEVE JOINT OF APPROVED DESIGN OR SHALL BE A COATED-FABRIC FLEXIBLE DUCT CONNECTOR LISTED AND LABELED FOR THE APPLICATION. VIBRATION ISOLATION CONNECTORS SHALL BE INSTALLED ONLY AT THE CONNECTION OF A DUCT TO A FAN INLET OR OUTLET.
   PRIOR TO THE USE OR CONCEALMENT OF ANY PORTION OF A GREASE DUCT SYSTEM, A LEAKAGE TEST SHALL BE PERFORMED. DUCT SHALL BE CONSIDERED TO BE CONCEALED WHERE INSTALLED IN SHAFTS OR COVERED BY COATINGS OR WRAPS THAT PREVENT THE DUCTWORK FROM VISUALLY INSPECTED ON ALL SIDE. THE DUCT INSTALLER SHALL BE RESPONSIBLE FOR PROVIDING THE NECESSARY EQUIPMENT AND PERFORMING THE GREASE DUCT LEAKAGE TEST. THE DUCT LEAKAGE TEST SHALL BE PERFORMED FOR ALL THE DUCT SYSTEMS, INCLUDING THE DUCT-TO-DUCT CONNECTION. THE DUCTWORK SHALL BE PERMITTED TO BE TESTED IN SECTIONS, PROVIDED THAT EVERY JOINT IS TESTED (IF TEST IS FAILED, CONTRACTOR TO PROVIDE NEW KITCHEN EXHAUST DUCT).
7. PROVIDE SMOKE TEST TO PROOF TIGHTNESS OF THE GREASE DUCT.
8. GREASE DUCT BRACING AND SUPPORTS SHALL BE OF NON-COMBUSTIBLE MATERIAL SECURELY ATTACHED TO THE STRUCTURE AND DESIGNED TO CARRY GRAVITY AND SEISMIC LADS WITHIN THE LIMITATIONS OF THE INDIANA BUILDING CODE. BOLTS, SCREWS, RIVETS AND OTHER MECHANICAL FASTENERS SHALL NOT PENETRATE DUCT WALLS.
9. A RESIDUE TRAP SHALL BE PROVIDED AT THE BASE OF EACH VERTICAL RISER WITH PROVISION FOR CLEANOUT IN ACCORDANCE WITH NFPA 96.
10. CLEANOUT OPENINGS SHALL BE PROVIDED AT EVERY CHANGE IN DIRECTION, NOT MORE THAN 10 FEET FROM CHANGES IN DIRECTION GREATER THAN 45 DEGREES.
11. CLEANOUT OPENINGS SHALL BE EQUIPPED WITH TIGHT-FITTING DOORS CONSTRUCTED OF STEEL HAVING A THICKNESS NOT LESS THAN THAT REQUIRED FOR THE DUCT. DOORS SHALL BE EQUIPPED WITH A SUBSTANTIAL METHOD OF LATCHING, SUFFICIENT TO HOLD THE DOOR TIGHTLY CLOSED. DOOR ASSEMBLIES SHALL HAVE A GASKET OR SEALANT THAT IS NON-COMBUSTIBLE AND LIQUID TIGHT AND SHALL NOT HAVE FASTENERS THAT PENETRATED THE DUCT.
12. THE CLEANOUTS FOR HORIZONTAL GREASE DUCT SHALL BE LOCATED ON THE SIDE OF THE DUCT WITH THE OPENING NOT LESS THAN 1.5" ABOVE THE BOTTOM OF THE DUCT AND NOT LESS THAN 1" BELOW THE TOP OF THE DUCT.
13. A GREASE DUCT SERVING THE TYPE-I HOOD THAT PENETRATED A CEILING, WALL OR FLOOR SHALL BE ENCLOSED FROM THE FIRE POINT OF PENETRATION TO THE OUTLET TERMINAL. DUCT ENCLOSURES SHALL HAVE A FIRE-RESISTANCE RATING NOT LESS THAN THAT OF THE FIRE-RESISTANCE RATED ASSEMBLY PENETRATED BUT NEED NOT EXCEED 2 HOURS.
14. KITCHEN EXHAUST OUTLETS SHALL BE LOCATED NOT LESS THAN 10 FEET HORIZONTALLY FROM PARTS OF THE SAME OR CONTIGUOUS BUILDINGS, ADJACENT BUILDINGS AND ADJACENT PROPERTY LINE. THIS EXHAUST OUTLETS SHALL BE LOCATED NOT LESS THAN 10 FEET HORIZONTALLY FROM AND NOT LESS THAN 3 FEET ABOVE AIR INTAKE OPENINGS INTO ANY BUILDING AND 40 INCH ABOVE THE ROOF.
15. PROVIDE TYPE-I EXHAUST DUCT FOR HOOD-1 EXHAUST, IN COMPLIANCE WITH CMC 2022.
16. PROVIDE UL LISTED 2 LAYERS OF 1.5" THICK FIRE WARP, TESTED IN ACCORDANCE WITH ASTM E2336 FOR TYPE-I EXHAUST DUCTS. FIRE WRAP TO PROVIDE 2-HR ENCLOSURE. THROUGH PENETRATION FIRE STOP SYSTEMS ARE TO BE TESTED IN ACCORDANCE WITH ASTM E 814 (UL1479). FOIL COVERING TO BE PROVIDED ABOVE INSULATION.
17. A CLEANOUT OPENING SHALL BE LOCATED AT THE BASE OF THE SHAFT TO PROVIDE ACCESS TO THE DUCT TO ALLOW FOR CLEANING AND INSPECTION. THE FINISHED OPENING SHALL BE NOT LESS THAN 12 INCHES BY 12 INCHES.

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. EACH UNIT GENERATING CONDENSATE SHALL BE PROVIDED WITH A CONDENSATE DRAIN WITH EXTERNAL, 4" DEEP P-TRAP. EXTEND DRAIN TO A ROOF MOUNTED SPLASH PAD OR AN ACCEPTABLE LOCATION REQUIRED BY CODE.
7. DUCT SIZES SHOWN ON DRAWINGS ARE CLEAR INSIDE DIMENSION.
8. ALL METAL DUCT AND AIR DISTRIBUTION DEVICES SHALL BE INSULATED PER LOCAL CODE WITH FIRE AND SMOKE RATING 25-50).
9. ALL DUCTWORK SHALL BE FABRICATED, INSTALLED, SEALED, AND INSULATED PER THE LATEST ISSUE OF SMACNA LOW-VELOCITY DUCT MANUAL.
10. ALL FLEX DUCT SHALL BE UL LISTED, INSULATED PER LOCAL CODE, CLASSIFIED AS A CLASS 1 AIR DUCT. MAXIMUM LENGTH IS TO BE 5'-0" PER DROP.
11. THE CONTRACTOR SHALL COORDINATE DIFFUSER LOCATIONS ON SITE WITH THE MOST RECENT REFLECTED CEILING PLAN.
12. 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.
13. PROVIDE AND INSTALL SMOKE DUCT DETECTORS IN EACH AIR CONDITIONING UNIT SUPPLY DUCT GREATER THAN 2000 CFM. CONTRACTOR SHALL PROVIDE INTERCONNECTION AND WIRE TO THE FIRE ALARM CONTROL PANEL IF REQUIRED. DUCT DETECTORS SHALL HAVE REMOTE TEST STATIONS LOCATED IN THE OFFICE NEAR THE RESPECTIVE THERMOSTATS.
14. THE ENTIRE INSTALLATION SHALL BE GUARANTEED FREE OF DEFECTS AND CONTRACTOR SHALL REPAIR AND / OR REPLACE ANY DEFECTIVE MATERIALS OR EQUIPMENT AT NO COST TO THE OWNER FOR A MINIMUM PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE BY ARCHITECT OR ENGINEER.
15. ALL WORK SHALL BE SUBJECT TO THE ACCEPTANCE AND APPROVAL OF THE ARCHITECT AND OWNER. THE ARCHITECT SHALL BE NOTIFIED OF ANY AND ALL DISCREPANCIES BETWEEN FIELD CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK. FAILURE OF PROPER NOTIFICATION DOES NOT RELIEVE THE CONTRACTOR. THE CONTRACTOR SHALL CORRECT ANY AND ALL WORK ARISING FROM SUCH FAILURE TO COORDINATE DISCREPANCIES TO THE SATISFACTION OF THE ARCHITECT WITHOUT ADDITIONAL COST TO THE OWNER.
16. THE CONTRACTOR SHALL, UPON COMPLETION OF PROJECT, PERFORM A COMPLETE TEST AND BALANCE OF ALL EQUIPMENT. PROVIDE A WRITTEN REPORT TO THE ARCHITECT. ALL CAPACITIES MUST BE SET TO WITHIN ±10% OF AMOUNTS INDICATED ON THE FLOOR PLAN AND SCHEDULES.
17. 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/ROOFS.
18. CONTRACTOR TO PROVIDE CORD OPERATED DAMPERS IN INACCESSIBLE CEILINGS.
19. PRIOR TO CONSTRUCTION TO THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING MECHANICAL EQUIPMENT THAT SERVING THIS AND NEARBY ADJACENT SPACES AND IS TO REMAIN. CONTRACTOR SHALL VERIFY THE PROPOSED LOCATIONS OF NEW MECHANICAL EQUIPMENT AND DETERMINE IF ANY CONFLICT (CLEARANCE ETC.) EXIST BETWEEN EQUIPMENT AND NEWLY INSTALLED EQUIPMENT. CONTRACTOR SHALL NOTIFY THE ENGINEER IF EQUIPMENT CANNOT BE SUBSTANTIALLY INSTALLED AND LOCATED AS INDICATED BY THESE DRAWINGS.
20. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO THE BUILDING STRUCTURE OR BUILDING UTILITIES CAUSED AS RESULT OF THE CONTRACTOR'S WORK UNDER THIS CONTRACT. IT IS RECOMMENDED THAT MASONRY/CONCRETE FLOORS/WALL BE X-RAYED PRIOR TO ANY PENETRATION.

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3. THE CONTRACTOR SHALL FIELD-VERIFY ALL EXISTING CONDITIONS, INCLUDING THE LOCATIONS OF SHAFTS, CEILING CUTOUTS, AND THE AVAILABLE FALSE CEILING HEIGHT, TO ENSURE ADEQUATE SPACE FOR DUCTWORK AS SHOWN/MARKED ON THE PLAN. THIS VERIFICATION MUST BE COMPLETED BEFORE BIDDING OR AWARDING THE CONTRACT.
4. BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE PLANS AND SPECIFICATIONS NOT WITHSTANDING. THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

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CONSTRUCTION:

REVISIONS

- 03/25/25-CHECK SET
- 04/22/25-PERMIT SET

CONSULTANT

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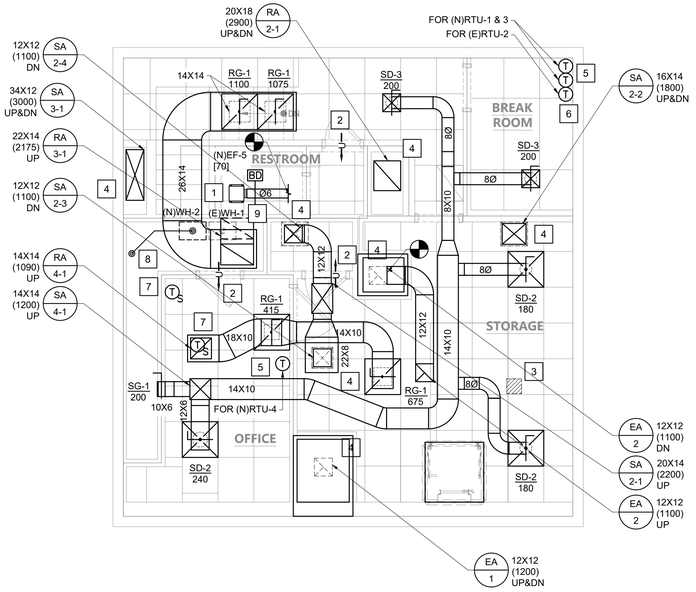
PROFFESSIONAL SEAL

SITE INFORMATION

MK TYPE: MK2X
JIB #: 327
ADDRESS:
13648 VAN NUYS BLVD
PACOIMA, CA
91331
DRAWN BY: NYE
PROJECT #: 12079-24
SCALE:

MECHANICAL FLOOR PLAN - 1ST FLOOR

M1.0



MECHANICAL FLOOR PLAN - 2ND FLOOR

1/4" = 1'-0"

KEYED NOTES:

1. PROVIDE NEW CEILING MOUNTED EXHAUST FAN WITH GRAVITY DAMPER & CONNECT TO EXISTING DUCTWORK. COORDINATE EXACT LOCATION, DISTANCE, & CONNECTION POINT IN FIELD. ENSURE TERMINATION OF THE EXHAUST DUCT AT ROOF PROVIDED WITH GOOSENECK AND INSECT SCREEN AND MINIMUM 10' AWAY FROM ANY FRESH AIR INTAKE.
2. PROVIDE 1" DOOR UNDERCUT FOR AIR TRANSFER.
3. DEMOLISH THE EXISTING SUPPLY, RETURN, AND EXHAUST AIR DUCTS RUNNING THROUGH THE SHAFTS IF THEY ARE NOT IN USE/CANNOT BE REUSED. PATCH AND SEAL THE SHAFT TO MATCH THE EXISTING CONDITION. COORDINATE WITH THE ARCHITECT/OWNER/LANDLORD FOR FINAL REQUIREMENTS.
4. CONTRACTOR TO VERIFY THE EXISTING SHAFT SIZES (AS MARKED ON THE PLAN), SHAFT LENGTHS AND CONDITIONS IN FIELD PRIOR BIDDING AND DISCREPANCIES MUST BE IMMEDIATELY REPORTED TO THE ARCHITECT/EOR.
5. LOCATION OF DIGITAL THERMOSTAT CONTROL. INSTALL A UNIT COMPATIBLE AND WIRE NEW 7-DAY PROGRAMMABLE THERMOSTAT. COORDINATE EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN. PROVIDE LOCKABLE COVER.
6. REUSE THE EXISTING THERMOSTAT WITH ASSOCIATED CONTROL FOR (E)RTU-2. CLEAN AND REFURBISH LIKE NEW CONDITION, REPAIR AS/IF REQUIRED AND REPLACE WITH SAME KIND IF DAMAGED. COORDINATE EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN. IN ABSENCE OF EXISTING ONE PROVIDE A NEW LOCKABLE COVER.
7. PROVIDE REMOTE TEMP./HUMIDITY SENSOR MOUNTED IN RETURN DUCT AND WIRE BACK TO T-STAT.
8. PROVIDE Ø2"/Ø4" CONCENTRIC VENT LINE FOR COMBUSTION AIR INTAKE / EXHAUST FROM GAS FIRED EQUIPMENT TO ROOF. ROUTE PIPING FROM RESPECTIVE UNIT LOCATION TO THE ROOF USING ROOF TERMINATION KIT. ROUTE THE VENT MINIMAL AMOUNT OF BENDS AND MINIMUM LENGTH AS REQUIRED BY RESPECTIVE UNIT MANUFACTURER INSTRUCTION. VENT SHALL BE TERMINATED 10' AWAY FROM AND 3' ABOVE ANY MECHANICAL FORCED INTAKE AIR THROUGH RTU/FAN.
9. EXISTING VENT FOR WATER HEATER (E)WH-1 TO REMAIN. VERIFY EXACT LOCATION AND ROUTING OF THE VENT IN FIELD. CONTRACTOR TO MODIFY THE VENT AS/IF REQUIRED PER RE-ROOFING AND STRUCTURE WITH RESPECTIVE CONTRACTORS. CONTRACTOR SHALL ENSURE THAT VENT IS TERMINATED 10' AWAY FROM AND 3' ABOVE ANY MECHANICAL FORCED INTAKE AIR THROUGH RTU/FAN.

GENERAL NOTES:

1. ALL WORK SHALL COMPLY WITH ALL LOCAL AND STATE CODES AND AUTHORITIES HAVING JURISDICTION.
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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. EACH UNIT GENERATING CONDENSATE SHALL BE PROVIDED WITH A CONDENSATE DRAIN WITH EXTERNAL, 4" DEEP P-TRAP. EXTEND DRAIN TO A ROOF MOUNTED SPLASH PAD OR AN ACCEPTABLE LOCATION REQUIRED BY CODE.
7. DUCT SIZES SHOWN ON DRAWINGS ARE CLEAR INSIDE DIMENSION.
8. ALL METAL DUCT AND AIR DISTRIBUTION DEVICES SHALL BE INSULATED PER LOCAL CODE WITH FIRE AND SMOKE RATING 25-50).
9. ALL DUCTWORK SHALL BE FABRICATED, INSTALLED, SEALED, AND INSULATED PER THE LATEST ISSUE OF SMACNA LOW-VELOCITY DUCT MANUAL.
10. ALL FLEX DUCT SHALL BE UL LISTED, INSULATED PER LOCAL CODE, CLASSIFIED AS A CLASS 1 AIR DUCT. MAXIMUM LENGTH IS TO BE 5'-0" PER DROP.
11. THE CONTRACTOR SHALL COORDINATE DIFFUSER LOCATIONS ON SITE WITH THE MOST RECENT REFLECTED CEILING PLAN.
12. 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.
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PROFFESSIONAL SEAL

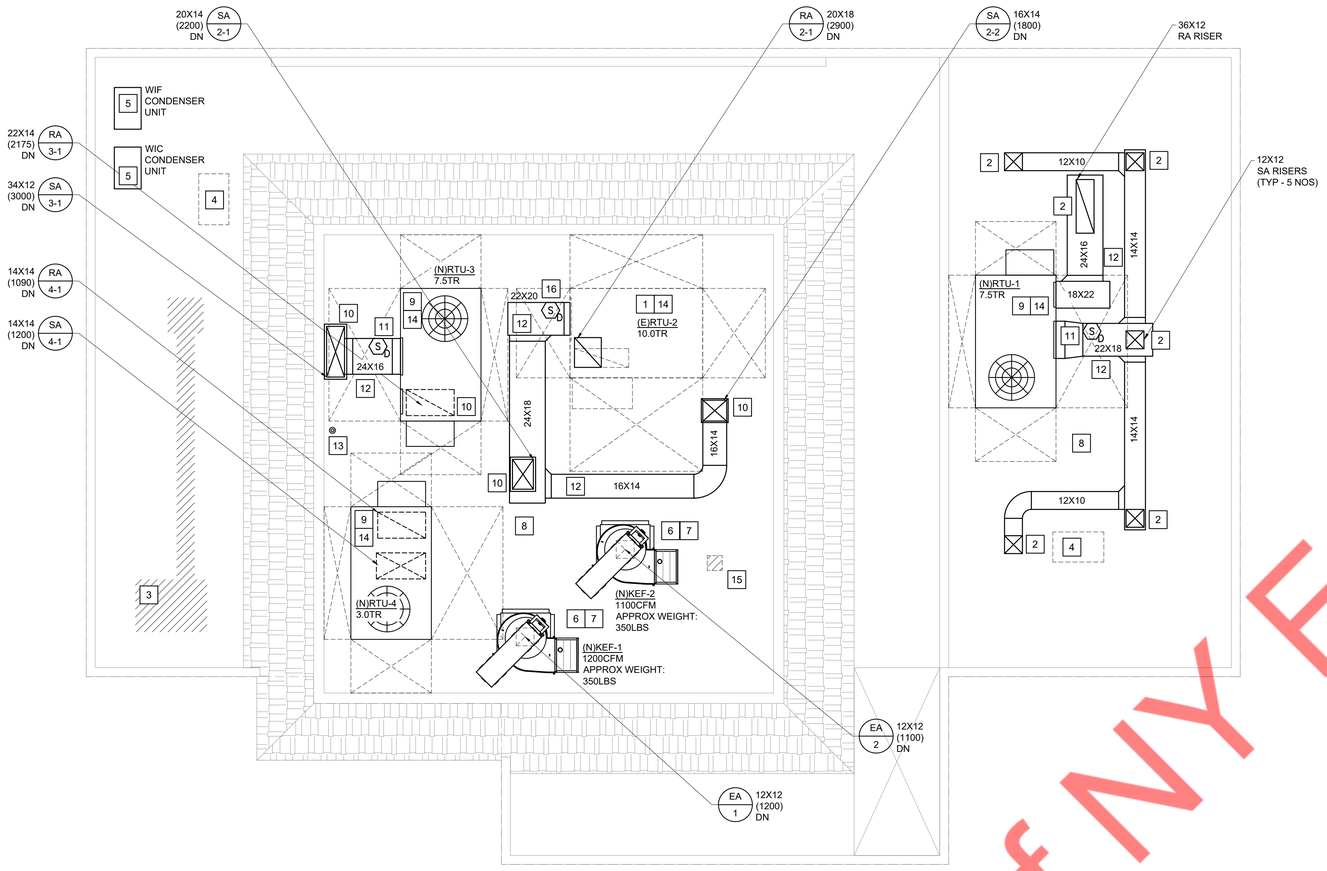
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DRAWN BY: NYE
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SCALE:

MECHANICAL FLOOR PLAN - 2ND FLOOR

M2.0



MECHANICAL FLOOR PLAN - ROOF

1/4" = 1'-0"

KEYED NOTES:

1. EXISTING RTU (E)RTU-2 TO BE RE-USED ON A NEW LOCATION AS SHOWN ON PLAN ALONG WITH ALL ASSOCIATED SUPPORTS, ROOF CURB, CONDENSATE DRAIN PIPING, CONTROLS AND ACCESSORIES. CLEAN AND REFURBISH TO "LIKE-NEW" CONDITION. REPAIR/REPLACE ANY ACCESSORIES AS REQUIRED TO PROVIDE A FULLY FUNCTIONING. PROVIDE NEW DUCTWORK AS PER THE APPROVED PLAN. VERIFY IN FIELD PRIOR TO BID. BALANCE OUTSIDE AIR OF EACH RTU TO MATCH TOTAL OA REQUIREMENT OF THE SPACE (REFER AIR BALANCING TABLE IN MECHANICAL SCHEDULE). NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO BID.
2. EXISTING PENETRATION FOR SUPPLY AIR DUCT RISERS 12X12 AND RETURN AIR RISER 36X12 TO REMAIN. CLEAN & REPAIR AS/IF REQUIRED. PROVIDE WATER RESISTANT SEALANT TO COVER-UP THE OPENINGS.
3. DEMOLISH AND SCRAP OUT EXISTING ROOF TOP HEAT PUMP UNIT WITH ALL ASSOCIATED DUCT WORKS AND SUPPORTD, CLOSE THE ASSOCIATED ROOF OPENING IN SAME KIND. COORDINATE THE FINAL REQUIREMENT WITH ARCHITECT/OWNER. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO BID.
4. EXISTING CONDENSING UNIT TO REMAIN ON ITS CURRENT LOCATION.
5. COORDINATE FINAL LOCATION OF WALK IN COOLER & WALK IN FREEZER CONDENSING UNIT LOCATION WITH ARCHITECT/CLIENT. INSTALLED BY OTHERS.
6. PROVIDE NEW ROOF MOUNTED KITCHEN EXHAUST FANS (N)KEF-1 & (N)KEF-2 AS SHOW ON PLAN. INSTALL IT AS PER MANUFACTURER RECOMMENDATION. COORDINATE THE FINAL LOCATION WITH SHAFT OPENING THROUGH FIRST FLOOR. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO BID.
7. KITCHEN EXHAUST SHALL BE TERMINATED A MINIMUM OF 10 FEET OF HORIZONTAL CLEARANCE FROM THE OUTLET TO ADJACENT BUILDINGS, PROPERTY LINES, AND AIR INTAKES. A MINIMUM OF 5 FEET OF HORIZONTAL CLEARANCE FROM THE OUTLET TO ANY COMBUSTIBLE STRUCTURE. A VERTICAL SEPARATION OF 3 FEET ABOVE ANY AIR INTAKES WITHIN 10 FEET (OF THE EXHAUST OUTLET AND PER GOVERNING LOCAL CODE CMC 2022 SECTION 510.9.1 ROOF TOP TERMINATIONS. PROVIDE WIND BAND ON EXHAUST FAN TO TERMINATE 3FT ABOVE MECHANICAL AIR INTAKES.
8. SCRAP EXISTING NOT USED EQUIPMENTS, SCRAP AND SEAL ANY VENT/OPENING WHICH ARE NOT USED FOR THE PROJECT. COORDINATE FINAL REQUIREMENT WITH ARCHITECT/OWNER/LANDLORD. PATCH AND SEAL ROOF IN KIND AS/IF REQUIRED.
9. CONTRACTOR TO PROVIDE NEW ROOF TOP UNIT AS LISTED IN THE MECHANICAL SCHEDULE. MODIFY THE DUCTWORK AS PER THE EXISTING SHAFT OPENINGS TO RUN TILL THE FIRST FLOOR. RE-USE THE CONDENSATE DRAIN LINES, GAS PIPING IF IN GOOD CONDITIONS OR REPAIR/REPLACE WITH THE SAME KIND. CONTRACTOR TO COORDINATE EXACT LOCATION, OVERALL UNIT OPERATING WEIGHT WITH STRUCTURAL CONTRACTOR AND ROOF OPENING WITH ROOFING CONTRACTOR.
10. CONTRACTOR TO VERIFY THE EXISTING SHAFT SIZES (AS MARKED ON THE PLAN), SHAFT LENGTHS AND CONDITIONS IN FIELD PRIOR BIDDING AND DISCREPANCIES MUST BE IMMEDIATELY REPORTED TO THE ARCHITECT/EOR.
11. CONTRACTOR TO PROVIDE NEW DUCT SMOKE DETECTOR IN MAIN SUPPLY AIR DUCTWORK AND INTEGRATE IT TO THE BUILDING FIRE ALARM SYSTEM. UPON DETECTION AUTOMATIC SHUTOFF SHALL BE ACCOMPLISHED BY INTERRUPTING THE POWER SOURCE OF THE AIR-MOVING EQUIPMENT. COORDINATE WITH RTU MANUFACTURER FOR COMPATIBLE CONTROLS AS REQUIRED.
12. ALL NEW EXTERIOR DUCTWORK SHALL BE WRAPPED WITH MINIMUM R-8 FIBROUS BOARD DUCT INSULATION, WITH WEATHER-BARRIER FINISH AN SECURED WITH MECHANICAL FASTENERS. TAPE ALL JOINTS, BREAKS AND PENETRATIONS WITH VAPOR-BARRIER TAPE. PROVIDE AND INSTALL ON OUTER JACKET OF METAL OR PLASTIC LAMINATE OVER-LAPPED AND SECURE WITH POP RIVETS. INSTALLATION SHALL BE PER SMACNA DUCT CONSTRUCTION STANDARDS AND LOCAL MECHANICAL CODE. INSTALL DUCTWORK SO AS TO SHED WATER.
13. Ø2"/Ø4" CONCENTRIC VENT LINE FOR COMBUSTION AIR INTAKE / EXHAUST FROM GAS FIRED HOT WATER HEATERS TO ROOF TERMINATION KIT. INSTALL AS PER MANUFACTURER'S INSTRUCTIONS.
14. REUSE EXISTING CONDENSATE DRAIN POINTS FOR NEW RTUS. RE-ROUTE THE DRAIN LINE AS/IF REQUIRED AFTER RE-ROOFING. COORDINATE WITH PLUMBING FOR TERMINATION, IF CONNECTION IS BEING REQUIRED AND ENSURE DRAIN IS TERMINATED AT APPROVED LOCATION AS PER LOCAL CODE.
15. DEMOLISH THE EXISTING SUPPLY, RETURN, AND EXHAUST AIR DUCTS RUNNING THROUGH THE SHAFTS IF THEY ARE NOT IN USE/CANNOT BE REUSED. PATCH AND SEAL THE SHAFT TO MATCH THE EXISTING CONDITION. COORDINATE WITH THE ARCHITECT/OWNER/LANDLORD FOR FINAL REQUIREMENTS.
16. EXISTING SMOKE DETECTOR IN SUPPLY AIR DUCT FOR (E)RTU-2 TO BE REUSED, CLEAN AND REFURBISH IT LIKE NEW CONDITION, REPAIR AS/IF REQUIRED AND REPLACE IN KINDS IF DAMAGED.

EDVC CALCULATION (ASHRAE 15-2022)

Refrigerant	R-454B			
Safety Group	A2L			
Equipment	(N) RTU-1	(N) RTU-3	(N) RTU-4	Units
Parameters	**Value**	**Value**	**Value**	
Room Floor Area	382	533	535	ft^2
Ceiling Height	7.66	9	7.75	ft
Volume of Main Occupied Space	2926.12	4797	4146.25	ft^3
Effective Dispersal Volume (Veff)	2926.12	4797	4146.25	ft^3
LFL (Lower Flammability Limit)	18.5	18.5	18.5	$lb/1000\,ft^3$
LFL (converted to lb/ft^3)	0.0185	0.0185	0.0185	lb/ft^3
Concentration Factor (CF)	0.5	0.5	0.5	(unitless)
Occupancy Factor (Focc)	1	1	1	(unitless)
EDVC (Allowable Limit)	27.06661	44.37225	38.3528125	lb
Refrigerant Charge (mrel)	8.2	8.2	12.7	lb
Compliant?	**YES**	**YES**	**YES**	

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8. ALL METAL DUCT AND AIR DISTRIBUTION DEVICES SHALL BE INSULATED PER LOCAL CODE WITH FIRE AND SMOKE RATING 25-50).
9. ALL DUCTWORK SHALL BE FABRICATED, INSTALLED, SEALED, AND INSULATED PER THE LATEST ISSUE OF SMACNA LOW-VELOCITY DUCT MANUAL.
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FIELD VERIFY ALL CONDITIONS:

1. DESIGN DRAWINGS ARE SCHEMATIC. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSPECT EXISTING FIELD CONDITIONS. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.
2. THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS COST.
3. THE CONTRACTOR SHALL FIELD-VERIFY ALL EXISTING CONDITIONS, INCLUDING THE LOCATIONS OF SHAFTS, CEILING CUTOUTS, AND THE AVAILABLE FALSE CEILING HEIGHT, TO ENSURE ADEQUATE SPACE FOR DUCTWORK AS SHOWN/MARKED ON THE PLAN. THIS VERIFICATION MUST BE COMPLETED BEFORE BIDDING OR AWARDING THE CONTRACT.
4. BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE PLANS AND SPECIFICATIONS NOT WITHSTANDING. THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

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- 04/22/25-PERMIT SET

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PROFFESSIONAL SEAL

SITE INFORMATION

MK TYPE: MK2X
JIB #: 327
ADDRESS:
13648 VAN NUYS BLVD
PACOIMA, CA
91331

DRAWN BY: NYE
PROJECT #: 12079-24
SCALE:

MECHANICAL FLOOR PLAN - ROOF

M3.0

MECHANICAL LEGEND

- NEW SHEET METAL DUCTWORK
- SUPPLY OR OUTSIDE AIR DUCT (UP & DOWN)
- RETURN AIR DUCT (UP & DOWN)
- EXHAUST AIR DUCT (UP & DOWN)
- DUCTWORK TRANSITION
- DUCTWORK TRANSITION-RECTANGULAR TO ROUND
- INCLINED RISE IN DUCTWORK
- INCLINED DROP IN DUCTWORK
- DUCT ELBOW WITH FIXED TURNING VANES
- ROUND SPIN-IN FITTING WITH DAMPER
- FLEXIBLE CONNECTOR
- FIRE DAMPER
- COMBINATION FIRE/SMOKE DAMPER
- VOLUME DAMPER
- HARD DUCTWORK
- FLEXIBLE DUCTWORK
- SUPPLY DIFFUSER, 4-WAY THROW
- SUPPLY DIFFUSER, 3-WAY THROW
- SUPPLY DIFFUSER, 2-WAY THROW
- SUPPLY DIFFUSER, 1-WAY THROW
- RETURN GRILLE
- EXHAUST GRILLE
- ROOF MOUNTED EXHAUST FAN
- CEILING MOUNTED EXHAUST FAN
- IN-LINE CABINET FAN
- ROOFTOP UNIT
- THERMOSTAT
- TEMPERATURE SENSOR
- HUMIDISTAT
- AREA SMOKE DETECTOR
- DUCT SMOKE DETECTOR
- CONNECT TO EXISTING
- AIR FLOW CFM
- AIR DEVICE TYPE (EX = Existing)
- AIR DEVICE NECK SIZE
- PLAN NOTE DESIGNATION
- REVISION DESIGNATION
- MECHANICAL EQUIPMENT DESIGNATION

MECHANICAL ABBREVIATIONS

AC	AIR CURTAIN
AFF	ABOVE FINISHED FLOOR
BHP	BRAKE HORSEPOWER
BTU	BRITISH THERMAL UNIT
BTU/HR or BTUH	BRITISH THERMAL UNIT PER HOUR
CFM	CUBIC FEET PER MINUTE
COD	CLEAN OUT DOOR
DB	DRY BULB
DTR.	DOWN THRU. ROOF
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR.
ESP	EXTERNAL STATIC PRESSURE
EXH.	EXHAUST
FPM	FEET PER MINUTE
HZ	FREQUENCY
KEF	KITCHEN EXHAUST FAN
LAT	LEAVING AIR TEMPERATURE
(L)	LINED
MC	MECHANICAL CONTRACTOR
MIN	MINIMUM
MUA	MAKE UP AIR
NC	NOISE CRITERIA
OSA	OUTSIDE AIR
PC	PLUMBING CONTRACTOR
PD	PRESSURE DROP
PSI	POUNDS PER SQUARE INCH
R/A	RETURN AIR
RH	RELATIVE HUMIDITY
RTU	ROOF TOP UNIT
S/A	SUPPLY AIR
TEF	TOILET EXHAUST FAN
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UC	UNDERCUT
UTR.	UP THRU. ROOF
WC	WATER COLUMN
WB	WET BULB
Ø	DIAMETER

NOTE: THIS PROJECT MAY NOT USE EVERY SYMBOL OR DEVICE APPEARING ON THIS LEGEND.

GAS FIRED PACKAGED ROOF TOP UNIT SCHEDULE

UNIT ID	MANUFACTURER	MODEL	NOMINAL TONS	SUPPLY FAN DATA				HEATING				COOLING DATA				ELECTRICAL DATA					EER/EER2	IEER/SEER	EXISTING UNIT WEIGHT APPROX.	NEW UNIT WEIGHT APPROX.
				TOTAL	OUTSIDE AIR	EXTERNAL STATIC	MOTOR RATING	TYPE	INPUT	OUTPUT	EFFICIENCY	TOTAL	SENSIBLE	AMBIENT	ENTERING	VOLTS	PHASE	Hz	MCA(A)	MOCP(A)				
				CFM	CFM	PRESSURE (IN. W.G.)	BHP		MBH	MBH	%	MBH	MBH	DB (˚F)	DB / WB(˚F)									
(N)RTU-1	TRANE/EQUIVALENT	YHK090A3S0***	7.5	3000	825	1.0	3.0	LOW GAS HEAT	120	97.2	81	88.3	70.7	100	80/67	208/230	3	60	43	50	12.1/-	17.7/-	1150 LBS (V.I.F)	1450 LBS.
(E)RTU-2	CARRIER (V.I.F)	48FCDM12A3A5A0A0A0 (V.I.F)	10 (V.I.F)	4000 (V.I.F)	1100	S.A.E	S.A.E	S.A.E	180 (V.I.F)	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	208/230	3	60	51 (V.I.F)	60 (V.I.F)	S.A.E	S.A.E	1250 LBS (V.I.F)	N/A
(N)RTU-3	TRANE/EQUIVALENT	YHK090A3S0***	7.5	3000	825	1.0	3.0	LOW GAS HEAT	120	97.2	81	88.3	70.7	100	80/67	208/230	3	60	43	50	12.1/-	17.7/-	N/A	1450 LBS.

NOTES FOR NEW RTU:

1. ALL EQUIPMENTS MUST BE HIGH EFFICIENT, MEETING OR EXCEEDING THE BRAND MINIMUM REQUIREMENTS.
2. PROVIDE ENTHALPY ECONOMIZER WITH BAROMETRIC RELIEF AND FDD.
3. PROVIDE 8-WIRE, 24VAC, AUTOMATIC CHANGEOVER, 2 STAGE HEAT/COOL, REMOTELY PROGRAMMABLE THERMOSTAT.
4. PROVIDE 5-MINUTE ANTI-SHORT CYCLE TIMER.
5. PROVIDE THRU THE BASE ELECTRICAL AND SINGLE POINT CONNECTION.
6. PROVIDE WITH 2" MERV 13 FILTERS.
7. PROVIDE 14" HIGH ROOF CURB, SHALL BE SHIPPED BEFORE RTU DELIVERY ON FIELD. INSTALL UNIT AS PER MANUFACTURERS RECOMMENDATIONS. COORDINATE WITH STRUCTURAL ENGINEERS FOR LOAD. USE SUITABLE SIZE ADAPTERS IF INSTALLING ON THE EXISTING LOCATION, AS/IF REQUIRED.
8. PROVIDE UNPOWERED CONVENIENCE OUTLET.
9. PROVIDE WITH FACTORY INSTALLED NON-FUSED DISCONNECT.
10. PROVIDE WITH MOTORIZED DAMPER AND OUTSIDE AIR INTAKE HOOD.
11. PROVIDE MANUFACTURER'S MOTOR AND DRIVE PACKAGE AS REQUIRED TO MEET SCHEDULED AIR CAPACITIES AND PRESSURE DROP.
12. PROVIDE WITH SUPPLY AIR SMOKE DETECTOR FOR (N)RTU-1 & (N)RTU-3.
13. PROVIDE ALL COMPRESSORS WITH 5 YEAR WARRANTY.
14. PROVIDE HOT GAS REHEAT AND ALL ASSOCIATED CONTROLS.
15. PROVIDE 1" CONDENSATE DRAIN LINE AND DISCHARGE TO NEAREST APPROVED DRAINAGE LOCATION AS PER LOCAL BUILDING REGULATIONS.
16. PROVIDE CONDENSER COIL HAIL GUARDS.
17. PROVIDE REFRIGERANT LEAK DETECTION SYSTEM AND MITIGATION REQUIREMENT PER UL SAFETY STANDARDS.

NOTES FOR EXISTING RTU:

1. S.A.E :- SAME AS EXISTING. V.I.F:- VERIFY IN FIELD.
2. EXISTING RTU WITH ALL ACCESSORIES TO BE RE-USED ON A NEW LOCATION AS SHOWN ON PLAN.
3. CONTRACTOR TO CONFIRM IF EXISTING RTU IS WORKING AT ITS 100% RATED CAPACITY.
4. CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND CONFIGURATION OF RTU ON SITE.
5. PROVIDE NEW THERMOSTAT AND TEMPERATURE SENSOR (IF REQUIRED) COMPATIBLE WITH EXSITING RTU. COORDINATE FINAL LOCATION OF T-STAT WITH ARCHITECT/OWNER.
6. CONTRACTOR TO REBALANCE OUTSIDE AIR & RETURN AIR DAMPERS ON EXISTING RTU TO MATCH VALUES MENTIONED IN THE AIR BALANCING TABLE.
7. REPLACE FILTER, AS/ IF REQUIRED. PROVIDE MERV-13 FILTER.
8. CONTRACTOR SHALL VERIFY EXACT ELECTRICAL CONNECTION WIRE SIZES, BREAKER, DISCONNECT ETC IN FIELD.

HEAT PUMP ROOF TOP UNIT SCHEDULE

UNIT ID	MANUFACTURER	MODEL	AREA SERVED	NOMINAL TONS	REFRIGERANT	SUPPLY FAN				HEAT			COOLING				ELECTRICAL					EER/EER2	SEER/SEER2	NEW UNIT WEIGHT APPROX
						TOTAL	OUTSIDE	EXTERNAL STATIC	MOTOR	TOTAL	AMBIENT	HSPF/HSPF2	TOTAL	SENSIBLE	AMBIENT	ENTERING	VOLTS	PHASE	Hz	MCA(A)	MOCP(A)			
						CFM	AIR CFM	PRESSURE(IN. W.G.)	HP	MBH	DB (˚F)	-	MBH	MBH	DB (˚F)	DB / WB(˚F)								
(N)RTU-4	TRANE/EQUIVALENT	WHK036A3S0***	SEE PLAN	3	R-454B	1200	110	1	3	27.7	37	8.5/7.2	34.3	27.8	100	80/67	208-230	3	60	25	30	13.6/12.8	16.8/16.2	550 LBS

NOTES / ACCESSORIES -

1. ALL EQUIPMENT MUST BE HIGH EFFICIENT, MEETING OR EXCEEDING THE BRANDS MINIMUM REQUIREMENTS.
2. ELECTRICAL CONNECTION TO BE SINGLE POINT AND TO BE THROUGH THE BOTTOM OF THE UNIT.
3. PROVIDE DISCONNECT SWITCH AND AN UNPOWERED GFCI RECEPTACLE.
4. CONDENSATE DRAIN WITH 2" DEEP VENTED TRAP DISCHARGE TO MOP SINK DRAIN WITH AIR GAP FITTINGS.
5. PROVIDE 8-WIRE, 24 VAC, AUTOMATIC CHANGEOVER, 2-STAGE HEAT / COOL, REMOTELY PROGRAMMABLE THERMOSTAT.
6. PRVOIDE REMOTE SENSORS AS SHOWN ON PLAN & WIRE BACK TO PROGRAMMABLE, 24 HOUR, 7 DAY, THERMOSTATS.
7. ANTI SHORT CYCLE TIMER.
8. THROWAWAY 2" FILTERS (MERV 13).
9. PROVIDE ALL COMPRESSORS WITH 5 YEAR WARRANTY.
10. VFD SUPPLY FAN.
11. PROVIDE HOT GAS REHEAT WITH ASSOCIATED CONTROLS AND SENSORS FOR DEHUMIDIFICATION CONTROL.
12. PROVIDE THE RTU WITH R-454/R-32 REFRIGERANT.
13. ENTHALPY ECONOMIZER WITH BAROMETRIC RELIEF / 25% MANUAL OUTSIDE AIR DAMPER ASSEMBLY WITH HOOD. PROVIDE FDD.
14. PROVIDE REFRIGERANT LEAK DETECTION SYSTEM AND MITIGATION REQUIREMENT PER UL SAFETY STANDARDS.
15. PROVIDE 14" HIGH ROOF CURB, SHALL BE SHIPPED BEFORE RTU DELIVERY IN FIELD. INSTALL AS PER MANUFACTURER RECOMMENDATIONS. COORDINATE WITH STRUCTURALENGINEERS FOR WEIGHT.

VENTILATION CALCULATION AS PER CALIFORNIA ENERGY CODE 2022 - TABLE 120.1-A & B

SL NO	ROOM NAME	AREA	OCCUPANCY AS PER 2022 CMC /1000SQ.FT.	OCCUPANY AS 2022 CMC	NO. OF CHAIR	FINAL OCCUPANCY AS PER ARCHITECTURAL LAYOUT	OUTDOOR AIR FLOW RATE AS PER CEC 2022 (CFM/SQ.FT)	REQUIRED OA (CFM)	PROVIDED OA (CFM)	EXHAUST RATE PER TABLE 120.1-B	EXHAUST CFM	PROVIDED EXHAUST
1	DINING	382	70	27	26	27	0.5	191		-	-	-
1	PUBLIC	374	70	27	26	27	0.5	187		-	-	-
2	RESTROOM 1F	62	0	0	0	0	0	0		-	70	70
3	RESTROOM 1F	60	0	0	0	0	0	0		-	70	70
4	SERVICE	116	20	3	4	3	0.15	17		-	-	-
5	KITCHEN	318	20	7	6	7	0.15	48		0.7	222.6	2300
6	BOH	251	0	0	0	0	0.15	38		-	-	-
7	ELEC. CLOSET	23	0	0	0	0	0.15	3	2860	-	-	-
8	STORAGE	207	0	0	0	0	0.15	31		-	-	-
9	OFFICE	91	5	1	2	1	0.15	14		-	-	-
10	BREAK ROOM	49	5	1	2	1	0.5	25		-	-	-
11	HALLWAY	111	0	0	0	0	0.15	17		-	-	-
12	STORAGE-WH	51	0	0	0	0	0.15	8		-	-	-
13	CLOSET	10	0	0	0	0	0.15	2		-	-	-
14	RESTROOM 2F	16	0	0	0	0	0	0		-	70	70
	TOTAL	**2121**	-	**66**	**66**	**66**	-	**579**	**2860**	-	**433**	**2510**

DIFFUSER AND REGISTER SCHEDULE

UNIT ID	MANUFACTURER	MODEL	SIZE	DESCRIPTION
SD-1	METALAIRE	9000-1, AL	12x12	ALUMINUM, 4-WAY MODULAR CORE SQUARE DIFFUSERS. ALUMINUM, WITH ADJUSTABLE SET OF MODULAR CORE PATTERN CONTROLLERS.
SD-2	METALAIRE	570006-AL	24x24	ALUMINUM, 2-CONE SQUARE FACE DIFFUSER WITH ROUND NECK. ALUMINUM, WITH ADJUSTABLE DISCHARGE AND RADIAL OPPOSED BLADE DAMPER.
SD-3	METALAIRE	570006-AL	12x12	ALUMINUM, 2-CONE SQUARE FACE DIFFUSER WITH ROUND NECK. ALUMINUM, WITH ADJUSTABLE DISCHARGE AND RADIAL OPPOSED BLADE DAMPER..
SD-4	METALAIRE	7000-6	24X24	ALUMINUM PERFORATED SUPPLY DIFFUSER WITH CURVED BLADE PATTERN CONTROLLER, VOLUME CONTROL OPPOSED BLADE DAMPERS.
SG-1	METALAIRE	4004	10X6	ALUMINUM DOUBLE DEFLECTION SUPPLY GRILLE, VOLUME CONTROL OPPOSED BLADE DAMPERS/COLLAR DAMPER.
RG-1	METALAIRE	RH-6	36x12	ALUMINUM RETURN GRILLE -0.667" SPACING SET AT 45 DEGREE ANGLE, VOLUME CONTROL OPPOSED BLADE DAMPERS.
RG-2	METALAIRE	RH-6	24x24	ALUMINUM RETURN GRILLE -0.667" SPACING SET AT 45 DEGREE ANGLE, VOLUME CONTROL OPPOSED BLADE DAMPERS.

NOTES:

1 MAXIMUM NOISE CRITERION RATING < 35 DBA.
2 GRILLE/DIFFUSER FINAL COLOR/FINISH SHALL BE COORDIANTED WITH THE ARCHITECT/CLEINT.
3 DIFFUSERS SHALL BE 4-WAY BLOW UNLESS OTHERWISE INDICATED ON PLANS.
4 MOUNTING FRAME TYPE SHALL BE COORD. WITH CEILING / WALL CONSTRUCTION TYPE.
5 NECK SIZE SHALL BE AS SCHEDULED.

NECK SIZES:

Up To 100 CFM	- 6" DIA
101 To 250 CFM	- 8" DIA
200 To 400 CFM	- 10" DIA
300 To 600 CFM	- 12" DIA
400 To 800 CFM	- 14" DIA
500 To 900 CFM	- 15" DIA

KITCHEN HOODS

UNIT ID	MANUFACTURER	LENGTH (FEET-INCH)	MODEL	TYPE	SERVICE	COOKING	EXHAUST			CONSTRUCTION	WEIGHT (LBS)
						TEMPERATURE (DEG F)	AIR (CFM)	COLLAR (INCH)	S.P (IN. W.G.)		
(N)KH-1	CAPTIVEAIRE	5'-8"	3650 BD-2	I	4 VAT FRYER	450	1100	12"	0.758	430 STAINLESS STEEL	300 MAX.
(N)KH-1	CAPTIVEAIRE	6'-4"	3650 BD-2	I	76" GRILLE	450	1200	12"	0.772	430 STAINLESS STEEL	300 MAX.

NOTES:

1. INSTALL HOOD AS PER MANUFACTURER RECOMMENDATION. REFER CAPTIVEAIRE HOOD DRAWINGS FOR SPSCIFICATION AND MORE DETAIL. SCHEDULE SHOWN IS FOR REFERNCE ONLY.
2. DRY CONTACT FOR HOOD FIRE SUPPRESSION SYSTEM TO BE PROVIDED AND ANSUL SYSTEM DESIGN & SUPPLY SHALL BE UNDER THIRD PARTY SCOPE.
3. CONNECT TO BUILDING MAIN FIRE ALARM PANEL FOR ALARM INITIATING SWITCH.
4. INCLUDE HOOD CONTORLLER WITH CONTROL PANEL FOR CONTROL OF HOOD EXHAUST FAN AND RTUS.

FAN SCHEDULE

UNIT ID	MANUFACTURER	MODEL	CFM	TYPE	DRIVE	FAN RPM	WEIGHT (LBS)	E.S.P. (IN. W.G.)	MOTOR HP/BHP	MOTOR VOLTS	MOTOR PHASE	INTERLOCKED WITH	NOTES / ACCESSORIES
(N)KEF-1	CAPTIVEAIRE	CASRE13DD	1100	ROOF MOUNTED	DIRECT	1708	350	1.25	1/-	115	1	(N)KH-1	1,3,4,5,6
(N)KEF-2	CAPTIVEAIRE	CASRE13DD	1200	ROOF MOUNTED	DIRECT	1752	350	1.25	1/-	115	1	(N)KH-2	1,3,4,5,6
(N)EF-3	GREENHECK	SP-LP0511-1	70	CEILING SUSPENDED	DIRECT	773	15	0.5	-/0.01	115	1	OCCUPANCY SENSOR	2,4,5,6
(N)EF-4	GREENHECK	SP-LP0511-1	70	CEILING SUSPENDED	DIRECT	773	15	0.5	-/0.01	115	1	OCCUPANCY SENSOR	2,4,5,6
(N)EF-5	GREENHECK	SP-LP0511-1	70	CEILING SUSPENDED	DIRECT	773	15	0.5	-/0.01	115	1	OCCUPANCY SENSOR	2,4,5,6

NOTES ACCESSORIES:

1. PRVOVIDE UNIT MOUNTED DISCONNECT SWITCH AND NEMA 3R RATED ENCLOUSRE FOR ALL OUTDOOR AIR FANS.
2. PROVIDE UNIT MOUNTED DISCONNECT SWITCH & SPEED CONTROL SWITCH.
3. PROVIDE MANUFACTURER RECOMMENDED ROOF CURB FOR ROOF MOUNTED FANS.
4. FANS SHALL HAVE AMCA SEAL & UL CERTIFICATIONS.
5. PROVIDE THERMAL OVERLOAD PROTECTION.
6. ALL FANS TO HAVE DIRECT DRIVE/ECM MOTORS.

AIR BALANCE TABLE

UNIT TAG	SUPPLY AIR	OUTSIDE AIR	RETURN AIR	EXHAUST AIR
(N)RTU-1	3000 CFM	825 CFM	2175 CFM	-
(E)RTU-2	4000 CFM	1100 CFM	2900 CFM	-
(N)RTU-3	3000 CFM	825 CFM	2175 CFM	-
(N)RTU-4	1200 CFM	110 CFM	1090 CFM	-
(N)KEF-1	-	-	-	1100 CFM
(N)KEF-2	-	-	-	1200 CFM
(N)EF-3	-	-	-	70 CFM
(N)EF-4	-	-	-	70 CFM
(N)EF-5	-	-	-	70 CFM
TOTAL:	11200 CFM	2860 CFM	8340 CFM	2510 CFM
BUILDING PRESSURE:			350 CFM	**POSITIVE**

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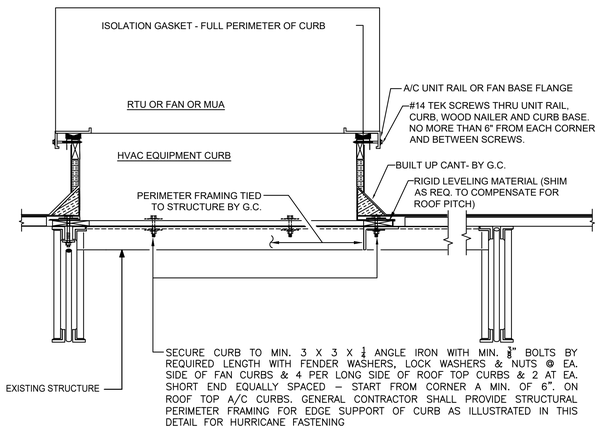
SITE INFORMATION

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JIB #: 327
ADDRESS:
13648 VAN NUYS BLVD
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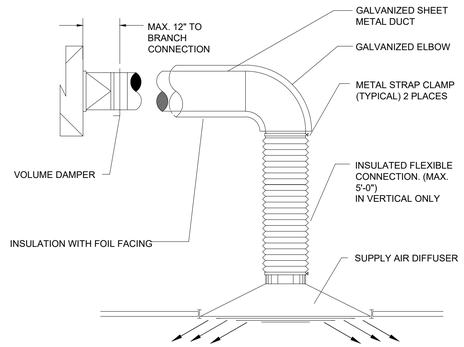
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MECHANICAL LEGENDS, ABBREVIATIONS & SCHEDULES

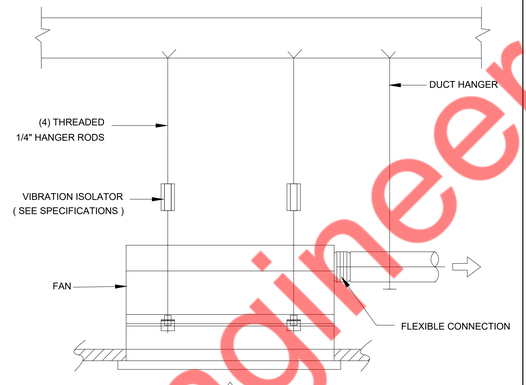
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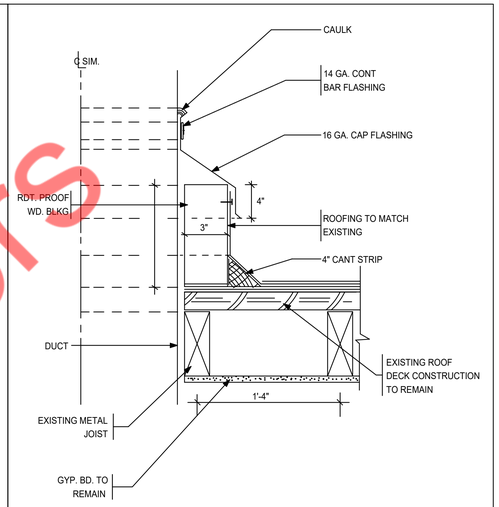
1 / M5.0 UNIT INSTALLATION ON ROOF N.T.S



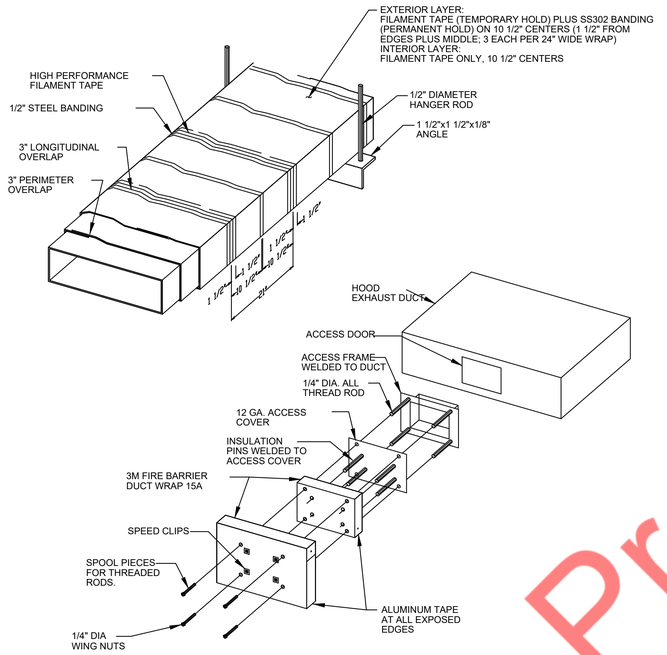
2 / M5.0 DIFFUSER DETAILS N.T.S



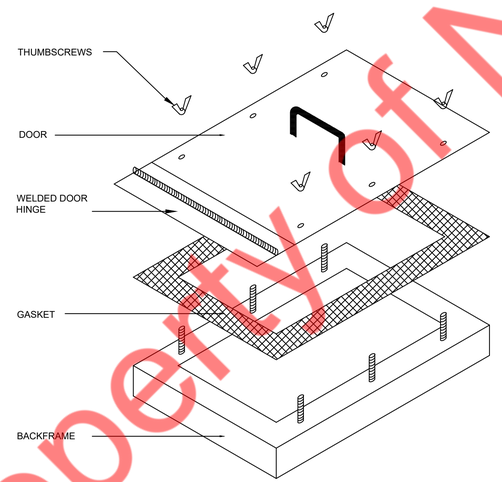
3 / M-5.0 CEILING FAN HANGING SUPPORT DETAIL N.T.S



4 / M5.0 DUCT PENETRATION THRU WOOD ROOF N.T.S



5 / M5.0 GREASE DUCT WRAP DETAIL N.T.S

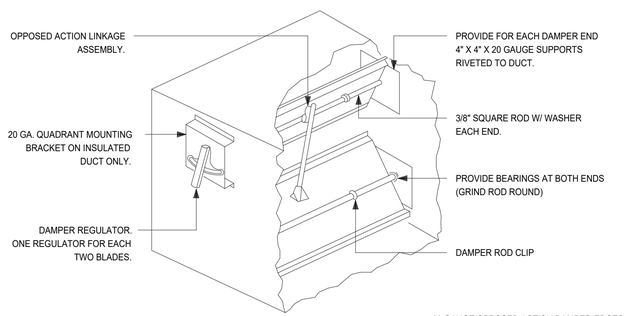


NOTES:

1. ACCESS DOOR IS TO BE DUCTMATE ULTIMATE DOOR II OR EQUAL.
2. ACCESS DOOR IS TO BE U.L. LISTED # 65X3.
3. ACCESS DOOR IS TO MEET OR EXCEED THE REQUIREMENTS OF NFPA 96, 2008 EDITION

AT ALL LOCATIONS REQUIRED BY LOCAL CODE.

6 / M5.0 GREASE DUCT ACCESS DOOR DETAIL N.T.S



20 GAUGE OPPOSED ACTION DAMPER-EDGES CRIMPED AS SHOWN. (MAX. BLADE HTG. 12")

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

7 / M5.0 LOW PRESSURE BALANCING DAMPER N.T.S

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CONSTRUCTION:

REVISIONS

- 03/25/25–CHECK SET
- 04/22/25–PERMIT SET

CONSULTANT

NY ENGINEERS
NEARBY ENGINEERS
382 NE 191ST STREET SUITE 49674,
MIAMI, FL 33179
PH-914.257.3455
WWW.NY-ENGINEERS.COM

PROFFESSIONAL SEAL

SITE INFORMATION

MK TYPE: MK2X
JIB #: 327
ADDRESS:
13648 VAN NUYS BLVD
PACOIMA, CA
91331

DRAWN BY: NYE
PROJECT #: 12079–24
SCALE:

MECHANICAL DETAILS (1 OF 2)

M5.0

LEGEND:
C - CAPTIVE AIRE SYSTEMS (CAS)
O - OWNER
G - GENERAL CONTRACTOR
K - KITCHEN EQUIPMENT CONSOLIDATOR (KEC)

For questions call Mike Wasluk at Captive-Aire, San Diego Regional Office (619) 273-5084

HOOD AND FAN SUPPLY RESPONSIBILITY

Captive-Aire has been established as a National Account with negotiated pricing for the package as defined below. The Owner can choose to source the specified Captive-Aire package either directly from Captive-Aire, or as part of the proposal from the KEC or GC.

If no direction is provided by the Owner, then the package will be sourced by the KEC as a default

ITEM	DESCRIPTION	SUPPLIED BY				ORDERED BY				INSTALLED BY			
		C	O	G	K	C	O	G	K	C	O	G	K
GRIDDLE HOOD: MODEL 3650BD-2	6'4" LONG TYPE 1 GREASE LOW PROXIMITY HOOD MODEL 3650 BD-2 - INCLUDES SS ETL LISTED CAPTRATE SOLO FILTERS (PARTICULATE CAPTURE EFFICIENCY: 85% EFFICIENT AT 9 MICRONS, 76% EFFICIENT AT 5 MICRONS), LS5 LIGHT FIXTURES, QUARTER END PANELS	X							X				X
GRIDDLE HOOD: SS WRAPPER PANELS	SS ENCLOSURE PANELS - 26.75" HIGH -- ENCLOSES TOP OF HOOD TO FINISHED CEILING	X							X				X
GRIDDLE HOOD: SS BACKSPLASH	SS WALL FLASHING BEHIND COOKING EQUIPMENT ON WALL UNDER THE HOOD - 61" H X 76" W	X							X				X
GRIDDLE HOOD: TIMER BRACKET	UNIVERSAL TIMER BRACKET MOUNTED ON FRONT FACE OF THE HOOD - 29.5" LONG	X							X				X
GRIDDLE HOOD: ELECTRICAL OUTLET	ELECTRICAL OUTLET FACE MOUNTED ON FRONT OF HOOD	X							X				X
FRYER HOOD: MODEL 3650BD-2	5'8" LONG TYPE 1 GREASE LOW PROXIMITY HOOD MODEL 3650 BD-2 - INCLUDES SS ETL LISTED CAPTRATE SOLO FILTERS (PARTICULATE CAPTURE EFFICIENCY: 85% EFFICIENT AT 9 MICRONS, 76% EFFICIENT AT 5 MICRONS), LS5 LIGHT FIXTURES, QUARTER END PANELS, WITH TOP MOUNTED UTILITY CABINET HOUSING PRE-INSTALLED FIRE SYSTEM AND FACTORY CONTROLS	X							X				X
FRYER HOOD: SS WRAPPER PANELS	SS ENCLOSURE PANELS - 26.75" HIGH -- ENCLOSES TOP OF HOOD TO FINISHED CEILING	X							X				X
FRYER HOOD: SS BACKSPLASH	SS WALL FLASHING BEHIND COOKING EQUIPMENT ON WALL UNDER THE HOOD - 61" H X 68" W	X							X				X
SHARED HOOD FIRE PROTECTION SYSTEM PIPING - ANSUL-3.0/3.0 - R-102	6GAL ANSUL R-102 FIRE SYSTEM FACTORY INSTALLED IN FRYER HOOD UTILITY CABINET -- INCLUDES AUTOMAN, 2 TANKS, DETECTION BRACKETS, PIPING, GAS VALVE -- SHARED FOR BOTH HOODS	X							X				X
SHARED HOOD FIRE PROTECTION SYSTEM - ANSUL GAS VALVE - MGVA1-1/2 GAS VALVE	ANSUL R-102 - 1.5" GAS VALVE - INCLUDED WITH FIRE SYSTEM PIPING -- INSTALLED BY PLUMBER - SHARED FOR BOTH HOODS	X							X				X
HOOD FIRE PROTECTION HOOKUP	FIRE HOOKUP BY LICENSED CERTIFIED FIRE DISTRIBUTOR. INCLUDES DRAWINGS FOR THE CITY, ANSUL FIRE PERMIT, FIELD PIPING, FIELD DETECTION LINES, MANUAL PULL STATION, AND COORDINATING AND PERFORMING FINAL FIRE TEST WITH THE LOCAL JURISDICTION	X							X				X
GRIDDLE HOOD EXHAUST FAN MODEL CASRE15DD (KEF-1)	MODEL CASRE13DD DIRECT DRIVE ECM UPBLAST RESTAURANT-DUTY UTILITY SET EXHAUST FAN W/ 24" HIGH ROOF CURB, GREASE CUP, DISCHARGE EXTENSION - 1ph, 115v ECM Motor @ 1.25" W.C.	X							X				X
ELECTRICAL CONNECTION TO KEF 1	1PH 115V POWER FROM BREAKER PANEL DIRECT TO FAN MOTOR -- LOW VOLTAGE PWM WIRING FROM HOOD CONTROL PANEL TO MOTOR FOR EC CONTROL			X				X					X
FRYER HOOD EXHAUST FAN MODEL CASRE15DD (KEF-2)	MODEL CASRE13DD DIRECT DRIVE ECM UPBLAST RESTAURANT-DUTY UTILITY SET EXHAUST FAN W/ 24" HIGH ROOF CURB, GREASE CUP, DISCHARGE EXTENSION - 1ph, 115v ECM Motor @ 1.25" W.C.	X							X				X
ELECTRICAL CONNECTION TO KEF 2	1PH 115V POWER FROM BREAKER PANEL DIRECT TO FAN MOTOR -- LOW VOLTAGE PWM WIRING FROM HOOD CONTROL PANEL TO MOTOR FOR EC CONTROL			X				X					X
SHARED HOOD CONTROL BOX: MODEL SC-120110MA	HOOD CONTROL PANEL FACTORY INSTALLED IN UTILITY CABINET ATTACHED TO FRYER HOOD. CONTROLS EXHAUST FANS KEF-1 AND KEF-2 AND INCLUDES TEMP SENSORS FOR BOTH HOODS AND ROOM STAT. DIGITAL HMI SWITCH INCLUDED LOOSELY, AND INSTALLED ON THE WALL	X							X				X
ELECTRICAL CONNECTIONS	ALL ELECTRICAL CONNECTIONS IN AND OUT OF THE CONTROL BOX, FANS, HOOD LIGHTS, GFCI OUTLETS, TEMP SENSORS, WALL SWITCHES, ETC -- BY ELECTRICAL CONTRACTOR. SEE CAPTIVE-AIRE DRAWINGS FOR DETAILED ELECTRICAL DIAGRAMS			X				X					X
GRIDDLE HOOD: LISTED GREASE DUCT	12" ID / 16" OD ETL LISTED SS DOUBLE WALL LISTED GREASE DUCT (UL1978 AND UL2221) PER MECHANICAL PLANS - INCLUDES 45 DEG OFFFSETS AND AJDUSTABLE STRAIGHT DUCTS TO TOP OF ROOF CURB	X							X				X
HARDWARE: GRIDDLE HOOD AND GREASE DUCT SUPPORTS AND HANGING MATERIALS	ALL-THREAD, UNISTRUT, HARDWARE, SUPPORTS FOR INSTALLING GREASE DUCT AND HANGING HOOD			X				X					X
FRYER HOOD: LISTED GREASE DUCT	12" ID / 16" OD ETL LISTED SS DOUBLE WALL LISTED GREASE DUCT (UL1978 AND UL2221) PER MECHANICAL PLANS - INCLUDES 45 DEG OFFFSETS AND AJDUSTABLE STRAIGHT DUCTS TO TOP OF ROOF CURB	X							X				X
HARDWARE: FRYER HOOD AND GREASE DUCT SUPPORTS AND HANGING MATERIALS	ALL-THREAD, UNISTRUT, HARDWARE, SUPPORTS FOR INSTALLING GREASE DUCT AND HANGING HOOD			X				X					X
HOOD DESIGN VERIFICATION AND COMMISSIONING (SDV)	FACTORY REVIEW AND COMMISSIONING OF HOODS, FANS, AND ELECTRICAL CONTROL PANELS BY A CAPTIVE-AIRE SERVICE PROFESSIONAL TO ENSURE ALL CAPTIVE-AIRE EQUIPMENT IS WORKING CORRECTLY AS DESIGNED. INCLUDED IS ONE VISIT AFTER ALL MECHANICAL AND ELECTRICAL EQUIPMENT IS FULLY INSTALLED AND OPERATIONAL AND ALL INSPECTIONS HAVE BEEN COMPLETED.	X								X	X		

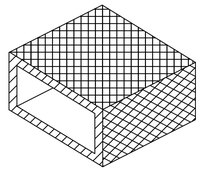


FIG. A

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

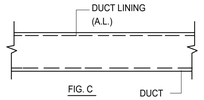


FIG. C

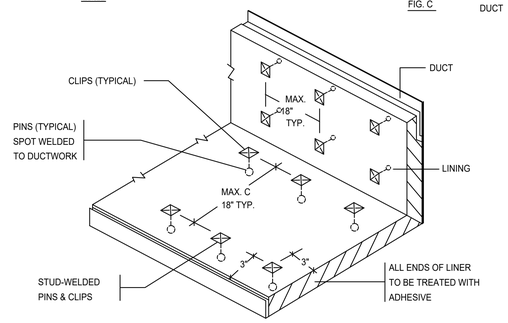
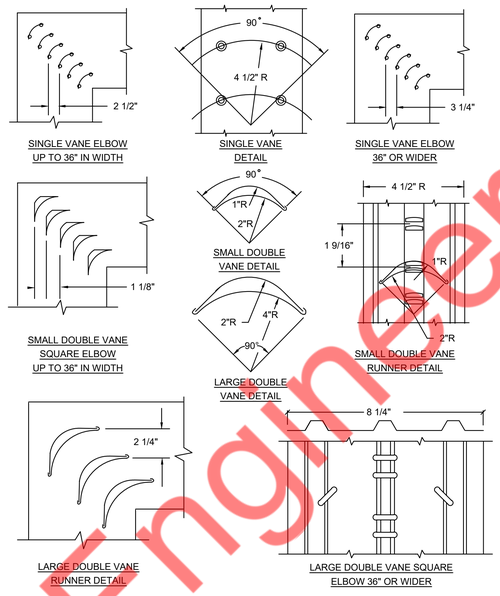
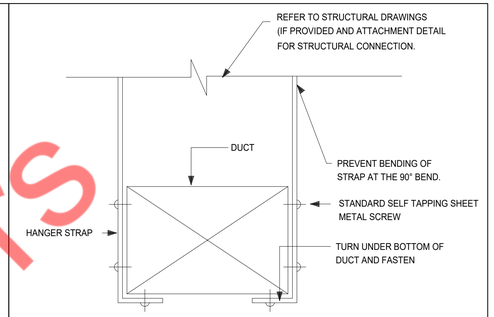


FIG. B

1 M5.1 ACOUSTICAL TREATMENT DUCT LINING
N.T.S



2 M5.1 LOW VELOCITY DUCTWORK ELBOWS
N.T.S

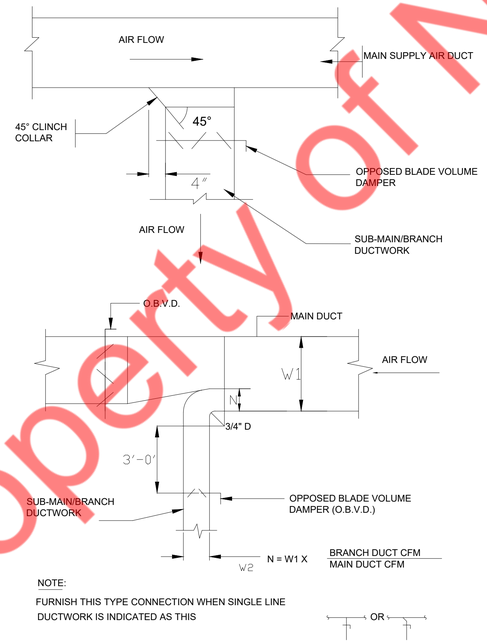


DUCT HANGER SCHEDULE		
DUCT CROSS SECTIONAL AREA	STRAP HANGER SIZE	MAX. SPACING
UNDER 2 SQ FT.	1" X 1/16"	6'-0" O.C.
2 TO 4 SQ FT.	1" X 1/8"	8'-0" O.C.
4 TO 8 SQ FT.	1" X 1/8"	6'-0" O.C.
OVER 8 SQ FT.	1" X 1/8"	4'-0" O.C.

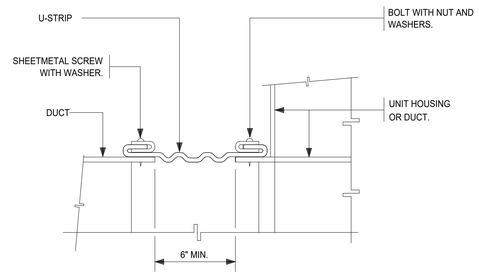
NOTES:

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

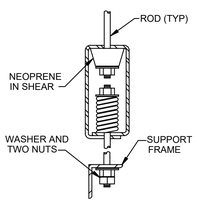
3 M5.1 METHOD OF HANGING DUCTWORK
N.T.S



4 M5.1 SUPPLY AIR DUCTWORK SUB-MAIN/BRANCH DUCT CONNECTION
N.T.S



5 M5.1 FLEXIBLE CONNECTION (DUCT-EQUIPMENT)
N.T.S



5 M5.1 VIBRATION ISOLATOR DETAIL
N.T.S

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DATES
RELEASE:
P.M. UPDATES:
SUBMITTAL DATE:
1: APR. 10, 2025
2:
3:
BID:
CONSTRUCTION:

REVISIONS
03/25/25-CHECK SET
04/22/25-PERMIT SET

CONSULTANT
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DRAWN BY: NYE
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SCALE:

MECHANICAL DETAILS (2 OF 2)

M5.1

FOR QUESTIONS, CALL THE
San Diego Office
REGION 9&
PHONE: (858) draft - 5384
EMAIL: ray96@captiveaire.com

HOOD INFORMATION - JOB#7399374

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM SIZE(S) WIDTH	LENG	HEIGHT	SIA	CFM	VEL	SP	HOOD CONSTRUCTION	HOOD CONF'GS END TO END	RDV
1	4 VAT FRYER	3650 BD-2	CAPTIVEAIRE	5' 8"	450 DEG	1	MEDIUM	194	1100				4"	12"	1100	1401	-0.758"	430 SS WHERE EXPOSED	ALCOVE	ALCOVE
2	76" GRIDDLE	3650 BD-2	CAPTIVEAIRE	6' 4"	450 DEG	1	MEDIUM	189	1200				4"	12"	1200	1528	-0.772"	430 SS WHERE EXPOSED	ALCOVE	ALCOVE

HOOD INFORMATION

HOOD NO	TAG	FILTER(S) TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY # 7 MICRONS	QTY	LIGHT(S) TYPE	WIRE GUARD	LOCATION	SIZE	UTILITY CABINET(S) FIRE SYSTEM TYPE	ELECTRICAL MODEL #	SWITCHES QUANTITY	FIRE SYSTEM PIPING	HOOD WEIGHT
1	4 VAT FRYER	CAPTRATE SOLID FILTER	4	16"	16"	85% SEE FILTER SPEC	2	L55 SERIES E26	NO						YES	260 LBS
2	76" GRIDDLE	CAPTRATE SOLID FILTER	4	16"	16"	85% SEE FILTER SPEC	2	L55 SERIES E26	NO						YES	285 LBS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1	4 VAT FRYER	FIELD WRAPPER 26.75" HIGH FRONT, LEFT, RIGHT.
		RIGHT QUARTER END PANEL: 26" TOP WIDTH, 0" BOTTOM WIDTH, 26" HIGH 430 SS.
		LEFT QUARTER END PANEL: 26" TOP WIDTH, 0" BOTTOM WIDTH, 26" HIGH 430 SS.
		RISER SENSOR INSTALL 60% PLEN.
2	76" GRIDDLE	FIELD WRAPPER 26.75" HIGH FRONT, LEFT, RIGHT.
		RIGHT QUARTER END PANEL: 26" TOP WIDTH, 0" BOTTOM WIDTH, 26" HIGH 430 SS.
		LEFT QUARTER END PANEL: 26" TOP WIDTH, 0" BOTTOM WIDTH, 26" HIGH 430 SS.
		GFCI DUPLEX OUTLET, 20A 125V - HOOD FRONT LEFT - VERTICAL - 15IT FROM END 17.00 IIST FROM BOTTOM 3.00.
		SENSOR-CV
		TIMER BRACKET 29.50" LONG - 2" CENTER TO BOTTOM DISTANCE.

WALL-MOUNT UTILITY CABINET

HOOD NO	LOCATION	SIZE	UTILITY CABINET(S) FIRE SYSTEM TYPE	SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY	WEIGHT
1	WALL MNT	12"x36"x24"	TANK FS	4.0/4.0			300.00 LBS

⑮ GREASE DUCT & CHIMNEY SPECIFICATIONS:
PROVIDE GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL 'DW' ROUND 20 GAUGE 430 STAINLESS STEEL DUCTWORK. MODEL 'DW' IS LISTED TO UL-1978 AND IS INSTALLED USING 'V' CLAMP LOCKING CONNECTIONS SEALED WITH 3M FIRE BARRIER 2000 PLUS. MODEL 'DW' DOES NOT REQUIRE WELDING PROVIDING IT HAS BEEN INSTALLED PER THE MANUFACTURERS INSTALLATION GUIDE.
PROVIDE RATED ACCESS DOORS AT EVERY CHANGE IN DIRECTION AND EVERY 12' ON CENTER. PER MANUFACTURES LISTING MODEL 'DW' HORIZONTAL RUNS LESS THAN 75 FT. CAN BE SLOPED 1/16" PER 12", HORIZONTAL RUNS MORE THAN 75 FT. CAN BE SLOPED 3/16" PER 12". DUCT SHOULD BE SLOPED AS MUCH AS POSSIBLE TO REDUCE THE CHANCE OF GREASE ACCUMULATION IN HORIZONTAL RUNS.

