MECHANICAL SYMBOLS LIST

- AIR HANDLING UNIT
- WALL MOUNTED AIR CONDITIONING UNIT
- MODULATING SUPPLY AIR DAMPER
- INLINE EXHAUST FAN
- AIR COOLED CONDENSING UNIT

AIR DEVICES

- CEILING DIFFUSER SUPPLY
- CEILING DIFFUSER RETURN/EXHAUST

DUCT ACCESSORIES

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

CONTROLS AND SENSORS

- T — THERMOSTAT
- TS — TEMPERATURE SENSOR

DUCTWORK

- 24"X12" — RECTANGULAR DUCT (WIDTH X DEPTH)
- FC FC — FLEXIBLE CONNECTION
- Ø12 — FLEXIBLE DUCT
- ROUND DUCT CROSS SECTION
- SUPPLY AIR RECTANGULAR DUCT GOING UP/DOWN
- RETURN AIR RECTANGULAR DUCT GOING UP/DOWN

APPLICABLE CODES

A. 2025 CALIFORNIA BUILDING CODE
B. 2025 CALIFORNIA MECHANICAL CODE
C. 2025 CALIFORNIA PLUMBING CODE
D. 2025 CALIFORNIA FIRE CODE
E. 2025 CALIFORNIA ELECTRICAL CODE
F. 2025 CALIFORNIA ENERGY CODE

MECHANICAL DRAWING LIST

M-0	MECHANICAL SYMBOL, ABBREVIATION & NOTES
M-0.1	MECHANICAL SPECIFICATIONS
M-1	MECHANICAL FLOOR PLAN - CLINIC
M-1.1	MECHANICAL FLOOR PLAN - LAB
M-2	MECHANICAL DETAILS
M-3	MECHANICAL SCHEDULE
M-4	TITLE 24 (1 OF 2)
M-4.1	TITLE 24 (2 OF 2)

MECHANICAL ABBREVIATIONS

AC	AIR CONDITIONING UNIT
ACCU	AIR COOLED CONDENSING UNIT
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AL	ACOUSTIC LINING
BD	GRAVITY DAMPER
CD	CONDENSATE DRAIN
S	SUPPLY CEILING DIFFUSER
R	RETURN CEILING DIFFUSER
CFM	CUBIC FEET OF AIR PER MINUTE
DN	DOWN
E	EXISTING
EDH	ELECTRICAL DUCT HEATER
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
FC	FLEXIBLE CONNECTION
FD/AD	FIRE DAMPER W/ACCESS DOOR
FD	FIRE DAMPER W/FUSIBLE LINK
FSD	FIRE SMOKE DAMPER
IEER	INTEGRATED ENERGY EFFICIENCY RATIO
MSD	MODULATING SUPPLY DAMPER
MD	MOTORIZED DAMPER
N	NEW
OAF	OUTSIDE AIR FAN
RA	RETURN AIR
RAD	RETURN AIR DUCT
SA	SUPPLY AIR
SAD	SUPPLY AIR DUCT
SEER	SEASONAL ENERGY EFFICIENCY RATIO
VD	VOLUME CONTROL DAMPER

BUILDING DEPARTMENT NOTES

ALL WORK SHALL COMPLY WITH APPLICABLE SECTIONS OF THE CALIFORNIA BUILDING CODE 2025, AND ALL AMENDMENTS AND RULES AND REGULATIONS OF THE DEPARTMENT OF BUILDINGS TO DATE.

1. ALL HEATING AND COOLING LOADS CALCULATED PER ASHRAE/ACCA 183.
2. VENTILATION FOR ALL AREA SHALL COMPLY WITH CALIFORNIA ENERGY CODE 2025, 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. REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED FIRE-RATED WALL AND SMOKE WALL CONSTRUCTION AND LOCATION.
6. THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.
7. TESTS OF MECHANICAL SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING SECTIONS OF THE CALIFORNIA MECHANICAL CODE 2025:
   A. VENTILATION SYSTEM BALANCING CALIFORNIA MECHANICAL CODE 2025 - 402.0
   B. SMOKE CONTROL SYSTEMS - CALIFORNIA MECHANICAL CODE 2025 - 606.0
8. THE FOLLOWING WORK ITEMS, COMPONENTS, MATERIALS, CAPACITIES, ETC. SHALL COMPLY WITH THE REFERENCED CODE OR STANDARD:
   A. STANDARDS OF HEATING - CALIFORNIA BUILDING CODE 2025 - 1203
   B. DUCT CONSTRUCTION AND INSTALLATION- CALIFORNIA MECHANICAL CODE 2025 - 603.0
   C. AIR INTAKES, EXHAUSTS AND RELIEF - CALIFORNIA MECHANICAL CODE 2025 - 502.0
   D. AIR FILTERS - CALIFORNIA MECHANICAL CODE 2025 - 408.0 (FILTERS SHALL BE A MINIMUM OF MERV 13 AS REQUIRED BY CEC 2025 120.1(C))
   E. MANUAL AND AUTOMATIC FIRE AND SMOKE CONTROLS FOR AIR DISTRIBUTION SYSTEMS - CALIFORNIA MECHANICAL CODE 2025 - 606.0
9. PORTIONS 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-8:
   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.
10. 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.
11. ALL MECHANICAL EQUIPMENT SHALL BE TESTED BY A CALIFORNIA CERTIFIED ACCEPTANCE TEST TECHNICIAN.

THERMOSTATIC CONTROL NOTES

(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
2. THE PERIMETER SYSTEM IS DESIGNED SOLELY TO OFFSET ENVELOPE HEAT LOSSES OR GAINS; AND
3. THE PERIMETER SYSTEM HAS AT LEAST ONE THERMOSTATIC CONTROL FOR EACH BUILDING ORIENTATION OF 50 FEET OR MORE; AND
4. THE PERIMETER SYSTEM IS CONTROLLED BY AT LEAST ONE THERMOSTAT LOCATED IN ONE OF THE ZONES SERVED BY THE SYSTEM.

(a) 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 NON-COVERED 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.

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

(b) 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.
2. 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.

FIELD VERIFY ALL CONDITIONS

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. 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. 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.

GENERAL NOTES

1. CONTRACTOR SHALL SURVEY THE AREA OF THIS WORK BEFORE SUBMITTING A BID AND SHALL BE RESPONSIBLE FOR NOTIFYING THE ARCHITECT OF ANY CONDITIONS WHICH WOULD PREVENT THE INSTALLATION OF THE WORK AS SHOWN ON DRAWINGS.
2. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIALS WHICH VIOLATE ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.
3. BEFORE PROCEEDING WITH ANY WORK IN OCCUPIED OR USED AREAS, THE CONTRACTOR SHALL APPLY TO OWNER FOR PERMISSION TO ENTER SUCH AREAS. THE CONTRACTOR IS OBLIGED TO PERFORM HIS WORK ONLY AT THE TIMES DESIGNATED BY OWNER. THERE WILL BE NO ADDITIONAL COMPENSATION FOR THE WORK PERFORMED AFTER HOURS OR ON OFF-DAYS WITHOUT PRIOR WRITTEN APPROVAL.
4. THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED, AND IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE PRESENT OCCUPANTS.
5. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK IN OVERTIME AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.
6. CONTRACTOR SHALL ASCERTAIN THE APPROPRIATE METHOD FOR BRINGING THE UNITS INTO AND THROUGH THE BUILDING TO POSITION UNIT IN LOCATION SHOWN ON THE PLANS. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH RESTRICTIVE SPACES. COORDINATE WITH BUILDING OWNER APPROPRIATE TIMES OF DAY SUCH EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.
7. DUCTWORK AND PIPING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL MAKE ALLOWANCE IN PRICING FOR ROUTING OF DUCTWORK AND PIPING TO AVOID OBSTRUCTIONS. EXACT LOCATIONS ARE SUBJECT TO APPROVAL OF ARCHITECT. COORDINATION WITH THE OTHER TRADES IS REQUIRED.
8. SUPPORT ALL DUCTWORK AND PIPING FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OR SUPPORTS FOR EQUIPMENT, FURNISH ADDITIONAL FRAMING. INSERTS SHALL BE STEEL, SLOTTED TYPE AND FACTORY PAINTED. SINGLE ROD SHALL BE SIMILAR TO GRINNELL FIG. 281. MULTI-ROD SHALL BE SIMILAR TO FEE & MASON SERIES 9000 WITH END CAPS AND CLOSURE STRIPS. MAXIMUM LOADING INCLUDING PIPES, DUCTWORK CONTENTS AND COVERING SHALL NOT EXCEED 75% OF RATED INSERT CAPABILITY. WHEN SUPPORTING FROM BUILDING USE BEAM CLAMPS IN APPROVED MANNER.
9. PROVIDE ALL NECESSARY FLASHING AND COUNTER FLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPES, DUCTS, LOUVERS, CONDUIT, AND EQUIPMENT. PROVIDE EQUIPMENT CURBS AND DUNNAGE STEEL AS REQUIRED.
10. SEAL OPENINGS AROUND DUCTS AND PIPING THROUGH PARTITIONS, WALLS AND FLOORS (NOT IN SHAFTS) WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL (FIBERGLASS INSULATION IS NOT ACCEPTABLE).
11. WHERE PENETRATIONS THROUGH FIRE RATED WALLS ARE NOT FIRE PROOFED THIS CONTRACTOR SHALL BE RESPONSIBLE TO SEAL SAME TO MAINTAIN THE RATED INTEGRITY.
12. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.
13. ACCESS DOORS ARE REQUIRED FOR ALL BUILDING SERVICE VALVES THAT RUN THROUGH THE SPACE, AND ACCESS DOOR SHALL HAVE THE EQUAL RATED CAPACITY (1HR, 2HR, ETC.) AS WALL. COORDINATE ALL LOCATIONS OF ACCESS DOORS WITH THE ARCHITECT.
14. REMOVABLE ACCESS TILE AND/OR ACCESS DOOR ARE REQUIRED IN HUNG CEILINGS, SHAFTS AND WALLS FOR ALL VOLUME AND FIRE DAMPERS, AUTOMATIC DAMPERS AND ALL OTHER MECHANICAL EQUIPMENT AND DEVICES. HVAC CONTRACTOR TO FURNISH ACCESS LOCATION REQUIREMENTS TO GENERAL CONTRACTOR. ACCESS TILE IDENTIFICATION: PROVIDE BUTTONS, TABS, AND MARKERS TO IDENTIFY LOCATION OF CONCEALED VALVES, DAMPERS AND EQUIPMENT.
15. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.
16. MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
17. ALL EQUIPMENT SHALL BE PROVIDED WITH ONE YEAR WARRANTY PARTS AND LABOR AND FIVE YEARS ON COMPRESSORS. WARRANTY PERIOD BEGINS UPON PROJECT ACCEPTANCE
18. ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS WORK WITH ITS COMPLETION AND FINAL ACCEPTANCE AND SHALL REPLACE ANY OF THE SAME WHICH MAY BE DAMAGED, LOST, OR STOLEN WITHOUT ADDITIONAL COST TO THE OWNER.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FAILURE OF ANY DUCTWORK SYSTEM OR EQUIPMENT TO FUNCTION PROPERLY UPON COMPLETION OF HIS WORK UPON SAID SYSTEM OR EQUIPMENT.
21. SUBMIT SHOP DRAWING OF ALL WORK WHICH MUST BE APPROVED BY THE ARCHITECT AND ENGINEER BEFORE WORK COMMENCES.
22. INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS THE CONTRACTOR SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.
23. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, BALANCED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.
24. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL," "SHALL BE," "FURNISH," "PROVIDE," "A," "THE," AND "ALL" HAVE BEEN OMITTED FOR BREVITY.
25. WHERE A CONFLICT EXISTS BETWEEN THE DRAWINGS, THE SPECIFICATIONS OR ANY OTHER CONSTRUCTION DOCUMENT, THE ONE WITH THE MOST STRINGENT REQUIREMENT(S) SHALL APPLY.

DEFINITIONS:
1) "PROVIDE": TO SUPPLY, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.
2) "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.
3) "FURNISH" OR "SUPPLY": TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH RELATED ACCESSORIES.

