MECHANICAL SYMBOLS LIST

MECHANICAL SYMBOL LEGEND

	NEW SUPPLY AIR DIFFUSER - CONNECT NEW DUCTWORK TO EXISTING SUPPLY DUCTWORK
R	NEW RETURN AIR DIFFUSER - CONNECT NEW DUCTWORK TO EXISTING RETURN DUCTWORK
	NEW EXHAUST FAN IN RESTROOM - CONNECT TO EXISTING EXHAUST DUCTWORK
T	NEW THERMOSTAT
	VOLUME CONTROL DAMPER
RELO	EXISTING SUPPLY AIR DIFFUSER TO BE RELOCATED
RELO	EXISTING RETURN AIR DIFFUSER TO BE RELOCATED

MECHANICAL ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AL	ACOUSTIC LINING
BOD	BOTTOM OF DUCT
BOE	BOTTOM OF EQUIPMENT
CFM	CUBIC FEET OF AIR PER MINUTE
COP	COEFFICIENT OF PERFORMANCE
CP	CONDENSATE PUMP
CD	CONDENSATE DRAIN PIPE
DN	DOWN
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
FC	FLEXIBLE CONNECTION
IEER	INTEGRATED ENERGY EFFICIENCY RATIO
VD	VOLUME DAMPER
RTU	ROOF TOP UNIT
SAE	SAME AS EXISTING

DUCTWORK

========	AIR DUCT W/ 1.5" ACOUSTICAL LINING
	FLEXIBLE DUCT
FC FC	FLEXIBLE CONNECTION
24X12	RECTANGULAR DUCT (WIDTH X DEPTH)
Ø12	ROUND DUCT (DIAMETER)
	ROUND DUCT CROSS SECTION
	SUPPLY AIR RECTANGULAR DUCT CROSS SECTION
	RETURN AIR RECTANGULAR DUCT CROSS SECTION

MECHANICAL DRAWING LIST

APPLICABLE CODES

A. 2022 CALIFORNIA BUILDING CODE
B. 2022 CALIFORNIA MECHANICAL CODE
C. 2022 CALIFORNIA PLUMBING CODE
D. 2022 CALIFORNIA FIRE CODE
E. 2022 CALIFORNIA ELECTRICAL CODE
F. 2022 CALIFORNIA ENERGY CODE.

MECHANICAL GENERAL NOTES

1. CONTRACTORS AND SUB-CONTRACTORS SHALL CAREFULLY REVIEW CONSTRUCTION DOCUMENTS. INFORMATION REGARDING COMPLETE WORK IS DISPERSED THROUGHOUT DOCUMENT SET AND CANNOT BE ACCURATELY DETERMINED WITHOUT REFERENCE TO COMPLETE DOCUMENT SET.

2. COORDINATE WITH WORK OF OTHER SECTIONS. EQUIPMENT FURNISHED BY OTHERS, REQUIREMENTS OF OWNER, AND WITH CONSTRAINTS OF EXISTING CONDITIONS OF PROJECT SITE. COORDINATE THE INSTALLATION OF MECHANICAL EQUIPMENT, DUCTWORK, ETC. TO FIT WITHIN THE SPACE ALLOWED BY ARCHITECTURAL AND STRUCTURAL CONDITIONS. CUTTING OR OTHERWISE ALTERING STRUCTURAL MEMBERS SHALL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION FROM THE STRUCTURAL ENGINEER OF RECORD AND COORDINATION WITH THE GENERAL CONTRACTOR. PROVIDE DUCT AND PIPE RISES AND DROPS AS REQUIRED FOR FIELD INSTALLATION AND TRADE COORDINATION. COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH ELECTRICAL DRAWINGS PRIOR TO ORDERING EQUIPMENT OR SUBMITTING SHOP DRAWINGS. FURNISH EQUIPMENT WIRED FOR VOLTAGES SHOWN THEREIN. CONTRACTOR SHALL BEAR ALL COST(S) ASSOCIATED WITH FAILURE TO COORDINATE ELECTRICAL CHARACTERISTICS. NOTIFY ARCHITECT OF ANY DISCREPANCIES BEFORE STARTING WORK.

3. DRAWINGS FOR HVAC WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENT. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS. REFER TO MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS. PROVIDE DUCTWORK, CONNECTIONS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY FOR A COMPLETE SYSTEM. GENERALLY DUCTWORK SHALL BE KEPT AS HIGH AS POSSIBLE.

4. WORK SHALL COMPLY WITH STATE AND LOCAL CODE REQUIREMENTS AS APPROVED AND AMENDED BY GOVERNING CITY. PURCHASE PERMITS ASSOCIATED WITH WORK. OBTAIN INSPECTIONS REQUIRED BY CODE.

5. INSTALL EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS AND MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCE.

6. PROVIDE ACCESS PANELS IN CEILINGS AND WALLS TO ALLOW ACCESS TO VALVES, TRAPS, DAMPERS, CLEANOUTS, CONTROLS, ETC. MINIMUM ACCESS SIZE - 12"x12", UNLESS LIMITED BY PHYSICAL CONSTRAINTS.

7. CONTRACT LANDLORD APPROVED ROOFING CONTRACTOR TO FLASH AND SEAL RELATED ROOF PENETRATIONS TO MAINTAIN ROOFING WARRANTY.

8. INSTALL EXHAUST FAN A MINIMUM OF 10 FT FROM INTAKE AIR OPENINGS.

9. COORDINATE LOCATIONS OF GRILLES, REGISTERS AND DIFFUSERS WITH ARCHITECTURAL REFLECTED CEILING PLAN. LOCATIONS SHOWN ARE APPROXIMATE, ADJUST LOCATIONS IN THE FIELD AS REQUIRED BY CONSTRUCTION CONSTRAINTS.

10. ELECTRICAL CONTRACTOR SHALL FURNISH, ROUTE, AND INSTALL CONTROL WIRING FOR MECHANICAL SYSTEMS. MECHANICAL CONTRACTOR SHALL PROVIDE CONTROLS AND CONTROL WIRING TERMINATIONS FOR MECHANICAL SYSTEMS.

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 50FEET OR MORE; AND
4. THE PERIMETER SYSTEM IS CONTROLLED BY AT LEAST ONE THERMOSTAT LOCATED IN ONE OF THE ZONES SERVED BY THE SYSTEM.

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

C. 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 NON-USE AND SHALL HAVE:

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

B. AN OCCUPANCY SENSOR; OR

C. 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 SET POINT 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 SET POINT IF THE SYSTEM PROVIDES MECHANICAL COOLING.
EXCEPTION TO SECTION 120.2(e)2B: THERMOSTAT SETUP CONTROLS ARE NOT REQUIRED IN NON-RESIDENTIAL 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.

D. 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 NON-ELECTRICAL 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.

MECHANICAL SPECIFICATIONS

PROVIDE EQUIPMENT INDICATED ON DRAWINGS, AND AS REQUIRED FOR COMPLETE FUNCTIONING SYSTEM.

DEFINITIONS:
FURNISH MEANS TO SUPPLY AND DELIVER TO PROJECT SITE, READY FOR INSTALLATION. INSTALL MEANS PLACE IN POSITION AND MAKE CONNECTIONS FOR SERVICE OR USE. PROVIDE MEANS FURNISH AND INSTALL, COMPLETE AND READY FOR INTENDED USE.

WARRANTY: PROVIDE LABOR AND MATERIALS TO REPAIR OR REPLACE DEFECTIVE PARTS AND MATERIALS REQUIRED FOR ONE YEAR AFTER OWNER ACCEPTANCE OF COMPLETED PROJECT. REFRIGERATION COMPRESSORS SHALL HAVE A FIVE YEAR (PARTS ONLY) WARRANTY. NATURAL GAS HEAT EXCHANGERS SHALL HAVE A TEN YEAR (PARTS ONLY) WARRANTY. PROVIDE SEPARATE LINE ITEM DEDUCT AMOUNT ON PROPOSAL FORM TO DELETE WARRANTY SERVICE, AT OWNER'S OPTION.

COORDINATION: COORDINATE WORK OF OTHER TRADES, EQUIPMENT FURNISHED BY OTHERS, REQUIREMENTS OF OWNER, AND WITH CONSTRAINTS OF EXISTING CONDITIONS OF PROJECT SITE.

DUCT DIMENSIONS: UNLESS OTHERWISE NOTED, DUCT DIMENSIONS ON DRAWINGS ARE INSIDE CLEAR DIMENSIONS.