IF THE DUCT OR CHIMNEY IS WITHIN 18 INCHES OF COMBUSTIBLE MATERIAL, PROVIDE UL-2221 OR UL-103 HT LISTED DOUBLE WALL GREASE DUCT OR DOUBLE WALL CHIMNEY EQUAL TO CAPTIVEAIRE SYSTEMS MODEL 'DV'- 2R, 2R TYPE HT, 3R, OR 3Z* ROUND 20 GAUGE 430 STAINLESS INNER DUCT INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL.

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

HVAC DISTRIBUTION NOTE

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

VERIFY CEILING HEIGHT

___' - ___"

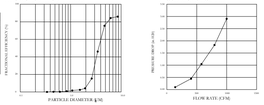
HEIGHT REQUIRED TO VERIFY THAT HOOD FITS SPACE AND TO SIZE THE ENCLOSURE PANELS

CUSTOMER APPROVAL TO MANUFACTURE:

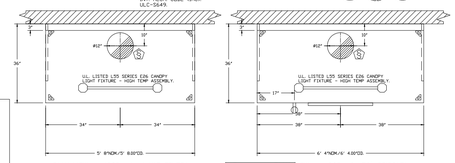
APPROVED AS NOTED ☐
APPROVED WITH NO EXCEPTION TAKEN ☐
REVISE AND RESUBMIT ☐
SIGNATURE _____
YOUR TITLE _____ DATE _____

SPECIFICATION: CAPTRATE GREASE-STOP SOLID FILTER

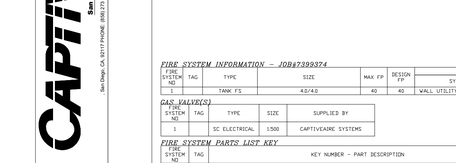
THE CAPTRATE GREASE-STOP SOLID FILTER IS A SINGLE-STAGE FILTER FEATURING A UNIQUE S-BAFFLE DESIGN IN CONJUNCTION WITH A SLOTTED REAR BAFFLE DESIGN, TO DELIVER EXCEPTIONAL FILTRATION EFFICIENCY.
FILTER IS STAINLESS STEEL CONSTRUCTION, AND SIZED TO FIT INTO STANDARD 2-INCH DEEP HOOD CHANNEL(S).
UNITS SHALL INCLUDE STAINLESS STEEL HANDLES AND A FASTENING DEVICE TO SECURE THE TWO COMPONENTS WHEN ASSEMBLED.
GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 85% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 10 INCHES OF WATER GAUGE.
THE CAPTRATE GREASE-STOP WAS TESTED TO ASTM STANDARD ASTM F1704-05.
MANUFACTURER APPROVED FOR USE IN SOLID FUEL APPLICATIONS AS A SPARK ARRESTER.



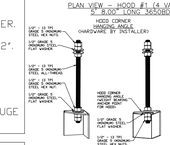
CAPTRATE FILTERS ARE BUILT IN COMPLIANCE WITH:
NFPA #96
U.L. STANDARD #2.
UL STANDARD #1046.
INT. MECH. CODE (IMC).
ULC-S649.



PLAN VIEW – HOOD #1 (4 VAT FRYER)
5' 8.00" LONG 3650BD-2

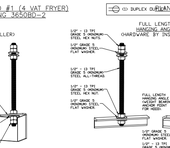


PLAN VIEW – HOOD #2 (76" GRIDDLE)
6' 4.00" LONG 3650BD-2



ASSEMBLY INSTRUCTIONS

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



ASSEMBLY INSTRUCTIONS

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

REVISIONS

DESCRIPTION	DATE

CAPTIVEAIRE
San Diego Office
San Diego, CA. 92117 PHONE: (858) 277 - 3384 FAX: (619) 671-2805 EMAIL: ray96@captiveaire.com

JB Store 0321 MK2- Los Angeles Pacoima R2 NI MVA
13648 Van Nuys BLVD
Los Angeles, CA, 91331

DATE: 3/12/2025
DWG.#: 7399374
DRAWN BY: massiluk
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 1

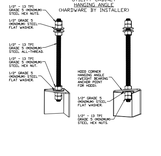
WALL-MOUNT UTILITY CABINET ASSEMBLY INSTRUCTIONS

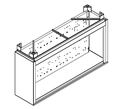
CABINET TO BE HUNG BY OTHERS. SEE UTILITY CABINET SCHEDULE FOR CABINET SIZE.
HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 MINIMUM ALL-THREAD SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN.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

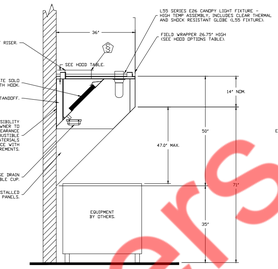
CLEARANCE TO COMBUSTIBLES

HOODS #	SURFACE	*CLEARANCE
1,2	TOP	18"
	FRONT	0"
	BACK	18"
	LEFT	18"
	RIGHT	18"

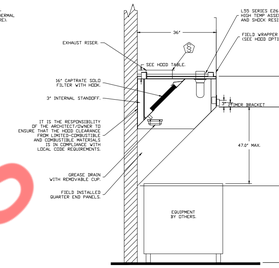
* 40" CLEARANCE TO COMBUSTIBLES CONFORMS TO UL710 STANDARD.







SECTION VIEW – MODEL 3650BD-2 HOOD – #1 (4 VAT FRYER)



SECTION VIEW – MODEL 3650BD-2 HOOD – #2 (76" GRIDDLE)

FIRE SYSTEM INFORMATION - JOB#7399374

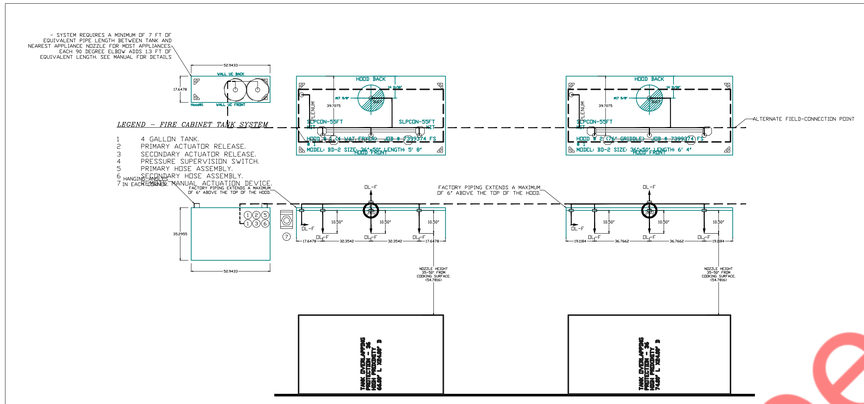
FIRE SYSTEM NO	TAG	TYPE	SIZE	MAX FP	DESIGN FP	INSTALLATION SYSTEM	LOCATION ON HOOD
1		TANK FS	4.0/4.0	40	40	WALL UTILITY CABINET LEFT	N/A

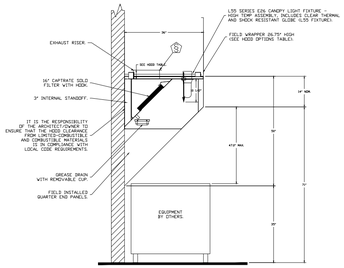
GAS VALVE(S)

FIRE SYSTEM NO	TAG	TYPE	SIZE	SUPPLIED BY
1		SC ELECTRICAL	1.500	CAPTIVEAIRE SYSTEMS

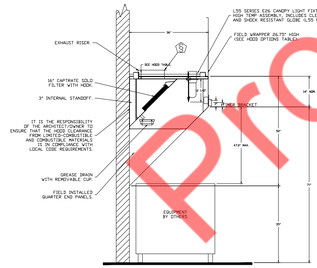
FIRE SYSTEMS PARTS LIST KEY

FIRE SYSTEM NO	TAG	KEY NUMBER - PART DESCRIPTION	QTY BY FACTORY	QTY BY FIELD
1		0 - 0 - TANK FIRE SUPPRESSION POST-DISCHARGE PROCEDURE UTILITY CABINET LABEL SHEET.	1	0
		0 - 0 - TANK FIRE SUPPRESSION MAINTENANCE GUIDE UTILITY CABINET LABEL SHEET.	1	0
		0 - 0 - 12-FJ8021-32144-07-360 DUCT FIRE THERMOSTAT WITH 12' FDDT WIRE LEADS. NO, CLOSE ON TEMP RISE AT 360°F. (400341350)	2	0
		0 - 0 - 32-00002 QUICK SEAL - 1/2" (UL).	2	0
		0 - 0 - 360391 3/8" BRASS PLUG.	5	0
		0 - 0 - 442PM353 1/2" MALE NPT TO 1/2" FEMALE NPT ELBOW, BRASS.	2	0
		0 - 0 - 442PM432 1/2" X 1/4" BRASS REDUCING BUSHING.	1	0
		0 - 0 - 79425 3/8" NPT FEMALE TO 1/2" MALE PROPRESS ADAPTER.	3	0
		0 - 0 - 79525 1/2" 90 PRO-PRESS ELBOW WITH 1/2"NPT FEMALE CONNECTION, VIEGA	3	0
		0 - 0 - 79580 1/2" X 1/2" PRO-PRESS TEE X 1/2"NPT FEMALE CONNECTION, VIEGA	3	0
		0 - 0 - 871200A2-001 SECONDARY ACTUATOR VALVE (SVA) - SINGLE ACTUATOR, REQUIRES PRIMARY RELEASE ACTUATOR, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 871200A5-001 HOSE, SECONDARY ACTUATOR HOSE, 7.5" BRAIDED STAINLESS STEEL, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 871300001-001 TANK - PRESSURIZED TANK USED FOR TANK FIRE SUPPRESSION.	2	0
		0 - 0 - 871300200-001 PRIMARY ACTUATOR KIT (PAK) - ACTUATOR AND RELEASE SOLENOID ASSEMBLY, ONE NEEDED PER FIRE SYSTEM, SUPERVISED, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 871300233-001 DIN CONNECTOR, CANFIELD PART #5.0560-205-ELEC, PAK - FIRE SUPPRESSION, SUBMINATURE SOLENOID CONNECTION (CED VENDOR 303771).	1	0
		0 - 0 - 871300250-001 HARDWARE, SVA BOLTS, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - 905545SPC PRO PRESS 1/2 PRESS X PRESS 90 ELBOW LS.	16	0
		0 - 0 - 909720SPC PRO PRESS PC611 1/2 PRESS TEE LS.	4	0
		0 - 0 - 986944115 HARDWARE, DATAMALOCK LOCKING BRACKET SQUARE NUTS 5/16" ZINC, TANK FIRE SUPPRESSION.	4	0
		0 - 0 - A0034332 JUNCTION BOX FOR MANUAL PULL STATION, 4SQ, DEEP BACK BOX, RED COLOR	1	0
		0 - 0 - A31484 1/4" NPT SCHRADER VALVE AND CAP, 45 DEGREES, 1/4" FLARE X 1/4" MPT HALF UNION, USED ON TANK SERVICE PORT.	1	0
		0 - 0 - B1343 3/8" BLACK IRON 90 ELBOW.	4	0
		0 - 0 - DATAMALOCK DISCHARGE ADAPTER TANK LOCKING PLATE FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - SLPCON-55FT SUPERVISED LOOP CONNECTION KIT. CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN HOODS WITH UP TO 48' GAP-MOUNTAINS. 57 FEET OF BLACK MG WIRE, 57 FEET OF TAN MG WIRE, 55 FEET OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS.	3	0
		0 - 0 - TANK STRAP TANK STRAP - USED FOR TANK FIRE SUPPRESSION.	6	0
		0 - 0 - TFS-SS TANK BRACKET TANK BRACKET FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - WC-210SS-000 STRAIGHTNECK ADAPTER, TANK FIRE SUPPRESSION.	2	0
		16 - 16 - 79215 1" X 3/8" NPT MALE ADAPTER, VIEGA	10	0
		16 - 16 - DL-F NOZZLE - TANK PROTECTION APPLIANCE COVERAGE NOZZLE (INCLUDES METAL BLOW OFF CAP, LANYARD, USED WITH CHROME-PLATED PIPE)	10	0
		24 - 24 - 2GX-7/8 2GX BLOCK SEAL - 3/8" (UL).	10	0
		29 - 34 - 460234 30 24VDC SINGLE ACTION MANUAL ACTUATION DEVICE (PUSH/PULL STATION) WITH PROTECTIVE COVER, ONE (1) NORMALLY OPEN CONTACT, RED COLOR.	1	0





SECTION VIEW – MODEL 3650BD-2 HOOD – #1



SECTION VIEW – MODEL 3650BD-2 HOOD – #2

REVISIONS

DESCRIPTION	DATE

CAPTIVEAIRE
San Diego Office
San Diego, CA. 92117 PHONE: (858) 277 - 3384 FAX: (619) 671-2805 EMAIL: ray96@captiveaire.com

JB Store 0321 MK2- Los Angeles Pacoima R2 NI MVA
13648 Van Nuys BLVD
Los Angeles, CA, 91331

DATE: 3/12/2025
DWG.#: 7399374
DRAWN BY: massiluk
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 3

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DATES

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SUBMITTAL DATE:
1: APR. 10, 2025
2: _____
3: _____
BID: _____
CONSTRUCTION: _____

REVISIONS

△ 03/25/25-CHECK SET
△ 04/22/25-PERMIT SET
△ _____
△ _____
△ _____
△ _____

CONSULTANT

NY ENGINEERS
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PROFFESSIONAL SEAL

SITE INFORMATION

MK TYPE: MK2X
JIB #: 327
ADDRESS:
13648 VAN NUYS BLVD
PACOIMA, CA
91331
DRAWN BY: NYE
PROJECT #: 12079-24
SCALE: _____

HOOD DETAILS
(1 OF 8)

M6.0

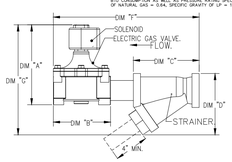
GAS VALVES AND STRAINERS

GAS VALVE SIZING						GAS VALVE DIMENSIONS							INSTALLATION	PART NUMBERS		
	TYPE	SIZE	VOLTAGE	MIN. INLET PRESSURE	MAX. INLET PRESSURE	FLOW AT 1 IN.W.C. DROP NATURAL GAS	FLOW AT 1 IN.W.C. DROP PROPANE	DIM "A"	DIM "B"	DIM "C"	DIM "D"	DIM "E"	PIPE ORIENTATION	GAS VALVE PART NUMBER	STRAINER PART NUMBER	GAS VALVE/STRAINER KIT
GAS VALVE FOR FS#1	ELECTRICAL	1-1/2"	120 VAC	5 PSI (3.5 IN.W.C.)	5 PSI (13.84 IN.W.C.)	2,406,000 BTU/HR	1,561,219 BTU/HR	7-3/8"	6-3/8"	5-3/4"	6-7/8"	14-1/8"	12-15/16"	HORIZONTAL/VERTICAL	R214275	4417687	(5CSCGV41-1/2

ELECTRIC GAS VALVES ONLY SOLENOID ORIENTATION
EVERY STRAINER GAS VALVES FOR BE MOUNTED WITH THE SOLENOID IN ANY POSITION AT OR ABOVE HORIZONTAL. THE SOLENOID MUST NOT BE MOUNTED WITH THE SOLENOID VERTICAL AND UPRIGHT.
2400C GAS VALVES MUST BE MOUNTED WITH THE SOLENOID VERTICAL AND UPRIGHT.

ALL GAS VALVES/STRAINERS
PROPER CLEARANCE MUST BE PROVIDED IN ORDER TO SERVICE THE STRAINER. A MINIMUM OF 6" CLEARANCE BELOW MUST BE PROVIDED IN ORDER TO REMOVE THE STRAINER CUSTOMER MUST VERIFY BTU CONSUMPTION AS WELL AS PRESSURE RATING SPECIFIC GRAVITY OF NATURAL GAS = 0.64, SPECIFIC GRAVITY OF LP = 1.52.

CALCULATIONS
TO CALCULATE GAS FLOW FOR OTHER THAN 1 IN.W.C. PRESSURE DROP
NEW BTU/HR = (BTU/HR AT 1 IN.W.C. PRESSURE DROP) X NEW PRESSURE DROP**.5
TO CALCULATE GAS FLOW FOR OTHER THAN 0.64 SPECIFIC GRAVITY
NEW BTU/HR = (BTU/HR AT 0.64) X 0.64 / NEW SPECIFIC GRAVITY**.5



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

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

- THIS PRE-ENGINEERED FIRE SYSTEM COMPLIES WITH U.L. 300 REQUIREMENTS.

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

JOB #: 7399374
JOB NAME: JIB STORE 0321 MK2- LOS ANGELES PACOIMA R2 NO MUA

SYSTEM SIZE: TANK-SP-2-WC DESIGN FP: 40, MAXIMUM FP: 40.
HOOD # 1 5' 8.00" LONG x 36" WIDE x 50" HIGH.
RISER # 1 SIZE: 12" DIA.
HOOD # 1 METAL BLOW-OFF CAPS INCLUDED.
HOOD # 2 6' 4.00" LONG x 36" WIDE x 50" HIGH.
RISER # 1 SIZE: 12" DIA.
HOOD # 2 METAL BLOW-OFF CAPS INCLUDED.

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

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

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

EXHAUST FAN INFORMATION – JOB#7399374

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	KEF-1 (FRYER)	1	CASREI30D	CAPTIVEAIRE	1100	1.250	1708	TEAO-ECM	1.000	0.6040	1	115	11.6	1148 FPM	201	30.1
2	KEF-2 (GRIDDLE)	1	CASREI30D	CAPTIVEAIRE	1200	1.250	1752	TEAO-ECM	1.000	0.6690	1	115	11.6	1252 FPM	201	34.8

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	KEF-1 (FRYER)	1	UTILITY SET GREASE CUP
		1	RES1/13 - DISCHARGE EXTENSION ASSEMBLY WITH HARDWARE
		1	ECM WIRING PACKAGE – PWM SIGNAL FROM ECOMO3 PREVAIRE (TELCO MOTOR), CCW ROTATION
		1	2 YEAR PARTS WARRANTY
2	KEF-2 (GRIDDLE)	1	UTILITY SET GREASE CUP
		1	RES1/13 - DISCHARGE EXTENSION ASSEMBLY WITH HARDWARE
		1	ECM WIRING PACKAGE – PWM SIGNAL FROM ECOMO3 PREVAIRE (TELCO MOTOR), CCW ROTATION
		1	2 YEAR PARTS WARRANTY

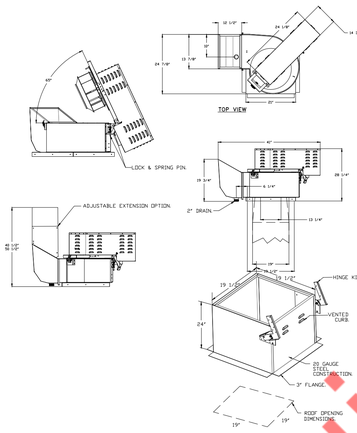
FAN ACCESSORIES

FAN UNIT NO	TAG	EXHAUST			SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1	KEF-1 (FRYER)	YES						
2	KEF-2 (GRIDDLE)	YES						

CURB ASSEMBLIES

NO	ON FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	KEF-1 (FRYER)	34 LBS	CURB	19.500"w X 19.500"L X 24.000"H VENTED HINGED
2	# 2	KEF-2 (GRIDDLE)	34 LBS	CURB	19.500"w X 19.500"L X 24.000"H VENTED HINGED

FANS #1 (KEF-1) (FRYER), #2 (KEF-2 (GRIDDLE)) - CASREI30D EXHAUST FAN



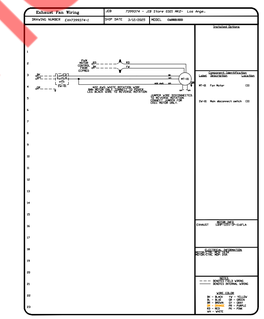
FEATURES:

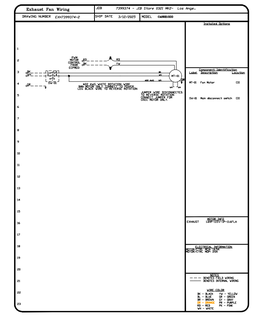
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL762 AND ULC-S645.
- HIGH HEAT OPERATION DIRECT DRIVE 300°F (149°C).
- HEAT SLINGER.
- GREASE CLASSIFICATION TESTING.
- TILT OUT WHEEL.
- LOCKING PIN FOR POWER PACK.
- MOTOR WEATHER COVER.
- INTERLOCKED DISCONNECT SWITCH.
- NEMA 4X SAFETY DISCONNECT SWITCH.

NORMAL TEMPERATURE TEST: DIRECT DRIVE
FANS SHALL BE TESTED FOR CONTINUOUS DUTY 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: BELT & DIRECT DRIVE
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 450°F (232°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

OPTIONS
- UTILITY SET GREASE CUP.
- RES1/13 - DISCHARGE EXTENSION ASSEMBLY WITH HARDWARE.
- ECM WIRING PACKAGE – PWM SIGNAL FROM ECOMO3 PREVAIRE (TELCO MOTOR), CCW ROTATION.
- 2 YEAR PARTS WARRANTY.





ELECTRICAL PACKAGE – JOB#7399374

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED			
				LOCATION	QUANTITY		FAN TAG	TYPE	#	HP	VOLTS	FLA
1		SC-3200120MA	WALL MOUNT 24 SS BOX	SHIP LOOSE w/ PREWIRE	1 LIGHT 1 Fan	SMART CONTROLS THERMOSTATIC CONTROL w/ RELAY ON/OFF WITH SUPPLY	KEF-1 (Fryer)	EXHAUST	1	1.000	115	11.6
							KEF-2 (Griddle)	EXHAUST	1	1.000	115	11.6



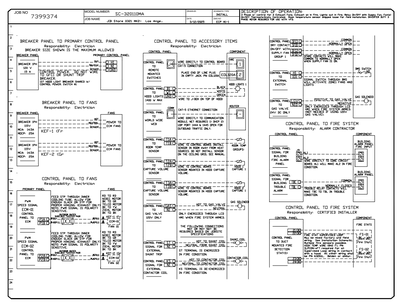
CASTLink Monitor and Control

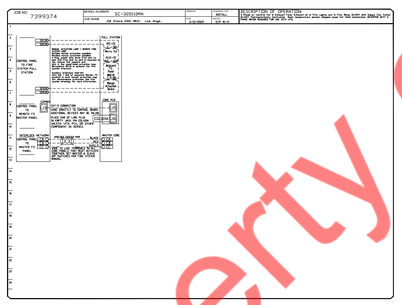
Read control panel to support communications to cloud-based Building Management System to monitor and control the system.
Read Control Panel to allow cloud-based Building Management System to monitor permanently installed as CASTRAC in the panel box.
Read Control Panel to allow cloud-based Building Management System to implement CASTRAC ENTHUSIAST control strategies for fully integrated Building Management.

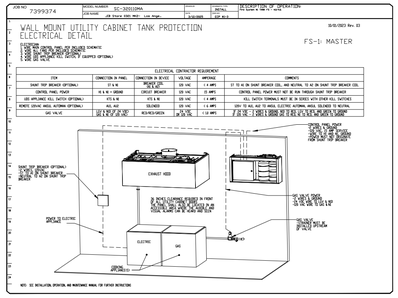
MONITORING AND CONTROL POINTS LIST

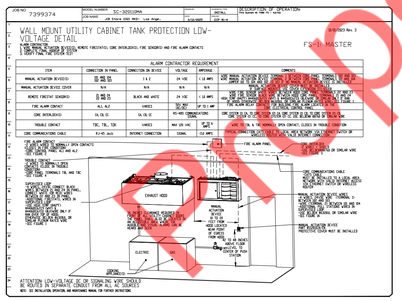
AV Package	Function
Hood Temperature	ANALOG
Duct Temperature	ANALOG
Fire Damper Temperature	ANALOG
Airflow VFD Damage Temperature	ANALOG
Fan Speed	ANALOG
Fan Amperage	ANALOG
Fan Power	ANALOG
VFD Faults	ANALOG
Controller Faults	ANALOG
Fan Status	ANALOG
Fan Faults	ANALOG
VFD Faults	ANALOG
VFD Filter Clog Percentage	ANALOG
Fire Condition	ANALOG & DIGITAL
Light Activity	ANALOG & DIGITAL
Wash Activity	ANALOG & DIGITAL

IT Package	Function
Hood Temperature	ANALOG
Duct Temperature	ANALOG
Fire Damper Temperature	ANALOG
Airflow VFD Damage Temperature	ANALOG
Controller Faults	ANALOG
Fan Faults	ANALOG
Fan Status	ANALOG
VFD Faults	ANALOG
VFD Filter Clog Percentage	ANALOG
Fire Condition	ANALOG
Light Activity	ANALOG
Wash Activity	ANALOG
Building Pressure	ANALOG
Fire Condition	ANALOG & DIGITAL
Light Activity	ANALOG & DIGITAL
Wash Activity	ANALOG & DIGITAL









Property of NY Engineers

REVISIONS

DESCRIPTION	DATE

CAPTIVE-AIRE
San Diego Office
9255 Customhouse Plaza, San Diego, CA 92154 PHONE: (858) 277-3500 FAX: (619) 710-3500 EMAIL: sdg@captiveaire.com

JIB Store 0321 MK2- Los Angeles Pacoima R2 NO MUA
13648 Van Nuys BLVD
Los Angeles, CA, 91331

DATE: 3/12/2025
DWG.#: 7399374
DRAWN BY: mesiluk
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 4

REVISIONS

DESCRIPTION	DATE

CAPTIVE-AIRE
San Diego Office
9255 Customhouse Plaza, San Diego, CA 92154 PHONE: (858) 277-3500 FAX: (619) 710-3500 EMAIL: sdg@captiveaire.com

JIB Store 0321 MK2- Los Angeles Pacoima R2 NO MUA
13648 Van Nuys BLVD
Los Angeles, CA, 91331

DATE: 3/12/2025
DWG.#: 7399374
DRAWN BY: mesiluk
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 5

REVISIONS

DESCRIPTION	DATE

CAPTIVE-AIRE
San Diego Office
9255 Customhouse Plaza, San Diego, CA 92154 PHONE: (858) 277-3500 FAX: (619) 710-3500 EMAIL: sdg@captiveaire.com

JIB Store 0321 MK2- Los Angeles Pacoima R2 NO MUA
13648 Van Nuys BLVD
Los Angeles, CA, 91331

DATE: 3/12/2025
DWG.#: 7399374
DRAWN BY: mesiluk
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 6

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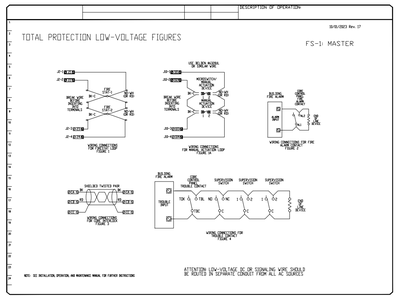
PROFFESSIONAL SEAL

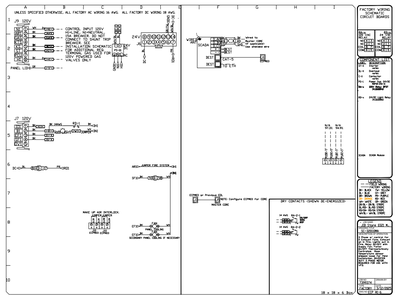
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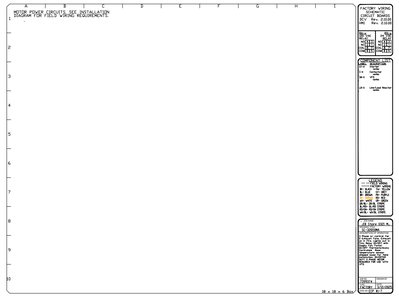
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JIB #: 327
ADDRESS:
13648 VAN NUYS BLVD
PACOIMA, CA
91331
DRAWN BY: NYE
PROJECT #: 12079-24
SCALE:

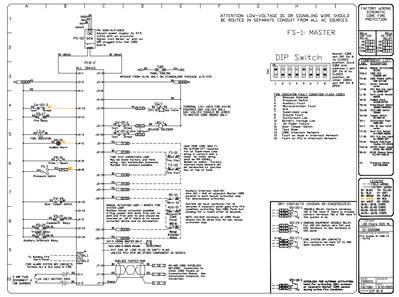
HOOD DETAILS
(2 OF 8)

M6.1









REVISIONS
DESCRIPTION DATE
CAPTIVEAIRE
San Diego Office
JIB Store (002) MK2- Los Angeles Pacoima R2 NO MVA
13648 Van Nuys BLVD
Los Angeles, CA, 91331
DATE: 3/12/2025
DWG.#: 7399374
DRAWN BY: massiuk
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 7

DUCTWORK #1 PARTS - JOB#7399374 DOUBLE WALL FRYER DUCT -14'0"RH

TAG	PART #	CFM	GPM	ZONE	COVEREDBY	SP	WEIGHT	VELOCITY	QTY	DESCRIPTION
H1-E1	DW16DVRISER-2R-S	1100				-0.758	7.31	0.00	1	DOUBLE WALL RISER COVER - USED ON 12" INNER RISER, 4" LONG - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER RISER SHELL ASSEMBLY. INCLUDES INSULATION & SINGLE 'V' CLAMPS FOR INNER & OUTER CONNECTIONS.
P1	DW12D39VLT-2R-S	1100				-0.0078	27.05	1400.56	1	DOUBLE WALL DUCT - 12" INNER DUCT, 23" LONG - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL.
P2	DW12450VASY-2R-S	1100				-0.0075	16.53	1400.56	1	DOUBLE WALL DUCT - 12" INNER 45 DUCT - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL.
P3	DW12472VAJD-2R-S	1100				-0.0119	83.19	1400.56	1	DOUBLE WALL ADJUSTABLE DUCT - 12" INNER DUCT - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL. MIN LENGTH = 11" / MAX LENGTH = 48.5" / ADJUSTMENT = 37.5" / ADJUSTABLE SECTION MAY NEED TO BE CUT. INCLUDES SINGLE AND DOUBLE WALL "V" CLAMPS.
P4	DW1620SADKIT						6.53		1	DUCT - HORIZONTAL SADDLE SUPPORT KIT, USED WITH 16" OD - INCLUDES UNI-STRUT CUT TO LENGTH, DW1620SAD, & HARDWARE BAG A.
P5	DW12450VASY-2R-S	1100				-0.0293	16.53	1400.56	1	DOUBLE WALL DUCT - 12" INNER 45 DUCT - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL.
P6, ASSEMBLED W/P7	DW12DVTEASY-2R-S	1100		1		-0.0082	34.13	1400.56	1	DOUBLE WALL DUCT - 12" INNER TEE DUCT - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL.
P7 ASSEMBLED W/P6 D=7	DW12DVACCDOORCOV-2R-S						18.57		1	DOUBLE WALL DUCT - 12" INNER ACCESS DOOR & 16" ACCESS DOOR COVER WITH CLAMPS - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL.
P8	DW12472VLT-2R-S	1100				-0.016	54.71	1400.56	1	DOUBLE WALL DUCT - 12" INNER DUCT, 47" LONG - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL.
P9	DW12172VLT-2R-S	1100				-0.0058	20.10	1400.56	1	DOUBLE WALL DUCT - 12" INNER DUCT, 17" LONG - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL.
P10 ASSEMBLED W/P11	DW12472VAJDTP-2R-S	1100				-0.0096	82.74	1400.56	1	DOUBLE WALL ADJUSTABLE DUCT TRANSITION PLATE - 12" INNER DUCT - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL. MIN LENGTH = 11" / MAX LENGTH = 48.5" / ADJUSTMENT = 37.5" / ADJUSTABLE SECTION MAY NEED TO BE CUT. INCLUDES SINGLE AND DOUBLE WALL "V" CLAMPS.
P11 ASSEMBLED W/P10 D=8	DW1912TPDBCK	1100					7.50	1400.56	1	DUCT TO CURB TRANSITION 3/4" DOWN TURN, 19-1/2" CURB TO 12" DUCT, 16 GA W/UNDRIZED STEEL. FOR USE WITH EXHAUST FANS.
SYSTEM AT P11						-0.8731	0.00			
RC1	DW16DVRISER-2R-S						7.31		1	DOUBLE WALL RISER COVER - USED ON 12" INNER RISER, 4" LONG - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER RISER SHELL ASSEMBLY. INCLUDES INSULATION & SINGLE 'V' CLAMPS FOR INNER & OUTER CONNECTIONS.
	3M-2000PLUS						0.80		2	DUCT - 3M FIRE BARRIER 2000 PLUS SILICONE - USED AS SEALANT TO SEAL DUCT JOINTS.
	DW12DVCLASY-2R-S						6.44		4	DUCT - 12" DUCT - 16" DOUBLE "V" CLAMP - 2R INSULATION & SINGLE "V" CLAMP ENCLOSED - REDUCED CLEARANCE.
TOTAL WEIGHT							409.56			

DOUBLE WALL FACTORY BUILT DUCTWORK

- ALL DUCTWORK IS REQUIRED TO BE INSTALLED WITH THE MAXIMUM SUPPORT SPACING LISTED BELOW.
- FOR A COMPLETE LIST OF APPROVED SUPPORT METHODS, SEE THE ENTIRE INSTALLATION AND OPERATION MANUAL.
- DUCTWORK SHALL SLOPE NOT LESS THAN 1/16" PER LINEAR FOOT TOWARDS THE HOOD OR AN APPROVED GREASE COLLECTION RESERVOIR.
- WHERE HORIZONTAL DUCTS EXCEED 75 FEET IN LENGTH, THE SLOPE SHALL NOT BE LESS THAN 3/16" PER LINEAR FOOT.

HORIZONTAL	
DUCT DIAMETER	SUPPORT SPACING (FT)
5"	7'
6"	7'
7"	7'
8"	7'
10"	7'
12"	7'
14"	7'
16"	7'
18"	5'
20"	5'
22"	5'
24"	5'
26"	5'
28"	5'
30"	5'
32"	5'
34"	5'
36"	5'

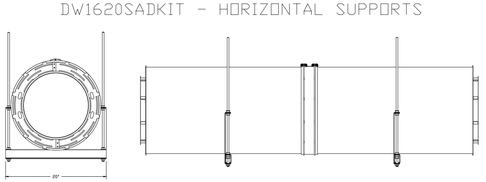
VERTICAL			
TYPE	WALL SUPPORT (FT)	CURB SUPPORT (FT)	FLOOR SUPPORT (FT)
2R & 2R HT (5"-16")	20'	24'	24'
2R (18")	18'	24'	24'
3R & 3Z (5"-24")	10'	24'	24'
3Z (26" -36")	10'	20'	20'

DO NOT LEAK TEST USING SMOKE BOMBS CONTAINING CHLORINES/CHLORIDES. CONSULT WITH CAPTIVEAIRE FOR PROPER LEAK TESTING METHODS.

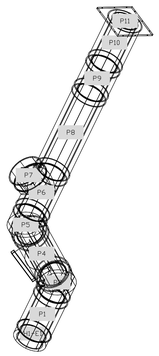
REVISIONS
DESCRIPTION DATE
CAPTIVEAIRE
San Diego Office
JIB Store (002) MK2- Los Angeles Pacoima R2 NO MVA
13648 Van Nuys BLVD
Los Angeles, CA, 91331
DATE: 3/12/2025
DWG.#: 7399374
DRAWN BY: massiuk
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 8

SUPPORT SYSTEM DETAILS #1

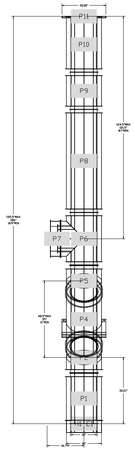
DW1620SADKIT - HORIZONTAL SUPPORTS



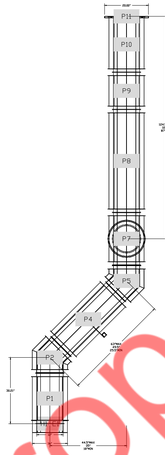
DUCTWORK #1 SE VIEW
FRYER DUCT -14'0"RH



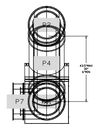
DUCTWORK #1 FRONT VIEW
FRYER DUCT -14'0"RH



DUCTWORK #1 SIDE VIEW
FRYER DUCT -14'0"RH



DUCTWORK #1 TOP VIEW
FRYER DUCT -14'0"RH



REVISIONS
DESCRIPTION DATE
CAPTIVEAIRE
San Diego Office
JIB Store (002) MK2- Los Angeles Pacoima R2 NO MVA
13648 Van Nuys BLVD
Los Angeles, CA, 91331
DATE: 3/12/2025
DWG.#: 7399374
DRAWN BY: massiuk
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 9

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1: APR. 10, 2025
2:
3:
BID:
CONSTRUCTION:

REVISIONS

- 03/25/25-CHECK SET
- 04/22/25-PERMIT SET

CONSULTANT

NY ENGINEERS
NEARBY ENGINEERS
382 NE 191ST STREET SUITE 49674,
MIAMI, FL 33179
PH-914.257.3455
WWW.NY-ENGINEERS.COM

PROFFESSIONAL SEAL

SITE INFORMATION

MK TYPE: MK2X
JIB #: 327
ADDRESS:
13648 VAN NUYS BLVD
PACOIMA, CA
91331
DRAWN BY: NYE
PROJECT #: 12079-24
SCALE:

HOOD DETAILS
(3 OF 8)

M6.2

DUCTWORK #2 PARTS -- JOB#7399374 DOUBLE WALL GRIDDLE DUCT-14"0"RH

TAG	PART #	CFM	GPH	ZONE	COVERED BY	SP	WEIGHT	VELOCITY	QTY	DESCRIPTION
H2-E1	DV16DWRISER-2R-S	1200				-0.772	7.31	0.00	1	DOUBLE WALL RISER COVER - USED ON 12" INNER RISER, 4" LONG - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER RISER SHELL ASSEMBLY. INCLUDES INSULATION & SINGLE 'V' CLAMPS FOR INNER & OUTER CONNECTIONS.
P1	DV1229DWLT-2R-S	1200				-0.0117	36.05	1527.89	1	DOUBLE WALL DUCT - 12" INNER DUCT, 29" LONG - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL.
P2	DV1245DWASY-2R-S	1200				-0.0283	16.53	1527.89	1	DOUBLE WALL DUCT - 12" INNER 45 DUCT - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL.
P3	DV1245DWASY-2R-S	1200				-0.0545	16.53	1527.89	1	DOUBLE WALL DUCT - 12" INNER 45 DUCT - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL.
P4	DV1247DWLT-2R-S	1200				-0.019	54.71	1527.89	1	DOUBLE WALL DUCT - 12" INNER DUCT, 47" LONG - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL.
P5	DV1247DWLT-2R-S	1200				-0.019	54.71	1527.89	1	DOUBLE WALL DUCT - 12" INNER DUCT, 47" LONG - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL.
P6, ASSEMBLED W/P7	DV12472DWJDTP-2R-S	1200				-0.0128	82.74	1527.89	1	DOUBLE WALL ADJUSTABLE DUCT TRANSITION PLATE - 12" INNER DUCT - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER SHELL ASSEMBLY. MIN LENGTH = 0" / MAX LENGTH = 48.0" / ADJUSTMENT = 30.0" / ADJUSTABLE SECTION MAY NEED TO BE CUT. INCLUDES SINGLE AND DOUBLE WALL "V" CLAMPS.
P7, ASSEMBLED W/P6 D=8	DV1912TPDBEX	1200					7.50	1527.89	1	DUCT TO CURB TRANSITION 3/4" DOWN TURN, 19-1/2" CURB TO 12" DUCT, 16 GA ALUMINIZED STEEL. FOR USE WITH EXHAUST FANS.
SYSTEM AT P7						-0.9174	0.00			
RC1	DV16DWRISER-2R-S						7.31		1	DOUBLE WALL RISER COVER - USED ON 12" INNER RISER, 4" LONG - 2 LAYERS REDUCED CLEARANCE - 16" STAINLESS STEEL OUTER RISER SHELL ASSEMBLY. INCLUDES INSULATION & SINGLE 'V' CLAMPS FOR INNER & OUTER CONNECTIONS.
	3M-2000PLUS						0.80		2	DUCT - 3M FIRE BARRIER 2000 PLUS SILICONE - USED AS SEALANT TO SEAL DUCT JOINTS.
	DV12DVCLASY-2R-S						6.44		4	DUCT - 12" DUCT - 16" DOUBLE "V" CLAMP - 2R INSULATION & SINGLE "V" CLAMP INCLUDED - REDUCED CLEARANCE.
TOTAL WEIGHT							310.75			

DOUBLE WALL FACTORY BUILT DUCTWORK

- ALL DUCTWORK IS REQUIRED TO BE INSTALLED WITH THE MAXIMUM SUPPORT SPACING LISTED BELOW.
- FOR A COMPLETE LIST OF APPROVED SUPPORT METHODS, SEE THE ENTIRE INSTALLATION AND OPERATION MANUAL.
- DUCTWORK SHALL SLOPE NOT LESS THAN 1/16" PER LINEAR FOOT TOWARDS THE HOOD OR AN APPROVED GREASE COLLECTION RESERVOIR.
- WHERE HORIZONTAL DUCTS EXCEED 75 FEET IN LENGTH, THE SLOPE SHALL NOT BE LESS THAN 3/16" PER LINEAR FOOT.

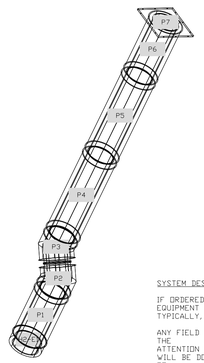
HORIZONTAL	
DUCT DIAMETER	SUPPORT SPACING (FT)
5"	7'
6"	7'
7"	7'
8"	7'
10"	7'
12"	7'
14"	7'
16"	7'
18"	5'
20"	5'
22"	5'
24"	5'
26"	5'
28"	5'
30"	5'
32"	5'
34"	5'
36"	5'

VERTICAL			
TYPE	WALL SUPPORT (FT)	CURB SUPPORT (FT)	FLOOR SUPPORT (FT)
2R & 2R HT (5"-16")	20'	24'	24'
2R (18")	18'	24'	24'
3R & 3Z (5"-24")	10'	24'	24'
3Z (26" -36")	10'	20'	20'

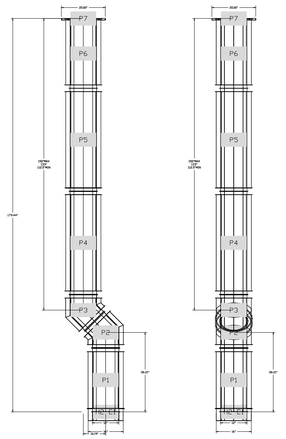
DO NOT LEAK TEST USING SMOKE BOMBS CONTAINING CHLORINES/CHLORIDES. CONSULT WITH CAPTIVEAIRE FOR PROPER LEAK TESTING METHODS.

DUCTWORK #2 TOP VIEW
GRIDDLE DUCT-14'0"RH

DUCTWORK #2 SE VIEW
GRIDDLE DUCT-14'0"RH



DUCTWORK #2 FRONT VIEW
GRIDDLE DUCT-14'0"RH



DUCTWORK #2 SIDE VIEW
GRIDDLE DUCT-14'0"RH

SYSTEM DESIGN VERIFICATION (SDV)

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

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

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

REVISIONS

	DESCRIPTION	DATE
1		
2		
3		
4		
5		

CAPTIVEAIRE
www.captiveaire.com
San Diego Office
San Diego, CA 92111 PHONE: (858) 277-7561 FAX: (619) 661-5344 E-MAIL: sandiego@captiveaire.com

JB Store 0201 MK2- Los Angeles Pacoima #2 NO MUA
13648 Van Nuys BLVD
Los Angeles, CA, 91331

DATE: 3/12/2025
DWG.#: 7399374
DRAWN BY: masiluk
SCALE: 3/4" = 1'-0"
MASTER DRAWING

SHEET NO. 10

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DATES

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P.M. UPDATES:
SUBMITTAL DATE:
1: APR. 10, 2025
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BID:
CONSTRUCTION:

REVISIONS

- 03/25/25-CHECK SET
- 04/22/25-PERMIT SET

CONSULTANT

NY ENGINEERS
NEARBY ENGINEERS
382 NE 191ST STREET SUITE 49674,
MIAMI, FL 33179
PH-914.257.3455
WWW.NY-ENGINEERS.COM

PROFFESSIONAL SEAL

SITE INFORMATION

MK TYPE: MK2X
JIB #: 327
ADDRESS:
13648 VAN NUYS BLVD
PACOIMA, CA
91331
DRAWN BY: NYE
PROJECT #: 12079-24
SCALE:

HOOD DETAILS
(4 OF 8)

M6.3

3M Science. Applied to Life.™

Fire Protection Products
3M™ Fire Barrier Duct Wrap 615+



Technical Data Sheet February / 2021

Product Description

3M™ Fire Barrier Duct Wrap 615+ is a flexible fire-resistant wrap consisting of an inorganic fiber blanket encapsulated with a scrim-reinforced foil. The product is 1-1/2 in. thick, 6pcf density[1]. It is used to fire rate commercial kitchen grease ducts as well as ventilation ducts. 3M™ Fire Barrier Duct Wrap 615+ is a proven alternative to 1- or 2-hour fire-resistant rated shaft enclosures for grease ducts (ICC-ES ESR-1255). With its excellent insulating capabilities, low weight and thin profile, it is an ideal choice for a duct enclosure system. This non-asbestos[2] wrap installs easily due to its high flexibility and strength.

[1] In accordance with the tolerances in ASTM C892 Standard Specification for High-Temperature Fiber Blanket Thermal Insulation.
[2] Has been demonstrated to be soluble in the lungs according to EU guideline 97/69/EG, for biopersistence.

Product Features

- Two-layer wrap for grease ducts rated as a shaft alternative per ASTM E2336
- Zero clearance to combustibles throughout the entire enclosure system for congested spaces
- Butted inner layer in 2-layer Grease Duct Applications
- One-layer wrap for fire-resistive ventilation ducts per ISO 6944 Type A
- High flexibility for installation ease
- Foil encapsulated for blanket protection, less dust, and high wrap strength
- Widest range of penetration seal systems
- Available in 24 in. x 25 ft. (609.6 mm x 7.62 m) and 48 in. x 25 ft. (1219.2 mm x 7.62 m) rolls
- Blanket adhered to foil scrim

Applications

3M™ Fire Barrier Duct Wrap 615+ is an ideal fire resistive enclosure for commercial kitchen grease ducts and ventilation air ducts. It is a proven performance alternative to a 1- or 2-hour fire-resistant rated shaft enclosures for grease ducts and provides zero clearance to combustible construction throughout the entire enclosure system. 3M™ Fire Barrier Water Tight Sealant 1000 NS, 3M™ Fire Barrier Water Tight Sealant 1003 SL or 3M™ Fire Barrier Silicone Sealant 2000+ is used in combination with 3M™ Fire Barrier Duct Wrap 615+ to firestop the duct when the duct penetrates fire-rated floor or wall assemblies. 3M™ Fire Barrier Duct Wrap 615+ also provides a firestop solution where a T-rating is required for penetrations located outside wall cavities or outside fire-resistance rated shaft enclosures.

Two-layer grease duct applications: 3M™ Fire Barrier Duct Wrap 615+ meets the criteria of ASTM E2336 Standard Test Methods for Fire Resistive Grease Duct Enclosure Systems.

Single-layer air duct applications: 3M™ Fire Barrier Duct Wrap 615+ has passed ISO 6944-1985 Fire Resistance Tests – Ventilation Ducts.

T-rating for metallic through-penetrating items: 3M™ Fire Barrier Duct Wrap 615+ is used in conjunction with 3M Fire Barrier sealants to achieve up to 2-hour equal F & T-ratings in ASTM E814 (UL 1479) tested through-penetrations.

Specifications

Installation shall be in strict accordance with manufacture's written instructions, as shown on the approved shop drawings. 3M™ Fire Barrier Duct Wrap 615+ shall be a high-temperature fiber blanket thermal insulation encapsulated in a fiberglass-reinforced aluminized polyester foil. Duct Wrap density shall be nominal 6 pcf (96 kg/m3) and have a nominal 1-1/2 in. (38.1 mm) thickness. The fiber blanket shall have a continuous use limit of 1832 °F (1000 °C). The blanket thermal resistance (R-value) at ambient temperature shall be minimum 6.3 °F $ft\frac{°F \cdot ft^2 \cdot hr}{Btu}$. Smoke Developed Index and Flame Spread Index of the bare blanket, and of the foil encapsulated blanket shall be 0/0. The foil encapsulation shall be bonded to the core blanket material.

Typically Specified Division or Section
Division 7 – Thermal and Moisture Protection
Section 23 07 13 – Duct Insulation
Related Sections
Section 07 21 00 – Thermal Protection
Section 07 21 16 – Blanket Insulation
Section 07 84 00 – Firestopping
Section 23 00 00 – Heating, Ventilation and Air-Conditioning (HVAC)
Section 23 31 13 – Metal Ducts

3M™ Fire Barrier Duct Wrap 615+ has been tested in accordance with the following: ICC-ES AC101, ASTM E2336, ASTM E119, ASTM E814, ASTM E84, ASTM E136, ASTM CS18, ISO 6944-85.

3M™ Fire Barrier Duct Wrap 615+, when installed per ASTM E2336 tested Grease Duct Design Listings, meets the following code requirements for field-applied grease duct enclosures:
NFPA 96
International Mechanical Code®
Uniform Mechanical Code

Performance and Typical Physical Properties

Scrim Color	Aluminum with Black Text		
Blanket Color	White		
Blanket Weight	0.9 lbs./ft² (4.38 kg/m²)		
Surface Burning Characteristics (ASTM E84)	Foil Encapsulated Blanket: Flame Spread Index: 0 Smoke Developed Value: 0		
Thermal Conductivity	Temperature	$\frac{Btu \cdot in}{hr \cdot ft^2 \cdot °F}$	$\frac{W}{m \cdot K}$
	500°F (260°C)	0.60	0.09
	1000°F (537°C)	1.15	0.17
	1500°F (815°C)	1.93	0.28
	1800°F (982°C)	2.51	0.36
	2000°F (1093°C)	2.94	0.43
Linear Shrinkage 24 Hour @ 2012°F (1100°C)	1.2%		
Noise Reduction Coefficient – NRC (ASTM C423)	0.80		
Mold and Mildew Resistance (ASTM C1338)	Devoid of growth		
Duct Service Temperature (ASTM C411)	Maximum Operating Temperature: 250°F (121°C)[3]		

[3] For ducts that operate with a surface temperature exceeding 250°F, contact your local 3M representative for further installation considerations.

Installation Techniques

Consult a 3M Authorized Fire Protection Products Distributor Sales Representative for applicable UL, ULC, Intertek or other third-party drawings and system details.

Installation Details: Tested and listed system details must be followed for each specific application. System examples are listed below:

Grease Duct Listings – ASTM E2336 / ICC-ES AC101

Fire Resistive Rating	Enclosure System	Third-Party Testing Services Design Listing	Description
1 and 2 hour	2 layers of 3M™ Fire Barrier Duct Wrap 615+	ICC-ES ESR-1255 Intertek 3MU/FRD 120-18 Intertek 3MU/FRD 120-19	Rectangular Rectangular Round

Ventilation Duct Listings – ISO 6944 Type A

Fire Resistive Rating	Enclosure System	Third-Party Testing Services Design Listing	Description
1 and 2 hour	1 Layer of 3M™ Fire Barrier Duct Wrap 615+	Intertek 3MU/DI 60-01 UL HNLJ.V-27 Intertek 3MU/DI 120-01	Rect. & Round (1 hour) Rectangular (2 Hour) Rect. & Round (2 Hour)

Through Penetration T-Ratings – ASTM E814 (UL 1479)

Protected Item	UL System	F & T Rating
Floor Sink	F-A-1160	2 Hour
Metal Pipe	F-A-1057	2 Hour

Maintenance

No maintenance is expected when installed in accordance with the applicable Intertek, UL or other third-party listed system and in accordance with
3M™ Fire Barrier Duct Wrap 615+ Installation Guidelines. Once installed, if any section of the 3M™ Fire Barrier Duct Wrap 615+ is damaged such
that the blanket requires repair, the following procedure will apply:
1. If the blanket has not been damaged but the foil has ripped, seal the rips with aluminum foil tape.
2. If the blanket has been damaged:
a. The damaged section should be removed by cutting the steel banding or removing the clips holding it in place.
b. A new section of the same dimension should be cut from a roll of 3M™ Fire Barrier Duct Wrap 615+, either 24" (60.9cm) or 48" (121cm) wide.
c. The new section should be placed and fitted ensuring the same overlap that existed previously (i.e. the original installation method).
d. The steel banding should be placed around the material and tensioned so as to sufficiently hold the 3M™ Fire Barrier Duct Wrap 615+ in place.

Storage and Shelf Life

3M™ Fire Barrier Duct Wrap 615+ rolls are stable under normal storage conditions. Normal stock and stock rotation practices are recommended. 3M™ Fire Barrier Duct Wrap 615+ shelf life is indefinite when stored in original unopened packaging in a dry warehouse environment. Pallets should not be stacked.

Lot numbering (e.g. 1807200223): First two digits = last two digits of the year manufactured (2018=18), third and fourth digit = month of manufacture, fifth and sixth digits = is the day of manufacture, seventh and eighth digits = crew code from fiber blanket, last two digits = day of encapsulation.

Availability

Available from 3M Authorized Fire Protection Products Distributors.
For additional technical and purchasing information, call 1-800-328-1687 or visit 3M.com/firestop.

Safe Handling

Consult Safety Data Sheet prior to handling and disposing of 3M™ Fire Barrier Duct Wrap 615+.

Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

Product Use

Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

Warranty, Limited Remedy and Disclaimer

Unless an additional warranty is specifically stated on the applicable 3M product packaging or product literature, 3M warrants that each 3M product meets the applicable 3M product specification at the time 3M ships the product. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF DEALING, CUSTOM OR USAGE OF TRADE. If the 3M product does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

3M
Industrial Adhesives and Tapes Division
3M Center, Building 225-3S-06
St. Paul, MN 55144-1000

Phone 800-328-1687
Fax 877-369-2923
Web 3M.com/firestop

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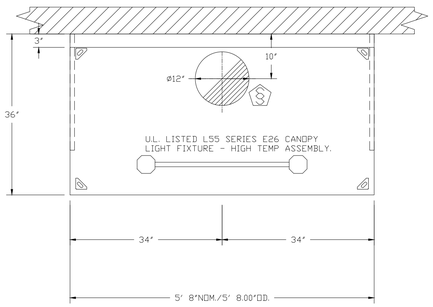
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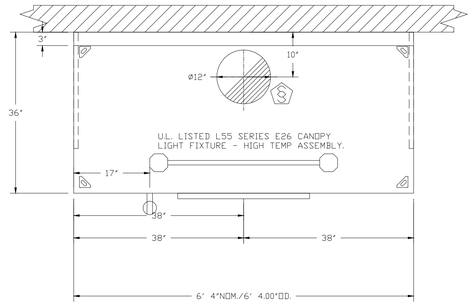
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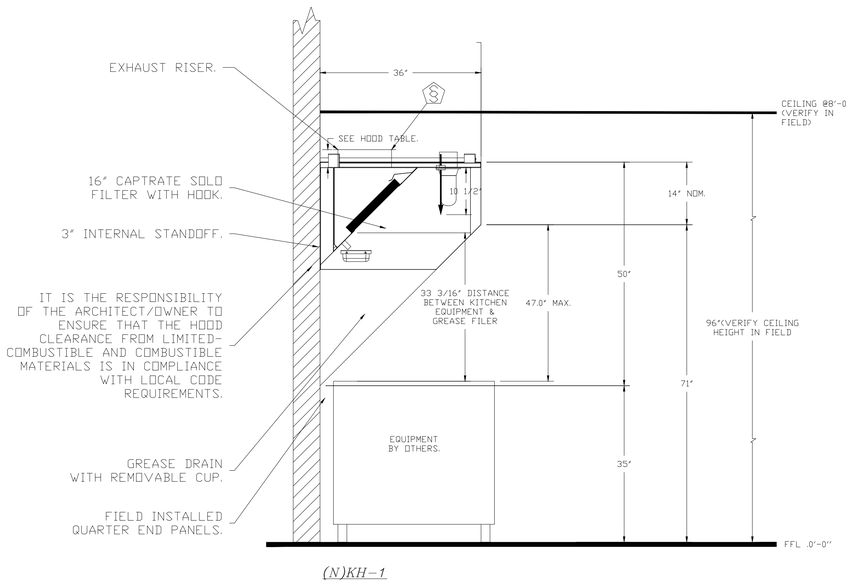
M6.4



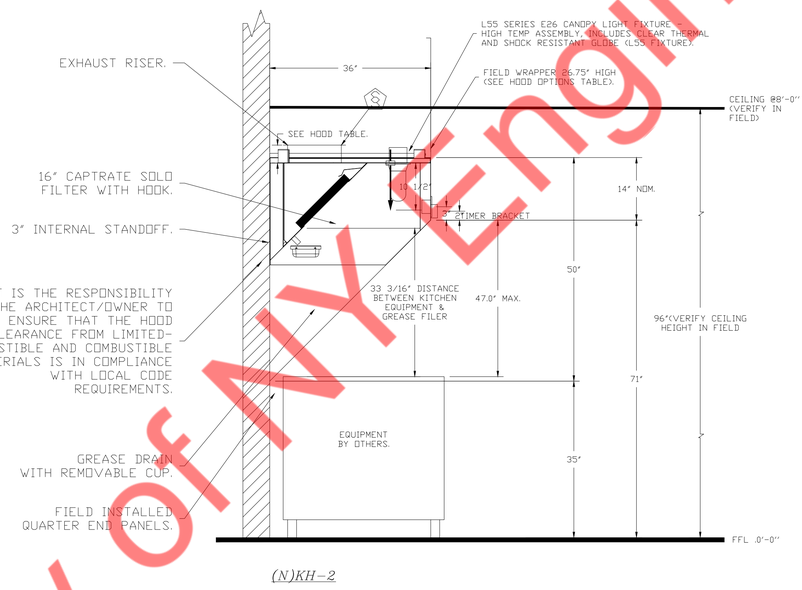
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(N)KH-2



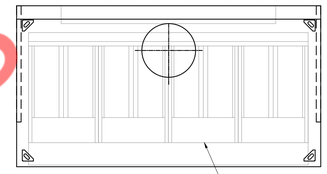
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(N)KH-2

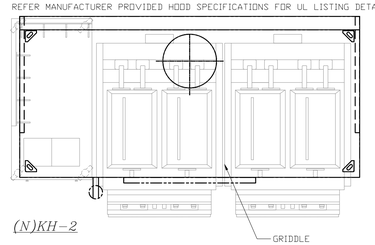
HOOD ELEVATION DETAILS - (N)KH-1 & (N)KH-2

REFER MANUFACTURER PROVIDED HOOD SPECIFICATIONS FOR UL LISTING DETAILS



(N)KH-1

REFER MANUFACTURER PROVIDED HOOD SPECIFICATIONS FOR UL LISTING DETAILS



(N)KH-2

EXCEPTION TO 508.5.1 CANOPY SIZE AND LOCATION:
LISTED EXHAUST HOODS ARE TO BE INSTALLED IN ACCORDANCE WITH THE TERMS OF THEIR LISTINGS AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

HOOD OVERHANG DETAILS - (N)KH-1 & (N)KH-2

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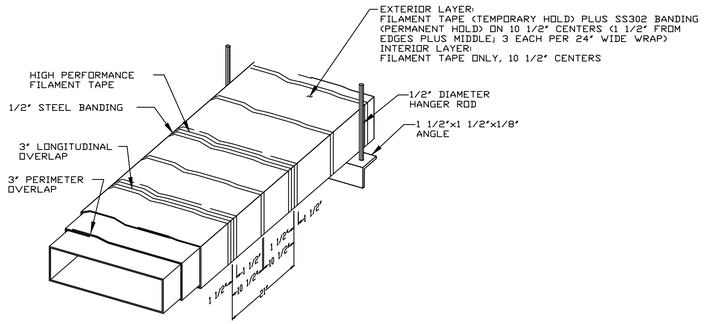
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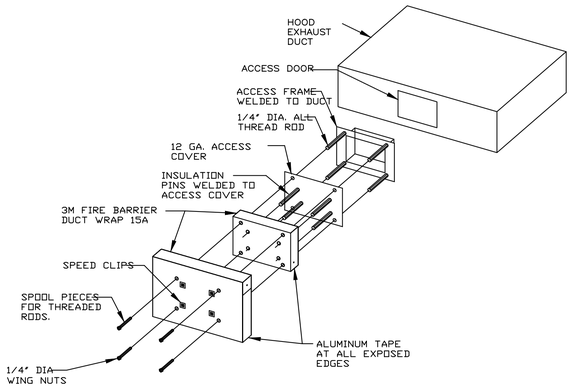
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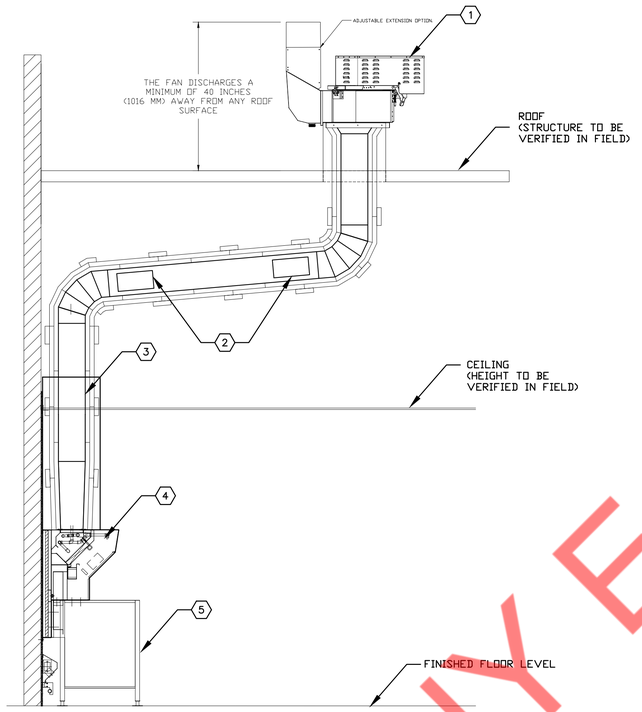
M6.5





FIELD VERIFY NOTES:
1. CONTRACTOR TO FIELD VERIFY THE FIRE RATING OF THE EXISTING GREASE DUCT. IN ABSENCE OF EXISTING ONE PROVIDE NEW WRAPPING AROUND THE DUCT TO MEET THE FIRE RATING REQUIREMENT AS PER LOCAL BUILDING REGULATIONS.
2. INSTALL NEW GREASE DUCT AS PER KITCHEN MANUFACTURER SPECIFICATIONS. PROVIDE DUCT WRAPPING AND SUPPORT AS REQUIRED TO MEET THE LOCAL BUILDING REGULATIONS.

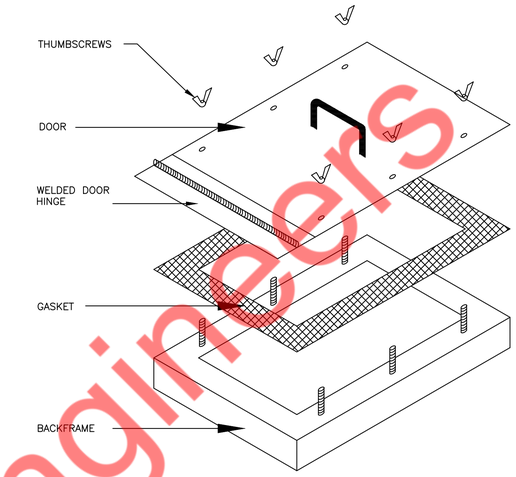
GREASE DUCT WRAP DETAILS



KEYED NOTES:
1. EXHAUST FAN (SEE EXHAUST FAN SCHEDULE)
2. ACCESS DOOR AT ALL CHANGES IN DIRECTION AS PER MANUFACTURER RECOMMENDATIONS
3. GREASE DUCT
4. KITCHEN HOOD
5. KITCHEN EQUIPMENT

1. PROVIDE RATED ACCESS DOORS AT EVERY CHANGE IN DIRECTION AND EVERY 12' ON CENTER. PER MANUFACTURES LISTING MODEL "DW" HORIZONTAL RUNS LESS THAN 75 FT. CAN BE SLOPED 1/16" PER 12", HORIZONTAL RUNS MORE THAN 75 FT. CAN BE SLOPED 3/16" PER 12".
2. DUCT SHOULD BE SLOPED AS MUCH AS POSSIBLE TO REDUCE THE CHANCE OF GREASE ACCUMULATION IN HORIZONTAL RUNS.

GREASE DUCT & CLEANOUT LOCATION AND KITCHEN EXHAUST FAN OUTLET TERMINATION ABOVE THE ROOF



NOTES:
1. ACCESS DOOR IS TO BE DUCTMATE ULTIMATE DOOR II OR EQUAL.
2. ACCESS DOOR IS TO BE U.L. LISTED # 65X3.
3. ACCESS DOOR IS TO MEET OR EXCEED THE REQUIREMENTS OF LATEST EDITION OF NFPA 96
4. AT ALL LOCATIONS REQUIRED BY LOCAL CODE.
5. LISTED GREASE DUCT ACCESS DOOR ASSEMBLIES (ACCESS PANELS) SHALL BE INSTALLED IN ACCORDANCE WITH THE TERMS OF THE LISTING AND THE MANUFACTURER'S INSTRUCTIONS.

GREASE DUCT ACCESS DOOR DETAIL

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M6.6

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

IF THE DUCT OR CHIMNEY IS WITHIN 18 INCHES OF COMBUSTIBLE MATERIAL, PROVIDE UL-2221 OR UL-103 HT LISTED DOUBLE WALL GREASE DUCT OR DOUBLE WALL CHIMNEY EQUAL TO CAPTIVEAIRE SYSTEMS MODEL 'DW- 2R, 2R TYPE HT, 3R, OR 3Z' ROUND 20 GAUGE 430 STAINLESS INNER DUCT INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL.

DOUBLE WALL FACTORY BUILT DUCTWORK
- ALL DUCTWORK IS REQUIRED TO BE INSTALLED WITH THE MAXIMUM SUPPORT SPACING LISTED BELOW.
- FOR A COMPLETE LIST OF APPROVED SUPPORT METHODS, SEE THE ENTIRE INSTALLATION AND OPERATION MANUAL
- DUCTWORK SHALL SLOPE NOT LESS THAN 1/16" PER LINEAR FOOT TOWARDS THE HOOD OR AN APPROVED GREASE COLLECTION RESERVOIR. - WHERE HORIZONTAL DUCTS EXCEED 75 FEET IN LENGTH, THE SLOPE SHALL NOT BE LESS THAN 3/16" PER LINEAR FOOT.

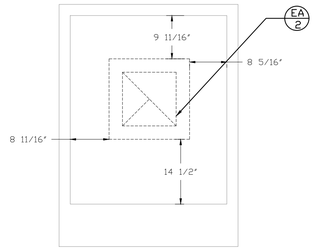
HORIZONTAL	
DUCT DIAMETER	SUPPORT SPACING (FT)
5"	7'
6"	7'
7"	7'
8"	7'
10"	7'
12"	7'
14"	7'
16"	7'
18"	5'
20"	5'
22"	5'
24"	5'
26"	5'
28"	5'
30"	5'
32"	5'
34"	5'
36"	5'

VERTICAL			
TYPE	WALL SUPPORT (FT)	CURB SUPPORT (FT)	FLOOR SUPPORT (FT)
2R & 2R HT (5"-16")	20'	24'	24'
2R (18")	18'	24'	24'
3R & 3Z (5"-24")	10'	24'	24'
3Z (26" -36")	10'	20'	20'

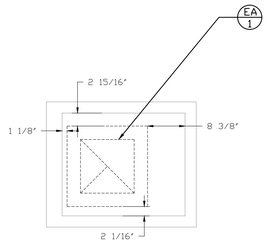
CAPTIVEAIRE SYSTEMS RECOMMENDS THE USE OF LISTED, PRE-FABRICATED ROUND GREASE EXHAUST DUCT TO REDUCE STATIC PRESSURE IN THE SYSTEM, MINIMIZE INSTALLATION AND INSPECTION TIMES, AND ENSURE DUCT IS LIQUID TIGHT

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

GREASE DUCT SPECIFICATIONS



SHAFT FOR (N)KH-1 GREASE DUCT



SHAFT FOR (N)KH-2 GREASE DUCT

FIELD VERIFY NOTES:
1. EXISTING GREASE DUCT TO BE RE-USED. CONTRACTOR EXTEND/MODIFY AS REQUIRED TO CONNECT THE GREASE DUCT FROM (N)KH-1 TO THE EXHAUST FAN (N)KEF-1 AND FROM (N)KH-2 TO THE EXHAUST FAN (N)KEF-2.
2. CONTRACTOR TO FIELD VERIFY THE EXACT SIZE OF SHAFT IN FIELD. REPAIR AS/OF REQUIRED. ENSURE THE DUCT IS FIRE WRAPPED AS PER KITCHEN HOOD MANUFACTURER SPECIFICATION OR TO MEET THE LOCAL CODE BUILDING REGULATIONS.

CLEARANCE BETWEEN SHAFT & GREASE DUCT

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PROJECT #: 12079-24
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HOOD DETAILS
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M6.7

CERTIFICATE OF COMPLIANCE NRCC-MCH-E

This document is used to demonstrate compliance for mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.4, or 141.0(b)2 for alterations.

Project Name: JIB #327, Van Nuys BLVD, Pacoima, CA — **Report Page:** (Page 1 of 12)
Project Address: 13648 Van Nuys BLVD, Pacoima, CA 91331 — **Date Prepared:** 2025-04-22T02:45:07-04:00

A. GENERAL INFORMATION

01	Project Location (city)	Pacoima	04	Total Conditioned Floor Area	2121
02	Climate Zone	9	05	Total Unconditioned Floor Area	2293
03	Occupancy Types Within Project:		06	# of Stories (Habitable Above Grade)	1

★ Restaurant

B. PROJECT SCOPE

This table includes mechanical systems or components that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.4, 170.2(b) or 141.0(b)2 and 180.2(b)2 for alterations.

01 Air System(s)		02 Wet System Components		03 Dry System Components	
☒	Heating Air System	☐	Water Economizer	☒	Air Economizer
☒	Cooling Air System	☐	Pumps	☐	Electric Resistance Heat
	Mechanical Controls	☐	System Piping	☒	Fan Systems
☒	Mechanical Controls (existing to remain, altered or new)	☐	Cooling Towers	☒	Ductwork (existing to remain, altered or new)
		☐	Chillers	☒	Ventilation
		☐	Boilers	☐	Zonal Systems/ Terminal Boxes

CERTIFICATE OF COMPLIANCE NRCC-MCH-E
Project Name: JIB #327, Van Nuys BLVD, Pacoima, CA — **Report Page:** (Page 2 of 12)
Date Prepared: 2025-04-22T02:45:07-04:00

C. COMPLIANCE RESULTS

Table C will indicate if the project data input into the compliance document is compliant with mechanical requirements. This table is not editable by the user. If this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D., or the table indicated as not compliant for guidance.

01		02		03		04		05		06		07		08	09
System Summary 110.1, 110.2, 140.4, 170.2(c)	AND	Pumps 140.4(k); 170.2(c)4i	AND	Fans/ Economizers 140.4(c), 140.4(e), 170.2(c)	AND	System Controls 110.2, 120.2, 140.4(f), 170.2(c)	AND	Ventilation 120.1, 160.2	AND	Terminal Box Controls 140.4(d), 170.2(c)4B	AND	Distribution 120.3, 140.4(l), 160.2, 160.3	AND	Cooling Towers 110.2(e)2	Compliance Results
(See Table F)		(See Table G)		(See Table H)		(See Table I)		(See Table J)		(See Table K)		(See Table L)		(See Table M)	
Yes	AND		AND	Yes	AND	Yes	AND	Yes	AND		AND	Yes	AND		COMPLIES with Exceptional Conditions
Mandatory Measures Compliance (See Table Q for Details)										COMPLIES					

D. EXCEPTIONAL CONDITIONS

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

The permit applicant has indicated on Table J that ventilation calculations have been attached or included elsewhere on the plans.

E. ADDITIONAL REMARKS

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

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Space Conditioning System Information

01 System Name	02 Quantity	03 System Serving	04 System Status	05 Space Type	06 Utilizing Recovered Heat
(N)RTU-1 & (N)RTU-3	2	Single zone	Alteration		☐

CERTIFICATE OF COMPLIANCE NRCC-MCH-E
Project Name: JIB #327, Van Nuys BLVD, Pacoima, CA — **Report Page:** (Page 3 of 12)
Date Prepared: 2025-04-22T02:45:07-04:00

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Space Conditioning System Information

01 System Name	02 Quantity	03 System Serving	04 System Status	05 Space Type	06 Utilizing Recovered Heat
(N)RTU-4	1	Single zone	Alteration		☐

Dry System Equipment Sizing (includes air conditioners, condensers, heat pumps, VRF, furnaces and unit heaters and DOAS systems)

01 Name or Item Tag	02 Equipment Category per Tables 110.2, 140.4(a)2 and 170.2(c)3aii	03 Equipment Type per Tables 110.2 and Title 20	04 Smallest Size Available[1] 140.4(a) and 170.2(c)1	Equipment Sizing per Mechanical Schedule (kBtu/h) 140.4(a)&b), 170.2(c)1 & 170.2(c)2						
				05 Heating Output[2,3]		06	07 Cooling Output[2,3]		08 Load Calculations[3,4]	
				Per Design (kBtu/h)	Rated (kBtu/h)	Supp. Heating Output (kBtu/h)	Sensible Per Design (kBtu/h)	Rated (kBtu/h)	Total Heating Load (kBtu/h)	Total Sensible Cooling Load (kBtu/h)
(N)RTU-1 & (N)RTU-3	Furnace + AC	AC, air cooled, single pkg + warm-air central furnace, gas-fired	Yes	45	97.2	0	30	88.3	97.2	70.7
(N)RTU-4	Unitary Heat Pumps (no elec. resistance)	Air-cooled, pkg (3 phase)	Yes	20	27.7	0	20	34.3	27.7	27.8

[1]FOOTNOTES: Equipment shall be the smallest size, within the available options of the desired equipment line, necessary to meet the design heating and cooling loads of the building per 140.4(a) and 170.2(c)1. Healthcare facilities are excepted.
[2]It is common practice to show rated output capacity on the equipment schedule. Sensible cooling output comes from specification sheet tables.
[3] If equipment is heating only, leave cooling output and load blank. If equipment is cooling only, leave heating output and load blank.
[4] Authority Having Jurisdiction may ask for load calculations used for compliance per 140.4(b) and 170.2(c).

CERTIFICATE OF COMPLIANCE NRCC-MCH-E
Project Name: JIB #327, Van Nuys BLVD, Pacoima, CA — **Report Page:** (Page 4 of 12)
Date Prepared: 2025-04-22T02:45:07-04:00

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP), DX-DOAS and Dual Fuel Heat Pumps)

01	02	03	04	05	06	07	08	09
		Heating Mode				Cooling Mode		
Name or Item Tag	Size Category (Btu/h)	Rating Condition (°F)	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency
(N)RTU-1 & (N)RTU-3	>=54kBtuh cooling / <225kBtuh heating		AFUE	0.8	0.81	EER	11	12.1
						IEER	14.6	17.7
(N)RTU-4	<65,000		HSPF	8	8.5	SEER	14	16.8

G. PUMPS

This section does not apply to this project.

CERTIFICATE OF COMPLIANCE NRCC-MCH-E
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Date Prepared: 2025-04-22T02:45:07-04:00

H. FAN SYSTEMS & AIR ECONOMIZERS

This table is used to demonstrate compliance with prescriptive requirements found in 140.4(c), 140.4(e), 140.4(m), 170.2(c)3, and 170.2(c)4A for fan systems. Fan systems serving only process loads are exempt from these requirements and do not need to be included in Table H.