GENERAL HVAC NOTES

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

SCOPE OF WORK

SCOPE OF WORK

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

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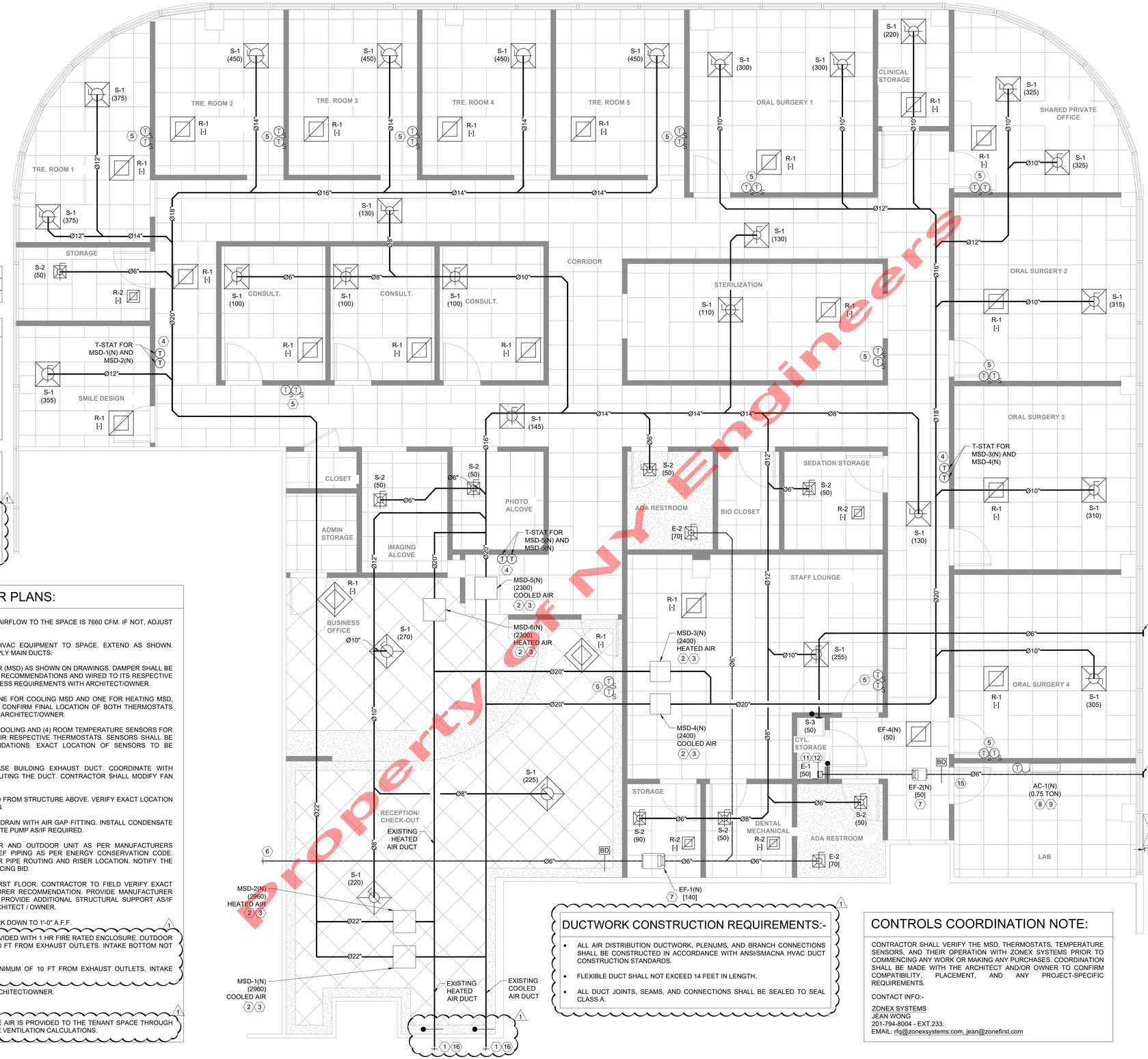
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NO.	DATE	DESCRIPTION
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PROJECT NO:
DATE:

SHEET TITLE:
MECHANICAL SYMBOL, ABBREVIATION & NOTES

SHEET #:
M-0



Property of NY Engineers

LEGENDS	
———	SUPPLY AIR DUCT
- - - - - - - - - -	EXHAUST AIR DUCT

PLENUM RETURN NOTE:

HVAC SYSTEM UTILIZES CEILING RETURN AIR PLENUMS. THE GENERAL CONTRACTOR SHALL VERIFY THAT ALL EXISTING AND NEW MATERIALS, EQUIPMENT, AND COMPONENTS INSTALLED WITHIN THE RETURN AIR PLENUM ARE LISTED AND LABELED FOR PLENUM APPLICATION. COMBUSTIBLE MATERIALS SHALL NOT BE PERMITTED WITHIN THE PLENUM. ALL EXPOSED MATERIALS WITHIN THE PLENUM SHALL COMPLY WITH ASTM E84 OR UL 723, IN COMPLIANCE WITH 2025 CALIFORNIA MECHANICAL CODE SECTION 602 AND SHALL HAVE A MAXIMUM FLAME SPREAD INDEX OF 25 AND A MAXIMUM SMOKE-DEVELOPED INDEX OF 50.

CONTRACTORS NOTE:-

- CONTRACTOR SHALL VERIFY ALL CLEARANCES AND AVAILABLE SPACE FOR DUCTWORK PRIOR TO ORDERING AND/OR FABRICATING MATERIAL.
- CONTRACTOR SHALL INSTALL ALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. IF REQUIRED, PROVIDE ADDITIONAL SUPPLY AIR AND EXHAUST VENTILATION AS SPECIFIED BY THE MANUFACTURER. COORDINATE WITH THE EQUIPMENT MANUFACTURER PRIOR TO INSTALLATION.

KEYED NOTES FOR FLOOR PLANS:

1. CONTRACTOR SHALL VERIFY THAT THE ENTERING AIRFLOW TO THE SPACE IS 7660 CFM. IF NOT, ADJUST THE SYSTEM AS REQUIRED TO PROVIDE 7660 CFM.
2. EXTEND FULL SIZE SUPPLY DUCTWORK FROM HVAC EQUIPMENT TO SPACE. EXTEND AS SHOWN. ACOUSTICALLY LINE THE FIRST 10'-0" OF BOTH SUPPLY MAIN DUCTS.
3. PROVIDE AND INSTALL MOTORIZED ZONING DAMPER (MSD) AS SHOWN ON DRAWINGS. DAMPER SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS AND WIRED TO ITS RESPECTIVE THERMOSTAT. CONFIRM EXACT LOCATION AND ACCESS REQUIREMENTS WITH ARCHITECT/OWNER.
4. PROVIDE TWO SEPARATE ZONE THERMOSTATS, ONE FOR COOLING MSD AND ONE FOR HEATING MSD, EACH COMPATIBLE WITH THEIR RESPECTIVE MSD. CONFIRM FINAL LOCATION OF BOTH THERMOSTATS FOR ALL MOTORIZED ZONING DAMPERS (MSD) WITH ARCHITECT/OWNER.
5. PROVIDE (4) ROOM TEMPERATURE SENSORS FOR COOLING AND (4) ROOM TEMPERATURE SENSORS FOR HEATING PER ZONE, AND AVERAGE THEM TO THEIR RESPECTIVE THERMOSTATS. SENSORS SHALL BE INSTALLED AS PER MANUFACTURER RECOMMENDATIONS. EXACT LOCATION OF SENSORS TO BE COORDINATED IN FIELD WITH ARCHITECT/OWNER.
6. CONNECT Ø6" EXHAUST DUCT TO EXISTING BASE BUILDING EXHAUST DUCT. COORDINATE WITH LANDLORD AND ARCHITECT/OWNER PRIOR TO ROUTING THE DUCT. CONTRACTOR SHALL MODIFY FAN STATIC PRESSURE AS REQUIRED.
7. PROVIDE EXHAUST FAN. FAN SHALL BE SUSPENDED FROM STRUCTURE ABOVE. VERIFY EXACT LOCATION OF STRUCTURAL MEMBERS PRIOR TO INSTALLATION.
8. CONNECT 1" CD FROM AC TO NEAREST PLUMBING DRAIN WITH AIR GAP FITTING. INSTALL CONDENSATE DRAIN WITH 1% TOWARD SINK. PROVIDE CONDENSATE PUMP AS/IF REQUIRED.
9. INSTALL REFRIGERANT PIPING BETWEEN INDOOR AND OUTDOOR UNIT AS PER MANUFACTURERS RECOMMENDATIONS. PROVIDE INSULATION TO REF PIPING AS PER ENERGY CONSERVATION CODE. COORDINATE WITH BASE BUILDING ENGINEER FOR PIPE ROUTING AND RISER LOCATION. NOTIFY THE ENGINEER OF ANY DISCREPANCY BEFORE COMMENCING BID.
10. CONTRACTOR TO INSTALL OUTDOOR UNIT ON FIRST FLOOR. CONTRACTOR TO FIELD VERIFY EXACT LOCATION ON SITE. INSTALL AS PER MANUFACTURER RECOMMENDATION. PROVIDE MANUFACTURER RECOMMENDED ACCESSORIES. CONTRACTOR TO PROVIDE ADDITIONAL STRUCTURAL SUPPORT AS/IF REQUIRED. COORDINATE FINAL LOCATION WITH ARCHITECT / OWNER.
11. CONTRACTOR TO EXTEND THE EXHAUST DUCT WORK DOWN TO 1'-0" A.F.F.
12. ENTIRE DUCT FROM THE GAS ROOM SHALL BE PROVIDED WITH 1 HR FIRE RATED ENCLOSURE. OUTDOOR AIR INTAKES SHALL BE LOCATED A MINIMUM OF 10 FT FROM EXHAUST OUTLETS. INTAKE BOTTOM NOT LESS THAN 10 FT ABOVE GRADE.
13. OUTDOOR AIR INTAKES SHALL BE LOCATED A MINIMUM OF 10 FT FROM EXHAUST OUTLETS. INTAKE BOTTOM NOT LESS THAN 10 FT ABOVE GRADE.
14. COORDINATE FINAL LOCATION OF LOUVER WITH ARCHITECT/OWNER.
15. PROVIDE 1" DOOR UNDER CUT.
16. CONTRACTOR TO ENSURE THE REQUIRED OUTSIDE AIR IS PROVIDED TO THE TENANT SPACE THROUGH THE BASE BUILDING AHU IN ACCORDANCE WITH THE VENTILATION CALCULATIONS.

DUCTWORK CONSTRUCTION REQUIREMENTS:-

- ALL AIR DISTRIBUTION DUCTWORK, PLENUMS, AND BRANCH CONNECTIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ANSI/SMACNA HVAC DUCT CONSTRUCTION STANDARDS.
- FLEXIBLE DUCT SHALL NOT EXCEED 14 FEET IN LENGTH.
- ALL DUCT JOINTS, SEAMS, AND CONNECTIONS SHALL BE SEALED TO SEAL CLASS A.

CONTROLS COORDINATION NOTE:

CONTRACTOR SHALL VERIFY THE MSD, THERMOSTATS, TEMPERATURE SENSORS, AND THEIR OPERATION WITH ZONEX SYSTEMS PRIOR TO COMMENCING ANY WORK OR MAKING ANY PURCHASES. COORDINATION SHALL BE MADE WITH THE ARCHITECT AND/OR OWNER TO CONFIRM COMPATIBILITY, PLACEMENT, AND ANY PROJECT-SPECIFIC REQUIREMENTS.

CONTACT INFO:-

ZONEX SYSTEMS
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MECHANICAL FLOOR PLAN- CLINIC 1/4" = 1'-0" | 1

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ISSUE		
NO.	DATE	DESCRIPTION
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PROJECT NO: | DATE:

SHEET TITLE: MECHANICAL FLOOR PLAN - CLINIC

SHEET #: M-1

GENERAL NOTES:

A. ALL WORK SHALL COMPLY WITH ALL LOCAL AND STATE CODES AND AUTHORITIES HAVING JURISDICTION.

B. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL REQUIRED PERMITS AND ARRANGE ALL REQUIRED INSPECTIONS.

C. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER CONTRACTORS AND TRADES.

D. 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.

E. 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.

F. 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.

G. DUCT SIZES SHOWN ON DRAWINGS ARE CLEAR INSIDE DIMENSION.

H. ALL DUCTWORK SHALL BE FABRICATED, INSTALLED, SEALED, AND INSULATED PER THE LATEST ISSUE OF SMACNA LOW-VELOCITY DUCT MANUAL.

I. ALL FLEX DUCT SHALL BE TESTED IN ACCORDANCE WITH UL 181. AND DUCT SHALL BE LISTED AND LABELED AS CLASS 1. MAXIMUM LENGTH TO BE 14'-0".

J. THE CONTRACTOR SHALL COORDINATE DIFFUSER LOCATIONS ON SITE WITH THE MOST RECENT REFLECTED CEILING PLAN.

K. THE CONTRACTOR IS TO MAKE ALL LOW-VOLTAGE WIRING CONNECTIONS FOR ALL HVAC EQUIPMENT INCLUDING TEMPERATURE CONTROLS, ROOF TOP UNITS, SMOKE DETECTORS AND CONTACTOR PANEL.

L. 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.

M. 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.

N. 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.

O. 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.

P. PROVIDE VOLUME DAMPER IN ACCESSIBLE CEILING AND PROVIDE CORD OPERATED DAMPER IN INACCESSIBLE CEILING.

Q. FLEXIBLE CONNECTION SHALL BE INSTALLED BETWEEN EQUIPMENT AND CONNECTING DUCTWORK.

R. THE SANDBLAST AND PLASTER ROOM EQUIPMENT ARE PROVIDED WITH SELF-CONTAINED DUST COLLECTION SYSTEMS WITH CARTRIDGE FILTERS. FILTERED AIR IS NOT RECIRCULATED INTO OCCUPIABLE SPACES.