SHEETMETAL DUCTWORK: PROVIDE SHEETMETAL DUCTWORK FABRICATED AND INSTALLED IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS, FOR 1" W.G. PRESSURE CLASS, SEAL CLASS "A". SHEETMETAL SHALL BE GALVANIZED SHEET STEEL OF LOCK FORMING QUALITY, WITH G90 ZINC COATING. SHEET STEEL SHALL COMPLY WITH ASTM A653 STANDARD SPECIFICATION FOR STEEL SHEETMETAL, ZINC COATED (GALVANIZED) OR ZINC-IRON ALLOY-COATED (GALVANNEALED) BY HOT DIP PROCESS, AND A924 STANDARD SPECIFICATION FOR GENERAL REQUIREMENTS FOR SHEET, METALLIC-COATED BY HOT DIP PROCESS. ALL ANGLE IRON USED FOR SUPPORT SHALL BE GALVANIZED. CONNECTIONS TO WALLS OR FLOOR SHALL BE AIR TIGHT WITH ANGLE IRON AND CAULKING. SEAL ALL DUCT SEAMS, TRANSVERSE AND LONGITUDINAL, AIR TIGHT. PROVIDE TURNING VANES AT ALL 90º ELBOWS.

REFRIGERANT PIPING: TYPE ACR HARD DRAWN COPPER TUBING MEETING REQUIREMENTS OF ASTM B280, WITH WROUGHT COPPER FITTINGS MEETING REQUIREMENTS OF ANSI B16.22, WITH BRAZED JOINTS MEETING REQUIREMENTS OF AWS A 5.8, USING BAG-1 (SILVER) FILLER MATERIAL. INSULATE SUCTION LINE PIPING WITH 1" THICK ARMAFLEX TYPE AP. PAINT INSULATION LOCATED OUTDOORS WITH ARMAFLEX WB FINISH.

ROUND SHEETMETAL DUCT: PROVIDE SPIRAL SEAM (ALL SIZES) OR SNAP LOCK (DUCT SIZES UP TO 10") GALVANIZED STEEL COMPLYING WITH SMACNA STANDARDS. SPIRAL SEAM DUCTWORK SHALL HAVE SMACNA SEAM TYPE RL-1.

FLEXIBLE DUCT: PROVIDE FACTORY ASSEMBLED CLASS 1 AIR DUCT (UL 181) WITH 1" THICK 1 PCF FIBERGLASS INSULATION AND REINFORCED OUTER PROTECTIVE COVER/VAPOR BARRIER. FLEXIBLE DUCT SHALL MEET NFPA 90A WITH FLAME SPREAD UNDER 25, SMOKE DEVELOPED UNDER 50, AND SHALL BE RATED FOR MINIMUM 2" W.G. PRESSURE AND 0ºF TO 250ºF TEMPERATURE. PROVIDE SCREW-OPERATED METAL ADJUSTABLE CLAMPING DEVICES. USE TWIST-LOCK TAP COLLARS AT CONNECTIONS INTO SHEETMETAL DUCTWORK. MAXIMUM EXTENDED LENGTH OF FLEXIBLE DUCT SHALL NOT EXCEED 6 FEET.

DUCT SEALANT: PROVIDE WATER BASED SYNTHETIC LATEX EMULSION PERMANENTLY FLEXIBLE HIGH VELOCITY DUCT SEALANT, DUCTMATE INDUSTRIES, INC. PRO SEAL OR EQUAL. SEALANT SHALL BE LOW VOC LEED COMPLIANT CAPABLE OF 15 " W.G., NFPA 90A AND 90B APPROVED, UL 181B-M LISTED AND UL 723 CLASSIFIED. INSTALL PER MANUFACTURER INSTRUCTIONS. SEALANT SHALL BE APPROVED FOR PLENUM INSTALLATIONS AND MEET FLAME SPREAD AND SMOKE DEVELOPED RATINGS FOR PLENUM APPLICATIONS.

DUCT INSULATION (ALL ROUND SUPPLY DUCT AND ROUND RETURN DUCT ABOVE CEILING AND ALL MAKEUP AIR DUCTWORK): PROVIDE MINIMUM 1-1/2" THICK BLANKET TYPE FIBERGLASS INSULATION COMPLYING WITH ASTM C-553, TYPE II, WITH FACTORY APPLIED KRAFT BONDED TO ALUMINUM FOIL, REINFORCED WITH FIBERGLASS VAPOR BARRIER/JACKET. JACKET SHALL CONFORM TO ASTM C-1136, TYPE II.

DUCT LINER (ALL RECTANGULAR SUPPLY AND RETURN DUCT EXCLUDING MAKEUP AIR DUCTWORK): PROVIDE MINIMUM 1" THICK, 2 PCF DENSITY, LONG TEXTILE FIBER TYPE DUCT LINER, WITH COATING ON AIR STREAM SIDE CONFORMING TO NFPA 90A. DUCT LINER SHALL BE SECURED TO DUCT WITH ADHESIVE AND MECHANICAL FASTENERS. ADHESIVE SHALL BE LEED COMPLIANT LOW VOC AS RECOMMENDED BY DUCT LINER MANUFACTURER, AND SHALL COMPLY WITH ASTM C-916. DUCT LINER FASTENERS SHALL COMPLY WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS", LATEST EDITION. THERMAL CONDUCTIVITY SHALL BE EQUAL TO OR LESS THAN 0.24 AT 75°F.

ROUND VOLUME DAMPERS: PROVIDE MINIMUM 20 GAUGE GALVANIZED STEEL FRAME AND BLADES, MINIMUM 3/8" SQUARE STEEL AXLE, MOLDED SYNTHETIC BEARINGS, WITH LOCKING POSITION REGULATOR. REGULATOR SHALL BE POSITIONED WITH SHEETMETAL BRACKET BEYOND DUCT COVERING. WHERE POSITIONING REGULATOR IS NOT ACCESSIBLE, PROVIDE COUPLING AND EXTENSION ROD WITH REGULATOR FOR CEILING OR WALL INSTALLATION.

RECTANGULAR VOLUME DAMPERS: PROVIDE MINIMUM 16 GAUGE GALVANIZED STEEL CHANNEL FRAME, 16 GAUGE GALVANIZED STEEL BLADES, MINIMUM 1/2" HEXAGONAL AXLE, MOLDED SYNTHETIC BEARINGS, WITH 3/8" SQUARE PLATED STEEL CONTROL SHAFT. LINKAGES SHALL BE CONCEALED IN FRAME. OPERATING SHAFT SHALL EXTEND BEYOND FRAME AND DUCT TO LOCKING QUADRANT WITH ADJUSTABLE LEVER. MAXIMUM BLADE WIDTH SHALL NOT EXCEED 6".

DUCT TURNING VANES: PROVIDE FABRICATED TURNING VANES AND VANE RUNNERS CONSTRUCTED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS" PROVIDE TURNING VANES CONSTRUCTED OF CURVED BLADES, SUPPORTED WITH BARS PERPENDICULAR TO BLADES, AND SET INTO SIDE STRIPS SUITABLE FOR MOUNTING IN DUCTWORK. FOLLOW SMACNA GUIDELINES FOR SPACING SUPPORT, AND CONSTRUCTION. ALL BLADES SHALL BE DOUBLE THICKNESS AIRFOIL TYPE.

FLEXIBLE DUCT CONNECTORS: PROVIDE UL LABELED 30 OUNCE NEOPRENE COATED FIBERGLASS FABRIC DUCT CONNECTORS AT DUCT CONNECTIONS TO ALL VIBRATING EQUIPMENT.

DUCT ACCESS DOORS: PROVIDE HINGED ACCESS DOORS IN DUCTWORK WHERE REQUIRED FOR ACCESS TO EQUIPMENT. PROVIDE INSULATED ACCESS DOORS FOR INSULATED DUCTWORK. CONSTRUCT OF SAME OR THICKER GAUGE SHEETMETAL AS DUCT IN WHICH IT IS INSTALLED. PROVIDE FLUSH FRAMES FOR UNINSULATED DUCTS, AND EXTENDED FRAMES FOR EXTERNALLY INSULATED DUCTS. PROVIDE CONTINUOUS HINGE ON ONE SIDE, WITH ONE HANDLE-TYPE LATCH FOR ACCESS DOORS 12" HIGH AND SMALLER, AND TWO HANDLE-TYPE LATCHES FOR LARGER ACCESS DOORS.

MECHANICAL EQUIPMENT IDENTIFICATION: PROVIDE ENGRAVED PLASTIC LAMINATE LABEL FOR EACH MAJOR ITEM OF MECHANICAL EQUIPMENT & EACH OPERATIONAL DEVICE. LETTERS SHALL BE MINIMUM OF 1/2 " HIGH. PROVIDE SIGNS TO INFORM OPERATOR OF OPERATIONAL REQUIREMENTS, TO INDICATE SAFETY AND EMERGENCY PRECAUTIONS, AND TO WARN OF HAZARDS AND IMPROPER OPERATION.