System Name	(N)RTU-1 & (N)RTU-3	Quantity	2	Fan System Status	Alteration	System Zoning	all other systems	Serving Dwelling Units	Not Serving Dwelling Units	Fan System Airflow (cfm)	3,000	Site Elevation	770	Economizer	Differential Enthalpy
01	02	03	04			05		06	07	08	09			10	11
								Allowance						Design	
Fan Name or Item Tag	Fan Type	Qty	Component			Airflow through Component (%)	Water Gauge (w.g)	Component Allowance (watt/cfm)	Fan Allowance (watt/cfm)[3]	Design Electrical Input Power Method		Motor Nameplate Horsepower		Fan Electrical Input Power (kW)	
(N)RTU-1 & (N)RTU-3	Supply	2	Altered:Supply Fan System			100		0.139	0.139	Manufacturer provided				0.75	
Supply Fan Base Allowance (watt/cfm)		0.232	Exhaust/Return/Relief/Transfer Fan Base Allowance(watt/cfm)			0	Fan System Allowance (kW)[3]		1.53	Fan System Electrical Input Power (kW)				1.5	

CERTIFICATE OF COMPLIANCE NRCC-MCH-E
Project Name: JIB #327, Van Nuys BLVD, Pacoima, CA — **Report Page:** (Page 6 of 12)
Date Prepared: 2025-04-22T02:45:07-04:00

H. FAN SYSTEMS & AIR ECONOMIZERS

System Name	(N)RTU-4	Quantity	1	Fan System Status	Alteration	System Zoning	all other systems	Serving Dwelling Units	Not Serving Dwelling Units	Fan System Airflow (cfm)	1,200	Site Elevation	770	Economizer	Differential Enthalpy
01	02	03	04			05		06	07	08	09			10	11
								Allowance						Design	
Fan Name or Item Tag	Fan Type	Qty	Component			Airflow through Component (%)	Water Gauge (w.g)	Component Allowance (watt/cfm)	Fan Allowance (watt/cfm)[3]	Design Electrical Input Power Method		Motor Nameplate Horsepower		Fan Electrical Input Power (kW)	
(N)RTU-4	Supply	1	Altered:Supply Fan System			100		0.139	0.139	Manufacturer provided				0.9	
Supply Fan Base Allowance (watt/cfm)			Exhaust/Return/Relief/Transfer Fan Base Allowance(watt/cfm)					Fan System Allowance (kW)[3]				Fan System Electrical Input Power (kW)		0.9	

[1] FOOTNOTES: Fans serving spaces with design background noise goals below NC35
[2] Low-turndown single-zone VAV fan system must be capable of and configured to reduce airflow to 50 percent of design airflow and use no more than 30 percent of the design wattage at that airflow. No more than 10 percent of the design load served by the equipment shall have fixed loads.
[3] Fan system allowance includes fan system base allowance.
[4] Filter pressure loss can only be counted once per fan system.
[5] Complex Fan System means a fan system that combines a single cabinet fan system with other supply fans, exhaust fans, or both.
[6] Computer room economizers must meet requirements of 140.9(a) and will be documented on the NRCC-PRC-E document..

H. EXHAUST AIR HEAT RECOVERY 140.4(q), 170.2(c)4O

01	02	03	04	05	06	07	08	09	10	11

CERTIFICATE OF COMPLIANCE NRCC-MCH-E
Project Name: JIB #327, Van Nuys BLVD, Pacoima, CA — **Report Page:** (Page 7 of 12)
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H. EXHAUST AIR HEAT RECOVERY 140.4(q), 170.2(c)4O

Fan System Name	Qty	Hours of Operation per Year	Design Supply Airflow Rate	Outdoor Airflow	% Outdoor Air at Full Design Airflow	Exemptions to Exhaust Air Heat Recovery Requirement per 140.4(q) & 170.2(c)4O	Exhaust Air Heat Recovery 140.4(q) & 170.2(c)4O	Type Of Heat Recovery Rating	Required Recovery Ratio	Energy Recovery Bypass
(N)RTU-1 & (N)RTU-3			3,000	825	28	NA: Total airflow exhausted and relieved within 20ft <75% per Exception 6 to 140.4(q)				
(N)RTU-4			1,200	110	9	NA: Total airflow exhausted and relieved within 20ft <75% per Exception 6 to 140.4(q)				

Fan Energy Index (FEI)

01 Name or Item Tag	02 FEI Exception	03 FEI
(N)RTU-1 & (N)RTU-3	Altered Fan System	
(N)RTU-4	Altered Fan System	

CERTIFICATE OF COMPLIANCE NRCC-MCH-E
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I. SYSTEM CONTROLS

This table is used to demonstrate compliance with mandatory controls in 110.2 and 120.2 and prescriptive controls in 140.4(f) and (n), 170.2(c)4D 170.2(c)4L or requirements in 141.0(b)2f 180.2(b)2 for altered space conditioning systems.

01	02	03	04	05	06	07	08	09	10
System Name	System Zoning	Conditioned Floor Area Being Served (ft²)	Thermostats 110.2(b) & (c)[1], 120.2(a) 160.3(a)2A or 141.0(b)2F & 180.2(b)2	Shut-Off Controls 120.2(e) & 160.3(a)2D	Isolation Zone Controls 120.2(g) & 160.3(a)2F	Demand Response 110.12 120.2(b) & 160.3(a)2B	Supply Air Temp. Reset 140.4(f) & 170.2(c)4D	Window Interlocks per 140.4(n) & 170.2(c)4D	Direct Digital Control (DDC) per 120.2
(N)RTU-1, RTU-3 & (N)RTU-4	Single zone	<= 25,000 ft²	Setback	4 Hour Timer	NA: Single Zone	DR Tstat per 110.12	NA: Alteration Project	NA: Alteration	NA: Single Zone

[1]FOOTNOTES: Gravity gas wall heaters, gravity floor heaters, gravity room heaters, non-central electric heaters, fireplaces or decorative gas appliances, wood stoves are not required to have setback thermostats.

I. VENTILATION AND INDOOR AIR QUALITY

This table is used to demonstrate compliance with mandatory ventilation requirements in 120.1 120.2(e)3B 140.4(p) and 140.4(q) for all nonresidential and hotel/motel and dr124refnolnk/()160.2, 160.3(a)3D, 170.2(c)4N, 170.2(c)4O for high-rise residential occupancies. For alterations, only ventilation systems being altered within the scope of the permit application need to be documented in this table. In lieu of this table, the required outdoor ventilation rates and airflows may be shown on the plans or the calculations can be presented in a spreadsheet.

01	☒	Check the box if the project is showing ventilation calculations on the plans, or attaching the calculations instead of completing this table.
02	☐	Check this box if the project included Nonresidential, Hotel/Motel Spaces or Multifamily Common Use Spaces
	☐	
03	☐	Check the box if the project is using natural ventilation in any nonresidential or hotel/motel spaces to meet required ventilation rates per 120.1(c)2.

K. TERMINAL BOX CONTROLS

This section does not apply to this project.

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DATES
RELEASE:
P.M. UPDATES:
SUBMITTAL DATE:
1: APR. 10, 2025
2:
3:
BID:
CONSTRUCTION:

REVISIONS
1 03/25/25—CHECK SET
2 04/22/25—PERMIT SET
3
4
5
6

CONSULTANT
NY ENGINEERS
NEARBY ENGINEERS
382 NE 191ST STREET SUITE 49674,
MIAMI, FL 33179
PH-914.257.3455
WWW.NY-ENGINEERS.COM

PROFFESSIONAL SEAL

SITE INFORMATION
MK TYPE: MK2X
JIB #: 327
ADDRESS:
13648 VAN NUYS BLVD
PACOIMA, CA
91331
DRAWN BY: NYE
PROJECT #: 12079—24
SCALE:

ENERGY ANALYSIS
(TITLE 24)
(1 OF 2)

M7.0

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: JIB #327, Van Nuys BLVD_Pacoima, CA	**Report Page:**	**(Page 9 of 12)**
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L. DISTRIBUTION (DUCTWORK and PIPING)

This table is used to show compliance with mandatory pipe insulation requirements found in 120.3 and mandatory requirements found in 120.4(g) for duct sealing.

01	☐	Insulation shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather shall be installed with a cover suitable for outdoor service. Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space shall have a Class I or Class II vapor retarder. All penetrations and joints of which shall be sealed.

Duct Leakage Testing

The answers to the questions below apply to the following duct systems:		Mechanical Floor Plans	**NR/ Common Use:** Duct leakage testing shall not exceed 15% per NA7.5.3 required for these systems?	No
			Dwelling Units: Total duct leakage of duct system shall not exceed 15% or duct system to outside shall not exceed 10% per RA3.1.4 required for systems?	---
			Duct leakage testing per CMC Section 603.9.2 required for these systems?	Yes

11	No	The scope of the project includes only duct systems serving healthcare facilities
12	Yes	Duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system.
13	Yes	The space conditioning system serves less than 5,000 ft^2 of conditioned floor area.
14	No	The combined surface area of the ducts is more than 25% of the total surface area of the entire duct system:
15	No	The scope of the project includes extending an existing duct system, which is constructed, insulated or sealed with asbestos.
16	No	The scope of the project includes an existing duct system that is documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Reference Nonresidential Appendix NA2.
17	Yes	All Ductwork and plenums with pressure class ratings shall be constructed to Seal Class A
18	No	All ductwork is an extension of an existing duct system
19	No	Ductwork serving individual dwelling unit
20		< 25 ft of new or replacement space conditioning ducts installed
21	R-8	Duct Insulation R-value
22	No	Ductwork Existing To Remain
23	Yes	Duct System Connected To Altered Space Conditioning System

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
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M. COOLING TOWERS

This section does not apply to this project.

N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4

Form/Title
NRCI-MCH-01-E - Must be submitted for all buildings

O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4

Form/Title	Systems/Spaces To Be Field Verified
NRCA-MCH-02-A - Outdoor Air must be submitted for all newly installed HVAC units. Note: MCH-02-A can be performed in conjunction with MCH-07-A Supply Fan VFD Acceptance (if applicable) since testing activities overlap.	
NRCA-MCH-03-A - Constant Volume Single Zone HVAC NOTE: This form does not automatically move to "Yes". If Constant Volume Single Zone HVAC Systems are included in the scope, permit applicant should move this form to "Yes".	(N)RTU-1, RTU-3 & (N)RTU-4
NRCA-MCH-05-A - Air Economizer Controls	(N)RTU-1 & (N)RTU-3; (N)RTU-4
NRCA-MCH-13-A Automatic FDD for Air Handling Units and Zone Terminal Units Acceptance	(N)RTU-1 & (N)RTU-3

P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

There are no NRCV forms required for this project.

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: JIB #327, Van Nuys BLVD_Pacoima, CA	**Report Page:**	**(Page 11 of 12)**
	Date Prepared:	2025-04-22T02:45:07-04:00

Q. MANDATORY MEASURES DOCUMENTATION LOCATION

This table is used to indicate where mandatory measures are documented in the plan set or construction documentation.

01		02
Compliance with Mandatory Measures documented through MCH Mandatory Measures Note Block	Yes	Plan sheet or construction document location Mechanical set_sheet M1.0 to M4.0

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: JIB #327, Van Nuys BLVD_Pacoima, CA	**Report Page:**	**(Page 12 of 12)**
Project Address: 13648 Van Nuys BLVD, Pacoima, CA 91331	**Date Prepared:**	2025-04-22T02:45:07-04:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: MICHAEL TOBIAS	Documentation Author Signature:
Company: NY ENGINEERS	Signature Date: 2025-04-22
Address: 382 NE 191st ST, SUITE 49674	CEA/ HERS Certification identification (if applicable):
City/State/Zip: MIAMI, FLORIDA 33179	Phone: 212-575-5300

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: MICHAEL TOBIAS	Responsible Designer Signature:
Company: NY ENGINEERS	Date Signed: 2025-04-22
Address: 382 NE 191ST ST, SUITE 49674	License: 433756
City/State/Zip: MIAMI, FLORIDA 33179	Phone: 212-575-5300

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DATES

RELEASE:
P.M. UPDATES:
SUBMITTAL DATE:
1: APR. 10, 2025
2:
3:
BID:
CONSTRUCTION:

REVISIONS

△	03/25/25-CHECK SET
△	04/22/25-PERMIT SET
△	
△	
△	
△	

CONSULTANT

NY ENGINEERS
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382 NE 191ST STREET SUITE 49674,
MIAMI, FL 33179
PH-914.257.3455
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PROFFESSIONAL SEAL

SITE INFORMATION

MK TYPE: MK2X
JIB #: 327
ADDRESS:
13648 VAN NUYS BLVD
PACOIMA, CA
91331
DRAWN BY: NYE
PROJECT #: 12079-24
SCALE:

ENERGY ANALYSIS
(TITLE 24)
(2 OF 2)

M7.1

STATE OF CALIFORNIA
Process Systems CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-PRC-E
This form is used to document any process systems that are within the scope of the permit application and are demonstrating compliance with mandatory requirements in 120.6/ 160.7 or prescriptive requirements in 140.9. This compliance document is used for newly constructed, addition and alteration projects.		
Project Name: JIB #327, Van Nuys BLVD_Pacoima, CA	**Report Page:**	**(Page 1 of 6)**
Project Address: 13648 Van Nuys BLVD, Pacoima, CA 91331	**Date Prepared:**	2025-04-22T01:58:12-04:00

A. GENERAL INFORMATION

01	Project Location (city)	Pacoima	04	Total Conditioned Floor Area	2121
02	Climate Zone	9	05	Total Unconditioned Floor Area	2293
03	Occupancy Types Within Project:		06	# of Stories (Habitable Above Grade)	1

● Restaurant

B. PROJECT SCOPE

This table includes process systems that are within the scope of the permit application and are demonstrating compliance with mandatory requirements in 120.6 / 160.7 or prescriptive requirements in 140.9.

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

01	02
☐ Refrigerated Spaces <3,000 ft² Total (no Title 24, Pt6 requirements)	☐ Escalator & Moving Walkway Speed Controls (mandatory 120.6(g))
☐ Refrigerated Spaces >=3,000 ft² Total (mandatory 120.6(a))	☐ Computer Rooms (mandatory 120.6(j) and prescriptive 140.9(a))[1]
☐ Food /Beverage Stores >8,000 ft² cfa (mandatory 120.6(b))	☒ Commercial Kitchen Ventilation/Exhaust (prescriptive 140.9(b))[1]
☐ Enclosed Parking Garage Exhaust >=10,000 cfm (mandatory 120.6(c))	☐ Laboratory Exhaust/Factory Exhaust & Fume Hood (prescriptive 140.9(c))[1]
☐ Newly Installed Process Boilers (mandatory 120.6(d))	☐ Pool/Spa (mandatory 110. A / 160.7)
☐ Compressed Air Systems Combined HP >= 25 (mandatory 120.6(e))	☐ Controlled Environment Horticulture (mandatory 120.6(h))
☐ Elevator Lighting & Ventilation Controls (mandatory 120.6(f) / 160.7)	☐ New Steam Traps (mandatory 120.6(i))

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

STATE OF CALIFORNIA
Process Systems CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-PRC-E
Project Name: JIB #327, Van Nuys BLVD_Pacoima, CA	**Report Page:**	**(Page 2 of 6)**
	Date Prepared:	2025-04-22T01:58:12-04:00

C. COMPLIANCE RESULTS

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

01	02	03	04	05	06	07	08	09	10	11	12	13	14
Refrigerated Warehouse / Space 120.6(a) (See Table F)	Commercial Refrigeration 120.6(b) (See Table G)	Parking Garage Exhaust 120.6(c) (See Table H)	Process Boilers 120.6(d) (See Table I)	Compressed Air Systems 120.6(e) (See Table J)	Elevators 120.6(f) / 160.7 (See Table K)	Escalators & Moving Walkways 120.6(g) (See Table L)	Computer Rooms 140.9(a) (See Table M)	Commercial Kitchens 140.9(b) (See Table N)	Laboratory/ Factory Exhaust 140.9(c) (See Table O)	Controlled Environment Horticulture 120.6(h) (See Table P)	Steam Trapi 120.6(i) (See Table Q)	Multifamily Pool/Spa 160.7 (See Table R)	**Compliance Results**
								Yes					COMPLIES

D. EXCEPTIONAL CONDITIONS

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

E. ADDITIONAL REMARKS

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

F. REFRIGERATED WAREHOUSES/SPACES

This section does not apply to this project.

G. COMMERCIAL REFRIGERATION

This section does not apply to this project.

STATE OF CALIFORNIA
Process Systems CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-PRC-E
Project Name: JIB #327, Van Nuys BLVD_Pacoima, CA	**Report Page:**	**(Page 3 of 6)**
	Date Prepared:	2025-04-22T01:58:12-04:00

H. ENCLOSED PARKING GARAGE EXHAUST

This section does not apply to this project.

I. PROCESS BOILER

This section does not apply to this project.

J. COMPRESSED AIR SYSTEMS

This section does not apply to this project.

K. ELEVATOR LIGHTING AND VENTILATION

This section does not apply to this project.

L. ESCALATORS AND MOVING WALKWAYS SPEED CONTROLS

This section does not apply to this project.

M. COMPUTER ROOM SYSTEM SUMMARY

This section does not apply to this project.

N. COMMERCIAL KITCHEN EXHAUST AND VENTILATION

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

Kitchen Ventilation 140.9(b)2

01		
	☐	Existing kitchen hoods not being replaced as part of an addition or alteration (do not need to meet requirements)
Requirements		

STATE OF CALIFORNIA
Process Systems CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-PRC-E
Project Name: JIB #327, Van Nuys BLVD_Pacoima, CA	**Report Page:**	**(Page 4 of 6)**
	Date Prepared:	2025-04-22T01:58:12-04:00

N. COMMERCIAL KITCHEN EXHAUST AND VENTILATION

02	Replacement Air to Hood Compliance Method 140.9(b)1A
	Not providing replacement air directly to the hood(s)
03	Mechanically cooled or heated makeup air delivered to any space with a kitchen hood is designed per 140.9(b)2A to not exceed the greater of:
	The hood exhaust flow minus the available transfer air from adjacent spaces
04	Location that is supplying transfer air: Dining/Public*/>
05	The kitchen/ dining facility has a total Type I and Type II kitchen hood exhaust airflow > 5000 cfm and is designed to have one of the following per 140.9(b)2B:
	NA/NOT a kitchen/ dining facility having a total Type I and Type II kitchen hood exhaust airflow rate > 5,000 cfm

Kitchen Exhaust: Airflow Rate 140.9(b)1B

01	Kitchen Name or Item Tag	Kitchen	Compliance Method per 140.9(b)1B		NA: Existing hoods are being replaced as part of an addition or alteration	
02	03	04	05	06	07	08
Name or Item Tag	Hood Type[1]	Hood Style	Hood Length (ft)	Equipment Duty	Design Hood Exhaust Rate CFM	Max Hood Exhaust Rate Allowed CFM
IN|KH-1	Type I				1100	
IN|KH-2	Type I				1200	

[1] *FOOTNOTES: Type II hoods do not have a max hood exhaust air rate per 140.9(b)1B*

O. LABORATORY AND FACTORY EXHAUST AND FUME HOODS

This section does not apply to this project.

P. CONTROLLED ENVIRONMENT HORTICULTURE

This section does not apply to this project.

Q. STEAM TRAPS IN INDUSTRIAL FACILITIES

This section does not apply to this project.

STATE OF CALIFORNIA
Process Systems CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-PRC-E
Project Name: JIB #327, Van Nuys BLVD_Pacoima, CA	**Report Page:**	**(Page 5 of 6)**
	Date Prepared:	2025-04-22T01:58:12-04:00

R. Pool & SPAs

This section does not apply to this project.

S. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selections have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4

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

T. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

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

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

STATE OF CALIFORNIA
Process Systems CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-PRC-E
Project Name: JIB #327, Van Nuys BLVD_Pacoima, CA	**Report Page:**	**(Page 6 of 6)**
Project Address: 13648 Van Nuys BLVD, Pacoima, CA 91331	**Date Prepared:**	2025-04-22T01:58:12-04:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: MICHAEL TOBIAS	Documentation Author Signature:
Company: NY ENGINEERS	Signature Date: 2025-04-22
Address: 382 NE 191st ST, SUITE 49674	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: MIAMI, FLORIDA 33179	Phone: 212-575-5300

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: MICHAEL TOBIAS	Responsible Designer Signature:
Company: NY ENGINEERS	Date Signed: 2025-04-22
Address: 382 NE 191st ST, SUITE 49674	License: M33750
City/State/Zip: MIAMI, FLORIDA 33179	Phone: 212-575-5300

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DATES

RELEASE:
P.M. UPDATES:
SUBMITTAL DATE:
1: APR. 10, 2025
2:
3:
BID:
CONSTRUCTION:

REVISIONS

△	03/25/25-CHECK SET
△	04/22/25-PERMIT SET
△	
△	
△	
△	

CONSULTANT

NY ENGINEERS
NEARBY ENGINEERS
382 NE 191ST STREET SUITE 49674,
MIAMI, FL 33179
PH-914.257.3455
WWW.NY-ENGINEERS.COM

PROFFESSIONAL SEAL

SITE INFORMATION

MK TYPE: MK2X
JIB #: 327
ADDRESS:
13648 VAN NUYS BLVD
PACOIMA, CA
91331
DRAWN BY: NYE
PROJECT #: 12079-24
SCALE:

PROCESS COMPLIANCE (TITLE 24)

M7.2

PLUMBING LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
—UGSAN—	UGSAN	UNDERGROUND SANITARY PIPING
—SAN—	SAN	SANITARY PIPING
—GW—	GW	GREASE WASTE
—CW—	CW	DOMESTIC COLD WATER
EX.CW	EX.CW	EXISTING COLD WATER
—HW—	HW	DOMESTIC HOT WATER
—HWR—	HWR	HOT WATER RETURN
—FW—	FW	FILTERED WATER
—G—	G	GAS PIPING
EX.G	EX.G	EXISTING GAS PIPING
—CD—	CD	CONDENSATE DRAIN
—V—	V	SANITARY VENT
	C.V	CONTROL VALVE
	C.V.	CHECK VALVE
	GC	GAS COCK
	U.	UNION
	H.B.	HOSE BIBB
		P-TRAP
		PIPE UP
		PIPE DROP
		PIPE CAP
	FD	FLOOR DRAIN / HUB DRAIN
	BFP	BACKFLOW PREVENTER
	P.O.C.	POINT OF CONNECTION
	CO	CLEANOUT
	BV	BALANCING VALVE
	FS	FLOOR SINK
	SOL	SOLENOID VALVE
	FCO	FLOOR CLEANOUT
	HD	HUB DRAIN

ABBREVIATIONS

ABV.	ABOVE	I.W.	INDIRECT WASTE
BEL.	BELOW	INV. EL.	INVERT ELEVATION
CLG.	CEILING	M.C.	MECHANICAL CONTRACTOR
DN.	DOWN	O.F.D.	OVERFLOW DRAIN
DTR.	DOWN THROUGH ROOF	P.C.	PLUMBING CONTRACTOR
E.C.	ELECTRICAL CONTRACTOR	PSI (G)	POUNDS PER SQ. INCH (GAUGE)
D.F.U.	DRAINAGE FIXTURE UNITS	R.D.	ROOF DRAIN
FLR.	FLOOR	TYP	TYPICAL
GPH.	GALLONS PER HOUR	UON	UNLESS OTHERWISE NOTED
GPM.	GALLONS PER MINUTE	UTR	UP THROUGH ROOF
GPF.	GALLONS PER FLUSH	VTR	VENT THROUGH ROOF
G.C.	GENERAL CONTRACTOR	W.S.F.U.	WATER SUPPLY FIXTURE UNITS
GR.	GRADE	W/	WITH
HDR.	HEADER	W/O	WITHOUT
W.I.B.	WALK IN BOX	VIF	VERIFY IN FIELD
W.I.C.	WALK IN COOLER	E	EXISTING
W.I.F.	WALK IN FREEZER	N	NEW

SECTION 22 05 00

COMMON WORK RESULTS FOR PLUMBING

1.0 GENERAL

1.01 DESCRIPTION

A. THIS DIVISION 22 AND THE ACCOMPANYING DRAWINGS COVER THE PROVISION OF ALL LABOR, EQUIPMENT, APPLIANCES, AND MATERIALS AND PERFORMING ALL OPERATIONS IN CONNECTION WITH THE CONSTRUCTION OF THE PLUMBING SYSTEMS AS SPECIFIED HEREIN AND AS SHOWN.

B. ALL WORK SPECIFIED IN THIS SECTION IS GOVERNED BY THE COMMON WORK RESULTS FOR PLUMBING 22 05 00,

C. THE GENERAL PROVISIONS AND DIVISION 1, INCLUDING THE GENERAL, SUPPLEMENTARY AND OTHER CONDITIONS AND OTHER DIVISIONS, AS APPROPRIATE, APPLY TO WORK SPECIFIED IN THIS DIVISION.

1. 02 EXISTING CONDITIONS

A. ATTENTION IS CALLED TO THE FACT THAT THE WORK IS TO BE PERFORMED WITHIN AN EXISTING, OPERATIONAL FACILITY. PRIOR TO THE SUBMISSION OF BIDS, EACH BIDDER SHALL VISIT THE PROJECT SITE, THOROUGHLY INVESTIGATE AND BE FAMILIAR WITH ALL EXISTING CONDITIONS WHICH WILL AFFECT THE WORK; ESPECIALLY THE WORK TO BE PERFORMED ABOVE THE EXISTING CEILINGS.

B. CONNECT NEW WORK TO EXISTING WORK IN A NEAT AND WORKMANLIKE MANNER. WHERE AN EXISTING STRUCTURE MUST BE CUT OR EXISTING UTILITIES INTERFERE, SUCH OBSTRUCTIONS SHALL BE BYPASSED, REMOVED, REPLACED OR RELOCATED, PATCHED AND REPAIRED. WORK DISTURBED OR DAMAGED SHALL BE REPLACED OR REPAIRED TO ITS PRICE CONDITION.

C. PRIOR TO THE START OF ANY DEMOLITION OR CONSTRUCTION, SECURE THE SERVICES OF A QUALIFIED, EPA CERTIFIED ASBESTOS ABATEMENT AGENCY TO CHECK THE EXISTING INSULATION, ETC. FOR ASBESTOS. SHOULD ASBESTOS BE FOUND, DO NOT PROCEED WITH DEMOLITION OR CONSTRUCTION; NOTIFY THE ARCHITECT IN ANY CASE IN WRITING OF THE AGENCY'S FINDINGS.

1.03 INTENT OF DRAWINGS AND SPECIFICATIONS

A. THE IMPLIED AND STATED INTENT OF THE DRAWINGS AND SPECIFICATIONS IS TO ESTABLISH MINIMUM ACCEPTABLE STANDARDS FOR MATERIALS, EQUIPMENT AND WORKMANSHIP, AND TO PROVIDE OPERABLE PLUMBING SYSTEMS COMPLETE IN EVERY RESPECT.

B. THE ENGINEERING DRAWINGS ARE DIAGRAMMATIC, INTENDED TO SHOW GENERAL ARRANGEMENT AND SIZES OF SYSTEM COMPONENTS, AND SHALL NOT BE SCALED. RATHER, THE ARCHITECTURAL AND STRUCTURAL DRAWINGS SHALL GOVERN SPACE CONSTRAINTS, DIMENSIONS AND FINISHES. AN OFFSETS AND FITTINGS WHICH WILL BE NECESSARY TO ACCOMPLISH THE FINISHED INSTALLATION SHALL BE PROVIDED AT NO ADDITIONAL COST OR INCREASE IN THE CONTRACT.

1.04 SPACE PRIORITY

A. ENSURE OPTIMUM USE OF AVAILABLE SPACE FOR MATERIALS AND EQUIPMENT INSTALLED ABOVE CEILINGS, ALLOCATE SPACE IN THE ORDER OF PRIORITY OS LISTED BELOW EXCEPT AS OTHERWISE DETAILED. ITEMS ORE LISTED IN THE ORDER OF PRIORITY, WITH ITEMS OF EQUAL IMPORTANCE LISTED UNDER A SINGLE PRIORITY NUMBER.

1. GRAVITY FLOW PIPING SYSTEMS
2. VENT PIPING SYSTEMS.
3. RECESSED LIGHTING FIXTURES
4. CONCEALED HVAC TERMINALS AND EQUIPMENT
5. AIR DUCT SYSTEMS
6. SPRINKLER PIPING SYSTEMS
7. PRESSURIZED PIPING SYSTEMS
8. ELECTRICAL CONDUIT, WIRING, CONTROL AIR TUBING

B. ORDER OF APACE PRIORITY DOES NOT DICTATE INSTALLATION SEQUENCE. INSTALLATION SEQUENCE SHALL BE OS REQUIRED TO INSTALL ALL AFFECTED THREADS.

C. THE WORK OF THIS DIVISION 22 SHALL NOT OBSTRUCT ACCESS FOR INSTALLATION, OPERATION AND MAINTENANCE OF THE WORK OF ANY OTHER DIVISION.

D. ALL MAJOR ITEMS OF EQUIPMENT SHALL BE ARRANGED SO A3 TO PROVIDE A MINIMUM OF 28" CLEAR AISLE SPACE. ADDITIONAL APACE SHALL BE PROVIDED BETWEEN AND AROUND EQUIPMENT FOR MAINTENANCE AND PROPER OPERATION OS SHOW IN THE EQUIPMENT MANUFACTURER'S LITERATURE.

1. 05 COORDINATION

A. COORDINATE ALL WORK UNDER THIS DIVISION 22 WITH WORK UNDER AL OTHER DIVISIONS, PROVIDING ADJUSTMENT AS NECESSARY.

B. COORDINATION OF SPACE REQUIREMENTS WITH RESPECT TO DIVISION 26 SHALL BE PERFORMED SUCH THAT..

1. NO EQUIPMENT, PIPING OR DUCTWORK, OTHER THAN ELECTRICAL, SHALL BE INSTALLED WITHIN 42" OF SWITCHBOARDS OR PANEL BOARDS.
2. NO PIPING OR DUCTWORK WHICH EVER OPERATES AT A TEMPERATURE IN EXCESS OF 120F SHALL BE INSTALLED WITHIN 3" OF ANY ELECTRICAL CONDUCTOR.

C. ALL ITEMS MOUNTED IN OR BELOW THE CEDING, AND AIL ITEMS PENETRATING THE CEILING, STALL BE COORDINATED WITH THE ARCHITECTURAL REFLECTED CEDING PLANS. IF ANY ITEMS ARE NOT SHOWN ON THESE PLANS, OR ANY ITEMS NEED TO BE RELOCATED, FOR COORDINATION PURPOSES, PREPARE A REFLECTED CEDING PLAN AND SUBMIT IT TO THE ARCHITECT FOR APPROVAL.

1.06 CODE COMPLIANCE

A. ALL WORKMANSHIP AND MATERIALS PROVIDED UNDER THIS DIVISION 22 SHALL COMPLY WITH ALL LAWS, ORDINANCES, CODES AND REGULATIONS OF ALL FEDERAL, STATE AND LOCAL AUTHORITIES HAVING JURISDICTION.

B. ALL FIRE SUPPRESSION, PLUMBING, HEATING, VENTING, AND A CONDITIONING MATERIALS AND WORKMANSHIP SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL CODES AND THE FOLLOWING STANDARDS OS MINIMUM REQUIREMENTS:

1. COUNTY OF LOS ANGELES ELECTRICAL CODE 2023 (TITLE 27)
2. COUNTY OF LOS ANGELES BUILDING CODE 2023 (TITLE 26)
3. CALIFORNIA ENERGY CONSERVATION CODE 2022 (TITLE 24)
4. COUNTY OF LOS ANGELES MECHANICAL CODE 2023 (TITLE 29)
5. COUNTY OF LOS ANGELES PLUMBING CODE 2023 (TITLE 28)

C. SECURE AND PAY ALL FEES ASSOCIATED WITH ALL PERMITS AND LICENSES REQUIRED FOR EXECUTION OF THE CONTRACT. ARRANGE FOR ALL INSPECTIONS REQUIRED BY CITY, COUNTY, STATE AND OTHER AUTHORITIES HAVING JURISDICTION, AND DELIVER CERTIFICATES OF APPROVAL TO THE ARCHITECT.

D. THE CODE REQUIREMENTS ARE STRICTLY A MINIMUM AND SHALL BE MET WITHOUT INCURRING ADDITIONS TO THE CONTRACT. WHERE REQUIREMENTS OF THE DRAWINGS OR SPECIFICATIONS EXCEED THE CODE REQUIREMENTS, THE WORK SHALL BE PROVIDED IN ACCORDANCE WITH THESE DRAWINGS OR SPECIFICATIONS. IN THE EVENT OF CONFLICT OR AMBIGUITY BETWEEN THE VARIOUS CODES, THE MOST STRINGENT REQUIREMENT SHALL GOVERN,

1.07 ELECTRICAL REQUIREMENTS AND INTERFACE

A. ALL ELECTRICAL EQUIPMENT AND WIRING PROVIDED UNDER THIS DIVISION 22 SHALL COMPLY WITH THE ELECTRICAL SYSTEM CHARACTERISTICS INDICATED ON THE ELECTRICAL DRAWINGS AND SPECIFIED IN DIVISION 26.

B. ELECTRIC CONTROLS, CONTRACTORS, STARTERS, PILOT LIGHTS, PUSH BUTTONS, ETC., SHALL BE PROVIDED COMPLETE OS PORT OF THE MOTOR, HEATER OR OTHER EQUIPMENT WHICH IT OPERATES. AM ELECTRICAL COMPONENTS SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND DIVISION 26. STARTERS SHALL BE WYE-DELTA, CLOSED TRANSITION TYPE. REFERENCE DIVISION 26 AND THE ELECTRICAL ENGINEERING DRAWINGS FOR THOSE MOTOR STARTERS PROVIDED UNDER DIVISION 26. ALL STARTERS NOT SHOWN SHALL BE PROVIDED UNDER THIS DIVISION 22, UNLESS SPECIFIED OTHERWISE UNDER OTHER INDIVIDUAL EQUIPMENT SECTIONS, MOTOR STARTERS SHALL CONFORM TO THE FOLLOWING MINIMUM REQUIREMENTS:

1. STARTERS FOR MOTORS 1/3 HORSEPOWER OR SMALLER SHALL BE MANUAL UNLESS REMOTE OR AUTOMATIC STARTING IS REQUIRED, IN WHICH CASE THE STARTERS SHALL BE MAGNETIC, FULL VOLTAGE, NON--REVERSING, SINGLE--SPEED, UNLESS OTHERWISE INDICATED. ALL OTHER STARTERS SHALL BE MAGNETIC.
2. EACH STARTER FOR A THREE-PHASE MOTOR SHALL BE FURNISHED WITH THREE (3) OVERLOAD RELAYS SIZED FOR THE FULL-LOAD RUNNING CURRENT OF THE MOTOR PROVIDED. PROVIDE AN EXTERNAL "HAND-OFF--AUTO" SELECTOR SWITCH WITH RED "RUNNING" LIGHT. PROVIDE O GREEN PILOT LIGHT TO INDICATE MOTOR "STOPPED. EACH PILOT LIGHT SHALL HAVE A LEGEND PLATE INDICATING REASON FOR SIGNAL.
3. EACH OVERLOAD RELAY SHALL HAVE A NORMALLY OPEN ALARM CONTACT, WHICH WILL CLOSE ONLY WHEN ACTUATED BY ON OVERLOAD (NOT TO BE CONFUSED WITH N.O. OR N.C. AUXILIARY CONTACTS). THESE CONTACTS SHALL BE PROPERLY WIRED TO THEIR RESPECTIVE BLUE PILOT LIGHT PROVIDED ON THE STARTER FRONT COVER AND HAVE 0 "TRIPPED" LEGEND PLATE.
4. INDIVIDUALLY MOUNTED MOTOR STARTERS SHALL BE IN A NEMA TYPE 1 GENERAL PURPOSE ENCLOSURE IN UNFINISHED AREAS AND SHALL BE FLUSH MOUNTED IN ALL FINISHED AREAS. ALL STARTERS MOUNTED IN EXTERIOR AREAS SHALL HAVE A NEMA 3R ENCLOSURE. EACH STARTER SHALL HAVE A LAMINATED NAMEPLATE TO 'INDICATE EQUIPMENT UNIT NUMBER, FUNCTION, AND CIRCUIT NUMBER.
5. ALL MOTOR STARTERS, PUSH BUTTONS AND PILOT LIGHTS SHALL BE OF THE SAME MANUFACTURER AS THE SWITCHBOARD AND SHALL BE GENERAL ELECTRIC, SQUARED, SIEMENS, OR WESTINGHOUSE.

C. MOTOR STARTERS FOR THE FOLLOWING EQUIPMENT SHALL BE PROVIDED UNDER DIVISION 22 BY THE MANUFACTURER OF THE EQUIPMENT:

1. PUMPS WITHOUT VFDS
2. OTHER EQUIPMENT HEREIN AFTER SPECIFIED IN OTHER SECTIONS TO BE PROVIDED WITH INTEGRAL STARTERS

D. UNLESS OTHERWISE NOTED OR SPECIFIED IN INDIVIDUAL SECTIONS, ALL 3-PHASE MOTORS SHALL BE STANDARD NEMA CONTINUOUS DUTY "B" TYPE, WITH CLASS 8 INSULATION, OPEN DRIP--PROOF FRAME FOR INDOOR SERVICE, TEFC FOR OUTDOOR SERVICE, AND A SERVICE FACTOR OF 1.15. ALL MOTORS 5 HP AND LARGER SHALL BE U.S. MOTORS HI-EFFICIENCY MODEL OR RELIANCE XE HI-EFFICIENCY MODEL.

E. ALL POWER WIRING AND FINAL CONNECTIONS TO EQUIPMENT SHALL BE PROVIDED UNDER DIVISION 26.

F. CONTROL COMPONENTS, ALL INTERLOCKS (CONTROL! VALVES, LEAK SENSORS, ETC.) AND CONTROL WIRING (120 VOLTS, SINGLE PHASE OR LESS) SHALL BE PROVIDED UNDER DIVISION 22 AS REQUIRED TO ACHIEVE THE SPECIFIED CONTROL SEQUENCES.

G. ALL CONTROL WIRING OVER 30 VOLTS SHALL BE INSTALLED BY O LICENSED ELECTRICIAN WORKING UNDER THIS DIVISION 22.

1.08 SLEEVES, SEALS, AND ESCUTCHEONS

A. SLEEVES SHALL BE PROVIDED THROUGH ALL PIPE PENETRATIONS OF CONCRETE OR MASONRY WALLS, ELEVATED FLOORS, AND ROOFS, EXCEPT THOSE PLUMBING PIPING PENETRATIONS FOR FIXTURES, VENTS, ETC.

B. SLEEVES SHALL BE FABRICATED FROM SCHEDULE 40 STEEL PIPE THROUGH 10" AND STANDARD WALL STEEL PIPE FOR SLEEVE SIZES 12" AND LARGER. ALL SLEEVES PENETRATING EXTERIOR WELLS, UNDERGROUND WALLS, PIT OR VAULT WALLS SHALL BE PROVIDED WITH A 3" X 3/8" THICK WATERSTOP RING WELDED COMPLETELY TO THE MIDPOINT OF THE SLEEVE.

C. ALL SLEEVES PENETRATING EXTERIOR WALLS, UNDERGROUND WALLS, PIT OR VAULT WALLS, AND ELEVATED FLOORS SHALL BE PACKED AND SEALED WATERTIGHT.

D. SLEEVES THROUGH ROOFS SHALL EXTEND ABOVE THE ROOF SURFACE AND BE FLASHED WATERTIGHT.

E. SLEEVES THROUGH WALLS SHALL BE CUT AND FINISHED FLUSH WITH EACH SURFACE OF THE WALL IN WHICH THEY ARE INSTALLED.

F. SLEEVES THROUGH ELEVATED FLOORS SHALL EXTEND AT LEAST 4" ABOVE THE FINISHED FLOOR AND BE SEALED WATERPROOF BETWEEN THE SLEEVE AND SLAB.

G. SLEEVES SHALL BE SIZED TO PROVIDE A MINIMUM OF 1/2" CLEARANCE BETWEEN THE INSIDE SURFACE OF THE SLEEVE AND THE OUTSIDE FINISHED SURFACE OF THE PIPE PLUS ANY INSULATION SPECIFIED.

H. FIRE--STOPS SHALL BE PROVIDED AS SPECIFIED HEREIN. ALL ANNULAR SPACES BETWEEN PIPING AND SLEEVES THAT DO NOT REQUIRE FIRE--STOPS SHALL BE PACKED WITH MINERAL WOOL AND CAULKED,

I. FIRE--STOPPING OR PACKING AT ELEVATED FLOOR PENETRATIONS SHALL BE LEVEL WITH OR ABOVE THE ELEVATION OF THE TOP OF THE SLEEVE TO PREVENT ANY WATER ON TOP OF THE SLEEVE,

J. PROVIDES ROUND, CHROME-PLATED ESCUTCHEONS ON ALL EXPOSED PIPING PENETRATIONS PASSING THROUGH WALLS, FLOORS, PARTITIONS AND CEILINGS.

K. ALL PENETRATIONS THROUGH RATED SLABS, WALLS, ETC. SHALL BE UNDER UL-LISTED SYSTEMS. PROVIDE RATED BOX--OUT, FIRE CAULKING, ETC. AS NEEDED TO ENSURE FIRE RATING IS MAINTAINED IN COMPLIANCE WITH UL-LISTED SYSTEMS

1.09 FIRE STOPS

A. WHERE PIPING, CONDUIT, ETC. POSS THROUGH FIRE PARTITIONS, FIRE WALLS, AND FLOORS, A FIRESTOP SHALL BE PROVIDED THAT WILL ENSURE AN EFFECTIVE BARRIER AGAINST THE SPREAD OF FIRE, SMOKE, AND GASES. FIRESTOP MATERIAL SHALL BE PACKED TIGHT AND COMPLETELY FILL GAPS BETWEEN THE DUCTWORK, PIPING, CONDUITS, ETC. AND THE PERIMETER OF THEIR ROUGH OPENINGS.

B. ALL PENETRATIONS SHALL BE IN ACCORDANCE WITH UL 1479 OR ASTM E 814 LISTED SYSTEMS, AND PRODUCTS USED SHALL BE SPECIFICALLY APPLICABLE FOR THE APPROPRIATE INSTALLATION CONDITIONS. ASSEMBLIES SHALL PROVIDE A MINIMUM RATING EQUAL TO THE CONSTRUCTION PENETRATED. PRODUCTS SHALL BE BY HILTI, 3M, OR PROSET.

C. INSTALLATION SHALL BE BY A QUALIFIED INSTALLER. THE INSTALLER SHALL BE CERTIFIED, LICENSED, OR OTHERWISE QUALIFIED BY THE FIRES TOPPING MANUFACTURER AS HAVING THE NECESSARY TRAINING TO INSTALL THE MANUFACTURER-SPECIFIC PRODUCT. A MANUFACTURER OR VENDOR'S WILLINGNESS TO SELL THE FIRES TOPPING PRODUCT TO THE CONTRACTOR OR INSTALLER DOES NOT IN ITSELF-CONFER QUALIFICATION.

D. INSTALLER SHALL HAVE AT LEAST ONE OF THE FOLLOWING QUALIFICATIONS:

1. FA 4991 APPROVED CONTRACTOR
2. UL APPROVED CONTRACTOR
3. HILT, 3M, OR PROSET ACCREDITED FIRE STOP SPECIALTY CONTRACTOR

E. INSTALLING FIRM SHALL HAVE NO LESS THAN 3 YEARS OF EXPERIENCE WITH FIRESTOP INSTALLATION.

F. A MANUFACTURER'S DIRECT REPRESENTATIVE (NOT DISTRIBUTOR OR AGENT) SHALL BE ON SITE DURING THE INITIAL INSTALLATION OF FIRESTOP SYSTEMS TO TRAIN APPROPRIATE CONTRACTOR PERSONNEL IN PROPER SELECTION AND INSTALLATION PROCEDURES.

G. THE FIRESTOP CONTRACTOR OR INSTALLER SHALL SUPPLY AS--BUILT DOCUMENTATION OF EACH INDIVIDUAL PENETRATION LOCATION ON THE PROJECT. DOCUMENTATION SHALL INCLUDE A SEQUENTIAL LOCATION NUMBER, DETAILED DESCRIPTION OF THE PENETRATION LOCATION, SIZE, AND TYPE, TESTED SYSTEM NUMBER, TYPE OF ASSEMBLY PENETRATED, AND RATING TO BE ACHIEVED. AS--BUILT DOCUMENTATION SHALL BE INCLUDED WITH THE CLOSE-OUT MATERIALS.

H. IDENTIFY THROUGH--PENETRATION FIRESTOP SYSTEMS WITH PRESSURE--SENSITIVE, SELF--ADHESIVE, PREPRINTED VINYL LABELS. ATTACH LABEL PERMANENTLY ON BOTH SIDES OF THE PENETRATED CONSTRUCTION IN A VISIBLE LOCATION. THE LABEL SHALL INCLUDE THE FOLLOWING:

1. THE WORDS "WARNING -- THROUGH PENETRATION FIRESTOP SYSTEM--DO NOT DISTURB"
2. THROUGH PENETRATION FIRESTOP SYSTEM DESIGNATION AND MANUFACTURER
3. DATE OF INSTALLATION

1.10 CORE DRILLING

A. CUTTING OF HOLES THROUGH CONCRETE AND MASONRY SHALL BE BY DIAMOND CORE OR CONCRETE SOW. PNEUMATIC HAMMER, IMPACT ELECTRIC AND HAND OR MANUAL HAMMER TYPE DRILLS WILL NOT BE ALLOWED, EXCEPT OS PERMITTED BY THE ARCHITECT WHERE REQUIRED BY LIMITED WORKING SPACE. LOCATE HOLES SUCH THAT THEY WILL NOT AFFECT STRUCTURAL SECTIONS SUCH OS RIBS OR BEAMS. HOLES SHALL BE LAID OUT WELL IN ADVANCE OF THE INSTALLATION. THESE LAYOUT LOCATIONS SHALL BE APPROVED BY THE ARCHITECT PRIOR TO DRILLING.

1.11 IDENTIFICATION OF PIPING

A. ALL ABOVEGROUND PLUMBING SYSTEMS PIPING AND VALVES SIZED 3/4" AND LARGER WHICH ORE INSTALLED INACCESSIBLE LOCATIONS (INCLUDING PIPING ABOVE REMOVABLE CEILINGS AND BEHIND ACCESS PANELS) SHALL BE IDENTIFIED IN STRICT CONFORMANCE WITH THE "SCHEME FOR THE IDENTIFICATION OF PIPING SYSTEMS" (ANSI A13.1-2015)

B. PIPING LABELS IN EXPOSED AREAS SHALL BE ORIENTED AND LOCATED IN COORDINATION WITH THE ARCHITECT.

C. SYSTEM AMES SHALL, AT MINIMUM, UNIQUELY IDENTIFY THE SYSTEM AND PERFORMANCE CATEGORY I.E 140% HOT WATER SUPPLY, HIGH PRESSURE COLD WATER, ETC.

D. SPECIALIZED PIPING (GREASE WASTE, ACID WASTE, FUEL PIPING, ETC.) INSTALLED UNDERGROUND SHALL BE LABELED. THE LABEL SHALL BE CORROSION-RESISTANT OR SHALL BE PERMANENTLY MARKED.

E. EACH IDENTIFICATION MARKER SHALL INCLUDE THE FOLLOWING:

PROPER COLOR-CODED BACKGROUND

PROPER COLOR OF LEGEND IN RELATION TO BACKGROUND COLOR

PROPER LEGEND LETTER SIZE

PROPER MARKER LENGTH

DIRECTION OF THE FLOW ARROW SHALL BE INCLUDED ON EACH MARKER

F. LOCATIONS FOR PIPE MARKERS SHALL BE AS FOLLOWS:

ADJACENT TO EACH VALVE AND FITTING

AT EACH BRANCH AND RISER TAKE OFF

AT EACH PIPE PASSAGE THROUGH WALLS, FLOORS AND CEILINGS

ON ALL STRAIGHT PIPE RUNS EVERY 25 FEET EXCEPT THAT PIPING

UNDERGROUND REQUIRED TO BE LABELED SHALL BE LABELED EVERY 10

FEET OR MORE OFTEN OS REQUIRED BY THE AHU

G. IDENTIFICATION MARKERS MAY BE STENCILED OR SHALL BE SET MARK PIPE MARKERS, OS MANUFACTURED BY SETON NOME PLATE CORPORATION.

H. ALL VALVES SHALL BE IDENTIFIED WITH THE APPROPRIATE SERVICE DESIGNATION AND VIVE NUMBER BRASS VALVE TAGS. EACH VALVE TAG SHALL BE 19 GAUGE BRASS WITH 1/4" BLOCK--FILED LETTERS OVER 1/2" BLACK-FILLED NUMBERS. TAGS SHALL BE FASTENED TO VALVES WITH BRASS, S. HOOKS OR BRASS JACK CHAIN. BRASS TAGS AND FASTENERS SHALL BE OS MANUFACTURED BY SETON NAME PLATE CORPORATION,

I. PROVIDE CHARTS OF ALL VALVES. VALVE CHARTS SHALL INCLUDE THE FOLLOWING ITEMS:

VALVE IDENTIFICATION NUMBER

LOCATION

PURPOSE / MATERIAL

2.0 PRODUCTS

2.01 BASIS AND SUBSTITUTION PROCEDURES

A. MANUFACTURER NAMES, SERIES, AND MODEL NUMBERS, AS NOTED OR SPECIFIED, ARE FOR THE PURPOSE OF DESCRIBING TYPE, CAPACITY, AND QUALITY OF EQUIPMENT, MATERIALS, AND PRODUCTS TO BE USED. UNLESS "OR EQUAL" IS SPECIFICALLY STATED, BIDS SHALL BE BASED ONLY ON THE SPECIFIED "BASIS OF DESIGN" MANUFACTURER. THE LISTING OF A PARTICULAR MANUFACTURER AS AN "EQUAL" OR "ACCEPTABLE SUBSTITUTE" MANUFACTURER SHALL NOT BE MISCONSTRUED AS APPROVING, NOR ALLOWING THE SUBSTITUTION OF, THAT MANUFACTURER'S STANDARD PRODUCT IN PLACE OF THE BASIS OF DESIGN. NO CONSIDERATION WILL BE GIVEN TO A PRODUCT THAT WOULD REQUIRE DIMENSIONAL, SPATIAL, OR AESTHETIC CHANGES TO THE PROJECT. "ACCEPTABLE SUBSTITUTE" AND "EQUAL" MANUFACTURERS SHALL ONLY BID THOSE PRODUCTS THAT EXACTLY MATCH THE SIZE AND OTHER CHARACTERISTICS OF THE SPECIFIED BASIS OF DESIGN. ANY CHANGES TO OTHER DISCIPLINES AND TRADES OF WORK REQUIRED BY AN "OR EQUAL" OR "SUBSTITUTE" PRODUCT SHALL BE DULY CONSIDERED AND PRICED ACCORDINGLY BEFORE BIDDING OR PRICING. THE DECISION AS TO WHETHER OR NOT O PROPOSED SUBSTITUTE OR "EQUAL" PRODUCT IS EQUAL TO THAT SPECIFIED SHALL REST SOLELY WITH THE ARCHITECT.

B. REQUESTS TO PROVIDE "EQUAL" PRODUCTS IN LIEU OF THOSE SPECIFIED SHALL BE SUBMITTED TO THE ARCHITECT IN WRITING AT LEAST TEN (10) DAYS PRIOR TO FINAL PRICING AND EXECUTION OF THE CONTRACT. NO CONSIDERATION WILL BE GIVEN TO SUBSTITUTE PRODUCTS AFTER FINAL PRICING AND EXECUTION OF THE CONTRACT.

C. ANY "OR EQUAL" PRODUCT OR PROPOSED PRODUCT SUBSTITUTION WHICH WILL CAUSE O CHANGE IN THE APPEARANCE, DIMENSIONS, OR DESIGN OF ANY PART OF THE BUILDING, STRUCTURE, ELECTRICAL SYSTEM, OR ANY OTHER ENGINEERED SYSTEM SHALL BE ACCOMPANIED BY A SCALED DRAWING AND WRITTEN DESCRIPTION OF THE REQUIRED CHANGE(S) FOR APPROVAL BY THE ARCHITECT. IF DEEMED NECESSARY BY THE ARCHITECT, DESIGN CHANGES SHALL BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER, CURRENTLY LICENSED IN THIS STATE. THIS SHALL BE PERFORMED UNDER THE CONTRACTOR SELECTING THE SUBSTITUTION'S SCOPE.

D. ANY AND ALL CHANGES DUE TO THE SUBSTITUTION OF BASIS OF DESIGN EQUIPMENT INCLUDING BUT NOT LIMITED TO ELECTRICAL CONNECTION, PHYSICAL SIZE, ACCESS, PIPING CONNECTIONS, CONTROLS, ETC. SHALL BE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR SELECTING THE SUBSTITUTION.

2.02 MINIMUM STANDARDS

A. EVERY PIECE OF ENERGY-CONSUMING EQUIPMENT, ALL FIRE SUPPRESSION PRODUCTS, AND LIFE SAFETY EQUIPMENT SHALL COMPLY WITH THE FOLLOWING STANDARDS OS APPLICABLE; ESPECIALLY REGARDING PREVAILING CODES:

1. FACTORY MUTUAL LABORATORIES (FM)
2. INDUSTRIAL RISK INSURERS (IRI)
3. UNDERWRITERS LABORATORIES, INC. (UL)
4. ADC: AIR DIFFUSION COUNCIL
5. AGA: AMERICAN GAS ASSOCIATION
6. AMCA: AIR MOVING AND CONDITIONING ASSOCIATION, INC.
7. ANSI: AMERICAN NATIONAL STANDARDS INSTITUTE
8. API: AMERICAN PETROLEUM INSTITUTE
9. AHRI: AIR CONDITIONING, HEATING, OND REFRIGERATION INSTITUTE
10. ASHRAE: AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS
11. ASME: AMERICAN SOCIETY OF MECHANICAL ENGINEERS
12. ASTM: AMERICAN SOCIETY OF TESTING AND MATERIALS
13. AWWA: AMERICAN WATER WORKS ASSOCIATION
14. IBR: INSTITUTE OF BOILER AND RADIATOR MANUFACTURERS
15. MSS: MANUFACTURERS STANDARDIZATION SOCIETY
16. NBBPVI; NATIONAL BOARD OF BOARD AND PRESSURE VESSEL INSPECTORS
17. NEMA: NOTIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
18. OSHA: OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION
19. PDI: PLUMBING DRAINAGE INSTITUTE
20. PPT PLASTIC PIPE INSTITUTE
21. CISPI: CAST IRON SOIL PIPING INSTITUTE

2.03 PIPE HANGERS AND SUPPORTS

A. PIPE HANGERS, HANGER RODS, TRAPEZE TYPE HANGERS, UPPER ATTACHMENTS AND OTHER SUPPORTS SHALL BE SELECTED BASED ON PIPE SIZE (PLUS INSULATION OF PIPES SPECIFIED TO BE INSULATED) AND THE WEIGHT OF THE MEDIUM BEING TRANSPORTED OR THE MEDIUM USED FOR TESTING, WHICHEVER IS GREATER, PROVIDE ALL HANGERS AND RODS, TURNBUCKLES, ANGLES, CHANNELS, AND OTHER STRUCTURAL SUPPORTS TO SUPPORT THE PIPING SYSTEMS. RODS FOR PIPE HANGERS SHALL BE FULL SIZE OF THE HANGER MANUFACTURER'S CATALOG LISTED ROD SIZE FOR EACH TYPE HANGER SPECIFIED. HANGERS 'AND SUPPORTS SHALL BE MICHIGAN, ITT GRINNELL OR B-LINE.

B. ALL MATERIAL UTILIZED FOR THE HANGING AND SUPPORT OF THE PIPING SYSTEMS SHALL BE MANUFACTURED PRODUCTS WHICH ARE SPECIFICALLY INTENDED FOR THE PURPOSE OF HANGING PIPING SYSTEMS. THE USE OF WIRE, STEEL STRAPS, PLASTIC TIES, ETC. IS STRICTLY PROHIBITED.

C. PIPE HANGERS SELECTED FOR SUPPORTING HORIZONTAL INSULATED PIPING SHALL BE SIZED TO FIT AROUND THE OUTSIDE OF THE PIPE INSULATION. INSULATED PIPING SHALL BE SUPPORTED ON GALVANIZED SHIELDS.

1. SHIELDS SHALL BE AS FOLLOWS:
2. PIPES 2" AND SMALLER: 18 GOUGE X 12" LONG
3. PIPES 2 1/2" AND LARGER: 16 GAUGE X 18" LONG

D. SHIELDS SHALL BE 180 DEGREES AROUND THE LOWER HALF OF THE PIPE AT ALL PIPE HANGERS, EXCEPT THAT ON TRAPEZE HANGERS, PIPE RACKS AND FLOOR SUPPORTED HORIZONTAL PIPES, SHIELDS SHALL BE 360 DEGREES AROUND THE ENTIRE PIPE.

E. PIPE HANGERS TOUCHING COPPER PIPING SHALL BE COPPER PLATED OR THE PIPING SHALL BE DIELECTRICALLY ISOLATED FROM ANY STEEL HANGERS OR CLAMPS THAT ARE USED. NOTE THE REQUIREMENT FOR DOMESTIC WATER PIPING REQUIRES THE HANGERS TO BE INSTALLED OVER THE INSULATION.

F. STEEL RODS, FRAMING, AND CLAMPS SHALL BE PLATED OR PRIMED TO PREVENT RUST FORMATION.

3.0 EXECUTION,

3.01 GENERAL

A. ALL PIPING, VALVES, AND FITTINGS SHALL BE PRODUCTS OF A DOMESTIC MANUFACTURER AND MADE IN THE USA.

B. FLEXIBLE PIPING CONNECTIONS SHALL BE PROVIDED AND INSTALLED AT ALL SUCTION AND DISCHARGE CONNECTIONS OF PACKAGED BOOSTER PUMPS AND AT ANY PUMP 2.0 HP AND ABOVE. FLEXIBLE PIPING CONNECTIONS SHALL BE SUITABLE FOR 150 PSI WORKING PRESSURE OR THE SYSTEM PRESSURE AT THE INSTALLATION LOCATION, WHICHEVER IS GREATER, AND BE SUITABLE FOR THE TEMPERATURE OF THE SYSTEM. FLEXIBLE CONNECTIONS SHALL BE STAINLESS STEEL BRAIDED HOSE TYPE, WITH A LENGTH NOT LESS THAN THEIR PIPE DIAMETER. PROVIDE AND INSTALL RESTRAINING RODS IF RECOMMENDED BY THE MANUFACTURER FOR THE INSTALLATION LOCATION AND APPLICATION.

C. PROVIDE AND INSTALL SH

3.04 INSTALLATION REQUIREMENTS

A. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT CONFORMANCE WITH THE RECOMMENDATIONS OF THE EQUIPMENT MANUFACTURER, OS INDICATED ON THE DRAWINGS, AND AS SPECIFIED.

B. PROVIDE INSTALLATION MANUALS FOR EACH PIECE OF EQUIPMENT. SUBMIT IN SEPARATELY BOUND VOLUMES AFTER REVIEW OF SUBMITTALS.

C. PROVIDE SUPPLEMENTARY STEEL FRAMING AND WELDED STEEL EQUIPMENT SUPPORT STANDS OS REQUIRED FOR PROPER HANGING AND SUPPORT OF THE PLUMBING SYSTEMS. STEEL ANGLES, CHANNELS AND TUBING UTILIZED FOR SUCH FRAMING SHALL BE SELECTED TOR A MAXIMUM DEFLECTION OF 1/360TH OF THE SPAN.

D. ALL ROOF CURBS SHALL BE A MINIMUM OF 12" HIGH AND SELECTED FOR THE VARIOUS ROOF PITCHES. CURBS INSTALLED ON ROOFS HAVING PITCHES OF NOT MORE THAN 1/4" PER FOOT MAY BE STANDARD CURBS SHIMMED LEVEL WITH STEEL CHANNELS OR ZS TO PROVIDE SUITABLE SUPPORT AND FLASHING SURFACES.

3.05 CLEANING, LUBRICATION AND ADJUSTMENT

A. THE EXTERIOR SURFACES OF OF PLUMBING EQUIPMENT, PIPING, CONDUIT, ETC., SHALL BE CLEANED AND FREE OF ALL DIRT, GREASE, OIL, PAINT SPLATTER, AND OTHER CONSTRUCTION DEBRIS.

B. BEARINGS THAT REQUIRE LUBRICATION SHALL BE LUBRICATED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

C. ALL CONTROL EQUIPMENT, VALVES, EQUIPMENT SETTINGS, PRESSURE TANKS, ETC. SHALL BE ADJUSTED TO THE SETTINGS REQUIRED FOR THE PERFORMANCE SPECIFIED.

D. DO ALL MATERIALS, EQUIPMENT, ETC. SUBJECT TO WEATHER, CORROSION, DUST, DEBRIS, WATER ETC. TO BE INSTALLED OR UTILIZED FOR THE PROJECT SHALL BE FULLY PROTECTED. THIS IS INCLUSIVE OF PIPING AND DUCT OPENINGS AND INTERNAL NON VENTILATION INTAKES AND DISCHARGES. THIS DIVISION'S SCOPE INCLUDES PROTECTION AND REMEDIATION OF ANY AND ALL DIVISION MATERIALS, ETC. INCLUDING CLEANING, VACUUMING, DUSTING, ETC. REQUIRED FOR A CLEAN SYSTEM AND OPERATION. INSULATION AND EQUIPMENT WITH ELECTRICAL CONNECTIONS SUBJECT TO WATER SHALL BE REPLACED IN THEIR ENTIRETY. COORDINATE WITH ALL OTHER TRADES AND SCHEDULES.

3.06 PAINTING

A. ALL UNCOATED AND UN-INSULATED STEEL SURFACES EXPOSED TO SIGHT INSIDE THE BUILDING, SUCH OS PIPING, EQUIPMENT HANGERS AND SUPPORTS, WHICH ORE NOT PROVIDED WITH FACTORY PRIME COAT OR GALVANIZING, SHALL BE CLEANED AND POINTED WITH ONE COAT OF RUST INHIBITING PRIMER. IN ADDITION, ALL SURFACES IN FINISHED SPACES SHALL ALSO BE PAINTED WITH TWO COOTS OF FINISH PAINT IN A COLOR SELECTED BY THE ARCHITECT.

B. STEEL ITEMS EXPOSED OUTSIDE THE BUILDING, SUCH OS EQUIPMENT SUPPORTS, UN-INSULATED PIPING AND HANGERS WHICH ARE NOT FACTORY POINTED OR GALVANIZED SHALL BE CLEANED AND PAINTED WITH ONE COAT OF RUST INHIBITING PRIMER AND TWO COATS OF ASPHALTIC BASE ALUMINUM PAINT. INSULATED STEEL PIPES OUTSIDE THE BUILDING SHALL BE CLEANED AND PAINTED WITH ONE COAT OF RUST INHIBITING PRIMER BEFORE INSTALLING INSULATION.

C. FACTORY PAINTED EQUIPMENT THAT HAS BEEN SCRATCHED OR MARRED SHALL BE REPAINTED TO MATCH THE ORIGINAL FACTORY COLOR.

3.07 PIPING LEAK TESTING

A. SANITARY, WASTE, STORM, AND VENT PIPING SHALL BE TESTED WITH WATER BEFORE INSTALLING FIXTURES. WATER TEST SHALL BE APPLIED TO THE SYSTEM EITHER IN ITS ENTIRETY OR TO THE INDIVIDUAL SECTIONS. EACH OPENING EXCEPT THE HIGHEST OPENING OF THE SECTION UNDER TEST SHALL BE PLUGGED, AND THE SECTION SHALL BE FILLED WITH WATER AND TESTED WITH O HEED OF WATER OF AT LEAST TEN (10) FEET ABOVE THE HIGHEST POINT IN THE SYSTEM. THE WATER SHALL BE KEPT IN THE PORTION UNDER TEST, FOR AT LEAST THIRTY (30) MINUTES; NO DROP IN THE WATER LEVEL WILL BE ACCEPTABLE.

B. THE WATER PIPING SYSTEMS SHALL BE TESTED AT A MINIMUM PRESSURE OF 125 PSI, OR 1.5 TIMES THE SYSTEM OPERATING CONDITIONS, WHICHEVER IS GREATER, AND PROVED TIGHT AT THIS PRESSURE FOR NOT LESS THAN THIRTY (30) MINUTES OR LONGER IF REQUIRED THE PERMIT INSPECTION OF ALL JOINTS. NO LOSS IN PRESSURE WILL BE PERMITTED.

C. ALL COMPRESSED CIR PIPING SHALL BE TESTED PNEUMATICALLY AND PROVED TIGHT AT O PRESSURE OF NOT LESS THAN 100 PSI FOR A PERIOD OF NOT LESS THAN TWO (2) HOURS. NO LOGS IN PRESSURE WILL BE PERMITTED.

D. ALL LEAKS SHALL BE REPAIRED BY TIGHTENING, REMAKING JOINTS, OR REPLACING PIPE AND FITTINGS. CAULKING OF JOINTS SHALL NOT BE PERMITTED.

E. SEE SPECIFICATION SECTION 23 11 23 FOR TESTING REQUIREMENTS OF NATURAL GAS AND LIQUID PROPANE GAS PIPING. SYSTEM SHALL BE PORT OF DIVISION 22 SCOPE UNLESS OTHERWISE ARRANGED WITHIN THE CONTRACT. COORDINATE WITH DIVISION 23.

3.08 RECORD (AS-BUILT) DRAWINGS

A. AT THE COMPLETION OF THE PROJECT. PROVIDE A SET OF REPRODUCIBLE PRINTS TO THE ARCHITECT WHICH REFLECTS ALL CHANGES, DEVIATIONS AND REVISIONS MODE TO THE ORIGINAL DESIGN DOCUMENTS. LOCATIONS OF ALL UNDERGROUND PIPING AND UTILITIES SHALL BE CLEARLY SHOWN AND DIMENSIONED FROM PERMANENT REFERENCE POINTS SUCH AS BUILDING COLUMN LINES. RECORD DRAWINGS SHALL BE PRODUCED IN ELECTRONIC FORMAT COMPATIBLE WITH AUTOCAD. FURNISH ELECTRONIC COPIES OF ALL DRAWINGS IN DWG. FORMAT, AND TWO (2) BAND COPIES OF ALL DRAWING SHEETS. AS-BUILTS FOR ELECTRONIC INCORPORATION BY THE DESIGN TEAM, OS APPLICABLE SHALL BE REDLINE MARK-UPS OF THE CONSTRUCTION DOCUMENTS.

3.09 OPERATING AND MAINTENANCE MANUALS AND INSTRUCTIONS

A. COMPLETE OPERATING AND MAINTENANCE MANUALS SHALL BE PROVIDED TO THE OWNER. FOUR COPIES SHALL BE PROVIDED. EACH COPY SHALL BE BOUND IN A SEPARATE 3-RING, LOOSE LEAF NOTEBOOK. OPERATING INSTRUCTIONS SHALL BE PROVIDED FOR EACH PLUMBING SYSTEM, AND SHALL EACH INCLUDE O BRIEF SYSTEM DESCRIPTION, A SIMPLE SCHEMATIC AND A SEQUENCE OF OPERATION. OPERATING AND MAINTENANCE INSTRUCTIONS SHALL BE PROVIDED FOR EACH PIECE OF EQUIPMENT. A CONTROL SYSTEM WIRING DIAGRAM SHALL BE INCLUDED IN EACH OPERATING AND MAINTENANCE MANUAL.

B. PRIOR TO FINAL ACCEPTANCE OR BENEFICIAL OCCUPANCY, PROVIDE THE SERVICES OF A COMPETENT TECHNICIAN FOR NOT LESS THAN ONE (1) DAY TO INSTRUCT THE OWNER IN THE OPERATION OF THE PLUMBING SYSTEMS,

3.10 MINIMUM HANGER SPACING

A. PIPE HANGERS OR SUPPORTS SHALL BE PROVIDED WITHIN 18" OF EACH HORIZONTAL FITTING, EQUIPMENT CONNECTION, VALVE, ETC. AND WITHIN 18" OF THE CENTERLINE OF HORIZONTAL OF VERTICAL CHANGES IN DIRECTION SUMMING TO 90° OR MORE. SPECIFIC ATTENTION IS CALLED TO TURNS INTO VERTICAL RISERS,

B. PIPING SUPPORTS SHALL BE PROVIDED, AT A MINIMUM, IN ACCORDANCE WITH THE GREATER OF THE BELOW OR CODE MINIMUM. WHERE THE BELOW OR CODE DOES NOT ADDRESS SUPPORT FOR SPECIFIC PIPING, SUPPORTS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS.

PIPING MATERIAL	MAX. HORZ. SPACING	MAX. VERT. SPACING
CAST IRON PIPE	5'	15'
COPPER PIPE	12'	10'
COPPER TUBING < 1-1/4" DIA	6'	10'
COPPER TUBING > 1-1/2" DIA	10'	10'
CPVC PIPE < 1" DIA	3'	10'
CPVC PIPE ≥ 1-1/4" DIA	4'	10'
PVC PIPE	4'	10'
PEX PIPE	32'	10'

INDUSTRY GUIDE REQUIRED FOR PIPING 2" DIAMETER AND SMALLER

C. RISER CLAMPS SHALL BE PROVIDED AT EACH FLOOR PENETRATION. FOR PRESSURIZED PIPING SYSTEMS, PROVIDE VIBRATION ISOLATION AT ALL RISER CLAMPS WITH TWO (2) PAD--TYPE MOUNTINGS CONSISTING OF A MINIMUM 3/8" THICK RIBBED OR WAFFLED ELASTOMERIC PADS BONDED BETWEEN MINIMUM 16-GOUGE GALVANIZED STEEL SEPARATOR PLATES. PODS SHALL BE SIZED FOR A DEFLECTION OF 0.12" TO 0.16". PADS SHALL BE MINIMUM 3"X3" SQUARE.

3.11 WARRANTY

A. ALL WORK PROVIDED UNDER THIS DIVISION 22 SHALL BE SUBJECT TO O MINIMUM ONE YEAR WARRANTY, THE WARRANTY SHALL INCLUDE PROMPT REPAIR OR REPLACEMENT OF EQUIPMENT OR SYSTEM FAILURES AND SHALL INCLUDE ALL PARTS AND LABOR. IN ADDITION, AIL COMPRESSORS SHALL CARRY AN ADDITIONAL FOUR YEAR PARTS--ONLY WARRANTY. EXTENDED WARRANTIES SHALL BE PROVIDED ON ALL OTHER EQUIPMENT SO SPECIFIED IN OTHER SECTIONS.

3.12 SHOP DRAWINGS.

A. SHOP DRAWINGS PER THE SUBMITTAL REQUIREMENTS SHALL BE SUBMIT TO THE DESIGN TEAM WITH ADEQUATE TIME FOR MULTIPLE ROUNDS OF REVIEW. SHOP DRAWINGS SHALL SHOW "AS--BUILT" CONDITIONS INCLUDING ELEVATIONS, OFFSETS, TRANSITIONS, AND ACCESSORIES. SHOP DRAWINGS SHALL INDICATE ALL CODE AND MANUFACTURER'S RECOMMENDED CLEARANCES, ACCESS, AND COORDINATE THE CLEARANCE AND ACCESS REQUIREMENTS WITH ALL OTHER TRADES.

B. SHOP DRAWINGS THAT USE KEYNOTES DIRECT FROM THE DESIGN DOCUMENTS SHALL NOT BE ACCEPTABLE OS THEY DO NOT DEMONSTRATE COORDINATION WITH AM OTHER TRADES, NECESSARY TRANSITIONS, ETC.

C. SHOP DRAWINGS SHALL BE PROVIDED AS COMPLETE PACKAGES IN PARALLEL WITH ALL TRADES TO DOCUMENT COORDINATION. FLOOR-BY-FLOOR OR OTHERWISE PIECEMEAL SHOP DRAWINGS ARE GENERALLY NOT ACCEPTABLE.

3.13 OWNER TRAINING

A. OWNER TRAINING SHALL BE PROVIDED FOR ALL SYSTEMS AND EQUIPMENT AND SHALL INCLUDE THE FOLLOWING:

1. 8-HOURS OF TRAINING FOR EACH TYPE OF EQUIPMENT
2. 16-HOURS FOR OVERALL SYSTEM OPERATIONAL TRAINING

B. A TRAINING SUMMARY AND SCHEDULE SHALL BE SUBMITTED TO THE ARCHITECT FOR APPROVAL WITHIN NINETY (90) DAYS OF THE DATE OF SUBSTANTIAL COMPLETION.

C. TRAINING TIMING WILL VARY AND SHALL BE ASSUMED TO INCLUDE MULTIPLE SESSIONS OS REQUIRED BY THE OWNER.

3.14 BID REQUIREMENTS

A. THE CONTRACTOR SHALL INCLUDE ALL SYSTEMS, EQUIPMENT AND ACCESSORIES SHOWN ON THE PLANS AND SPECIFICATIONS.

B. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL CONTRACT DOCUMENTS TO ALL SUBCONTRACTORS. ALL SYSTEMS, EQUIPMENT AND ACCESSORIES SHALL BE INCLUDED IN THE BID, WHETHER SHOWN ON THE SUBCONTRACTOR APPLICABLE PLANS OR OTHER DESIGN DOCUMENTS.

C. SHOULD ANY DISCREPANCY OCCUR IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL PROVIDE O REQUEST FOR CLARIFICATION PRIOR TO BID OR NOTE THE DISCREPANCY IN THE BID AND PROVIDE AN APPROPRIATE COST ALLOWANCE IN THE BID.

D. THE CONTRACTOR SHALL ACKNOWLEDGE THAT THE CONTRACT DOCUMENTS ORE DIAGRAMMATIC AND SHALL PROVIDE ALL SYSTEMS, EQUIPMENT AND ACCESSORIES REQUIRED FOR A COMPLETE FACILITY. ANY AREAS THAT APPEAR TO BE VOID OF SYSTEMS OR INAPPROPRIATE SYSTEMS SHALL BE NOTED IN THE BID. NO POST BID CHANGE ORDER SHALL BE CONSIDERED FOR AREAS OR DISCREPANCIES NOT NOTED IN THE BID.

E. ALL INSTALLATION COORDINATION AND MEANS AND METHODS AND LABOR AND MATERIALS REQUIRED FOR PROPER SYSTEM INSTALLATION SHALL BE INCLUDED.

F. THESE REQUIREMENTS ARE IN ADDITION TO BID PROCEDURES AND REQUIREMENTS OF THE RFP OR GENERAL SPECIFICATIONS.

END OF SECTION.

SECTION 22 07 00

PLUMBING INSULATION

1.0 GENERAL

1.01 DESCRIPTION

A. ALL WORK SPECIFIED IN THIS SECTION IS GOVERNED BY THE COMMON WORK RESULTS FOR PLUMBING SECTION 22 05 00.

B. THIS SECTION 22 07 00 AND THE ACCOMPANYING DRAWINGS COVER THE PROVISION OF ALL OTHER, EQUIPMENT, APPLIANCES, AND MATERIALS AND PERFORMING ALL OPERATIONS IN CONNECTION WITH THE INSULATION OF THE PLUMBING SYSTEMS OS SPECIFIED HEREIN AND AS SHOWN. THESE SYSTEMS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

1. SANITARY WASTE AND VENT SYSTEMS
2. DOMESTIC WATER SYSTEMS

1.02 INTENT

A. THE INTENT OF THIS SECTION OF THE SPECIFICATIONS TO PROVIDE COMPLETE AND OPERABLE PLUMBING SYSTEMS COMPLETE WITH INSULATION, WHICH ARE FREE OF UNREASONABLE NOISE, VIBRATION, AND SWEATING, AND FABRICATED SO OS TO FIT THE SPACE ALLOTTED.

B. THE WORD "PIPING" IS DEFINED TO MEAN ALL PIPING, FITTINGS, JOINTS, HANGERS, COATINGS, VALVES, COCKS, INSULATION AND ACCESSORIES NECESSARY FOR THE PLUMBING SYSTEMS DESCRIBED, SHOWN AND SPECIFIED.