KEYED NOTES FOR FLOOR PLANS:

1. EXTEND FULL SIZE SUPPLY & RETURN DUCTWORK FROM HVAC EQUIPMENT TO SPACE. EXTEND AS SHOWN. ACOUSTICALLY LINE THE FIRST 10'-0" OF BOTH SUPPLY AND RETURN MAIN DUCTS.
2. CONNECT 1" CD FROM AC TO NEAREST PLUMBING DRAIN WITH AIR GAP FITTING. INSTALL CONDENSATE DRAIN WITH 1% TOWARD SINK. PROVIDE CONDENSATE PUMP AS/IF REQUIRED.
3. INSTALL REFRIGERANT PIPING BETWEEN INDOOR AND OUTDOOR UNIT AS PER MANUFACTURERS RECOMMENDATIONS. PROVIDE INSULATION TO REF PIPING AS PER ENERGY CONSERVATION CODE. COORDINATE WITH BASE BUILDING ENGINEER FOR PIPE ROUTING AND RISER LOCATION. NOTIFY THE ENGINEER OF ANY DISCREPANCY BEFORE COMMENCING BID.
4. PROVIDE AN AUXILIARY DRAIN PAN WITH WATER LEAKAGE SENSOR IN ORDER TO SHUT-OFF THE UNIT IN CASE OF WATER LEAKAGE. THE PAN SHALL HAVE A DEPTH OF NOT LESS THAN 1.5 INCHES, SHALL BE NOT LESS THAN 3 INCHES LARGER THAN THE UNIT, OR THE COIL DIMENSIONS IN WIDTH AND LENGTH AND SHALL BE CONSTRUCTED OF CORROSION-RESISTANT MATERIAL. METALLIC PANS SHALL HAVE A THICKNESS OF NOT LESS THAN 0.0236 INCH (NO. 24 GAGE) FOR GALVANIZED SHEET METAL PANS, 0.0179 INCH (NO. 26 GAGE) FOR STAINLESS STEEL PANS, OR 0.0320 INCH (NO. 20 GAGE) FOR ALUMINUM PANS. NON-METALLIC PANS SHALL HAVE A THICKNESS OF NOT LESS THAN 0.0625 INCH.
5. PROVIDE REMOTE TEMP SENSOR MOUNTED IN RETURN DUCT AND WIRE BACK TO T-STAT.
6. PROVIDE NEW 7-DAY PROGRAMMABLE THERMOSTAT. MOUNT ON WALL AT 48" A.F.F. COORDINATE EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN. PROVIDE LOCKABLE COVER.
7. CONNECT Ø6" EXHAUST DUCT TO EXISTING BASE BUILDING EXHAUST DUCT. COORDINATE WITH LANDLORD AND ARCHITECT/OWNER PRIOR TO ROUTING THE DUCT. CONTRACTOR SHALL MODIFY FAN STATIC PRESSURE AS REQUIRED.
8. PROVIDE EXHAUST FAN. FAN SHALL BE SUSPENDED FROM STRUCTURE ABOVE. VERIFY EXACT LOCATION OF STRUCTURAL MEMBERS PRIOR TO INSTALLATION.
9. CONTRACTOR TO INSTALL OUTDOOR UNIT ON FIRST FLOOR. CONTRACTOR TO FIELD VERIFY EXACT LOCATION ON SITE. INSTALL AS PER MANUFACTURER RECOMMENDATION. PROVIDE MANUFACTURER RECOMMENDED ACCESSORIES. CONTRACTOR TO PROVIDE ADDITIONAL STRUCTURAL SUPPORT AS/IF REQUIRED. COORDINATE FINAL LOCATION WITH ARCHITECT / OWNER.

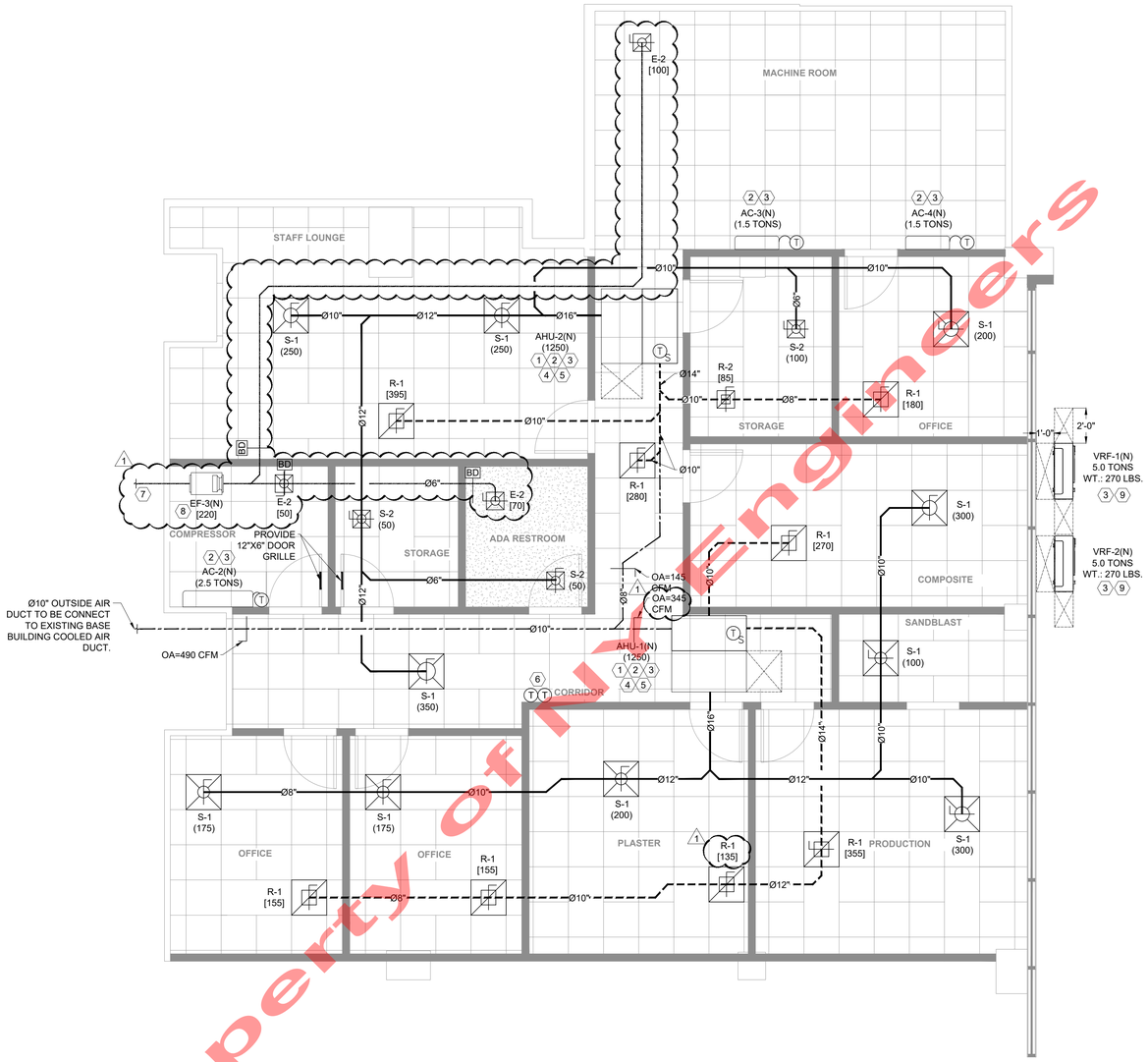
CONTRACTORS NOTE:-

CONTRACTOR SHALL VERIFY ALL CLEARANCES AND AVAILABLE SPACE FOR DUCTWORK PRIOR TO ORDERING AND/OR FABRICATING MATERIAL.

LEGENDS	
———	SUPPLY AIR DUCT
- - - - - -	RETURN AIR DUCT
—·—·—·—	OUTSIDE AIR DUCT
———————	EXHAUST AIR DUCT

DUCTWORK CONSTRUCTION REQUIREMENTS:-

- ALL AIR DISTRIBUTION DUCTWORK, PLENUMS, AND BRANCH CONNECTIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ANSI/SMACNA HVAC DUCT CONSTRUCTION STANDARDS.
- FLEXIBLE DUCT SHALL NOT EXCEED 14 FEET IN LENGTH.
- ALL DUCT JOINTS, SEAMS, AND CONNECTIONS SHALL BE SEALED TO SEAL CLASS A.



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NO.	DATE	DESCRIPTION
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PROJECT NO: DATE:

SHEET TITLE: MECHANICAL FLOOR PLAN - LAB

SHEET #: M-1.1

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

HEAT PUMP (INDOOR UNIT) SCHEDULE

MAKE:- LG (OR EQUIVALENT)

UNIT TAG	BUILDING	AREA SERVED	TYPE	CAP. (TON)	COOLING MBH	HEATING MBH	TOTAL CFM	OUTDOOR CFM	MAX RATED ESP. (IN. WG)	MAX. SOUND PRESS.(DBA)	ELECTRICAL DATA		DIMENSIONS (HXWXD) (IN.)	PIPE SIZE (INCH)				WEIGHT (LBS.)	MODEL NO.
											PH/VOLT/HZ	FLA (A)	UNIT	LIQ.	SUCTION	REF TYPE	DRAIN (ID)		
AC-1(N)	CLINIC	SEE PLAN	DX - WALL MOUNT	1.0	14.1	19	459	-	-	41	POWERED BY OUTDOOR		12-1/8 X 32-15/16 X 7-7/16	1/4"	3/8"	R32	1"	20	KNUAB121A (OR EQUIVALENT)
AC-2(N)	LAB	SEE PLAN	WALL MOUNT	2.5	30.0	32.0	742	-	-	46	1/208-230/60	0.9	14-5/8 X 47-1/4 X 10-7/16	1/4"	1/2"	R32	1"	21	ZRNU303SRAA (OR EQUIVALENT)
AC-3(N)		SEE PLAN	WALL MOUNT	1.5	19.1	21.5	494	-	-	43	1/208-230/60	0.52	13-19/32 X 39-9/32 X 8-9/32	1/4"	1/2"	R32	1"	29	ZRNU183SKSA (OR EQUIVALENT)
AC-4(N)		SEE PLAN	WALL MOUNT	1.5	19.1	21.5	494	-	-	43	1/208-230/60	0.52	13-19/32 X 39-9/32 X 8-9/32	1/4"	1/2"	R32	1"	29	ZRNU183SKSA (OR EQUIVALENT)
AHU-1(N)		SEE PLAN	DUCTED UNIT	2.5	28	31.5	1250	345	0.8	40	1/208-230/60	2.5	15 X 51 X 28	3/8"	5/8"	R32	1"	94	ZRNU283M3AA (OR EQUIVALENT)
AHU-2(N)		SEE PLAN	DUCTED UNIT	2.5	28	31.5	1250	345	0.8	40	1/208-230/60	2.5	15 X 51 X 28	3/8"	5/8"	R32	1"	94	ZRNU283M3AA (OR EQUIVALENT)

NOTES FOR INDOOR UNITS

1. SUPPLY AIR CFM BASED ON HIGH SPEED.
2. PROVIDE MOUNTING BRACKETS AND ALL ASSOCIATED ACCESSORIES.
3. ALL REFRIGERANT PIPING TO BE SIZED PER MANUFACTURERS RECOMMENDATIONS.
4. AIR HANDLING UNIT TO BE PROVIDED WITH THE APPROPRIATE FBM FILTER BOXES.
5. INDOOR UNIT ACCESS PANEL FIELD-PROVIDED.
6. CONTRACTOR SHALL PROVIDE A LONG LINE SET FOR REFRIGERANT PIPING IN THE EVENT THAT TOTAL REFRIGERANT LENGTH EXCEEDS THE MANUFACTURER'S STANDARD RECOMMENDED LENGTH.
7. AHU-1(N), AHU-2(N) TO BE INCLUDED SECONDARY DRAIN PANS AS WELL AS WATER BUG SENSORS TO SHUT DOWN THE CORRESPONDING EQUIPMENT AND NOTIFY IN EVENT OF A WATER LEAKAGE.
8. PROVIDE DRAIN PUMP FOR WALL MOUNTED UNIT, IF REQUIRED.

HEAT PUMP (OUTDOOR UNIT) SCHEDULE

UNIT TAG	BUILDING	LOCATION	INDOOR UNIT SERVED	CAP.TR	COOLING MBH	HEATING MBH	COMPRESSOR TYPE	UNIT DIMENSIONS IN.(HXWXD)	WEIGHT (LBS)	PIPING DIMENSION		ELECTRICAL							SOUND LEVEL (Dba)	WEIGHT (LBS.)	MODEL NO.	MAKE
										LIQUID-HI PRESSURE (INCH)	GAS HIGH-PRESSURE (INCH)	(V/Hz/Ph)	MCA (A)	MOP (A)	REFRIGERANT	EER2	SEER2/ HSPF2	COP 47DF				
ACCU-1(N)	CLINIC	SEE ON PLAN	AC-1(N)	1	14.1	19	INVERTER (VARIABLE SPEED COMPRESSOR)	22 X 32 X 14	69	1/4"	3/8"	208-230/60/1	12	15	R32	12.8	22.5 / 10.5	3.9	61	70	KUSAB121A (OR EQUIVALENT)	LG (OR EQUIVALENT)
VRF-1(N)	LAB	SEE ON PLAN	(AC-2(N), AC-3(N), AC-4(N))	5	60	67	HERMETICALLY SEALED SCROLL	55 X 38 X 13	270	3/8"	3/4"	208-230/60/1	32.9	40	R32	13	23 / 10	4.3	59	270	ZRUM060GSS0 (OR EQUIVALENT)	LG (OR EQUIVALENT)
VRF-2(N)		SEE ON PLAN	AHU-1(N), AHU-2(N)	5	60	67	HERMETICALLY SEALED SCROLL	55 X 38 X 13	270	3/8"	3/4"	208-230/60/1	32.9	40	R32	13	23 / 10	4.3	59	270	ZRUM060GSS0 (OR EQUIVALENT)	LG (OR EQUIVALENT)

NOTES:-

1. UNIT SHALL HAVE TEN YEAR EXTENDED WARRANTY FOR COMPRESSORS/PARTS.
2. PROVIDE LOW AMBIENT CONTROL FOR CONDENSING UNIT OPERATION DOWN TO -4°F.
3. PROVIDE COMPRESSOR CYCLE PROTECTOR.
4. CONCRETE PAD SUPPORT SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR.
5. CONTRACTOR SHALL PROVIDE A LONG LINE SET FOR REFRIGERANT PIPING IN THE EVENT THAT TOTAL REFRIGERANT LENGTH EXCEED THE MANUFACTURER'S STANDARD RECOMMENDED LENGTH.
6. OUTDOOR REFRIGERANT LINESETS TO BE WRAPPED IN UV RESISTANT , FIRE RATED, AND ANTI MICROBIAL INSULATION PROTECTION BASED ON AIREX-FLEX GUARD OR EQUAL.
7. OUTDOOR HEAT PUMPS TO BE LOCATED WITH PROPER CLEARANCES AND MUST PREVENT RE-CIRCULATION OF AIR. COORDINATE WITH MANUFACTURER AND ARCHITECT.
8. CONTRACTOR SHALL ALL CONTROL AND POWER WIRING FROM OUTOOR UNIT TO INDOOR UNIT, WIRE SHALL BE SIZED AS PER MANUFACTURER RECOMMENDATIONS.
9. CONTRACTOR TO CHECK AVAILABILITY OF UNIT IN MARKET, IF NOT THEN NOTIFY ENGINEER.