TESTING AND BALANCING: TEST AND ADJUST MECHANICAL SYSTEMS AND EQUIPMENT TO ASSURE PROPER BALANCE AND OPERATION. PERFORM TESTS IN ACCORDANCE WITH NEBB OR AABC, AND ASHRAE STANDARDS. TEST AND BALANCE REPORT SHALL INCLUDE OUTDOOR AIR TEMPERATURE AT TIME OF TESTING, ENTERING AIR TEMPERATURE AND LEAVAING AIR TEMPERATURE AT THE COIL(S), AIR TEMPERATURE AND AIR FLOW AT EACH SUPPLY AIR DIFFUSER AND RETURN AIR GRILLE, AND SPACE TEMPERATURE FOR EACH SYSTEM. ELIMINATE OBJECTIONABLE NOISE AND VIBRATION, AND ASSURE PROPER FUNCTION OF CONTROLS. BALANCING CONTRACTOR SHALL BE AN INDEPENDENT CERTIFIED TEST AND BALANCE CONTRACTOR, WITH NEBB OR AABC CERTIFICATION. SUBMIT COMPLETED AND CERTIFIED TEST AND BALANCE REPORT TO OWNER'S REPRESENTATIVE. BALANCE SYSTEMS TO WITHIN 5% OF AIR FLOWS INDICATED ON DRAWINGS, AND REPORT DISCREPANCIES TO HVAC INSTALLER FOR CORRECTION. MARK FINAL BALANCE POSITIONS ON DAMPERS WITH PERMANENT MARKER.

OPERATIONS AND MAINTENANCE MANUALS (O&M): AT COMPLETION OF PROJECT PROVIDE MINIMUM OF TWO O&M MANUALS IN THREE RING BINDERS TO OWNER/TENANT. MANUALS SHALL HAVE TABS LABELED WITH ALL SECTIONS SEPARATED WITH CLEAR INDEX AT FRONT. PROVIDE WARRANTY LETTER AT FRONT OF MANUAL STATING DATES OF WARRANTY (START DATE AND END DATE) AND CONTACTS WITH PHONE NUMBERS FOR WARRANTY WORK. PROVIDE NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE INCLUDING RECOMMENDED SETPOINTS. MANUALS SHALL INCLUDE SUBMITTALS OF ALL EQUIPMENT, SIZE AND OPTIONS SELECTED. PROVIDE ALL BALANCING REPORTS. PROVIDE MANUFACTURER LITERATURE FOR OPERATIONS AND MAINTENANCE FOR ALL EQUIPMENT ON PROJECT. ALL PERIODIC AND ROUTINE MAINTENANCE SHALL BE CLEARLY IDENTIFIED. PROVIDE CONTROLS SECTION LISTING SYSTEM OPERATING AND CONTROL INSTRUCTIONS, MAINTENANCE, CALIBRATION, WIRING DIAGRAMS SCHEMATICS AND CONTROL SEQUENCE DESCRIPTIONS.

DUCTWORK INSULATION:

A. ALL SUPPLY DUCTWORK INSIDE OF THE BUILDING, IN NON-CONDITIONED SPACES, SHALL BE INSULATED WITH DUCT WRAP OF 1" MINIMUM THICKNESS AND 1 1/2 LB. DENSITY, WITH VAPOR BARRIER. JOINTS SHALL BE STAPLED AND TAPED. AS AN ALTERNATE, THE CONTRACTOR MAY LINE THE DUCTS WITH 1" THICK, 1 1/2 LB. DENSITY FIBERGLASS DUCT LINER.
B. ALL DUCTWORK EXPOSED OUTSIDE OF THE BUILDING SHALL BE COVERED WITH 1 1/2" THICK, 3 LB. DENSITY, FIBERGLASS BOARD WITH F.S.K. FACING. ALL JOINTS SHALL BE TAPED. WEATHERPROOF DUCTS WITH WEATHERPROOF MASTIC BOTH UNDER AND OVER ONE LAYER OF FIRE RETARDANT GLASS CLOTH WITH 2" OVERLAP ON ALL SEAMS. WEATHERPROOF COATING SHALL BE 1/8" THICK.
C. DUCTWORK INSULATION SHALL HAVE A FLAME SPREAD/SMOKE DENSITY RATING NOT EXCEEDING 25/50 PER NFPA PAMPHLET 90A.
D. INDOOR DUCT AND PLENUM INSULATION SCHEDULE;
1. CONCEALED, RECTANGULAR, ROUND AND FLAT-OVAL, SUPPLY-RETURN, OUTDOOR-AND EXHAUST-AIR DUCT AND AIR PLENUM INSULATION:
2. FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN WITH MINIMUM INSTALLED THERMAL RESISTANCE AS FOLLOWS:
UNCONDITIONED SPACES WITHIN BUILDING: R-8
WITHIN BUILDING ENVELOPE ASSEMBLY: R-8
OUTSIDE OF BUILDING: R-8

DIFFUSERS, REGISTERS, AND GRILLES:

PRODUCTS
A. DIFFUSERS, REGISTERS AND GRILLES SHALL BE FURNISHED AND INSTALLED FOR CAPACITIES AND IN LOCATIONS INDICATED ON DRAWINGS. ALL REGISTERS AND DIFFUSERS SHALL BE PRIME COATED STEEL OR EXTRUDED ALUMINUM FINISHED UNLESS OTHERWISE NOTED IN BAKED WHITE ENAMEL.
B. MANUFACTURERS; TITUS
1. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCT BY ONE OF THE FOLLOWING:
   a. CARNES.
   b. HART & COOLEY INC.
   c. KRUEGER.
   d. METALAIRE, INC.
   e. NAILOR INDUSTRIES INC.
   f. RUSKIN
C. ALL DIFFUSERS SHALL HAVE CONTROLLING/EQUALIZING GRID AND OPPOSED BLADE DAMPER UNLESS OTHERWISE NOTED.
D. ALL DUCTED RETURN REGISTERS SHALL HAVE AN OPPOSED BLADE DAMPER UNLESS OTHERWISE NOTED.

END OF SECTION 233713

CALIFORNIA BUILDING DEPARTMENT NOTES

ALL WORK SHALL COMPLY WITH APPLICABLE SECTIONS OF THE CALIFORNIA BUILDING CODE 2022, 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 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. 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 2022:
   A. VENTILATION SYSTEM BALANCING CALIFORNIA MECHANICAL CODE 2022 - 402
8. THE FOLLOWING WORK ITEMS, COMPONENTS, MATERIALS, CAPACITIES, ETC. SHALL COMPLY WITH THE REFERENCED CODE OR STANDARD:
   A. STANDARDS OF HEATING - CALIFORNIA BUILDING CODE 2022 - 1203
   B. DUCT CONSTRUCTION AND INSTALLATION- CALIFORNIA MECHANICAL CODE 2022 - 603
   C. AIR INTAKES, EXHAUSTS AND RELIEF - CALIFORNIA MECHANICAL CODE 2022 -502.
   D. AIR FILTERS - CALIFORNIA MECHANICAL CODE 2022 - 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 - CALIFORNIA MECHANICAL CODE 2022 - 606
9. PORTIONS OF SUPPLY-AIR AND RETURN-AIR DUCTS CONVEYING HEATED OR COOLED AIR LOCATED IN ONE OR MORE OF THE FOLLOWING SPACES SHELL BE INSULATED TO A MINIMUM INSTALLED LEVEL OF R-8:
   1.OUTDOOR; OR
   2.IN A SPACE BETWEEN THE ROOF AND AN INSULATED CEILING; OR
   3.IN A SPACE DIRECTLY UNDER A ROOF WITH FIXED VENTS OR OPENING TO THE OUTSIDE OR UNCONDITIONED SPACE ; OR
   4.IN AN UNCONDITIONED CRAWLSPACE ; OR
   5.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.