1.03 ACCEPTABLE MANUFACTURERS

A. INSULATION PRODUCTS SHALL BE AS MANUFACTURED BY OWENS CORNING, KNAUF, MANVILLE, CERTAINTEED, DOW, ARMACELL, OR ARMSTRONG.

2.0 PRODUCTS

2.01 PLUMBING INSULATION

A. ALL PIPE INSULATION PRODUCTS SHALL HOVE A PERMANENT COMPOSITE INSULATION, JOCKEY AND ADHESIVE FIRE AND SMOKE HAZARD RATING AS TESTED BY PROCEDURE ASTM-84, NFPA 255 AND UL 723 NOT EXCEEDING FLAME SPREAD 25 OR SMOKE DEVELOPED 50.

B. BLANKET---TYPE INSULATION ON STORM DRAINS SHALL HOVE ON OVERAGE THERMAL CONDUCTIVITY (K---VALUE) NOT TO EXCEED 0.27 BTU PER INCH/H.SQFT AT A MEAN TEMPERATURE OF 75 DEG F. INSULATION SHALL HAVE O MINIMUM DENSITY OF 1 LB/CU.FT, AND SHALL BE 2" THICK.

C. PREFORMED INSULATION FOR ALL DOMESTIC HOT WATER PIPING SHALL BE A MINIMUM 1-1/2" THICK FOR PIPING LESS THAN OR EQUAL TO 1-1/2" DIAMETER, 2" THICK FOR PIPING ABOVE 1-1/2" IN DIAMETER, PREFORMED FIBERGLASS PIPE INSULATION WITH WHITE ALL-SERVICE JACKET. ALL LONGITUDINAL JOINTS SHALL BE LAPPED, SELF-STICKING TYPE WITH ALL BUTT JOINTS, TEARS, ETC. SEATED WITH O MATCHING WHITE VAPOR BARRIER TAPE. ELBOWS SHALL BE MITERED OR MAY BE ZESTON COVERS FILLED WITH EQUIVALENT FIBERGLASS INSULATION. THE MAXIMUM CONDUCTIVITY (K-VALUE)) OF THE INSULATION SHALL BE 0.23 BTU PER INCH/SQ.F AT 75 DEG F.

D. PREFORMED INSULATION FOR ALL DOMESTIC COLD WATER PIPING, EXCEPT TRAP PRIMER PIPING UNDERGROUND, SHALL BE MINIMUM 1" THICK. PREFORMED FIBERGLASS PIPE INSULATION WITH WHITE ALL-SERVICE JACKET. ALL LONGITUDINAL JOINTS SHALL BE LOPPED, SELF--STICKING TYPE WITH OF BUTT JOINTS, TEARS, ETC. SEALED WITH O MATCHING WHITE VAPOR BARRIER TAPE. ELBOWS SHALL BE MITERED OR MAY BE ZESTON COVERS FILED WITH EQUIVALENT FIBERGLASS INSULATION. THE MAXIMUM CONDUCTIVITY (K-VALUE) OF THE INSULATION SHALL BE 0.23 BTU PER INCH/H.SQ.FT AT 75F.

E. INSULATION SHALL BE CONTINUOUS OVER ALL VALVE BODIES, FITTINGS, AND WALL AND FLOOR PENETRATIONS. DO NOT INSULATE UNIONS ON HOT WATER PIPING, NOR INSTRUMENTS, GOUGES, VALVE HAND WHEELS, ETC. ON ANY PIPER.

F. ALL PIPING INSULATION COVERING WATER*CARRYING PIPING THAT IS EXPOSED TO THE WEATHER AND SUBJECT TO BURSTING FROM FREEZING TEMPERATURES SHALL HAVE OVERSIZED INSULATION TO ACCOMMODATE HEATING CABLE. SEE SPECIFICATION 23 05 33

G. PIPING INSTALLED OUTSIDE THE BUILDING AND EXPOSED TO WEATHER SHALL HAVE POLYISOCYANURATE INSULATION IN ACCORDANCE WITH SPECIFICATION 23 07 19. PROVIDE A CONTINUOUS WATERTIGHT ALUMINUM JACKET AND FITTING COVERS FOR ALL POLYISOCYANURATE INSULATION PIPING EXPOSED TO THE WEATHER.

H. CLOSED-CELL INSULATION SHALL BE PROVIDED OVER ALL PING CALLED TO HAVE INSULATION THAT IS INSTALLED BELOW GROUND. CLOSED-CELL PIPING INSULATION SHALL MATCH THE THICKNESS FOR ABOVE-GROUND PING, 25/50 ARMAFLEX OR RUBATEX. ALL GLUES AND COATINGS SHALL BE PRODUCTS OF THE SOME MANUFACTURER AS THE INSULATION. THE INSULATION SHALL BE INSTALLED BY THE SLIP--ON METHOD; SLITTING OF THE INSULATION IS PROHIBITED AND SHALL BE CAUSE FOR REJECTION.

3.0 EXECUTION

3.01 ARRANGEMENT

A. FOLLOW THE GENERAL PIPING LAYOUT, ARRANGEMENT, SCHEMATICS AND DETAILS. PROVIDE ALL OFFSETS, VENTS, DRAINS, AND CONNECTIONS NECESSARY TO ACCOMPLISH THE INSTALLATION. FABRICATE PIPING ACCURATELY TO MEASUREMENTS ESTABLISHED AT THE PROJECT SITE TO AVOID INTERFERENCE WITH DUCTWORK, OTHER PIPING, EQUIPMENT, OPENINGS, ELECTRICAL CONDUITS AND LIGHT FIXTURES. MAKE SUITABLE PROVISION FOR EXPANSION AND CONTRACTION WITH EXPANSION LOOPS AND OFFSETS.

3.02 INSULATION INSTALLATION

A. PROVIDE BLANKET INSULATION OVER ALL HORIZONTAL ROOF DRAIN PIPING WHICH IS WITHIN THE BUILDING INCLUDING THE VERTICAL RISERS TO THE ROOF DRAINS AND THE UNDERBODY OF THE ROOF DRAINS.

1. BLANKET INSULATION SHALL BE WRAPPED AROUND THE PIPING AND UNDERBODIES OF ROOF DRAINS, ENDS OF INSULATION SHALL OVERLAP AT LEAST 2" AND THE BOTTOM OF INSULATION SHALL OVERLAP PIPE INSULATION AT PIPE CONNECTION TO ROOF DRAIN AT LEAST 3". ADHERE INSULATION TO ROOF DRAIN UNDERBODIES WITH 100% COVERAGE OF FIRE RETARDANT ADHESIVE AND TAPE ALL JOINTS WITH 3" WIDE FOIL REINFORCED KRAFT TAPE.

B. PROVIDE INSULATION OVER ALL ABOVE GROUND HOT AND COLD WATER PIPING, EXCEPT THAT NO INSULATION IS REQUIRED ON COLD WATER LINES INSTALLED INSIDE INTERIOR PLUMBING CHASES (THOSE CHASES WITH NO EXTERIOR WALL). IN ADDITION, NO INSULATION IS REQUIRED FOR COLD WATER PIPING OUTSIDE THE BUILDING VAPOR BARRIER AND DESIGNED TO BE DRAINED DOWN FOR FREEZE-PROTECTION, SUCH OS PARKING DECK HOSE BIBS FOR WASH DOWN. ALL JOINTS AND TEARS SHALL BE SEALED WITH MATCHING WHITE VAPOR BARRIER TAPE

C. SEE SPECIFICATION 23 07 19 FOR HVAC PIPING INSULATION REQUIREMENTS.

END OF SECTION

SECTION 22 10 00

PLUMBING PIPING

1.0 GENERAL

1.01 DESCRIPTION

A. ALL WORK SPECIFIED IN THIS SECTION IS GOVERNED BY THE COMMON WORK RESULTS FOR PLUMBING SECTION 22 05 00.

B. THIS SECTION 22 10 60 AND THE ACCOMPANYING DRAWINGS COVER THE PROVISION OF ALL LABOR, EQUIPMENT, APPLIANCES, AND MATERIALS AND PERFORMING ALL OPERATIONS IN CONNECTION WITH THE CONSTRUCTION OF THE PLUMBING SYSTEMS OS SPECIFIED HEREIN AND AS SHOWN. THESE SYSTEMS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

SANITARY, WASTE, AND VENT SYSTEMS

DOMESTIC WATER SYSTEMS

C. PROVIDE ALL FINAL PLUMBING CONNECTIONS TO ALL EQUIPMENT FURNISHED BY THE OWNER.

D. PROVIDE ISOLATION VALVE AND REDUCED PRESSURE BACKFLOW PREVENTER OR VACUUM BRAKER AT THE SERVICE ENTRANCE AND AT THOSE CONNECTIONS (ESPECIALLY TO KITCHEN EQUIPMENT) REQUIRED BY LOCAL PLUMBING CODE.

E. NOTE: SEE SPECIFICATION SECTION 23 11 23 FOR NATURAL GAS PIPING. NATURAL GAS PIPING SHALL BE PART OF THIS DIVISION'S SCOPE UNLESS OTHERWISE COORDINATED. COORDINATE WITH ALL TRADES.

1.02 INTENT

A. IT IS THE INTENT OF THIS SECTION OF THE SPECIFICATIONS TO PROVIDE COMPLETE AND OPERABLE PLUMBING SYSTEMS AS SHOWN AND SPECIFIED WHICH ARE FREE OF LEAKS, PROPERLY VENTED, FREE OF UNREASONABLE NOISE, VIBRATION, AND SWEATING, AND FABRICATED SO AS TO FIT THE SPACE ALLOTTED AND TO EXHIBIT A MINIMUM RESISTANCE TO FLUID FLOW.

B. THE WORD "PIPING" IS DEFINED TO MEAN ALL PIPING, FITTINGS, JOINTS, HANGERS, COATINGS, VALVES, COCKS, INSULATION AND ACCESSORIES, NECESSARY FOR THE PLUMBING SYSTEMS DESCRIBED, SHOWN AND SPECIFIED.

1.03 GENERAL REQUIREMENTS

A. PROVIDE ALL REDUCING FITTINGS, FLANGES, COUPLINGS, AND UNIONS OF THE SIZE AND TYPE OF MATERIAL TO MATCH THE PIPING CONNECTIONS AT EACH FIXTURE, PIECE OF EQUIPMENT, VALVE, AND ACCESSORY.

B. UNION JOINTS, COUPLINGS, OR FLANGES SHALL BE PROVIDED IN EACH PIPE LINES CONNECTED TO EACH PIECE OF EQUIPMENT, FIXTURE, AND ELSEWHERE AS INDICATED AND SPECIFIED. UNIONS SHALL MATCH THE PIPING SYSTEM IN WHICH THEY ARE INSTALLED.

C. UNIONS OR FLANGES SHALL BE PROVIDED BETWEEN ALL COPPER-TO-STEEL CONNECTIONS. THESE UNIONS SHALL BE DIELECTRIC, INSULATING TYPE.

D. ALL CHANGES IN DIRECTION AND BRANCHES SHALL BE MADE WITH MANUFACTURED FITTINGS.

E. THE USE OF OFFSET-TYPE REDUCERS IS STRICTLY PROHIBITED IN ANY PIPING SYSTEM.

F. IN ALL WATER PIPING SYSTEMS, CHANGES IN HORIZONTAL PIPE LINE SIZES SHALL BE MADE WITH ECCENTRIC REDUCERS INSTALLED FLAT ON TOP FOR PROPER AIR VENTING. REDUCING TEES, REDUCING ELBOWS AND CONCENTRIC REDUCERS SHALL ONLY BE ALLOWED IN WATER PIPING SYSTEMS FOR CHANGING PIPE SIZES IN VERTICAL RISERS AND FOR MAKING CONNECTIONS TO EQUIPMENT AND ACCESSORIES FROM VERTICAL RISERS.

G. ALL PIPE JOINTS SHALL BE CUT SQUARE AND ALL BURRS SHALL BE REMOVED.

H. OPEN ENDS OF PIPELINES NOT CURRENTLY BEING HANDLED SHALL BE PLUGGED DURING INSTALLATION TO KEEP DIRT, WATER, AND FOREIGN MATERIAL OUT OF THE SYSTEM.

I. SANITARY WASTE AND STORM DRAINAGE PIPING SHALL SLOPE DOWN IN THE DIRECTION OF FLOW AS SHOWN ON THE DRAWINGS OR AS PRESCRIBED BY CODE, OUT NOT LESS THAN 1 PERCENT.

J. ALL VENTS THROUGH THE ROOF (VTR) SHALL BE OFFSET JUST BELOW THE ROOF SUCH THAT THEIR TERMINATION POINTS ARE AT LEAST 15 FT FROM ANY OUTSIDE AIR INTAKE OF ANY HVAC UNIT: SPECIAL ATTENTION IS CALLED TO PACKAGED ROOF TOP AND DEDICATED MAKE=-P AIR UNITS.

K. TRAP PRIMERS SHALL BE PROVIDED AT ALL FLOOR DRAINS, FLOOR SINKS, TRENCH DRAINS, AND HUB DRAINS EXCEPT TRAP PRIMERS MAY BE OMITTED WHERE DRAIN ROUTES TO THE STORM SYSTEM. ROUTE WATER PIPING FROM THE NEAREST COLD WATER LINE AS ALLOWED BY CODE.

L. ALL PIPING, VALVES, AND FITTINGS SHALL BE PROVIDED BY O DOMESTIC MANUFACTURER AND MANUFACTURED IN THE USA.

2.0 PRODUCTS

2.01 SANITARY WASTE AND VENT SYSTEMS

A. ALL UNDERGROUND SANITARY WASTE AND VENT PIPING SHALL BE PC, DWV SOLID WALL SCHEDULE 40 WITH SOCKET-TYPE, SOLVENT WELDED JOINTS IN SIZES UP TO 12"; 14" AND LARGER PIPING SHALL BE PVC, DWV SOLID WALL SCHEDULE 80 WITH SOCKET-TYPE, SOLVENT WELDED JOINTS. ALL PVC PIPING SHALL BE INSTALLED IN ACCORDANCE TO ASTM

B. ALL ABOVE GROUND SANITARY, WASTE, AND VENT PIPING SHALL BE HUBLESS CAST IRON SOIL PIPE UON. ALL CAST IRON SOIL PIPE AND FITTINGS SHALL BEAR THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE AND SHALL BE LISTED BY NSF INTERNATIONAL OR RECEIVE PRIOR APPROVAL BY THE **ARCHITECT/ENGINEER. ALL HUBLESS CAST IRON PIPE SHALL CONFORM TO ASTM A 888 AND CISPI STANDERD 301.

1. SANITARY, WASTE, AND VENT PIPING LESS THAN OR EQUAL TO 2.5" MAY BE COPPER DWV WITH BRAZED JOINTS. PIPING SHALL MEET ASTM B 75, B 88, B 251, AND B 306.
2. DRAIN PIPING FROM EQUIPMENT WITH HIGH-TEMPERATURE DISCHARGE, SUCH OS KITCHEN WARE WASHERS, POT SINKS, ETC. SHALL BE TYPE L HARD-DRAWN COPPER TUBING WITH WROUGHT COPPER FITTINGS AND SOLDERED JOINTS.
3. SANITARY AND WASTE PIPING IN PRESSURIZED PIPING SYSTEMS, SUCH AS FOR ELEVATOR SUMP PUMPS OR SANITARY SUMP PUMPS, SHALL BE COPPER DWV WITH WROUGHT COPPER FITTINGS. ALL JOINTS SHALL BE BRAZED.

C. JOINTS ON HUBLESS COST IRON SOIL PIPE SHALL BE MADE WITH NEOPRENE COUPLINGS AND STAINLESS STEEL CLAMPS. GASKETS SHALL CONFORM TO ASTM C 564. COUPLINGS AND GASKETS SHALL BE PRODUCED BY THE SAME MANUFACTURER AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, INCLUDING BAND TIGHTENING SEQUENCE AND TORQUE. ALL COUPLINGS SHALL BE MANUFACTURED TO THE CISP1 310 STANDARD, ASTM C 1277. ASTM C 150, FM STANDARD 1680 CLASS | AND CERTIFIED BY NSF INTERNATIONAL. COUPLING SHALL BE AS FOLLOWS:

1. 1" TO 3" - TWO (2) STAINLESS STEEL BANDS
2. 4" TO 8" – FOUR (4) STAINLESS STEEL BANDS
3. 10" TO 15" - HEAVY DUTY COUPLING WITH SIX (6) STAINLESS STEEL BANDS. HEAVY-DUTY COUPLINGS SHALL CONFORM TO ASTM C 1540.

D. ALL OFFSETS ON 8" PIPE AND LARGER SHALL HAVE METAL RESTRAINING STROPS BY HOLDRITE OR APPROVED EQUAL.

E. CLEANOUTS SHALL BE PROVIDED AT THE LOCATIONS INDICATED AND, A3 A MINIMUM, WHERE REQUIRED BY CODE. FLOOR CLEANOUTS SHALL BE A MINIMUM OF 4" AND SHALL BE COMPLETE WITH A FLUSH PLUG AND REMOVABLE, SCORIATED BRONZE FLOOR PLATE. PROVIDE CARPET BUTTONS IN CARPETED AREAS. WALL CLEANOUTS SHALL BE THREADED CLEANOUT TEES AND PLUGS WITH POLISHED STAINLESS STEEL COVER PLATE WITH CENTER SET SCREW.

F. FLOOR DRAINS IN TOILETS AND FINISHED AREAS SHALL BE JR SMITH 2000 SERIES WITH 6" TYPE B SQUARE ADJUSTABLE STRAINERS FINISHED IN SATIN NICKEL BRONZE; OR EQUAL PRODUCTS BY JOSAM OR ZURN. PROVIDE VANDOLPROOF SECURED TOPS.

G. FLOOR DRAINS IN MECHANICAL ROOMS AND UNFINISHED CONCRETE FLOORS SHALL BE JR SMITH 2131 SERIES WITH ROUND 11 3/4" CAST IRON GRATE, SEDIMENT BUCKET AND DEEP-SEAL P-TROP; OR EQUAL PRODUCTS BY JOSAM OR ZURN. PROVIDE VANDAL-PROOF SECURED TOPS.

H. HUB DRAINS (HD) SHALL BE MADE WITH O REDUCER FITTING WITH OPENING AT LEAST ONE NOMINAL SIZE LARGER THAN THE CONNECTED PIPING OS SCHEDULED. HD SHALL BE SIZED TO RECEIVE ALL DISCHARGES WITHOUT SPLASHING.

2.02 DOMESTIC WATER PIPING

A. UNDERGROUND DOMESTIC WATER SERVICE ENTRANCE PIPING 3" AND SMALLER IN SIZE SHALL BE TYPE K HARD-DRAWN COPPER TUBING WITH WROUGHT COPPER FITTINGS. ALL JOINTS SHALL BE BRAZED.

B. UNDERGROUND DOMESTIC WATER SERVICE ENTRANCE PIPING ABOVE 3" IN SIZE SHALL BE CLASS 150 DUCTILE IRON PIPE WITH MECHANICAL JOINTS.

C. ALL UNDERGROUND COPPER BRANCH LINES (1/2" AND 3/4" ONLY) SHALL BE CONTINUOUS LENGTHS OF SOFT TYPE K COPPER TUBING WITH NO JOINTS ALLOWED UNDERGROUND.

D. ABOVEGROUND DOMESTIC WATER SYSTEM PIPING 3" IN SIZE AND SMALLER SHALL BE TYPE L HARD-DRAWN COPPER TUBING WITH WROUGHT COPPER FITTINGS AND SOLDERED POINTS.

E. ABOVEGROUND DOMESTIC WATER PIPING 4" AND LARGER SHALL BE TYPE L HARD-DRAWN COPPER TUBING WITH ROLLED GROOVED JOINTS AND FITTINGS. INSTALLATION-READY COPPER FITTINGS SHALL MEET THE SAME GASKET MATERIAL SPECIFICATIONS OS COUPLINGS. FITTINGS SHALL BE AS FOLLOWS OR EQUAL, AND SHALL BE PROVIDED BY THE MANUFACTURER WITH THE GASKET INCLUDED IN THE COUPLER ASSEMBLY:

1. COUPLING: RIGID, VICTAULIC STYLE 607 (6" AND SMALLER)
2. GASKETS: GRADE EHP EPDM (8" AND SMALLER)

F. ALL VALVES IN POTABLE WATER SYSTEMS SHALL BE "LEAD-FREE" TYPE.

G. AL

SECTION 22 30 00

PLUMBING EQUIPMENT

1.0 GENERAL

1.01 DESCRIPTION

A. ALL WORK SPECIFIED IN THIS SECTION IS GOVERNED BY THE COMMON WORK RESULTS FOR PLUMBING SECTION 22 05 00.

B. THIS SECTION 22 30 00 AND THE ACCOMPANYING DRAWINGS COVER THE PROVISIONS OF ALL LABOR, EQUIPMENT, APPLIANCES, AND MATERIALS AND PERFORMING ALL OPERATIONS IN CONNECTION WITH THE CONSTRUCTION OF THE WATER HEATING SYSTEMS AS SPECIFIED HEREIN AND AS SHOWN. THESE SYSTEMS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

1. WATER HEATERS
2. HOT WATER CIRCULATOR

1.02 GENERAL REQUIREMENTS

A. ALL PLUMBING EQUIPMENT INSTALLED IN LOCATIONS WITH A WATER HARDNESS OF 25 GRAINS PER GALLON OR MORE, SHALL BE RESISTANT TO CORROSION. WHERE COPPER MATERIALS ARE IN THE WATER STREAM, IT SHALL BE CUPRO-NICKEL OF NOT MORE THAN 90% COPPER.

B. ALL WATER HEATERS SHALL BE NSF/ANSI 61 CERTIFIED TEOD FREE" FOR POTABLE WATER SERVICE,

C. ALL WATER HEATERS SHALL HAVE ASME-RATED TEMPERATURE AND PRESSURE RELIEF VALVE(S). VALVE(S) SHALL BE PROVIDED BY THE MANUFACTURER AND SIZED FOR THE DISCHARGE LOCATION NOTED IN THE PLANS.

D. ALL WATER HEATERS AND TANKS SHALL BE GLASS--LINED, 1600F FIRED, WITH A WORKING PRESSURE OF 150 PSI, A TEST PRESSURE OF 300 PSI, OR THE SYSTEM PRESSURE AT THE INSTALLATION LOCATION, WHICHEVER IS GREATER, AND SHALL HAVE MAGNESIUM ANODES FOR ELECTROLYTIC PROTECTION. SEPARATE STORAGE TANKS MAY ALSO BE CEMENT---LINED. TANKS SHALL BE ASTM STAMPED.

E. ALL WATER HEATERS SHALL MEET OR EXCEED THE ENERGY EFFICIENCY REQUIREMENTS OF THE LATEST VERSION OF ASHRAE 90.1.

F. ALL WATER HEATERS AND PUMPS SHALL BE UL APPROVED AND LABELED, AND BE AGA-CERTIFIED WHERE APPLICABLE.

G. ALL WATER HEATERS AND PUMPS SHALL BE NEMA-RATED APPROPRIATE FOR THE INSTALLATION LOCATION IN WHICH THEY ARE INSTALLED.

H. WATER HEATER CONTROLS SHALL INCLUDE AN OPERATING THERMOSTAT AND MANUAL RESET HIGH LIMIT CONTROL FOR EACH HEATING ELEMENT OR BURNER. THE SAFETY HIGH LIMIT CONTROL SHALL PREVENT OVERHEATING IN THE EVENT OF A THERMOSTAT FAILURE.

I. ALL CONTROLS SHALL BE FACTORY--WIRED AND REQUIRE NO EXTERNAL POWER SOURCE.

J. WATER HEATERS AND TANKS SHALL HAVE DRAINS WITH EXTERNAL ACCESS AND HOSE END CONNECTION.

K. ALL WATER HEATER CONDENSATE LINES SHALL BE PROTECTED FROM FREEZING OR SHALL BE HEAT TRACED IN ACCORDANCE WITH SPECIFICATION 23 05 93.

L. THE WATER HEATER SHALL BE CERTIFIED BY AN INDEPENDENT LABORATORY FOR OXIDES OF NITROGEN (NOX) OF LESS THAN 10 PPM CORRECTED TO 3% 02 OR BETTER OS REQUIRED BY THE AHJ.

M. WHERE CLASSIFIED AS A BOILER BY THE DEPARTMENT OF LABOR, AH, OR APPLICABLE CODES, THE SYSTEM SHALL ADDITIONALLY MEET ALL REQUIREMENTS. AN EMERGENCY POWER OFF (EPO) SWITCH SHALL BE PROVIDED OT LOCATIONS REQUIRED BY THE AHJ. THE EPO(S) SHALL BE ACCESSIBLE, CLEARLY LABELED, AND SHALL SHUT OFF ALL POWER TO THE BOILERS AND CAUSE THE EQUIPMENT TO BE DISENGAGED. EPO(S) SHALL BE COORDINATED WITH CONTROLS AND DIVISION 26 AND SHALL BE INSTALLED AND WIRED UNDER THIS SCOPE.

2.0 PRODUCTS:

2.01 WATER HEATER **COMMERCIAL GAS**

A. THE TANKLESS WATER HEATER SHALL BE UL LISTED FOR THE US AND NSF CERTIFIED.

B. UNIT SHALL BE PROTECTED BY A SHEET METAL HOUSING. HEAT EXCHANGER SHALL BE RATED FOR MAXIMUM WORKING PRESSURE NOT LESS THAN 150 PSIG.

C. ALL ASPECTS OF INSTALLATION OF WATER HEATER PLANT SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS. MATERIALS SHALL CONFORM TO ALL MANUFACTURER RECOMMENDATION INCLUDING ELECTRICAL CONNECTIONS AND WIRING.

D. WATER HEATER PIPING SHALL BE FIELD CONSTRUCTED OF MATERIALS AS SPECIFIED. WATER HEATER SHALL BE INSTALLED WITH INDIVIDUAL ISOLATING SHUTOFF VALVES FOR SERVICE AND MAINTENANCE..

2.02 HOT WATER CIRCULATOR

A. HOT WATER CIRCULATOR SHALL BE OS SCHEDULED. ACCEPTABLE SUBSTITUTE MANUFACTURERS ORE B&G, GOULDS, AND GRUNDFOS, SUBJECT TO SUBSTITUTION REQUIREMENTS.

B. HOT WATER CIRCULATORS USED IN POTABLE WATER SYSTEMS SHALL BE LEAD-FREE.

3.0 EXECUTION

3.01 INSTALLATION

A. THE WATER HEATERS AND ACCESSORIES SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND THE CONTRACT DOCUMENTS.

B. ALL TEMPERATURE AND PRESSURE RELIEF VALVES SHALL BE PIPED FULL SIZE TO ON INDIRECT WASTE SUCH AS THE NEAREST FLOOR DRAIN, SERVICE SINK, SINK TAILPIECE, ETC. PIPING SHALL BE IN ACCORDANCE WITH SPECIFICATION 22 10 00 FOR DWV SERVICES. SIZE SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS.

C. ALL WATER HEATERS SHALL HAVE INTERNAL HEAT TRAPS OR SHALL HAVE HEAT TRAPS INSTALLED IN THE COLD WATER AND HOT WATER PIPING. INSTANTANEOUS WATER HEATERS SHALL BE PROVIDED WITH HEAT TRAPS UNLESS MANUFACTURER DOCUMENTATION SPECIFICALLY ALLOWS EXCLUSION.

D. WATER HEATERS SHALL BE COMPLETELY ENCASED IN HIGH-DENSITY INSULATION OF SUFFICIENT VALUE TO MEET THE ENERGY EFFICIENCY STANDARDS OF THE LATEST VERSION OF ASHRAE 90.1, OR SHALL BE FACTORY INSULATED WITH NON-CFC POLYURETHANE CLOSED--CELL FOAM INSULATION. PROVIDE REMOVABLE INSULATION PANELS TO MAINTAIN ACCESS TO ALL REQUIRED COMPONENTS.

E. ALL WATER HEATERS OR BOILERS SUBJECT TO CONDENSING UNDER NORMAL STEADY-STATE OPERATING CONDITIONS SHALL BE PROVIDED AND INSTALLED WITH ACCESSORY CONDENSATE NEUTRALIZATION KITS.

3.02 WARRANTY

A. PROVIDE 5-YEAR LIMITED WARRANTY ON ALL TANKS AND HEAT EXCHANGERS, AND 1-YEAR LIMITED WARRANTY ON PARTS UNLESS OTHERWISE NOTED.

END OF SECTION

SECTION 22 40 00

PLUMBING FIXTURES

1.0 GENERAL

1.01 DESCRIPTION

A. ALL WORK SPECIFIED IN THIS SECTION IS GOVERNED BY THE COMMON WORK RESULTS FOR PLUMBING SECTION 22 05 00.

B. THIS SECTION 22 40 00 AND THE ACCOMPANYING DRAWINGS COVER THE PROVISIONS OF ALL LABOR, FIXTURES, EQUIPMENT, APPLIANCES AND MATERIALS, AND PERFORMING ALL OPERATIONS IN CONNECTION WITH THE CONSTRUCTION AND INSTALLATION OF THE PLUMBING FIXTURES AND TRIM OS SPECIFIED HEREIN AND AS SHOWN.

C. ALL FINISHES SHALL BE OS SELECTED BY THE ARCHITECT. WHERE THE ARCHITECT DOES NOT HAVE A PREFERENCE, FINISHES SHALL BE IN ACCORDANCE WITH THIS SPECIFICATION.

D. ALL EXPOSED PIPING, VALVES, STOPS, P--TRAPS, ETC. SHALL BE CHROME-PLATED. ALSO, ALL EXPOSED PIPING PENETRATIONS THROUGH WALLS, FLOORS OR CEILINGS SHALL BE PROVIDED WITH CHROME-PLATED CAST BRASS ESCUTCHEONS.

E. ALL P-TRAPS SHALL BE MINIMUM 17--GOUGE BRASS.

F. ALL EXPOSED P-TRAPS SUBJECT TO CONTACT, SUCH AS THOSE BELOW WALL-MOUNTED LAVATORIES, SHALL BE PROVIDED WITH INSULATED COVERS AS REQUIRED.

G. FLUSH VALVES SHALL HAVE A NON-HOLD OPEN FEATURE, VACUUM BREAKERS, AND COVER CAP ON ANGLE-TYPE STOP.

H. PROVIDES ALL FINAL CONNECTIONS TO ALL EQUIPMENT AND FIXTURES FURNISHED BY OWNER.

I. UNLESS OTHERWISE SPECIFIED IN ON INDIVIDUAL FIXTURE DESCRIPTION, ALL ENAMELED CAST-IRON AND PORCELAIN FIXTURES SHALL BE WHITE.

J. ALL LAVATORIES AND OTHER HAND-WASHING FIXTURES SHALL BE PROVIDED AND INSTALLED WITH ASSE 1070 POINT--OF--USE MIXING VALVE ON THE HOT WATER CONNECTION. MIXING VALVE SHALL BE SET TO PROVIDE NO MORE THAN 110F HOT WATER.

1.02 INTENT

A. IT IS THE INTENT OF THIS SECTION OF THE SPECIFICATIONS TO PROVIDE COMPLETE, OPERABLE, ADJUSTED, CLEAN PLUMBING FIXTURES AS SHOWN AND SPECIFIED, WHICH ARE FREE OF LEAKS, NOISE, AIR, VIBRATION, AND WATERFLOW FLUCTUATIONS.

1.03 BASIS OF DESIGN

A. THE BASIS OF DESIGN IS OS OUTLINED FOR EACH FIXTURE IN THE 2.0 PRODUCTS SUB SECTION, ANY PROPOSED SUBSTITUTIONS SHALL BE PROVEN EQUAL IN ALL RESPECTS TO THE EQUIPMENT SPECIFIED AS THE BASIS OF DESIGN.

1.04 ACCEPTABLE MANUFACTURERS

A. ACCEPTABLE FIXTURE MANUFACTURERS FOR EACH TYPE OF FIXTURE ARE AS FOLLOWS:

1. WATER CLOSETS -- AMERICAN STANDARD, KOHLER, SLOAN, AND ZURN
2. URINALS - AMERICAN STANDARD, KOHLER, SLOAN, AND ZURN
3. MANUAL FLUSH VALVES -- AMERICAN STANDARD, KOHLER, SLOAN, AND ZURN
4. AUTOMATIC FLUSH VALVES -- AMERICAN STANDARD, KOHLER, SLOAN, TOTO, AND ZURN
6. LAVATORY FAUCETS -- AMERICAN STANDARD, BRADLEY, CHICAGO, DELANY, GROHE, KOHLER, SLOAN, TOTO, AND ZURN
7. KITCHEN /PANTRY/ETC. SINKS -- AMERICAN STANDARD, ELKAY, GROHE, DUST, AND KOHLER
8. KITCHEN/PANTRY/ETC. FAUCETS - AMERICAN STANDARD, CHICAGO, DELTA, ELKAY, JUST, KOHLER, AND ZURN
9. SERVICE AND LAUNDRY SINKS - FIAT, KOHLER, MUSTEE, PROFLO, AND STERN-WILLIAMS
10. SERVICE AND LAUNDRY FAUCETS - AMERICAN STANDARD, DELTA,ELKAY, FIAT, KOHLER, T&S BRASS, SPEAKMAN, AND STERN- WILLIAM

2.0 EXECUTION.

2.01 INSTALLATION

A. UNITS SHALL BE INSTALLED AS INDICATED AND IN CONFORMANCE WITH THE MANUFACTURER IS RECOMMENDATIONS. COORDINATE THE ACTUAL UNITS TO BE PROVIDED WITH ALL TRADES.

B. ALL PLUMBING FIXTURES SHALL BE FREE OF LEAKS, PROVIDED COMPLETELY FINISHED, TRIMMED, ADJUSTED, CLEANED, AND READY FOR USE. THEY SHALL BE PROPERLY SECURED TO THE STRUCTURE BY THE USE OF THRU--BOLTING, BACK PLATES, CARRIERS, EXPANSION SHIELDS (FOR FLOOR MOUNTING ONLY) OR TOGGLE BOLTS.

C. WALL HUNG FIXTURES SUPPORTED ON CHOIR CARRIERS SHALL BE BOLTED TO THE FLOOR STAB. CAREFULLY COORDINATE SPACE REQUIREMENTS AND FIXTURE MOUNTING HEIGHT REQUIREMENTS WITH SUPPORTS BEING FURNISHED.

D. FIXTURES SUPPORTED WITH WALL HANGERS ON MASONRY CHASE WALLS SHALL BE FASTENED TO THE WALL WITH NOT LESS THAN 3/8" BOLTS WHICH SHALL PASS THROUGH THE WALL AND THROUGH A 1/4" X 4" WIDE STEEL BACKPLATE ON THE UNFINISHED CHASE WALL SIDE.

E. WHERE FIXTURES ARE HUNG ON SINGLE MASONRY WALLS WITHOUT 9 PIPE CHASE BEHIND, THEY SHALL BE MOUNTED WITH 3/8" TOGGLE BOLTS

F. FIXTURES ON STEEL STUD WALLS SHALL HAVE A 1/4" X 4" WIDE STEEL BACKPLATE WIRED WITH 1/16" STEEL WIRE TO THE STUDS. BOLTS NOT LESS THAN 3/8" SHALL SECURE THE FIXTURES THROUGH THE FIXTURE HANGER AND THE BACKPLATE.

G. ALL MOUNTING HOLES PROVIDED IN FIXTURES SHALL BE USED FOR SUPPORT. IN ADDITION TO THE MAIN HANGERS, 1/4" TOGGLE BOLTS SHALL SECURE THE BOTTOM OF ALL WALL-HUNG FIXTURES AT EACH DRILLING PROVIDED FOR THIS PURPOSE.

H. MOUNT WALL-HUNG FIXTURES AT THE HEIGHTS INDICATED ON THE ARCHITECTURAL DRAWINGS OR AS PRESCRIBED BY LOCAL CODE. SPECIAL ATTENTION IS CALLED TO THE INSTALLATION REQUIREMENTS OF THE ANSI HANDICAP CODE.

2.02 CLEANING AND ADJUSTMENT

A. THE UNITS SHALL BE CLEANED, TESTED AND FIELD-ADJUSTED TO PROVIDE OPTIMUM FLOW AND DRAINAGE. SPECIFIC ATTENTION IS CALLED TO THE ADJUSTMENT OF AUTOMATIC FLUSH VALVES AND FAUCETS FOR EMPIRICAL CONDITIONS.

B. ALL FLUSH VALVES, DIAPHRAGMS, STRAINERS, AERATORS, ETC. SHALL BE FULLY CLEANED AFTER AIL PIPING AND FIXTURE FLUSHING.

END OF SECTION

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DATES

RELEASE:
P.M. UPDATES:
SUBMITTAL DATE:
1: APR. 10, 2025
2:
3:
BID:
CONSTRUCTION:

REVISIONS

- 03/25/25--CHECK SET
- 04/22/25--PERMIT SET

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PROFFESSIONAL SEAL

SITE INFORMATION

MK TYPE: MK2X
JIB #: 327
ADDRESS:
13648 VAN NUYS BLVD
PACOIMA, CA
91331

DRAWN BY: NYE
PROJECT #: 12079--24
SCALE:

PLUMBING SPECIFICATION (2 OF 2 SHEETS)

P0.3

PLUMBING FIXTURE SCHEDULE

SYM.	E/N	QTY	FIXTURE	MIN. CONNECTION SIZE					DESCRIPTION
				W.	V.	C.W.	H.W.	G.	
37	E	1	SHAKE/SMOOTH. MACH. FAUCET	--	--	1/2"	--	--	FISHER #4730, 18" CONTROL DJ SWING SPOUT. PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR.
34	E	2	ICE TEA/COFFEE BREWER	--	--	3/8"	--	--	ITCB-DV, 29" TRUNK W/ TRAY (ITCB-DV-35700.0019)
594	N	1	PREP TABLE FAUCET	--	--	1/2"	1/2"	--	FISHER #3512-10 FAUCET, WITH 8 INCH SPOUT AND FISHER #10758 SINK, LEVERWASTE #22209 W/ STRAINER. PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR.
598B	N	1	3-COMP FAUCET	--	--	1/2"	1/2"	--	FISHER #2310-1WB PRE-RINSE SYSTEM W/ ULTRA SPRAY AND FISHER #2901-14 PRE-RINSE, ADD-ON FAUCET. PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR.
FCO	N	--	FLOOR CLEANOUT	SEE PLANS	--	--	--	--	ZURN #ZN1400 CAST IRON BODY ADJUSTABLE SCORIATED SECURED NICKEL BRONZE TOP, SIZE AS REQUIRED. TOP FLUSH W/ FINISH FLOOR, SEE DETAIL 9/P3.1.
FD-1	N	5	FLOOR DRAIN	3"	2"	--	--	--	ZURN #Z-415-BZ WITH NICKEL BRONZE GRATE.
HD-1	N	1	HUB DRAIN	3"	2"	--	--	--	ZURN #Z1870.
FS-1	N	5	FLOOR SINK	3"	1 1/2"	--	--	--	ZURN #FD2375Y WITH 1/2 GRATE AND SEDIMENT BUCKET.
FS-2	N	1	FLOOR SINK	3"	1 1/2"	--	--	--	ZURN #FD2376Y WITH 1/2 GRATE AND SEDIMENT BUCKET. REQUIRED ONLY FOR INDIRECT WASTE OF 3-COMP SINK WHEN DIRECTED BY LOCAL CODES.
HB	N	2	HOSE BIBB	--	--	3/4"	--	--	ACORN #8121, ROUGH BRASS W/ VACUUM BREAKER. IN FREEZING AREAS INSTALL ZURN #Z-1320-C WITH VACUUM BREAKER, CHROME PLATED CAST BOX WITH HINGED COVER AND OPERATING KEY.
LAV	N	2	LAVATORY	2"	1 1/2"	1/2"	1/2"	--	AMERICAN STANDARD DECRUM #913400ECWALL HUNG, WHITE. 5" DEEP BOWL AND FAUCET HOLES AT 4" OC WITH ZURN #Z1231-079 CONCEALED ARM SYSTEM W/(4) 1/2" DIA. "HILTI KWIK BOLT 11" EXPANSION ANCHORS W/ 2-1/4" MIN. EMBEDMENT. PROVIDE WITH CHICAGO FAUCET NO. 3501-8E39VPABCP DECK MOUNTED, METERING SINK FAUCET.PROVIDE WITH 0.35 GPM, PRESSURE COMPENSATING, NON-AERATED SPRAY AND MVP SELF CLOSING, AUTO-TIMED METERING CARTRIDGE. TIME OUT ADJUSTMENT SETTING SHALL BE FACTORY PRE-SEAT AT 15 SECONDS. INSULATE TRAP AND WATER SUPPLIES WITH TRUEBRO LAV GUARD 2 #102 E-Z SERIES INSULATION KIT: (800) 340-5909.
556	N	2	H.S, LAV-SINK ITEM #556 KITCHEN	2"	1 1/2"	1/2"	1/2"	--	SUPPLIED BY KITCHEN EQUIPMENT CONTR. & INSTALLED BY PLUMBING CONTRACTOR. PROVIDE WITH 0.5 GPM AERATOR. FISHER #85391 FAUCET, 4" BACK SPLASH MOUNT, WITH 6" GOOSENECK SPOUT. PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR.
556	N	1	H.S, LAV-SINK ITEM #556 SERVICE AREA	2"	1 1/2"	1/2"	1/2"	--	SUPPLIED BY KITCHEN EQUIPMENT CONTR. & INSTALLED BY PLUMBING CONTRACTOR. PROVIDE WITH 0.5 GPM AERATOR. FISHER #85405 FAUCET, 4" BACK SPLASH MOUNT, WITH 6" GOOSENECK SPOUT. PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR.
540	N	1	MOP SINK	3"	2"	3/4"	3/4"	--	36"X36" STAINLESS STEEL MOP SINK W/ DRAIN OPENING (BY OTHERS). ZURN #FD-2275 WITH STAINLESS STEEL STRAINER PROVIDED & INSTALLED BY PLUMBING CONTRACTOR. PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR. FISHER #8253 WITH INTEGRAL VACUUM BREAKER, 3/4" THREADED OUTLET, PAIL HOOK AND WALL BRACE. PROVIDED AND INSTALLED BY P.C.
TMV	N	--	THERMOSTATIC MIXING VALVE	--	--	1/2"	1/2"	--	LEONARD #270-LF, SET AT 110°F. SURFACE MOUNT TIGHT TO UNDERSIDE OF FIXTURE. MINIMUM FLOW RATE 0.25 GPM.
WC	N	2	WATER CLOSET	4"	2"	1"	--	--	(ACCESSIBLE WATER CLOSET, FLOOR MOUNT, 10" ROUGH-IN) AMERICAN STANDARD #3043.102 MADERA 17" HIGH, WHITE VITREOUS CHINA, 1.28 GPF, ELONGATED SIPHON JET BOWL, 1-1/2" TOP SPUD WITH EXPOSED HIGH EFFICIENCY AUTOMATIC SENSOR FLUSH VALVE (SLOAN MODEL #111-1.28 ES-S TMO) OR SIMILAR AND POWER CONVERTER MODEL #EL-154. LOCATED POWER CONVERTER ABOVE CEILING SPACE ACCESSIBLE OVER HALLWAY. ADJUST SENSOR TO FLUSH AFTER USER HAS MOVED AWAY AND LEFT THE SEAT IN THE UP POSITION. FLUSHING OPERATION SHALL BE FROM, WIDE SIDE OF TOILET STALL, OLSONITE #95C1 OPEN FRONT SEAT LESS COVER, SELF-SUSTAINING CHECK DO NOT CONNECT TO SYMMONS POWER SUPPLY, CONNECT WITH ALL WATER CLOSET. PROVIDE CHROME PIPE SUPPORTS FOR FLUSH VALVE (SLOAN MODEL J-212-A) OR SIMILAR.
WCO	N	--	WALL CLEANOUT	SEE PLANS	--	--	--	--	ZURN #Z1446 STAINLESS STEEL WALL ACCESS COVER W/ CENTER SCREW
EX.IWH	E	1	EXISTING INSTANTANEOUS WATER HEATER	--	--	--	--	--	EXISTING
IWH-1	N	--	INSTANTANEOUS WATER HEATER	--	--	1-1/2"	1-1/2"	1"	NAVIEN MODEL NPE-240S INTERIOR, TANKLESS, 199,000 BTU/HR INPUT, 3.2 GPM AT 85 DEGREE F RISE, WALL MOUNTED, WITH PRESSURE RELIEF VALVE, RE-CIRCULATION PUMP OPTION FOR ONLY (1) OF THE HEATERS. FULLY AUTOMATIC CONTROLS. CONTRACTOR SHALL PROVIDE 3" PVC COMBINATION VENT/FLUE PER DETAIL 01/P3.0. SET FOR 140°F OUTPUT WATER TEMPERATURE. CONTACT NAVIEN FOR NATIONAL ACCOUNT PRICING.
EX.ET	E	1	EXPANSION TANK	--	--	1/2"	--	--	EXISTING
RCP-1	N	1	RECIRCULATION PUMP	1"	--	--	--	--	39 WATTS, 115 V/1PH, 2 GPM@ 7FT. HEAD, BELL & GOSSETT : MODEL NBF-8S
SOL	N	2	GAS SOLENOID VALVE	--	--	--	--	1-1/2"	CAPTIVEAIRE #MGVA 1-1/2" MECHANICAL SHUT OFF VALVE WITH UPSTREAM STRAINER. REFER TO KITCHEN HOOD DRAWINGS FOR ADDITIONAL INFORMATION.
TP-1	N	--	TRAP PRIMER	--	--	--	--	--	PRECISION PLUMBING PRODUCT #PR-500 PRIMER-RITE PRIMER. LOCATED IN WALL MOUNTED ACCESSIBLE AT +18" A.F.F.
195	N	1	HYDRA RINSE	--	--	1/2"	1/2"	--	HYDRA RINSE HR SERIES CLEANING AND SANITIZING SYSTEM. MOUNT IN ACCESSIBLE LOCATION ABOVE SHAKE MACHINE.
BFP-1	N	2	BACK FLOW PREVENTER	--	--	--	--	--	MAKE:WATTS, MODEL:LF9D DCV (ASSE 1012 APPROVED)
BFP-2	N	4	BACK FLOW PREVENTER	--	--	--	--	--	MAKE:WATTS, MODEL:SD-3 DCV (ASSE 1022 APPROVED)

GENERAL NOTES

1. VERIFY EXACT LOCATIONS, ELEVATIONS AND CHARACTERISTICS OF UTILITIES AND PIPING BEFORE COMMENCEMENT OF WORK, AND IMMEDIATELY NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.
2. OBTAIN EXACT LOCATIONS AND MOUNTING HEIGHTS OF PLUMBING FIXTURES AND KITCHEN EQUIPMENT FROM ARCHITECTURAL AND KITCHEN EQUIPMENT DRAWINGS.
3. CONTRACTOR SHALL MAKE ALL ARRANGEMENTS WITH UTILITY COMPANIES FOR SERVICE AND CONNECTIONS AND SHALL PAY FOR ALL PERMITS. FMI WILL PAY ALL FEES, CHARGES AND METERS.
4. TERMINATE ALL VENT AND FLUE OUTLETS AT 10'-0" MINIMUM FROM ANY FRESH AIR INTAKES OR PER LOCAL JURISDICTION.
5. INSTALL ALL PLUMBING TO AVOID INTERFERENCE WITH ELECTRICAL AND MECHANICAL EQUIPMENT AND STRUCTURAL FRAMING. NO WATER OR DRAIN LINES PERMITTED OVER OR UNDER ELECTRICAL PANELS.
6. PROVIDE FAUCETS UNLESS OTHERWISE NOTED, TRAPS, STOPS, GATE VALVES, GAS COCKS, WATER HAMMER ARRESTERS, WALL CLEANOUTS, CLEANOUT COVERS, FLEXIBLE CONNECTIONS, SHUT-OFF VALVES AND INDIRECT WASTE TO AN APPROVED RECEPTOR AND ALL NECESSARY TRIM FOR A COMPLETELY INSTALLED AND CONNECTED PLUMBING SYSTEM.
7. RECORD ON AS-BUILT DRAWINGS, ALL SIZES, LOCATIONS. INVERTS AND MATERIALS OF EXISTING PIPES THAT ARE ENCOUNTERED AND NEW PIPES INSTALLED DURING THE COURSE OF THE PROJECT. DELIVER AS-BUILTS TO JIB CONSTRUCTION MANAGER AT THE END OF THE PROJECT.
8. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL LOCAL AND FEDERAL CODES, RULES AND REGULATIONS GOVERNING THIS PROJECT.
9. UPON COMPLETION OF JOB, INSPECT ALL EXPOSED PORTIONS OF THE PLUMBING INSTALLATIONS AND COMPLETELY REMOVE ALL EXPOSED LABELS, SOIL, MARKINGS, AND FOREIGN MATERIAL EXCEPT PRODUCT LABELS AND THOSE REQUIRED BY LAW.
10. INDIRECT WASTE TERMINATIONS:
    - 10.a. TERMINATE ALL POTABLE CLEAR WATER THROUGH AN INDIRECT WASTE PIPE BY MEANS OF AN AIR GAP.
    - 10.b. TERMINATE ALL NON-POTABLE CLEAR WATER THROUGH AN INDIRECT WASTE PIPE BY MEANS OF AN AIR GAP OR AIR BREAK.
    - 10.c. FOOD UTENSILS, DISHES, POTS AND PANS SINK (3-COMPARTMENT SINK) SHALL BE THROUGH AN INDIRECT WASTE PIPE THROUGH AN AIR GAP OR AN AIR BREAK OR DIRECTLY INTO THE DRAINAGE SYSTEM.
11. PROVIDE FLEXIBLE GAS CONNECTIONS TO GAS EQUIPMENT. PROVIDE RIGID GAS CONNECTIONS TO EQUIPMENT, OTHER THAN COOKING EQUIPMENT, WHERE LOCAL JURISDICTION PROHIBITS THE USE OF FLEXIBLE CONNECTIONS.
12. VERIFY ALL EQUIPMENT AND APPLIANCE CONNECTION SIZES PRIOR TO MAKING FINAL CONNECTION. REDUCE BRANCH PIPE SIZING JUST PRIOR TO CONNECTION TO UNIT.
13. DISINFECTION OF POTABLE WATER SYSTEM.
    - 13.1. THE PIPE SYSTEM SHALL BE FLUSHED WITH CLEAN, POTABLE WATER UNTIL DIRTY WATER DOES NOT APPEAR AT THE POINTS OF OUTLET.
    - 13.2. THE SYSTEM OR PART THEREOF SHALL BE FILLED WITH A WATER/CHLORINE SOLUTION CONTAINING AT LEAST 50 PARTS PER MILLION OF CHLORINE, AND THE SYSTEM OR PART THEREOF SHALL BE VALVED OFF AND ALLOWED TO STAND FOR 24 HOURS; OR THE SYSTEM OR PART THEREOF SHALL BE FILLED WITH A WATER/CHLORINE SOLUTION CONTAINING AT LEAST 200 PARTS PER MILLION OF CHLORINE AND ALLOWED TO STAND FOR 3 HOURS.
    - 13.3. FOLLOWING THE REQUIRED STANDING TIME, THE SYSTEM SHALL BE FLUSHED WITH CLEAN POTABLE WATER UNTIL THE CHLORINE IS PURGED FROM THE SYSTEM.
    - 13.4. THE PROCEDURE SHALL BE REPEATED WHERE SHOWN BY A BACTERIOLOGICAL EXAMINATION THAT CONTAMINATION REMAINS PRESENT IN THE SYSTEM.
14. ALL EXPOSED DRAIN LINES FROM KITCHEN EQUIPMENT TO FLOOR DRAINS AND FLOOR SINKS SHALL BE SCHEDULE 40 PVC.
15. CONTRACTOR SHALL VIDEO INSPECT ANY EXISTING SANITARY MAINS TO BE RE-USED OR CONNECTED PRIOR TO COMMENCING WORK. NOTIFY ENGINEER OF RECORD IMMEDIATELY OF ANY PIPE DEFECTS, CRACKS, OR BREAKS WITH VIDEO EVIDENCE. JET FLUSH AND CLEAN ANY OBSTRUCTIONS OR BLOCKAGES FOUNDS.

UTILITY SCHEDULE

WATER SERVICE	W.S.F.U.	GPM	WATER SERVICE	STREET PRESSURE/AVAILABLE PRESSURE
	94.75	69	0'-2"	PLUMBING CONTRACTOR SHALL OBTAIN FLOW TEST INFORMATION FOR EXISTING WATER MAIN SIZE AND PRESSURE IN STREET. CONTRACTOR SHALL NOTIFY ARCHITECT IMMEDIATELY IF RESIDUAL PRESSURE IS ABOVE 80 PSI OR BELOW 40 PSI.
SEWER DRAIN	D.F.U.	SLOPE	BUILDING SEWER	STREET SEWER
	102	1/8"	4"	PLUMBING CONTRACTOR SHALL COORDINATE WITH CIVIL CONTRACTOR.

GAS DATA (MBH)	SPACE HEATING	WATER HEATING*	COOKING*	TOTAL	MAXIMUM EQUIVALENT LENGTH
	420	398	400	1218	125 FT.

*MAXIMUM COOKING LOAD CALCULATED WITH 4-FRYER LAYOUT

WATER TESTING REQUIREMENTS

WATER TESTING REQUIREMENTS SHOULD BE PROVIDED PRIOR TO START OF PLUMBING DESIGN. OBTAIN WATER HARDNESS INFORMATION FROM YOUR LOCAL WATER AUTHORITY OR CONTACT:

IF WATER HARDNESS IS OVER 10g Pg OR 170 ppm, PROVIDE WATER SOFTENER PER OPTION 1 AS NOTED ON PROTOTYPICAL PLANS.

FOR CORPORATE STORES, CONTRACTOR SHALL CONTACT CULLIGAN AFTER INSTALLATION AND CONFIRM THEY HAVE A SERVICE AGREEMENT WITH OWNER FOR STARTUP AND MAINTENANCE OF EQUIPMENT.

GREASE INTERCEPTOR CALCULATION

GREASE INTERCEPTOR CALCULATIONS Quote: EX2F55C1

Reference No. 81584 Project Name: Jack In box, Van Nuys

Step 1: Liquid Holding Capacity to grease interceptor

Fixture DFU to Liquid Holding Capacity per UPC Table 1014.3.6

NAME	TYPE	DIMENSIONS	DFU	QTY	TOTAL DFU
3 Compartment Sink	3 Compartment Sink	21" x 18" x 14" (3)	6	1	6
Floor Drain	Floor Drain	N/A	2	3	6
Floor Sink	Floor Sink	N/A	2	6	12
Hand Sink	Hand Sink	12" x 12" x 5"	2	3	6
Ice Machine (with drain)	Ice Machine (with drain)	N/A	1	2	2
Mop Basin	Mop Basin	33" x 32" x 10"	3	1	3
Pre-Rinse Sink One Bowl	Pre-Rinse Sink One Bowl	18" x 18" x 9"	2	1	2
Total					**37**

Liquid Holding Capacity used to size interceptor **1,250 Gal**

Step 2: Grease Production

Number of Seats x 4 turns per seat x Grease Production Value x Days between pump-out = Grease output

Number of seats in facility: 20
Grease production value: 0.035 lbs per serving (Fast Food - Full Prep: High / No flatware)
Days between pump-outs: 90 days

20 x 4 x 0.035 x 90 = 252 lbs of FOG

NOTE: CIVIL CONTRACTOR TO FIELD VERIFY EXISTING GREASE INTERCEPTOR CAPACITY AND LOCATION PRIOR TO BID.

GAS LOAD

GAS CONNECTION SCHEDULE	
EQUIPMENT	GAS MBH
RTU-1(N)	120 MBH
RTU-2 (E)	180 MBH (V.I.F.
RTU-3 (N)	120 MBH
21-D (CAMSHELL GRILL)	100 MBH
22B (FRYER 4@ 75 MBH EACH	300 MBH
EX. IWH (EXISTING WATER HEATER)	199 MBH
IWH-1 (WATER HEATER)	199 MBH
TOTAL LOAD	1218 MBH

GAS PIPE SIZED PER LOS ANGELES COUNTY PLUMBING CODE 2023 TABLE #1215.2(1)
PRESSURE DROP = 0.5" W.C. , SPECIFIC GRAVITY = 0.60
MAXIMUM EQUIV. LENGTH = 125'-0" FT
EQUIVALENT TO 1218 MBH

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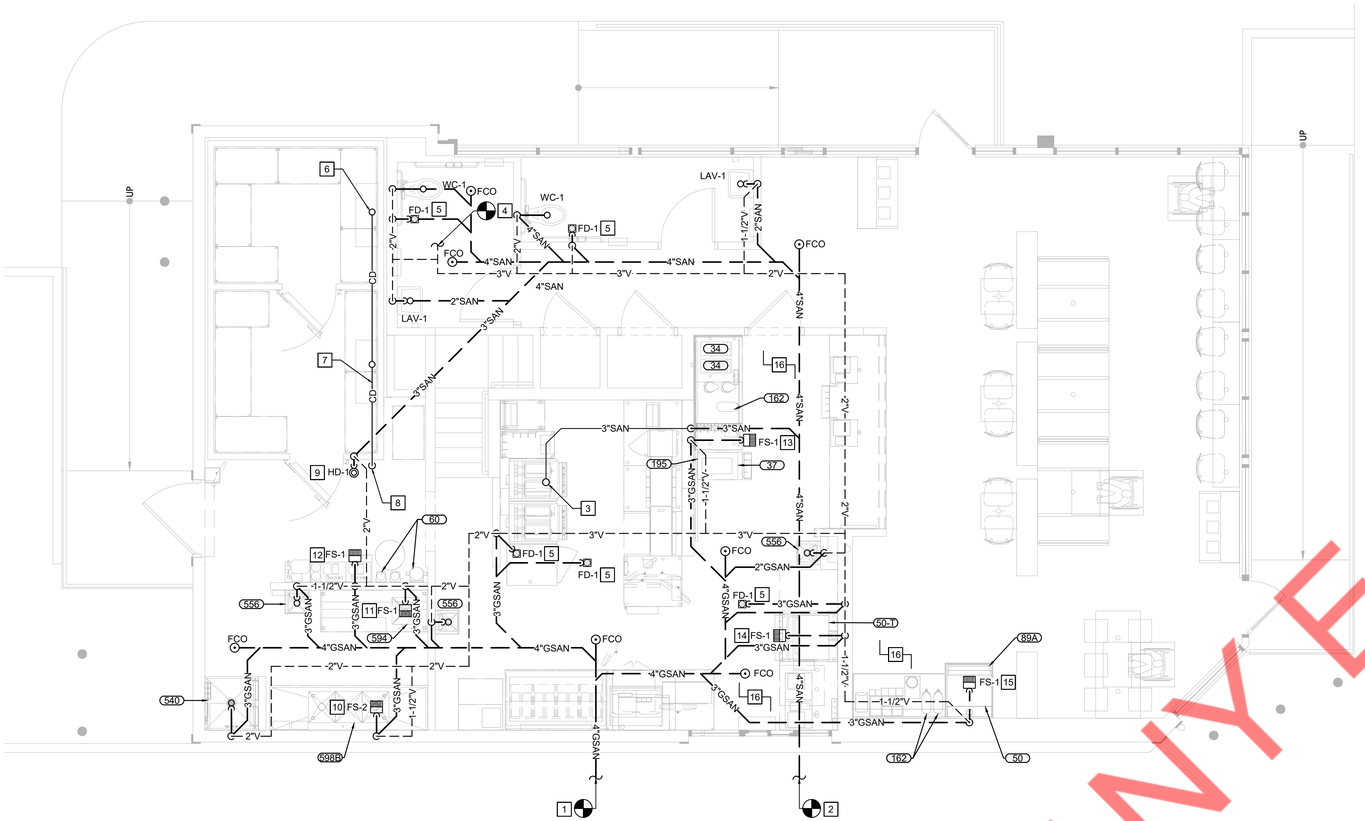
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DRAWN BY: NYE
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SCALE:

PLUMBING SCHEDULES

P0.4



PLUMBING SANITARY & VENT PLAN - 1ST FLOOR

1/4" = 1'-0"

KEYED NOTES:

1	EXTEND & CONNECT 4" GREASE WASTE LINE TO EXISTING GREASE INTERCEPTOR. CONTRACTOR TO FIELD VERIFY THE EXISTING GREASE INTERCEPTOR'S CAPACITY AND CONDITION ALSO ENSURE THE GREASE INTERCEPTOR HAS 75 GPM FLOW. IF THE CAPACITY IS INSUFFICIENT BASED ON THE CALCULATED TOTAL GALLONS REQUIRED, REPLACE THE GREASE INTERCEPTOR. BEFORE REUSING, ENSURE THE EXISTING GREASE INTERCEPTOR IS THOROUGHLY CLEANED.
2	EXTEND & CONNECT 4" SANITARY WASTE LINE TO SANITARY WASTE LINE. CONTRACTOR SHALL VERIFY IN FIELD THE EXISTING SANITARY PIPE SIZE, ROUTING, DIRECTION OF FLOW, INVERT & POINT OF CONNECTION PRIOR TO BID.
3	3" SANITARY LINE FROM SECOND FLOOR. REFER SHEET P1.3 FOR CONTINUATION
4	EXTEND AND CONNECT 3" VENT LINE TO EXISTING VENT LINE IN THE SPACE. CONTRACTOR SHALL VERIFY IN FIELD THE EXISTING VENT PIPE SIZE, ROUTING & POINT OF CONNECTION PRIOR TO BID.
5	PROVIDE TRAP PRIMER RECESSED IN WALL WITH ACCESS PANEL. ROUTE 1/2" CW TO FLOOR DRAIN PER MANUFACTURER SPECIFICATIONS.
6	W.I.B. EVAPORATOR COIL. SEE KITCHEN EQUIPMENT DRAWINGS FOR ADDITIONAL INFORMATION.
7	ROUTE CONDENSATE LINE WITH W.I.F. AND W.I.C. BY BOX MANUFACTURER. HEAT TAPE ROPE TO BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
8	P.O.C. OF CONDENSATE DRAIN TO BOX CONDENSATE DRAIN BY PLUMBING CONTRACTOR. CONTRACTOR SHALL CORE THROUGH BOX WALL ABOVE COVE BASE THEN SEAL AROUND DRAIN PER MANUFACTURER'S RECOMMENDATION.
9	ROUTE INDIRECT CONDENSATE DRAIN TO HUB DRAIN WITH APPROVED AIR GAP.
10	ROUTE INDIRECT WASTE FROM 3-COMPARTMENT SINK (#598B) TO FLOOR SINK WITH APPROVED AIR GAP.
11	ROUTE INDIRECT WASTE FROM PREP SINK (#594) TO FLOOR SINK WITH APPROVED AIR GAP.
12	ROUTE INDIRECT WASTE FROM DRINK DISPENSER (#50) AND WATER FILTERS (#60) TO FLOOR SINK WITH APPROVED AIR GAP.
13	ROUTE INDIRECT WASTE FROM ICE TEA DISPENSER/COFFEE BREWER (#34) AND TEA DISPENSER (#162) TO FLOOR SINK WITH APPROVED AIR GAP.
14	ROUTE INDIRECT WASTE FROM DRINK DISPENSER (#50-T) AND ICE MACHINE (#89A) TO FLOOR SINK WITH APPROVED AIR GAP.
15	ROUTE INDIRECT WASTE FROM DRINK DISPENSER (#50), ICE MACHINE (#89A) AND TEA BREWER (#162) TO FLOOR SINK WITH APPROVED AIR GAP.
16	CONTRACTOR TO COORDINATE WITH ARCHITECT/ LANDLORD AND FIELD VERIFY THE EXISTING SANITARY AND VENT LINES IN THE SPACE ARE IN GOOD CONDITION. REPLACE THE PIPES IF NOT IN GOOD CONDITION AND NOTIFY THE ENGINEER IF ANY DISCREPANCIES IN THE FIELD PRIOR TO BID.

GENERAL NOTES:

A. ALL PIPING SHALL BE SNAKE CLEAN PRIOR TO CONNECTION.

B. ALL DRAIN, WASTE AND VENT FITTINGS SHALL BE CAST IRON PIPE.

C. PLUMBING IS NOT PERMITTED IN ANY DEMISING PARTITIONS. FURROUT THE WALL AS NECESSARY.

D. EXHAUST AND PLUMBING VENTS SHALL BE LOCATED A MINIMUM OF 10'-0"AWAY FROM ANY OUTSIDE AIR INTAKE, AND 5'-0"FROM ANY DEMISING WALL VERTICAL PLANE.

E. ALL FLOOR DRAINS ARE REQUIRED TO HAVE TRAP PRIMERS.

F. ALL FLOOR PENETRATIONS MUST BE CORE BORED, SLEEVED, GROUTED, SEALED AND MADE WATERPROOF. SLEEVES MUST EXTEND A MINIMUM OF 4"AFF.

G. SLOPE OF DRAINAGE SYSTEM SHALL BE 1/8" PER FOOT FOR SANITARY & ¼" PER FOOT OF RUN FOR GREASE WASTE FOR PIPE 3" AND ABOVE. 1/4" PER FOOT OF RUN FOR PIPE LESS THAN 3". VENT PIPING SHALL BE PITCHED TO DRAIN.

H. PROVIDE ACCESS PANEL FOR CLEANOUTS AND ALL CONCEALED EQUIPMENTS THAT REQUIRE MAINTENANCE ACCESS. CONTRACTOR TO COORDINATE WITH ARCHITECT FOR LOCATION.

I. PROVIDE WALL CLEANOUTS WHEREVER POSSIBLE FOR EACH CHANGE IN DIRECTION OF MORE THAN 45DEG.

J. ANY WORK SHOWN ON THE DRAWINGS AND NOT PARTICULARLY DESCRIBED IN THE SPECIFICATIONS OR DETAILS, OR ANY WORK WHICH MAY BE DEEMED NECESSARY TO COMPLETE THE CONTRACT SHALL BE PROVIDED BY THE CONTRACTOR AS PART OF THIS CONTRACT.

K. CONTRACTOR TO FIELD VERIFY FEASIBILITY OF FLOOR SLAB PENETRATION AS PER STRUCTURAL REQUIREMENT.

L. ROUGH-IN AND CONNECT KITCHEN EQUIPMENT INDICATED. SEE KITCHEN EQUIPMENT DRAWINGS.

M. PROVIDE ENGRAVED SIGN IN OFFICE INDICATING TYPE OF WASTE PIPING WITH APPROPRIATE METHOD OF CLEANING.

N. REFER TO ARCHITECTURAL AND MECHANICAL SHEETS FOR LOCATION OF GREASE EXHAUST FIRE RATED SHAFTS. SHAFTS SHALL NOT BE PENETRATED.

O. REFER RISER DIAGRAMS FOR ALL PIPE SIZES.

P. CONNECT NEW SANITARY AND VENT LINES TO EXISTING LINES WITH THE ADEQUATE SIZE. CONTRACTOR TO FIELD VERIFY AND NOTIFY THE ENGINEER IF CONDITIONS DIFFER FROM THOSE SHOWN IN THE PLAN.

PLUMBING FIXTURE UNITS

FIXTURE	NO.	DRAIN	
		D.F.U.	TOTAL D.F.U.
WATER CLOSET	2	8	16
LAVATORY	2	1	2
HAND SINK	3	1	3
PREP SINK*	1	-	-
3 - COMPARTMENT SINK*	1	-	-
HOSE BIBB/WATER FILTRATION UNIT	3/1	-	-
SHAKE/SMOOTHIE MACHINE*	1	-	-
FLOOR DRAIN	6	6	36
FLOOR SINK	6	6	36
HUB DRAIN (CLEAR WASTE)	1	6	6
MOP SINK	1	3	3
TOTAL			102

PROBABLE DEMANDS/ AND PIPE SIZING REQUIREMENTS: DRAIN: GW 60 DFU USE 4" SANITARY (MIN); DRAIN: SAN 42 DFU USE 4" SANITARY (MIN)

BASED ON COUNTY OF LOS ANGELES PLUMBING CODE 2023 *FIXTURE HAS INDIRECT WASTE TO FLOOR SINK

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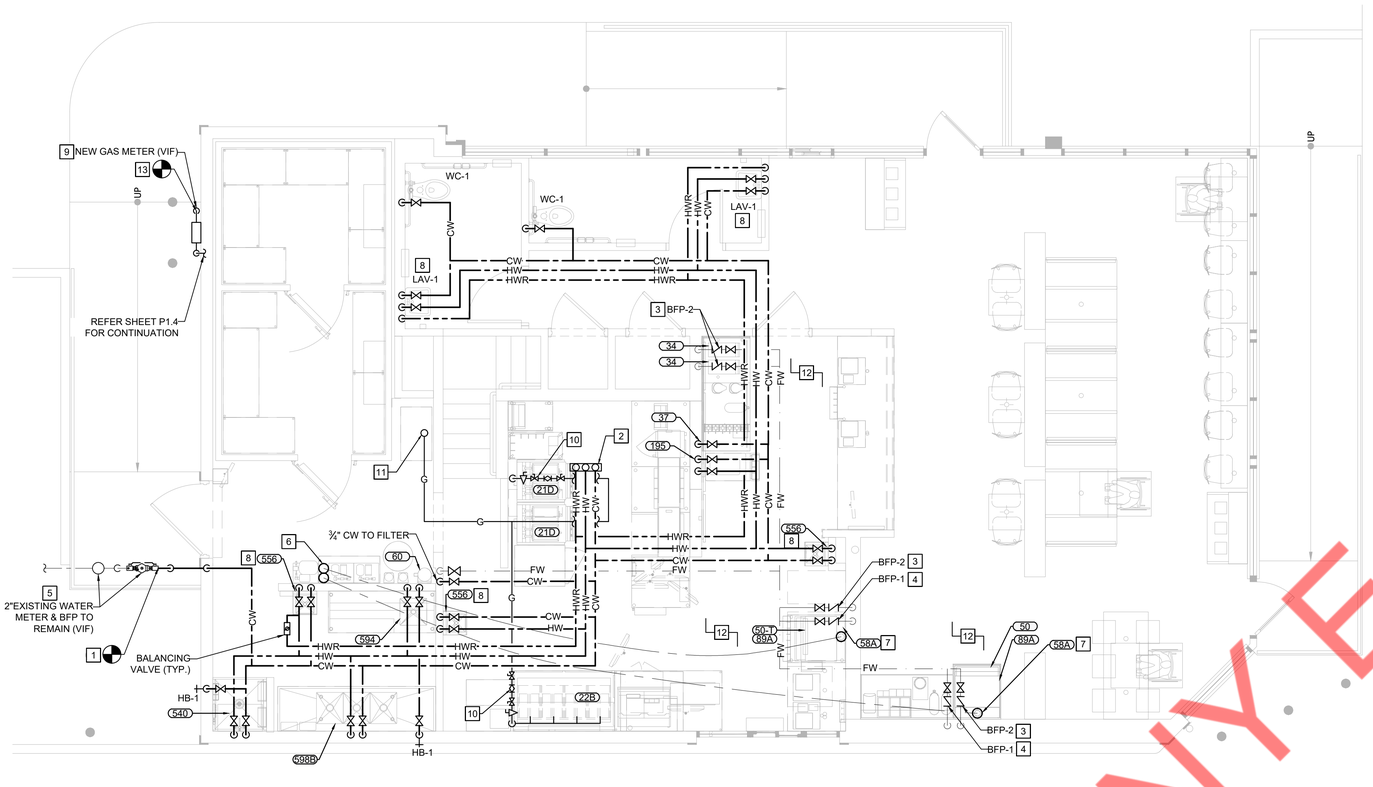
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PLUMBING SANITARY & VENT PLAN 1ST FLOOR

P1.1



PLUMBING DOMESTIC WATER & GAS SUPPLY PLAN - 1ST FLOOR

1/4" = 1'-0"

KEYED NOTES:

1	EXTEND & CONNECT 2" DOMESTIC WATER SUPPLY LINE TO EXISTING DOMESTIC WATER MAIN. CONTRACTOR SHALL VERIFY IN FIELD THE EXISTING DOMESTIC WATER SUPPLY MAIN SIZE, LOCATION AND POINT OF CONNECTION PRIOR TO BID. UPGRADE EXISTING WATER SUPPLY LINE IF NOT SUFFICIENT.
2	EXTEND DOMESTIC WATER SUPPLY LINES UP TO SECOND FLOOR. REFER SHEET P1.3 FOR CONTINUATION OF WATER LINES.
3	PROVIDE ASSE 1022 APPROVED ½" BACKFLOW PREVENTER (BFP-2) FOR ICE TEA BREWER/ COFFEE BREWER/ BEVERAGE DISPENSER/ DRINK DISPENSER . CONTRACTOR TO FIELD VERIFY AND INSTALL BFP AT AN ACCESSIBLE LOCATION.
4	PROVIDE ASSE 1012 APPROVED ½" BACKFLOW PREVENTER (BFP-1) FOR ICE MACHINE. CONTRACTOR TO FIELD VERIFY AND INSTALL BFP AT AN ACCESSIBLE LOCATION.
5	CONTRACTOR TO FIELD VERIFY LOCATION, SIZE AND CONDITION OF EXISTING RPZ AND WATER METER. PROVIDE NEW IF NOT EXISTING.
6	SYRUP LINE BUNDLE FROM SYRUP RACK. COORDINATE SYRUP LINE SIZE WITH OWNER PRIOR TO ROUGH-IN.
7	SYRUP BUNDLE DOWN IN CHASE. COORDINATE LOCATION AND SIZE OF CHASE WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
8	PROVIDE THERMOSTATIC MIXING VALVE TO ALL LAVATORIES & HAND SINKS. SET VALVE TEMP 110 DEG F.
9	PROVIDE NEW GAS METER AND GAS PIPING. COORDINATE WITH GAS COMPANY APPROXIMATE LENGTH: 125'-0", SYSTTEM PRESSURE: LESS THAN 2 PSI, AND TOTAL LOAD: 1218 CFH. PRIOR TO BID AND CONSTRUCTION. ROUTE GAS PIPING UP WALL AND ONTO ROOF.
10	SOLENOID VALVE : AUTOMATIC EMERGENCY SHUT-OFF VALVE CONTROLLED BY KITCHEN HOOD FIRE SUPPRESSION SYSTEM. LOCATED BELOW CEILING IN ACCESSIBLE LOCATION.
11	EXTEND GAS LINE UP TO ROOF.
12	EXISTING KITCHEN EQUIPMENT TO REMAIN/ RELOCATE. CONTRACTOR TO COORDINATE WITH ARCHITECT/ LANDLORD AND FIELD VERIFY THE EXISTING WATER SUPPLY LINES IN THE SPACE ARE IN GOOD CONDITION. REPLACE THE PIPES IF NOT IN GOOD CONDITION AND NOTIFY THE ENGINEER IF ANY DISCREPANCIES IN THE FIELD PRIOR TO BID.
13	EXTEND AND CONNECT NEW 2-1/2" GAS SERVICE LINE WITH NEW GAS METER TO EXISTING GAS SERVICE. CONTRACTOR TO FIELD VERIFY POINT OF CONNECTION, ROUTING, SIZE AND PRESSURE OF EXISTING SERVICE AND UPGRADE IF NOT SUFFICIENT.

GENERAL NOTES:

A. FOR ROUGH-IN AND KITCHEN EQUIPMENT CONNECTIONS, SEE KITCHEN EQUIPMENT DRAWINGS AND PLUMBING DRAWINGS.

B. COORDINATE FIXTURE ROUGH-IN LOCATIONS WITH FOUNDATION PLAN.

C. REFER TO ISOMETRIC DIAGRAM FOR PIPING SIZING.

D. ALL GAS PIPING JOINTS AND FITTINGS SHALL BE MADE UP W/LOC-TITE #567 COMPOUND. PIPING BEHIND COOKING EQUIPMENT SHALL NOT EXTEND MORE THAN 4" BEYOND WALL SURFACE.