FAN SCHEDULE

UNIT ID	BUILDING	MANUFACTURER	CFM	ESP(IN W.G.)	VOLTS/PH	FLA(A)	HP	WEIGHT (LBS)	MODEL	TYPE	NOTES
EF-1(N)	CLINIC	GREENHECK	140	1	208/1	4	-	60	SP-97-VG	INLINE	1,2,3
EF-2(N)		GREENHECK	50	0.5	115/1	1.5	1/40	50	SQ-60	INLINE	4,5
EF-3(N)	LAB	GREENHECK	220	1	208/1	2.6	1/4	60	SP-98-VG	INLINE	1,2,6

NOTES:

1. PROVIDE GRAVITY BACKDRAFT DAMPER.
4. INSTALL AS PER MANUFACTUER RECOMMENTION.
3. EF-1(N) INTERLOCK WITH ROOM LIGHTS.
4. PROVIDE THERMAL OVERLOAD PROTECTION, BACKDRAFT DAMPER, AMCA SEAL AND UL CERTIFIED, SPEED CONTROLLER.
5. EF-2(N) SHALL OPERATE CONTINOUSLY, WITH A MANUAL SWITCH PROVIDED FOR OVERRIDE CONTROL.
6. EF-3(N) INTERLOCK WITH TIME CLOCK.

VENTILATION CALCULATION

ROOM NAME	AREA (SQ.FT.)	AS PER CALIFORNIA ENERGY CODE 2025 - TABLE 120.1-A & B: OUTDOOR AIR FLOW RATE CFM/SQ.FT, ACH	AS PER CALIFORNIA ENERGY CODE 2025 - TABLE 120.1-A & B: REQUIRED OA (CFM)	AS PER CALIFORNIA MECHANICAL CODE 2025 - TABLE 402.1: OCCUPANCY /1000SQ.FT	OCCUPANY AS PER CODE	FINAL OCCUPANCY AS PER ARCH.	AS PER CALIFORNIA MECHANICAL CODE 2025 - TABLE 402.1: OUTDOOR AIR FLOW RATE CFM/PERSON	AS PER CALIFORNIA MECHANICAL CODE 2025 - TABLE 402.1: OUTDOOR AIR FLOW RATE CFM/SQ.FT	AS PER CALIFORNIA MECHANICAL CODE 2025 - TABLE 402.1: REQUIRED OA (CFM)	PROVIDED OA (CFM)	EXHAUST AIRFLOW RATE (CFM/SQ.FT. OR CFM/FIXTURE)	REQUIRED EXHAUST AIR (CFM)	PROVIDED EXHAUST
RECEPTION/CHECK-OUT	560	0.15	85	5	3	18	5	0.06	124	125	-	-	-
BUSINESS OFFICE	320	0.15	50	5	2	3	5	0.06	35	50	-	-	-
ADMIN STORAGE	38	0.15	10	2	1	1	5	0.06	8	10	-	-	-
IT CLOSET	18	0.15	5	2	1	0	5	0.06	2	5	-	-	-
IMAGING ALCOVE	70	0.15	15	5	1	1	5	0.12	14	15	-	-	-
PHOTO ALCOVE	60	0.15	10	5	1	1	5	0.06	9	10	-	-	-
SMILE DESIGN	104	0.15	20	5	1	1	5	0.06	12	20	-	-	-
STORAGE	64	0.15	10	2	1	1	5	0.06	9	10	-	-	-
CONSULT. 1	94	0.15	15	5	1	2	5	0.06	16	20	-	-	-
CONSULT. 2	94	0.15	15	5	1	2	5	0.06	16	20	-	-	-
CONSULT. 3	94	0.15	15	5	1	2	5	0.06	16	20	-	-	-
TRE ROOM 1	148	0.15	25	20	3	2	7.5	0.12	33	35	-	-	-
TRE ROOM 2	138	0.15	25	20	3	2	7.5	0.12	32	35	-	-	-
TRE ROOM 3	142	0.15	25	20	3	2	7.5	0.12	33	35	-	-	-
TRE ROOM 4	140	0.15	25	20	3	2	7.5	0.12	32	35	-	-	-
TRE ROOM 5	142	0.15	25	20	3	2	7.5	0.12	33	35	-	-	-
ORAL SURGERY 1	220	0.15	35	20	5	3	10	0.18	70	70	-	-	-
CLINICAL STORAGE	54	0.15	10	2	1	0	5	0.06	4	10	-	-	-
SHARED PRIVATE OFFICE	170	0.15	30	5	1	1	5	0.06	16	30	-	-	-
ORAL SURGERY 2	222	0.15	35	20	5	3	10	0.18	70	70	-	-	-
ORAL SURGERY 3	220	0.15	35	20	5	3	10	0.18	70	70	-	-	-
ORAL SURGERY 4	223	0.15	35	20	5	3	10	0.18	71	75	-	-	-
LAB	137	2	46	-	-	-	-	-	-	50	-	-	-
STERILIZATION	200	2	67	-	-	-	-	-	-	70	-	-	-
SEDATION STORAGE	65	0.15	10	2	1	1	5	0.06	9	10	-	-	-
BIO CLOSET	40	0.15	10	2	1	1	5	0.06	8	10	-	-	-
ADA RESTROOM	56	0	0	-	-	-	-	-	-	0	70	70	70
STAFF LOUNGE	340	0.5	170	5	2	11	5	0.06	76	170	-	-	-
CYL. STORAGE	12	0.15	5	2	1	1	5	0.06	6	5	-	-	-
STORAGE	46	0.15	10	2	1	1	5	0.06	8	10	-	-	-
DENTAL MECHANICAL	55	0.15	10	2	1	1	5	0.06	9	10	-	-	-
ADA RESTROOM	54	0	0	-	-	-	-	-	-	0	70	70	70
HALLWAY	1652	0.15	250	0	0	0	0	0.06	100	250	-	-	-
TOTAL	**5992**		**1132**						941	**1390**		**140**	**140**

VENTILATION CALCULATION

ROOM NAME	AREA (SQ.FT.)	AS PER CALIFORNIA ENERGY CODE 2025 - TABLE 120.1-A & B: OUTDOOR AIR FLOW RATE CFM/SQ.FT, ACH	AS PER CALIFORNIA ENERGY CODE 2025 - TABLE 120.1-A & B: REQUIRED OA (CFM)	AS PER CALIFORNIA MECHANICAL CODE 2025 - TABLE 402.1: OCCUPANCY /1000SQ.FT	OCCUPANY AS PER CODE	FINAL OCCUPANCY AS PER ARCH. SHEET GN.0	AS PER CALIFORNIA MECHANICAL CODE 2025 - TABLE 402.1: OUTDOOR AIR FLOW RATE CFM/PERSON	AS PER CALIFORNIA MECHANICAL CODE 2025 - TABLE 402.1: OUTDOOR AIR FLOW RATE CFM/SQ.FT	AS PER CALIFORNIA MECHANICAL CODE 2025 - TABLE 402.1: REQUIRED OA (CFM)	PROVIDED OA (CFM)	EXHAUST AIRFLOW RATE (CFM/SQ.FT. OR CFM/FIXTURE)	REQUIRED EXHAUST AIR (CFM)	PROVIDED EXHAUST
OFFICE 1	122	0.15	20	5	1	1	5	0.06	13	20	-	-	-
OFFICE 2	122	0.15	20	5	1	1	5	0.06	13	20	-	-	-
PLASTER	174	0.15	30	20	4	4	7.5	0.18	62	65	-	-	-
PRODUCTION	215	0.15	35	5	2	2	5	0.06	23	35	-	-	-
SANDBLAST	53	0.15	10	2	1	1	5	0.06	9	10	-	-	-
COMPOSITE	178	0.15	30	5	1	1	5	0.06	16	30	-	-	-
OFFICE	109	0.15	20	5	1	1	5	0.06	12	20	-	-	-
STORAGE	80	0.15	15	2	1	0	5	0.06	5	15	-	-	-
MACHINE ROOM	315	0.15	50	2	1	1	5	0.06	24	50	-	-	100
STAFF LOUNGE	305	0.5	155	5	2	8	5	0.06	59	155	-	-	-
ADA RESTROOM	56	0	0	-	-	-	-	-	-	0	70	70	70
STORAGE	56	0.15	10	2	1	0	5	0.06	4	10	-	-	-
COMPRESSOR	72	0.15	15	2	1	0	5	0.06	5	15	-	-	50
HALLWAY	300	0.15	45	0	0	0	0	0.06	18	45	-	-	-
TOTAL	**2157**		**455**							**490**		**70**	**220**

AIR TERMINAL SCHEDULE

BASIS OF DESIGN: **KRUEGER** (OR EQUIVALENT)

TAG	TYPE	DIMENSION (IN)	MODEL NO.	MAX NC dBA
S-1	SUPPLY	24X24	1100 SERIES W/PERFOATED PLATE (OR EQUIVALENT)	21
S-2	SUPPLY	12X12	1100 SERIES W/PERFOATED PLATE (OR EQUIVALENT)	21
S-3	SUPPLY	6X6	5800 (OR EQUIVALENT)	21
R-1	RETURN	24X24	1190 SERIES W/PERFOATED PLATE (OR EQUIVALENT)	21
R-2	RETURN	12X12	1190 SERIES W/PERFOATED PLATE (OR EQUIVALENT)	21
E-1	EXHAUST	6X6	S580 OR EQUIVALENT)	21
E-2	EXHAUST	12X12	S580 OR EQUIVALENT)	21

NOTES FOR DIFFUSERS

1. ALL GRILLES : CONTRACTOR SHALL COORDINATE WITH LATEST ARCHITECTURAL REFLECTED CEILING PLANS PLANS TO ENSURE PROPER AIR DEVICE BORDER SELECTION.
2. COORDINATE COLOR/FINISH/TYPE/MATERIAL WITH ARCHITECT.
3. PROVIDE SQUARE TO ROUND ADAPTER, IF REQUIRED.

FOR ROUND DIFFUSER NECK SIZE

- 6"X6" : 0 - 125 CFM
- 8"X8" : 126 - 220 CFM
- 10"X10" : 221 - 350 CFM
- 12"X12" : 351 - 500 CFM
- 15"X15" : 501 - 750 CFM
- 18"X18" : 751 - 1125 CFM

Property of NY Engineers

NUVIA DENTAL

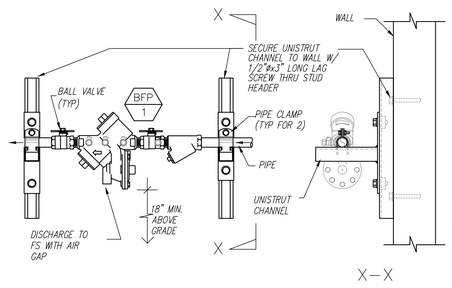
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NO.	DATE	DESCRIPTION
1		

PROJECT NO: DATE:

SHEET TITLE: MECHANICAL SCHEDULE

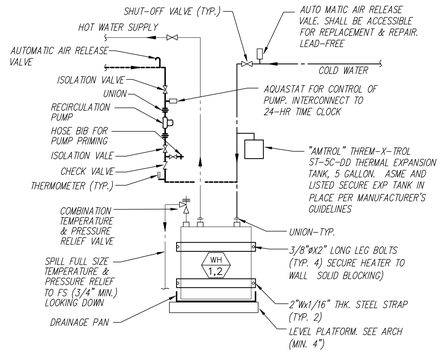
SHEET #: M-3



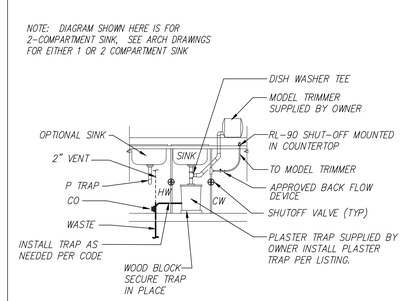
BACK FLOW DEVICE DETAIL | 4

NOTES:
WATER HEATER SHALL BE STRAPPED TO THE WALL IN TWO PLACES. ONE IN THE UPPER 1/3 AND ONE IN THE LOWER 1/3 OF THE TANK. THE LOWER POINT SHALL BE A MIN. OF 4" ABOVE THE CONTROLS. PROVIDE DRAIN AT LOW POINT OF FLUE VENT AND RUN TO APPROVED LOCATION. INSTALL WATER HEATER PER MANUFACTURER'S INSTRUCTIONS. NO EXCEPTION TAKEN. PROVIDE DRAIN FROM WATER HEATER FLUE PIPE TO APPROVED LOCATION.