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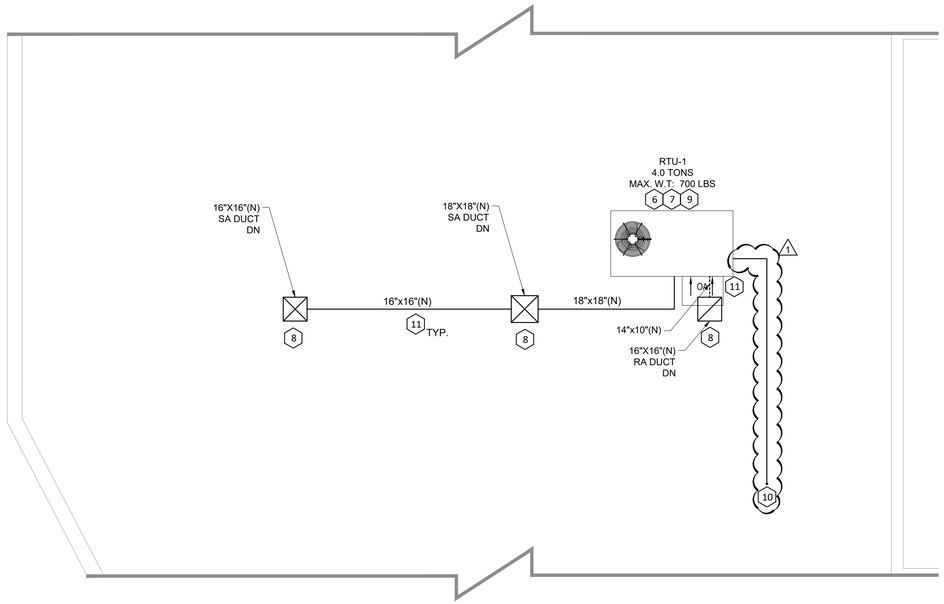
No.	Drawing Issues / Revisions	Date
1	Building Comments	02/17/25

Proposed Interior Tenant Fit-out for HearingLife

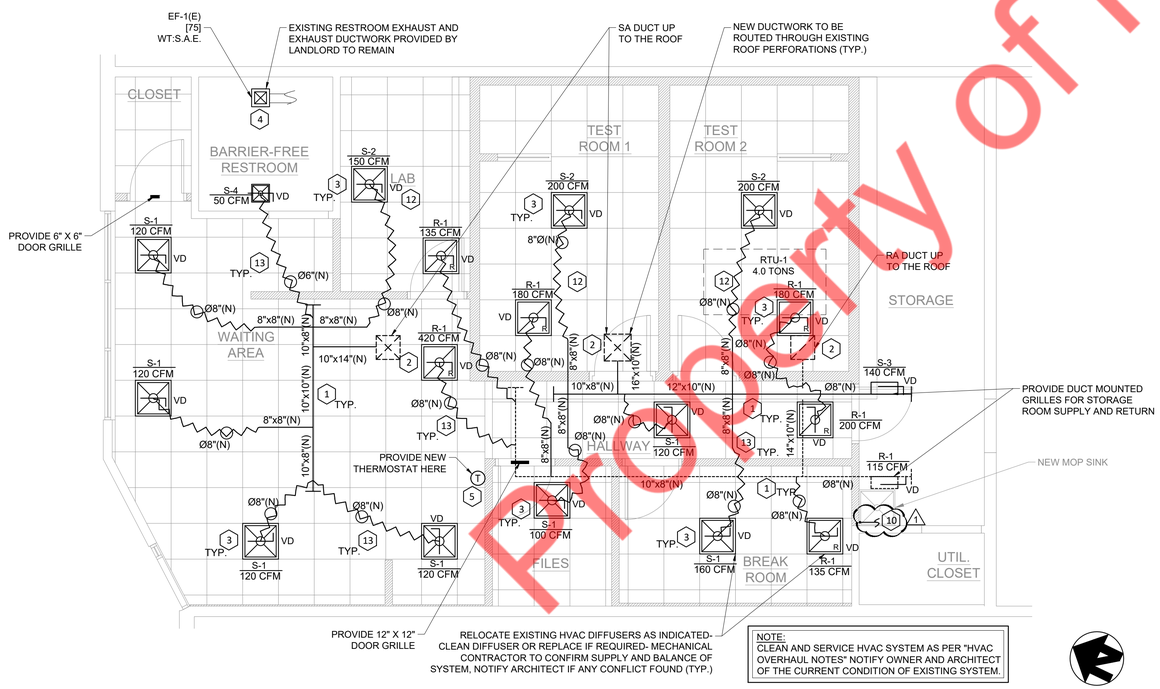
Drawing Title: GENERAL NOTES, SPECIFICATIONS & LEGENDS

Date: 10-29-24	Dwg No. M 0.1
Drawn By: NYE	
Checked By: NYE	
Job No: 24-059	1 of 6



2 MECHANICAL ROOF PLAN

SCALE: 1/4" = 1'-0"



1 MECHANICAL FLOOR PLAN

SCALE: 1/4" = 1'-0"

MECHANICAL GENERAL NOTES

A. COORDINATE LOCATION AND SIZES OF ROOF OPENINGS WITH OWNER AND STRUCTURAL ENGINEERS.

B. EQUIPMENT SIZES, DIMENSIONS AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE ACTUAL EQUIPMENT SELECTED VENDOR DRAWINGS BEFORE FABRICATION OF DUCTWORK, PIPING ETC.

C. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS FOR ALL HVAC BASED ON ACTUAL EQUIPMENT SELECTED PRIOR TO INSTALLATION.

D. ALL SOURCE OF MECHANICAL INTAKE SHALL REMAIN 10 LINEAR FEET SEPARATION BETWEEN ANY SOURCE OF EXHAUST. CONTRACTOR IS RESPONSIBLE TO ADJUST DUCT LENGTHS AS NEEDED.

E. TEST AND BALANCE AIR SYSTEMS. PROVIDE REPORT TO GENERAL CONTRACTOR AND OWNER.

F. RTU WEIGHTS ARE INCLUDED ROOF CURBS AND/OR ADAPTORS.

G. CONTRACTOR SHALL BALANCE EACH DEVICE WITH CFM SHOWN ON PLAN.

H. NEW DUCTWORK SHOWN ON THE PLAN ARE SCHEMATIC ONLY. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES FOR PIPING AND DUCTWORK ROUTING. OFFSET AND RUN PIPING, DUCTWORK INSIDE THE STRUCTURE IF REQUIRED. PROVIDE ANY EXTRA PIPING, DUCTWORK, FITTINGS, INSULATIONS AND OTHER ACCESSORIES IN ORDER TO COMPLETE THE INSTALLATION.

I. DUCT SIZES SHOWN ON PLANS ARE CLEAR INSIDE AIR STREAM DIMENSIONS.

J. PROVIDE FIRE OR FIRE+SMOKE DAMPER WHEREVER DUCTS ARE CROSSING FIRE/SMOKE RATES WALLS/BARRIERS. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR THE FIRE RATINGS OF THE WALLS.

K. PROVIDE MINIMUM R-8 INSULATION (INTERNAL FOR EXPOSED DUCTS AND EXTERNAL FOR CONCEALED DUCTS) FOR SUPPLY & RETURN DUCTS. PROVIDE ACOUSTIC INSULATION ON MAIN SUPPLY AND RETURN DUCTS UPTO 10 FT. FROM HVAC UNIT.