E. PROVIDE ENGRAVED LABEL ADJACENT TO CW SOV ON WALL - "MAIN C.W. SHUT-OFF VALVE".

F. PROVIDE ENGRAVED LABEL AT PRESSURE REDUCING VALVE "PRESSURE REDUCING VALVE".

G. PROVIDE AND INSTALL SOV'S AT ALL HOT AND COLD WATER STUB-OUTS OR PER LOCAL CODES.

H. FLUSH VALVES AND FAUCETS SHALL COMPLY WITH ADA AND LOCAL CODES FOR REQUIRED OPERATING FORCE.

I. REFER TO ARCHITECTURAL AND MECHANICAL SHEETS FOR LOCATION OF GREASE EXHAUST DUCTS. COORDINATE AS NECESSARY.

J. COORDINATE WITH ARCHITECTURAL CEILING PLAN AND PROVIDE ENGRAVED LABEL AT ANY GAS OR WATER VALVES ABOVE CEILING.

K. DOMESTIC HW, CW, FW PIPING MATERIAL TO BE COPPER.

PLUMBING FIXTURE UNITS

FIXTURE	NO.	COLD WATER		HOT WATER	
		W.S.F.U. C.W.	TOTAL C.W.	W.S.F.U. H.W.	TOTAL H.W.
WATER CLOSET	2	30	70	-	-
LAVATORY	2	1	2	1	2
HAND SINK	3	1	3	1	3
PREP SINK	1	3	3	3	3
3 - COMPARTMENT SINK	1	3	3	3	3
HOSE BIBB/WATER FILTRATION UNIT	3/1	2.5/1	8.5	-	-
SHAKE/SMOOTHIE MACHINE	1	1	1	-	-
ICE TEA/ COFFEE BREWER	2	0.5	1	-	-
HYDRA RINSE (#195)	1	1	1	1	1
MOP SINK	1	2.25	2.25	2.25	2.25
TOTAL			94.75		14.25

PROBABLE DEMANDS/ AND PIPE SIZING REQUIREMENTS:
COLD WATER: 94.75 WSFU = 69 GPM
HOT WATER: 14.25 WFSU = 26.5 GPM
USE 2" CW SERVICE

DOMESTIC WATER HYDRAULIC CALCULATION

S.NO		PSI
A	MINIMUM PRESSURE AT CITY MAIN	65.00
B	SET PRESSURE AT PRESSURE REDUCING VALVE (NO PRV)	65.00
C	PRESSURE LOSS THROUGH (2") WATER METER	05.00
D	PRESSURE LOSS THROUGH (2") REDUCED PRESSURE BACKFLOW PREVENTER	15.00
E	PRESSURE LOSS THROUGH (2") PRESSURE REDUCING VALVE (NO PRV)	00.00
F	PRESSURE LOSS THROUGH SOFTENER OR OTHER MISCELLANEOUS EQUIPMENT	00.00
G	PRESSURE LOSS DUE TO ELEVATION (19.5 FEET X 0.433)	08.45
H	RESIDUAL PRESSURE	25.00
I	TOTAL PRESSURE LOSSES (C+D+E+F+G+H)	53.45
J	PRESSURE AVAILABLE FOR FRICTION LOSS IN THE SYSTEM	11.55
K	PRESSURE LOSS / 100ft PIPE LENGTH	04.00
L	TOTAL PIPE LOSS (AT 200' DEVELOPED LENGTH)	08.00

C) 5PSI + D) 15PSI + G) 8.45PSI +H)25.00 PSI + L) 8.00 = 61.45 PSI TOTAL PRESSURE LOSSES IN SYSTEM

PRESSURE AVAILABLE IN SYSTEM:
(A) 65 PSI (CITY MAIN) - (I) 53.45 PSI - (L) 8.0 PSI = 3.55 PSI AVAILABLE PRESSURE AFTER LOSSES

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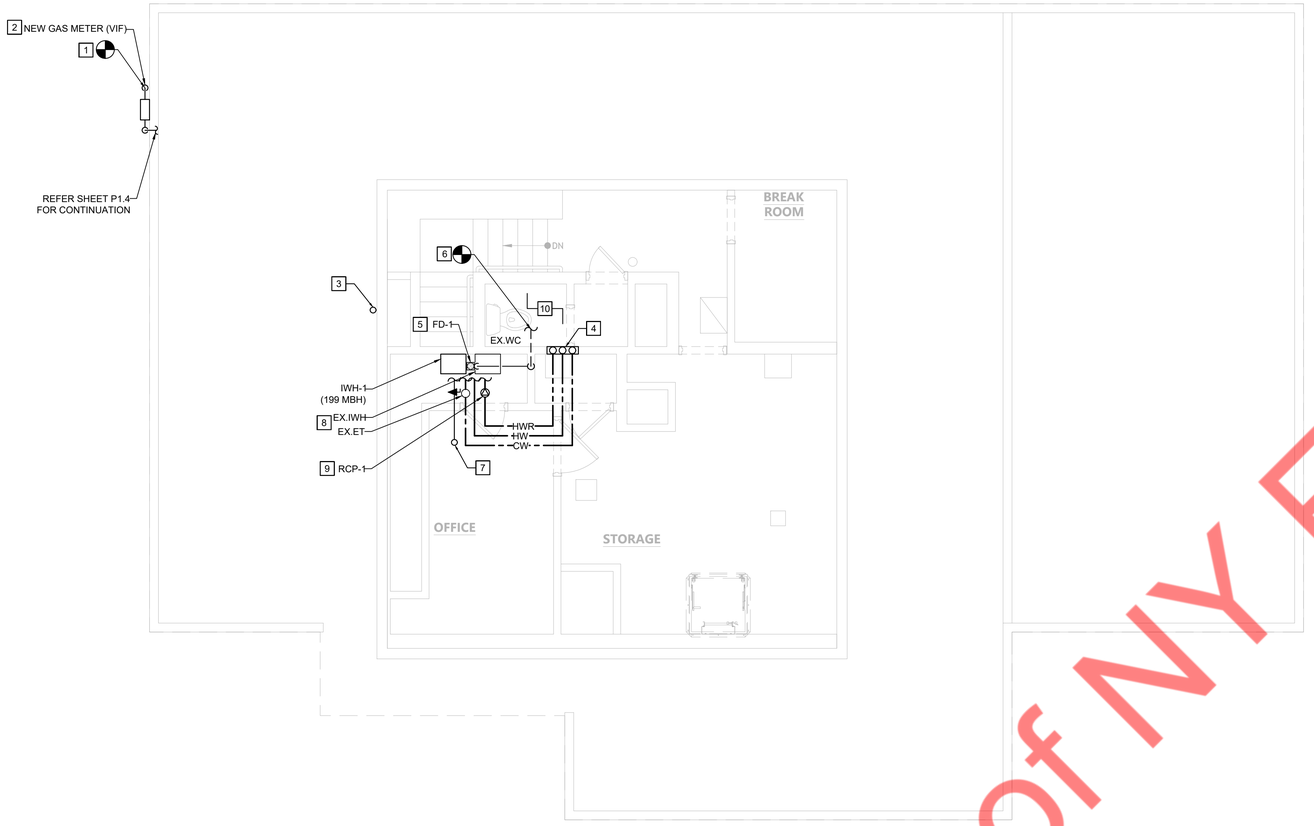
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PLUMBING DOMESTIC WATER & GAS SUPPLY PLAN 1ST FLOOR

P1.2



PLUMBING PLAN - 2ND FLOOR

1/4" = 1'-0"

KEYED NOTES:

1	EXTEND AND CONNECT NEW 2-1/2" GAS SERVICE LINE WITH NEW GAS METER TO EXISTING GAS SERVICE. CONTRACTOR TO FIELD VERIFY POINT OF CONNECTION, ROUTING, SIZE AND PRESSURE OF EXISTING SERVICE AND UPGRADE IF NOT SUFFICIENT.
2	PROVIDE NEW GAS METER AND GAS PIPING. COORDINATE WITH GAS COMPANY APPROXIMATE LENGTH: 125'-0", SYSTTEM PRESSURE: LESS THAN 2 PSI, AND TOTAL LOAD: 1218 CFH. PRIOR TO BID AND CONSTRUCTION. ROUTE GAS PIPING UP WALL AND ONTO ROOF.
3	EXTEND GAS LINE UP TO ROOF.
4	EXTEND DOMESTIC WATER SUPPLY LINES DOWN TO FIRST FLOOR. REFER SHEET P1.2 FOR CONTINUATION OF WATER LINES.
5	ROUTE WATER HEATER T & P DRAIN LINES TO FLOOR DRAIN WITH APPROVED AIR GAP.
6	EXTEND AND CONNECT 2" VENT LINE FROM FLOOR DRAIN TO EXISTING VENT LINE IN THE SPACE. CONTRACTOR SHALL VERIFY IN FIELD THE EXISTING VENT PIPE SIZE, ROUTING & POINT OF CONNECTION PRIOR TO BID.
7	1-1/4" GAS PIPE DOWN FROM ROOF TO WATER HEATER (IWH). REFER SHEET P1.4 FOR CONTINUATION.
8	EXISTING INSTANTANEOUSLY GAS FIRED WATER HEATER (EX.IWH) WITH EXISTING EXPANSION TANK (EX.ET) TO BE REMAIN AT THE EXISTING LOCATION WITH ASSOCIATED ACCESSORIES AND FITTINGS. LOCATION SHOWN ON PLAN APPROX. CONTRACTOR TO VERIFY IN FIELD EXACT LOCATION, PIPE CONNECTIONS & CHECK SAME TO BE IN GOOD CONDITION, REPLACE WITH NEW WATER HEATER OF THE SAME MAKE IF NOT IN GOOD CONDITION.
9	CONTRACTOR TO FIELD VERIFY AND PROVIDE RECIRCULATION PUMP WITH HOT WATER RETURN LINE TO THE SPACE. PRIOR TO BID. REFER PLUMBING FIXTURE SCHEDULE.
10	EXISTING RESTROOM FIXTURES AND PIPING TO REMAIN. CONTRACTOR TO FIELD VERIFY EXISTING CONDITION OF THE SAME AND REPLACE IF REQUIRED.

GENERAL NOTES:

A. ROUGH-IN AND CONNECT KITCHEN EQUIPMENT INDICATED. SEE KITCHEN EQUIPMENT DRAWINGS.

B. SEE KITCHEN ROUGH-IN PLAN SHEET P1.6 FOR PLUMBING ROUGH-IN LOCATIONS (SERVICES IN WALLS AND ABOVE CEILING).

C. COORDINATE FIXTURE ROUGH-IN LOCATIONS WITH FOUNDATION PLAN, SHEET S1.0 (SERVICES BELOW FLOOR).

D. VENT SIZES ARE IN ACCORDANCE WITH LOCAL PLUMBING CODES.

E. PROVIDE ENGRAVED SIGN IN OFFICE INDICATING TYPE OF WASTE PIPING WITH APPROPRIATE METHOD OF CLEANING.

F. SANITARY SEWER PIPES SIZED PER LOCAL PLUMBING CODES AT 2% SLOPE (1/4"PER/FT.).

G. REFER TO ARCHITECTURAL AND MECHANICAL SHEETS FOR LOCATION OF GREASE EXHAUST FIRE RATED SHAFTS. SHAFTS SHALL NOT BE PENETRATED.

H. PLUMBING VENTS SHALL TERMINATE NOT LESS THAN 10' FROM, OR 3' ABOVE, ANY WINDOW, DOOR, AIR INTAKE, OR VENT SHAFT.

I. FOR ROUGH-IN AND KITCHEN EQUIPMENT CONNECTIONS, SEE KITCHEN EQUIPMENT DRAWINGS AND PLUMBING DRAWINGS.

J. COORDINATE FIXTURE ROUGH-IN LOCATIONS WITH FOUNDATION PLAN.

K. REFER TO ISOMETRIC DIAGRAM FOR PIPING SIZING.

L. ALL GAS PIPING JOINTS AND FITTINGS SHALL BE MADE UP W/LOC-TITE #567 COMPOUND. PIPING BEHIND COOKING EQUIPMENT SHALL NOT EXTEND MORE THAN 4" BEYOND WALL SURFACE.

M. PROVIDE ENGRAVED LABEL ADJACENT TO CW SOV ON WALL - "MAIN C.W. SHUT-OFF VALVE".

N. PROVIDE ENGRAVED LABEL AT PRESSURE REDUCING VALVE "PRESSURE REDUCING VALVE".

O. PROVIDE AND INSTALL SOV'S AT ALL HOT AND COLD WATER STUB-OUTS OR PER LOCAL CODES.

P. FLUSH VALVES AND FAUCETS SHALL COMPLY WITH ADA AND LOCAL CODES FOR REQUIRED OPERATING FORCE.

Q. REFER TO ARCHITECTURAL AND MECHANICAL SHEETS FOR LOCATION OF GREASE EXHAUST DUCTS. COORDINATE AS NECESSARY.

R. COORDINATE WITH ARCHITECTURAL CEILING PLAN AND PROVIDE ENGRAVED LABEL AT ANY GAS OR WATER VALVES ABOVE CEILING.

S. DOMESTIC HW, CW, FW PIPING MATERIAL TO BE COPPER.

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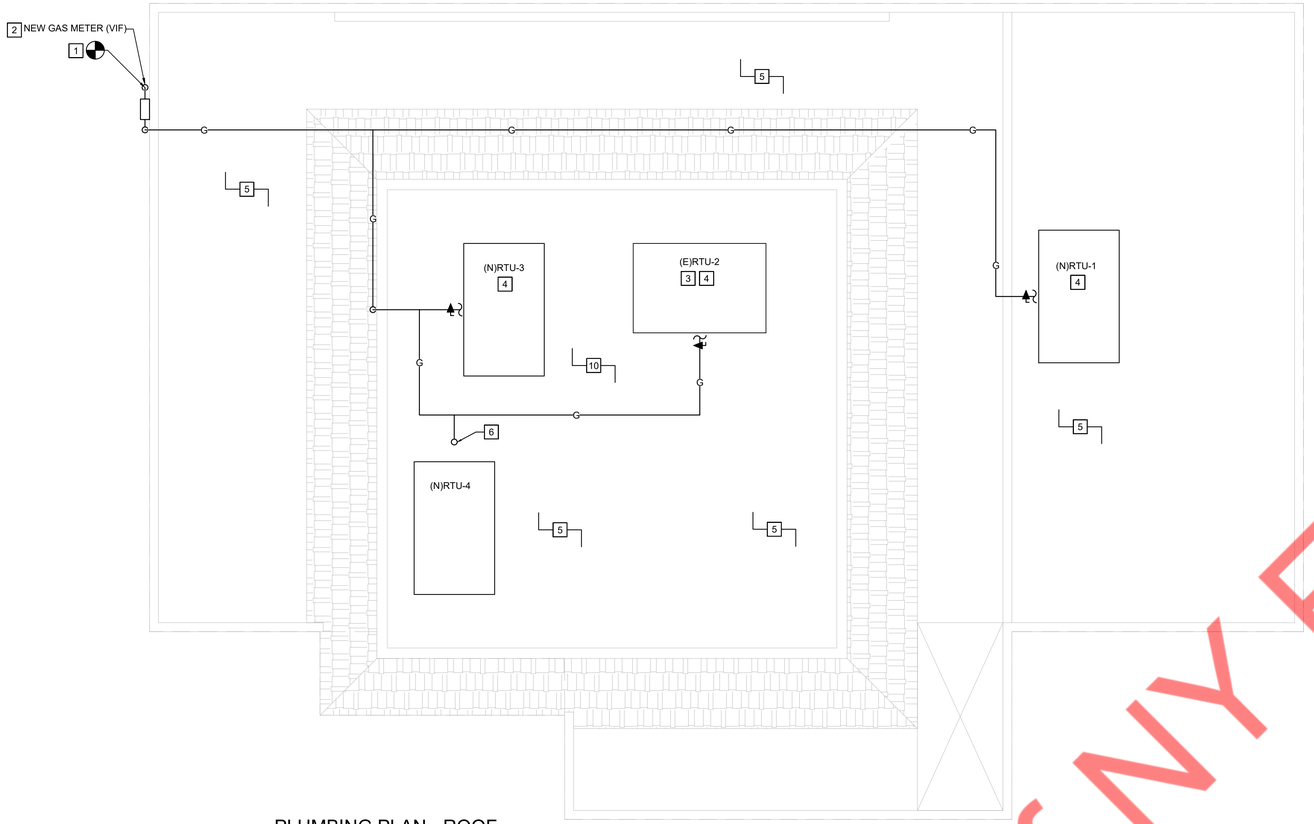
DRAWN BY: NYE

PROJECT #: 12079-24

SCALE:

PLUMBING PLAN
2ND FLOOR

P1.3



PLUMBING PLAN - ROOF

1/4" = 1'-0"

KEYED NOTES:

1	EXTEND AND CONNECT NEW 2-1/2" GAS SERVICE LINE WITH NEW GAS METER TO EXISTING GAS SERVICE. CONTRACTOR TO FIELD VERIFY POINT OF CONNECTION, ROUTING, SIZE AND PRESSURE OF EXISTING SERVICE AND UPGRADE IF NOT SUFFICIENT.
2	PROVIDE NEW GAS METER AND GAS PIPING. COORDINATE WITH GAS COMPANY APPROXIMATE LENGTH: 125'-0", SYSTTEM PRESSURE: LESS THAN 2 PSI, AND TOTAL LOAD: 1218 CFH. PRIOR TO BID AND CONSTRUCTION. ROUTE GAS PIPING UP WALL AND ONTO ROOF.
3	EXISTING RTU (RTU-2) TO BE RELOCATED IN NEW LOCATION. CONTRACTOR TO CONNECT THE EXISTING RELOCATED RTU (RTU-2) WITH THE EXISTING GAS PIPING AND ASSOCIATED ACCESSORIES AVAILABLE IN THE SPACE, VERIFY IN FIELD EXACT LOCATION OF EXISTING PIPING & CHECK SAME TO BE IN WORKING CONDITION, OTHERWISE PROVIDE NEW GAS PIPING.
4	CONTRACTOR SHALL PROVIDE AND INSTALL GAS VALVE, DIRT LEG & UNION AS REQUIRED IF EXISTING ONE NOT IN GOOD CONDITION. ALSO PROVIDE AND INSTALL PRESSURE REGULATOR VALVE BEFORE TIE-IN TO EQUIPMENT.
5	CONTRACTOR TO FIELD VERIFY THE CONDITION OF EXISTING GAS PIPING, IF EXISTING GAS PIPING FOUND NOT TO BE IN GOOD CONDITION REPLACE THE EXISTING GAS PIPING WITH NEW PIPING.
6	1-1/4" GAS PIPE DOWN TO SECOND FLOOR. REFER SHEET P1.3 FOR CONTINUATION.

GENERAL NOTES:

A. ROUGH-IN AND CONNECT KITCHEN EQUIPMENT INDICATED. SEE KITCHEN EQUIPMENT DRAWINGS.

B. SEE KITCHEN ROUGH-IN PLAN SHEET P1.6 FOR PLUMBING ROUGH-IN LOCATIONS (SERVICES IN WALLS AND ABOVE CEILING).

C. REFER TO ARCHITECTURAL AND MECHANICAL SHEETS FOR LOCATION OF GREASE EXHAUST FIRE RATED SHAFTS. SHAFTS SHALL NOT BE PENETRATED.

D. PLUMBING VENTS SHALL TERMINATE NOT LESS THAN 10' FROM, OR 3' ABOVE, ANY WINDOW, DOOR, AIR INTAKE, OR VENT SHAFT.

E. FOR ROUGH-IN AND KITCHEN EQUIPMENT CONNECTIONS, SEE KITCHEN EQUIPMENT DRAWINGS AND PLUMBING DRAWINGS.

F. COORDINATE FIXTURE ROUGH-IN LOCATIONS WITH FOUNDATION PLAN.

G. REFER TO ISOMETRIC DIAGRAM FOR PIPING SIZING.

H. ALL GAS PIPING JOINTS AND FITTINGS SHALL BE MADE UP W/LOC-TITE #567 COMPOUND. PIPING BEHIND COOKING EQUIPMENT SHALL NOT EXTEND MORE THAN 4" BEYOND WALL SURFACE.

I. PROVIDE ENGRAVED LABEL AT PRESSURE REDUCING VALVE "PRESSURE REDUCING VALVE".

J. REFER TO ARCHITECTURAL AND MECHANICAL SHEETS FOR LOCATION OF GREASE EXHAUST DUCTS. COORDINATE AS NECESSARY.

K. COORDINATE WITH ARCHITECTURAL CEILING PLAN AND PROVIDE ENGRAVED LABEL AT ANY GAS OR WATER VALVES ABOVE CEILING.

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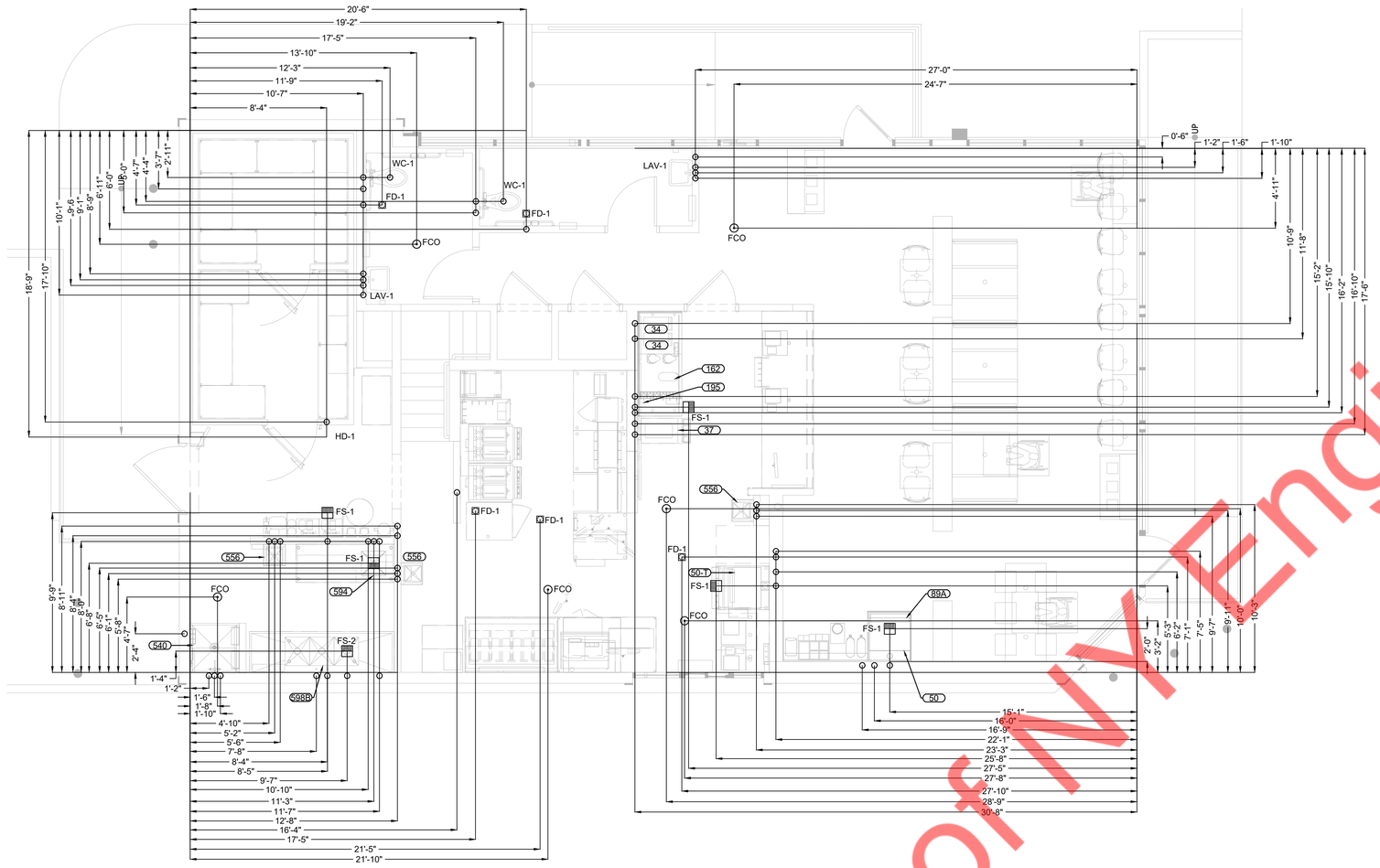
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SCALE:

PLUMBING PLAN
ROOF

P1.4



PLUMBING ROUGH-IN PLAN

1/4" = 1'-0"

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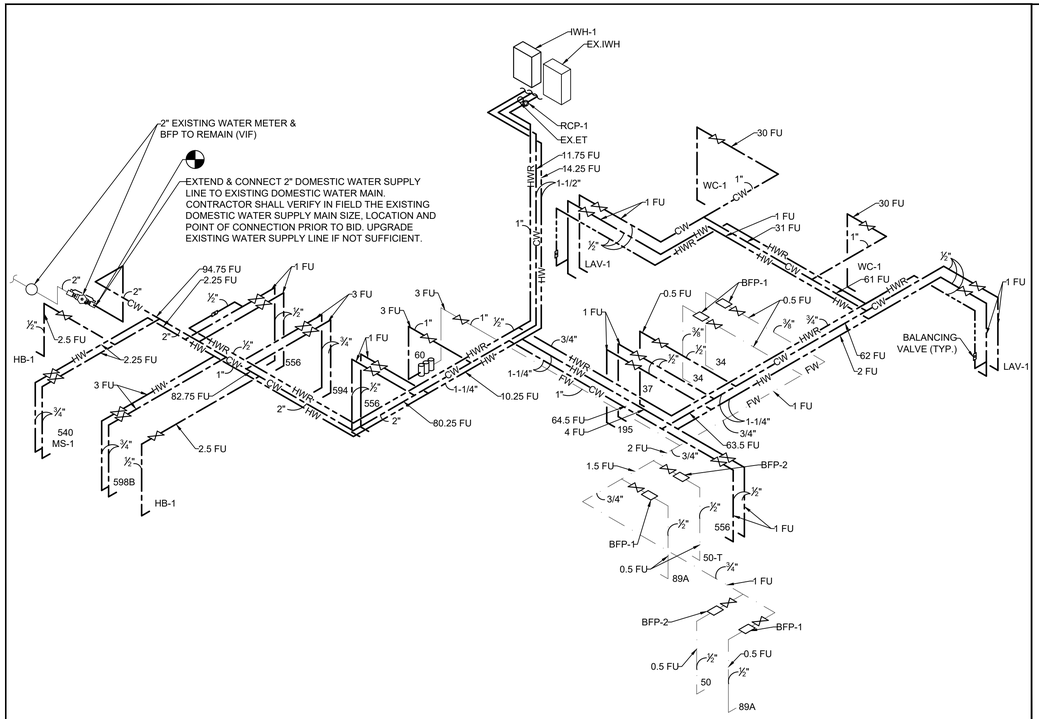
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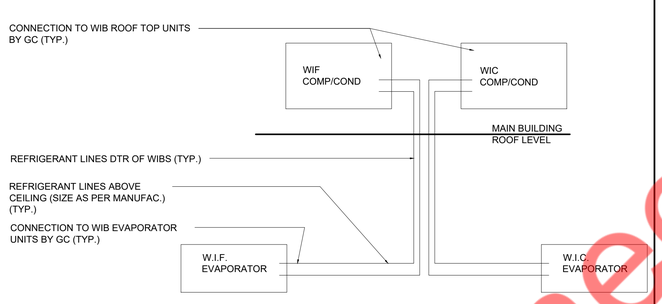
SCALE:

PLUMBING
ROUGH-IN PLAN

P1.6

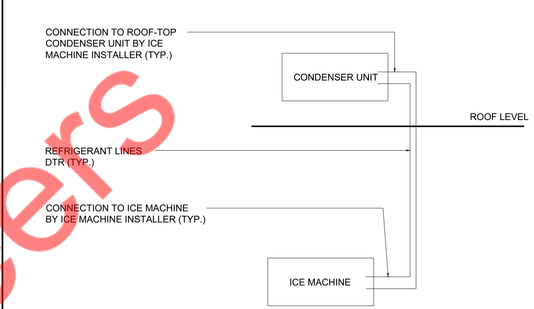


1	SCALE	DOMESTIC WATER ISOMETRIC DIAGRAM
	NTS	



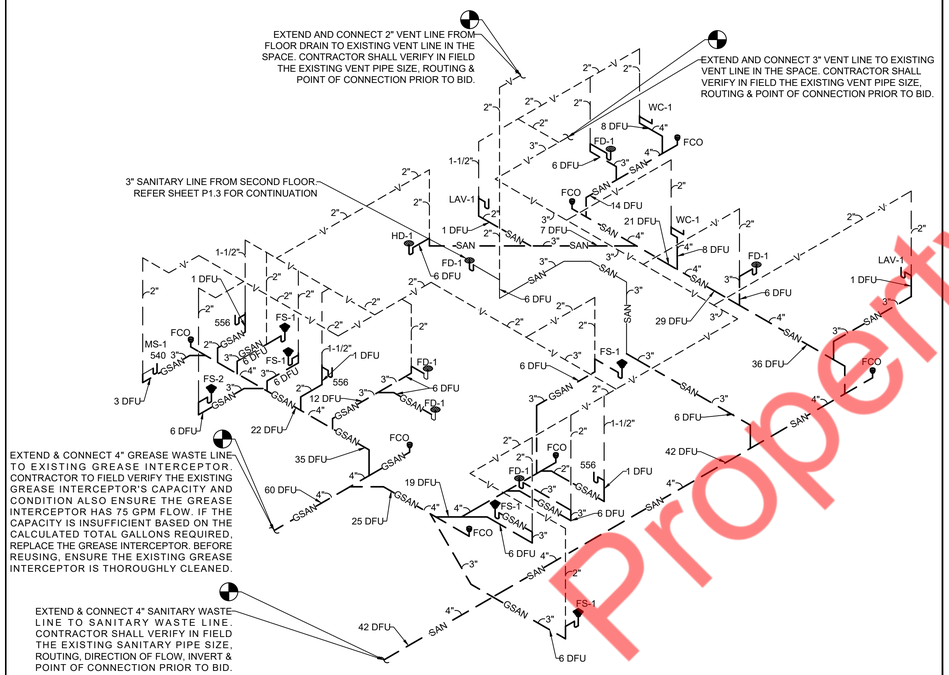
NOTES
1. WALK IN BOX EVAPORATOR WILL BE FACTORY INSTALLED BY WIB MANUFACTURER. ROOF TOP COMPRESSOR AND CONDENSING UNITS AND REFRIGERANT LINES SHALL BE INSTALLED BY G.C.
2. REFRIGERANT DATA:
   WIC - 6# R404A
   WIF - 8.5# R404A

2	SCALE	WIB REFRIGERANT LINES SCHEMATIC AT ICS BOX
	NTS	

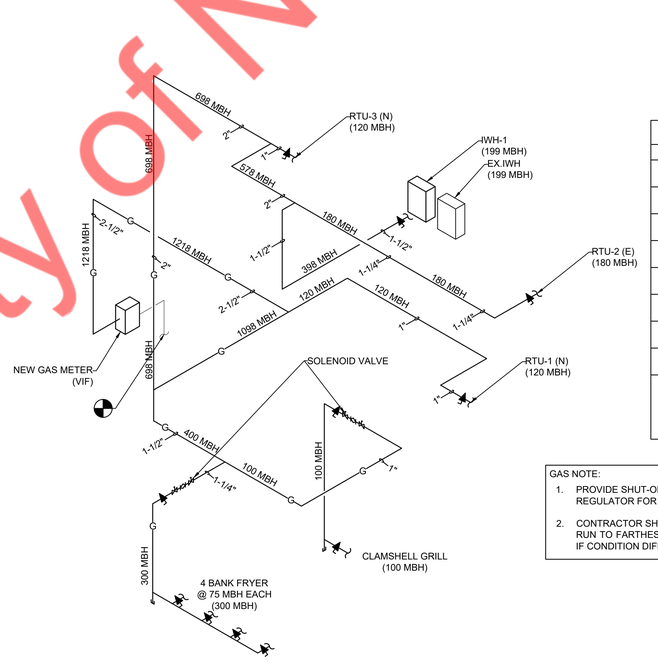


NOTES:
1. CONDENSER UNIT, ICE MACHINE AND REFRIGERANT LINES WILL BE PROVIDED AND INSTALLED BY ICE MACHINE INSTALLER.
2. REFRIGERANT LINES SHALL BE INSULATED AND SIZED PER MANUFACTURER'S REQUIREMENTS, BY ICE MACHINE INSTALLER.
3. REFRIGERANT DATA:
   ICE MACHINE ABOVE ICE BIN - R404A

3	SCALE	ICE MACHINE REFRIGERANT LINES SCHEMATIC
	NTS	



4	SCALE	SANITARY AND VENT ISOMETRIC DIAGRAM
	NTS	



GAS CONNECTION SCHEDULE

EQUIPMENT	GAS MBH
RTU-1(N)	120 MBH
RTU-2 (E)	180 MBH (V.I.F.
RTU-3 (N)	120 MBH
21-D (CAMSHELL GRILL)	100 MBH
22B (FRYER 4@ 75 MBH EACH	300 MBH
EX. IWH (EXISTING WATER HEATER)	199 MBH
IWH-1 (WATER HEATER)	199 MBH
TOTAL LOAD	1218 MBH

GAS PIPE SIZED PER LOS ANGELES COUNTY PLUMBING CODE 2023 TABLE #1215.2(1)
PRESSURE DROP = 0.5" W.C. , SPECIFIC GRAVITY = 0.60
MAXIMUM EQUIV. LENGTH = 125'-0" FT
EQUIVALENT TO 1218 MBH

GAS NOTE:
1. PROVIDE SHUT-OFF VALVE AN ACCESSIBLE LOCATION. PROVIDE GAS PRESSURE REGULATOR FOR ALL GAS EQUIPMENT IF REQUIRED.
2. CONTRACTOR SHALL VERIFY ACTUAL GAS PRESSURE AND LONGEST LENGTH OF RUN TO FARTHEST APPLIANCE PRIOR TO INSTALLATION AND NOTIFY ENGINEER IF CONDITION DIFFER THAN SHOWN ON THIS PLAN.

5	SCALE	GAS PIPING ISOMETRIC DIAGRAM
	NTS	

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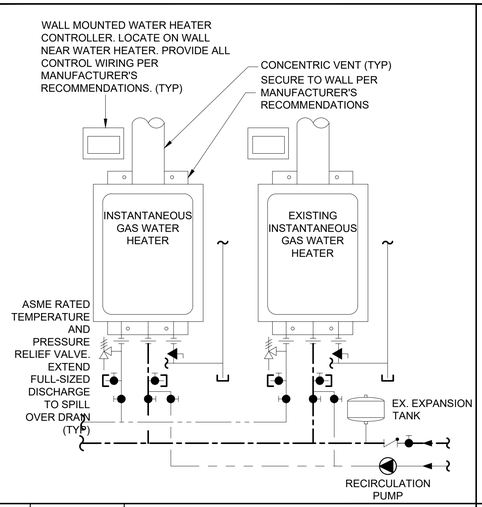
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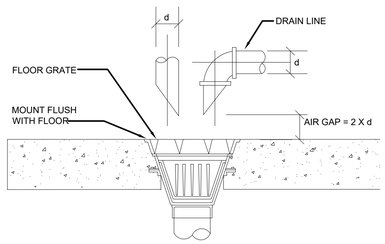
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PROJECT #: 12079-24
SCALE:

PLUMBING RISER DIAGRAMS

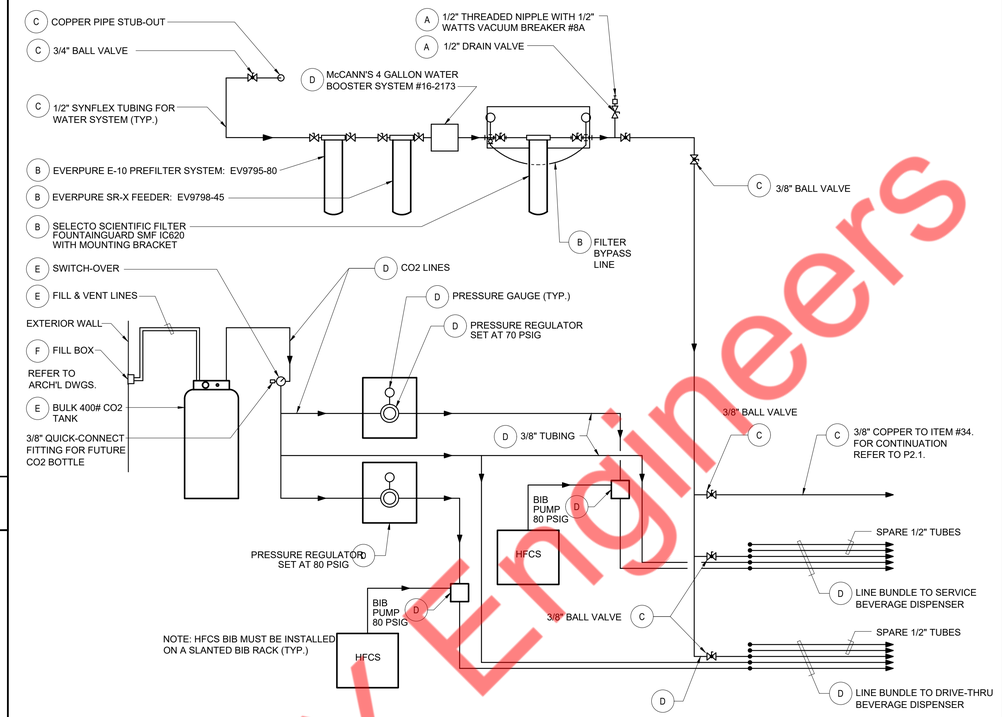
P2.0



1	SCALE N.T.S.	WATER HEATER PIPING DETAIL



2	SCALE N.T.S.	FLOOR SINK DETAILS



5	SCALE N.T.S.	FILTERED WATER AND HFCS LINE SCHEMATIC

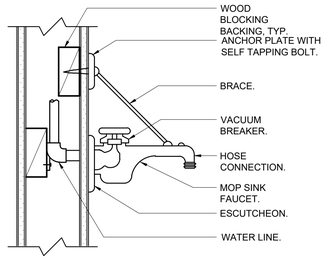
GENERAL NOTES:

1. DRINK SYSTEM TUBING BUNDLES SHALL CONSIST OF THE FOLLOWING:
   5 Line Bundle:
   - 3/8" CO2 line
   - 1/2" White Line - HFCS (5 gallon BIB)
   - 1/2" White Line - Spare
   - 1/2" Black Line - Water
   - 1/2" Black Line - Spare

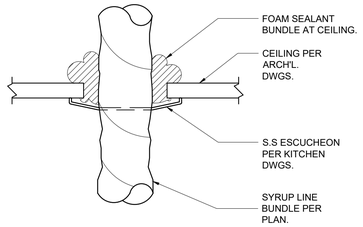
   No connections shall be made above ceiling.
2. Water Booster System shall be set to start at 80 psig and cutout at 100 psig water pressure.
3. The HFCS system 2 @ 5-tube bundles shall be run above the ceiling from the Syrup Rack to the Drink Machines by the Beverage Contractor.
4. Beverage contractor shall completely prime the system to ensure all brands are working properly on completion of work.
5. Beverage contractor shall provide and install all synflex tubing from GC provided ball valves.
6. No copper piping allowed downstream of reduced pressure backflow preventer.
7. Reduced pressure backflow preventer is located within each of the Coca-Cola Freestyle machines.

KEY NOTES:

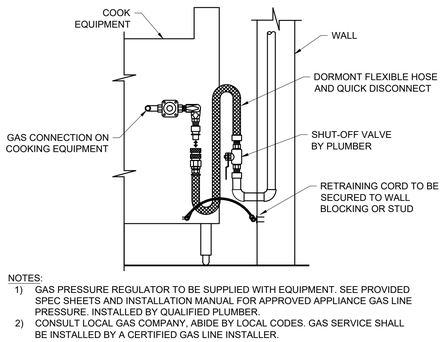
- (A) G.C. PROVIDED, BEVERAGE CONTRACTOR SHALL INSTALL AND MAKE FINAL CONNECTIONS.
- (B) OWNER PROVIDED, BEVERAGE CONTRACTOR SHALL INSTALL AND MAKE FINAL CONNECTIONS.
- (C) G.C. SHALL PROVIDE, INSTALL AND MAKE FINAL CONNECTIONS.
- (D) BEVERAGE CONTRACTOR SHALL PROVIDE, INSTALL AND MAKE FINAL CONNECTIONS.
- (E) CO2 CONTRACTOR SHALL PROVIDE AND INSTALL CO2 TANK WITH FILL AND VENT LINES.
- (F) OWNER PROVIDED, G.C. SHALL INSTALL



3	SCALE N.T.S.	BLOCKING DETAIL

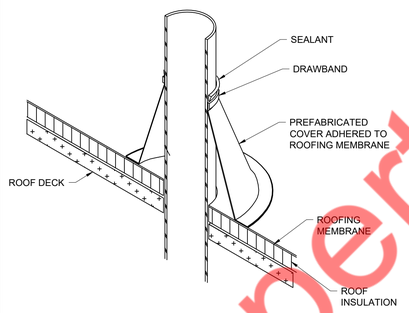


4	SCALE N.T.S.	SYRUP LINE BUNDLE

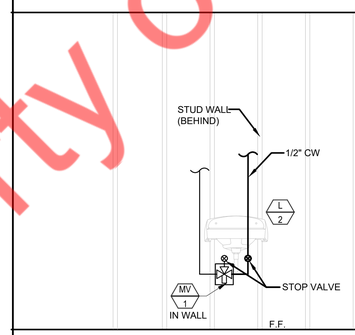


NOTES:
1) GAS PRESSURE REGULATOR TO BE SUPPLIED WITH EQUIPMENT. SEE PROVIDED SPEC SHEETS AND INSTALLATION MANUAL FOR APPROVED APPLIANCE GAS LINE PRESSURE. INSTALLED BY QUALIFIED PLUMBER.
2) CONSULT LOCAL GAS COMPANY, ABIDE BY LOCAL CODES. GAS SERVICE SHALL BE INSTALLED BY A CERTIFIED GAS LINE INSTALLER.

6	SCALE N.T.S.	QUICK DISCONNECT GAS PIPING DETAIL



7	SCALE N.T.S.	GAS PIPING THRU ROOF DETAIL



8	SCALE N.T.S.	HAND SINK PIPING DETAIL

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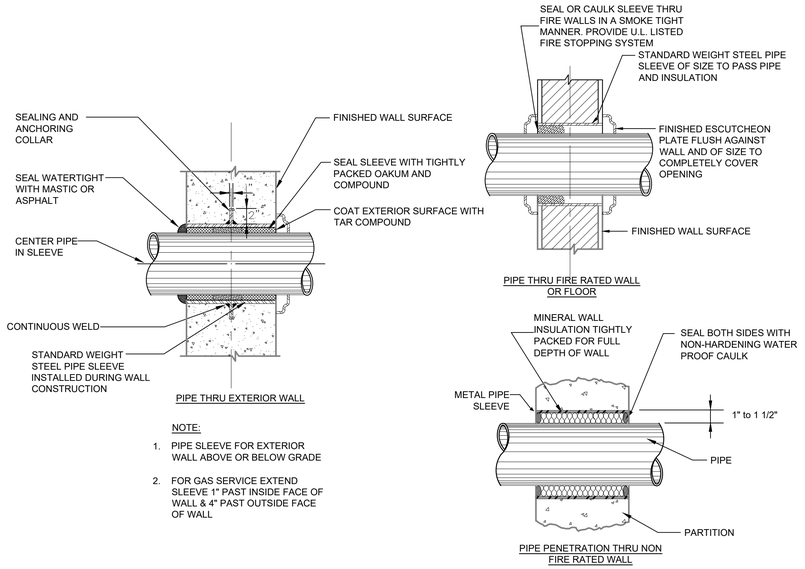
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PLUMBING DETAILS
(1 OF 2 SHEETS)

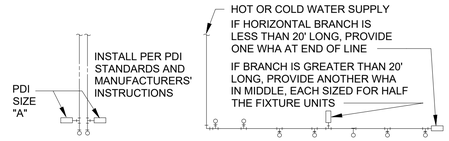
P3.0



NOTE:

1. PIPE SLEEVE FOR EXTERIOR WALL ABOVE OR BELOW GRADE
2. FOR GAS SERVICE EXTEND SLEEVE 1" PAST INSIDE FACE OF WALL & 4" PAST OUTSIDE FACE OF WALL

1	SCALE N.T.S.	PIPE SLEEVE THROUGH WALL SECTION



SINGLE FIXTURE

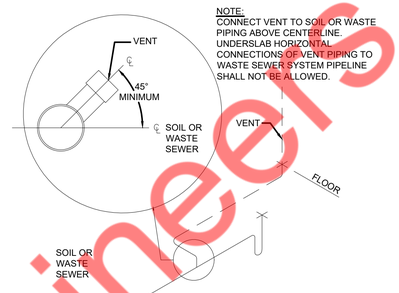
PDI SIZE	PIPE SIZE	FIXTURE UNIT LOAD
A	1/2"	1-11
B	3/4"	12-32
C	1"	33-60
D	1-1/4"	61-113
E	1-1/2"	114-154
F	2"	155-330

MULTIPLE FIXTURES

FIXTURE UNIT TABULATION		
FIXTURE	COLD	HOT
VALVE WATER CLOSET	5	--
URINAL	5	--
COUNTER SINK	1.5	1.5
LAVATORY	1.5	1.5
MOP BASIN	2.25	2.25
WATER COOLER	.25	--

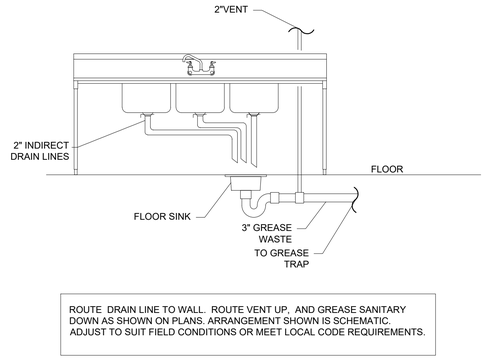
PROVIDE WATER HAMMER ARRESTERS BY SIOUX CHIEF, PRECISION PLUMBING PRODUCTS, WATTS OR APPROVED EQUAL WITH PISTON AND O-RING CONSTRUCTION HAVING PDI #WH-201, ASSE #1010 AND ANSI #A112.26.1M CERTIFICATION. INSTALL IN HORIZONTAL OR VERTICAL POSITION, BUT NEVER UPSIDE DOWN. INSTALL INLINE WITH WATER FLOW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

2	SCALE N.T.S.	WATER HAMMER ARRESTOR



NOTE:
CONNECT VENT TO SOIL OR WASTE PIPING ABOVE CENTERLINE. UNDERSLAB HORIZONTAL CONNECTIONS OF VENT PIPING TO WASTE SEWER SYSTEM PIPELINE SHALL NOT BE ALLOWED.

3	SCALE N.T.S.	VENT PIPING INSTLLATION



ROUTE DRAIN LINE TO WALL. ROUTE VENT UP. AND GREASE SANITARY DOWN AS SHOWN ON PLANS. ARRANGEMENT SHOWN IS SCHEMATIC. ADJUST TO SUIT FIELD CONDITIONS OR MEET LOCAL CODE REQUIREMENTS.

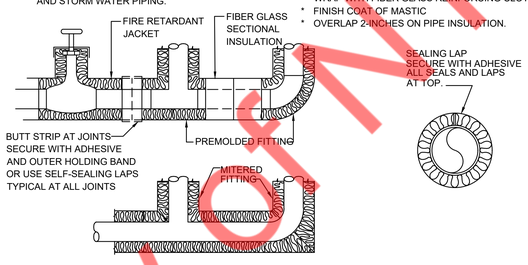
4	SCALE N.T.S.	3-COMPARTMENT SINK DETAILS

CONCEALED VALVES AND FITTINGS

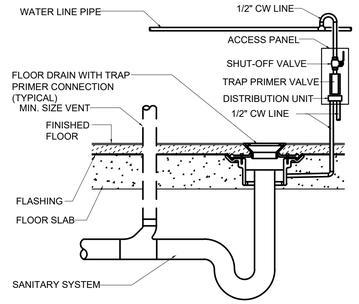
- WRAP WITH 1-INCH THICK, 1-POUND DENSITY TO REQUIRED PIPE INSULATION THICKNESS
- SECURE WITH WIRE OR TAPE.
- VAPOR SEAL COLD WATER, CHILLED WATER AND STORM WATER PIPING.

CONCEALED VALVES AND FITTINGS

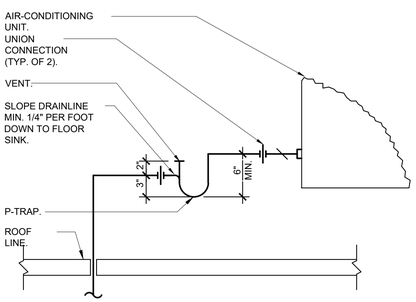
- PREMOLDED FIBER GLASS OR RADIAL MITERED PIPE INSULATION
- SKIM COAT OF INSULATION CEMENT
- COAT OF MASTIC
- WRAP WITH FIBER GLASS REINFORCING CLOTH.
- FINISH COAT OF MASTIC
- OVERLAP 2-INCHES ON PIPE INSULATION.



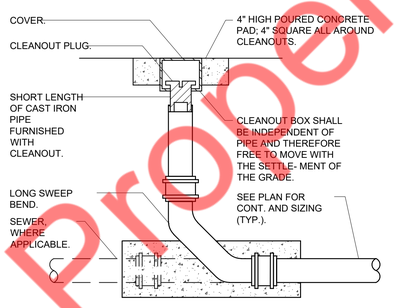
5	SCALE N.T.S.	PIPE INSULATION DETAILS



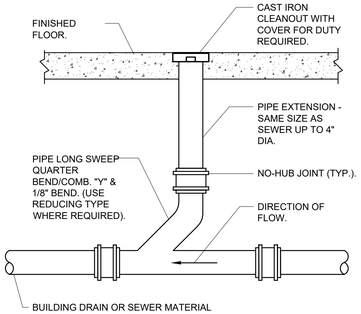
6	SCALE N.T.S.	FLOOR DRAIN WITH TRAP PRIMER



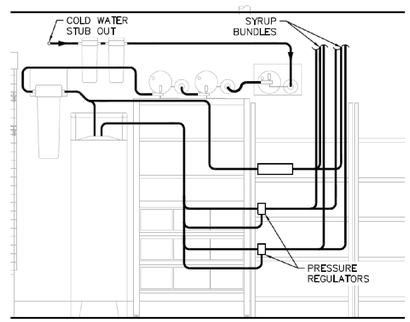
7	SCALE N.T.S.	AC UNIT CONDENSATION LINE



8	SCALE N.T.S.	ONE-WAY CLEANOUT TO GRADE



9	SCALE N.T.S.	INTERIOR FLOOR CLEANOUT



10	SCALE N.T.S.	FILTERED WATER AND SYRUP LINE ELEVATION

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DATES

RELEASE:
P.M. UPDATES:
SUBMITTAL DATE:
1: APR. 10, 2025
2:
3:
BID:
CONSTRUCTION:

REVISIONS

- 03/25/25-CHECK SET
- 04/22/25-PERMIT SET

CONSULTANT

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382 NE 191ST STREET SUITE 49674,
MIAMI, FL 33179
PH-914.257.3455
WWW.NY-ENGINEERS.COM

PROFFESSIONAL SEAL

SITE INFORMATION

MK TYPE: MK2X
JIB #: 327
ADDRESS:
13648 VAN NUYS BLVD
PACOIMA, CA
91331
DRAWN BY: NYE
PROJECT #: 12079-24
SCALE:

PLUMBING DETAILS (2 OF 2 SHEETS)

P3.1

STATE OF CALIFORNIA
Domestic Water Heating System
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-PLB-E
This document is used to demonstrate compliance for nonresidential occupancies with requirements in 110.1, 110.3, 120.3, and 140.5, and with requirements in 141.0 for additions and alterations, for domestic water heating scopes using the prescriptive path. For high-rise residential and hotel/motel occupancies compliance is demonstrated with requirements in 110.1, 110.3, 160.4 and 170.2(d), and with requirements 180.1 for additions and 180.2 for alterations.	
Project Name: Jack In The Box, Van Nuys, CA	**Report Page:** (Page 1 of 7)
Project Address: 13648, Van Nuys Blvd. Pacoima, CA 91331	**Date Prepared:** 2025-04-22T03:27:47-04:00

A. GENERAL INFORMATION

01	Project Location (city)	Pacoima	02	Climate Zone	9
03	Occupancy Types Within Project (select all that apply):				
● Restaurant					

B. PROJECT SCOPE

This table includes domestic water heating systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive paths outlined in 140.5/ 170.2(d) and 141.0(a)/ 180.1, or 141.0(b)2N / 180.2 for additions or alterations. Solar water heating systems are documented on the NRCC-SAB compliance document. Combined hydronic water heating systems are documented on the NRCC-MCH compliance document.

01	02	03		
My project consists of (check all that apply):	System Type[1,2]	System Components		
☐ New system (DHW system being installed for the first time)		☐ Equipment	☐ Distribution	☐ Controls
☒ System Alteration (equipment, distribution or controls)	Individual System (serving nonresidential spaces)	☒ Equipment	☒ Distribution	☒ Controls

[1] *FOOTNOTES: Point of use water heaters, or other non-central systems used to serve nonresidential spaces, are considered individual systems.*
[2] *Dwelling units refers to hotel/motel guest rooms and units in a multifamily residential occupancy.*
[3] *DHW systems serving 2 or more dwelling units are considered "Central Systems" for multifamily occupancies*

C. COMPLIANCE RESULTS

Table C will indicate if the project data input into the compliance document is compliant with water heating requirements. If this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. or the table indicated as not compliant for guidance.

01	02	03	04
Domestic Hot Water Equipment	Distribution Systems	Controls	**Compliance Results**
Table F	Table G	Table H	
Yes	Yes	Yes	COMPLIES

D. EXCEPTIONAL CONDITIONS

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

E. ADDITIONAL REMARKS

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

F. DOMESTIC HOT WATER EQUIPMENT

This table is used to demonstrate compliance with mandatory equipment requirements in 110.1 and 110.3. Compliance with prescriptive requirements in 140.5(c) / 170.2(d) must also be demonstrated and with 141.0 / 180.1/ 180.2 for addition and alteration scopes.

Equipment Schedule: Water Heating Efficiency and Standby Loss

03	04			05		06		
System Name	IWH-1	Exception to 140.5(c)/ 170.2(d)3	Exceptions Do Not Apply	☐	Gas Service Water Heating System >= 1MMBtu/h[1]	Capacity-weighted Average Efficiency %		
07	08	09	10	11	12	13	14	15
Name or Item Tag	Equipment Type	Volume (gal)	Rated Input Capacity (Btu/h)	Max GPM/ First Hour Rating (FHR)	Rated Efficiency	Minimum Efficiency Required	Efficiency Unit	Designed Standby Loss	Maximum Standby Loss
IWH-1	Commercial Gas Instantaneous Water Heater	0	199,000		0.98	0.8	TE		

[1] *FOOTNOTE: In systems >= 1MMBtu/h with multiple units, gas water heaters with input capacity > 100,000 Btu/h may meet 90% EF requirements via an input capacity-weighted average.*
[2] *FOOTNOTE: Compliant equipment may be found in the Modernized Appliance Efficiency Database System (MAEDBS) on the Energy Commission website: https://cacertappliances.energy.ca.gov/Pages/Search/AdvancedSearch.aspx*

Water Heating Equipment All Occupancies

	Yes	No	Not Applicable	Requirement
18	☒	☐	☐	Unfired storage tank insulation shall have Internal + External >=R-16 OR External >=R-3.5. Label required per 110.3(c)3
19	☐	☐	☒	New state buildings 60% of energy for service water heating from site solar energy or recovered energy per 110.3(c)5
20	☐	☐	☒	Isolation valves for instantaneous water heater with input rating >6.8 kBTUH or 2 kW has been specified per 110.3(c)6
21	☐	☐	☒	School buildings < 25,000 ft² and < 4 stories must install a heat pump water heating system per 140.5(a)1. Water heating systems serving an individual bathroom space may be an instantaneous electric water heater.

G. DOMESTIC HOT WATER DISTRIBUTION SYSTEM

This table is used to demonstrate compliance for nonresidential occupancies with distribution requirements in 120.3 and 140.5. For multifamily and hotel/motel occupancies, compliance is demonstrated with requirements 110.3(c), 160.4, 170.2(d).

Mandatory Pipe Insulation All Occupancies

13	☐	For systems serving dwelling units, pipe insulation must meet the minimum insulation requirements in Table 160.4-A (see blow) except: • Piping that penetrates framing members shall not be required to have pipe insulation for the distance of the framing penetration. Piping that penetrates metal framing shall use grommets, plugs, wrapping or other insulating material to assure that no contact is made with the metal framing. Insulation shall abut securely against all framing members • Piping installed in interior or exterior walls shall not be required to have pipe insulation if all of the requirements are met for compliance with Quality Insulation Installation (QII) as specified in the Reference Residential Appendix RA3.5. • Piping surrounded with a minimum of 1 inch of wall insulation, 2 inches of crawlspace insulation, or 4 inches of attic insulation, shall not be required to have pipe insulation.
14	☒	For systems serving nonresidential spaces, pipe insulation for the following applications is specified to comply with Table 120.3-A (see below) per 120.3: • Recirculating system piping, including supply and return piping of the water heater • The first 8 ft of hot and cold outlet piping, including between storage tank and heat trap, for a nonrecirculating storage system • Pipes that are externally heated
15	☒	Insulation shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather shall be installed with a cover suitable for outdoor service per 120.3(b) / 160.4(f). Pipe insulation buried below grade must be installed in a water proof and non-crushable casing or sleeve.

TABLE 120.3-A / 160.4-A PIPE INSULATION THICKNESS

Fluid Temperature Range (°F)	Conductivity Range (Btu-in per hour per ft² per °F)	Insulation Mean Rating Temp (°F)	Nominal Pipe Diameter (in)			
			< 1	1 to < 1.5	1.5 to < 4	1.5 to < 4 Multifamily & Hotel/Motel
			Minimum Insulation Required			
105-140	0.22 - 0.28	100	1.0 in or R-7.7	1.5 in or R-12.5	1.5 in or R-11	2.0 in or R-16

H. DOMESTIC HOT WATER CONTROLS

This table is used to demonstrate compliance with control requirements in 110.3 for all occupancies. For multifamily residential and hotel/motel occupancies, compliance is also demonstrated with requirements in 160.4(e) / 170.2(d).

	Yes	No	Not Applicable	Requirement
01	☒	☐	☐	Construction documents require manufacturer certification that service water-heating systems are equipped with automatic temperature controls capable of adjusting temperature settings per 110.3(a).
02	☒	☐	☐	Systems with capacity > 167,000 BTUH equipped with outlet temperature controls per 110.3(c)1 unless covered by California Plumbing Code 613.0.
03	☒	☐	☐	Controls for circulating pumps or electrical heat trace systems are capable of automatically turning off the system per §110.3(c)2 unless systems serves healthcare facility.
04	☐	☐	☒	For recirculation systems serving multiple dwelling units, design includes automatic pump controls per 170.2(d) or 180.1(b)3 for additions.
05	☐	☐	☒	For recirculation systems serving individual dwelling units, design includes manual on/off controls as specified in Reference Appendix RA4.4.9 per 170.2(d).
06	☐	☐	☒	Combustion air positive shut-off shall be provided per 160.4(3).on all newly installed commercial boilers as follows: • Boilers with input capacity >= 2.5 MMBtu/h, in which the boiler is designed to operate with a nonpositive vent static pressure • Boilers where one stack serves two or more boilers with a total combined input capacity per stack of 2.5 MMBtu/h.
07	☐	☐	☒	Boiler combustion air fans with motor >= 10 hp shall meet one of the following • The fan motor shall be driven by a variable speed drive OR • The fan motor shall include controls that limit the fan motor demand to <=30% of the total design wattage at 50% of the design air volume.
08	☐	☐	☒	Newly installed boilers with an input capacity (d:gte/] 5MMBtu/h and a steady state full-load combustion efficiency < 90% shall maintain excess (stack-gas) oxygen concentrations <= 5% by volume on a dry basis over firing rates of 20-100%. Combustion air volume shall be controlled with respect to firing rate or flue gas oxygen concentration. Use of a common gas and combustion air control linkage or jack shaft is prohibited.

I. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selection have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online

Form/Title
NRCI-PLB-E - Must be submitted for all buildings

J. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

There are no forms required for this project.

K. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

There are no forms required for this project.

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: MICHAEL TOBIAS	Documentation Author Signature:
Company: NY ENGINEERS	Signature Date: 04/22/25
Address: 382 NE 191st ST, SUITE 49674	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: MIAMI, FLORIDA 33179	Phone: 212-575-5300

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: MICHAEL TOBIAS	Responsible Designer Signature:
Company: NY ENGINEERS	Date Signed: 04/22/25
Address: 382 NE 191st ST, SUITE 49674	License: M33750
City/State/Zip: MIAMI, FLORIDA 33179	Phone: 212-575-5300

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REVISIONS
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2 04/22/25-PERMIT SET
3
4
5
6

CONSULTANT
NY ENGINEERS
NEARBY ENGINEERS
382 NE 191ST STREET SUITE 49674,
MIAMI, FL 33179
PH-914.257.3455
WWW.NY-ENGINEERS.COM

PROFFESSIONAL SEAL

SITE INFORMATION
MK TYPE: MK2X
JIB #: 327
ADDRESS:
13648 VAN NUYS BLVD
PACOIMA, CA
91331
DRAWN BY: NYE
PROJECT #: 12079-24
SCALE:

PLUMBING ENERGY ANALYSIS (TITLE 24)

P4.0

ELECTRICAL SYMBOL LEGEND AND ABBREVIATIONS

SYMBOL	DESCRIPTION
	CONCEALED CONDUIT IN CEILING OR WALL
	CONCEALED CONDUIT IN FLOOR OR UNDERGROUND
	CIRCUIT HOMERUN TO PANEL; EACH ARROWHEAD 1 CIRCUIT
	NO. OF CONDUCTORS IN CONDUIT; EACH CROSSHATCH = 1 WIRE
	FLEXIBLE CONDUIT OR S.O. CORD
	EXPOSED CONDUIT
	CONDUIT STUBBED UP OR TURNED DOWN
	PLYWOOD BACKBOARD
	SURFACE MOUNTED RACEWAY
	MULTI OUTLET SURFACE MOUNTED RACEWAY
	WALL MOUNTED DUPLEX RECEPTACLE OUTLET
	WALL MOUNTED G.F.C.I. DUPLEX RECEPTACLE OUTLET
	POS SYSTEM DUPLEX RECEPTACLE OUTLET WITH ISOLATED GROUND (NEMA5-15R)
	POS SYSTEM QUAD RECEPTACLE OUTLET WITH ISOLATED GROUND(NEMA5-15R)
	WALL MOUNTED QUAD RECEPTACLE OUTLET
	SPECIAL PURPOSE RECEPTACLE, (SEE EQUIPMENT SCHEDULE OR NOTES)
	WALL MOUNTED 125 / 250V NEMA RECEPTACLE (SEE EQUIPMENT SCHEDULE OR NOTES)
	FLOOR MOUNTED DUPLEX RECEPTACLE
	CEILING MOUNTED DUPLEX RECEPTACLE
	CEILING / WALL MOUNTED JUNCTION BOX
	EQUIPMENT SCHEDULE REFERENCE (REFER O KITCHEN DRAWINGS)
	WALL MOUNTED COMBINATION DATA/VOICE OUTLET. PROVIDE JUNCTION BOX WITH 3/4" CONDUIT TO ABOVE CEILING.
	WALL MOUNTED VOICE OUTLET. PROVIDE JUNCTION BOX WITH 3/4" CONDUIT TO ABOVE CEILING.
	WALL MOUNTED DATA OUTLET. PROVIDE JUNCTION BOX WITH 3/4" CONDUIT TO ABOVE CEILING.
	JUNCTION BOX FOR TV. PROVIDE JUNCTION BOX WITH 3/4" CONDUIT TO ABOVE CEILING.
	2-GANG JUNCTION BOX FOR AV, LOW-VOLTAGE WIRING BY OTHERS. PROVIDE JUNCTION BOX WITH 1-1/4" CONDUIT TO ABOVE CEILING. U.N.O.
CR	JUNCTION BOX FOR CARD READER. PROVIDE JUNCTION BOX WITH 3/4" CONDUIT TO ABOVE CEILING.
	NEST CAM OUTDOOR WHITE #NC2400ES (BY A/V COMPANY)
WAP	WIRELESS ACCESS POINT, CEILING MOUNTED (BY OTHERS)
SPK	SPEAKER LOCATION (BY OTHERS)
	277/480 VOLT OR 120/208 VOLT PANELBOARD AS NOTED ON PLAN DRAWINGS
	RECESSED MOUNTED 120/208 VOLT PANELBOARD
T	TRANSFORMER
	LIGHT FIXTURE (REFER LIGHTING FIXTURE SCHEDULE ON LIGHTING PLAN)
	EXIT SIGN - CEILING, WALL MT.
	LIGHT FIXTURE ON EMERGENCY CIRCUIT
$	WALL MOUNTED S.P.S.T. TOGGLE SWITCH
$3	WALL MOUNTED 3-WAY TOGGLE SWITCH
$4	WALL MOUNTED 4-WAY TOGGLE SWITCH
$D	WALL MOUNTED DIMMER SWITCH (WATTAGE AS REQUIRED)
$T	WALL MOUNTED TIMER SWITCH
$OV	WALL MOUNTED MANUAL OVERRIDE SWITCH (TO OVERRIDE CIRCUIT DESIGNATED AT LIGHTING CONTACTOR PANEL)
OS	WALL MOUNTED OCCUPANCY SENSOR, PASSIVE IR MOUNT AT 48" AFF.
OS	CEILING MOUNTED OCCUPANCY SENSOR
TC	TIME CLOCK
C	LIGHTING CONTACTORS
PS	(400) WattStopper CEILING MOUNTED DAYLIGHT PHOTO SENSOR
D	WattStopper DIMMING ROOM CONTROLLER
D	WattStopper DIMMING ROOM CONTROLLER
CO	CO SENSOR
OSD	WALL MOUNTED OCCUPANCY SENSOR SWITCH WITH DIMMER

SYMBOL	DESCRIPTION
S_M	MOTOR RATED TOGGLE SWITCH
	COMBINATION MOTOR STARTER/DISCONNECT SWITCH
	DISCONNECT SWITCH (FRAME/POLES/FUSE-IF REQUIRED)
M	MOTOR LOAD
S	SMOKE DETECTOR- CEILING MOUNTED
D	DUCT MOUNTED SMOKE DETECTOR
M	MAGNETIC DOOR HOLD DEVICE TO INTERLOCK WITH FIRE ALARM SYSTEM

ELECTRICAL ABBREVIATIONS:

F.B.O.	FURNISHED BY OTHERS
AFF/AFG	ABOVE FINISHED FLOOR/ABOVE FINISHED GRADE
BC	BELOW CEILING
AC	ABOVE COUNTER
WP	WEATHER PROOF
E, EX/RE/N	EXISTING/RELOCATED/NEW
GFCI	GROUND FAULT INTERRUPTING CIRCUIT
E.C.	EMPTY CONDUIT (PROVIDE PULLSTRING IN ALL EMPTY CONDUIT)
FPMR	FUSE PER MANUFACTURER'S RECOMMENDATION
IG	ISOLATED GROUND
WP	WEATHER PROOF
NL	NIGHT LIGHT
A	AMPERE
N	NEUTRAL
V	VOLT
W	WATT
U.N.O.	UNLESS OTHERWISE NOTED
WIB	WALK IN BOX
WIC	WALK IN COOLER
WIF	WALK IN FREEZER
PNL	PANEL

NOTES:

1. COORDINATE LOCATION AND SPECIFIC MOUNTING HEIGHT WITH ARCHITECT.
2. ALL LEGENDS NOT USED ON PLANS.

SCOPE OF WORK

REUSE EXISTING 600 AMP, 120/208V, 3-PH, 4-WIRE ELECTRICAL SERVICE PROVISION FOR THE PROJECT SPACE.

REUSE EXISTING ELECTRICAL DISTRIBUTION & SERVICE EQUIPMENT AS MUCH POSSIBLE:

- 'MDP' 600 AMP (MCB), 120/208V, 3PH, 4W. PROVIDE NEW BRANCH BREAKERS AS REQUIRED. 75KVA, 208 TO 120/208V, 3PH TRANSFORMER. EXACT CONFIGURATION & CONNECTION TO BE VERIFIED IN FIELD.
- ELECTRICAL SUB PANEL 400 AMP, 120/208V, 3PH, 4W. PROVIDE NEW BRANCH BREAKERS AS REQUIRED.
- ELECTRICAL PANEL 'A' 125 AMP (MLO), 120/208V, 1PH, 3W. PROVIDE NEW BRANCH BREAKERS AS REQUIRED.
- ELECTRICAL PANEL 'B' 225 AMP (MLO), 120/208V, 1PH, 3W. PROVIDE NEW BRANCH BREAKERS AS REQUIRED.

PROVIDE NEW ELECTRICAL PANEL 'E' 200 AMP (MCB), 120/208V, 3PH, 4W.

PROVIDE ALL NECESSARY EQUIPMENT, ALL WIRING AND LIGHTING FOR THE PROJECT SPACE. COORDINATE WITH G.C. FOR LOW-VOLTAGE WIRING.

ELECTRICAL SPECIFICATIONS

SUMMARY

A. GENERAL AND SUPPLEMENTARY CONDITIONS WITHIN THE SPECIFICATIONS ARE HEREBY INCORPORATED AND BECOME PART OF THESE SPECIFICATIONS AND AS SUCH SHALL BE APPLICABLE TO THE WORK OF THE ELECTRICAL CONTRACT.
B. PRIOR TO SUBMISSION OF A BID PROPOSAL, THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS AND LIMITATIONS THAT IMPACT THE WORK OF THIS CONTRACT. NO ADDITIONAL COSTS TO THE OWNER SHALL BE PERMITTED FOR CHANGES TO THE WORK AS A RESULT OF THE CONTRACTORS FAILURE TO VISIT THE SITE PRIOR TO BIDDING AND IDENTIFY ITEMS THAT WERE ABLE TO BE VERIFIED DURING A SITE VISIT PRIOR TO THE SUBMISSION OF A BID PROPOSAL.
C. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIAL, EQUIPMENT, RIGGING, AND MISCELLANEOUS ITEMS AS REQUIRED FOR A COMPLETE, OPERATIONAL, FUNCTIONAL AND CODE COMPLIANT ELECTRICAL INSTALLATION AS SHOWN ON THE DRAWINGS AND AS SPECIFIED IN THESE SPECIFICATIONS.

LANDLORDS REQUIREMENTS

A. ALL WORK OF THIS CONTRACT SHALL BE COMPLETED IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE LANDLORD'S WORK LETTER, LANDLORD'S CONSTRUCTION CRITERIA AND/OR THE TENANT/LANDLORD AGREEMENT. THIS CONTRACTOR SHALL EXAMINE THESE DOCUMENTS PRIOR TO THE SUBMISSION OF A BID PROPOSAL.
B. ALL APPLICABLE REQUIREMENTS OF THE LANDLORD'S WORK LETTER, LANDLORDS CONSTRUCTION CRITERIA AND/OR THE TENANT/LANDLORD AGREEMENT DOCUMENTS SHALL BE CONSIDERED PART OF THESE SPECIFICATIONS.

EXISTING CONDITIONS

A. THE CONTRACT DOCUMENTS ARE BASED ON INFORMATION PROVIDED TO THE CONSULTANT AT THE TIME OF DESIGN. THIS CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO SUBMITTING A BID PROPOSAL. BIDS AND SUBSTITUTIONS A.PRIOR TO SUBMISSION OF A BID PROPOSAL, CONTRACTOR SHALL THOROUGHLY REVIEW THE BID INSTRUCTIONS AND ALL CIVIL, ARCHITECTURAL, STRUCTURAL, FOOD SERVICE AND MEPFP CONSTRUCTION DOCUMENTS.
B. SHOULD THE CONTRACTOR WISH TO SUBMIT AN ALTERNATE PRODUCT TO THE MANUFACTURERS NAMED IN THESE SPECIFICATIONS OR ON THE DRAWINGS FOR ANY EQUIPMENT, THE CONTRACTOR SHALL SUBMIT A VOLUNTARY ALTERNATIVE A MINIMUM OF SEVEN (7) CALENDAR DAYS PRIOR TO BID, STATING THE MANUFACTURER'S NAME, MODEL NUMBER, WRITTEN, DETAILED PRODUCT DATA.
C. WORK PERFORMED OR CONSTRUCTED WITH UNAPPROVED EQUALS IS AT CONTRACTOR'S RISK AND ANY REQUIRED CORRECTION OF WORK INCORPORATING UNAPPROVED EQUALS SHALL BE AT CONTRACTOR'S SOLE COST AND EXPENSE.
D. NO SUBSTITUTIONS PERMITTED FOR LIGHTING FIXTURES.