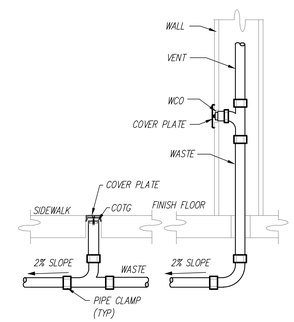
NOTE:
DRAINAGE PAN SHALL DISCHARGE TO AN OBSERVABLE LOCATION WITH A MINIMUM 3/4" DRAIN PIPE. DRAINAGE PAN SHALL BE AT LEAST 1–1/2" DEPTH. (CPC 507.5).



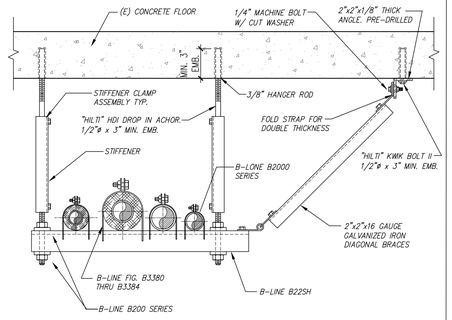
WATER HEATER DETAIL | 3



PLASTIC TRAP DET. | 2

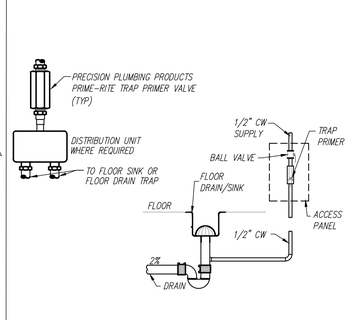


CLEAN OUT DETAIL | 1

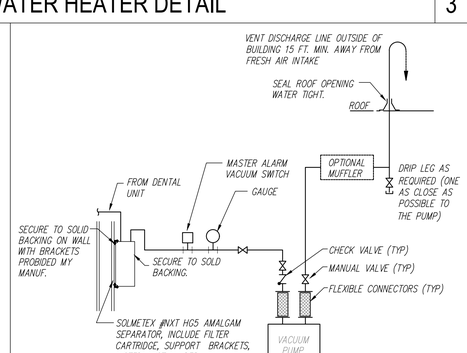


NOTES:
1. HANG TRAPEZE AT 6'–0" ON CENTER

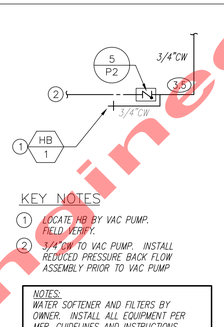
PIPE SUPPORT DETAIL | 9



TRAP PRIMER DETAIL | 8



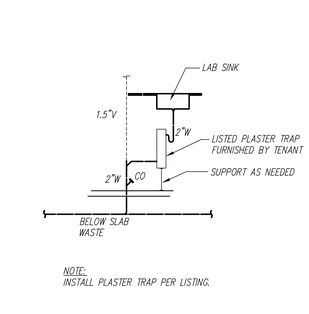
VAC. PUMP PIPING | 7



KEY NOTES
1. LOCATE HB BY VAC PUMP. FIELD VERIFY.
2. 3/4"CW TO VAC PUMP. INSTALL REDUCED PRESSURE BACK FLOW ASSEMBLY PRIOR TO VAC PUMP

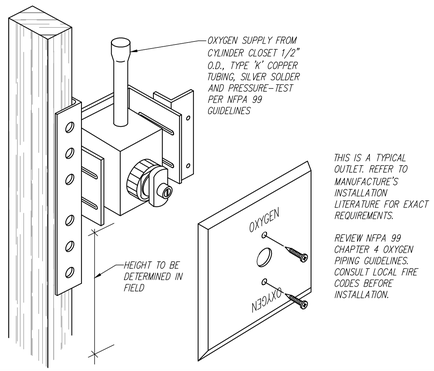
NOTES:
WATER SOFTENER AND FILTERS BY OWNER. INSTALL ALL EQUIPMENT PER MFR. GUIDELINES AND INSTRUCTIONS.
ALL PIPING SHALL BE ANCHORED TO WALL ON UNISTRUT (TYP.)

WATER TO VAC PUMP | 6

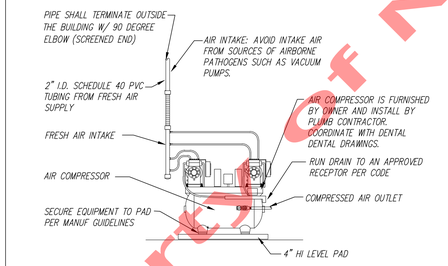


NOTE:
INSTALL PLASTER TRAP PER LISTING.

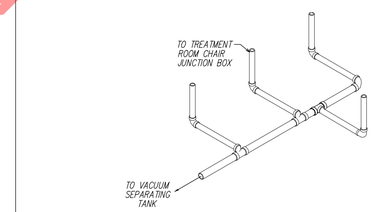
PLASTER TRAP PIPING DET. | 5



OXYGEN OUTLET | 13



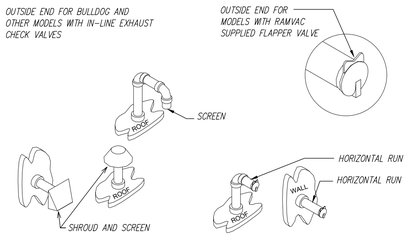
AIR COMPRESSOR (FOR REFERENCE ONLY) | 12



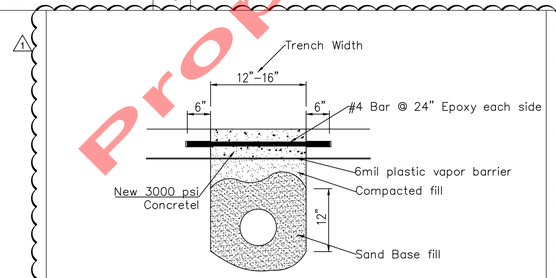
VACUUM LINE SUB FLOOR NOTES:
TANK USE 45 DEGREE ELBOWS — IF NECESSARY 90 DEGREE DWV ELBOWS CAN BE USED. CONSULT WITH MANUFACTURER. ALL BRANCH LINES TO BE STAGGERED.
LOCATION AND INCORPORATE A CLEAN OUT. ALL WORK MUST COMPLY WITH NFPA.

VAC PIPE DETAIL | 11

PROTECT OUTSIDE END OF EXHAUST FROM ENTRY OF WATER, DEBRIS, AND CREATURES. POINT AWAY FROM PREVAILING WINDS, CLEAR OF SNOW OR OTHER OBSTRUCTIONS. CLEAR ROOF TOPS OR OUTSIDE WALLS BY A MINIMUM OF 6 INCHES. LOCATE IN AN INCONSPICUOUS SITE AWAY FROM DOORS, WINDOWS OR VENTILATION INTAKES. ALL WORK MUST COMPLY WITH NFPA.



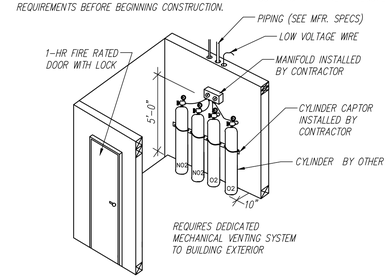
VAC PUMP TERMINATION (TYP.) | 10



GENERAL NOTE:
CONTRACTOR TO COORDINATE SLAB REPAIR REQUIREMENT WITH THE OWNER.

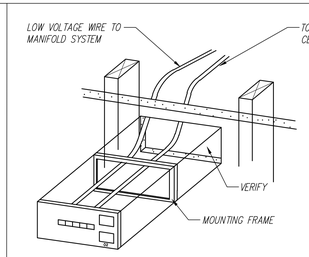
SLAB REPAIR DETAIL | 16

THESE RECOMMENDATIONS ARE BASED ON NFPA–99 STANDARD FOR MEDICAL GAS SYSTEMS. LOCAL BUILDING AND FIRE CODES MAY SUPERSEDE NFPA–99. IMPORTANT: VERIFY LOCAL REQUIREMENTS BEFORE BEGINNING CONSTRUCTION.



MIN. 2 OXYGEN AND 2 OXIDE VALVES.

MED. GAS CYLINDER CLOSET | 15



VERIFY SPECIFICATION WITH MANUFACTURE

ALARM TO BE MONITORED BY CENTRAL STATION TO NOTIFY FIRE DEPARTMENT VERIFY EXACT LOCATION OF CENTRAL STATION IN FIELD

OXYGEN ALARM PANEL | 14

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NUVIA DENTAL

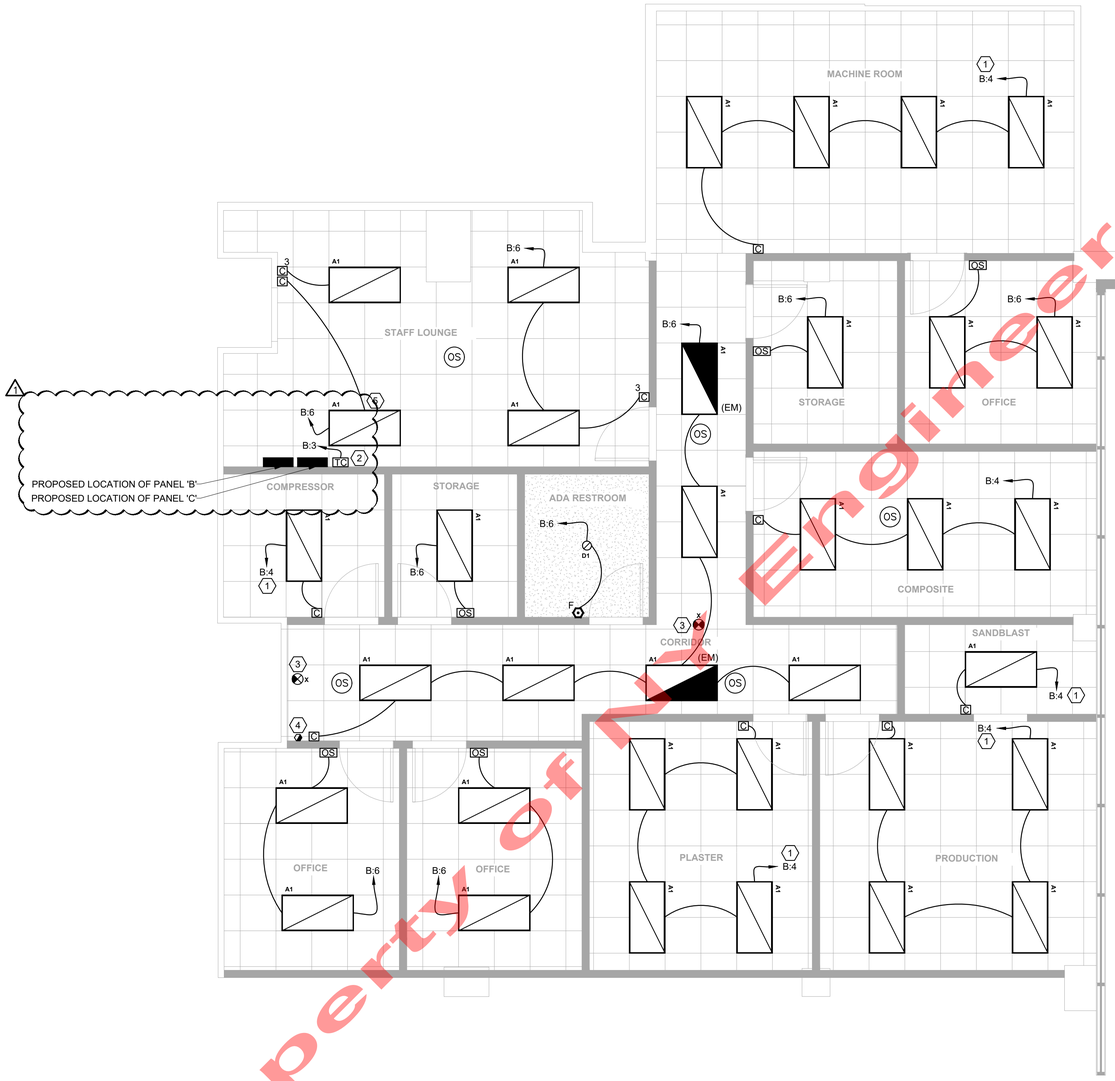
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NO.	DATE	DESCRIPTION
1		

PROJECT NO: | DATE:

SHEET TITLE:
PLUMBING DETAILS

SHEET #:
P-5



LIGHTING PLAN KEYED NOTES: (#)

1. ROUTE LIGHTING CIRCUIT VIA LIGHTING TIME CLOCK.
2. PROVIDE LIGHTING TIME CLOCK. SEE DETAIL 2 ON SHEET E-0 FOR WIRING DIAGRAM.
3. WIRE ALL EXIT LIGHTS TO THE NEAREST CIRCUIT AHEAD OF SWITCHING FOR CONTINOUS OPERATION.
4. PROVIDE 0-2HOUR BY-PASS TIMER. SEE DETAIL 2 ON SHEET E-0 FOR WIRING DIAGRAM.
5. LIGHTING NEAR ELECTRICAL PANELS SHALL NOT BE CONTROLLED BY ANY AUTOMATIC MEANS AND SHALL COMPLY WITH CEC 110.26(D).

WIRING IN PATIENT CARE AREAS SHALL BE COMPLY WITH CEC 517.13(A) AND (B).