L. KEEP ALL ADJOINING AREAS ADJACENT TO THE WORK AREAS CLEAN AND FREE OF DEBRIS.

M. ALL EXHAUST AND RETURN AIR TERMINALS TO HAVE RIGID DUCT CONNECTIONS.

N. APPLIANCES LOCATED ON ROOFS OR OTHER ELEVATED LOCATIONS SHALL BE ACCESSIBLE. (1)

MECHANICAL FLOOR & ROOF PLANS KEY NOTES

1. MAIN SUPPLY & RETURN DUCT AS SHOWN. CONNECT BRANCH DUCT TO RESPECTIVE SUPPLY & RETURN AIR DIFFUSER. CONTRACTOR TO FIELD VERIFY THE EXACT LOCATION OF MAIN SUPPLY & RETURN DUCT.
2. EXTEND FULL SIZE SUPPLY & RETURN DUCTWORK FROM ROOFTOP UNIT TO SPACE. EXTEND AS SHOWN. TRANSITION DUCT AS NECESSARY TO MAKE CONNECTION. ACOUSTICALLY LINE THE FIRST 10'-0" OF BOTH SUPPLY AND RETURN MAIN DUCTS INSIDE THE SPACE.
3. EXISTING SUPPLY/RETURN DIFFUSERS TO REMAIN OR TO BE REUSED. VERIFY SIZE, LOCATION AND COORDINATE WITH ARCHITECTURAL SHEETS INCLUDING REFLECTED CEILING PLAN FOR RELOCATIONS. CLEAN AND REFURBISH TO "LIKE NEW" CONDITION EXTEND/MODIFY DUCTWORK AS REQUIRED. PROVIDE VOLUME DAMPER OR COLLAR DAMPER, VERIFY IN FIELD PRIOR TO BID.
4. REUSE & RELOCATE EXISTING CEILING MOUNTED EXHAUST FAN ALONG WITH ACCESSORIES & EXISTING DUCTING. CONTRACTOR TO FIELD VERIFY THE EXACT LOCATION OF EXHAUST FAN. VERIFY THAT THE LOCATION OF ANY OUTSIDE AIR INTAKE SOURCE FROM ADJACENT TENANTS SHOULD BE AT LEAST 10'-0" AWAY FROM EXHAUST DUCT TERMINATING ON ROOF.
5. INSTALL AND WIRE A NEW 7-DAY PROGRAMMABLE THERMOSTAT FOR RTU-1. COORDINATE EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN.
6. TEMPERATURE SENSOR INSTALL IN RETURN AIR DUCT & WIRE BACK TO T-STAT FOR RTU-1.
7. RTU TO BE PROVIDED & INSTALLED BY LANDLORD. EXISTING ROOF CURB TO REMAIN & TO BE REUSED. CONTRACTOR TO FIELD VERIFY THE EXACT LOCATION OF RTU.
8. CONTRACTOR TO VERIFY IN FIELD THE EXACT LOCATION AND SIZE OF SUPPLY & RETURN AIR DUCT PENETRATION. REUSE EXISTING ROOF PENETRATIONS FOR THE NEW MAIN SUPPLY & RETURN AIR DUCTS.
9. CONTRACTOR TO VERIFY ANY EXHAUST TERMINATION OF ADJACENT TENANT SHALL BE 10'-0" AWAY FROM THE RTU OUTSIDE AIR INTAKE.
10. CONDENSATE DRAIN SHALL BE DIRECTED TO THE MOP SINK INSIDE THE SPACE. CONDENSATE DRAIN PIPING SHALL BE A MIN. OF 3/4 IN. DIAMETER WITH MIN.1/8 IN./FT. HORIZONTAL SLOPE IN THE DIRECTION OF DISCHARGE (1% SLOPE). CONDENSATE LINES MUST BE PROVIDED WITH CLEANOUTS FOR CLEARING OF ANY BLOCKAGES. (1)
11. PROVIDE WEATHER-PROOF COATING FOR EXTERIOR DUCTWORK RUNNING ON THE ROOF.
12. PROVIDE ACOUSTICAL INSULATION FOR THE DUCTWORK SERVING TO THE SPECIFIED ROOMS.
13. FLEXIBLE DUCT LENGTH SHOULD NOT BE MORE 10'-0".

HVAC / OVERHAUL NOTES

1. BRUSH CLEAN AND VACUUM HOUSING, CONDENSER DUCTWORK, ETC.
2. HIGH PRESSURE WASH AND CLEAN COILS, DRAIN PAN.
3. TEST COILS AND PIPING FOR LEAKS, CRACKS, ETC.
4. CHANGE BELTS, FILTERS, REFRIG. DRYERS. ADJUST BELT TENSION.
5. REPLACE FREON, REFRIG. OILS WITH NEW CHARGE, USE REFRIG. RECOVER EQUIPMENT AS PER CLEAN AIR ACT, SECTION 608.
6. LUBRICATE ALL MOVING PARTS.
7. REPAIR DRAIN PAN AS REQUIRED. INSTALL NEW TRAP.
8. CHECK FOR CONTACT WEAR ON ALL RELAYS, CONTRACTORS, REPLACE AS REQUIRED.
9. TIGHTEN ALL ELECTRICAL CONNECTIONS, ENSURE THAT ALL ELECTRICAL CONTROLS ARE WORKING PROPERLY.
10. TEST MOTOR.
11. REPLACE THERMOSTAT.
12. SUBMIT SERVICE REPORT.

NOTE:
NOT ALL SERVICES MAY BE REQUIRED. FIELD VERIFY CONDITION, AGE, AND WORKING ORDER OF EXISTING HVAC UNIT IN FIELD

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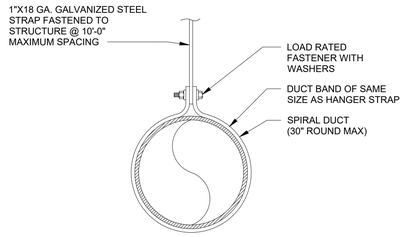
No.	Drawing Issues / Revisions	Date
1	Building Comments	02/17/25

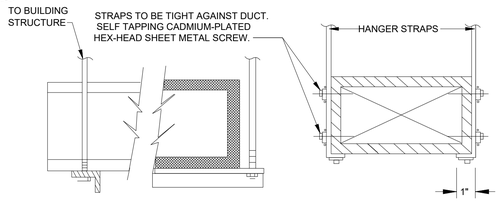
Proposed
Interior Tenant Fit-out
for
HearingLife

Drawing Title:
MECHANICAL FLOOR & ROOF PLANS

Date: 10-29-24	Dwg No. M 1.0
Drawn By: NYE	
Checked By: NYE	
Job No: 24-059	2 of 6

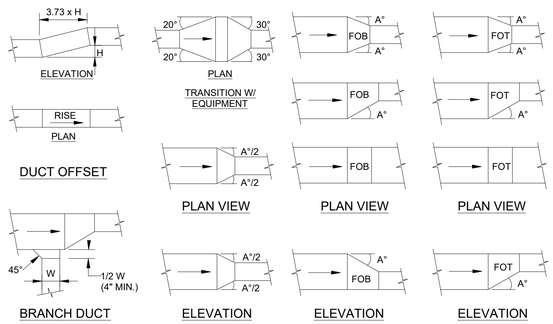


1 M2.0 SPIRAL DUCT INSTALLATION DETAIL
NOT TO SCALE



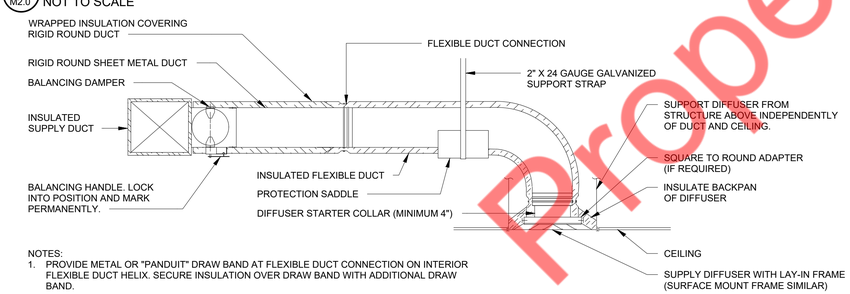
HANGER SIZES FOR RECTANGULAR DUCTS			
MAXIMUM DUCT WIDTH	HANGER	SUPPORT ANGLE HORIZONTAL	MAXIMUM HANGER SPACING
30"	1" x 18" GAUGE STRAP	NONE REQUIRED	10'-0"
36"	1/4" ROUND ROD	1-1/2" X 1-1/2" X 1/8"	8'-0"
48"	1/4" ROUND ROD	2" X 2" X 1/8"	8'-0"
60"	5/16" ROUND ROD	2" X 2" X 1/8"	8'-0"
84"	3/8" ROUND ROD	2" X 2" X 1/8"	8'-0"

2 M2.0 DUCT HANGER SIZING FOR RECTANGULAR
NOT TO SCALE



NOTES: 1) ANGLE A = 30° WHEN AIR FLOWS IN DIRECTION OF ARROW (SUPPLY AIR).
2) ANGLE A = 20° WHEN AIR FLOWS IN OPPOSITE DIRECTION OF ARROW (RETURN OR EXHAUST).

3 M2.0 LOW VELOCITY DUCT FITTINGS DETAIL
NOT TO SCALE



NOTES:
1. PROVIDE METAL OR "PANDUIT" DRAW BAND AT FLEXIBLE DUCT CONNECTION ON INTERIOR FLEXIBLE DUCT HELIX. SECURE INSULATION OVER DRAW BAND WITH ADDITIONAL DRAW BAND.
2. PROVIDE BEADING ON ROUND METAL DUCT 12" OR LARGER IN DIAMETER.
3. PROVIDE MINIMUM 4" COLLARS FOR ATTACHMENT OF FLEXIBLE DUCT TO ROUND DUCT, DAMPERS, AND DIFFUSERS.
4. BAND RIGID ROUND DUCT INSULATION TO DUCT AND PROVIDE TAPE FOR INSULATION OVERLAP.