QUALITY ASSURANCE

A. ALL MATERIALS AND EQUIPMENT SHALL BE NEW.
B. PROVIDE PERMITS, INSPECTIONS, FINAL CERTIFICATES OF INSPECTION BY THE AUTHORITY HAVING JURISDICTION, PERMIT AND INSPECTION FEES AND ALL MATERIALS, EQUIPMENT AND LABOR AS REQUIRED FOR A COMPLETE, FUNCTIONAL, FULLY OPERATIONAL AND CODE COMPLIANT ELECTRICAL SYSTEM.
C. THIS CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR AND ACCESSORIES FOR A COMPLETE FUNCTIONAL AND CODE COMPLIANT ELECTRICAL INSTALLATION, WHETHER OR NOT SHOWN ON THE DRAWINGS OR SPECIFIED IN THESE SPECIFICATIONS.
D. EC SHALL VERIFY THE VOLTAGE AND AMPERAGE REQUIREMENTS OF ALL EQUIPMENT DELIVERED TO THE SITE PRIOR TO CONNECTION. EC SHALL NOTIFY THE OWNER OF ANY DIFFERENCES
E. REQUIREMENTS OF REGULATORY AGENCIES.
   1. PERMITS: ARRANGE AND PAY FOR ALL PERMITS, INSPECTIONS AND UTILITY CONNECTIONS REQUIRED.
   2. PROVIDE ALL TESTS AND INSPECTIONS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
   3. PROVIDE A SIGNED CERTIFICATE OF INSPECTION AT THE COMPLETION OF THE PROJECT. INCLUDE IN OPERATION AND MAINTENANCE MANUALS.
F. CODES AND STANDARDS
   1. COMPLY WITH SPECIFIED CODES AND STANDARDS. IF CONFLICT EXISTS BETWEEN CODES OR STANDARDS AND DRAWINGS, PROJECT MANUAL OR ADDENDA REQUIREMENTS, REQUEST CLARIFICATION FROM ARCHITECT/ENGINEER.
   2. CONFORM TO THE INSTALLATION RULES AND REGULATIONS OF THE CODES AND STANDARDS LISTED INCLUDING ALL SUBSEQUENTLY PUBLISHED AMENDMENTS THERETO ISSUED PRIOR TO THE DATE OF THE BIDDING DOCUMENTS.
   3. CONFORM TO THE REQUIREMENTS OF ALL LOCAL, STATE AND FEDERAL AGENCIES WHICH HAVE AUTHORITY OVER THIS PROJECT.
   4. COMPLY WITH THE APPLICABLE EDITION OF THE FOLLOWING CODES AND STANDARDS THAT HAVE BEEN ADOPTED BY AND ARE ENFORCED BY THE AUTHORITY HAVING JURISDICTION:
      a. INTERNATIONAL BUILDING CODE.
      b. INTERNATIONAL ENERGY CONSERVATION CODE
      c. INTERNATIONAL MECHANICAL CODE
      d. NATIONAL ELECTRICAL CODE
      e. INTERNATIONAL FIRE CODE
      f. LIFE SAFETY CODE, NFPA 101
      g. AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES
      h. ALL LOCAL CODES AND ORDINANCES ADOPTED AND ENFORCED BY THE AUTHORITY HAVING JURISDICTION.
G. REFERENCED STANDARDS:
   1. ALL EQUIPMENT, APPARATUS, MATERIALS AND SYSTEMS SHALL BE RATED, TESTED, FABRICATED AND INSTALLED IN ACCORDANCE WITH THE APPLICABLE INDUSTRY STANDARDS.
   2. ALL EQUIPMENT, APPARATUS, MATERIALS AND SYSTEMS SHALL BE LISTED AND LABELED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (UL, ETL, ETC)

ELECTRICAL CONTRACT DOCUMENTS

A. THE ELECTRICAL DRAWINGS (DRAWINGS) AND THE SPECIFICATIONS SHALL TOGETHER FORM A SET OF CONTRACT DOCUMENTS FOR THE ELECTRICAL WORK. NEITHER THE DRAWINGS OR THE SPECIFICATIONS SHALL BE COMPLETE WITHOUT THE OTHER. ANY ITEM SHOWN ONLY ON THE DRAWINGS OR SPECIFIED ONLY IN THE SPECIFICATIONS SHALL BE CONSIDERED AS IF SHOWN AND SPECIFIED IN BOTH.
B. ELECTRICAL DRAWINGS AND SPECIFICATIONS: COMPLY WITH THE FOLLOWING REQUIREMENTS:
   1. CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH ALL DRAWINGS AND SPECIFICATIONS WITHIN THE CONTRACT DOCUMENTS, INCLUDING, BUT NOT NECESSARILY LIMITED TO, GEOTECHNICAL, LANDSCAPE, CIVIL, ARCHITECTURAL, STRUCTURAL, FOOD SERVICE, MECHANICAL, PLUMBING, TELECOMMUNICATION AND FIRE PROTECTION DRAWINGS AND SPECIFICATIONS.
   2. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO INDICATE APPROXIMATE LOCATION ONLY OF ELECTRICAL WORK. THE ACTUAL LOCATION OF ANY ELECTRICAL WORK SHALL NOT INTERFERE WITH THE LOCATION, CLEARANCES, ETC. REQUIRED BY THE WORK OF OTHER TRADES.
   3. PRIOR TO ROUGH-IN, CONTRACTOR SHALL COORDINATE ALL DEVICE LOCATIONS WITH THE ARCHITECTURAL WALL ELEVATIONS, CASEWORK/CABINETRY ELEVATIONS AND DETAILS AND THE FINAL, APPROVED FOOD SERVICE SHOP DRAWINGS.
C. DEFINITIONS: THE FOLLOWING TERMS ARE USED ON THE ELECTRICAL DRAWINGS AND IN THE SPECIFICATIONS AND SHALL BE DEFINED AS FOLLOWS:
   1. CONTRACTOR - THE ELECTRICAL CONTRACTOR OR ANY OF THEIR SUB-CONTRACTORS.
   2. WORK - ALL MATERIAL, LABOR, TRANSPORTATION OF THE ELECTRICAL CONTRACTOR OR ANY OF THEIR SUB-CONTRACTORS.
   3. FURNISH - PURCHASE. SUBMIT FOR REVIEW AND APPROVAL, COORDINATE WITH THE CONTRACT DOCUMENTS AND DELIVER TO THE PROJECT SITE IN NEW, UNDAMAGED CONDITION, STORE AS DIRECTED, PROTECT FROM DAMAGE DURING STORAGE.
   4. INSTALL - INSTALL IN PLACE, MAKE READY FOR CONNECTION TO THE REQUIRED SERVICE.
   5. CONNECT - CONNECT TO THE REQUIRED SERVICE AS REQUIRED FOR PROPER OPERATION, TEST FOR PROPER OPERATION AND FUNCTIONALITY IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS AND REQUIREMENTS SPECIFIED WITHIN THESE SPECIFICATIONS AND TURN OVER TO THE OWNER IN FULL OPERATING CONDITION.
   6. PROVIDE - FURNISH, INSTALL AND CONNECT AS DEFINED HEREIN FOR A COMPLETE, FUNCTIONAL AND CODE COMPLIANT INSTALLATION READY FOR INTENDED USE.
   7. FINISHED SPACE - SPACES HAVING WALLS PAINTED OR FINISHED WITH WALL COVERING, LAY-IN OR DRYWALL CEILINGS, AND FINISHED FLOORING MATERIALS. EXAMPLES OF FINISHED SPACES INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, ALL SPACES IN A DWELLING UNIT, OFFICES, LOBBIES, CORRIDORS, TOILET ROOMS, ETC.
   8. UNFINISHED SPACES - SPACES WITH UNFINISHED WALLS AND FLOORS AND TYPICALLY ARE NOT EQUIPPED WITH A CEILING. EXAMPLES INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, MECHANICAL ROOMS, ELECTRICAL ROOMS, SERVICE AREAS, ETC.
   9. SHALL - ACTION THAT IS REQUIRED WITHOUT OPTION OR QUALIFICATION.
   10. REMOVE - DETACH ITEMS FROM EXISTING CONSTRUCTION AND LEGALLY DISPOSE OF THEM OFF SITE UNLESS INDICATED TO BE REMOVED AND SALVAGED OR REMOVED AND RE-INSTALLED.
   11. REMOVE AND SALVAGE - CAREFULLY DETACH FROM EXISTING CONSTRUCTION IN A MANNER TO PREVENT DAMAGE AND DELIVER TO OWNER READY FOR RE-USE.
   12. REMOVE AND REINSTALL - DETACH ITEMS FROM EXISTING CONSTRUCTION, PREPARE FOR RE-USE, RE-INSTALL AND RECONNECT WHERE INDICATED SUCH THAT THE RE-INSTALLED ITEM IS FULLY OPERATIONAL.
   13. EXISTING TO REMAIN - EXISTING ITEMS OF CONSTRUCTION THAT ARE NOT TO BE PERMANENTLY REMOVED AND THAT ARE NOT OTHERWISE INDICATED TO BE REMOVED, REMOVED AND SALVAGED OR REMOVED AND RE-INSTALLED.

SUBMITTALS

A. REVIEW OF THE SHOP DRAWINGS IS RENDERED AS A SERVICE ONLY AND SHALL NOT BE CONSIDERED AS A GUARANTEE OF MEASUREMENTS OR OF BUILDING CONDITIONS. NOR SHALL IT BE CONSTRUED AS RELIEVING THE CONTRACTOR'S OF BASIC RESPONSIBILITIES UNDER HIS CONTRACT. ARCHITECT/ENGINEER WILL REVIEW SHOP DRAWINGS ONLY FOR CONFORMANCE WITH DESIGN CONCEPT OF THE PROJECT. REVIEW BY THE ARCHITECT/ENGINEER SHALL NOT BE CONSTRUED.
   1. AS PERMITTING ANY DEPARTURE FROM THE CONTRACT REQUIREMENTS.
   2. AS RELIEVING THE CONTRACTOR OF THE RESPONSIBILITY FOR ANY ERROR IN DETAILS, DIMENSIONS OR OTHERWISE THAT MAY EXIST.
   3. AS APPROVED DEPARTURES FROM ADDITIONAL DETAILS OR INSTRUCTIONS PREVIOUSLY FURNISHED BY THE ARCHITECT/ENGINEER.

SHOP DRAWINGS:

1. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND DESCRIPTIVE LITERATURE OF EQUIPMENT TO BE FURNISHED UNDER THIS CONTRACT. DRAWINGS SHALL STATE CAPACITIES, SIZES, ETC., OF ALL EQUIPMENT AND SHALL BE CERTIFIED. SEE GENERAL CONDITIONS AND SUPPLEMENTARY CONDITIONS FOR ADDITIONAL REQUIREMENTS.
2. PROVIDE SUBMITTALS FOR LIGHTING FIXTURES, TRANSFORMERS, PANELBOARDS, LIGHTING CONTROL DEVICES, CONTACTORS, WIRING DEVICES, DISCONNECT SWITCHES, POWER SYSTEM STUDY.

B. THE CONTRACTOR SHALL PERFORM NO PORTION OF THE WORK REQUIRING SUBMITTAL AND REVIEW OF SHOP DRAWINGS, PRODUCT DATA, SAMPLES OR SIMILAR SUBMITTALS UNTIL THE RESPECTIVE SUBMITTALS HAS BEEN APPROVED BY THE ENGINEER.

ELECTRICAL COORDINATION DRAWINGS

A. PREPARE ELECTRICAL COORDINATION DRAWINGS AS REQUIRED BY THE WORK AND AS DIRECTED BY THE GENERAL CONTRACTOR.
B. MEET WITH REPRESENTATIVES OF THE OTHER DISCIPLINES/TRADES TO COORDINATE THE ELECTRICAL WORK WITH THE WORK OF EACH DISCIPLINE AND TO OBTAIN INFORMATION REGARDING THEIR WORK THAT IS TO BE INDICATED ON THE COORDINATION DRAWINGS.

POWER SYSTEM STUDIES - GENERAL

A. PROVIDE COMPUTER-BASED, POWER SYSTEM STUDIES THAT INCLUDES:
A SHORT CIRCUIT STUDY TO DETERMINE THE MINIMUM INTERRUPTING CAPACITY OF CIRCUIT PROTECTIVE DEVICES;
AN ARC-FLASH STUDY TO DETERMINE THE ARC-FLASH HAZARD DISTANCE AND THE INCIDENT ENERGY TO WHICH PERSONNEL COULD BE EXPOSED DURING WORK ON OR NEAR ELECTRICAL EQUIPMENT.
B. STUDIES SHALL BE PERFORMED UTILIZING COMPUTER PROGRAMS THAT ARE DISTRIBUTED NATIONALLY AND ARE IN WIDE USE. SOFTWARE ALGORITHMS SHALL COMPLY WITH REQUIREMENTS OF STANDARDS AND GUIDES SPECIFIED IN THIS SECTION. MANUAL CALCULATIONS ARE UNACCEPTABLE.
C. SOFTWARE DEVELOPERS: SUBJECT TO COMPLIANCE WITH SPECIFIED REQUIREMENTS, PERFORM STUDIES UTILIZING SOFTWARE PRODUCTS BY ONE OF THE FOLLOWING:
   1. EASY POWER
   2. POWER ANALYTICS CORPORATION
   3. SKM SYSTEMS ANALYSIS
D. ALL STUDIES SHALL BE BASED ON THE DEVICE CHARACTERISTICS OF ACTUAL EXISTING COMPONENTS AND THE NEW COMPONENTS BEING INSTALLED.
E. PROVIDE ALL FIELD LABOR AS REQUIRED TO OBTAIN ALL DATA NECESSARY TO CONDUCT THE STUDIES SPECIFIED HEREIN.
F. SUBMIT STUDIES FOR REVIEW BEFORE SUBMITTING THE SYSTEM OVERCURRENT PROTECTIVE DEVICE AND POWER DISTRIBUTION EQUIPMENT SUBMITTALS. SUBMIT STUDY REPORT FOR REVIEW PRIOR TO RECEIVING FINAL APPROVAL OF THE OVERCURRENT PROTECTIVE DEVICE AND DISTRIBUTION EQUIPMENT SUBMITTALS.
G. WHERE FORMAL COMPLETION OF STUDIES WILL CAUSE A DELAY IN THE ORDERING AND MANUFACTURING OF OVERCURRENT PROTECTIVE DEVICES AND POWER DISTRIBUTION EQUIPMENT, OBTAIN APPROVAL FROM ENGINEER FOR PRELIMINARY SUBMITTAL OF SUFFICIENT STUDY DATA TO ENSURE THAT THE SELECTION OF DEVICES AND ASSOCIATED CHARACTERISTICS IS SATISFACTORY AND IN COMPLIANCE WITH THE RESULTS OF THE STUDIES BEING PERFORMED.

SHORT CIRCUIT STUDY

A. PROVIDE A COMPUTER-BASED, SHORT CIRCUIT STUDY TO DETERMINE THE MINIMUM INTERRUPTING CAPACITY OF CIRCUIT PROTECTIVE DEVICES.
B. FOR NEW EQUIPMENT, USE CHARACTERISTICS SUBMITTED UNDER THE PROVISIONS OF ACTION SUBMITTALS AND INFORMATION SUBMITTALS FOR THIS PROJECT.
C. FOR EXISTING RELOCATED EQUIPMENT AND EXISTING EQUIPMENT THAT IS EXISTING TO REMAIN, OBTAIN REQUIRED ELECTRICAL DISTRIBUTION SYSTEM DATA BY FIELD INVESTIGATION AND SURVEYS, CONDUCTED BY QUALIFIED TECHNICIANS AND ENGINEERS. THE QUALIFICATIONS OF TECHNICIANS AND ENGINEERS SHALL BE QUALIFIED AS DEFINED BY NFPA 70E.
D. GATHER AND TABULATE ALL REQUIRED DATA TO SUPPORT THE SHORT-CIRCUIT STUDY. COMPLY WITH RECOMMENDATIONS IN IEEE 551 AS TO THE AMOUNT OF DETAIL THAT IS REQUIRED TO BE ACQUIRED IN THE FIELD.
E. BEGIN SHORT-CIRCUIT CURRENT ANALYSIS AT THE SERVICE, EXTENDING DOWN TO THE SYSTEM OVERCURRENT PROTECTIVE DEVICES AS FOLLOWS:
   1. TO NORMAL SYSTEM LOW-VOLTAGE LOAD BUSES WHERE FAULT CURRENT IS 10 KA OR LESS.

ARC FLASH HAZARD STUDY

A. PROVIDE A COMPUTER-BASED, ARC-FLASH HAZARD STUDY TO DETERMINE THE ARC-FLASH HAZARD DISTANCE AND THE INCIDENT ENERGY TO WHICH PERSONNEL COULD BE EXPOSED DURING WORK ON OR NEAR EXISTING AND NEW ELECTRICAL EQUIPMENT.
B. ELECTRICAL SURVEY DATA: GATHER AND TABULATE ALL REQUIRED INPUT DATA TO SUPPORT STUDY. COMPLY WITH RECOMMENDATIONS IN IEEE 1584 AND NFPA 70E AS TO THE AMOUNT OF DETAIL THAT IS REQUIRED TO BE ACQUIRED IN THE FIELD.
C. FOR NEW EQUIPMENT, USE CHARACTERISTICS SUBMITTED UNDER THE PROVISIONS OF ACTION SUBMITTALS AND INFORMATION SUBMITTALS FOR THIS PROJECT.
D. FOR EXISTING EQUIPMENT, WHETHER OR NOT RELOCATED, OBTAIN REQUIRED ELECTRICAL DISTRIBUTION SYSTEM DATA BY FIELD INVESTIGATION AND SURVEYS CONDUCTED BY QUALIFIED TECHNICIANS AND ENGINEERS.
E. HAZARD LABELS SHALL HAVE AN ORANGE HEADER WITH THE WORDING, "WARNING, ARC-FLASH HAZARD," AND SHALL INCLUDE THE FOLLOWING INFORMATION TAKEN DIRECTLY FROM THE ARC-FLASH HAZARD ANALYSIS:
   1. LOCATION DESIGNATION.
   2. NOMINAL VOLTAGE.
   3. FLASH PROTECTION BOUNDARY.
   4. HAZARD RISK CATEGORY.
   5. INCIDENT ENERGY.
   6. WORKING DISTANCE.
   7. ENGINEERING REPORT NUMBER, REVISION NUMBER, AND ISSUE DATE.
F. ARC FLASH HAZARD WARNING LABELS SHALL BE A 3.5-BY-5-INCH THERMAL TRANSFER LABEL OF HIGH-ADHESION POLYESTER FOR EACH WORK LOCATION INCLUDED IN THE ANALYSIS.
G. LABELS SHALL BE MACHINE PRINTED, WITH NO FIELD-APPLIED MARKINGS.

RECORD DOCUMENTS

A. DURING THE PROGRESS OF THE WORK, CONTRACTOR SHALL MAINTAIN A CURRENT (DAILY) AS-BUILT SET OF THE DRAWINGS AND SPECIFICATIONS, INDICATING THEREON ALL WORK INSTALLED AT VARIANCE WITH SUCH CONTRACT DOCUMENTS INCLUDING, WITHOUT LIMITATION, WORK COVERED BY ADDENDA, FIELD WORK ORDERS, CHANGE ORDERS, AND ENGINEERS
B. CONTRACTOR SHALL PROVIDE THE TENANT WITH THE FINAL AS-BUILT SET OF DRAWINGS AT THE COMPLETION OF THE WORK.

COORDINATION WITH LANDLORD AND UTILITY COMPANIES

A. PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL COORDINATE THE WORK OF THIS CONTRACT WITH THE LANDLORD'S AUTHORIZED REPRESENTATIVE AND AUTHORIZED REPRESENTATIVES OF EACH SERVING UTILITY THAT WILL PROVIDE SERVICE TO THIS SITE, INCLUDING BUT NOT NECESSARILY LIMITED TO, ELECTRIC, TELEPHONE AND CABLE/SATELLITE TV SERVICE PROVIDERS.
B. CONTRACTOR SHALL MEET WITH AUTHORIZED REPRESENTATIVES OF THE LANDLORD AND EACH UTILITY TO DISCUSS LANDLORD UTILITY COMPANY SCOPE OF WORK, CONTRACTOR SCOPE OF WORK, POINT OF SERVICE PICK-UP, DETAILS REGARDING SYSTEM INTERFACE, UTILITY COMPANY STANDARDS TO BE COMPLIED WITH, ETC.

COORDINATION WITH OTHER TRADES

A. ELECTRICAL WORK SHALL BE INSTALLED SO AS TO NOT CONFLICT WITH THE WORK OF OTHER TRADES.
B. SET ALL SLEEVES AND CUT AND PATCH ALL MISCELLANEOUS HOLES NECESSARY FOR THE CONVENIENT AND PROPER INSTALLATION OF THE WORK.
C. CONFER WITH THE OTHER CONTRACTORS REGARDING THE LOCATION AND SIZE OF PIPES, EQUIPMENT, DUCTS, OPENINGS AND SPECIAL ARCHITECTURAL TREATMENTS IN ORDER THAT THERE MAY BE NO INTERFERENCES BETWEEN THE INSTALLATION OR THE PROGRESS OF THE WORK OF ANY CONTRACTOR ON THE PROJECT.
D. ALL LINE VOLTAGE WIRING AND FINAL CONNECTIONS TO COMPLETE MECHANICAL SYSTEMS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
E. PROVIDE FINAL ELECTRICAL CONNECTIONS TO EQUIPMENT FURNISHED/PROVIDED BY OTHERS, (HVAC EQUIPMENT, PLUMBING EQUIPMENT, COMMERCIAL KITCHEN EQUIPMENT, ETC.
F. COORDINATE THE NEMA CONFIGURATION OF THE RECEPTACLE TO BE PROVIDED WITH THE NEMA PLUG CONFIGURATION OF THE CORD/PLUG ASSEMBLY FURNISHED WITH THE EQUIPMENT TO BE INSTALLED. PROVIDE RECEPTACLES HAVING A NEMA CONFIGURATION THAT MATCHES THE NEMA CONFIGURATION OF THE PLUG ON THE EQUIPMENT.
G. PROVIDE FINAL COORDINATION OF AVAILABLE POWER (VOLTAGE/PHASE) WITH OTHER TRADES PRIOR TO THEIR ORDERING OF EQUIPMENT.
H. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION REGARDING ELECTRICAL WORK TO BE PROVIDED ASSOCIATED WITH MECHANICAL EQUIPMENT.
I. WHERE ELECTRICAL WORK (CONDUIT BOXES, RECEPTACLES, DISCONNECT SWITCHES, ETC.) ARE SECURED DIRECTLY TO THE HOUSING OF MECHANICAL EQUIPMENT, THEY SHALL BE INSTALLED ON A PORTION OF THE EQUIPMENT HOUSING NOT REQUIRED TO BE REMOVED FOR ROUTINE MAINTENANCE. PRIOR TO INSTALLATION, COORDINATE ALL ELECTRICAL WORK AT MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR.

TEMPORARY POWER

A. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED TEMPORARY CONSTRUCTION POWER AND LIGHTING TO ALLOW ALL CONTRACTORS AND SUB-CONTRACTORS TO PERFORM THE WORK OF THEIR CONTRACTS.
B. PRIOR TO THE SUBMISSION OF A BID PROPOSAL, THE CONTRACTOR SHALL CONTACT THE GENERAL CONTRACTOR TO COORDINATE THE TYPE OF EQUIPMENT TO BE UTILIZED DURING THE WORK OF THIS CONTRACT

SEQUENCING AND SCHEDULING

A. COORDINATE ELECTRICAL EQUIPMENT INSTALLATION WITH OTHER BUILDING COMPONENTS AND THE PROJECT PHASING PLAN.

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DATES

RELEASE:
P.M. UPDATES:
SUBMITTAL DATE:
1: APR. 10, 2025
2:
3:
BID:
CONSTRUCTION:

REVISIONS

- 03/25/25-CHECK SET
- 04/22/25-PERMIT SET

CONSULTANT

PROFFESSIONAL SEAL

SITE INFORMATION

MK TYPE: MK2X
JIB #: 327
ADDRESS:
13648 VAN NUYS BLVD
PACOIMA, CA
91331

DRAWN BY: NYE
PROJECT #: 12079-24
SCALE:

ELECTRICAL SYMBOL LIST, ABBREVIATIONS & SPECIFICATIONS

E0.1

UTILITY COMPANY METERING EQUIPMENT

A. PROVIDE ALL EQUIPMENT REQUIRED FOR ELECTRICITY METERING BY UTILITY COMPANY. ALL METERING EQUIPMENT AND THE INSTALLATION OF THE EQUIPMENT SHALL BE IN COMPLIANCE WITH ALL UTILITY COMPANY REQUIREMENTS.
B. ELECTRICAL SERVICE CONNECTIONS: COORDINATE WITH UTILITY COMPANIES AND COMPONENTS THEY FURNISH AS FOLLOWS:
   1. COMPLY WITH REQUIREMENTS OF UTILITIES PROVIDING ELECTRICAL POWER SERVICES.
   2. COORDINATE INSTALLATION AND CONNECTION OF UTILITIES AND SERVICES, INCLUDING PROVISION FOR ELECTRICITY-METERING COMPONENTS.
C. METERS SHALL BE FURNISHED BY UTILITY COMPANY; INSTALLED BY ELECTRICAL CONTRACTOR.
D. METER SOCKETS: COMPLY WITH REQUIREMENTS OF ELECTRICAL-POWER UTILITY COMPANY. INSTALL ALL CONDUITS AND EQUIPMENT ACCORDING TO UTILITY COMPANY'S WRITTEN REQUIREMENTS. PROVIDE EMPTY CONDUITS FOR METERING LEADS AND EXTEND GROUNDING CONNECTIONS AS REQUIRED BY UTILITY COMPANY.

FIRE STOPPING

A. PROVIDE FIRE STOPPING FOR PENETRATIONS BY CONDUIT OR CABLES AND OTHER EQUIPMENT THROUGH FIRE-RATED VERTICAL BARRIERS (WALLS AND PARTITIONS), HORIZONTAL BARRIERS (FLOOR/CEILING ASSEMBLIES) AND VERTICAL SHAFT WALLS AND PARTITIONS.
B. FIRESTOP SYSTEM INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF ATME E 814 OR UL 1479 TESTED ASSEMBLIES THAT PROVIDE A FIRE RATING EQUAL TO OR GREATER THAN THAT OF THE CONSTRUCTION BEING PENETRATED.

SEISMIC RESTRAINT

A. PROVIDE SEISMIC RESTRAINT FOR ELECTRICAL WORK AND SYSTEMS AND EQUIPMENT IN STRICT ACCORDANCE WITH THE APPLICABLE BUILDING CODE AND THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.

B. SUBMIT ALL REQUIRED DETAILS TO THE AUTHORITY HAVING JURISDICTION FOR REVIEW AND APPROVAL.

C. PROVIDE SEISMIC RESTRAINT FOR ELECTRICAL WORK AND SYSTEMS AND EQUIPMENT IN STRICT ACCORDANCE WITH THE APPLICABLE BUILDING CODE AND THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
D. SUBMIT ALL REQUIRED DETAILS TO THE AUTHORITY HAVING JURISDICTION FOR REVIEW AND APPROVAL.

CUTTING & PATCHING

A. PRIOR TO CORE DRILLING OR SAW CUTTING OPERATIONS, CONTRACTOR SHALL X-RAY OR GROUND PENETRTING RADAR (GPR) THE EXISTING SLAB TO DETERMINE THE LOCATION OF ANY EXISTING UTILITIES, STRUCTURAL MEMBERS. ETC. COORDINATE ALL SCANNING, CUTTING AND CORE DRILLING OPERATIONS WITH GC AND LANDLORD PRIOR TO COMMENCEMENT OF WORK.
B. CORE-DRILL OR SAW-CUT EXISTING FLOORS, WALLS, ROOF, ETC., AS REQUIRED FOR THE INSTALLATION OF THE ELECTRICAL WORK. STRUCTURAL COMPONENTS, INCLUDING BUT NOT NECESSARILY LIMITED TO, COLUMNS, BEAMS, GIRDERS, PLATES OR JOISTS SHALL NOT BE CUT.
C. PATCH SURROUNDING AREAS FLUSH WITH ADJACENT SURFACES AND PREPARE TO RECEIVE SPECIFIED FINISHES. PATCH AND REPAIR ROOF TO MATCH EXISTING ROOFING SYSTEM. ALL ROOF WORK SHALL BE PERFORMED TO MEET THE WARRANTY REQUIREMENTS OF THE EXISTING ROOFING SYSTEM.

GROUNDING

A. PROVIDE ELECTRICAL SYSTEM AND EQUIPMENT GROUNDING IN ACCORDANCE WITH APPLICABLE N.E.C. REQUIREMENTS.
B. THE METALLIC CONDUIT SYSTEM SHALL BE GROUNDED AND BONDED TO FORM AN EQUIPMENT GROUNDING CONDUCTOR.
C. PROVIDE AN INSULATED EQUIPMENT GROUND CONDUCTOR WITHIN ALL FEEDERS AND BRANCH CIRCUITS. THIS EQUIPMENT GROUND CONDUCTOR SHALL BE IN ADDITION TO THE EQUIPMENT GROUND CONDUCTOR FORMED BY THE METALLIC CONDUIT SYSTEM.
D. PROVIDE AN ISOLATED GROUND CONDUCTOR IN ADDITION TO THE EQUIPMENT GROUNDING CONDUCTOR IN SELECT BRANCH CIRCUITS AS NOTED ON THE DRAWINGS.
E. PROVIDE A #6 AWG GREEN INSULATED GROUNDING CONDUCTOR FROM THE GROUND BAR AT TELEPHONE TERMINAL BOARD TO THE ELECTRICAL SERVICE GROUND.
F. PROVIDE A COPPER GROUNDING BAR AT THE TELEPHONE TERMINAL BACKBOARD. GROUNDING BAR SHALL BE ¼ INCH X 4 INCHES X 12 INCHES, PRE-DRILLED FOR CONDUCTOR TERMINATIONS, WITH NON-METALLIC STAND-OFF BRACKETS WITH INSULATORS. CHATSWORTH PRODUCTS 10622-012 OR APPROVED EQUAL.

EQUIPMENT IDENTIFICATION

A. PROVIDE EQUIPMENT LABELS ON PANELBOARDS, DISCONNECT SWITCHES, CONTACTORS, TRANSFORMERS, CONTROLS, ETC. EQUIPMENT LABELS SHALL BE ENGRAVED PHENOLIC RESIN NAMEPLATES ATTACHED TO ENCLOSURE WITH MECAL FASTENERS. SELF-ADHESIVE NAMEPLATES ARE NOT ACCEPTABLE. LETTERING SHALL BE 1/2" HIGH, BLACK TEXT ON WHITE BACKGROUND.
B. ENGRAVED NAMEPLATES ATTACHED TO COMPONENTS SHALL IDENTIFY THE EQUIPMENT DESIGNATION, NAME OF THE "UPSTREAM" POWER SOURCE (AS APPLICABLE), VOLTAGE AND PHASE.
C. THE COVERS OF ALL OUTLET AND JUNCTION BOXES INSTALLED ABOVE CEILINGS AND INSTALLED EXPOSED IN UNFINISHED SPACES SHALL BE LABELED TO IDENTIFY THE SERVING PANEL, VOLTAGE, PHASE AND CIRCUIT NUMBERS CONTAINED WITHIN THE BOX. LABEL SHALL BE LEGIBLY HANDWRITTEN WITH BLACK, FELT TIP PERMANENT MARKER.
D. THE COVER PLATES OF ALL WIRING DEVICES SHALL BE LABELED TO IDENTIFY THE SERVING PANEL AND THE CIRCUITS SERVING THE DEVICE. LABELS SHALL BE MACHINE PRINTED, BLACK TEXT ON A CLEAR, SELF ADHESIVE LABEL.

CONDUIT AND FITTINGS

A. ALL INTERIOR AND EXTERIOR CONDUITS SHALL BE INSTALLED AND SUPPORTED IN ACCORDANCE WITH N.E.C. REQUIREMENTS.
B. MINIMUM CONDUIT SIZE SHALL BE ¾" TRADE SIZE. SWITCH LEGS SHALL BE ½" TRADE SIZE.
C. WITHIN INTERIOR FINISHED AREAS, ALL CONDUIT SHALL BE INSTALLED CONCEALED WITHIN NEW AND EXISTING WALLS AND ABOVE NEW AND EXISTING CEILINGS.
D. CONDUIT INSTALLED WITHIN THE INTERIOR OF THE BUILDING SHALL BE GALVANIZED ELECTRICAL METALLIC TUBING (EMT). CONDUIT FITTINGS FOR INDOOR EMT CONDUITS SHALL BE CAST METAL, COMPRESSION TYPE.
E. EMT SHALL BE USED FOR INTERIOR FEEDERS AND BRANCH CIRCUITS INSTALLED EXPOSED IN UNFINISHED SPACES, CONCEALED ABOVE NEW OR EXISTING CEILINGS OR CONCEALED WITHIN EXISTING AND NEW INTERIOR PARTITIONS.
F. CONDUITS INSTALLED EXPOSED ON THE EXTERIOR OF THE BUILDING SHALL BE GALVANIZED RIGID STEEL. FITTINGS SHALL BE THREADED TYPE.
G. CONDUITS INSTALLED UNDER SLAB ON GRADE CONSTRUCTION SHALL BE RIGID NON-METALLIC (RNC), SCHEDULE 40 PVC. RNC COMPLYING WITH NEMA TC 2 AND UL 651 UNLESS OTHERWISE INDICATED. FITTINGS FOR RIGID NON-METALLIC CONDUIT SHALL COMPLY WITH NEMA TC 3; MATCH TO CONDUIT TYPE AND MATERIAL.
H. PROVIDE CONDUIT EXPANSION FITTINGS IN ALL CONDUIT RUNS THAT EXTEND ACROSS BUILDING EXPANSION JOINTS AND WHERE MOVEMENT MAY BE ENCOUNTERED.
I. CONDUIT SHALL BE SUPPORTED FROM STRUCTURE ONLY.
J. PVC CONDUIT SHALL ONLY BE USED BELOW GRADE.
K. PROVIDE FLEXIBLE METAL CONDUIT FOR CONNECTIONS TO VIBRATING EQUIPMENT WITHIN INTERIOR DRY LOCATIONS. MAXIMUM CONDUIT LENGTH SHALL BE 36 INCHES.
L. PROVIDE LIQUID-TIGHT FLEXIBLE METAL CONDUIT FOR CONNECTIONS TO VIBRATING EQUIPMENT IN WET OR OUTDOOR LOCATIONS. MAXIMUM CONDUIT LENGTH SHALL BE 36 INCHES.
M. PROVIDE FLEXIBLE METAL CONDUIT FOR FINAL CONNECTIONS TO RECESSED LIGHT FIXTURES (FIXTURE WHIPS). MAXIMUM CONDUIT LENGTH SHALL BE 72 INCHES.
N. PROVIDE LIQUID-TIGHT FLEXIBLE METAL CONDUIT FOR FINAL ELECTRICAL CONNECTIONS TO FOOD SERVICE EQUIPMENT.
O. CONDUITS THAT EXTEND UP TO THE ROOF LEVEL TO SERVE ROOF MOUNTED MECHANICAL EQUIPMENT INSTALLED ON A CURB SHALL BE ROUTED WITHIN THE EQUIPMENT CURB. COORDINATE ELECTRICAL WORK WITH MECHANICAL EQUIPMENT INSTALLER.
P. PROVIDE CONDUIT SEALING FITTINGS IN ALL CONDUITS THAT EXTEND FROM NON-REFRIGERATED SPACES TO REFRIGERATED SPACES PER NEC 300.7(A). PROVIDE EXPANSION JOINTS FOR CONDUIT AS REQUIRED TO COMPENSATE FOR THERMAL EXPANSION AND CONTRACTION.
Q. ALL CONDUITS INSTALLED IN ASSOCIATION WITH THE WALK-IN COOLER FREEZER SHALL BE INSTALLED IN ACCORDANCE WITH THE WALK-IN MANUFACTURERS RECOMMENDATIONS AND REQUIREMENTS. COORDINATE ALL CONDUIT INSTALLATION WITH WALK-IN EQUIPMENT INSTALLER.
R. ACCEPTABLE MANUFACTURERS FOR GALVANIZED RIGID CONDUIT, EMT, FLEXIBLE METAL CONDUITS AND LIQUID-TIGHT FLEXIBLE METAL CONDUITS SHALL BE ALLIED, REPUBLIC, WHEATLAND, ELECTRI-FLEX AND ANACONDA.
S. ACCEPTABLE MANUFACTURERS FOR CONDUIT FITTINGS SHALL BE THOMAS AND BETTS OR APPROVED EQUAL.

CONDUCTORS

A. ALL CONDUCTORS SHALL BE SOFT DRAWN, ANNEALED COPPER, #12 AWG MINIMUM. CONDUCTORS
B. CONDUCTORS #12 AND #10 AWG SHALL BE SOLID; #8 AWG AND LARGER SHALL BE STRANDED.
C. THE USE OF ALUMINUM CONDUCTORS IS NOT ACCEPTABLE.
D. EXPOSED, INTERIOR FEEDERS: TYPE THHN-THWN, SINGLE CONDUCTORS IN CONDUIT.
E. FEEDERS INSTALLED CONCEALED IN CEILINGS, WALLS, PARTITIONS: TYPE THHN-THWN, SINGLE CONDUCTORS IN CONDUIT.
F. FEEDERS INSTALLED CONCEALED IN CONCRETE, BELOW SLABS-ON-GRADE AND UNDERGROUND: TYPE THHN-THWN, SINGLE CONDUCTORS IN PVC CONDUIT.
G. EXPOSED, INTERIOR, BRANCH CIRCUITS: TYPE THHN-THWN, SINGLE CONDUCTORS IN CONDUIT.
H. BRANCH CIRCUITS CONCEALED IN EXISTING AND NEW CEILINGS, WALLS, AND PARTITIONS: TYPE THHN-THWN, SINGLE CONDUCTORS IN CONDUIT.
I. BRANCH CIRCUITS CONCEALED BELOW SLABS-ON-GRADE, AND UNDERGROUND: TYPE THHN-THWN, SINGLE CONDUCTORS IN CONDUIT.
J. ACCEPTABLE MANUFACTURERS FOR CONDUCTORS: GENERAL CABLE COMPANY, CAROL, ANACONDA, ROME, SOUTHWIRE.
K. CLASS 1 CONTROL CIRCUITS: TYPE THHN-THWN, IN CONDUIT.
L. CLASS 2 CONTROL CIRCUITS: POWER-LIMITED PLENUM RATED CABLE, CONCEALED IN BUILDING FINISHES.
M. THE USE OF NON-METALLIC-SHEATHED CABLE (TYPE NM) AND ARMORED CABLE (TYPE AC OR BX) IS NOT ACCEPTABLE
N. WIRE CONNECTORS SHALL BE EQUAL TO SCOTCH LOCK FOR #8 AWG AND SMALLER, THOMAS AND BETTS LOCK-TITE FOR #6 AND LARGER.
O. PROVIDE #10 AWG CONDUCTORS FOR BRANCH CIRCUITS HAVING A CONDUCTOR LENGTH LONGER THAN 75 FEET.
P. SIZE OF CONDUCTORS AND CABLES INDICATED OR SPECIFIED ARE IN AMERICAN WIRE GAGE (AWG or KCMIL AND SHARPE).
Q. INSTALL ALL WIRING IN APPROVED RACEWAY AND ENCLOSURES, EXCEPT WHERE SPECIFIED OR INDICATED, FOR LOW-VOLTAGE WIRING OR, WHERE TYPE MC CABLE IS INDICATED, SPECIFIED AS ACCEPTABLE, OR BOTH.
R. SUPPORT ALL CONDUCTORS AND CABLES IN VERTICAL INSTALLATIONS, AS REQUIRED BY NFPA-70, BY INSTALLING CABLE SUPPORTS OR PLUG-TYPE CONDUIT RISER SUPPORTS, OR WIRE-MESH SAFETY GRIPS.
S. INSTALL ALL CONDUCTORS AND CABLE IN RACEWAYS CONTINUOUS WITHOUT TAPS OR SPLICES. SPLICE OR TAP ONLY IN APPROVED BOXES AND ENCLOSURES WITH APPROVED SOLDERLESS CONNECTORS, OR CRIMP CONNECTORS AND TERMINAL BLOCKS FOR CONTROL WIRING, AND KEEP TO THE MINIMUM REQUIRED. INSULATE ALL SPLICES, TAPS, AND JOINTS AS REQUIRED BY CODE.
T. ALL MATERIALS USED TO TERMINATE, SPLICE OR TAP CONDUCTORS; DESIGNED, PROPERLY SIZED, AND UL LISTED FOR THE SPECIFIC APPLICATION AND CONDUCTORS INVOLVED, AND INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, USING THE MANUFACTURER'S RECOMMENDED TOOLS.
U. WHERE WIRING IS INDICATED AS INSTALLED, BUT THE CONNECTION IS INDICATED "FUTURE" OR "BY OTHER DIVISION, TRADES, OR CONTRACTS", LEAVE A MINIMUM OF 3' FOOT "PIGTAIL" AT THE BOX, TAPE THE ENDS OF CONDUCTORS, AND COVER THE BOX.
V. VOLTAGE DROP IN BRANCH CIRCUITS SHALL NOT EXCEED 3 PERCENT.

TYPE MC CABLE

A. USES PERMITTED
   1. TYPE MC CABLE: 600V, UNJACKETED: ANSI E119 AND E814, UL STANDARDS 44 OR 83 (AS APPLICABLE), AND 1569, NFPA 70 ARTICLE 330; ALUMINUM OR GALVANIZED STEEL INTERLOCKED ARMOR; THHM- OR XHHW-INSULATED CONDUCTORS, COLOR CODE: ICEA METHOD 1, WITH GREEN INSULATED GROUNDING CONDUCTOR.
   2. IN LIEU OF FLEXIBLE CONDUIT AND WIRING FROM LIGHT FIXTURES IN ACCESSIBLE CEILINGS TO JUNCTION BOXES (ATTACHED TO BUILDING STRUCTURE) ABOVE THE CEILING. PROVIDE CABLE WHIPS OF SUFFICIENT LENGTHS TO ALLOW FOR RELOCATING EACH LIGHT FIXTURE WITHIN A 5' FOOT RADIUS OF ITS INSTALLED LOCATION, BUT NOT EXCEEDING 6' FEET IN UNSUPPORTED LENGTHS.
   3. FOR VERTICAL DROPS IN STUD WALLS.

B. USES NOT PERMITTED:
   1. HOMERUNS TO PANELBOARDS.
   2. WHERE EXPOSED TO VIEW.
   3. WHERE EXPOSED TO DAMAGE.
   4. HAZARDOUS LOCATIONS.
   5. WET LOCATIONS.
   6. INSTALLED HORIZONTALLY WITHIN STUD WALL.
   7. WHEN RESTRICTED OTHERWISE ABOVE, AND WHEN SPECIFICALLY DISALLOWED BY THE LOCAL AHJ, OWNER OR BOTH.

CONDUCTOR COLOR CODING

A. PROVIDE COLOR CODING SYSTEM AS LISTED BELOW FOR ALL FEEDERS AND BRANCH CIRCUITS AND USED AS A BASIS FOR BALANCING LOAD ON PANELS.
B. COLOR CODING FOR CONDUCTOR #12 AWG THROUGH #6 AWG SHALL CONSIST OF COLOR CODED THERMOPLASTIC INSULATION OF THE COLORS SPECIFIED HEREIN.
C. COLOR CODING FOR CONDUCTORS #8 AWG AND LARGER SHALL BE FIELD APPLIED SELF ADHESIVE TAPE OF THE COLOR SPECIFIED HEREIN FOR THE PARTICULAR PHASE. PHASE A--BLACK, PHASE B--RED, PHASE C--BLUE, NEUTRAL--WHITE.
D. 120/208V: EQUIPMENT GROUND--GREEN, ISOLATED GROUND--GREEN WITH DISTINCTIVE WHITE OR YELLOW MARKINGS.
E. 277/480V: BROWN-A, ORANGE-B YELLOW-C, NEUTRAL - WHITE OR GRAY, EQUIPMENT GROUND - GREEN. .

BOXES AND FITTINGS

A. ALL OUTLET BOXES SHALL BE UL LISTED AND LABELED FOR USE IN THE SPACE THEY OCCUPY AND THE PURPOSE THEY SERVE.
B. SHEET METAL OUTLET AND DEVICE BOXES FOR DRY, INTERIOR APPLICATIONS: COMPLY WITH NEMA OS 1 AND UL 514A.
C. CAST-METAL OUTLET AND DEVICE BOXES FOR EXTERIOR APPLICATIONS: COMPLY WITH NEMA FB 1, FERROUS ALLOY, TYPE FS OR FD, WITH GASKETED COVER.
D. OUTLET BOXES INSTALLED WITHIN FIRE RATED ASSEMBLIES SHALL HAVE A FIRE RATING EQUAL TO OR GREATER THAN THE RATING OF THE WALL IN WHICH IT IS INSTALLED.
E. OUTLET BOXES SHALL BE 4 INCHES SQUARE BY 2 1/8 INCHES DEEP , EXCEPT FOR 2" PARTITIONS SHALL BE AT LEAST 1-1/2" DEEP.
F. OUTLET BOXES FOR VOICE AND DATA DEVICES SHALL BE 4 11/16 INCHES SQUARE BY 2 1/8 INCHES DEEP.
G. ALL PULLBOXES SHALL BE CONSTRUCTED OF GALVANIZED STEEL, OF METAL GAUGE AND PHYSICAL SIZE AS REQUIRED BY THE N.E.C. FOR THE NUMBER AND SIZE OF CONDUITS AND CONDUCTORS ASSOCIATED WITH THE PULLBOX.
H. FIXTURE OUTLET BOXES IN/OR ON CEILINGS SHALL NOT BE LESS THAN 1-1/2" DEEP OR LESS THAN 4" SQUARE. ALL OUTLET BOXES INTENDED TO SUPPORT FIXTURES SHALL BE EQUIPPED WITH 3/8" FIXTURE STUDS FASTENED THROUGH THE BOTTOM OF THE BOX WITH FOUR BOLTS.
I. NEW OUTLET BOXES INSTALLED WITHIN NEW OR EXISTING STUD WALL CONSTRUCTION SHALL BE MOUNTED TO A STUD OR MOUNTED IN A BRACKET THAT SPANS STUD-TO-STUD, CADDY TSQB BRACKET OR APPROVED EQUAL. THE USE OF "OLD WORK" TYPE BOXES THAT.
J. ACCEPTABLE MANUFACTURERS FOR BOXES: APPLETON, STEEL CITY, RACO.

PANELBOARDS

A. PANELBOARDS SHALL BE LIGHTING AND APPLIANCE TYPE, DEAD FRONT, SAFETY TYPE, FURNISHED WITH BRANCH CIRCUIT BREAKER OVERCURRENT PROTECTIVE DEVICES, COPPER PHASE, NEUTRAL AND EQUIPMENT GROUNDING BUS BARS, MAIN CIRCUIT BREAKER OR MAIN LUG ONLY AS NOTED ON THE DRAWINGS. MAIN BUSES AND CONNECTORS SHALL BE HARD DRAWN COPPER OF 98% CONDUCTIVITY. LOAD CENTERS ARE NOT ACCEPTABLE FOR USE.
B. CIRCUIT BREAKERS SHALL BE MOLDED CASE, BOLT-ON TYPE SUITABLE FOR VOLTAGE AND AMPERE RATINGS INDICATED ON DRAWINGS AND IN PANEL SCHEDULES. REFER TO THE PANEL SCHEDULES ON THE DRAWINGS FOR ADDITIONAL ACCESSORIES TO BE PROVIDED AT SELECT CIRCUIT BREAKERS.
C. CIRCUIT BREAKERS SHALL HAVE A MINIMUM AMPERE INTERRUPTING CAPACITY (AIC) OF 10,000 AMPERES FOR 120/208V SYSTEMS, 14,000 FOR 277/480V SYSTEMS
D. D.WHERE THE POWER SYSTEM STUDY IDENTIFIES AVAILABLE FAULT CURRENT VALUES AT EXISTING AND NEW PANELS THAT ARE HIGHER THAN THE MINIMUM AIC RATINGS SPECIFIED HEREIN, PROVIDE CIRCUIT BREAKERS IN THE PANELS THAT HAVE AIC RATINGS GREATER THAN THE AVAILABLE FAULT CURRENT AT THE PANEL AS DETERMINED BY THE POWER SYSTEM STUDY.
E. PROVIDE NEMA 1 ENCLOSURES FOR INTERIOR PANELS.
F. PANEL BOARDS SHALL BE EQUIPPED WITH FLUSH TYPE LOCK AND CATCH. ALL LOCKS SHALL BE KEYED ALIKE, WITH TWO KEYS SUPPLIED WITH EACH LOCK.
G. CIRCUIT BREAKERS SERVING LIGHTING CIRCUITS SHALL BE RATED FOR SWITCH DUTY.
H. CIRCUIT BREAKERS SERVING HVAC EQUIPMENT SHALL BE HACR RATED.
I. ALL LUGS SHALL BE OF THE SOLDERLESS TYPE AND RATED AT A MINIMUM OF 75°C.
J. PROVIDE NEW CIRCUIT DIRECTORIES WITHIN NEW AND EXISTING PANELS TO REFLECT THE WORK OF THIS CONTRACT. DIRECTORY SHALL BE TYPEWRITTEN OR COMPUTER GENERATED. HANDWRITTEN CIRCUIT DIRECTORIES ARE NOT ACCEPTABLE.
K. UTILIZE FINAL, OWNER ASSIGNED ROOM NAMES AND NUMBERS TO IDENTIFY SPACES WITHIN THE CIRCUIT DIRECTORIES. COMPLY WITH NEC 408.4 WHEN IDENTIFYING CIRCUITS IN CIRCUIT DIRECTORIES.
L. PANEL CIRCUITS SHALL BE CONFIGURED SUCH THAT THE LOAD IS DISTRIBUTED EVENLY ACROSS ALL THREE PHASES TO WITHIN 10% IN ACCORDANCE WITH N.E.C. REQUIREMENTS.
M. ALL NEW AND EXISTING PANEL BOARDS SHALL BE LABELED TO IDENTIFY THE AMOUNT OF FAULT CURRENT AVAILABLE AT THE PANEL AS DETERMINED BY THE POWER SYSTEM STUDY TO BE PERFORMED. LABEL SHALL BE MACHINE PRINTED, BLACK TEXT ON CLEAR, SELF ADHESIVE TAPE. INSTALL LABEL ADJACENT TO PANEL BOARDS ENGRAVED NAMEPLATE.
N. ALL NEW AND EXISTING PANEL BOARDS SHALL BE LABELED TO IDENTIFY THE ARC FLASH HAZARD CHARACTERISTICS AT THE PANEL AS DETERMINED BY THE POWER SYSTEM STUDY TO BE PERFORMED.
O. ALL "SPARE" CIRCUIT BREAKERS SHALL BE SET TO THE "OFF" POSITION.
P. PROVIDE THREE (3) EMPTY 1 INCH CONDUITS FROM EACH FLUSH MOUNTED PANEL STUBBED UP TO ABOVE ACCESSIBLE CEILING.
Q. PROVIDE HANDLE TIES ON ALL MULTI-WIRE BRANCH CIRCUITS IN ACCORDANCE WITH NEC 210.4(B)
R. ACCEPTABLE MANUFACTURERS FOR PANELBOARDS BY SCHNEIDER, ABB, SIEMENS OR EATON.

SWITCHES

A. TOGGLE SWITCHES SHALL BE SINGLE POLE, 3-WAY OR 4-WAY AS NOTED ON THE DRAWINGS, 20 AMPERES, 120/277 VOLT AC TYPE, SPECIFICATION GRADE WITH SCREW TERMINALS. HUBBELL 1221-X, 1223-X OR 1224-X OR APPROVED EQUIVALENT BY ONE OF THE ADDITIONAL MANUFACTURERS SPECIFIED HEREIN.
B. TOGGLE SWITCHES SHALL BE MOUNTED AT DOORS, INSTALLED ADJACENT TO THE TRIM ON THE STRIKING SIDE OF THE DOOR, REGARDLESS OF THE LOCATION INDICATED ON THE DRAWINGS. VERIFY ALL DOOR SWINGS PRIOR TO INSTALLATION OF OUTLET BOXES FOR SWITCHES.
C. DEVICE COLOR SHALL BE AS SELECTED BY THE OWNER/ARCHITECT.
D. PROVIDE A NEUTRAL CONDUCTOR TO ALL SWITCH LOCATIONS
E. ADDITIONAL ACCEPTABLE MANUFACTURERS FOR SWITCHES: LEGRAND, LEVITON.

RECEPTACLES

A. RECEPTACLES SHALL BE 20 AMP, 125 VOLT, 2-POLE, 3-WIRE, GROUNDING TYPE, NEMA 5-20R WITH SCREW TERMINALS. HUBBELL 5362-W OR APPROVED EQUAL BY ONE OF THE ADDITIONAL MANUFACTURERS SPECIFIED HEREIN.
B. GFCI RECEPTACLES SHALL BE 20 AMP, 125 VOLT, 2-POLE, 3-WIRE, GROUNDING TYPE, FEED THROUGH TYPE CAPABLE OF PROTECTING DOWNSTREAM RECEPTACLES ON A SINGLE CIRCUIT, SOLID STATE GROUND FAULT SENSING AND SIGNALING, 5 MILLIAMP TRIP LEVEL, NEMA 5-20R WITH SCREW TERMINALS. HUBBELL GFS362-X OR APPROVED EQUAL BY ONE OF THE ADDITIONAL MANUFACTURERS SPECIFIED HEREIN.
C. ISOLATED GROUND RECEPTACLES SHALL BE ORANGE, 20 AMP, 125 VOLT, 2-POLE, 3-WIRE, GROUNDING TYPE, NEMA 5-20R WITH SCREW TERMINALS, HUBBELL IG-5362-W OR APPROVED EQUAL BY ONE OF THE ADDITIONAL MANUFACTURERS SPECIFIED HEREIN.
D. PROVIDE SPECIAL PURPOSE RECEPTACLES HAVING NEMA CONFIGURATIONS THAT MATE AND MATCH THE NEMA PLUG CONFIGURATION PROVIDED WITH THE EQUIPMENT TO BE CONNECTED.
E. COVER PLATES FOR EXTERIOR RECEPTACLES SHALL BE RATED FOR "WEATHERPROOF WHILE IN USE".
F. DEVICE COLOR SHALL BE AS SELECTED BY THE OWNER/ARCHITECT.
G. ADDITIONAL ACCEPTABLE MANUFACTURERS FOR SWITCHES AND RECEPTACLES: LEGRAND, LEVITON.

GFCI PROTECTION:

A. ALL KITCHEN SINGLE PHASE RECEPTACLES RATED 150 VOLTS TO GROUND OR LESS, 50 AMPS OR LESS AND THREE PHASE RECEPTACLES RATED 150 VOLTS TO GROUND OR LESS, 100 AMPS OR LESS SHALL HAVE GROUND FAULT CIRCUIT INTERRUPTER PROTECTION FOR PERSONNEL IN ACCORDANCE WITH NEC 210.8, (B), (1) - (10), OR THE EQUIVALENT REQUIREMENT WITHIN THE APPLICABLE ELECTRICAL CODE.
B. THE "GFCI" NOTATION AT A DEVICE OR CIRCUIT BREAKER INDICATES THAT GFCI PROTECTION SHALL BE PROVIDED FOR THE CIRCUIT OR CIRCUITS INDICATED. GFCI PROTECTION SHALL BE PROVIDED BY ONE OF THE FOLLOWING MEANS:
- INTEGRAL GFCI PROTECTION WITHIN THE DEVICE (NEMA 5-20R RECEPTACLES), WHEN THE DEVICE IS ABLE TO BE INSTALLED IN A READILY ACCESSIBLE LOCATION AS DEFINED BY THE APPLICABLE ELECTRICAL CODE.
- GFCI CIRCUIT BREAKER INSTALLED WITHIN THE PANEL FOR SERVICE TO THE CIRCUIT OR CIRCUITS.
- GFCI CIRCUIT BREAKER INSTALLED WITHIN AN INDIVIDUAL ENCLOSURE EXTERNAL TO THE PANEL FOR SERVICE TO THE CIRCUIT.
- DEAD-FRONT GFCI DEVICE INSTALLED IN A READILY ACCESSIBLE LOCATION AS DEFINED BY THE NEC (APPLICABLE TO 20 AMP, 120 VOLT CIRCUITS).
- AN INDIVIDUALLY MOUNTED EXTERNAL SPECIAL PURPOSE GROUND FAULT CIRCUIT INTERRUPTER (SPGFCI) DEVICE SIMILAR TO "SHOCK BLOCK" PRODUCTS AS MANUFACTURED BY LITTLE FUSE, OR APPROVED EQUAL.
- DEAD FRONT DEVISES SHALL BE BE LABELED TO IDENTIFY THE CIRCUIT AND THE LOAD SERVED BY THE DEVICE.

COVER PLATES FOR TOGGLE SWITCHES AND RECEPTACLES

A. COVER PLATES WITHIN NON-FOOD SERVICE AREAS SHALL BE NYLON, OF CONFIGURATION TO MATCH THE WIRING DEVICE.
B. COVER PLATES WITHIN THE FOOD SERVICE AREA SHALL BE STAINLESS STEEL WITH STAINLESS STEEL HARDWARE, UNLESS OTHERWISE NOTED.
C. CONFIGURATION AND COLOR OF COVER PLATE SHALL MATCH THAT OF THE WIRING DEVICE THAT THE PLATE WILL BE INSTALLED ON.
D. COVER PLATE COLOR SHALL BE AS SELECTED BY THE OWNER/ARCHITECT.
E. ADDITIONAL ACCEPTABLE MANUFACTURERS FOR COVER PLATES: LEGRAND, LEVITON.

MOUNTING HEIGHTS FOR ELECTRICAL DEVICES AND EQUIPMENT

A.DEVICES AND EQUIPMENT SHALL BE INSTALLED AT THE MOUNTING HEIGHTS NOTED BELOW UNLESS NOTED OTHERWISE ON THE DRAWINGS OR REQUIRED BY APPLICABLE CODES AND STANDARDS:
- 1TOGGLE SWITCHES, WALL SWITCH OCCUPANCY SENSORS AND DIMMERS FOR LIGHTING CONTROL - TOP OF DEVICE 48" AFF
- CONVENIENCE RECEPTACLES -TOP OF DEVICE 18" AFF
- CONVENIENCE RECEPTACLES AT COUNTERTOPS - BOTTOM OF DEVICE 44" AFF OR AS NOTED ON THE DRAWINGS
- RECEPTACLES AT FOOD SERVICE EQUIPMENT - AS INDICATED ON THE FINAL, APPROVED FOOD SERVICE SHOP DRAWINGS.
- TELEPHONE AND DATA OUTLETS - TOP OF DEVICE 18" AFF OR AS REQUIRED BY THE ADJACENT CASEWORK
- DISCONNECT SWITCHES - TOP OF ENCLOSURE 66" AFF
- PANELBOARDS - TOP OF ENCLOSURE 72" AFF

DISCONNECT SWITCHES

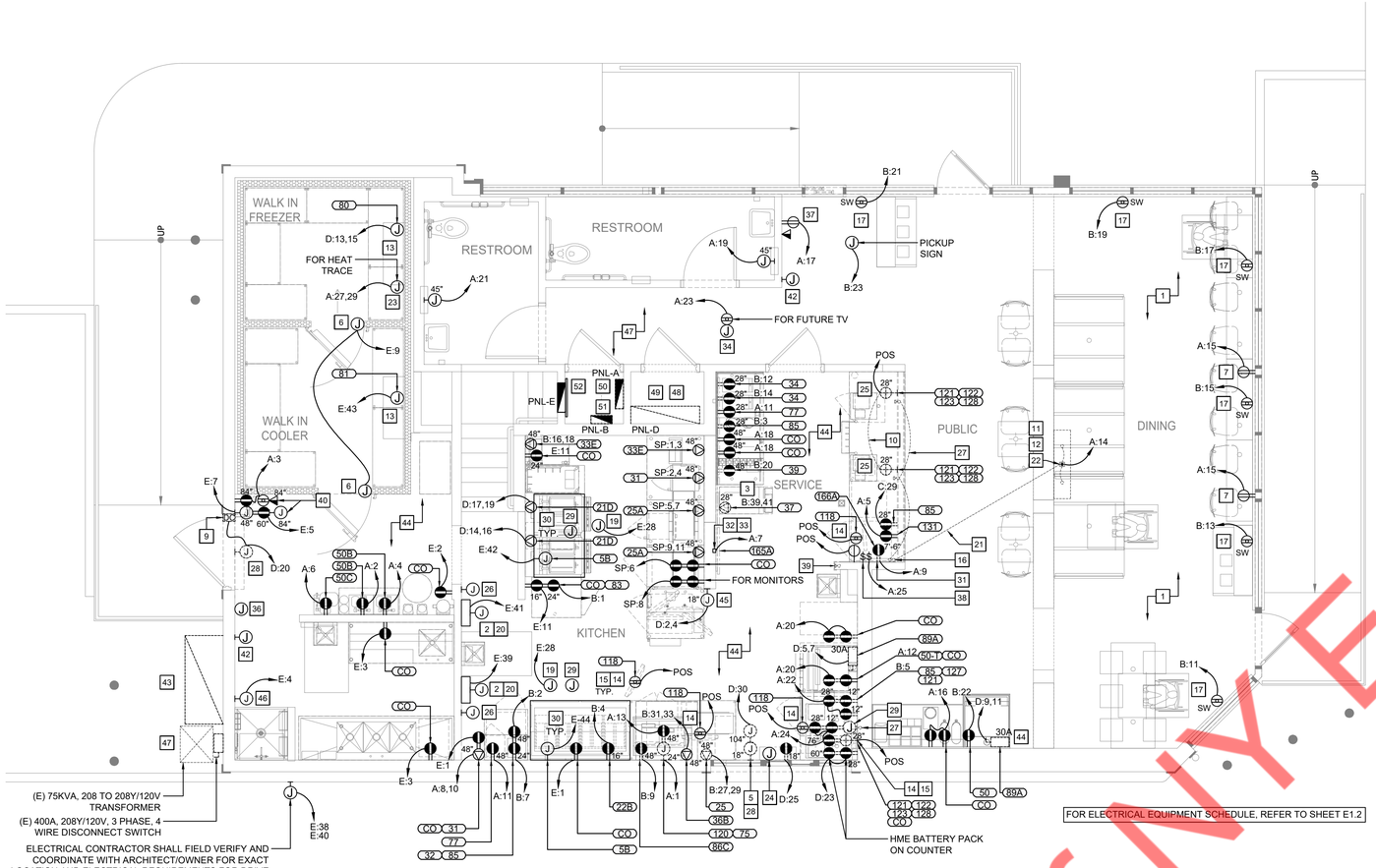
A. DISCONNECT SWITCHES SHALL BE HEAVY DUTY TYPE, UL LISTED AND LABELED, EQUIPPED WITH A LUG FOR TERMINATION OF THE EQUIPMENT GROUNDING CONDUCTOR.
B. DISCONNECT SWITCHES SHALL HAVE NEMA 1 ENCLOSURES FOR DRY, INDOOR APPLICATIONS; NEMA 3R ENCLOSURES FOR OUTDOOR OR WET LOCATION APPLICATIONS.
C. DISCONNECT SWITCHES INSTALLED EXPOSED IN FOOD SERVICE AREAS SHALL BE NEMA 4X STAINLESS STEEL.
D. ALL DISCONNECT SWITCHES SHALL BE EQUIPPED WITH AN ENGRAVED NAMEPLATE TO IDENTIFY THE SERVING PANEL, CIRCUIT NUMBERS AND THE LOAD SERVED BY THE SWITCH.
E. ACCEPTABLE MANUFACTURERS FOR DISCONNECT SWITCHES: SCHNEIDER, ABB, SIEMENS OR EATON.

DUCT MOUNTED SMOKE DETECTORS

A. PROVIDE A 120 VOLT POWER SOURCE TO ALL DUCT MOUNTED SMOKE DETECTORS INSTALLED WITHIN NEW AND EXISTING MECHANICAL EQUIPMENT.
B. PROVIDE A DUCT MOUNTED SMOKE DETECTORS WITHIN NEW AND EXISTING MECHANICAL EQUIPMENT AS REQUIRED BY APPLICABLE CODES. FINAL ELECTRICAL CONNECTION AND ALL INTERLOCK WIRING BY THE ELECTRICAL CONTRACTOR.
C. PROVIDE ALL INTERLOCK WIRING IN CONDUIT BETWEEN ALL DUCT DETECTORS SUCH THAT UPON DETECTING SMOKE IN ANY ONE DETECTOR, ALL ROOF TOP UNITS SHALL BE SHUT DOWN.
D. PROVIDE TEST/RESET SWITCH AND PIEZO ALERT SOUNDER AND REMOTE ANNUNCIATORS ALARM LED MOUNTED AS DIRECTED BY LOCAL AHJ. EC TO PROVIDE ALL REQUIRED INTERLOCK WIRING BETWEEN DUCT DETECTOR AND REMOTE SWITCH.
E. REFER TO DETAILS ON MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.

TESTING

A. PROVIDE ALL TESTS AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
B. PROVIDE THE TESTS AS OUTLINED HEREINAFTER AND OTHER TESTS REQUIRED TO ESTABLISH THE ADEQUACY, QUALITY, SAFETY, COMPLETED STATUS AND SUITABLE OPERATION OF EACH SYSTEM.
C. PROMPTLY CORRECT ANY FAILURES, DEFICIENCIES AND/OR DEFECTS REVEALED BY THESE TESTS. AFTER CORRECTING FAILURES, DEFICIENCIES OF DEFECTS, CONDUCT NEW TESTING TO VERIFY THAT THE DEFICIENCY HAS BEEN RECTIFIED AND THE SYSTEM IS



POWER PLAN - 1ST FLOOR

1/4" = 1'-0"

KEYED NOTES:

1. ALL RECEPTACLES IN DINING ROOM SHALL BE TAMPER RESISTANT TYPE WHERE APPLICABLE.
2. RECESSED JUNCTION BOX FOR CAPTIVE AIRE HOOD CONTROL PANEL HMI SWITCH. PROVIDE A 3/4" CONDUIT FROM THIS JUNCTION BOX TO THE HOOD CONTROL PANEL WITH (1) CAT 5E CABLE WITH RJ45 JACK ON EACH END.
3. SHAKE MACHINE RECEPTACLE. - NEMA L15-20R. ELECTRIC CONTRACTOR SHALL PROVIDE & INSTALL CORD & CAP.
4. NOT USED
5. ELECTRIC CONTRACTOR PROVIDE 4"x4" JUNCTION BOX WITH 3/4"CONDUIT FOR LOOP DETECTOR CONDUCTORS AT PICK UP WINDOW. SEE DETAIL 2 ON SHEET E7.2.
6. JUNCTION BOX IN ACCESSIBLE ATTIC SPACE. PROVIDE 120V CONNECTION TO COOLER/FREEZER DOOR HEATERS.
7. TAMPER RESISTANT DUPLEX RECEPTACLE WITH (2) USB CHARGING PORTS CENTERED ON THE TABLE AND FLUSH MOUNTED IN WALL BELOW TABLE. RECEPTACLE SHALL BE PASS & SEYMOUR #TR5362USBGRY, GRAY WITH STAINLESS STEEL COVER PLATE.
8. NOT USED
9. ELECTRIC CONTRACTOR SHALL INSTALL DOOR SWITCH PROVIDED WITH AIR CURTAIN.
10. ROUTE CONDUITS UNDER SLAB BETWEEN SALES COUNTER SECTIONS.
11. ELECTRICAL CONTRACTOR SHALL INSTALL AND WIRE ALL BOXES/RECEPTACLES PROVIDED WITH TABLE PER TABLE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
12. CONCRETE SLAB "LEAVE OUT" FOR LOCATING FLOOR BOX AND ROUTING LIQUID-TIGHT NON-METALLIC FLEX FROM CONDUIT FITTING IN SIDE OF FLOOR BOX TO TABLE LEGS.
13. JUNCTION BOX AT 96" ABOVE WALK-IN FLOOR FOR LIQUID TIGHT FLEX CONNECTION TO FAN COIL UNIT. PROVIDE JUNCTION BOX FOR WIB EVAPORATOR COIL AS PER MANUFACTURER'S REQUIREMENTS.
14. PROVIDE AND INSTALL (GREEN/ WHITE) ISOLATED GROUND CONDUCTOR WITH ALL "POS" CIRCUITS. CONNECT ISOLATED GROUND WIRE TO ISOLATED GROUND BUS IN MPS. POS CIRCUIT CONDUCTORS SPLICES SHALL BE SOLDERED AND WIRE NUTTED. ALL "POS" HOMERUNS SHALL BE FED BACK TO PANEL "POS". SEE SHEET E6.0. 15 LCD MONITOR POS DUPLEX RECEPTACLE (HUBBELL # IG5262) IN 4" SQUARE J-BOX. SEE SHEET E6.1.
15. LCD MONITOR POS DUPLEX RECEPTACLE (HUBBELL # IG5262) IN 4" SQUARE J-BOX. SEE SHEET E6.0.
16. ELECTRIC CONTRACTOR PROVIDE 2" CONDUIT WITH PULL WIRE FOR P.O.S. COMMUNICATION CABLE, SEE SHEET E6.1.
17. PROVIDE NEW SHOW WINDOW RECEPTACLE ABOVE WINDOW ON WALL OR CEILING AS REQUIRED TO MEET SHOW WINDOW REQUIREMENTS. COORDINATE THE EXACT LOCATION WITH THE ARCHITECT. CONTRACTOR TO FIELD VERIFY THE EXISTING SHOW WINDOW RECEPTACLE AVAILABILITY & OPERABLE CONDITION. REUSE IF POSSIBLE; OTHERWISE PROVIDE NEW AS SHOWN ON PLAN.
18. NOT USED
19. JUNCTION BOX ELECTRIC SOLENOID VALVE ON GAS SUPPLY LINE INSTALLED BY PLUMBING CONTRACTOR . COORDINATE WITH PLUMBING CONTRACTOR FOR EXACT LOCATION AND CONNECTIONS.
20. CAPTIVE AIRE HOOD CONTROL PANEL FURNISHED WITH THE HOODS. INSTALLATION BY THE MECHANICAL CONTRACTOR. REFER TO DETAILS 5 ON SHEET E8.2 AND CAPTIVE AIRE DRAWINGS FOR WIRING REQUIREMENTS. COORDINATE EXACT LOCATION ON FIELD WITH OWNER/ARCHITECT PRIOR TO ROUGH-IN. BASE BID ACCORDINGLY.
21. PROVIDE 3/4" PVC IN/UNDER FLOOR SLAB BETWEEN FLOOR BOXES AND TO WALL AS SHOWN. STUB UP IN WALL, TRANSITION TO EMT AND ROUTE TO PANEL VIA SWITCH AT SERVICE COUNTER WALL.
22. ELECTRICAL CONTRACTOR SHALL PROVIDE SINGLE-GANG FLOOR BOX FOR POWER TO COMMUNAL TABLES, LEGRAND "OMNIBOX" #880CS1-1 CAST IRON FLOOR BOX WITH #881TCCL CARPET/TILE FLANGE AND #830CXTCAL COVER PLATE. PROVIDE LIQUID-TIGHT NON-METALLIC FLEX FROM FLOOR BOX THRU TABLE LEG TO RECEPTACLE(S). COORDINATE INSTALLATION WITH TABLE PROVIDER. ROUGH-IN FLOOR BOX AND LIQUID-TIGHT NON-METALLIC FLEX TO TABLE LEGS PRIOR TO INFILL OF SLAB "LEAVE OUT" WITH CONCRETE.
23. SURFACE MOUNT JUNCTION BOX FOR 208V CONNECTION TO HEAT TAPE AROUND CONDENSATE DRAIN LINE. HEAT TAPE SHALL BE PROVIDED AND INSTALLED BY ELECTRIC CONTACTOR; RAYCHEM WINTERGARD #H621 OR EQUIVALENT WITH HARDWIRED POWER CONNECTION AND END SEAT. COORDINATE EXACT LOCATION ON FIELD PRIOR TO ROUGH-INS.
24. PROVIDE JUNCTION BOX ABOVE CEILING FOR FUTURE WI-FI. PROVIDE 1" CONDUIT WITH CAT 6 CABLE FROM JUNCTION BOX TO MANAGERS WORKSTATION AND BLANK COVER ON JUNCTION BOX.
25. POS QUAD RECEPTACLE (HUBBELL #IG5262) IN 4" SQUARE JUNCTION BOX. SEE SHEET E6.2.
26. PROVIDE & INSTALL 4" OCTAGONAL JUNCTION BOX RECESSED IN WALL FOR HOOD FIRE SUPPRESSION SYSTEM PULL STATION. INSTALL 3/4" CONDUIT WITH END BUSHINGS FROM JUNCTION BOX TO 6" ABOVE CEILING. SEE DETAIL 3 ON SHEET E8.1 AND KITCHEN HOOD DRAWINGS.
27. ELECTRIC CONTRACTOR PROVIDE 1" CONDUIT UNDER GROUND CONDUIT TO 1" CONDUIT WITH PULL STATION TO FLUSH MUD RING @28" FOR POS CABLING.
28. EXISTING AIR CURTAIN AND CONTROLS TO REMAINS UNCHANGED. RECIRCUIT AS SHOWN IF NOT IN OPERABLE CONDITION. BASE BID ACCORDINGLY.
29. OWNER FURNISHED CAPTIVE AIRE ROOM SENSOR AT 90" AFF. INSTALLED BY MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO WIRE SENSOR INTO HOOD CONTROL PANEL. CONTRACTOR COORDINATE LOCATION, MOUNTING HEIGHT OF JUNCTION BOX WITH OWNER PRIOR TO ROUGH-IN.
30. RECEPTACLES SERVING COOKING EQUIPMENT OR TIMERS UNDER HOOD SHALL BE CAPABLE OF BEING DE-ENERGIZED ON ACTIVATION OF HOOD FIRE SUPPRESSION SYSTEM. WIRE RECEPTACLES UNDER EACH HOOD TO CONTACTORS.
31. RECEPTACLE BEHIND BREAKFAST MENU BOARD, PROVIDE PASS & SEYMOUR (LEGRAND) CAT #TV1LVKITWCC2 SINGLE GANG RECESSED TV BOX. VERIFY MOUNTING HEIGHT SHOWN WITH OWNER PRIOR TO ROUGH-IN.
32. ANODIZED ALUMINUM SURFACE RACEWAY APPROX. 5'-0" LONG MOUNTED VERTICAL TO WALL FROM ABOVE THE CEILING DOWN TO SHELF FOR POWER/DATA TO (2) MONITORS (118). REFER TO ELEVATION 2B/K2.0 FOR LOCATION. SURFACE RACEWAY SHALL BE WIRE MOLD ALS300 SERIES WITH DIVIDER (ALS300D5), OFFSET DUPLEX RECEPTACLE COVER (ALS346DO) AND OFFSET GROMMETED COVER PLATE (ALS356Z) FOR DATA CABLES. PROVIDE ALL REQUIRED DIVIDER CLIPS, GROUND CLAMP, END FITTINGS, ETC... FOR A COMPLETE ASSEMBLY. PROVIDE (1) ISOLATED GROUND DUPLEX RECEPTACLE WIRED TO POS-2. INSTALL RECEPTACLE AND GROMMETED COVER PLATES AS CLOSE TO BOTTOM OF RACEWAY AS POSSIBLE.
33. POWER SUPPLY BOX ABOVE CEILING FOR POWER TO INTERIOR MENU BOARDS, FURNISHED BY SIGN VENDOR. E.C. SHALL MAKE ALL CONNECTIONS PER MANUFACTURERS REQUIREMENTS
34. DUPLEX RECEPTACLE FLUSH IN CEILING AND JUNCTION BOX ABOVE RESTROOM VESTIBULE ENTRANCE AT 10'-6" A.F.F. FOR FUTURE TV. PROVIDE 1" CONDUIT WITH PULL STRING FROM JUNCTION BOX TO MANAGERS WORKSTATION AND BLANK COVER ON JUNCTION BOX.
35. NOT USED.
36. 4X4 J-BOXES WITH BLANK STAINLESS STEEL FACE PLATE 1" C. TO 6" ABOVE CEILING. FOR FUTURE.
37. PROVIDE RECEPTACLE/DATA OUTLET FOR EXTERIOR FOOD LOCKER -120V. 1Ø. CONTRACTOR SHALL COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH FOOD LOCKER MANUFACTURER REPRESENTATIVE PRIOR TO ROUGH-IN.
38. PROVIDE 3/4" PVC IN/UNDER FLOOR SLAB BETWEEN FLOOR BOXES AND TO WALL AS SHOWN. STUB UP IN WALL, TRANSITION TO EMT AND ROUTE TO PANEL VIA SWITCHES AT SERVICE COUNTER WALL.
39. FOR BUMP BAR AND CRT CABLING. REFER TO SHEET E-6.1 FOR ADDITIONAL INFORMATION.
40. PROVIDE RJ 45 JACK. COORDINATE EXACT LOCATION ON FIELD PRIOR TO ROUGH-INS.
41. NOT USED.
42. VERTICALLY MTD. J-BOX FOR TEMPERATURE SENSOR AT + 60" AND IN HVAC RETURN DUCT AS INDICATED. WHERE LENNOX HVAC UNITS ARE BEING USED, PROVIDE JUNCTION BOX AT 54" A.F.F FOR HUMIDISTAT. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL 1/2" C. WITH #18-2 THERMOSTAT CABLE FROM TEMPERATURE SENSORS TO THERMOSTAT IN OFFICE AND 1/2"C. WITH #18-8 THERMOSTAT CABLE FROM THERMOSTAT TO HVAC UNIT (& 1/2"C WITH #18- 4 THERMOSTAT CABLE FROM HUMIDISTAT TO HVAC UNIT). SEE SHEET E5.0 AND MECHANICAL DRAWINGS.
43. EXISTING 600A (MCB), 120/208V, 3 PHASE, 4-WIRE ELECTRICAL PANEL 'MDP'. CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATION WITH ARCHITECT/OWNER PRIOR TO ROUGH IN.
44. EXISTING KITCHEN EQUIPMENTS TO REMAIN. UTILIZE EXISTING BRANCH BEAKER IF IT'S IN OPERABLE CONDITION, OTHERWISE PROVIDE NEW. REUSE EXISTING FEEDER IF POSSIBLE, RECONNECT IT TO NEW ELECTRICAL PANEL, EXTEND FEEDER, CONDUIT AS NEEDED OTHERWISE PROVIDE NEW FEEDER AS REQUIRED. ELECTRICAL CONTRACTOR TO COORDINATE EXACT ELECTRICAL REQUIREMENT & LOCATION WITH ARCHITECT/OWNER PRIOR TO ROUGH-IN.
45. CONTRACTOR PROVIDE JUNCTION BOX FOR SUB-PANEL BELOW COUNTER. CONTRACTOR COORDINATE VOLTAGE AND POWER REQUIREMENTS WITH OWNER PRIOR TO ROUGH-IN.
46. PROVIDE JUNCTION BOX FOR IRRIGATION CONTROL. FIELD VERIFY LOCATION WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.
47. EXISTING ELECTRICAL PANELS & SERVICE EQUIPMENTS SHALL REMAIN. CONTRACTOR SHALL FIELD VERIFY THE EXACT RATING, VOLTAGE, PHASE, ELECTRICAL DISTRIBUTION AND OPERABLE CONDITION IN FIELD. PROVIDE NEW IF FOUND INOPERABLE. ELECTRICAL CONTRACTOR SHALL VERIFY THE LOCATION OF ELECTRICAL PANELS IN COMPLIANCE WITH NEC ARTICLE 110.26(A) AND (B). ELECTRICAL CONTRACTOR SHALL FIELD VERIFY THAT THE PANELS ARE UNOBSTRUCTED AND THE AREA WHERE THE PANELS ARE PLACED SHALL NOT BE USED AS A STORAGE SPACE.
48. EXISTING 400A (MCB), 120/208V, 3 PHASE, 4-WIRE ELECTRICAL SUB PANEL. CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATION AND ARCHITECT/OWNER PRIOR TO ROUGH IN.
49. EXISTING 600A (MLO), 120/208V, 1 PHASE, 4-WIRE ELECTRICAL PANEL 'D' MOUNTED ON 400A SUBPANEL. CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATION WITH ARCHITECT/OWNER PRIOR TO ROUGH IN.
50. EXISTING 125A (MLO), 120/208V, 1 PHASE, 3-WIRE ELECTRICAL PANEL 'A'. CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATION WITH ARCHITECT/OWNER PRIOR TO ROUGH IN.
51. EXISTING 225A (MLO), 120/208V, 1 PHASE, 3-WIRE ELECTRICAL PANEL 'B'. CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATION WITH ARCHITECT/OWNER PRIOR TO ROUGH IN.
52. NEW 200A (MCB), 120/208V, 3 PHASE, 4-WIRE ELECTRICAL PANEL 'E'. CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATION WITH ARCHITECT/OWNER PRIOR TO ROUGH IN.