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LIGHTING PLAN - LAB 1/4" = 1'-0" | 1

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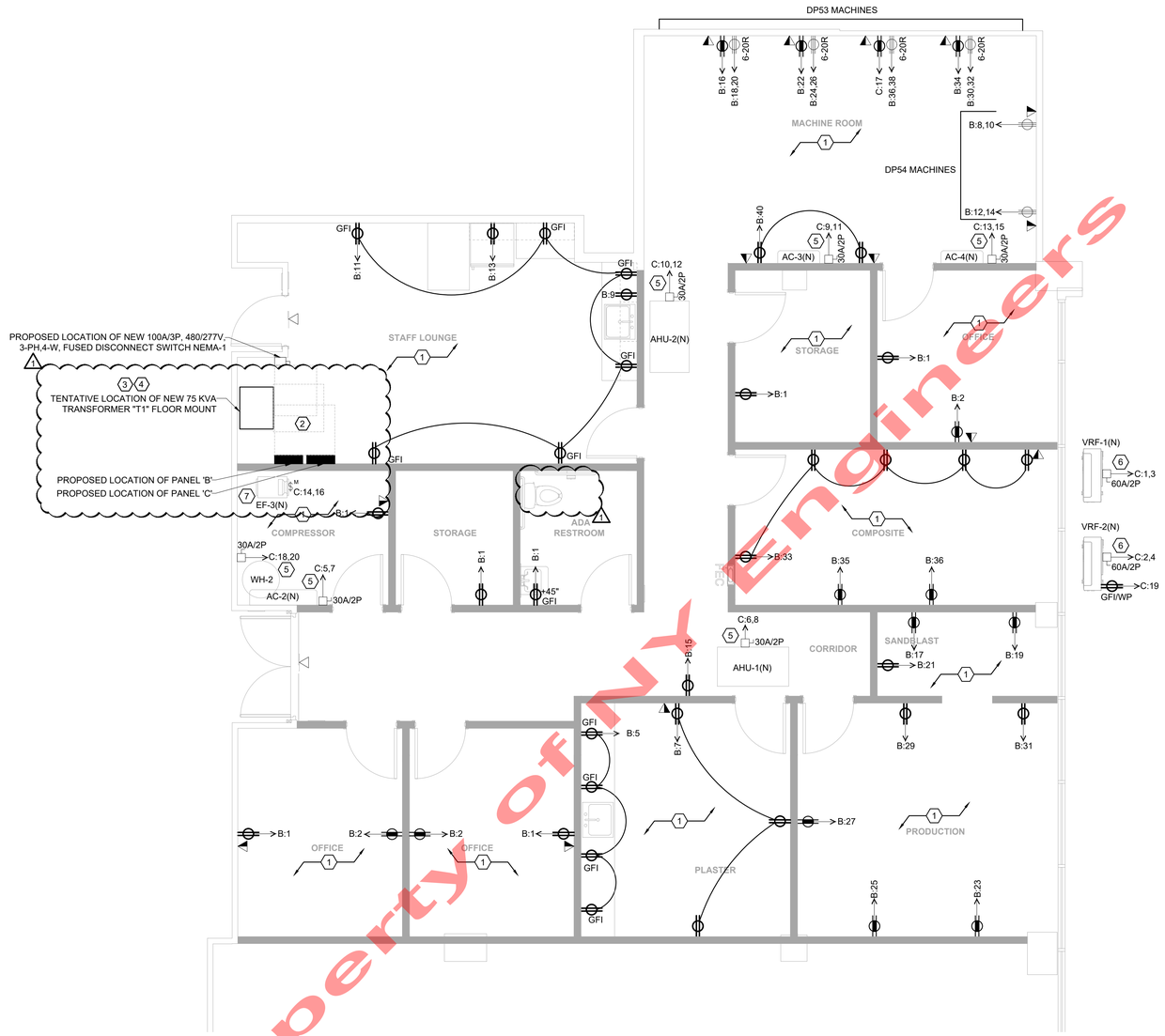
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NO.	DATE	DESCRIPTION
1		

PROJECT NO: | DATE:

SHEET TITLE: LIGHTING PLAN - LAB

SHEET #: E-1.1



Property of NY Engineers

ALL ELECTRICAL OUTLETS IN WET LOCATIONS AND/OR WITHIN 6' OF WATER SOURCE SHALL BE GFCI PROTECTED (CEC 210.8)

WIRING IN PATIENT CARE AREAS SHALL BE COMPLY WITH CEC 517.13(A) AND (B).

ELECTRICAL POWER PLAN KEYED NOTES: (#)

1. E.C. TO VERIFY EXACT LOCATION AND MOUNTING HEIGHTS OF OUTLETS IN FIELD.
2. THE ELECTRICAL CONTRACTOR (E.C.) SHALL FIELD VERIFY THAT ALL ELECTRICAL PANELS ARE UNOBSTRUCTED. THE AREA IN FRONT OF ELECTRICAL PANELS SHALL NOT BE USED FOR STORAGE. WORKING SPACE SHALL BE PROVIDED IN ACCORDANCE WITH THE CEC SECTION 110.26(A).
3. E.C. SHALL COORDINATE THE EXACT LOCATION OF THE FLOOR-MOUNT TRANSFORMER WITH THE OWNER/ARCHITECT IN THE FIELD. ENSURE THE TRANSFORMER IS INSTALLED ON A STRUCTURALLY RATED FLOOR PAD WITH VIBRATION ISOLATION AS REQUIRED.
4. THE TRANSFORMER IS SHOWN FLOOR-MOUNTED AND MUST REMAIN READILY ACCESSIBLE. MAINTAIN THE REQUIRED 36" CLEARANCE AT THE FRONT AND SIDE/REAR FOR CODE-COMPLIANT ACCESS AND WORKING SPACE PER CEC 110.26 AND MANUFACTURER RECOMMENDATIONS. ENSURE ADEQUATE LIGHTING, SAFE ACCESS, AND CLEAR EGRESS PATH. TRANSFORMER NOT LOCATED DIRECTLY ADJACENT TO PLUMBING FIXTURES. MAINTAIN CLEARANCE, ACCESSIBILITY, LABELING, GROUNDING, AND DISCONNECTS PER CEC SECTIONS 110.26, 450.11, 250, AND 450.3.
5. ELECTRICAL POWER PROVISION FOR MECHANICAL/PLUMBING EQUIPMENT. E.C. SHALL COORDINATE EXACT LOCATION, POWER AND ELECTRICAL OUTLET/DISCONNECT REQUIREMENT FOR MECHANICAL/PLUMBING EQUIPMENT WITH EQUIPMENT MANUFACTURER AND MECHANICAL/PLUMBING CONTRACTOR IN COORDINATION WITH ARCHITECT/OWNER IN THE FIELD PRIOR TO ROUGH-IN. BASE BID ACCORDINGLY. MAINTAIN CLEARANCE AS PER CEC CODE COMPLIANCE.
6. E.C. SHALL COORDINATE DISCONNECT REQUIREMENT FOR MECHANICAL UNIT WITH MECHANICAL CONTRACTOR AND EQUIPMENT MANUFACTURER PRIOR TO ROUGH-IN AND PROVIDE AS REQUIRED. COORDINATE LOCATION OF DISCONNECT WITH MANUFACTURER AND MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. LOCATE AS REQUIRED TO MAINTAIN CEC CLEARANCES.
7. THE EXHAUST FAN TO BE INTERLOCKED WITH TIME CLOCK. (1)

N

ELECTRICAL POWER PLAN - LAB 1/4" = 1'-0" | 1

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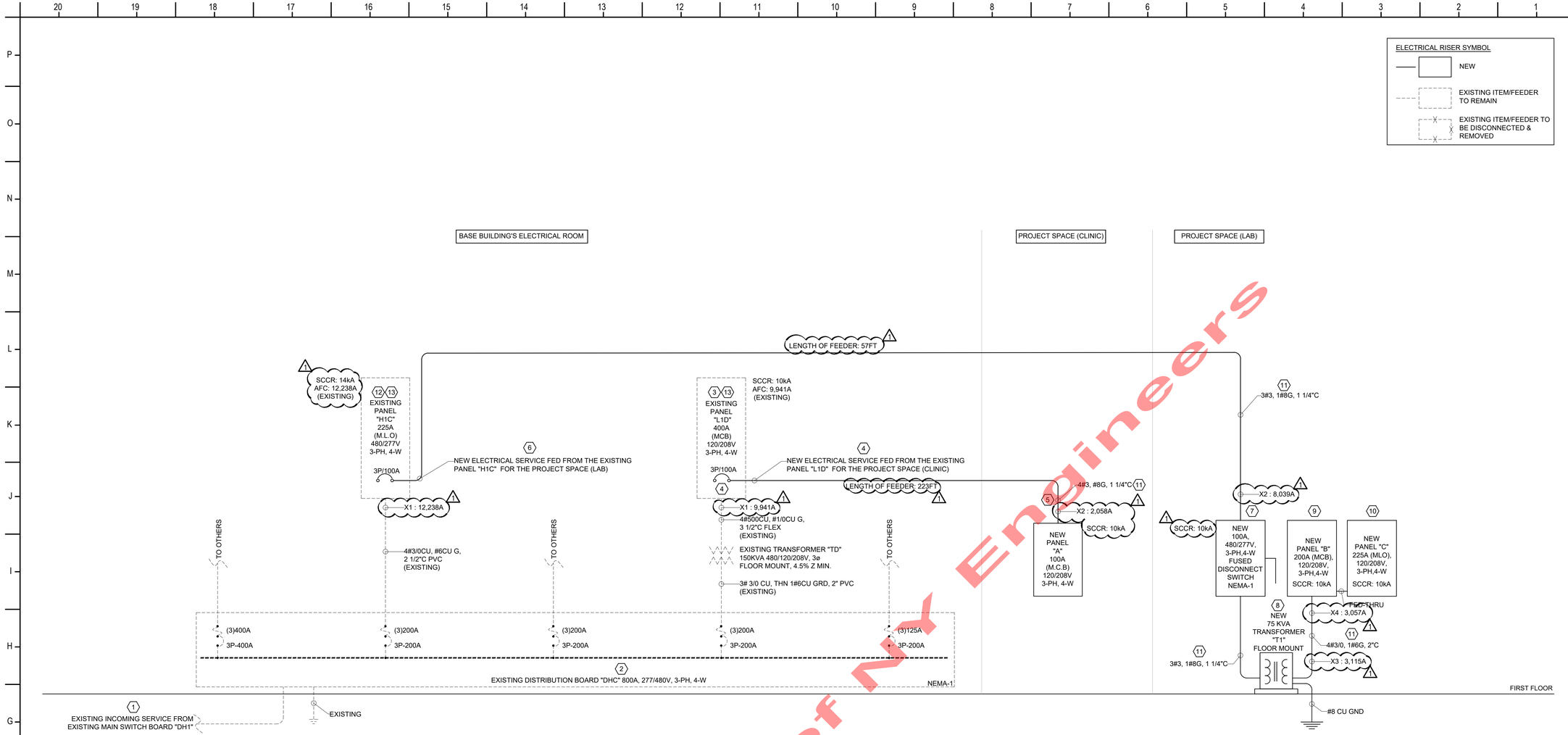
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NO.	DATE	DESCRIPTION
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PROJECT NO: | DATE:

SHEET TITLE: ELECTRICAL POWER PLAN - LAB

SHEET #: E-2.1

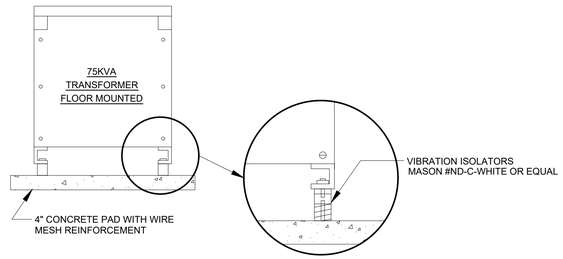


RISER DIAGRAM KEYED NOTES: (#)