4 M2.0 DIFFUSER CONNECTION DETAIL - FLEX DUCT
NOT TO SCALE

ROOFTOP UNIT SCHEDULE

MARK	MANU-FACTURER	MODEL	FAN				COOLING					HEATING			ELECTRIC	ELECTRICAL				APPROXIMATE WEIGHT(LBS)	SUPPLIED BY	INSTALLED BY	NOTES
			SUPPLY AIR FLOW (CFM)	OUTSIDE AIR FLOW (CFM)	EXTERNAL STATIC (IN. W.G.)	SUPPLY MOTOR HP	AMBIENT OAT °F	ENTERING AIR TEMPERATURE °F	TONS	TOTAL CAPACITY (BTU/HR)	SENSIBLE CAPACITY (BTU/HR)	EFFICIENCY EER/SEER	TOTAL CAPACITY (BTU/HR)	HSPF	COP	HEATING CAPACITY (KW/MBH)	VOLTAGE	PHASE	MCA (A)	MOCP (A)				
RTU-1	YORK	XN048E05B2A--	1600	235	1	1/3	91.4	80 / 67	4.0	56,400	39,400	11.8/14.00	44,000	8.00	3.20	4/13.65	208-230	3	41.4	50	700	LL	LL	1-12

NOTES:
1. CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND CONFIGURATION OF RTU ON SITE.
2. CONTRACTOR TO BALANCE OUTSIDE AIR & RETURN AIR DAMPERS ON RTU TO MATCH VALUES MENTIONED IN THE TABLE ABOVE.
3. 2" MERV 13 STANDARD FILTERS.
4. SIDE DISCHARGE & RETURN CONFIGURATION.
5. UNIT TO BE PROVIDED WITH LOW LEAKAGE VOLUME CONTROL DAMPER, NEMA 3R DISCONNECT, INTAKE HOOD, SCREEN INTAKE.
6. PROVIDE FLEXIBLE CONNECTION AT DUCT CONNECTION TO UNIT.
7. PROVIDE VIBRATION ISOLATOR FOR UNIT MOUNTING.
8. ELECTRICAL CONNECTION TO BE SINGLE POINT AND TO BE THROUGH THE BOTTOM OF THE UNIT.
9. PROVIDE ALL COMPRESSORS WITH 5 YEAR WARRANTY.
10. ANTI SHORT CYCLE TIMER.
11. CONNECT CONDENSATE DRAIN LINE FROM RTU-1 ON THE ROOF TO THE NEAREST DRAIN POINT. CONNECT TO A DRAIN LINE VIA AIR GAP IN AN APPROVED MANNER.
12. RTU TO BE PROVIDED AND INSTALLED BY LANDLORD.

EXISTING EXHAUST FAN SCHEDULE

MARK	MANUFACTURER	MODEL	TYPE	AREA SERVED	FAN				ELECTRICAL				APPROXIMATE WEIGHT (LBS)	SUPPLIED BY	INSTALLED BY	ACCESSORIES	NOTES
					EXHAUST AIRFLOW (CFM)	EXTERNAL STATIC (IN. W.G.)	DRIVE TYPE	MOTOR WATTS	VOLTAGE	PHASE	MCA (A)	MOCP (A)					
EF-1(E)	GREENHECK (V.I.F.)	SP-A125 (V.I.F.)	CEILING	RESTROOM	75 (V.I.F.)	S.A.E.	S.A.E.	S.A.E.	115 (V.I.F.)	1 (V.I.F.)	S.A.E.	S.A.E.	S.A.E.	LL	LL	S.A.E.	1-2

NOTES:
1. INTERLOCK FAN OPERATION WITH LIGHT SWITCH.
2. V.I.F. : VERIFY IN FIELD. S.A.E.: SAME AS EXISTING..

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

ROOM NAME	AREA (SQ.FT.)	OCCUPANCY AS PER LAYOUT	TOTAL OUTDOOR AIR RATE CFM/SQ.FT	REQUIRED OA (CFM)	PROVIDED OA (CFM)	EXHAUST AIRFLOW RATE (CFM/SQ.FT OR CFM/UNIT)	REQ EXHAUST AIRFLOW RATE (CFM)	PROVIDED EXHAUST AIRFLOW RATE (CFM)
WAITING AREA	390	7	0.15	59	60	0	0	0
HALLWAY	92	0	0.15	14	15	0	0	0
LAB	87	1	0.15	13	15	0	0	0
TEST ROOM #1	160	4	0.15	24	25	0	0	0
TEST ROOM #2	160	4	0.15	24	25	0	0	0
FILES	53	0	0.15	8	10	0	0	0
BREAK ROOM	102	2	0.5	51	55	0	0	0
STORAGE	175	0	0.15	26	30	0	0	0
RESTROOM	56	0	0	0	0	70	70	75
TOTAL	**1275**	**18**	-	**219**	**235**	-	**70**	**75**

GRILLE, REGISTER, AND DIFFUSER SCHEDULE

MARK	MANUFACTURER	MODEL	TYPE	NECK SIZE	FACE SIZE	FRAME TYPE	MATERIAL	FINISH	NOISE CRITERIA	ACCESSORIES
R-1	CARNES	RTLAH	STEEL LOUVERED RETURN DIFFUSER	8"Ø	24"X24"	LAY-IN	STEEL	STANDARD WHITE	<25	OBD
R-2	CARNES	RDDM	DUCT MOUNTED RETURN GRILLE	-	10"X6"	SURFACE	STEEL	STANDARD WHITE	<25	OBD, TF
S-1	CARNES	SPAB	PERFORATED DIFFUSER	8"Ø	24"X24"	LAY-IN	STEEL	STANDARD WHITE	<25	OBD, TF
S-2	CARNES	SFTB	STAMPED LOUVERED DIFFUSER	8"Ø	24"X24"	LAY-IN	STEEL	STANDARD WHITE	<20	OBD, TF
S-3	CARNES	RDDM	DUCT MOUNTED SUPPLY GRILLE	-	10"X6"	SURFACE	STEEL	STANDARD WHITE	<25	OBD
S-4	CARNES	SPAB	STAMPED LOUVERED DIFFUSER	6"Ø	12"X12"	LAY-IN	STEEL	STANDARD WHITE	<25	OBD, TF

ACCESSORIES:
OBD-OPPOSED BLADE DAMPER, TF- T FRAME

CONTRACTOR TO PROVIDE ALL COPPER TUBING, REFRIGERANT, SITE GLASS, DRIER AND OTHER SPECIALTY ITEMS FOR COMPLETE MECHANICAL INSTALLATION. PROVIDE ALL NECESSARY CONTROLS AND CONTROL WIRING BETWEEN UNITS AND THERMOSTAT. RECALCULATE AND DISTRIBUTE CFM ACCORDING TO SIZE AND AREA OF ROOM, TYP.

AIR BALANCE SCHEDULE

MARK	SUPPLY AIR (CFM)	OUTSIDE AIR (CFM)		RETURN AIR (CFM)	EXHAUST AIR (CFM)
		SUPPLY	%OA		
RTU -1	1600	235	14.68	1365	-
EF-1(E)	-	-		-	75
TOTAL	1600	235		1365	75
RESULTING BUILDING PRESSURIZATION				160	POSITIVE

NOTES:
1. CONTRACTOR TO ADJUST MOTORISED DAMPER ON FRESH AIR TAP TO PROVIDE OUTSIDE AIR AS MENTIONED IN ABOVE TABLE.

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No.	Drawing Issues / Revisions / Building Comments	Date
1		02/17/25