GENERAL NOTES:

A. FOR ELECTRICAL STUB, REFER TO SHEET E-3.1.

B. FOR ELECTRICAL SPECIFICATIONS, REFER TO SHEET E0.1 & E0.2.

C. ALL 120V OUTLETS IN KITCHEN SHALL BE 5mA GFCI BREAKER PROTECTED. SEE PANEL SCHEDULES FOR MORE INFORMATION.

D. PORTIONS OF RACEWAY AND CABLE THAT ARE EXPOSED TO WIDELY DIFFERENT TEMPERATURES, SUCH AS COOLERS, FREEZERS OR SERVICE ENTRANCE CONDUCTORS SHALL BE SEALED WITH A SEALANT IDENTIFIED FOR USE WITH CABLE INSULATION, CONDUCTOR INSULATION A BARE CONDUCTOR. A SHIELD OR OTHER COMPONENTS PER SECTION 300.7(A).

E. NO FLEX CONDUIT!

F. FOR EXACT LOCATIONS OF KITCHEN & MECHANICAL EQUIPMENT AND POINTS OF CONNECTION, REFER TO KITCHEN & MECHANICAL EQUIPMENT DRAWINGS AND MANUFACTURER'S SHOP DRAWINGS.

G. ALL CIRCUIT FEEDERS AND DISCONNECTS SHALL BE SIZED BY NEC.

H. CONTRACTOR SHALL VERIFY CIRCUIT BREAKER, DISCONNECT SWITCH, STARTER AND FUSE SIZES WITH SELECTED EQUIPMENT MANUFACTURER'S SHOP DRAWINGS PRIOR TO PLACING ORDER AND PROVIDE EVERYTHING AS REQUIRED.

I. ELECTRICAL EQUIPMENT ENCLOSURES SHALL BE NEMA-1 FOR INTERIOR AND NEMA 3R FOR EXTERIOR. IN COASTAL REGIONS THE STANDARD FOR OUTSIDE SHALL BE NEMA-4X.

J. THE SUSPENSION OF ANY ITEMS FROM BASE BUILDING STRUCTURE BY MEANS OF DRILLING, WELDING, SHOOTING ARE PROHIBITED. CONTRACTOR TO MAKE SURE ALL THE EQUIPMENTS, CONDUITS, CABLE TRAYS TO BE SUPPORTED BY MEANS OF THE BEAM CLAMPS.

K. DO NOT MEASURE/LOCATE OUTLETS ON DRAWINGS. USE DIMENSIONS PROVIDED.

L. ALL GFCI RECEPTACLES SHALL BE INSTALLED IN A READILY ALL GFCI RECEPTACLES SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION OR A DEAD FRONT GFI DEVICE INSTALLED IN A READILY ACCESSIBLE LOCATION. OR A GFCI CIRCUIT BREAKER SHALL USED TO FEED THE CIRCUIT NOTED.

M. G.C. TO COORDINATE ALL LOW VOLTAGE LOCATIONS AND REQUIREMENTS WITH TENANT & TENANT LV SUBCONTRACTOR.

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

O. OUTLETS' LOCATION SHOWN IN THE DRAWING ARE DIAGRAMMATIC, FOR ACTUAL LOCATION AND MOUNTING HEIGHT REFER ARCHITECTURAL PLAN.

P. CONTRACTOR SHALL COORDINATE EXACT RECEPTACLE TYPE FOR EQUIPMENT WITH EQUIPMENT VENDOR/MANUFACTURER.

FIELD VERIFY ALL CONDITIONS

1. DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSPECT EXISTING FIELD CONDITIONS. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.
2. THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS COST.
3. BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE PLANS AND SPECIFICATIONS NOT WITHSTANDING. THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

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DATES

RELEASE:
P.M. UPDATES:
SUBMITTAL DATE:
1: APR. 10, 2025
2:
3:
BID:
CONSTRUCTION:

REVISIONS

- 03/25/25-CHECK SET
- 04/22/25-PERMIT SET

CONSULTANT

PROFFESSIONAL SEAL

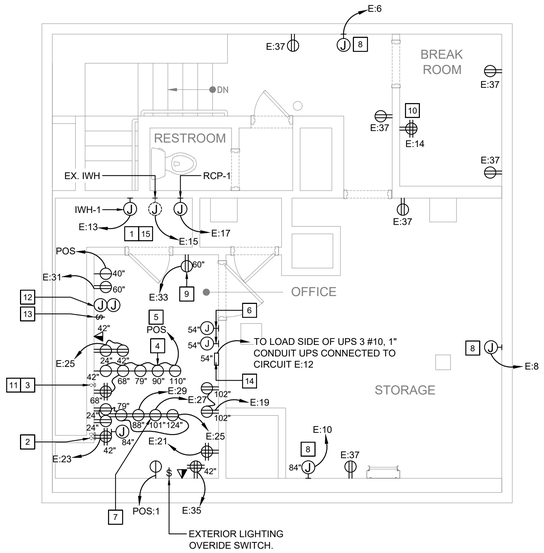
SITE INFORMATION

MK TYPE: MK2X
JIB #: 327
ADDRESS:
13648 VAN NUYS BLVD
PACOIMA, CA
91331

DRAWN BY: NYE
PROJECT #: 12079-24
SCALE:

POWER PLAN
1ST FLOOR

E1.1



POWER PLAN - 2ND FLOOR

1/4" = 1'-0"

KEYED NOTES:

1. PLUMBING EQUIPMENT SHALL BE PROVIDED WITH THE REQUIRED ROUGH-INS, MOCP, AND WIRE SIZE REQUIREMENTS. THE ELECTRICAL CONTRACTOR MUST COORDINATE WITH THE MANUFACTURER FOR THE EXACT TYPE OF ROUGH-INS AND WIRE SIZE BEFORE THE COMMENCEMENT OF WORK
2. 2" SCHEDULE 40 PVC CONDUIT WITH PULL STRING AND PROTECTIVE BUSHING FROM MUD RING TO 6" ABOVE ACCESSIBLE CEILING FOR SECURITY SYSTEM.
3. ELECTRIC CONTRACTOR PROVIDE 2" SCHEDULE 40 PVC CONDUIT WITH PULL STRING AND PROTECTIVE BUSHING FROM MUD RINGS TO 6" ABOVE ACCESSIBLE CEILING FOR P.O.S. SYSTEM.
4. ELECTRICAL FEED IN 3/4" CONDUIT FROM OFFICE JUNCTION BOX TO SINGLE RECEPTACLE (HUBBELL #IG4710) IN 4" SQ. JUNCTION BOX FOR "OCS" UNIT IN DRIVE-THRU SPEAKER BOARD.LOCATE RECEPTACLE IN LOWER LEFT HAND SIDE OF SPEAKER BOARD. .
5. PROVIDE AND INSTALL (GREEN/ WHITE) ISOLATED GROUND CONDUCTOR THRU-OUT WITH ALL "POS" CIRCUITS. CONNECT ISOLATED GROUND WIRE TO ISOLATED GROUND BUS IN MPS. POS CIRCUIT CONDUCTORS SPLICES SHALL BE SOLDERED AND WIRE NUTTED. ALL "POS" HOMERUNS SHALL BE FED BACK TO PANEL "POS".
6. 2X4 VERTICALLY MOUNTED JUNCTION BOX WITH 1/2"C. FOR THERMOSTAT. E.C. SHALL PROVIDE AND INSTALL #18-8 THERMOSTAT CABLE TO RESPECTIVE HVAC UNITS ON ROOF. SEE MECHANICAL DRAWINGS.
7. MUSIC SYSTEM POWER OUTLET.
8. TOGGLE DISCONNECT AND JUNCTION BOX (WITH-IN SIGHT OF BUILDING SIGN) AND FEED MC CABLE CABLE WHIP THRU EXTERIOR WALL AND CONNECT TO BUILDING SIGN WITH 120V. 20A DEDICATED CIRCUIT. IF NOT IN SIGHT SIGN PROVIDE LOCKABLE DISCONNECT SWITCH PER N.E.C ARTICLE 600. VERIFY MOUNTING HEIGHT AND POWER REQUIREMENTS WITH OWNER PRIOR TO ROUGH-IN.
9. DUPLEX RECEPTACLE FOR CARBON MONOXIDE DETECTOR. DETECTOR WILL BE PROVIDED BY OTHERS IF REQUIRED BY BUILDING CODE OR LOCAL JURISDICTION. VERIFY LOCATION AND MOUNTING HEIGHT OF RECEPTACLE WITH OWNER PRIOR TO ROUGH-IN.
10. TELEPHONE CABINET SHALL BE A CIRCLE A.W. #24246TCF AND #2424WB, 24" X 24" X 6" DEEP. WITH 3/4" PLYWOOD BACKBOARD. (PROVIDED BY OWNER, INSTALLED BY E.C.). CABINET SHALL BE U.L. LISTED AND INSTALLED W/ LOWER EDGE AT 12" A.F.F. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL GROUNDING WIRE FROM BUILDING GROUND AND TERMINATE AT GROUNDING LUG (1-#6 COPPER IN 1/2"C.). ALL RUN OUTS TO OUTLETS SHALL BE BY ELECTRICAL CONTRACTOR. COORDINATE EXACT LOCATION ON FIELD WITH ARCITECT/OWNER PRIOR TO ROUGH-IN.
11. 3/4" CONDUIT ONLY TO TELEPHONE BACKBOARD FROM 4"x4" JUNCTION BOX, SINGLE GANG PLASTER RING FOR SATELITE SYSTEM.
12. JUNCTION BOXES FOR "HME" INTERCOM SYSTEM. COORDINATE LOCATION WITH OWNER PRIOR TO ROUGH-IN. REFER TO SHEET E7.1 FOR ADDITIONAL INFORMATION.
13. TIMER SWITCH FOR BYPASS OF SAIL SWITCH IN DOAS-1 PLENUM. ELECTRICAL CONTRACTOR SHALL WIRE SWITCH PARALLEL WITH SAIL SWITCH FOR CONTROL OF SOLENOID VALVE ON GAS SUPPLY TO COOK LINE. OPERATION OF TIMER SHALL BYPASS SAIL SWITCH TO KEEP SOLENOID VALVE OPEN.
14. PANEL "POS"-SQUARE-D QO6-12 L100DF W/ QO115 BREAKERS, ISOLATED GROUND BAR 1Ø, 13"H X 9"W PANEL PROVIDED BY OWNER AND INSTALLED BY ELECTRICAL CONTRACTOR.
15. EXISTING WATER HEATER SHALL REMAIN. E.C. SHALL VERIFY THE EXACT LOCATION & OPERABLE CONDITION OF ELECTRICAL CONNECTION & CIRCUITRY IN THE FIELD. PROVIDE NEW AS SHOWN IF FOUND INOPERABLE. BASE BID ACCORDINGLY.

EQUIPMENT SCHEDULE:

ITEM NO.	QTY.	QTY.	EQUIPMENT DISCRIPTION	ELECTRICAL VOLTS	PHASE	AMPS	KW	DIRECT	PLUG	NEMA	MANUFACTURER	MODEL NUMBER
5B	N	2	FRYER EXAUST HOOD	240	1	0.72	0.18				CAPTIVE AIRE	
21D	N	2	CLAMSHELL GRILL	208	1	27	6		X	NEMA 6-50P	TAYLOR	L819
22B	E	1	4 BANK FRYER	120	1	13	1.56				FRYMASTER	FPGL430CA
25	E	1	PASS THRU_EXTENDED HOLDING BIN	208	1	13.6	2.8		X	NEMA 6-20P	PRINCE CASTLE	EHB34R2-JIB17 (3H X 4W)
25A	N	2	SINGLE SIDED EXTENDED HOLDING BIN	208	1	15.7	3.76		X	NEMA 6-20P	PRINCE CASTLE	EHB34F2-GMS17 (3H X 4W)
31	N	2	MICROWAVE	208	1	16	3.2		X	NEMA 6-20P	SHARP	R-CD2200M
32	N	1	CHEESE DISPENSER	120	1	4.3	0.52		X	NEMA 5-15P	SERVER	FSPWSS
33E	N	2	3-IN-1 TOASTER (CONTACT TOASTER)	208-240	1	13.5	2.8	X			PRINCE CASTLE	CTDE-SAX
34	E	2	ICE TEA/COFFEE BREWER	120	1	14	1.7		X	NEMA 5 -15P		ITCB-DV, 29" TRUNK W/ TRAY (ITCB-DV-35700.0019)
36B	N	1	CRISP & READY FRY HOLDING BIN	208	1	8	3.82		X	NEMA 6 -30P	CRYSPY MAX - QUAD LANE	MCG3527NNN
37	E	1	SHAKE MACHINE	208/230	1	20	4.64				TAYLOR441	
39	E	1	VITA MIX 570	120	1	2.6	0.31		X	NEMA 5 -15P	VITAMIX	VITA MIX 570
50	N	1	LEGACY/BEVARIETY DRINK DISPENSER AT DINING ROOM	120	1	20						
50B	N	2	LEGACY/BEVARIETY CARBONATOR W/ SHELF	115	1	20						
50C	N	1	LEGACY/BEVARIETY BOOSTER PUMP	115	1	20						
50-T	N	1	CORNELIUS DRINK DISPENSER	115	1	20						
75	E	1	TIMER FRY BIN	120	1	0.1	0.02		X	NEMA 5-15P	PRINCE CASTLE	16 CHAN 755-HM16
77	N	2	TIMER - BEVERAGE STATION AND TACO STATION	120	1	0.83	0.01		X		PRINCE CASTLE - 4CHAIN	
83	N	1	REF/FRZ DUAL TEMP_REFRIGERATOR TOP	115	1	3.7	0.43		X	NEMA 5-15P	TRUE	STG1DTA-2HS-HC
85	E	3	UNDERCOUNTER REFRIGERATOR	120	1	5.5	0.66		X	NEMA 5-15P	RANDELL	RAN 9404-7L-JIB / RAN 9404-7R-JIB
86C	E	1	UNDERCOUNTER FREEZER	120	1	6.8	0.78		X	NEMA 5-15P	RANDELL	RAN 9404F-7L-JIB / RAN 9404F-7R-JIB
89A	E	2	ICE MACHINE ABOVE ICE BIN	208/230	1	15.8		X			SCOTSMAN	#C1030SR
90A	E	2	CONDENSING UNIT FOR ICE BIN	208/230	1	2.7		X			SCOTSMAN	#ERC311
118		4	POS LCD MONITORS	120	1						XENIAL	24"W X14.5"H
120	E	1	BUMP BAR								JBX STANDARD	
121		4	CASH REGISTER	120	1	2	0.24				JBX STANDARD	
122		3	CASH DRAWER	120	1						JBX STANDARD	
123		3	RECEIPT PRINTER	120	1	1.5	0.18				JBX STANDARD	
127		1	SPARE CASH DRAWER								JBX STANDARD	
128		3	CREDIT CARD READER	120	1						JBX STANDARD	
131	E	2	VIDEO SURVEILLANCE MONITOR	120	1		0.15				JBX STANDARD	
165A		1	INTERIOR MENU BOARD	120	1	5	0.60				SIGNTECH	
166A		1	DOUBLE PANEL MENU BOARD- BREAKFAST	120	1	2.5	0.30				SIGNTECH	
80	N	1	WALK IN FREEZER EVAPORATOR	208-230	1	11.7	2.7	X			CLIMATE CONTROL	LSF120BK
81	N	1	WALK IN COOLER EVAPORATOR	115	1	20		X			CLIMATE CONTROL	LSC120AK

NOTES:

1		THE CONTRACTOR SHALL COORDINATE THE EXACT RECEPTACLE TYPE FOR EQUIPMENT WITH THE VENDOR/MANUFACTURER AND THE EXACT MOUNTING HEIGHT WITH THE ARCHITECT.
2		ALL EQUIPMENT SHALL BE PROVIDED WITH THE REQUIRED ROUGH-INS, MOCP, AND WIRE SIZE REQUIREMENTS. THE ELECTRICAL CONTRACTOR MUST COORDINATE WITH THE MANUFACTURER FOR THE EXACT TYPE OF ROUGH-INS AND WIRE SIZE FOR THE WORK COMMENCEMENT.

EQUIPMENT SCHEDULE NOTES:

1. 5mA GFCI BREAKERS MUST BE USED WHERE OUTLETS REQUIRING GFCI PROTECTION ARE NOT ACCESSIBLE FOR COMPLIANCE WITH NEC 210.8. WHERE GFCI PROTECTION SHUNT TRIP IS REQUIRED, THE CIRCUIT SHALL HAVE A GFCI BREAKER.
2. ALL SINGLE PHASE RECEPTACLE 50A OR LESS AND THREE PHASE RECEPTACLES RATED 100A OR LESS INSTALLED WITHIN THE KITCHEN AREA SHALL BE PROVIDED WITH GFCI PROTECTION AS PER NEC 210.8.
3. E.C. SHALL COORDINATE WITH EQUIPMENT SUPPLIER FOR EXACT LOCATION, MOUNTING DETAILS AND POWER REQUIREMENT AND ACCORDINGLY PROVIDE THE ELECTRICAL POWER CONNECTION TO EQUIPMENTS.

GENERAL NOTES:

A. FOR ELECTRICAL STUB, REFER TO SHEET E-3.1.

B. FOR ELECTRICAL SPECIFICATIONS, REFER TO SHEET E0.1 & E0.2.

C. ALL 120V OUTLETS IN KITCHEN SHALL BE 5mA GFCI BREAKER PROTECTED. SEE PANEL SCHEDULES FOR MORE INFORMATION.

D. PORTIONS OF RACEWAY AND CABLE THAT ARE EXPOSED TO WIDELY DIFFERENT TEMPERATURES, SUCH AS COOLERS, FREEZERS OR SERVICE ENTRANCE CONDUCTORS SHALL BE SEALED WITH A SEALANT IDENTIFIED FOR USE WITH CABLE INSULATION, CONDUCTOR INSULATION A BARE CONDUCTOR. A SHIELD OR OTHER COMPONENTS PER SECTION 300.7(A).

E. NO FLEX CONDUIT!

F. FOR EXACT LOCATIONS OF KITCHEN & MECHANICAL EQUIPMENT AND POINTS OF CONNECTION, REFER TO KITCHEN & MECHANICAL EQUIPMENT DRAWINGS AND MANUFACTURER'S SHOP DRAWINGS.

G. ALL CIRCUIT FEEDERS AND DISCONNECTS SHALL BE SIZED BY NEC.

H. CONTRACTOR SHALL VERIFY CIRCUIT BREAKER, DISCONNECT SWITCH, STARTER AND FUSE SIZES WITH SELECTED EQUIPMENT MANUFACTURER'S SHOP DRAWINGS PRIOR TO PLACING ORDER AND PROVIDE EVERYTHING AS REQUIRED.

I. ELECTRICAL EQUIPMENT ENCLOSURES SHALL BE NEMA-1 FOR INTERIOR AND NEMA 3R FOR EXTERIOR. IN COASTAL REGIONS THE STANDARD FOR OUTSIDE SHALL BE NEMA-4X.

J. THE SUSPENSION OF ANY ITEMS FROM BASE BUILDING STRUCTURE BY MEANS OF DRILLING, WELDING, SHOOTING ARE PROHIBITED. CONTRACTOR TO MAKE SURE ALL THE EQUIPMENTS, CONDUITS, CABLE TRAYS TO BE SUPPORTED BY MEANS OF THE BEAM CLAMPS.

K. DO NOT MEASURE/LOCATE OUTLETS ON DRAWINGS. USE DIMENSIONS PROVIDED.

L. ALL GFCI RECEPTACLES SHALL BE INSTALLED IN A READILY ALL GFCI RECEPTACLES SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION OR A DEAD FRONT GFI DEVICE INSTALLED IN A READILY ACCESSIBLE LOCATION. OR A GFCI CIRCUIT BREAKER SHALL USED TO FEED THE CIRCUIT NOTED.

M. G.C. TO COORDINATE ALL LOW VOLTAGE LOCATIONS AND REQUIREMENTS WITH TENANT & TENANT LV SUBCONTRACTOR.

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

O. OUTLETS' LOCATION SHOWN IN THE DRAWING ARE DIAGRAMMATIC, FOR ACTUAL LOCATION AND MOUNTING HEIGHT REFER ARCHITECTURAL PLAN.

P. CONTRACTOR SHALL COORDINATE EXACT RECEPTACLE TYPE FOR EQUIPMENT WITH EQUIPMENT VENDOR/MANUFACTURER.

FIELD VERIFY ALL CONDITIONS

1. DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSPECT EXISTING FIELD CONDITIONS. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.
2. THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS COST.
3. BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE PLANS AND SPECIFICATIONS NOT WITHSTANDING. THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

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DATES

RELEASE:

P.M. UPDATES:

SUBMITTAL DATE:
1: APR. 10, 2025
2:
3:

BID:

CONSTRUCTION:

REVISIONS

- 03/25/25-CHECK SET
- 04/22/25-PERMIT SET

CONSULTANT

SITE INFORMATION

MK TYPE: MK2X

JIB #: 327

ADDRESS:
13648 VAN NUYS BLVD
PACOIMA, CA
91331

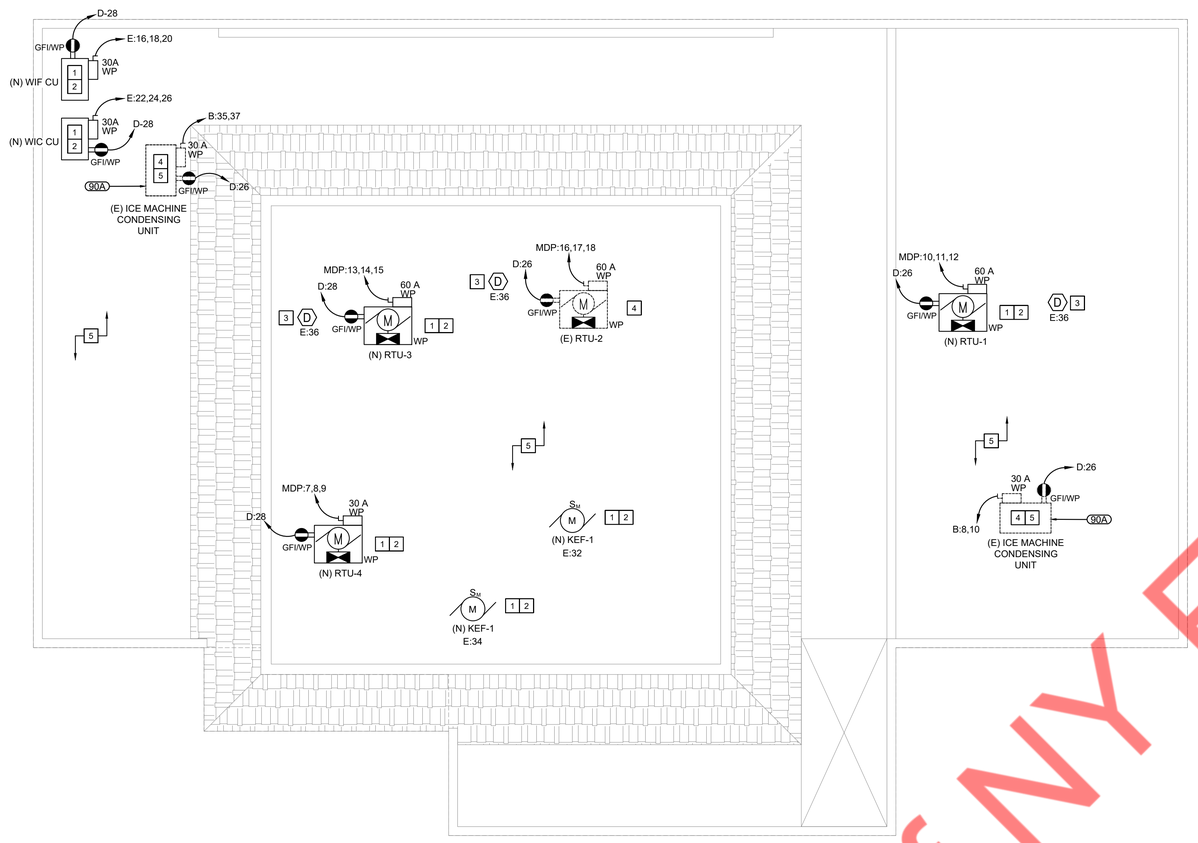
DRAWN BY: NYE

PROJECT #: 12079-24

SCALE:

POWER PLAN
2ND FLOOR

E1.2



POWER PLAN - ROOF

1/4" = 1'-0"

KEYED NOTES:

1. MECHANICAL EQUIPMENT SHALL BE PROVIDED WITH THE REQUIRED ROUGH-INS, MOCP, AND WIRE SIZE REQUIREMENTS. THE ELECTRICAL CONTRACTOR MUST COORDINATE WITH THE MANUFACTURER FOR THE EXACT TYPE OF ROUGH-INS AND WIRE SIZE BEFORE THE COMMENCEMENT OF WORK.
2. ALL OUTDOOR ELECTRICAL EQUIPMENT SHALL BE NEMA 3R RATED. COORDINATE EXACT ELECTRICAL REQUIREMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. CIRCUIT FACTORY INSTALLED RECEPTACLE AS REQUIRED. OTHERWISE PROVIDE NEW AS SHOWN
3. DUCT SMOKE DETECTOR FURNISHED BY ELECTRICAL CONTRACTOR AND INSTALLED IN SUPPLY AIR DUCT BY MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL WIRE DETECTOR PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. DETECTOR SHALL BE WIRED SO THAT ACTIVATION OF EITHER DETECTOR IN UNIT SHALL SHUT DOWN MECHANICAL UNITS. DUCT DETECTOR: 120V 1Ø, EXTEND CONDUIT AND CONDUCTORS TO NEW PANEL BOARD.
4. EXISTING HVAC UNITS TO REMAIN. UTILIZE EXISTING DISCONNECT IF IT'S IN OPERABLE CONDITION, OTHERWISE PROVIDE NEW. REUSE EXISTING FEEDER IF POSSIBLE, RECONNECT IT TO NEW ELECTRICAL PANEL, EXTEND FEEDER, CONDUIT AS NEEDED OTHERWISE PROVIDE NEW FEEDER AS REQUIRED. ELECTRICAL CONTRACTOR TO COORDINATE EXACT ELECTRICAL REQUIREMENT & LOCATION WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
5. CONTRACTOR TO VERIFY IN FIELD ANY RECEPTACLE IS PRESENT WITHIN 25FT OF EXISTING HVAC UNITS. IF YES, EXISTING RECEPTACLES TO REMAIN. WIRE TO NEW AVAILABLE CIRCUIT AS SHOWN IF NEEDED. VERIFY EXACT LOCATION. ELSE PROVIDE NEW WEATHER PROOF, GFI, 120V, 20A RECEPTACLE WITHIN 25FT OF THE HVAC UNIT.

GENERAL NOTES:

A. FOR ELECTRICAL STUB, REFER TO SHEET E-3.1.

B. FOR ELECTRICAL SPECIFICATIONS, REFER TO SHEET E0.1 & E0.2.

C. ALL 120V OUTLETS IN KITCHEN SHALL BE 5mA GFCI BREAKER PROTECTED. SEE PANEL SCHEDULES FOR MORE INFORMATION.

D. PORTIONS OF RACEWAY AND CABLE THAT ARE EXPOSED TO WIDELY DIFFERENT TEMPERATURES, SUCH AS COOLERS, FREEZERS OR SERVICE ENTRANCE CONDUCTORS SHALL BE SEALED WITH A SEALANT IDENTIFIED FOR USE WITH CABLE INSULATION, CONDUCTOR INSULATION A BARE CONDUCTOR, A SHIELD OR OTHER COMPONENTS PER SECTION 300.7(A).

E. NO FLEX CONDUIT!

F. FOR EXACT LOCATIONS OF KITCHEN & MECHANICAL EQUIPMENT AND POINTS OF CONNECTION, REFER TO KITCHEN & MECHANICAL EQUIPMENT DRAWINGS AND MANUFACTURER'S SHOP DRAWINGS.

G. ALL CIRCUIT FEEDERS AND DISCONNECTS SHALL BE SIZED BY NEC.

H. CONTRACTOR SHALL VERIFY CIRCUIT BREAKER, DISCONNECT SWITCH, STARTER AND FUSE SIZES WITH SELECTED EQUIPMENT MANUFACTURER'S SHOP DRAWINGS PRIOR TO PLACING ORDER AND PROVIDE EVERYTHING AS REQUIRED.

I. ELECTRICAL EQUIPMENT ENCLOSURES SHALL BE NEMA-1 FOR INTERIOR AND NEMA 3R FOR EXTERIOR. IN COASTAL REGIONS THE STANDARD FOR OUTSIDE SHALL BE NEMA-4X.

J. THE SUSPENSION OF ANY ITEMS FROM BASE BUILDING STRUCTURE BY MEANS OF DRILLING, WELDING, SHOOTING ARE PROHIBITED. CONTRACTOR TO MAKE SURE ALL THE EQUIPMENTS, CONDUITS, CABLE TRAYS TO BE SUPPORTED BY MEANS OF THE BEAM CLAMPS.

K. DO NOT MEASURE/LOCATE OUTLETS ON DRAWINGS. USE DIMENSIONS PROVIDED.

L. ALL GFCI RECEPTACLES SHALL BE INSTALLED IN A READILY ALL GFCI RECEPTACLES SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION OR A DEAD FRONT GFI DEVICE INSTALLED IN A READILY ACCESSIBLE LOCATION. OR A GFCI CIRCUIT BREAKER SHALL USED TO FEED THE CIRCUIT NOTED.

M. G.C. TO COORDINATE ALL LOW VOLTAGE LOCATIONS AND REQUIREMENTS WITH TENANT & TENANT LV SUBCONTRACTOR.

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

O. OUTLETS' LOCATION SHOWN IN THE DRAWING ARE DIAGRAMMATIC, FOR ACTUAL LOCATION AND MOUNTING HEIGHT REFER ARCHITECTURAL PLAN.

P. CONTRACTOR SHALL COORDINATE EXACT RECEPTACLE TYPE FOR EQUIPMENT WITH EQUIPMENT VENDOR/MANUFACTURER.

FIELD VERIFY ALL CONDITIONS

1. DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSPECT EXISTING FIELD CONDITIONS. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.
2. THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS COST.
3. BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE PLANS AND SPECIFICATIONS NOT WITHSTANDING. THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

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DATES

RELEASE:
P.M. UPDATES:
SUBMITTAL DATE:
1: APR. 10, 2025
2:
3:
BID:
CONSTRUCTION:

REVISIONS

- 03/25/25-CHECK SET
- 04/22/25-PERMIT SET

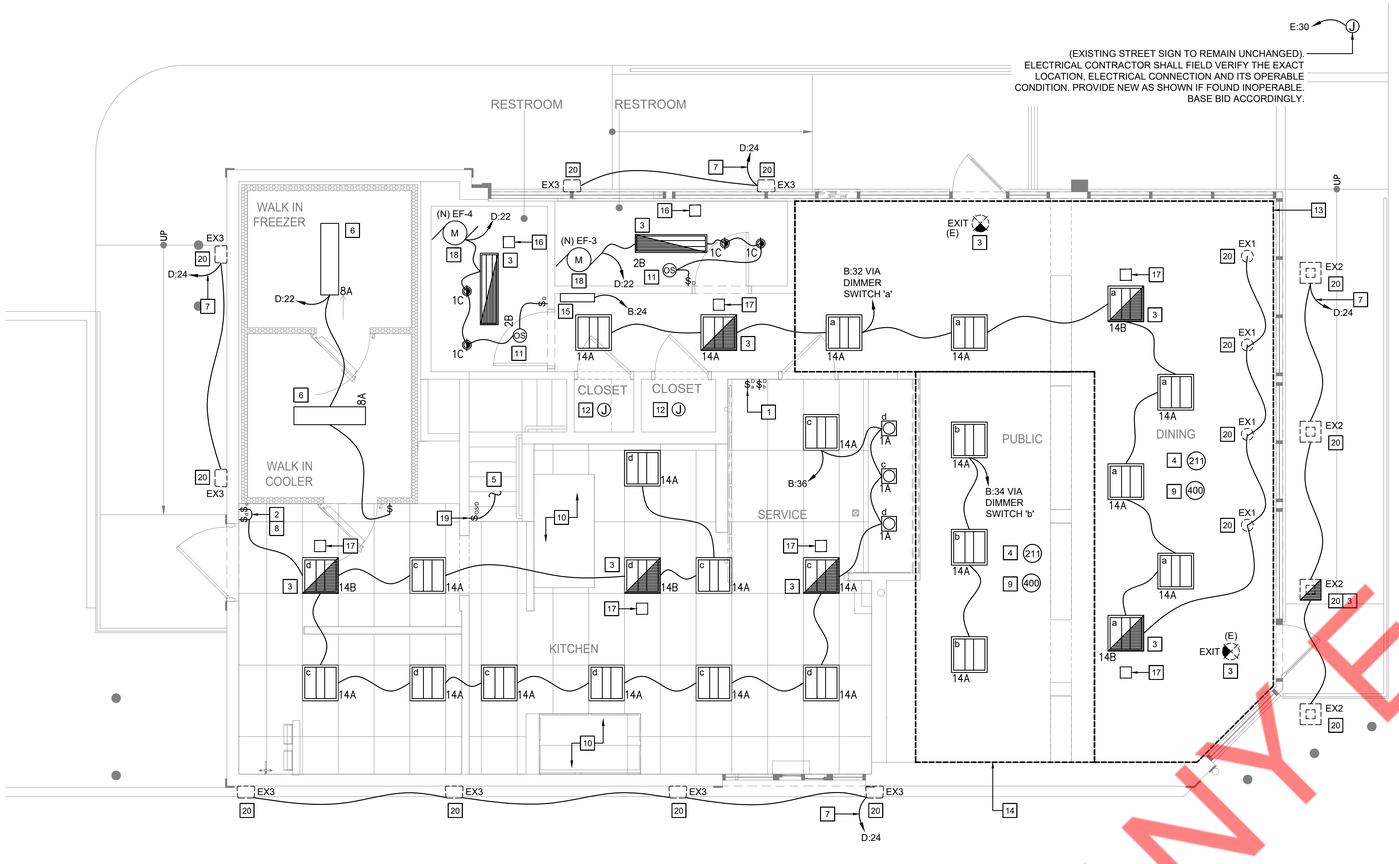
CONSULTANT

SITE INFORMATION

MK TYPE: MK2X
JIB #: 327
ADDRESS:
13648 VAN NUYS BLVD
PACOIMA, CA
91331
DRAWN BY: NYE
PROJECT #: 12079-24
SCALE:

POWER PLAN ROOF

E1.3



LIGHTING PLAN - 1ST FLOOR

1/4" = 1'-0"

KEYED NOTES:

1. (2) LOW VOLTAGE DIMMERS FOR CONTROL OF LIGHT FIXTURES IN DAYLIGHT ZONES 1 AND 2 MTD. AT 42" A.F.F. PROVIDE ENGRAVED IDENTIFICATION FOR EACH DIMMER. REFER TO E8.2 FOR WIRING DIAGRAMS. LOWER CASE LETTER AT SWITCH CORRESPONDS TO LOWER CASE LETTER AT LIGHT FIXTURE.
2. SWITCHES FOR SERVICE/KITCHEN AREA LED LIGHTING. TWO SWITCHES PER CIRCUIT FOR DUAL LEVEL LIGHTING PER ENERGY CODE. SINGLE SWITCH TO CONTROL LIGHT FIXTURES DENOTED AS 'c' AND ADDITIONAL SWITCH TO CONTROL LIGHT FIXTURES NOTED AS 'd'
3. WIRE EMERGENCY/NIGHT LIGHT/EXIT SIGN AHEAD OF LIGHTING IN THE AREA AND CONNECT AHEAD OF LOCAL SWITCH PER NEC 700-12(A) AND LIFE SAFETY CODE. PROVIDE FIXTURES WITH MINIMUM OF 90 MINUTE BATTERY BACK-UP.
4. DIMMING ROOM CONTROLLER (211 OR 221). REFER TO DETAIL ON SHEET E8.1 & E8.2 FOR WIRING OF LIGHTING CONTROL DEVICES (TYPICAL).
5. EXTEND CONDUIT AND CONDUCTORS TO LIGHT FIXTURES ON SECOND FLOOR. REFER TO SHEET E4.2 FOR LOCATION OF LIGHT FIXTURES.
6. ALL WALK-IN BOX REFRIGERATION DEVICES, LIGHT FIXTURES, SWITCHES, AND RECEPTACLES WILL BE INSTALLED AND WIRED BY THE ELECTRICAL CONTRACTOR.
7. WIRE CIRCUIT THRU LIGHTING CONTACTOR AND/OR TIME CLOCK. SEE DETAIL ON SHEET E8.1.
8. LIGHT SWITCH FOR KITCHEN LIGHT FIXTURES. CONTRACTOR LABELED WITH LOWER CASE LETTER. MOUNT SWITCH AT 42" A.F.F. AND PROVIDE ENGRAVED IDENTIFICATION PLATE. E.C. TO COORDINATE EXACT LOCATION ON FIELD WITH OWNER/ARCHITECT FOR OVERRIDE SWITCH PRIOR TO ROUGH-IN.
9. DAYLIGHT ZONE LIGHT SENSOR. (TYPICAL)
10. REFER TO KITCHEN HOOD DRAWINGS FOR LOCATION OF KITCHEN HOOD LIGHT.
11. CEILING MOUNTED OCCUPANCY SENSOR. TYPICAL FOR ALL RESTROOM LIGHTING, EXCEPT EMERGENCY FIXTURES.
12. CONTRACTOR SHALL COORDINATE WITH ARCHITECT/CLIENT AND PROVIDE POWER PROVISION IN CLOSET AS REQUIRED.
13. OUTLINE OF PRIMARY DAY LIGHTING ZONE 1.
14. OUTLINE OF SECONDARY DAY LIGHTING ZONE 2.
15. 500W. INVERTER, FIXTURE TYPE 50A, TO PROVIDE EMERGENCY LIGHTING POWER TO (2) TYPE '2B' LIGHT FIXTURES IN RESTROOMS, (6) 14B LIGHT FIXTURES AND (1) EX2 EXTERIOR EMERGENCY EGRESS LIGHT FIXTURES AT DINING AREA EGRESS DOORS. MOUNT INVERTER ABOVE ACCESSIBLE CEILING AND WIRE TO CIRCUIT INDICATED AHEAD OF ANY CONTROLS. REFER ALSO TO KEY NOTE 3.
16. UL 924 EMEREGENCY TRANSFER CONTROL DEVICE FOR RESTROOM EMERGENCY LIGHTS (FIXTURE '2B'). REFER TO DETAIL ON SHEET E8.1 FOR REQUIREMENTS AND WIRING. MOUNT FLUSH IN CEILING.
17. UL 924 EMERGENCY TRANSFER CONTROL DEVICE FOR DINING/KITCHEN AREA EMERGENCY LIGHTS (FIXTURE '14B'). REFER TO DETAIL ON E8.2 FOR REQUIREMENTS AND WIRING. MOUNT FLUSH IN CEILING.
18. NEW EXHAUST FAN INTERLOCKED WITH LIGHT SWITCH / OCCUPANCY SENSORS. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION AND SPECIFICATIONS.
19. PROVIDE OCCUPANCY SENSOR SWITCH THAT IS COMPATIBLE WITH LIGHT FIXTURE BEING SERVED.
20. EXISTING LIGHTS TO REMAIN. ELECTRICAL CONTRACTOR TO REUSE LIGHTS AND CONTROLS ALONG WITH EXISTING CIRCUIT SERVING AREA. CONTRACTOR SHALL RE-LAMP WITH LED BULBS. REPLACE WITH NEW LED LIGHT FIXTURE IF RETRO-FIT NOT POSSIBLE. PROVIDE NEW CONTROLS AS SHOWN IF EXISTING ARE NOT WORKABLE. BASE BID ACCORDINGLY.

FIELD VERIFY ALL CONDITIONS

1. DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSPECT EXISTING FIELD CONDITIONS. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.
2. THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS COST.
3. BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE PLANS AND SPECIFICATIONS NOT WITHSTANDING. THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

INVERTER LOAD:

FIXTURE	QUANTITY	WATTAGE	TOTAL
14B	6	40	240
2B	2	40	80
EX2	1	12	12
			332

GENERAL NOTES:

A. REFER TO SHEET E8.1 & E8.2 FOR LIGHTING CONTROL WIRING DIAGRAMS.

B. ALL EXIT LIGHTS THROUGHOUT BUILDING AND EMERGENCY LIGHTS IN SHALL BE CONNECTED TO LOCAL CIRCUIT AHEAD OF ALL CONTROLS.

C. NO FLEX CONDUIT!

D. ALL ELECTRICAL WORK SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE OR LOCAL CODE AND/OR OTHER AUTHORITIES HAVING JURISDICTION.

E. THE CONTRACTOR SHALL VISIT THE PROJECT SITE, REVIEW EXISTING CONDITIONS AGAINST THE PLANS, AND FAMILIARIZE HIMSELF WITH THE WORK PRIOR TO BIDDING AND START OF WORK.

F. SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION AND QUANTITY OF LIGHTING FIXTURES.

G. ELECTRICAL CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS AS REQUIRED FOR A FULLY COMPLETE AND OPERABLE SYSTEM.

H. ALL EQUIPMENT SHALL HAVE UL OR CSA LABELS.

I. G.C. IS RESPONSIBLE FOR ALL FINAL CONNECTION S, TERMINATIONS, AND COORDINATION IN ALL MILLWORK FIXTURES.

J. ELECTRICAL CONTRACTOR'S BID SHALL INCLUDE INSTALLATION OF ALL LIGHT FIXTURES AND ASSOCIATED LAMPS. SOME FIXTURES REQUIRE ASSEMBLY. E.C. IS RESPONSIBLE TO ENSURE THE ADJUSTABILITY OF ALL DIRECTIONAL FIXTURES AFTER INSTALLATION AND SHALL AIM FIXTURES PER DIRECTION FROM OWNER. IF THE CEILING SYSTEMS ARE FIRE RATED, E.C. SHALL CLOSELY COORDINATE RECESSED FIXTURE REQUIREMENT WITH OWNER AND SUPPLIER TO MAINTAIN THE FIRE RATING OF THE CEILING.

K. G.C. SHALL PROVIDE TIME CLOCK PROGRAMMING TRAINING SESSION FOR THE STORE MANAGER AND AT LEAST ONE OTHER EMPLOYEE PRIOR TO PROJECT CLOSEOUT.

L. ALL FIXTURES INSTALLED OUTDOORS SHALL BE RATED FOR DAMP/WET LOCATIONS AS REQUIRED. THE CONTRACTOR SHALL COORDINATE DAMP/WET LOCATION RATING PER NEC ARTICLE 410.10 (A). ALL INSTALLATIONS SHALL CONFORM TO NEC ARTICLE 410, ALL SUB ARTICLES. ALL FLUORESCENT FIXTURES THAT UTILIZE DOUBLE ENDED LAMPS AND CONTAIN BALLAST(S) THAT CAN BE SERVICED IN PLACE SHALL BE CODE COMPLIANT WITH N.E.C. 410.130(G)

M. THE ELECTRICAL LIGHTING INSTALLATIONS SHALL CONFORM TO ALL STATE AND LOCAL SEISMIC AND CODE REQUIREMENTS REGARDING LIGHT FIXTURE SUPPORT. ALL ELECTRICAL METALLIC TUBING (EMT), RIGID NON-METALLIC CONDUITS, "SEAL TIGHT" TYPE CONDUITS AND ALL OTHER CONDUITS THAT DO NOT CONTAIN A CODE SIZED GROUND WIRE SHALL HAVE A CODE SIZED BOND WIRE INSTALLED WITH THE CIRCUIT CONDUCTORS.

N. IF STORE IS AN OPEN DECK THEN ALL CAMERA AND SHOPPERTRAX LINES RUN THROUGH CONDUIT SO CAMERA/ SHOPPERTRAX CAN BE SECURED AT THE PROPER HEIGHT.

LIGHTING SCHEDULE

MK9D/MK10B/MK11A/REMODELS
UPDATED 04/09/2021

ITEM #	PLANSYMBOL	DESCRIPTION	MFR/MODEL	LAMP	WATTS/ FIXTURE
1A	1A	5"/6" DIA. RETROFILE BAFFLE - TRIOM LED MODULE, 90 CRI, 3500 K, MATTE WHITE, HIGH LUMEN	COPPER LIGHTING SOLUTIONS #LT560WH -12935 #H750ICAT (6" ROUGH-IN HSG)	INTEGRAL WITH FIXTURE	12
1C	1C	6" DIA. ARCHITECTURAL WALL WASH DOWNLIGHT, 0-10V DIMMING TO 10%, 3500K, IN ACOUSTIC TILE CEILING.	HALO # HC620D10-HM612835 61RWWH	INTEGRAL WITH FIXTURE	20
2A	2A	1'X4' LED BACKLIT FLAT PANEL WITH FIELD ADJUSTABLE CCT AND WATTAGE	NUVO 65-573R1	INTEGRAL WITH FIXTURE	20
2B	2B/NL	1'X4' LED BACKLIT FLAT PANEL WITH FIELD ADJUSTABLE CCT AND WATTAGE (EMERGENCY FIXTURE)	NUVO 65-573R1	INTEGRAL WITH FIXTURE	20
8A	8A	4' SURFACE MOUNTED LED LINEAR LUMINAIRE, 40W, 5300 LUMENS, 500K COLOR, 120-277V, POLYCARBONATE HOUSING SUITABLE FOR WATER AND DUST PROTECTION.	BARRON, TRACE LITE: VPA-4-40-C	INTEGRAL WITH FIXTURE	40
14A	14A	2' X 2' RECESSED LED BACKLIT FLAT PANEL, NUVO 65-571 40W, 4600 LUMENS, 100V-277V, 3500K COLOR, 0-10V DIMMIING	NUVO 65-571	INTEGRAL WITH FIXTURE	40
14B	14B/NL	2' X 2' RECESSED LED BACKLIT FLAT PANEL, NUVO 65-571 40W, 4600 LUMENS, 100V-277V, 3500K COLOR, 0-10V DIMMIING REFER TO KEY NOTES ON ELECTRICAL DRAWING FOR ADDITIONAL INFORMATION. (EMERGENCY FIXTURE)	NUVO 65-571	INTEGRAL WITH FIXTURE	40
EX1		EXISTNG	EXISTNG	EXISTNG	
EX2		EXISTNG	EXISTNG	EXISTNG	
EX3		EXISTNG	EXISTNG	EXISTNG	
EX4		EXISTNG	EXISTNG	EXISTNG	
EX5		EXISTNG	EXISTNG	EXISTNG	
EX6		EXISTNG	EXISTNG	EXISTNG	
EXIT (E)		EXISTNG EXIT SIGN	EXISTNG	EXISTNG	

LIGHTING FIXTURE SCHEDULE NOTES:

1. COORDINATE FINAL FIXTURE MAKE, WATTAGE AND MODEL WITH ARCHITECT.
2. ALL ILLUMINATED EXIT SIGN TO HAVE A MAX WATTAGE OF 5 PER SIDE.
3. ALL EMERGENCY LIGHT MARKED AS "EM" ARE WITH MINIMUM 90 MINUTE OF BATTERY BACK UP.

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DATES

RELEASE:
P.M. UPDATES:
SUBMITTAL DATE:
1: APR. 10, 2025
2:
3:
BID:
CONSTRUCTION:

REVISIONS

- 03/25/25-CHECK SET
- 04/22/25-PERMIT SET

CONSULTANT

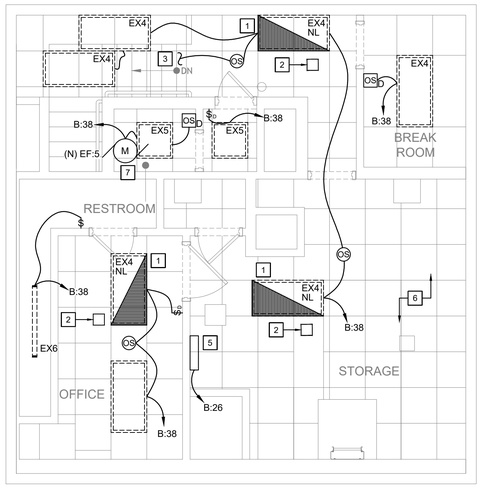
SITE INFORMATION

MK TYPE: MK2X
JIB #: 327
ADDRESS:
13648 VAN NUYS BLVD
PACOIMA, CA
91331

DRAWN BY: NYE
PROJECT #: 12079-24
SCALE:

LIGHTING PLAN
1ST FLOOR

E4.1



LIGHTING PLAN - 2ND FLOOR

1/4" = 1'-0"

KEYED NOTES:

1. WIRE EMERGENCY/NIGHT LIGHT/EXIT SIGN AHEAD OF LIGHTING IN THE AREA AND CONNECT AHEAD OF LOCAL SWITCH PER NEC 700-12(A) AND LIFE SAFETY CODE. PROVIDE FIXTURES WITH MINIMUM OF 90 MINUTE BATTERY BACK-UP.
2. UL 924 EMERGENCY TRANSFER CONTROL DEVICE FOR DINING/KITCHEN AREA EMERGENCY LIGHTS. REFER TO DETAIL ON SHEET E8.1 FOR REQUIREMENTS AND WIRING. MOUNT FLUSH IN CEILING.
3. EXTEND CONDUIT AND CONDUCTORS TO WALL SWITCH ON FIRST FLOOR. REFER TO SHEET E-4.1 FOR LOCATION OF WALL SWITCH.
4. NOT USED.
5. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY THE EXISTING INVERTER AVAILABLE FOR SECOND FLOOR AND ITS OPERABLE CONDITIONS, LOCATION AND ELECTRICAL CONNECTIONS REUSE IF POSSIBLE, OTHERWISE PROVIDE NEW 250W. INVERTER, FIXTURE TYPE 25A, TO PROVIDE EMERGENCY LIGHTING POWER TO (4) EXISTING (2' X 4') LIGHTS FIXTURES ON SECOND FLOOR. MOUNT INVERTER ABOVE ACCESSIBLE CEILING AND WIRE TO CIRCUIT INDICATED AHEAD OF ANY CONTROLS. BASE BID ACCORDINGLY.
6. EXISTING LIGHTS TO REMAIN. ELECTRICAL CONTRACTOR TO REUSE LIGHTS AND CONTROLS ALONG WITH EXISTING CIRCUIT SERVING AREA. CONTRACTOR SHALL RE-LAMP WITH LED BULBS. REPLACE WITH NEW LED LIGHT FIXTURE IF RETRO-FIT NOT POSSIBLE. PROVIDE NEW CONTROLS AS SHOWN IF EXISTING ARE NOT WORKABLE. BASE BID ACCORDINGLY.
7. NEW EXHAUST FAN INTERLOCKED WITH LIGHT SWITCH / OCCUPANCY SENSORS. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION AND SPECIFICATIONS.

FIELD VERIFY ALL CONDITIONS

1. DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSPECT EXISTING FIELD CONDITIONS. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.
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3. BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE PLANS AND SPECIFICATIONS NOT WITHSTANDING. THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

INVERTER LOAD:

FIXTURE	QUANTITY	WATTAGE	TOTAL
EX4	3	40	120
			120

GENERAL NOTES:

A. REFER TO SHEET E8.1 & E8.2 FOR LIGHTING CONTROL WIRING DIAGRAMS.

B. ALL EXIT LIGHTS THROUGHOUT BUILDING AND EMERGENCY LIGHTS IN SHALL BE CONNECTED TO LOCAL CIRCUIT AHEAD OF ALL CONTROLS.

C. NO FLEX CONDUIT!

D. ALL ELECTRICAL WORK SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE OR LOCAL CODE AND/OR OTHER AUTHORITIES HAVING JURISDICTION.

E. THE CONTRACTOR SHALL VISIT THE PROJECT SITE, REVIEW EXISTING CONDITIONS AGAINST THE PLANS, AND FAMILIARIZE HIMSELF WITH THE WORK PRIOR TO BIDDING AND START OF WORK.

F. SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION AND QUANTITY OF LIGHTING FIXTURES.

G. ELECTRICAL CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS AS REQUIRED FOR A FULLY COMPLETE AND OPERABLE SYSTEM.

H. ALL EQUIPMENT SHALL HAVE UL OR CSA LABELS.

I. G.C. IS RESPONSIBLE FOR ALL FINAL CONNECTION S, TERMINATIONS, AND COORDINATION IN ALL MILLWORK FIXTURES.

J. ELECTRICAL CONTRACTOR'S BID SHALL INCLUDE INSTALLATION OF ALL LIGHT FIXTURES AND ASSOCIATED LAMPS. SOME FIXTURES REQUIRE ASSEMBLY, E.C. IS RESPONSIBLE TO ENSURE THE ADJUSTABILITY OF ALL DIRECTIONAL FIXTURES AFTER INSTALLATION AND SHALL AIM FIXTURES PER DIRECTION FROM OWNER. IF THE CEILING SYSTEMS ARE FIRE RATED, E.C. SHALL CLOSELY COORDINATE RECESSED FIXTURE REQUIREMENT WITH OWNER AND SUPPLIER TO MAINTAIN THE FIRE RATING OF THE CEILING.

K. G.C. SHALL PROVIDE TIME CLOCK PROGRAMMING TRAINING SESSION FOR THE STORE MANAGER AND AT LEAST ONE OTHER EMPLOYEE PRIOR TO PROJECT CLOSEOUT.

L. ALL FIXTURES INSTALLED OUTDOORS SHALL BE RATED FOR DAMP/WET LOCATIONS AS REQUIRED. THE CONTRACTOR SHALL COORDINATE DAMP/WET LOCATION RATING PER NEC ARTICLE 410.10 (A). ALL INSTALLATIONS SHALL CONFORM TO NEC ARTICLE 410, ALL SUB ARTICLES. ALL FLUORESCENT FIXTURES THAT UTILIZE DOUBLE ENDED LAMPS AND CONTAIN BALLAST(S) THAT CAN BE SERVICED IN PLACE SHALL BE CODE COMPLIANT WITH N.E.C. 410.130(G)

M. THE ELECTRICAL LIGHTING INSTALLATIONS SHALL CONFORM TO ALL STATE AND LOCAL SEISMIC AND CODE REQUIREMENTS REGARDING LIGHT FIXTURE SUPPORT. ALL ELECTRICAL METALLIC TUBING (EMT), RIGID NON-METALLIC CONDUITS, "SEAL TIGHT" TYPE CONDUITS AND ALL OTHER CONDUITS THAT DO NOT CONTAIN A CODE SIZED GROUND WIRE SHALL HAVE A CODE SIZED BOND WIRE INSTALLED WITH THE CIRCUIT CONDUCTORS.

N. IF STORE IS AN OPEN DECK THEN ALL CAMERA AND SHOPPERTRAX LINES RUN THROUGH CONDUIT SO CAMERA/ SHOPPERTRAX CAN BE SECURED AT THE PROPER HEIGHT.

MK9D/MK10B/MK11A/REMODELS
UPDATED 04/09/2021

LIGHTING SCHEDULE

ITEM #	PLANSYMBOL	DESCRIPTION	MFR/MODEL	LAMP	WATTS/ FIXTURE
1A	1A	5"/6" DIA. RETROFILE BAFFLE - TRIOM LED MODULE, 90 CRI, 3500 K, MATTE WHITE, HIGH LUMEN	COPPER LIGHTING SOLUTIONS #LT560WH -12935 #H750ICAT (6" ROUGH-IN HSG)	INTEGRAL WITH FIXTURE	12
1C	1C	6" DIA. ARCHITECTURAL WALL WASH DOWNLIGHT, 0-10V DIMMING TO 10%, 3500K, IN ACOUSTIC TILE CEILING.	HALO # HC620D10-HM612835 61RWWH	INTEGRAL WITH FIXTURE	20
2A	2A	1'X4' LED BACKLIT FLAT PANEL WITH FIELD ADJUSTABLE CCT AND WATTAGE	NUVO 65-573R1	INTEGRAL WITH FIXTURE	20
2B	2B/NL	1'X4' LED BACKLIT FLAT PANEL WITH FIELD ADJUSTABLE CCT AND WATTAGE (EMERGENCY FIXTURE)	NUVO 65-573R1	INTEGRAL WITH FIXTURE	20
8A	8A	4' SURFACE MOUNTED LED LINEAR LUMINAIRE, 40W, 5300 LUMENS, 500K COLOR, 120-277V, POLYCARBONATE HOUSING SUITABLE FOR WATER AND DUST PROTECTION.	BARRON, TRACE LITE: VPA-4-40-C	INTEGRAL WITH FIXTURE	40
14A	14A	2' X 2' RECESSED LED BACKLIT FLAT PANEL, NUVO 65-571 40W, 4600 LUMENS, 100V-277V, 3500K COLOR, 0-10V DIMMIING	NUVO 65-571	INTEGRAL WITH FIXTURE	40
14B	14B/NL	2' X 2' RECESSED LED BACKLIT FLAT PANEL, NUVO 65-571 40W, 4600 LUMENS, 100V-277V, 3500K COLOR, 0-10V DIMMIING REFER TO KEY NOTES ON ELECTRICAL DRAWING FOR ADDITIONAL INFORMATION. (EMERGENCY FIXTURE)	NUVO 65-571	INTEGRAL WITH FIXTURE	40
EX1		EXISTNG	EXISTNG	EXISTNG	
EX2		EXISTNG	EXISTNG	EXISTNG	
EX3		EXISTNG	EXISTNG	EXISTNG	
EX4		EXISTNG	EXISTNG	EXISTNG	
EX5		EXISTNG	EXISTNG	EXISTNG	
EX6		EXISTNG	EXISTNG	EXISTNG	
EXIT (E)		EXISTNG EXIT SIGN	EXISTNG	EXISTNG	

LIGHTING FIXTURE SCHEDULE NOTES:

1. COORDINATE FINAL FIXTURE MAKE, WATTAGE AND MODEL WITH ARCHITECT.
2. ALL ILLUMINATED EXIT SIGN TO HAVE A MAX WATTAGE OF 5 PER SIDE.
3. ALL EMERGENCY LIGHT MARKED AS "EM" ARE WITH MINIMUM 90 MINUTE OF BATTERY BACK UP.

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DATES

RELEASE:
P.M. UPDATES:
SUBMITTAL DATE:
1: APR. 10, 2025
2:
3:
BID:
CONSTRUCTION:

REVISIONS

- 03/25/25-CHECK SET
- 04/22/25-PERMIT SET

CONSULTANT

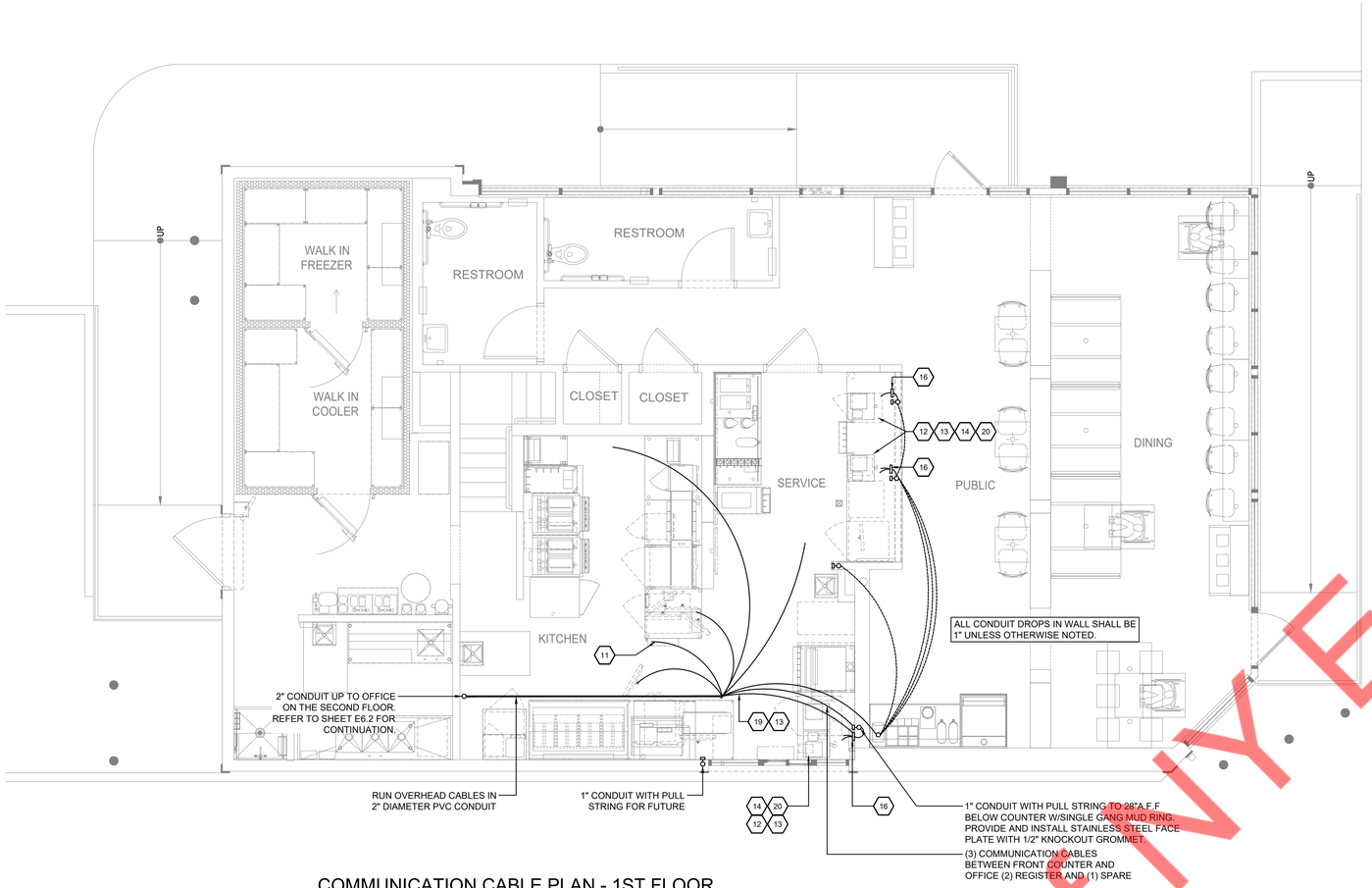
SITE INFORMATION

MK TYPE: MK2X
JIB #: 327
ADDRESS:
13648 VAN NUYS BLVD
PACOIMA, CA
91331

DRAWN BY: NYE
PROJECT #: 12079-24
SCALE:

LIGHTING PLAN
2ND FLOOR

E4.2



COMMUNICATION CABLE PLAN - 1ST FLOOR

1/4" = 1'-0"

FIELD VERIFY ALL CONDITIONS

1. DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSPECT EXISTING FIELD CONDITIONS. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.
2. THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS COST.
3. BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE PLANS AND SPECIFICATIONS NOT WITHSTANDING. THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

EQUIPMENT SCHEDULE AND NOTES:

KITCHEN EQUIPMENT	ITEM	QUANTITY	DESCRIPTION	ABBR.	LOADS/AMPS (120/1/60)	REMARKS
110	1	1	BACK-OF-HOUSE (B-O-H) OFFICE MONITOR	-	2.5	
111	2	1/1	PERSONAL COMPUTER / POS SERVER	P.C.	5.00/5.00	
112	3	1	P.C. MONITORS	-	1.5	
113	4	1	PRINTER	-	6.00	
114	5	8	VIDEO CONTROLLER	-	0.50	
115	6	4	NETWORK SWITCH	-	0.50	
116	7	1	OFFICE PATCH PANEL	-	-	
118	9	8	LCD MONITORS	-	1.30	
119	10	1	KVM SWITCH	-	0.02	MOUNTED IN P.C. CABINET
120	11	8	BUMP BAR	BB	-	
121	12	4	CASH REGISTER	C.R.	2.00	ONE TO BE DESIGNATED AS ORDER TAKEN ONLY
122	13	3	CASH DRAWER	DRAWER.	-	
123	14	3	RECEIPT PRINTER	PRINT.	1.5	
124	16	3	WALL MOUNTED BOX	SMB	-	
125	17	1	ORDER CONFIRMATION SYSTEM UNIT (DELPHI)	OCS	0.45	LOCATED IN DRIVE THRU SPEAKER BOARD
126	18	1	UNINTERRUPTIBLE POWER SYSTEM & SHELF	UPS	-	PROVIDED BY OWNER & INSTALLED BY G.C.
127	19	1	SPARE CASH DRAWER	DRAWER	-	
128	20	3	CREDIT CARD READER	-	-	

NOTES:

1. TALL POS EQUIPMENT WILL BE PROVIDED BY THE OWNER.
2. ALL REQUIRED VIDEO MONITOR MOUNTING BRACKETS SHALL BE PROVIDED BY THE OWNER.
3. PROVIDE MINIMUM 2" CONDUIT WITH PULL STRING FOR COMMUNICATIONS ALL COMMUNICATIONS CABLE SHALL BE PROVIDED BY OWNER.
4. PROVIDE ALL LINE VOLTAGE CONDUCTORS, CONDUITS, J-BOXES, INCLUDING THOSE DOWNSTREAM OF UPS DEVICES.
5. REFER TO INTERIOR DESIGN DRAWINGS FOR HOLES IN COUNTER (BY G.C.) FOR POS CABLES. HOLES FOR DRIVE-THRU REGISTERS ARE PREDRILLED BY KITCHEN EQUIPMENT FABRICATOR.

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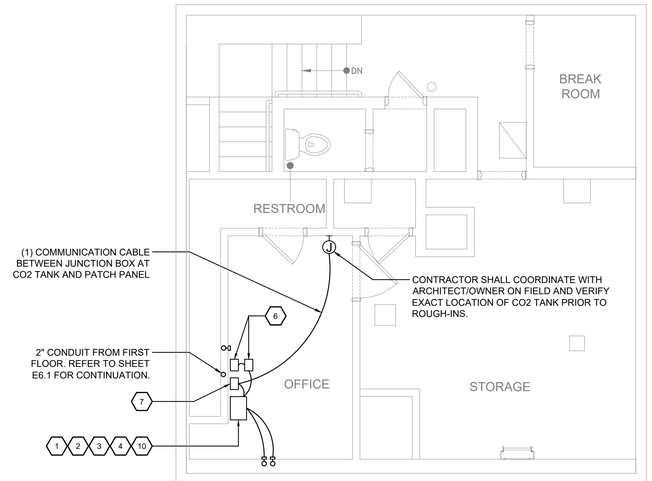
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DRAWN BY: NYE
PROJECT #: 12079-24
SCALE:

COMMUNICATION CABLE PLAN 1ST FLOOR

E6.1



COMMUNICATION CABLE PLAN - 2ND FLOOR

1/4" = 1'-0"

EQUIPMENT SCHEDULE AND NOTES:

KITCHEN EQUIPMENT	ITEM	QUANTITY	DESCRIPTION	ABBR.	LOADS/AMPS (120/1/60)	REMARKS
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112	3	1	P.C. MONITORS	-	1.5	
113	4	1	PRINTER	-	6.00	
114	5	8	VIDEO CONTROLLER	-	0.50	
115	6	4	NETWORK SWITCH	-	0.50	
116	7	1	OFFICE PATCH PANEL	-	-	
118	9	8	LCD MONITORS	-	1.30	
119	10	1	KVM SWITCH	-	0.02	MOUNTED IN P.C. CABINET
120	11	8	BUMP BAR	BB	-	
121	12	4	CASH REGISTER	C.R.	2.00	ONE TO BE DESIGNATED AS ORDER TAKEN ONLY
122	13	3	CASH DRAWER	DRAWER.	-	
123	14	3	RECEIPT PRINTER	PRINT.	1.5	
124	16	3	WALL MOUNTED BOX	SMB	-	
125	17	1	ORDER CONFIRMATION SYSTEM UNIT (DELPHI)	OCS	0.45	LOCATED IN DRIVE THRU SPEAKER BOARD
126	18	1	UNINTERRUPTIBLE POWER SYSTEM & SHELF	UPS	-	PROVIDED BY OWNER & INSTALLED BY G.C.
127	19	1	SPARE CASH DRAWER	DRAWER	-	
128	20	3	CREDIT CARD READER	-	-	

NOTES:

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FIELD VERIFY ALL CONDITIONS

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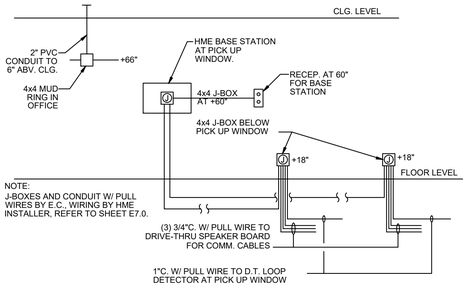
CONSULTANT

SITE INFORMATION

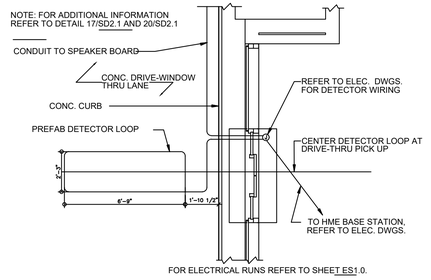
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PACOIMA, CA
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DRAWN BY: NYE
PROJECT #: 12079-24
SCALE:

COMMUNICATION CABLE PLAN 2ND FLOOR

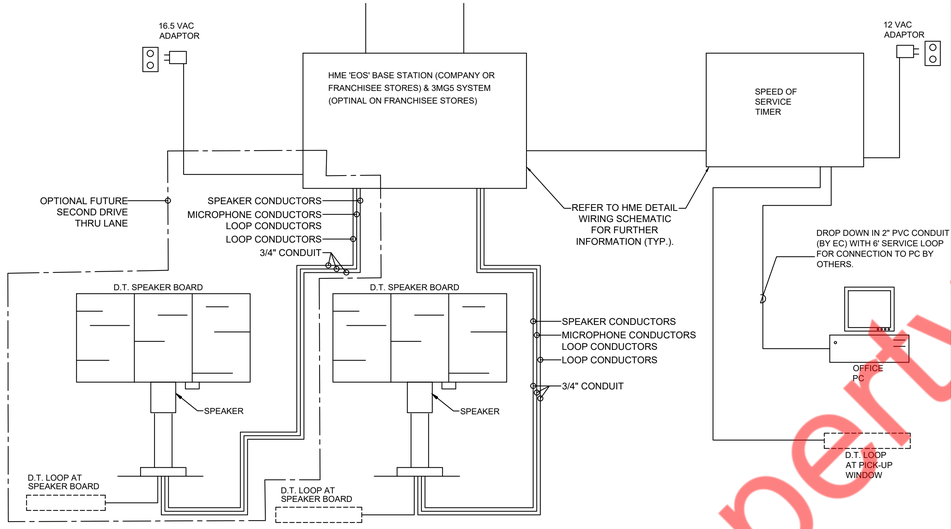
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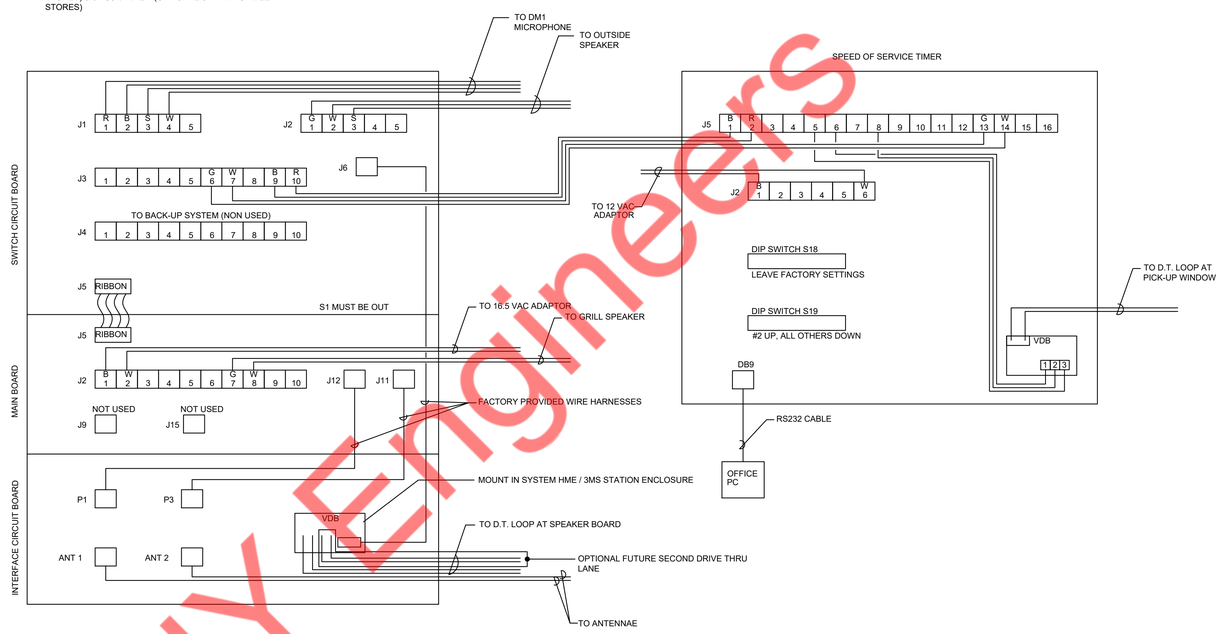
1	SCALE	HME SYSTEM CONDUIT/WIRING SCHEMATIC
	N.T.S.	



2	SCALE	DETECTOR LOOP AT DRIVE-THRU PIK UP WINDOW
	N.T.S.	



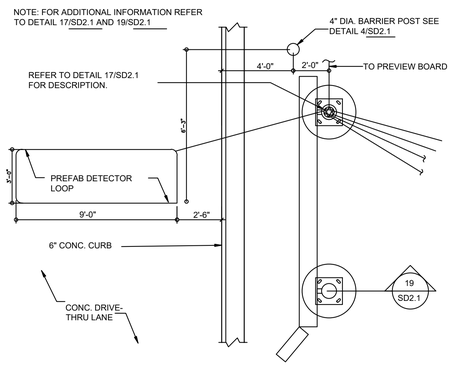
3	SCALE	HME DETAILED WIRING SCHEMATIC (WITH DOUBLE DRIVE THRU OPTION)
	N.T.S.	



NOTES:

1. WIRING PROVIDED & INSTALLED BY HME INSTALLER.
2. WIRE LEGEND: B = BLACK, R = RED, G = GREEN, W = WHITE, S = SHIELD.
3. VDB = VEHICLE DETECTION BOARD (NOT PROVIDED AS PART OF INTERFACE CIRCUIT BOARD).
4. D.T. LOOP CONDUCTORS SHALL BE SOLDERED AND WIRE NUTTED AT JOINT - ONLY 1 JOINT ALLOWED.