1. EXISTING ELECTRICAL SERVICE FROM THE UTILITY COMPANY SHALL REMAIN AS IS. E.C. SHALL COORDINATE WITH LANDLORD/UTILITY COMPANY FOR EXACT POWER DISTRIBUTION. INFORM THE ENGINEER ON RECORD FOR ANY DISCREPANCIES PRIOR TO COMMENCING ANY WORK.
2. EXISTING ELECTRICAL DISTRIBUTION BOARD "DHC" OF 800A, 120/208V, 3-PHASE, 4-WIRE IN SHALL REMAIN AS IT IS. E.C. SHALL VERIFY EXACT LOCATION AND OPERABLE CONDITION OF EXISTING ELECTRICAL DISTRIBUTION PANEL "DHC" IN FIELD WITH LANDLORD/UTILITY COMPANY FOR EXACT POWER DISTRIBUTION. REPORT TO ENGINEER ON RECORD FOR ANY DISCREPANCIES.
3. EXISTING ELECTRICAL PANEL "L1D" OF 400A, 120/208V, 3-PHASE, 4-WIRE IN SHALL REMAIN AS IT IS. E.C. SHALL VERIFY EXACT LOCATION AND OPERABLE CONDITION OF EXISTING ELECTRICAL PANEL "L1D" IN FIELD WITH LANDLORD/UTILITY COMPANY FOR EXACT POWER DISTRIBUTION. REPORT TO ENGINEER ON RECORD FOR ANY DISCREPANCIES.
4. NEW 100A, 120/208V, 3-PHASE, 4-WIRE ELECTRICAL SERVICE FROM THE EXISTING PANEL "L1D" FOR THE PROJECT SPACE (CLINIC) VIA NEW 100A, 120/208V, 3-PHASE, 4-WIRE, 3-POLE BREAKER. E.C. SHALL COORDINATE WITH LANDLORD/OWNER/UTILITY COMPANY FOR EXACT INCOMING OF ELECTRICAL SERVICE AND POWER DISTRIBUTION.
5. NEW 100A (MCB), 120/208V, 3-PHASE, 4-WIRE PANEL "A" FOR THE PROJECT SPACE (CLINIC). E.C. SHALL COORDINATE WITH ARCHITECT/LANDLORD FOR EXACT LOCATION IN FIELD. BASE BID ACCORDINGLY
6. NEW 100A, 480/277V, 3-PHASE, 4-WIRE ELECTRICAL SERVICE FROM THE EXISTING PANEL "H1C" FOR THE PROJECT SPACE (LAB) VIA NEW 100A, 480/277V, 3-PHASE, 4-WIRE, 3-POLE BREAKER. E.C. SHALL COORDINATE WITH LANDLORD/OWNER/UTILITY COMPANY FOR EXACT INCOMING OF ELECTRICAL SERVICE AND POWER DISTRIBUTION.
7. NEW 100A, 480/277V, 3-PHASE, 4-WIRE ELECTRICAL FUSED DISCONNECT SWITCH FOR THE PROJECT SPACE. E.C. SHALL COORDINATE WITH ARCHITECT/OWNER FOR LOCATION OF FUSED DISCONNECT SWITCH IN FIELD.
8. NEW 75KVA, 3-PHASE, 4-WIRE TRANSFORMER "T1" WITH PRIMARY 480V/277V AND SECONDARY 120/208V FOR PROJECT SPACE (LAB). E.C. SHALL COORDINATE WITH ARCHITECT/OWNER FOR EXACT LOCATION OF THE FLOOR MOUNT TRANSFORMER IN FIELD. BASE BID ACCORDINGLY.
9. NEW 200A (MCB), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "B" FOR PROJECT SPACE (LAB). E.C. SHALL COORDINATE WITH ARCHITECT/OWNER FOR EXACT LOCATION OF PANEL "B" IN FIELD.
10. NEW 225A (MLO), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "C" FOR PROJECT SPACE (LAB). E.C. SHALL COORDINATE WITH ARCHITECT/OWNER FOR EXACT LOCATION OF PANEL "C" IN FIELD.
11. E.C. TO FIELD VERIFY EXACT LENGTH OF THE CABLE AND CHECK THE VOLTAGE DROP IS UNDER LIMIT PER CEC BEFORE INSTALLATION. E.C. SHALL PROVIDE THE UPDATED WIRE/FEEDER SIZE AS NEEDED AS PER THE VOLTAGE DROP CALCULATION. BASE BID ACCORDINGLY.
12. EXISTING ELECTRICAL PANEL "H1C" OF 225A (MLO), 480/277V, 3-PHASE, 4-WIRE IN SHALL REMAIN AS IT IS. E.C. SHALL VERIFY EXACT LOCATION AND OPERABLE CONDITION OF EXISTING ELECTRICAL PANEL "H1C" IN FIELD WITH LANDLORD/UTILITY COMPANY FOR EXACT POWER DISTRIBUTION. REPORT TO ENGINEER ON RECORD FOR ANY DISCREPANCIES.
13. E.C. SHALL VERIFY THE AVAILABILITY OF A SLOT IN THE EXISTING PANEL IN THE FIELD INSPECTION PRIOR TO COMMENCING WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER. BASE BID ACCORDINGLY.

RISER DIAGRAM GENERAL NOTES:

1. ABOVE RISER DIAGRAM IS FOR REFERENCE PURPOSE ONLY. E.C TO VERIFY EXACT POWER DISTRIBUTION & OPERABLE CONDITION OF EXISTING DEVICES/EQUIPMENTS IN FIELD AND INFORM ENGINEER FOR ANY DISCREPANCY. VERIFY SCOPE OF WORK WITH OWNER/LANDLORD PRIOR TO BID.
2. E.C. SHALL VERIFY THE INCOMING SERVICE AMPERAGE, VOLTAGE, NUMBER OF PHASES, WIRE SIZE AND DISTRIBUTION IN FIELD.
3. E.C. TO COORDINATE FAULT CURRENT (ISC) RATING WITH UTILITY COMPANY AND AHJ PRIOR TO COMMENCING ANY WORK.
4. E.C. TO VERIFY OPERABLE CONDITIONS OF EXISTING DEVICES IN FIELD, REPLACE/RECTIFY IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
5. E.C. SHALL VERIFY THE EXACT POWER DISTRIBUTION & INCOMING CONNECTION TO ALL PANELS IN FIELD. INFORM ENGINEER FOR ANY DISCREPANCY FOUND PRIOR TO COMMENCING WORK.
6. E.C. SHALL PROVIDE GROUNDING AND BONDING AS REQUIRED FOR THE ELECTRICAL SYSTEMS. GROUNDING AND BONDING SHALL BE CONSIDERED MEANS AND METHODS OF CONSTRUCTION AND SHALL BE PERFORMED BY THE ELECTRICAL CONTRACTOR IN ACCORDANCE WITH CEC ARTICLE 250. GAS PIPING SYSTEMS SHALL BE BONDED IN ACCORDANCE WITH THE UTILITY PROVIDER'S INSTALLATION GUIDELINES WHERE REQUIRED.



NOTES:

1. PROVIDE 4" CONCRETE HOUSE KEEPING PAD UNDER EACH FLOOR MOUNTED TRANSFORMER WITH WIRE MESH REINFORCING.
2. MOUNT TRANSFORMER TO PAD ON DOUBLE DEFLECTION NEOPRENE FLOOR MOUNTS MASON INDUSTRY #ND-C-WHITE OR EQUAL.

TRANSFORMER FLOOR MOUNT DETAIL

NOTE:
ABOVE SHOWN DIAGRAM IS FOR REFERENCE ONLY. FINAL MOUNTING METHOD, SUPPORT STRUCTURE, AND INSTALLATION DETAILS SHALL BE CONFIRMED WITH THE TRANSFORMER MANUFACTURER'S AS PER PUBLISHED INSTALLATION INSTRUCTIONS. E.C. SHALL COORDINATE WITH THE MANUFACTURER TO ENSURE PROPER CLEARANCES, ACCESSIBILITY, AND VIBRATION ISOLATION.

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ELECTRICAL RISER DIAGRAM 1/4" = 1'-0" | 1

NUVIA DENTAL

ISSUE

NO.	DATE	DESCRIPTION
1		

PROJECT NO: | DATE:

SHEET TITLE: ELECTRICAL RISER DIAGRAM

SHEET #: E-3

PANEL:	A (NEW)							SCCR RATING:	10kA		MOUNTING:	SURFACE		
120/208	VOLTS,	3	PHASE,	4	WIRE						LOCATION	HALLWAY		
MAIN CB	100A	MLO:	N/A	BUS:	125A						FED FROM	EX. 400A PANEL "L1D" VIA NEW 100A BREAKER		

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20	SMILE DESIGN & STORAGE RECEPTACLE	R	0.54	2#12, #12G, 3/4"C	1.44			2#12, #12G, 3/4"C	0.90	R	CONSULT. ROOM RECEPTACLE	20	2
3	20	TRE. ROOM-1 DEDICATED CHAIR RECEPTACLE	R	0.18	2#12, #12G, 3/4"C		1.08		2#12, #12G, 3/4"C	0.90	R	CONSULT. ROOM RECEPTACLE	20	4
5	20	TRE. ROOM-2 DEDICATED CHAIR RECEPTACLE	R	0.18	2#12, #12G, 3/4"C			1.08	2#12, #12G, 3/4"C	0.90	R	CONSULT. ROOM RECEPTACLE	20	6
7	20	TRE. ROOM-3 DEDICATED CHAIR RECEPTACLE	R	0.18	2#12, #12G, 3/4"C	0.90			2#12, #12G, 3/4"C	0.72	R	STERILIZATION ROOM RECEPTACLE	20	8
9	20	TRE. ROOM-4 DEDICATED CHAIR RECEPTACLE	R	0.18	2#12, #12G, 3/4"C		1.50		2#12, #12G, 3/4"C	1.32	E	ULTRASONIC CLEANER	20	10
11	20	TRE. ROOM-5 DEDICATED CHAIR RECEPTACLE	R	0.18	2#12, #12G, 3/4"C			1.08	2#12, #12G, 3/4"C	0.90	E	STERILIZATION ROOM REFRIG.	20	12
13	20	TRE. ROOM-1 RECEPTACLE	R	1.08	2#12, #12G, 3/4"C	1.68			2#12, #12G, 3/4"C	0.60	E	SINGLE CASSETTE STERILIZER	20	14
15	20	TRE. ROOM-2 RECEPTACLE	R	1.08	2#12, #12G, 3/4"C		2.40		2#12, #12G, 3/4"C	1.32	E	AUTOCLAVE STERILIZER	20	16
17	20	TRE. ROOM-3 RECEPTACLE	R	1.08	2#12, #12G, 3/4"C			1.98	2#12, #12G, 3/4"C	0.90	R	HALLWAY & CLINICAL STORAGE RECEPTACLE	20	18
19	20	TRE. ROOM-4 RECEPTACLE	R	1.08	2#12, #12G, 3/4"C	1.98			2#12, #12G, 3/4"C	0.90	R	HALLWAY RECEPTACLE	20	20
21	20	TRE. ROOM-5 RECEPTACLE	R	1.08	2#12, #12G, 3/4"C		2.16		2#12, #12G, 3/4"C	1.08	R	SHARED PRIVATE OFFICE RECEPTACLE	20	22
23	20	ORAL SURGERY 1 DEDICATED CHAIR RECEPTACLE	R	0.18	2#12, #12G, 3/4"C			1.80	2#12, #12G, 3/4"C	1.62	R	ORAL SURGERY 1 ROOM RECEPTACLE	20	24
25	20	ORAL SURGERY 2 DEDICATED CHAIR RECEPTACLE	R	0.18	2#12, #12G, 3/4"C	1.98			2#12, #12G, 3/4"C	1.80	R	ORAL SURGERY 2 ROOM RECEPTACLE	20	26
27	20	ORAL SURGERY 3 DEDICATED CHAIR RECEPTACLE	R	0.18	2#12, #12G, 3/4"C		1.98		2#12, #12G, 3/4"C	1.80	R	ORAL SURGERY 3 ROOM RECEPTACLE	20	28
29	20	ORAL SURGERY 4 DEDICATED CHAIR RECEPTACLE	R	0.18	2#12, #12G, 3/4"C			1.98	2#12, #12G, 3/4"C	1.80	R	ORAL SURGERY 4 ROOM RECEPTACLE	20	30
31	20	LAB-TRIMMER	E	1.20	2#12, #12G, 3/4"C	1.56			2#12, #12G, 3/4"C	0.36	R	ADA RESTROOM RECEPTACLE	20	32
33	20	LAB-STREMER	E	1.44	2#12, #12G, 3/4"C		3.52		2#10, #10G, 3/4"C	2.08	O	AIR COMPRESSOR - DENTAL MECHANICAL ROOM	2P-30	34
35	20	MINI LAB RECEPTACLE	R	1.08	2#12, #12G, 3/4"C			3.16		2.08	O			36
37	20	STORAGE & SEDATION STORAGE RECEPTACLE	R	0.36	2#12, #12G, 3/4"C	1.55			2#10, #10G, 3/4"C	1.19	O	VACCUM - DENTAL MECHANICAL ROOM	2P-30	38
39	20	BIO CLOSET RECEPTACLE	R	0.36	2#12, #12G, 3/4"C		1.55			1.19	O			40
41	20	CYL. STORGAE RECEPTACLE	R	0.18	2#12, #12G, 3/4"C			1.44	2#12, #12G, 3/4"C	1.26	R	STAFF LOUNGE RECEPTACLE	20	42
43	20	I.T. CLOSET RECEPTACLE	R	0.36	2#12, #12G, 3/4"C	0.86			2#12, #12G, 3/4"C	0.50	E	STAFF LOUNGE MICROWAVE	20	44
45	20	IMAGING & PHOTO ALCOVE RECEPTACLE	R	1.08	2#12, #12G, 3/4"C		1.98		2#12, #12G, 3/4"C	0.90	E	STAFF LOUNGE REFRIGERATOR	20	46
47	2P-20	PANAROMIC X-RAY - IMAGING ALCOVE	E	0.60	2#12, #12G, 3/4"C			1.68	2#12, #12G, 3/4"C	1.08	R	BUSINESS OFFICE RECEPTACLE	20	48
49			E	0.60		1.32			2#12, #12G, 3/4"C	0.72	R	BUSINESS OFFICE RECEPTACLE	20	50
51	20	RECEPTION RECEPTACLE	R	0.72	2#12, #12G, 3/4"C		1.22		2#12, #12G, 3/4"C	0.50	E	BEVERAGE STATION RECEPTACLE	20	52
53	20	RECEPTION, BUSINESS OFFICE & HALLWAY LIGHTING	L	0.50	2#12, #12G, 3/4"C			1.10	2#12, #12G, 3/4"C	0.60	L	SMILE DESIGN, STORAGE, TRE. ROOM 1 TO 5, ORAL SURGERY 1 TO 4, LAB, CLINICAL STORAGE, SHARED PRIVATE OFFICE LIGHTING	20	54
55	20	I.T. & BIO CLOSET, IMAGING & PHOTO ALCOVE, ADA RESTROOM, STAFF LOUNGE, STORAGES, DENTAL MECHANICAL, CYL. STORAGE, STERILIZATION, CONSULT. LIGHTING	L	0.80	2#12, #12G, 3/4"C	1.30			2#12, #12G, 3/4"C	0.50	L	TIME CLOCK	20	56
57	20	SPARE					0.00					SPARE	20	58
59	20	SPARE						0.00				SPARE	20	60
TOTAL CONNECTED LOAD (KVA)						14.57	17.39	15.30						

SCCR RATING: 10kA

PANEL SCHEDULE GENERAL NOTES:

1. E.C. SHALL COORDINATE EXACT POWER AND ELECTRICAL OUTLET/DISCONNECT REQUIREMENT FOR MECHANICAL/PLUMBING EQUIPMENT WITH EQUIPMENT MANUFACTURER IN COORDINATION WITH ARCHITECT/OWNER IN THE FIELD PRIOR TO ROUGH-IN. BASE BID ACCORDINGLY.
2. E.C. SHALL COORDINATE WITH ALL KITCHEN AND OTHER EQUIPMENT MANUFACTURER / SUPPLIER FOR THE EXACT ELECTRICAL REQUIREMENTS AND PROVIDE THE ELECTRICAL OUTLET INCLUDING J-BOX/RECEPTACLE/ DISCONNECT, BREAKER, CABLE AND CONDUIT ACCORDINGLY. BASE BID ACCORDINGLY.
3. CONTRACTOR SHALL COORDINATE WITH ARCHITECT/OWNER/LV CONSULTANT FOR POWER AND ELECTRICAL REQUIREMENTS FOR THE LOW VOLTAGE AND SECURITY SYSTEM IN FIELD AND ACCORDINGLY PROVIDE THE ELECTRICAL CONNECTIONS/CIRCUITS FROM SPARE CIRCUITS FOR LOW VOLTAGE SYSTEM PER REQUIREMENTS. BASE BID ACCORDINGLY.