Proposed Interior Tenant Fit-out for HearingLife

Drawing Title: MECHANICAL DETAILS & SCHEDULES

Date: 10-29-24
Drawn By: NYE
Checked By: NYE
Job No: 24-059
Dwg No. M 2.0

ELECTRICAL SYMBOLS LEGEND

5 3 1	HOME RUN TO PANEL. CIRCUIT NUMBERS, PHASE, NEUTRAL, AND GROUND CONDUCTORS INDICATED ALONG WITH ISOLATED GROUND CONDUCTOR IF APPLICABLE.
1	PARTIAL CIRCUIT.
	CONDUIT INSTALLED CONCEALED ABOVE CEILING OR IN WALL.
	CONDUIT INSTALLED CONCEALED BELOW FLOOR SLAB OR UNDERGROUND.
	GROUND CONNECTION.
$	SINGLE POLE SWITCH, +3'-10" OR AS NOTED.
$3	THREE-WAY SWITCH, +3'-10" OR AS NOTED.
OS	WALL MOUNTED OCCUPANCY SENSOR, +3'-10" OR AS NOTED.
OS	CEILING MOUNTED OCCUPANCY SENSOR.
	SIMPLEX RECEPTACLE, +18" OR AS NOTED.
	DUPLEX RECEPTACLE, +18" OR AS NOTED.
	QUADAPLEX RECEPTACLE +18" OR AS NOTED.
	RECEPTACLE INSTALLED HORIZONTALLY, BOTTOM AT +6" ABOVE COUNTER TOP.
	DUPLEX RECEPTACLE INSTALLED FLUSH IN CEILING.
	TWIST LOCK RECEPTACLE INSTALLED FLUSH IN CEILING.
	RECEPTACLE LETTER DESIGNATION DEFINITION: G GROUND FAULT INTERRUPTING DEVICE IG ISOLATED GROUND USB DEVICE WITH USB PORT WP WEATHERPROOF GROUND FAULT INTRUPTING DEVICE CR CORD REEL TR TAMPER RESISTANT
	SPECIAL RECEPTACLE, NEMA STYLE AS NOTED, +18" OR AS NOTED.
J	JUNCTION BOX.
J	4x4 JUNCTION BOX, UNLESS OTHERWISE NOTED.
	DISCONNECT SWITCH, TOP AT +6'-0" OR AS NOTED.
	DISCONNECT SWITCH PROVIDED WITH EQUIPMENT.
P	EXTERIOR PHOTOCELL, INSTALLED ON ROOF FACING NORTH.
R	CONTROL OR POWER RELAY, INSTALLED AS NOTED.
	PUSHBUTTON, TOP AT +4'-6" OR AS NOTED.
	PANIC BUTTON, TOP AT +3'-6" OR AS NOTED.
DB	DOOR BELL CHIME, +8'-0" OR AS NOTED.
TR	CONTROL TRANSFORMER, INSTALLED AS NOTED.
T S C (H) H	THERMOSTAT, TEMPERATURE SENSOR, CARBON MONOXIDE, CARBON DIOXIDE SENSOR AND HUMIDISTAT, +3'-10" OR AS NOTED. REFER TO MECHANICALL DRAWINGS FOR MORE INFORMATION.
EOD	ELECTRICALLY OPERATED DAMPER
	120 VOLT DUCT TYPE SMOKE DETECTOR
SCP	SECURITY SYSTEM CONTROL PANEL, TOP AT 6'-0".
K	KEYPAD, +46" OR AS NOTED.
	SECURITY CAMERA, PENDANT MOUNTED
	WALL MOUNTED SECURITY CAMERA
K	SECURITY KEYPAD
D	DOOR CONTACTS.
M	POWER COMPANY METER, TOP AT +6'-10" AFG OR AS NOTED.
	TRANSFORMER, FLOOR MOUNTED OR SUSPENDED FROM STRUCTURE AS NOTED.
	BRANCH CIRCUIT PANELBOARD, TOP AT +6'-0" OR AS NOTED.
	DISTRIBUTION PANEL, TOP AT +6'-0" OR AS NOTED.
	PLYWOOD PHONEBOARD, INSTALLED AS NOTED.
	CAT6 OUTLET, +18" UNLESS NOTED OTHERWISE WITH 1" CONDUIT TO ABOVE CEILING. NO # = 1 PORT, # = NUMBER OF PORTS
V	DATA OUTLET, +18" UNLESS NOTED OTHERWISE WITH 1" CONDUIT TO ABOVE CEILING. C = COAX , H= HDMI, V = VGA
V	CEILING MOUNTED DATA OUTLET
	AREA TYPE PHOTOELETRIC SMOKE DETECTOR, CEILING MOUNTED, OR AS NOTED.

GENERAL REFERENCES/NOTATIONS

AC	MOUNT DEVICE +6" ABOVE TOP OF COUNTER TO BOTTOM OF DEVICE.
+48"	MOUNTING HEIGHT ABOVE FINISHED FLOOR TO CENTERLINE OF DEVICE.
03/E5	DETAIL OR SECTION REFERENCE.
???	FOODSERVICE EQUIPMENT DESIGNATION.
#	REVISION DESIGNATION.
TYPE ?	EQUIPMENT DESIGNATION.

ABBREVIATIONS

AFF/AFG	ABOVE FINISHED FLOOR/GRADE.	NEC	NATIONAL ELECTRICAL CODE.
AHJ	AUTHORITY HAVING JURISDICTION.	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION.
BAS	BUILDING AUTOMATION SYSTEM.	NL	NIGHT LIGHT.
DNR	DEPARTMENT OF NATURAL RESOURCES.	NF	NON-FUSED.
EC	ELECTRICAL CONTRACTOR.	O	OWNER PROVIDED.
EM	EMERGENCY.	PA	PUBLIC ADDRESS.
ETR	EXISTING TO REMAIN.	PC	PLUMBING CONTRACTOR.
FA	FIRE ALARM.	SPD	SURGE PROTECTION DEVICE.
FPC	FIRE PROTECTION CONTRACTOR.	TYP	TYPICAL.
FSEC	FOOD SERVICE EQUIPMENT CONTRACTOR.	UL	UNDERWRITERS LABORATORIES.
GC	GENERAL CONTRACTOR.	UNO	UNLESS NOTED OTHERWISE.
MC	MECHANICAL CONTRACTOR.	UPS	UNINTERRUPTIBLE POWER SUPPLY.
		WP	WEATHERPROOF.

SYMBOLS LEGEND NOTES

1. REFER TO LIGHT FIXTURE SCHEDULE FOR SPECIFICATION AND INFORMATION ON ALL LUMINARIES.
2. REFER TO SPECIFICATIONS AND PLAN NOTES FOR DETAILED DESCRIPTION OF ALL DEVICES SHOWN IN THIS SCHEDULE, PROVIDED BY CONTRACTOR.
3. MOUNTING HEIGHTS INDICATED ARE MEASURED FROM FINISHED FLOOR TO THE CENTERLINE OF THE DEVICE UNLESS NOTED OTHERWISE.

ELECTRICAL SPECIFICATIONS

LIGHTING FIXTURES

A. PROVIDE LIGHTING FIXTURES, OF SIZES, TYPES AND RATINGS INDICATED-COMPLETE WITH ALL COMPONENTS AND ACCESSSORIES. SHIP FIXTURES FACTORY ASSEMBLED, WITH THOSE COMPONENTS REQUIRED FOR A COMPLETE INSTALLATION. DESIGN FIXTURES WITH CONCEALED HINGES AND CATCHES, WITH METAL PARTS GROUNDED AS COMMON UNIT, AND SO CONSTRUCTED AS TO DAMPEN DRIVER GENERATED NOISE.

B. ALL LIGHTING SHALL BE U.L LISTED.

C. INSTALL INTERIOR LIGHTING FIXTURES AT LOCATIONS AS INDICATED, IN ACCORDANCE WITH FIXTURE MANUFACTURER'S WRITTEN INSTRUCTIONS, APPLICABLE REQUIREMENTS OF NEC, NECA'S "STANDARD OF INSTALLATION", NEMA STANDARDS, AND WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT LIGHTING FIXTURES FULFILL REQUIREMENTS.

D. FASTEN LIGHTING FIXTURES SECURELY TO STRUCTURAL SUPPORTS, AND ENSURE THAT FIXTURES ARE PLUMB AND LEVEL.

E. LIGHT FIXTURES INSTALLED IN LAY-IN CEILINGS SHALL BE SUPPORTED BY ADDITIONAL WIRE SUPPORT AT TWO CORNERS. ATTACHED TO CEILING GRID, AND ANCHORED TO STRUCTURAL MEMBER. THIS ADDITIONAL WIRE SUPPORT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR AND IS NOT CONSIDERED PART OF GENERAL GRID LAYOUT.

F. PROVIDE EQUIPMENT GROUNDING CONNECTIONS FOR INTERIOR LIGHTING FIXTURES AS INDICATED. TIGHTEN CONNECTION TO COMPLY WITH TIGHTENING TORQUES SPECIFIED IN UL STD 486A TO ASSURE PERMANENT AND EFFECTIVE GROUNDS.

FIRE RATED WALL PENETRATIONS

A. PROVIDE U.L. LISTED FIRESTOP SYSTEM SEALANTS AROUND ALL CONDUITS PASSING THROUGH ALL RATED WALLS OR FLOORS IN ACCORDANCE WITH THE U.L. FIRE RESISTANCE DIRECTORY.

B. THE SELECTED SYSTEM MUST BEAR AN APPROVED U.L. PENETRATION SYSTEM NUMBER AND BE INSTALLED IN ACCORDANCE WITH THE SELECTED SYSTEM TAKING INTO ACCOUNT THE CONSTRUCTION AND THE RATING OF THE RATED ASSEMBLY BEING PENETRATED AND THE TYPE OF PENETRATION BEING MADE.

C. THE ELECTRICAL CONTRACTOR SHALL REVIEW ARCHITECTURAL DRAWINGS TO CONFIRM NUMBER AND EXTENT OF ALL FIRE RATED PARTITIONS IN THE FACILITY.

D. APPROVED PRODUCTS:
1. HILTI CS240
2. TERMCO FYRESHIELD
3. 3M CP-25

RACEWAY SYSTEMS

A. THE ELECTRICAL CONTRACTOR SHALL REVIEW ARCHITECTURAL DRAWINGS TO CONFIRM NUMBER AND EXTENT OF ALL FIRE RATED PARTITIONS IN THE FACILITY.