4	SCALE	HME WIRING SCHEMATIC (WITH DOUBLE DRIVE THRU OPTION)
	N.T.S.	



5	SCALE	SPEAKER BOARD PLAN
	N.T.S.	

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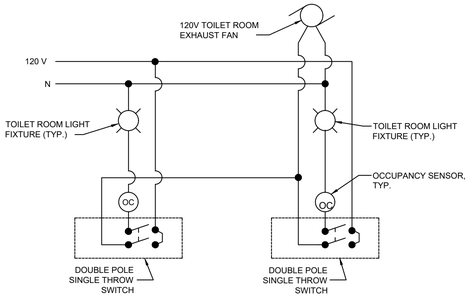
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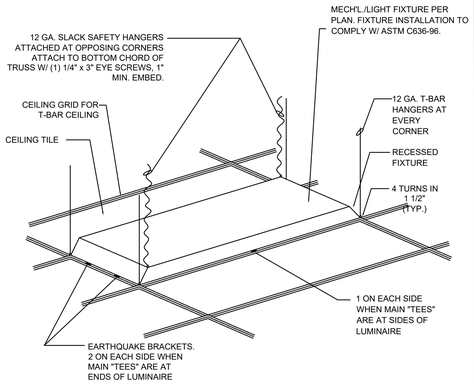
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JIB #: 327
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13648 VAN NUYS BLVD
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DRAWN BY: NYE
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SCALE:

HME INTERCOM SYSTEM

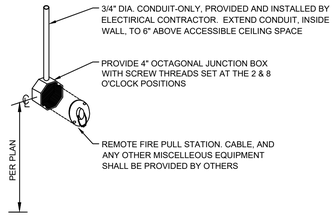
E7.1



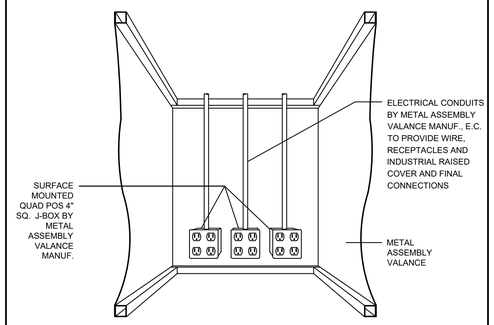
1	SCALE N.T.S.	RESTROOM EXHAUST FAN SWITCHING DETAIL



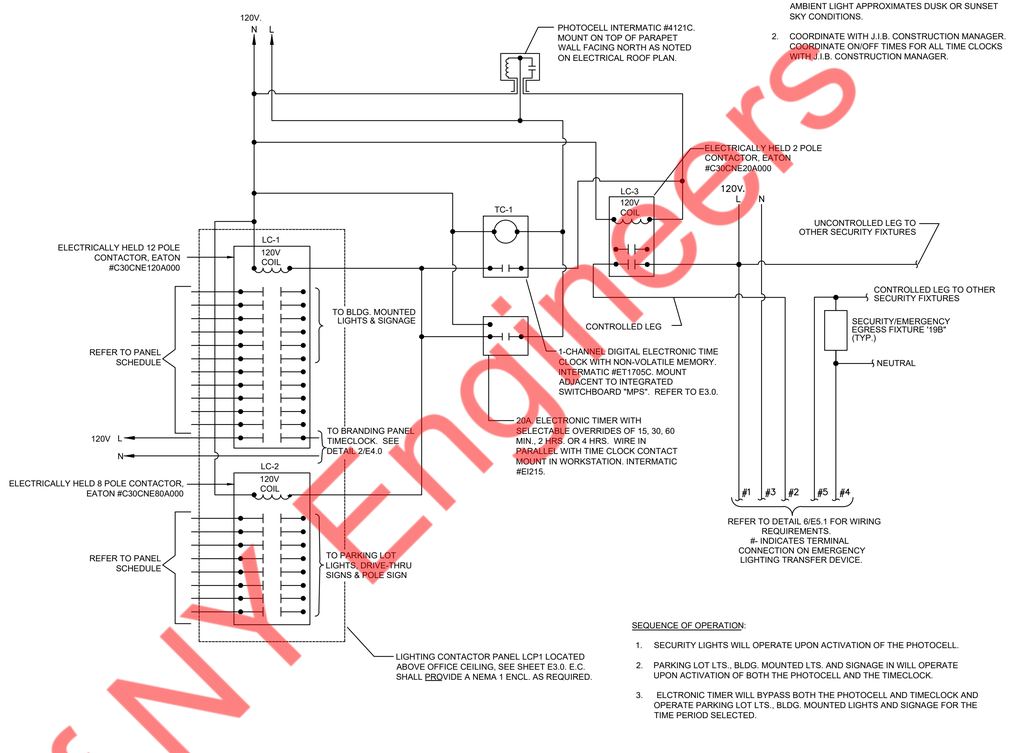
2	SCALE N.T.S.	CEILING FIXTURE BRACING



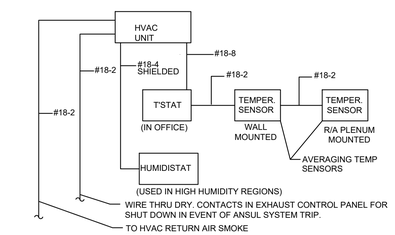
3	SCALE N.T.S.	REMOTE HOOD FIRE PULL STAITON



4	SCALE N.T.S.	POS & LIGHT OUTLETS AT METAL ASSEMBLY VALANCE

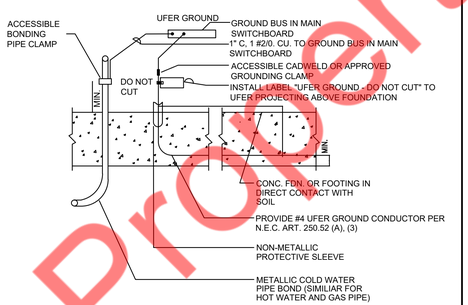


5	SCALE N.T.S.	EXTERIOR LIGHTING CONTROL DIAGRAM (ALL ITEMS PROVIDED & INSTALLED BY E.C.)

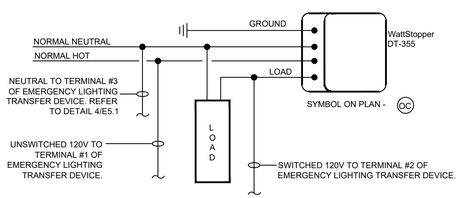


NOTES:
ALL CONDUIT (1/2" MIN.) AND CONDUCTORS (COPPER) SHALL BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

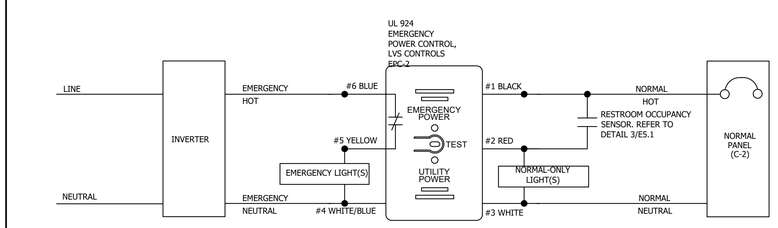
6	SCALE N.T.S.	HVAC CONTROL WIRING SCHEMATIC



7	SCALE N.T.S.	BUILDING GROUND DETAIL



8	SCALE N.T.S.	CEILING MOUNTED OCCUPANCY SENSOR WIRING DIAGRAM



NOTES:
1. THE E.C. SHALL FURNISH, INSTALL AND WIRE DEVICE PER MANUFACTURER INSTALLATION INSTRUCTIONS.
2. THE UL 924 EMERGENCY POWER CONTROL SHOWN IN THIS DETAIL WILL ALLOW THE OCCUPANCY SENSOR IN THE RESTROOM TO CONTROL BOTH THE NORMAL LIGHT FIXTURES AND THE EMERGENCY LIGHT FIXTURE TOGETHER, AND PROVIDE EMERGENCY ILLUMINATION TO THE EMERGENCY FIXTURE UPON LOSS OF NORMAL POWER.

TYPICAL FOR EACH RESTROOM

9	SCALE N.T.S.	EMERGERNCY POWER CONTROL DETAIL "A"

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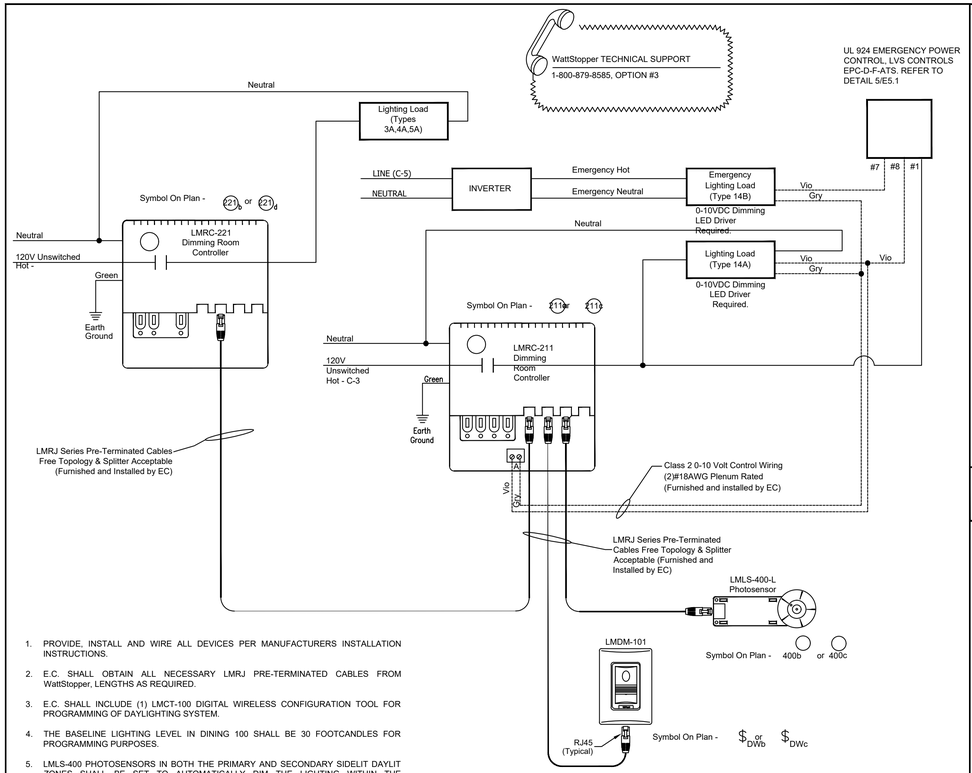
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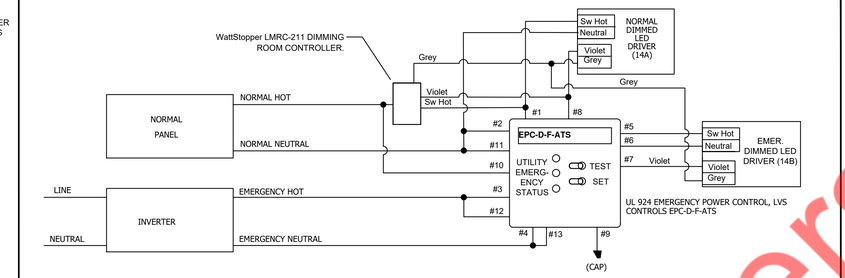
LIGHTING CONTROL DETAILS

E8.1



1. PROVIDE, INSTALL AND WIRE ALL DEVICES PER MANUFACTURERS INSTALLATION INSTRUCTIONS.
2. E.C. SHALL OBTAIN ALL NECESSARY LMRJ PRE-TERMINATED CABLES FROM WattStopper, LENGTHS AS REQUIRED.
3. E.C. SHALL INCLUDE (1) LMCT-100 DIGITAL WIRELESS CONFIGURATION TOOL FOR PROGRAMMING OF DAYLIGHTING SYSTEM.
4. THE BASELINE LIGHTING LEVEL IN DINING 100 SHALL BE 30 FOOTCANDLES FOR PROGRAMMING PURPOSES.
5. LMLS-400 PHOTOSENSORS IN BOTH THE PRIMARY AND SECONDARY SIDELIT DAYLIT ZONES SHALL BE SET TO AUTOMATICALLY DIM THE LIGHTING WITHIN THE RESPECTIVE ZONE WHEN THE PHOTOSENSOR DETECTS A LIGHTING LEVEL 150% (45 FOOTCANDLES) OF THE BASELINE FOOTCANDLE LEVEL. THE LIGHTING LEVEL SHALL AUTOMATICALLY BE REDUCED BY A MINIMUM OF 65% (19 FOOTCANDLES).
6. IN THE PRIMARY SIDELIT DAYLIT ZONE, THE LMRC-211 DIMMING ROOM CONTROLLER AND THE LMRC-221 DIMMING ROOM CONTROLLER SHALL BE PROGRAMMED SO THAT THE LMLS-400 PHOTOSENSORS CONNECTED TO THE LMRC-211 CONTROLLER WILL INITIATE THE SIMULTANEOUS DIMMING OF LIGHTING CIRCUITS ROUTED THRU BOTH CONTROLLERS.
7. UPON COMPLETION OF INSTALLTION AND PROGRAMMING OF SYSTEM, THE E.C. SHALL INSTRUCT THE OWNER ON THE OPERATION OF THE SYSTEM, AND TURN OVER THE LMCT-100 DIGITAL WIRELESS CONFIGRATION TOOL TO THE OWNER.

1	SCALE N.T.S.	SIDELITE DAYLIGHT ZONES "1' OR "2" LIGHTING CONTROL WIRING DIAGRAM



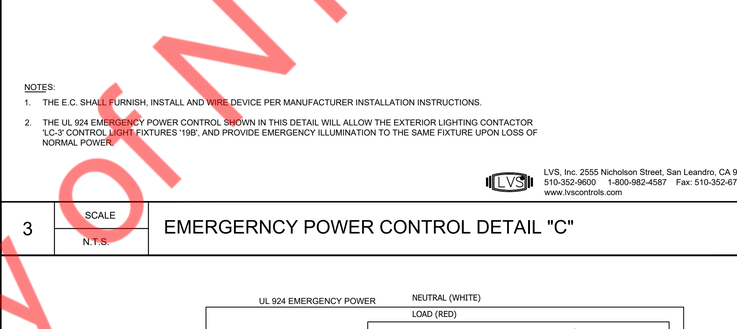
NOTES:

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2. THE UL 924 EMERGENCY POWER CONTROL SHOWN IN THIS DETAIL WILL ALLOW THE WattStopper DIMMING ROOM CONTROLLER TO DIM BOTH THE NORMAL LIGHT FIXTURES AND THE EMERGENCY LIGHT FIXTURE TOGETHER, AND PROVIDE FULL LIGHT OUTPUT EMERGENCY ILLUMINATION TO EMERGENCY FIXTURE 14B UPON LOSS OF NORMAL POWER.

TYPICAL FOR EACH DAYLIGHT ZONE (a/b AND c/d)

LVS, Inc. 2555 Nicholson Street, San Leandro, CA 94577-4216 Phone: 510-352-9600 1-800-982-4587 Fax: 510-352-6707 Web: www.lvscontrols.com

2	SCALE N.T.S.	EMERGENCY POWER CONTROL DETAIL "B"



NOTES:

1. THE E.C. SHALL FURNISH, INSTALL AND WIRE DEVICE PER MANUFACTURER INSTALLATION INSTRUCTIONS.
2. THE UL 924 EMERGENCY POWER CONTROL SHOWN IN THIS DETAIL WILL ALLOW THE EXTERIOR LIGHTING CONTACTOR 'LC-3' CONTROL LIGHT FIXTURES '19B', AND PROVIDE EMERGENCY ILLUMINATION TO THE SAME FIXTURE UPON LOSS OF NORMAL POWER.

LVS, Inc. 2555 Nicholson Street, San Leandro, CA 94577-4216 Phone: 510-352-9600 1-800-982-4587 Fax: 510-352-6707 Web: www.lvscontrols.com

3	SCALE N.T.S.	EMERGERNCY POWER CONTROL DETAIL "C"

JACK IN THE BOX

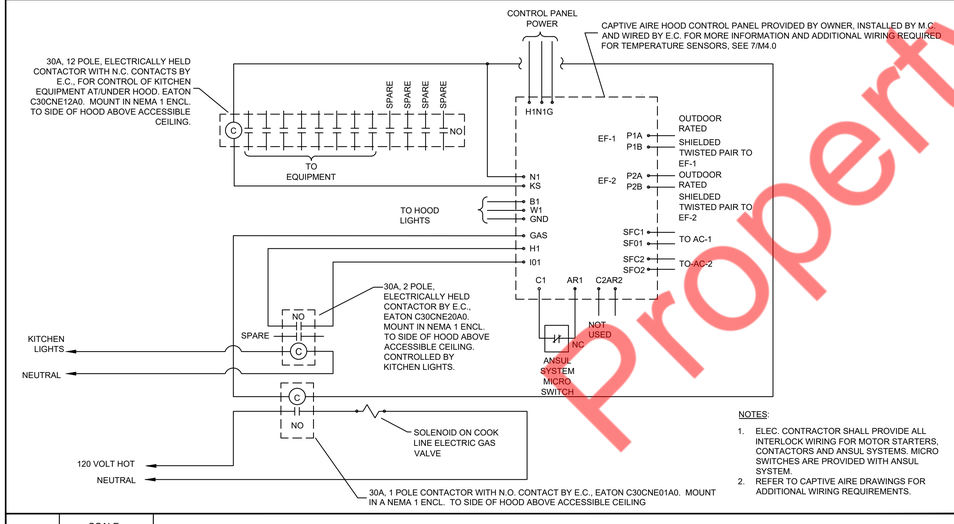
SIGN REQUIREMENTS

SIGN	NOMINAL SIZE (H X W X D)	TOTAL WATTS	CIRCUIT QUANTITY / CAPACITY
EXTERIOR POLE SIGNS			
Box - Hard Face	6' x 6' x 6' 8' x 8' x 8' 10' x 10' x 10' 12' x 12' x 12'	960 W. 1440 W. 1440 W. 1920 W.	1 - 120 / 1 / 60 1 - 120 / 1 / 60 2 - 120 / 1 / 60 2 - 120 / 1 / 60
Box - Flex Face (Metal Halide)	10' x 10' x 10' 12' x 12' x 12' 15' x 15' x 15'	2520 W. 3840 W. 3840 W.	2 - 120 / 1 / 60 3 - 120 / 1 / 60 3 - 120 / 1 / 60
Double Faced	6' x 6' 8' x 8' 10' x 10' 12' x 12' 15' x 15'	480 W. 960 W. 1560 W. 1920 W. 2880 W.	1 - 120 / 1 / 60 1 - 120 / 1 / 60 2 - 120 / 1 / 60 2 - 120 / 1 / 60 2 - 120 / 1 / 60
SECONDARY SIGNS			
Breakfast/Drive-Thru	3'-6" x 8'	N/A	N/A
Breakfast or Drive-Thru	1'-9" x 8'	N/A	N/A
Reader Board (Marquis)	3'-0" x 8' - S/F 3'-0" x 8' D/F (2 S/F SIGNS)	360 W. 720 W.	1 - 120 / 1 / 60 1 - 120 / 1 / 60
MONUMENT SIGNS			
	4' x 4' 5' x 5' 6' x 6' 8' x 8'	276 W. 540 W. 552 W. 972 W.	1 - 120 / 1 / 60 1 - 120 / 1 / 60 1 - 120 / 1 / 60 1 - 120 / 1 / 60
WALL SIGNS			
	4' x 4' 5' x 5' 6' x 6' 7'-6" x 7'-6"	276 W. 540 W. 552 W. 960 W.	1 - 120 / 1 / 60 1 - 120 / 1 / 60 1 - 120 / 1 / 60 1 - 120 / 1 / 60
CHANNEL LETTER SIGNS			
	1'-4" x 10' 2' x 15'	360 W. 480 W.	1 - 120 / 1 / 60 1 - 120 / 1 / 60
EXTERIOR MENU			
	2' x 11'	480 W.	1 - 120 / 1 / 60
SPEAKER STATION W / COMBO BOARD			
	4' x 8'	600 W.	1 - 120 / 1 / 60
SPEAKER STATION W OUT COMBO BOARD			
	4' x 7'	480 W.	1 - 120 / 1 / 60
DIRECTIONAL SIGNS			
	1'-8" x 3'-2"	240 W.	1 - 120 / 1 / 60

NOTES :
ALL CONDUIT SHALL BE 3/4" DIAMETER MINIMUM.

OWNER PROVIDED SIGN -ELEC. REQUIREMENTS

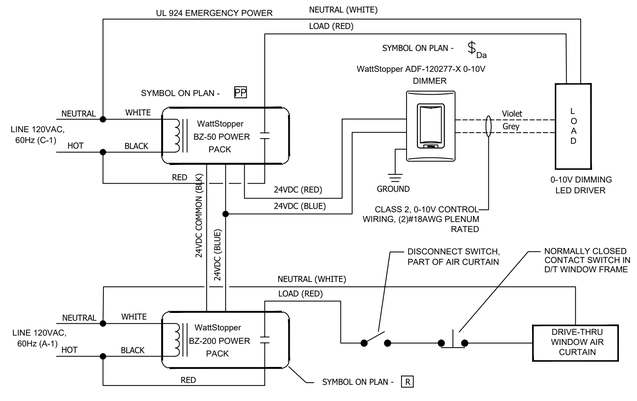
4	SCALE N.T.S.	OWNER PROVIDED SIGN -ELEC. REQUIREMENTS



NOTES:

1. ELEC. CONTRACTOR SHALL PROVIDE ALL INTERLOCK WIRING FOR MOTOR STARTERS, CONTACTORS AND ANSUL SYSTEMS. MICRO SWITCHES ARE PROVIDED WITH ANSUL SYSTEM.
2. REFER TO CAPTIVE AIRE DRAWINGS FOR ADDITIONAL WIRING REQUIREMENTS.

5	SCALE N.T.S.	GRILL/FRYER HOOD SHUT-DOWN WIRING DIAGRAM



6	SCALE N.T.S.	KITCHEN LIGHTING & D/T AIR CURTAIN CONTROL DETAILS

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DATES

RELEASE:
P.M. UPDATES:
SUBMITTAL DATE:
1: APR. 10, 2025
2:
3:
BID:
CONSTRUCTION:

REVISIONS

- 03/25/25-CHECK SET
- 04/22/25-PERMIT SET

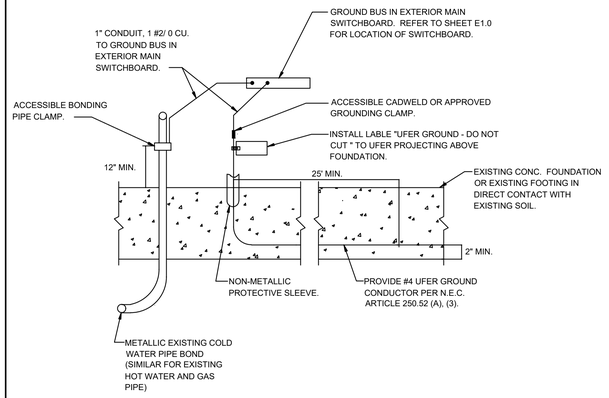
CONSULTANT

SITE INFORMATION

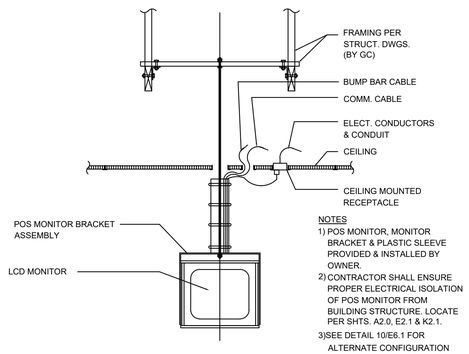
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JIB #: 327
ADDRESS:
13648 VAN NUYS BLVD
PACOIMA, CA
91331
DRAWN BY: NYE
PROJECT #: 12079-24
SCALE:

LIGHTING CONTROL DETAILS

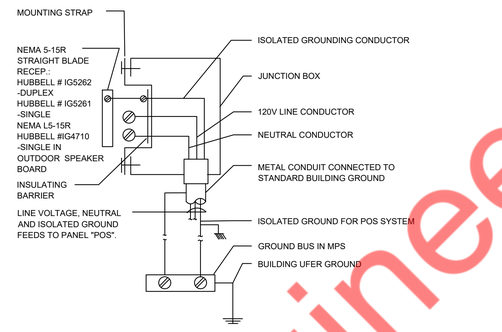
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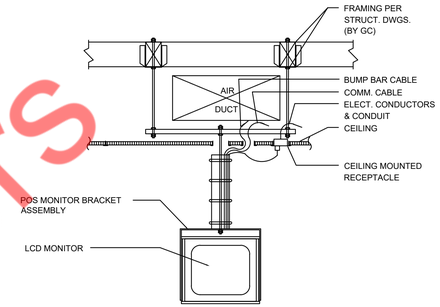
1	SCALE N.T.S.	BUILDING GROUND DETAILS



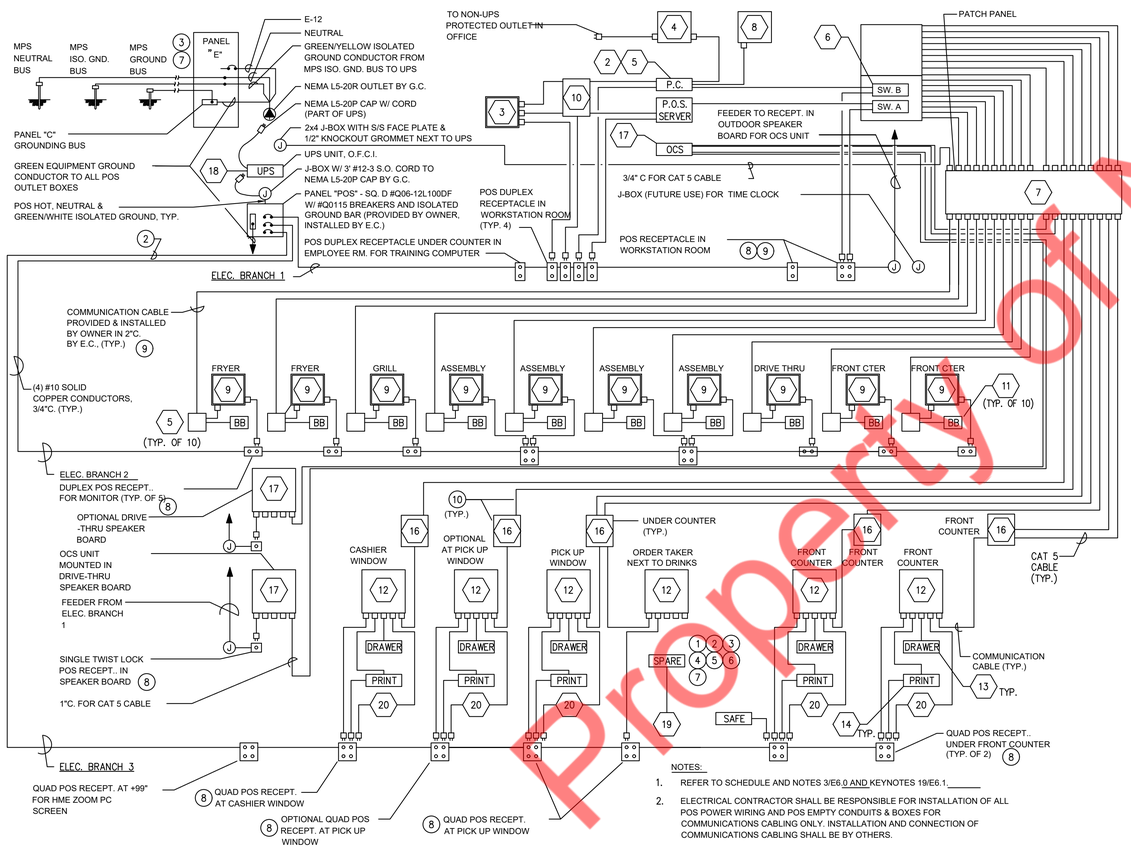
2	SCALE N.T.S.	VIDEO MONITOR MOUNTING DETAILS



3	SCALE N.T.S.	POS ISOLATED GROUNDING RECEPTACLE DETAILS



4	SCALE N.T.S.	VIDEO MONITORING MOUNTING AT MECHANICAL DUCT



5	SCALE N.T.S.	SCHEMATIC WIRING DIAGRAM

1. THE SCHEMATIC WIRING DIAGRAM INDICATES A TYPICAL INSTALLATION. VERIFY QUANTITY OF RECEPTACLES.
2. ALL P.O.S. SYSTEM CONDUIT SHALL BE EMT.
3. CONNECT P.O.S. SYSTEM NEUTRAL TO MPS NEUTRAL/GROUND BUS. CONNECT ISOLATED GROUND TO MPS GROUND BUS.
4. CONDUCTOR FEEDS THROUGHOUT POS SYSTEM SHALL BE #10, COPPER, SOLID CONDUCTORS. ALL CONDUCTOR SPLICES SHALL BE SOLDERED AND WIRE NUTTED PER THE N.E.C. SOLDERLESS CONNECTIONS ARE NOT PERMITTED.
5. SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH ALL LOCAL AND NATIONAL CODES.
6. IF A METAL COUNTERTOP IS INSTALLED, GROUND COUNTERTOP W/ SEPARATE #10 SOLID GROUND WIRE TO EQUIP. GROUND SYSTEM.
7. AT THE COMPLETION OF THE INSTALLATION OF THE POS ELECTRICAL CIRCUIT, DISCONNECT THE ISOLATED GROUND WIRE FROM THE BLDG GROUNDING BUS IN THE MPS & TEST FOR CONTINUITY BETWEEN THE ISOLATED AND BUILDING GROUNDS AT ALL POS OUTLETS. IF THERE IS CONTINUITY, THE COMPLETE CIRCUIT SHALL BE RECHECKED FOR CROSS-CONNECTION OF THE TWO GROUNDS AND THE SYSTEM RE-TESTED. A TEST REPORT SHALL BE SENT TO THE CONSTRUCTION MANAGER ON COMPLETION OF A SUCCESSFUL TEST.
8. ALL POS RECEPTACLES SHALL BE LABELED "UPS PROTECTED".
9. 4"x4" MUD RINGS SHALL BE INSTALLED AT TERMINATIONS OF LOW VOLTAGE CONDUITS.
10. DASHED LINES INDICATE FUTURE EQUIPMENT AND/OR CABLING (TYPICAL).

6	SCALE N.T.S.	KEY NOTES (FOR DETAILS 5)

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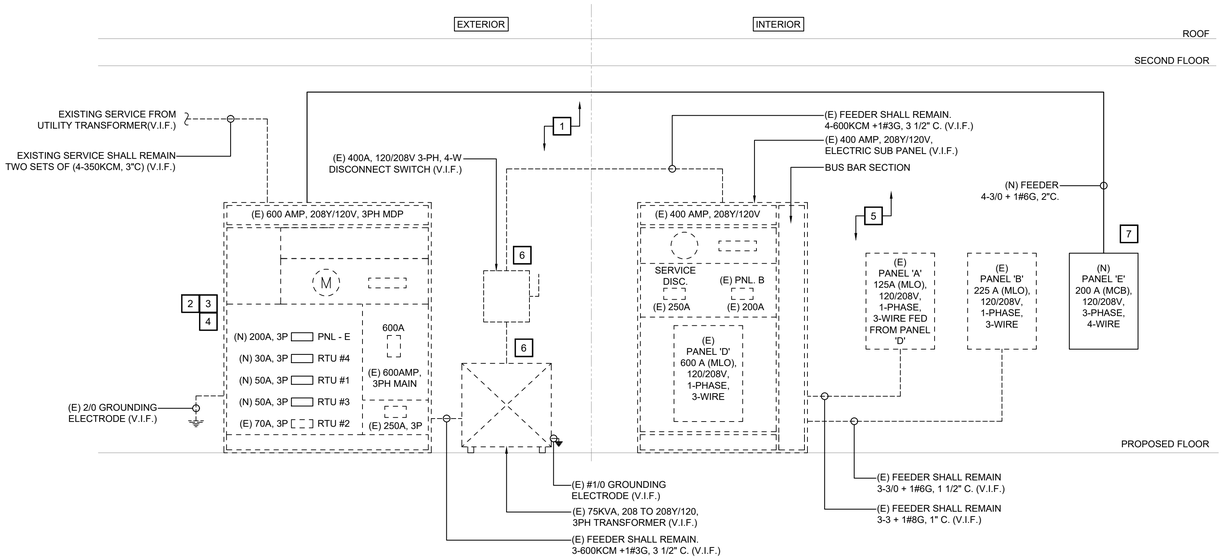
CONSULTANT

SITE INFORMATION

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JIB #: 327
ADDRESS:
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PACOIMA, CA
91331
DRAWN BY: NYE
PROJECT #: 12079-24
SCALE:

POS DETAILS

E9.1



KEYED NOTES:

1. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH ARCHITECT/OWNER FOR EXACT POWER DISTRIBUTION, LOCATION PRIOR TO COMMENCING ANY WORK. INFORM ENGINEER ON RECORD FOR ANY DISCREPANCIES. BASE BID ACCORDINGLY.
2. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY THE EXACT RATINGS AND OPERABLE CONDITION OF EXISTING BRANCH BREAKERS FROM EXISTING TO REMAIN ELECTRICAL PANEL MDP, REUSE IF POSSIBLE OTHERWISE PROVIDE NEW AS SHOWN. BASE BID ACCORDINGLY,.
3. NEW BREAKERS MAY BE REQUIRED FOR USE IN THE EXISTING PANEL BOARD TO MATCH RATING INDICATED ON THE RISER DIAGRAM. PRIOR TO BID/PRICING, THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL EXISTING-TO-REMAIN PANEL BOARD MANUFACTURER AND MODEL NUMBER TO ENSURE THAT REPLACEMENT BREAKERS ARE AVAILABLE. WHERE BREAKER AVAILABILITY ISSUES ARISE, NOTIFY THE PROJECT MANAGER PRIOR TO BID/PRICING.
4. DESIGNATED CIRCUIT NUMBER SHOWN ON THE RISER DIAGRAM FOR A CERTAIN LOAD, MAY BE DIFFERENT THAN THE ACTUAL CIRCUIT NUMBER IN THE EXISTING PANEL BOARD. ALL EXISTING-TO-REMAIN ELECTRICAL LOADS SHALL REMAIN CONNECTED TO THE SAME BREAKER AND CIRCUIT DESIGNATION. AVAILABLE SPARES AND SPACES SHALL BE UTILIZED TO FEED THE NEW LOADS.
5. EXISTING ELECTRICAL PANEL SHALL REMAIN. E.C. SHALL VERIFY EXACT LOCATION, RATING, OPERABLE CONDITION IN FIELD. REPLACE IF FOUND INOPERABLE. BASE BID ACCORDINGLY. E.C. SHALL MAINTAIN CLEARANCE FOR ELECTRICAL PANEL PER CODE.
6. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY THE EXACT USE AND CONFIGURATION/CONNECTIONS OF EXISTING 75KVA TRANSFORMER AND EXISTING 400 A DISCONNECT SWITCH PRIOR TO BID. INFORM ENGINEER ON RECORD FOR ANY DISCREPANCIES.
7. NEW 200A (MCB), 120/208V, 3 PHASE, 4-WIRE ELECTRICAL PANEL 'E'. CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATION WITH ARCHITECT/OWNER PRIOR TO ROUGH IN.

ELECTRICAL PANEL SCHEDULE

PANELBOARD			MDP	VOLTAGE		120 / 208 V	PHASE		3	WIRE		4		
PANEL TYPE			MCB	MAINS		600 A	BUS RATING		600 A	AIC RATING		V.I.F.		
NEMA TYPE ENCLOSURE			3R	MOUNTING		FLOOR	OPTIONS			NOTE		EXISTING PANEL		

CKT. NO.	EQT TAG	CKT TAG	DESCRIPTION	POLE	WIRE SIZE	BKR. SIZE	TOTAL WATTS	PHASE	TOTAL WATTS	BKR. SIZE	WIRE SIZE	POLE	DESCRIPTION	CKT TAG	EQT TAG	CKT. NO.
1			SPACE					A								
2			SPACE					B								
3			SPACE					C								
4							13,673	A								
5		(N)	NEW PANEL - E	3	3/0	200	10,433	B								
6							11,397	C								
7							2,401	A								
8		(N)	RTU #4	3	10	30	2,401	B								
9							2,401	C								
10							4,131	A								
11		(N)	RTU #1	3	6	50	4,131	B								
12							4,131	C								
13							4,131	A								
14		(N)	RTU #3	3	6	50	4,131	B								
15							4,131	C								
16							4,899	A	33,327							
17		(E)	EXIST. RTU #2	3	4	70	4,899	B	33,327	250	250	3	(E) 75 KVA TRANSFORMER (EXIST. 400A INTERIOR SUB PANEL)	(E)	1	
18							4,899	C	33,327							

ALL PHASES TO BE BALANCED TO WITHIN 7%
A= 62,562 WATTS
B= 59,322 WATTS
C= 60,286 WATTS

(E) EXISTING TO REMAIN
(N) NEW CIRCUIT
GFCI GROUND FAULT CURRENT INTERRUPTER
IG CIRCUITS WITH ISOLATED GROUND
TC CIRCUITS ON TIMECLOCK
EMS ROUTING TO THE EMS PANEL
C BREAKER LOCK
a,b,c SWITCHES CONTROLLING LIGHTS

TOTAL CONNECTED LOAD	182,171	WATTS	506	AMPS
TOTAL DEMAND LOAD	162,452	WATTS	451	AMPS

ELECTRICAL PANEL SCHEDULE

PANELBOARD			D	VOLTAGE		208 / 120 V	PHASE		1	WIRE		3		
PANEL TYPE			MLO	MAINS		NA	BUS RATING		600 AMP	AIC RATING		V.I.F.		
NEMA TYPE ENCLOSURE			1	MOUNTING		SUB PANEL	OPTIONS			NOTE		EXISTING PANEL		

CKT. NO.	EQT TAG	CKT TAG	DESCRIPTION	POLE	WIRE SIZE	BKR. SIZE	TOTAL WATTS	PHASE	TOTAL WATTS	BKR. SIZE	WIRE SIZE	POLE	DESCRIPTION	CKT TAG	EQT TAG	CKT. NO.
1		(E)	EXIST. PANEL A	2	3	100	9,500	A	7,120	70	4	2	NEW PANEL - SP	(E)		2
3							9,110	B	7,120							4
5	89A	(E)	EXIST. ICE MACHINE	2	10	30	1,664	A		70		2	SPARE			6
7							1,664	B								8
9	89A	(E)	EXIST. ICE MACHINE	2	10	30	1,664	A		30		2	SPARE			10
11							1,664	B								12
13	80	(N)	WALK IN FREEZER EVAPORATOR	2	12	20	1,350	A	3,000	40	8	2	CLAMSHELL GRILL	(N)	21D	14
15							1,350	B	3,000							16
17	21D	(N)	CLAMSHELL GRILL	2	8	40	3,000	A					SHUNT TRIP			18
19							3,000	B	1,000	20	12	1	EXIST. AIR CURTAIN - 2	(E)		20
21			SHUNT TRIP					A	280	20	12	1	WIB, RESTROOM LIGHTS	(N)		22
23		(E)	EXIST. HME BATTERY	1	12	20	360	B	400	20	12	1	EXTERIOR LIGHTS	(E)		24
25		(E)	EXIST. DT WINDOW REC.	1	12	20	180	A	900	20	12	1	EXIST. ROOF GFI RECEPTACLE	(E)		26
27			SPARE	2		60		B	900	20	12	1	ROOF GFI RECEPTACLE	(N)		28
29								A	1,000	20	12	1	EXIST. AIR CURTAIN - 1	(E)		30

ALL PHASES TO BE BALANCED T0 WITHIN 7%
A= 29,658 WATTS
B= 29,568 WATTS
WATTS

(E) EXISTING TO REMAIN
(N) NEW CIRCUIT
GFCI GROUND FAULT CURRENT INTERRUPTER
IG CIRCUITS WITH ISOLATED GROUND
TC CIRCUITS ON TIMECLOCK
EMS ROUTING TO THE EMS PANEL
C BREAKER LOCK
a,b,c SWITCHES CONTROLLING LIGHTS

TOTAL CONNECTED LOAD	59,226	WATTS	285	AMPS
TOTAL DEMAND LOAD	43,693	WATTS	211	AMPS

ELECTRICAL PANEL SCHEDULE

PANELBOARD			A	VOLTAGE		208 / 120 V	PHASE		1	WIRE		3		
PANEL TYPE			MLO	MAINS		NA	BUS RATING		125 A	AIC RATING		V.I.F.		
NEMA TYPE ENCLOSURE			1	MOUNTING		SURFACE	OPTIONS			NOTE		EXISTING PANEL		

CKT. NO.	EQT TAG	CKT TAG	DESCRIPTION	POLE	WIRE SIZE	BKR. SIZE	TOTAL WATTS	PHASE	TOTAL WATTS	BKR. SIZE	WIRE SIZE	POLE	DESCRIPTION	CKT TAG	EQT TAG	CKT. NO.
1	120	(E)	BUMP BAR	1	12	20	180	A	1,150	20	12	1	BEVARIETY CARBONATOR W/ SHELF	(N)	50B	2
3	131	(E)	REC_SECURITY MONITOR	1	12	20	360	B	1,150	20	12	1	BEVARIETY CARBONATOR W/ SHELF	(N)	50B	4
5	131	(E)	REC_SECURITY MONITOR	1	12	20	360	A	1,150	20	12	1	BEVARIETY BOOSTER PUMP	(N)	50C	6
7	165A	(N)	INTERIOR MENU BOARD	1	12	20	660	B	1,600	20	12	2	MICROWAVE	(N)	31	8
9	166A	(E)	MENU BOARD- BREAKFAST	1	12	20	300	A	1,600							10
11	77	(N)	TIMER - BEV & TACO STATION	1	12	20	360	B	1,600	20	12	1	DRINK DISPENSER	(N)	50-T	12
13	75	(N)	TIMER - FRYER BIN	1	12	20	180	A	1,080	20	12	1	REC_LARGE DINNING TABLE	(N)		14
15		(N)	REC_DINNING TABLE	1	12	20	360	B	360	20	12	1	CONV. RECEPTACLE_DINNING	(N)		16
17		(N)	REC_FOOD LOCKER	1	12	20	1,200	A	360	20	12	1	CONV. RECEPTACLE_DEV. STATION	(N)		18
19	GFCI	(N)	HAND DRYER	1	12	20	1,200	B	540	20	12	1	CONV. RECEPTACLE - ICE M/C	(N)		20
21	GFCI	(N)	HAND DRYER	1	12	20	1,200	A	360	20	12	1	CONV. RECEPTACLE - DT	(N)		22
23		(N)	REC_CEILING (FUTURE TV)	1	12	20	180	B	540	20	12	1	CONV. RECEPTACLE - DT	(N)		24
25		(N)	USB REC. AT SEATING	1	12	20	180	A		20		1	SPARE			26
27							200	B		20		1	SPARE			28
29		(N)	WIF_HEAT TRACE	2	12	20	200	A		20		1	SPARE			30

ALL PHASES TO BE BALANCED TO WITHIN 7%
A= 9,500 WATTS
B= 9,110 WATTS

(E) EXISTING TO REMAIN
(N) NEW CIRCUIT
GFCI GROUND FAULT CURRENT INTERRUPTER
IG CIRCUITS WITH ISOLATED GROUND
TC CIRCUITS ON TIMECLOCK
EMS ROUTING TO THE EMS PANEL
C BREAKER LOCK
a,b,c SWITCHES CONTROLLING LIGHTS

TOTAL CONNECTED LOAD	18,610	WATTS	90	AMPS
TOTAL DEMAND LOAD	15,114	WATTS	73	AMPS

ELECTRICAL PANEL SCHEDULE

PANELBOARD			SP	VOLTAGE		208 / 120 V	PHASE		1	WIRE		3		
PANEL TYPE			MLO	MAINS		NA	BUS RATING		100 A	AIC RATING		V.I.F.		
NEMA TYPE ENCLOSURE				MOUNTING		V.I.F.	OPTIONS			NOTE		NEW PANEL		

CKT. NO.	EQT TAG	CKT TAG	DESCRIPTION	POLE	WIRE SIZE	BKR. SIZE	TOTAL WATTS	PHASE	TOTAL WATTS	BKR. SIZE	WIRE SIZE	POLE	DESCRIPTION	CKT TAG	EQT TAG	CKT. NO.
1	33E	(N)	3-IN-1 TOASTER (CONTACT TOASTER)	2	12	20	1,400	A	1,600	20	12	2	MICROWAVE	(N)	31	2
3							1,400	B	1,600							4
5	25A	(N)	SINGLE SIDED EXTENDED HOLDING BIN	2	12	20	1,880	A	360	20	12	1	CONV. RECEPTACLE	(N)		6
7							1,880	B	360	20	12	1	MENU BOARDS (MONITORS)	(N)		8
9	25A	(N)	SINGLE SIDED EXTENDED HOLDING BIN	2	12	20	1,880	A					SPARE			10
11							1,880	B					SPARE			12
13			SPARE					A					SPARE			14
15			SPARE					B					SPARE			16
17			SPARE					A					SPARE			18
19			SPARE					B					SPARE			20
21			SPARE					A					SPARE			22
23			SPARE					B					SPARE			24

ALL PHASES TO BE BALANCED TO WITHIN 7%
A= 7,120 WATTS
B= 7,120 WATTS
WATTS

(E) EXISTING TO REMAIN.
(N) NEW CIRCUIT
GFCI GROUND FAULT CURRENT INTERRUPTER
IG CIRCUITS WITH ISOLATED GROUND
TC CIRCUITS ON TIMECLOCK
EMS ROUTING TO THE EMS PANEL
C BREAKER LOCK
a,b,c SWITCHES CONTROLLING LIGHTS

TOTAL CONNECTED LOAD	14,240	WATTS	69	AMPS
TOTAL DEMAND LOAD	9,508	WATTS	46	AMPS

ELECTRICAL PANEL SCHEDULE

PANELBOARD			B	VOLTAGE		208 / 120 V	PHASE		1	WIRE		3		
PANEL TYPE			MLO	MAINS		NA	BUS RATING		225 A	AIC RATING		V.I.F.		
NEMA TYPE ENCLOSURE			1	MOUNTING		SURFACE	OPTIONS			NOTE		EXISTING PANEL		

CKT. NO.	EQT TAG	CKT TAG	DESCRIPTION	POLE	WIRE SIZE	BKR. SIZE	TOTAL WATTS	PHASE	TOTAL WATTS	BKR. SIZE	WIRE SIZE	POLE	DESCRIPTION	CKT TAG	EQT TAG	CKT. NO.
1	83	(N)	DUAL TEMP REFRIGERATOR	1	12	20	430	A	520	20	12	1	CHEESE DISPENSER	(N)	32	2
3	85	(N)	UC REFRIGERATOR	1	12	20	660	B	1,560	20	12	1	4 BANK FRYER	(E)	22B	4
5	85	(N)	UC REFRIGERATOR	1	12	20	660	A					SHUNT TRIP			6
7	85	(N)	UC REFRIGERATOR	1	12	20	660	B	280							8
9	86 C	(E)	UC FREEZER	1	12	20	780	A	280	20	12	2	CONDENSING UNIT FOR ICE BIN	(E)	90A	10
11		(N)	SHOW WINDOW RECEPTACLE	1	12	20	1,800	B	1,700	20	12	1	ICE TEA/COFFEE BREWER	(E)	34	12
13		(N)	SHOW WINDOW RECEPTACLE	1	12	20	1,800	A	1,700	20	12	1	ICE TEA/COFFEE BREWER	(E)	34	14
15		(N)	SHOW WINDOW RECEPTACLE	1	12	20	1,800	B	1,400	20	12	2	3-IN-1 TOASTER (CONTACT TOASTER)	(N)	33E	16
17		(N)	SHOW WINDOW RECEPTACLE	1	12	20	1,800	A	1,400							18
19		(N)	SHOW WINDOW RECEPTACLE	1	12	20	1,800	B	310	20	12	1	VITA MIX 570	(E)	39	20
21		(N)	SHOW WINDOW RECEPTACLE	1	12	20	1,800	A	360	20	12	1	DRINK DISPENSER	(N)	50	22
23		(N)	PICKUP SIGN	1	12	20	1,200	B	500	20	12	1	INVERTER 600W DINNING	(N)		24
25			SPARE	1		20		A	250	20	12	1	INVERTER 250W 2ND FLOOR	(N)		26
27	25	(E)	PASS THRU_EXTENDED HOLDING BIN	2	12	20	1,400	B	1,000	20	12	1	EXIST. BIG SIGN MORQUEE	(E)		28
29							1,400	A	1,400	20	12	1	EXIST. BIG SIGN MORQUEE	(E)		30
31	36B	(E)	CRISP & READY FRY HOLDING BIN	2	12	20	1,910	B	410	20	12	1	DINNING LIGHTS	(N)		32
33							1,910	A	120	20	12	1	DINNING LIGHTS	(N)		34
35	90A	(E)	CONDENSING UNIT FOR ICE BIN	2	12	20	280	B	556	20	12	1	KITCHEN LIGHTS	(N)		36
37							280	A	400	20	12	1	SECOND FLOOR LIGHTS	(N)		38
39	37	(E)	SHAKE MACHINE	2	10	30	2,320	B		50		2	SPARE	(N)		40
41							2,320	A								42

ALL PHASES TO BE BALANCED TO WITHIN 7%
A= 19,210 WATTS
B= 21,546 WATTS
WATTS

(E) EXISTING TO REMAIN
(N) NEW CIRCUIT
GFCI GROUND FAULT CURRENT INTERRUPTER
IG CIRCUITS WITH ISOLATED GROUND
TC CIRCUITS ON TIMECLOCK
EMS ROUTING TO THE EMS PANEL
C BREAKER LOCK
a,b,c SWITCHES CONTROLLING LIGHTS

TOTAL CONNECTED LOAD	40,756	WATTS	196	AMPS
TOTAL DEMAND LOAD	36,625	WATTS	177	AMPS

ELECTRICAL PANEL SCHEDULE

PANELBOARD			E	VOLTAGE		120 / 208 V	PHASE		3	WIRE		4		
PANEL TYPE			MCB	MAINS		200 A	BUS RATING		225 A	AIC RATING		V.I.F.		
NEMA TYPE ENCLOSURE			1	MOUNTING		FLUSH	OPTIONS			NOTE		NEW PANEL		

CKT. NO.	EQT TAG	CKT TAG	DESCRIPTION	POLE	WIRE SIZE	BKR. SIZE	TOTAL WATTS	PHASE	TOTAL WATTS	BKR. SIZE	WIRE SIZE	POLE	DESCRIPTION	CKT TAG	EQT TAG	CKT. NO.
1		(N)	CONV. RECEPTACLE	1	12	20	360	A	180	20	12	1	CONV. RECEPTACLE	(N)		2
3		(N)	CONV. RECEPTACLE	1	12	20	180	B	500	20	12	1	IRRIGATION RECEPTACLE	(N)		4
5		(N)	CONV. RECEPTACLE - SECURITY	1	12	20	180	C	1,200	20	12	1	BUILDING SIGN	(N)		6
7		(N)	SECURITY SYSTEM	1	12	20	200	A	1,200	20	12	1	BUILDING SIGN	(N)		8
9		(N)	WIB_DOOR HEATERS	1	12	20	880	B	1,200	20	12	1	BUILDING SIGN	(N)		10
11		(N)	CONV. RECEPTACLE	1	12	20	180	C	1,930	30	10	1	POS SYSTEM	(N)		12
13		(N)	WATER HEATER (IWH-1)	1	12	20	500	A	360	20	12	1	TELEPHONE QUAD	(N)		14
15		(E)	EXIST. WATER HEATER (EX. IWH)	1	12	20	500	B	2,766							16
17		(N)	RCP-1	1	12	20	100	C	2,766	30	10	3	WIF_CONDENDING UNIT	(N)		18
19		(N)	SEC. FLOOR RECEPTACLE	1	12	20	360	A	2,766							20
21		(N)	CONV. SEC. FLOOR RECEPTACLE	1	12	20	360	B	1,921							22
23		(N)	SATELITE RECEPTACLE	1	12	20	540	C	1,921	30	10	3	WIC_CONDENDING UNIT	(N)		24
25		(N)	REC_OFFICE	1	12	20	1,080	A	1,921							26
27		(N)	REC_SOUND SYSTEM	1	12	20	180	B	360	20	12	1	SOLENOID VALVE	(N)		28
29		(N)	REC_SECURITY MONITOR	1	12	20	180	C	1,200	20	12	1	EXIST. STREET SIGN	(E)		30
31		(N)	REC_HME SYSTEM	1	12	20	540	A	746	20	12	1	KEF-1	(N)		32
33		(N)	REC_CO2 TANK	1	12	20	180	B	746	20	12	1	KEF-2	(N)		34
35		(N)	CONV. SEC. FLOOR RECEPTACLE	1	12	20	360	C	360	20	12	1	DUCT DETECTOR	(N)		36
37		(N)	CONV. SEC. FLOOR RECEPTACLE	1	12	20	1,080	A	360	20	12	1	DRIVE THRU MENU BOARD	(N)		38
39		(N)	HOOD CONTROL PANEL (KEH-1)	1	12	20	300	B	360	20	12	1	DRIVE THRU MENU BOARD	(N)		40
41		(N)	HOOD CONTROL PANEL (KEH-2)	1	12	20	300	C	180	20	12	1	FRYER EXAUST HOOD	(N)	5B	42
43	81	(N)	WALK IN COOLER EVAPORATOR	1	12	20	1,840	A	180	20	12	1	FRYER EXAUST HOOD	(N)	5B	44
45			SPARE	1		20		B		20		1	SPARE			46
47			SPARE	1		20		C		20		1	SPARE			48
49			SPARE	1		20		A		20		1	SPARE			50
51			SPARE	1		20		B		20		1	SPARE			52
53			SPARE	1		20		C		20		1	SPARE			54

ALL PHASES TO BE BALANCED TO WITHIN 7%
A= 13,673 WATTS
B= 10,433 WATTS
C= 11,397 WATTS

(E) EXISTING TO REMAIN
(N) NEW CIRCUIT
GFCI GROUND FAULT CURRENT INTERRUPTER
IG CIRCUITS WITH ISOLATED GROUND
TC CIRCUITS ON TIMECLOCK
EMS ROUTING TO THE EMS PANEL
C BREAKER LOCK
a,b,c SWITCHES CONTROLLING LIGHTS

TOTAL CONNECTED LOAD	35,503	WATTS	99	AMPS
TOTAL DEMAND LOAD	35,448	WATTS	99	AMPS

ELECTRICAL LOAD SUMMARY

DESCRIPTION	NEC CONNECTED kW	VOLT	PHASE	NEC DEMAND FACTOR	NEC DEMAND kW
LIGHTING- 120V	2.9	120	1	1.25	3.6
EXTERIOR SIGN	6.8	120	1	1.25	8.5
RECEPTACLES	22.7	120	1	>10kW=10+(0.5*(kW-10)]	16.3
INTERIOR SIGN	1.2	120	1	1.25	1.5
S/W OUTLETS	10.8	120	1	1.25	13.5
AIR CURTAIN	2.0	120	1	1.00	2.0
CU	15.2	208	3	1.00	15.2
KITCHEN EQUIPMENT	70.5	208	1	0.65	45.8
DOOR HEATER	0.9	120	1	1.00	0.9
ROOFTOP UNITS	46.7	208	3	1.00	46.7
HOT WATER HEATER	1.1	120	1	1.00	1.1
KITCHEN EXH. FANS	1.5	120	1	1.00	1.5
TOTALS	182.2				156.6

NOTES:
* USE GREATER VALUE OF THE TWO CATEGORIES.
** 125% OF THE LARGEST MOTOR OR COMPRESSOR IN SYSTEM APPLIED ONLY ON ONE UNIT.
*** N.E.C. ARTICLE 220-12 REQUIREMENT (200 VA PER FOOT OF SHOW WINDOW)
MINUS ACTUAL SHOW WINDOW LIGHTING kVA.

N.E.C. DEMAND kVA x 1,000 / SYSTEM VOLTAGE x 1.732 — MINIMUM FEEDER AMPERAGE

156.6 x 1000 = 156,612 / 208 x 1.732 = 360 — 434.7 AMPS USE (EXISTING) 600AMP SERVICE.

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DATES
RELEASE:
P.M. UPDATES:
SUBMITTAL DATE: 1: APR. 10, 2025
2:
3:
BID:
CONSTRUCTION:

REVISIONS
- 03/25/25-CHECK SET
- 04/22/25-PERMIT SET

CONSULTANT

SITE INFORMATION
MK TYPE: MK2X
JIB #: 327
ADDRESS: 13648 VAN NUYS BLVD PACOIMA, CA 91331
DRAWN BY: NYE
PROJECT #: 12079-24
SCALE:

ELECTRICAL RISER AND PANEL SCHEDULE

E11.1

Not for Engineering

ENERGY ANALYSIS - INDOOR

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-E

This document , JIB #327, Van Nuys BLVD_Pacoima, CA with requirements in 110.9, 110.12(c), 130.0, 130.1, 140.6 and 141.0(b)2 for indoor lighting scopes using the prescriptive path for nonresidential and hotel/motel occupancies. It is also used to document compliance with requirements in 160.5, 170.2(e) and 180.2(b)4 for indoor lighting scopes using the prescriptive path for multifamily occupancies. Multifamily includes dormitary and senior living facilities.

Project Name: JIB #327, Van Nuys BLVD_Pacoima, CA	Report Page: (Page 1 of 8)
Project Address: 13648 Van Nuys BLVD, Pacoima, CA 91331	Date Prepared: 2025-04-22T04:51:43-04:00

A. GENERAL INFORMATION

01	Project Location (city)	04	Total Conditioned Floor Area (ft²)	2,486
02	Climate Zone	05	Total Unconditioned Floor Area (ft²)	0
03	Occupancy Types Within Project (select all that apply):	06	# of Stories (Habitable Above Grade)	2
● Restaurant				

B. PROJECT SCOPE

This table includes any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.6 / 170.2(e) or 141.0(b)2 / 180.2(b)4 for alterations.

Scope of Work	Conditioned Spaces		Unconditioned Spaces	
01	02	03	04	05
My Project Consists of (check all that apply):	Calculation Method	Area (ft²)	Calculation Method	Area (ft²)
☐ New Lighting System	N/A	0	N/A	0
☐ New Lighting System - Parking Garage	N/A	0	N/A	0
☒ Altered Lighting System	Complete Building Method	2486	N/A	0
Total Area of Work (ft²)	2486			

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-E
Project Name: JIB #327, Van Nuys BLVD_Pacoima, CA	Report Page: (Page 2 of 8)
	Date Prepared: 2025-04-22T04:51:43-04:00

C. COMPLIANCE RESULTS

If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D, for guidance.

Lighting in conditioned and unconditioned spaces must not be combined for compliance per 140.6(b)1 / 170.2(e)	Allowed Lighting Power per 140.6(b) / 170.2(e) (Watts)						Adjusted Lighting Power per 140.6(a) / 170.2(e) (Watts)				Compliance Results
	01	02	03	04		05	06	07 Adjustments		08	09
	Complete Building 140.6(c)1 (See Table I)	Area Category 140.6(c)2 / 170.2(e)4 (See Table I)	Area Category Additional 140.6(c)2G / 170.2(e)4Av (+) (See Table J)	Tailored 140.6(c)3 / 170.2(e)4B (+) (See Table K)	=	**Total Allowed** (Watts)	≥ Total Designed (Watts) (See Table F)	PAF Lighting Control Credits 140.6(a)2 / 170.2(e)1B (-) (See Table P)	=	**Total Adjusted** (Watts) *Includes Adjustments	**05 must be >= 08 140.6 / 170.2(e)**
Conditioned	1,588.6				=	1,588.6	≥ 1,530		=	1530	COMPLIES
Unconditioned					=		≥		=		
Controls Compliance (See Table H for Details)											COMPLIES
Rated Power Reduction Compliance (See Table Q for Details)											

D. EXCEPTIONAL CONDITIONS

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

E. ADDITIONAL REMARKS

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

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-E
Project Name: JIB #327, Van Nuys BLVD_Pacoima, CA	Report Page: (Page 3 of 8)
	Date Prepared: 2025-04-22T04:51:43-04:00

F. INDOOR LIGHTING FIXTURE SCHEDULE

This table includes all planned permanent and portable lighting other than dwelling unit/ hotel/ motel room lighting. Multifamily dwelling unit and hotel/motel room lighting is documented in Table T. If using Table T to document lighting in multifamily common use areas providing shared provisions for living, eating, cooking or sanitation, those luminaires are not included here.

Designed Wattage: Conditioned Spaces

01 Name or Item Tag	02 Complete Luminaire Description	03 Modular (Track) Fixture	04 Small Aperture & Color Change[3]	05 Watts per luminaire[2]	06 How is Wattage determined	07 Total Number of Luminaires	08 Excluded per 140.6(a)3 / 170.2(e)2C	09 Design Watts	10 Field Inspector Pass	10 Field Inspector Fail
1A	5"/6" DIA. RETROFILE BAFFLE	No	NA	12	Mfr. Spec	3	No	36	☐	☐
1C	6" DIA. ARCHITECTURAL WALL WASH	No	NA	20	Mfr. Spec	4	No	80	☐	☐
2A/2B	1'X4' LED BACKLIT	No	NA	20	Mfr. Spec	2	No	40	☐	☐
14A/14B	2' X 2' RECESSED LED BACKLIT	No	NA	40	Mfr. Spec	25	No	1,000	☐	☐
EX1	EXISTING	No	NA	10	Mfr. Spec	4	No	40	☐	☐
EX4	EXISTING	No	NA	30	Mfr. Spec	7	No	210	☐	☐
EX5	EXISTING	No	NA	12	Mfr. Spec	2	No	24	☐	☐
EX6	EXISTING	No	NA	20	Mfr. Spec	1	No	20	☐	☐
8A	4' SURFACE MOUNTED LED	No	NA	40	Mfr. Spec	2	No	80	☐	☐
Total Designed Watts: CONDITIONED SPACES								1,530		

[1]*FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per 140.6(a)4B / 170.2(e)2D is adjusted to be 75% /80% of their rated wattage. Table F automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05.*

[2]*Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per 130.0(c) / 160.5(b). Wattage used must be the maximum rated for the luminaire, not the lamp.*

G. MODULAR LIGHTING SYSTEMS

This section does not apply to this project.

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-E
Project Name: JIB #327, Van Nuys BLVD_Pacoima, CA	Report Page: (Page 4 of 8)
	Date Prepared: 2025-04-22T04:51:43-04:00

H. INDOOR LIGHTING CONTROLS (Not including PAFs)

This table includes lighting controls for conditioned and unconditioned spaces.

Building Level Controls

01	02	03 Field Inspector Pass	03 Field Inspector Fail
Mandatory Demand Response 110.12(c)	Shut-off controls 130.1(c) / 160.5(b)4C		
NA < 4,000W subject to multilevel	Whole Building Auto Time Switch	☐	☐

Area Level Controls

04 Area Description	05 Complete Building or Area Category Primary Function Area	06 Manual Area Controls 130.1(a) / 160.5(b)4A	07 Multi-Level Controls 130.1(b) / 160.5(b)4B	08 Shut-Off Controls 130.1(c) // 160.5(b)4C	09 Primary/Sky lit Daylighting 130.1(d) / 160.5(b)4D	10 Secondary Daylighting 130.1(d) / 160.5(b)4D	11 Interlocked Systems 140.6(a)1/ 170.2(e)2A	12 Field Inspector Pass	12 Field Inspector Fail
DINING/PUBLIC	Restaurant	Auth. Personnel	Dimmer	Auto. Time Switch	Included	Included	No	☐	☐
KITCHEN/SERVICE	Restaurant	Auth. Personnel	Multilevel Switch	Auto. Time Switch	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
OFFICE	Restaurant	Auth. Personnel	Dimmer	Occupancy Sensor	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
RESTROOM	Restaurant	Auth. Personnel	Dimmer	Occupancy Sensor	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
					13				
					Plan Sheet Showing Daylit Zones:				
					Refer to sheet E4.1 for lighting plan 1st floor				

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-E
Project Name: JIB #327, Van Nuys BLVD_Pacoima, CA	Report Page: (Page 5 of 8)
	Date Prepared: 2025-04-22T04:51:43-04:00

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS

Each area complying using the Complete Building or Area Category Methods per 140.6(b) are included in this table. Column 06 indicates if additional lighting power allowances per 140.6(c) or adjustments per 140.6(a) are being used .

Conditioned Spaces

01 Area Description	02 Complete Building or Area Category Primary Function Area	03 Allowed Density (W/ft²)	04 Area (ft²)	05 Allowed Wattage (Watts)	06 Additional Allowance / Adjustment Area Category	06 PAF
DINING/PUBLIC	Restaurant	0.65	760	494	No	No
KITCHEN/SERVICE	Restaurant	0.65	870	565.5	No	No
OFFICE	Restaurant	0.65	616	400.4	No	No
RESTROOM	Restaurant	0.65	198	128.7	No	No
	TOTALS:		2,444	1,588.6	See Tables J, or P for detail	

J. ADDITIONAL ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING SYSTEM

This section does not apply to this project.

K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE

This section does not apply to this project.

L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY

This section does not apply to this project.

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING

This section does not apply to this project.

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-E
Project Name: JIB #327, Van Nuys BLVD_Pacoima, CA	Report Page: (Page 6 of 8)
	Date Prepared: 2025-04-22T04:51:43-04:00

N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED DECORATIVE /SPECIAL EFFECTS

This section does not apply to this project.

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE

This section does not apply to this project.

P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))

This section does not apply to this project.

Q. RATED POWER REDUCTION COMPLIANCE FOR ONE-FOR-ONE ALTERATIONS

This section does not apply to this project.

R. 80% LIGHTING POWER FOR ALL ALTERATIONS - CONTROLS EXCEPTIONS

This section does not apply to this project.

S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF)

This section does not apply to this project.

T. DWELLING UNIT LIGHTING

This section does not apply to this project.

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-E
Project Name: JIB #327, Van Nuys BLVD_Pacoima, CA	Report Page: (Page 7 of 8)
	Date Prepared: 2025-04-22T04:51:43-04:00

U. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selections have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online

Form/Title
NRCI-LTI-E - Must be submitted for all buildings

V. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

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

Form/Title	Systems/Spaces To Be Field Verified
NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	DINING/PUBLIC; KITCHEN/SERVICE; OFFICE; RESTROOM
NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	DINING/PUBLIC

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-E
Project Name: JIB #327, Van Nuys BLVD_Pacoima, CA	Report Page: (Page 8 of 8)
Project Address: 13648 Van Nuys BLVD, Pacoima, CA 91331	Date Prepared: 2025-04-22T04:51:43-04:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: CLAYTON LUCAS	Documentation Author Signature:
Company: GEMINI ENGINEERING GROUP	Signature Date: 04/24/2025
Address: 101 NIGHTLINGER LANE	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: MILLSAP, TX 76066	Phone: 817-901-5991

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: CLAYTON LUCAS	Responsible Designer Signature:
Company: GEMINI ENGINEERING GROUP	Date Signed: 04/24/2025
Address: 101 NIGHTLINGER LANE	License: E24065
City/State/Zip: MILLSAP, TX 76066	Phone: 817-901-5991

Property of MY Engineers

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DATES

RELEASE:
P.M. UPDATES:
SUBMITTAL DATE:
1: APR. 10, 2025
2:
3:
BID:
CONSTRUCTION:

REVISIONS

△ 03/25/25-CHECK SET
△ 04/22/25-PERMIT SET
△
△
△
△

CONSULTANT

SITE INFORMATION

MK TYPE: MK2X
JIB #: 327
ADDRESS:
13648 VAN NUYS BLVD
PACOIMA, CA
91331

DRAWN BY: NYE
PROJECT #: 12079-24
SCALE:

ELECTRICAL ENERGY ANALYSIS (TITLE 24)

E12.1

ENERGY ANALYSIS - OUTDOOR

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-E
This document is JIB #327, Van Nuys BLVD_Pacoima, CA -ith requirements in 110.9, 130.0, 130.2, 140.7, and 141.0(b)2I, for outdoor lighting scopes using the prescriptive path for nonresidential and hotel/motel occupancies. It is also used to document compliance with requirements in 160.5, 170.2(e)6, 180.1(a) and 180.2(b)4Bv for outdoor lighting scopes using the prescriptive path for multifamily and mixed-use occupancies. Multifamily includes dormitory and senior living facilities.	
Project Name: JIB #327, Van Nuys BLVD_Pacoima, CA	**Report Page:** (Page 1 of 7)
Project Address: 13648 Van Nuys BLVD, Pacoima, CA 91331	**Date Prepared:** 2025-04-22T03:24:28-04:00

A. GENERAL INFORMATION

01	Project Location (city)	PACOIMA	04	Total Illuminated Hardscape Area (ft^2)	200
02	Climate Zone	9			
03	Outdoor Lighting Zone per Title 24 Part 1 10.114 or as designated by Authority Having Jurisdiction (AHJ):				
☐	LZ-0: Very Low - Undeveloped Parkland	☒ LZ-2: Moderate - Urban Clusters	☐	LZ-4: High - Must be reviewed by CA Energy Commission for Approval	
☐	LZ-1: Low - Rural Areas	☐ LZ-3: Moderately High - Urban Areas			
05	Occupancy Types within Project				
●	Restaurant				

B. PROJECT SCOPE

This table includes outdoor lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.7 / 170.2(e)6 or 141.0(b)2I. / 180.2(b)4Bv for alterations.

My Project Consists of:

01	02	
☐ New Lighting System	Must Comply with Allowances from 140.7 / 170.2(e)6	
☒ Altered Lighting System	Is your alteration increasing the connected lighting load (Watts)?	○ Yes ● No
03	04	05
% of Existing Luminaires Being Altered[1]	Sum Total of Luminaires Being Added or Altered	Calculation Method
☒ < 10% ☐ >= 10% and < 50% ☐ >= 50%	12	Not Increasing Existing Power Method per 141.0(b)2L / 180.2(b)4Bv

[1] *FOOTNOTES: % of Existing Luminaires Being Altered = (Sum Total of Luminaires Being Added or Altered / Existing Luminaires within the Scope of the Permit Application) x 100.*

STATE OF CALIFORNIA
Outdoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-E
Project Name: JIB #327, Van Nuys BLVD_Pacoima, CA	**Report Page:** (Page 2 of 7)
	Date Prepared: 2025-04-22T03:24:28-04:00

C. COMPLIANCE RESULTS

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

Calculations of Total Allowed Lighting Power (Watts) 140.7 / 170.2(e)6 or 141.0(b)2I. / 180.2(b)4Bv												Compliance Results		
01		02		03	04		05		06		07	08		09
General Hardscape Allowance 140.7(d)1 / 170.2(e)6 (See Table I)	+	Per Application 140.7(d)2 / 170.2(e)6 (See Table J)	+	Sales Frontage 140.7(d)2 (See Table K)	Ornamental 140.7(d)2 / 170.2(e)6 (See Table L)	+	Per Specific Area 140.7(d)2 / 170.2(e)6 (See Table M)	OR	Existing Power Allowance 141.0(b)2I. / 180.2(b)4Bv (See Table N)	=	**Total Allowed** (Watts)	≥	**Total Actual** (Watts)	**07 must be >= 08**
---	+	---	+	---	---	+	---	OR	140	=	140	≥	120	COMPLIES
Shielding Compliance (See Table G for Details)														N/A
Controls Compliance (See Table H for Details)														---

D. EXCEPTIONAL CONDITIONS

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

E. ADDITIONAL REMARKS

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

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F. OUTDOOR LIGHTING FIXTURE SCHEDULE

For new or altered lighting systems demonstrating compliance with 140.7 / 170.2(e)6 all new luminaires being installed and any existing luminaires remaining or being moved within the spaces covered by the permit application are included in the Table below. For altered lighting systems using the Existing Power method per 141.0(b)2I, only new luminaires being installed and replacement luminaires being installed as part of the project scope are included (ie, existing luminaires remaining or existing luminaires being moved are not included). Outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit are included in Table H. and are not included here. All other multifamily outdoor lighting is included here.

Designed Wattage:

01	02		03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description		Watts per luminaire[1, 2]	How is Wattage determined	Total Number Luminaires[2]	Luminaire Status[3]	Excluded per 140.7(a)3 / 170.2(e)6A	Design Watts	Cutoff Req. > 6,200 initial lumen output 130.2(b) / 160.5(c)1[4]	Field Inspector	
										Pass	Fail
EX2	EXISTING	☐ Linear	10	Mfr. Spec	4	Existing Unchanged	☐	40	---	☐	☐
EX3	EXISTING	☐ Linear	10	Mfr. Spec	8	Existing Unchanged	☐	80	---	☐	☐
							Total Design Watts:	120			

* NOTES: Selections with a * require a note in the space below explaining how compliance is achieved.
EX: Luminaire is lighting a statue; EXCEPTION 2 to 130.2(b)

[1] *FOOTNOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per 130.0(c) / 160.5(b)*
[2] *For linear luminaires, wattage should be indicated as W/lf instead of Watts/luminaire. Total linear feet should be indicated in column 05 instead of number of luminaires.*
[3] *Select "New" for new luminaires in a new outdoor lighting project, or for added luminaires in an alteration. Select "Altered" for replacement luminaires in an alteration. Select "Existing to Remain" for existing luminaires within the project scope that are not being altered and are remaining. Select "Existing Reinstalled" for existing luminaires which are being removed and reinstalled as part of the project scope.*
[4] *Compliance with mandatory shielding requirements is required for luminaires with initial lumen output >= 6,200 unless exempted by 130.2(b)/ 160.5(c)*

G. SHIELDING REQUIREMENTS (BUG)

This section does not apply to this project.

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H. OUTDOOR LIGHTING CONTROLS

This section does not apply to this project.

I. LIGHTING POWER ALLOWANCE (per 140.7 / 170.2(e))

This section does not apply to this project.

J. LIGHTING ALLOWANCE: PER APPLICATION

This section does not apply to this project.

K. LIGHTING ALLOWANCE: SALES FRONTAGE

This section does not apply to this project.

L. LIGHTING ALLOWANCE: ORNAMENTAL

This section does not apply to this project.

M. LIGHTING ALLOWANCE: PER SPECIFIC AREA

This section does not apply to this project.

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N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)

This table includes all existing luminaires being replaced to establish the lighting power allowance per 141.0(b)2Lii, 141.0(b)2Liii, 180.2(b)4Bvb and 180.2(b)4Bvc. Existing luminaires that are remaining or being moved should NOT be included.
Outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit are included in Table H. and are not included here. All other multifamily outdoor lighting is included here.

Existing Conditions Wattage:

01	02	03	04	05	06	07	
Name or Item Tag	Complete Luminaire Description	Watts per luminaire[1,2]	How is Wattage determined	# of Luminaires Being Replaced[2]	Existing Watts	Field Inspector Pass	Fail
EX2	EXISTING	10	Mfr. Spec[1]	5	50	☐	☐
EX3	EXISTING	10	Mfr. Spec[1]	9	90	☐	☐
				Total Existing Watts	140		
				Allowance per 141.0(b)2L / 180.2(b)4Bv:	140		

[1] *FOOTNOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per 130.0(c) / 160.5(b)*
[2] *For linear luminaires, wattage should be indicated as W/lf instead of Watts/luminaire. Total linear feet should be indicated in column 05 instead of number of luminaires.*

O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selection has been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online

Form/Title
NRCI-LTO-E - Must be submitted for all buildings

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	Date Prepared: 2025-04-22T03:24:28-04:00

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

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

Form/Title	Systems/Spaces To Be Field Verified
NRCA-LTO-02-A - Must be submitted for all outdoor lighting controls except for alterations where controls are added to <= 20 luminaires.	

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CERTIFICATE OF COMPLIANCE	NRCC-LTO-E
Project Name: JIB #327, Van Nuys BLVD_Pacoima, CA	**Report Page:** (Page 7 of 7)
Project Address: 13648 Van Nuys BLVD, Pacoima, CA 91331	**Date Prepared:** 2025-04-22T03:24:28-04:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: CLAYTON LUCAS	Documentation Author Signature:
Company: GEMINI ENGINEERING GROUP	Signature Date: 04/24/2025
Address: 101 NIGHTLINGER LANE	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: MILLSAP, TX 76066	Phone: 817-901-5991

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: CLAYTON LUCAS	Responsible Designer Signature:
Company: GEMINI ENGINEERING GROUP	Date Signed: 04/24/2025
Address: 101 NIGHTLINGER LANE	License: E24065
City/State/Zip: MILLSAP, TX 76066	Phone: 817-901-5991

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DATES

RELEASE:
P.M. UPDATES:
SUBMITTAL DATE:
1: APR. 10, 2025
2:
3:
BID:
CONSTRUCTION:

REVISIONS

△ 03/25/25-CHECK SET
△ 04/22/25-PERMIT SET
△
△
△
△

CONSULTANT

SITE INFORMATION

MK TYPE: MK2X
JIB #: 327
ADDRESS:
13648 VAN NUYS BLVD
PACOIMA, CA
91331
DRAWN BY: NYE
PROJECT #: 12079-24
SCALE:

ELECTRICAL ENERGY ANALYSIS (TITLE 24)

E12.2