ELECTRICAL PANEL SCHEDULE ABBREVIATIONS:

(E)	EXISTING
(N)	NEW
MLO	MAIN LUG ONLY
L	LIGHTING
R	RECEPTACLE
H	HVAC
M	MOTOR
E	EQUIPMENT
O	OTHER

SHORT-CIRCUIT CALCULATION AT PANEL "A"

EATON BUSSMANN SERIES

FC² available fault current calculator

Your System Details

Project Name: Nuvia - Walnut Creek, CA
System Type: Three-Phase
Creator Name:
Creator Email:
Creator Company/Organization:
Creator Title/Position:
Creation Date:

FAULT - X1
$I_{SHORT-CIRCUIT}$ 9,941 AMPS ← AT EXISTING PANEL "L1D"
Voltage (L-L) 208 V

CONDUCTOR RUN - C1
LENGTH 223 FT
SIZE 3
QTY (per phase) 1
TYPE Three-Conductor Cable
CONDUIT Steel
WIRE Cu, 600 V

CONDUCTOR

FAULT - X2
$I_{SHORT-CIRCUIT}$ 2,058 AMPS ← AT NEW PANEL "A"
Voltage (L-L) 208 V

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NUVIA DENTAL

ISSUE

NO.	DATE	DESCRIPTION
1		

PROJECT NO: DATE:

SHEET TITLE: PANEL SCHEDULES - CLINIC

SHEET #: E-3.1

PANEL: B (NEW) — **SCCR RATING:** 10kA (1) — **MOUNTING:** SURFACE

120/208 VOLTS, 3 **PHASE,** 4 **WIRE** — **LOCATION** STAFF LOUNGE

MAIN CB 200A — **MLO:** N/A — **BUS:** 225A — **FED FROM** 100A FUSED DIS. VIA 75KVA TRANSFORMER

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20	COMPRESSOR STORAGE, OFFICE, ADA RESTROOM AREA REC.	R	1.26	2#12,#12G,3/4"C	1.80			2#12,#12G,3/4"C	0.54	R	OFFICE DEDICATED RECEPTACLE	20	2
3	20	TIMER	O	1.20	2#12,#12G,3/4"C		1.50		2#12,#12G,3/4"C	0.30	L	LTG- PRODUCTION, SANDBLAST, PLASTER, COMPOSITE, COMPRESSOR, MACHINE ROOM	20	4
5	20	PLASTER RM RECEPTACLE	R	0.72	2#12,#12G,3/4"C			1.12	2#12,#12G,3/4"C	0.40	L	LTG- STORAGE, OFFICE , ADA RESTROOM, HALLWAY, STAFF ROOM	20	6
7	20	PLASTER RM RECEPTACLE	R	0.54	2#12,#12G,3/4"C	3.04			2#10,#10G,3/4"C	2.50	O	DPS4- MACHINE ROOM	2P-30	8
9	20*	STAFF LOUNGE MICROWAVE	E	0.50	2#12,#12G,3/4"C		3.00			2.50	O			10
11	20	STAFF LOUNGE RECEPTACLES	R	1.08	2#12,#12G,3/4"C			3.58	2#10,#10G,3/4"C	2.50	O	DPS4- MACHINE ROOM	2P-30	12
13	20*	STAFF LOUNGE REFRIG.	E	0.90	2#12,#12G,3/4"C	3.40				2.50	O			14
15	20	HALLWAY RECEPTACLE	R	0.18	2#12,#12G,3/4"C		2.10		2#12,#12G,3/4"C	1.92	O	DSP53-MACHINE ROOM	20	16
17	20	SANDBLAST RM DEDICATED RECEPTACLE	R	0.60	2#12,#12G,3/4"C			1.25	2#12,#12G,3/4"C	0.65	O	DPS3-MACHINE ROOM	2P-20	18
19	20	SANDBLAST RM DEDICATED RECEPTACLE	R	1.40	2#12,#12G,3/4"C	2.05				0.65	O			20
21	20	SANDBLAST RM RECEPTACLE	R	0.18	2#12,#12G,3/4"C		2.10		2#12,#12G,3/4"C	1.92	O	DSP53-MACHINE ROOM	20	22
23	20	PRODUCTION RM DEDICATED RECEPTACLE	R	1.20	2#12,#12G,3/4"C			1.85	2#12,#12G,3/4"C	0.65	O	DPS3-MACHINE ROOM	2P-20	24
25	20	PRODUCTION RM DEDICATED RECEPTACLE	R	1.20	2#12,#12G,3/4"C	1.85				0.65	O			26
27	20	PRODUCTION RM DEDICATED RECEPTACLE	R	1.20	2#12,#12G,3/4"C		3.12		2#12,#12G,3/4"C	1.92	O	DSP53-MACHINE ROOM	20	28
29	20	PRODUCTION RM RECEPTACLE	R	0.18	2#12,#12G,3/4"C			0.83	2#12,#12G,3/4"C	0.65	O	DPS3-MACHINE ROOM	2P-20	30
31	20	PRODUCTION RM RECEPTACLE	R	0.18	2#12,#12G,3/4"C	0.83				0.65	O			32
33	20	COMPOSITE AREA RECEPTACLE	R	1.08	2#12,#12G,3/4"C		1.44		2#12,#12G,3/4"C	0.36	R	MACHINE ROOM REC.	20	34
35	20	COMPOSITE DEDICATED RECEPTACLE	R	0.25	2#12,#12G,3/4"C			0.90	2#12,#12G,3/4"C	0.65	O	DPS3-MACHINE ROOM	2P-20	36
37	20	COMPOSITE DEDICATED RECEPTACLE	R	0.25	2#12,#12G,3/4"C	0.90				0.65	O			38
39	20	SPARE					0.00					SPARE	20	40
41	20	SPARE						0.00				SPARE	20	42
TOTAL CONNECTED LOAD (KVA)						13.86	13.26	9.53						

PANEL: C (NEW) — **SCCR RATING:** 10kA (1) — **MOUNTING:** SURFACE

120/208 VOLTS, 3 **PHASE,** 4 **WIRE** — **LOCATION** STAFF LOUNGE

MAIN CB NA — **MLO:** 225A — **BUS:** 225A — **FED FROM** FEDTHROUGH PANEL-B

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	2P-40	VRF-1(N)	H	3.42	2#8,#10G,3/4"C	6.84			2#8,#10G,3/4"C	3.42	H	VRF-2(N)	2P-40	2
3			H	3.42			6.84			3.42	H			4
5	2P-15	AC-2(N)	H	0.12	2#12,#12G,3/4"C			0.44	2#12,#12G,3/4"C	0.33	H	AHU-1(N)	2P-15	6
7			H	0.12		0.44				0.33	H			8
9	2P-15	AC-3(N)	H	0.07	2#12,#12G,3/4"C		0.39		2#12,#12G,3/4"C	0.33	H	AHU-2(N)	2P-15	10
11			H	0.07				0.39		0.33	H			12
13	2P-15	AC-4(N)	H	0.07	2#12,#12G,3/4"C	0.41			2#12,#12G,3/4"C	0.34	H	EF-3(N)	2P-15	14
15			H	0.07			0.41			0.34	H			16
17	20	DSP53-MACHINE ROOM	O	1.92	2#12,#12G,3/4"C			3.92	2#12,#12G,3/4"C	2.00	O	WH-2	2P-30	18
19	20	MAINTAINANCE RECEPTACLE	R	0.18	2#12,#12G,3/4"C	2.18				2.00	O			20
21	20	SPARE					0.00					SPARE	20	22
23	20	SPARE						0.00				SPARE	20	24
25	20	SPARE				0.00						SPARE	20	26
27	20	SPARE					0.00					SPARE	20	28
29	20	SPARE						0.00				SPARE	20	30
31		SPACE				0.00						SPACE		32
33		SPACE					0.00					SPACE		34
35		SPACE						0.00				SPACE		36
37		SPACE				0.00						SPACE		38
39		SPACE					0.00					SPACE		40
41		SPACE						0.00				SPACE		42
TOTAL CONNECTED LOAD (KVA)						9.87	7.64	4.75						

SHORT-CIRCUIT CALCULATION AT PANEL "B & C" (1)

EATON BUSSMANN SERIES — FC² available fault current calculator

Your System Details

Project Name: Nuvia - Walnut Creek, CA
System Type: Three-Phase
Creator Name:
Creator Email:
Creator Company/Organization:
Creator Title/Position:
Creation Date:

FAULT - X1
$I_{symm\ rms\ (1/2\ cyc)}$ 12.238 AMPS
Voltage (L-L) 480 V
← AT EXISTING PANEL "H1C"

CONDUCTOR

CONDUCTOR RUN - C1
LENGTH 57 FT
SIZE 3
QTY (per phase) 1
TYPE Three-Conductor Cable
CONDUIT Steel
WIRE Cu, 600 V

FAULT - X2
$I_{symm\ rms\ (1/2\ cyc)}$ 8.039 AMPS
Voltage (L-L) 480 V
← AT 100A DISCONNECT SWITCH

TRANSFORMER - T1
KVA 75
Voltage $_{secondary}$ 208
%Z 5.56
%Z TOL No Change

FAULT - X3
$I_{symm\ rms\ (1/2\ cyc)}$ 5.115 AMPS
Voltage (L-L) 208 V
← AT 75KVA TRANSFORMER SECONDARY

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EATON BUSSMANN SERIES — FC² available fault current calculator

CONDUCTOR

CONDUCTOR RUN - C2
LENGTH 10 FT
SIZE 3/0
QTY (per phase) 1
TYPE Three-Conductor Cable
CONDUIT Steel
WIRE Cu, 600 V

FAULT - X4
$I_{symm\ rms\ (1/2\ cyc)}$ 3.057 AMPS
Voltage (L-L) 208 V
← AT NEW PANEL "B & C"

Created Using Eaton's Bussmann Series - Available Fault Current Calculator 1.5 — Page 2

PANEL SCHEDULE GENERAL NOTES:

1. E.C. SHALL COORDINATE EXACT POWER AND ELECTRICAL OUTLET/DISCONNECT REQUIREMENT FOR MECHANICAL/PLUMBING EQUIPMENT WITH EQUIPMENT MANUFACTURER IN COORDINATION WITH ARCHITECT/OWNER IN THE FIELD PRIOR TO ROUGH-IN. BASE BID ACCORDINGLY.
2. E.C. SHALL COORDINATE WITH ALL KITCHEN AND OTHER EQUIPMENT MANUFACTURER / SUPPLIER FOR THE EXACT ELECTRICAL REQUIREMENTS AND PROVIDE THE ELECTRICAL OUTLET INCLUDING J-BOX/RECEPTACLE/ DISCONNECT, BREAKER, CABLE AND CONDUIT ACCORDINGLY. BASE BID ACCORDINGLY.
3. CONTRACTOR SHALL COORDINATE WITH ARCHITECT/OWNER/LV CONSULTANT FOR POWER AND ELECTRICAL REQUIREMENTS FOR THE LOW VOLTAGE AND SECURITY SYSTEM IN FIELD AND ACCORDINGLY PROVIDE THE ELECTRICAL CONNECTIONS/CIRCUITS FROM SPARE CIRCUITS FOR LOW VOLTAGE SYSTEM PER REQUIREMENTS. BASE BID ACCORDINGLY.

ELECTRICAL PANEL SCHEDULE ABBREVIATIONS:

(E)	EXISTING
(N)	NEW
MLO	MAIN LUG ONLY
L	LIGHTING
R	RECEPTACLE
H	HVAC
M	MOTOR
E	EQUIPMENT
O	OTHER

Property of NY Engineers

NUVIA DENTAL

ISSUE

NO.	DATE	DESCRIPTION
1		

PROJECT NO: — DATE:

SHEET TITLE: PANEL SCHEDULES - LAB

SHEET #: E-3.2