B. CONDUIT SHALL BE SUPPORTED AT INTERVALS PER NEC REQUIREMENTS AND SHALL BE SECURELY FASTENED TO BUILDING WITH AN APPROVED FASTENING SYSTEM.

C. MINIMUM CONDUIT SIZE IS 1/2". MINIMUM CONDUIT SIZE FOR HOMERUNS IS 3/4". MINIMUM CONDUIT SIZE FOR UNDERGROUND IS 1".

D. MC CABLE MAY BE USED IN CONCEALED LOCATIONS ABOVE CEILINGS OR IN WALLS WHERE ALLOWED BY LOCAL LODES. MC CABLE SHALL NOT BE USED TO ENTER PANEL BOARDS.

WIRING, WIRING DEVICES, PLATES AND GROUNDING

A. ALL WIRING SHALL CONSIST OF COPPER CONDUCTORS WITH THERMOPLASTIC INSULATION RATED FOR SIX HUNDRED (600) VOLTS. ALL WIRING INSULATION SHALL BE HEAT AND MOISTURE RESISTANT TYPES THW, THWN, OR THHN FOR INTERNAL AND DRIVE LOCATIONS.

B. MINIMUM CONDUCTOR SIZE SHALL BE NO. 12 AWG FOR ALL POWER CIRCUITS (I.E. RECEPTACLES, LIGHTING, EQUIPMENT POWER, ETC.). NUMBER 14 AWG SHALL BE MINIMUM SIZE PERMITTED FOR EQUIPMENT CONTROL CIRCUIT WIRING.

C. ALL SPLICES AND CONNECTIONS SHALL BE MADE IN OUTLET BOXES, JUNCTION BOXES OR EQUIPMENT WHERE ACCESSIBLE.

D. CONDUCTORS SHALL BE PULLED WITHOUT THE USE OF OIL OR GREASE. WIRE PULLING LUBRICANTS WHICH ARE APPROVED FOR USE WITH CONDUCTOR INSULATION MAY BE USED. CARE SHALL BE TAKEN IN PULLING WIRE TO ASSURE THAT MAXIMUM ALLOWABLE PULLING TENSION OF WIRE IS NOT EXCEEDED. WIRING WITH DAMAGED CONDUCTORS OR INSULATION WILL NOT BE ACCEPTED.

E. ALL PLUG-IN DEVICES TO BE GROUNDED TYPE.

F. INSTALL INSULATED GREEN GROUNDING CONDUCTOR (NO.12 AWG MINIMUM) IN ALL RACEWAYS.

G. WIRING DEVICES SHALL BE INDUSTRIAL GRADE. FINISH SHALL BE PER ARCHITECT.

H. PLATES SHALL BE PROVIDED FOR ALL WIRING DEVICES, DATA OUTLETS, JUNCTION BOXES, ETC.

I. PLATES FOR FLUSH MOUNTED DEVICES SHALL BE STAINLESS STEEL. PLATES FOR SURFACE MOUNTED BOXES SHALL BE GALVANIZED STEEL. PLATE COLOR SHALL BE WHITE WHEN MOUNTED IN CEILING.

SCOPE OF WORK

REUSE OF EXISTING SERVICE , ELECTRICAL OUTLETS AND ELECTRICAL PANEL. PROVIDE NEW LIGHTING FIXTURE AND ITS CIRCUIT AND CONTROLS. REUSE AND REPLACEMENT OF THE ELECTRICAL OUTLETS AS NEEDED.

GENERAL ELECTRICAL NOTES

1. INCLUDE ALLOWANCE FOR UNFORSEEN CONDITIONS THAT MAY AFFECT THE SCOPE OF WORK. MINOR DEVIATIONS REQUIRED FOR ACCOMPLISHING THE INTENT OF THIS DESIGN ARE TO BE INCLUDED IN THIS ALLOWANCE.
2. COORDINATE WORK ABOVE THE CEILING WITH OTHER TRADES TO PROVIDE THE GREATEST POSSIBLE CLEARANCE. CONDUIT RUNS SHALL BE RUN THROUGH TRUSSES WHERE POSSIBLE. ANY RELOCATING OR REROUTING OF EQUIPMENT, PIPES, CONDUITS, DUCTS OR MATERIAL RESULTING FROM A LACK OF COORDINATION BETWEEN CONTRACTORS WILL BE AT THE CONTRACTOR'S EXPENSE.
3. VERIFY PLACEMENT OF ALL DEVICES SHOWN ON CONSTRUCTION DOCUMENT PRIOR TO FINAL PLACEMENT.
4. PROVIDE ALL REQUIRED DISCONNECT SWITCHES AND MOTOR STARTERS TO ALL EQUIPMENT.
5. ELECTRICAL DESIGN IS BASED ON THE INSTALLATION OF 75°C CONDUCTORS CONNECTED TO TERMINAL LUGS AND EQUIPMENT U.L. LISTED FOR A MINIMUM 75°C CONDUCTORS TERMINATED. ON EQUIPMENT WITH A LOWER RATING 60°C OR NO RATING SHOWN, CONDUCTOR SIZE SHALL BE INCREASED TO CONFORM TO ADOPTED ELECTRICAL CODE AND UL/CUL NO. 489 REQUIREMENTS.
6. CONTROL VOLTAGE WIRING SHALL BE PLENUM RATED OR INSTALL IN CONDUIT.
7. DATA WIRING SHALL BE ROUTED IN 3/4" CONDUIT BACK TO DEMARC AREA FROM DEVICE LOCATION.
8. CONDUIT SHALL BE SUPPORTED AT INTERVALS PER NEC REQUIREMENTS AND SHALL BE SECURELY FASTENED TO BUILDING WITH AN APPROVED FASTENING SYSTEM.
9. ALL BRANCH CIRCUT WIRING SHALL BE ELECTRICAL METALLIC TUBING (EMT), MINIMUM 3/4" OR AS NOTED. USE COMPRESSION TYPE FITTINGS ON ALL EMT. SET SCREW OR CRIMP FITTINGS ARE NOT ALLOWED.
10. BRANCH CIRCUITS SHOWN WITH TWO GROUNDING CONDUCTORS SHALL HAVE ONE EQUIPMENT GROUND CONDUCTOR (GREEN) AND ONE ISOLATED GROUND CONDUCTOR (GREEN W/ YELLOW STRIP)INSTALLED IN RACEWAY.
11. CONDUCTORS SHALL BE A MINIMUM OF #12 THHN/THWN COPPER UNLESS NOTED OTHERWISE ON PLANS OR IN SPECIFICATIONS. BRANCH CIRCUITS SHALL BE PROVIDED WITH (2) #12 CONDUCTORS AND (1) #12 EQUIPMENT GROUND CONDUCTOR UNLESS NOTED OTHERWISE.
12. THERMOSTATS, TEMPERATURE SENSORS, CARBON DIOXIDE SENSORS AND HUMIDISTATS: UNLESS NOTED OTHERWISE, PROVIDE WALL BOX AT +3'-10' AFF WITH 3/4" CONDUIT STUBBED OUT TO ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS AND PULLSTRINGS.
13. ALL EMPTY CONDUIT SHALL BE PROVIDE WITH A PULL STRING.
14. ALL RACEWAYS SHALL CONTAIN A GROUNDING ELECTRODE OR CONDUCTOR SIZED PER THE ADOPTED ELECTRICAL CODE.
15. SWITCHBOARDS, PANELBOARDS, DISCONNECT SWITCHES, TRANSFORMERS AND CONTACTORS SHALL BE "LISTED" AND "IDENTIFIED" AS RATED FOR A MINIMUM OF 75°C CONDUCTOR TERMINATION.
16. PROVIDE FLEXIBLE CONNECTIONS ONLY FOR FINAL CONNECTION TO EQUIPMENT (6'-0" MAXIMUM LENGTH). PROVIDE LIQUID TIGHT FLEXIBLE CONNECTION (6'-0" MAXIMUM LENGTH) AT EXTERIOR LOCATIONS AND WHERE EXPOSURE TO MOISTURE IS POSSIBLE.
17. ALL PANELBOARDS, SWITCHBOARDS AND LINE VOLTAGE CONTROL EQUIPMENT SHALL BE FIELD MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS. MARKING SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTING, SERVICING OR MAINTENANCE OF EQUIPMENT. MARKING SHALL BE SELF ADHESIVE, COMMERCIAL LABEL CONFORMING TO ADOPTED CODES.
18. LIGHT SWITCHES, CONVENIECE ELECTRICAL OUTLETS, THERMOSTATS AND OTHER ENVIRONMENTAL CONTROLS SHALL BE LOCATED NO HIGHER THAN 48" AND NO LOWER THAN 15" ABOVE THE FLOOR. IF THE REACH IS OVER AN OBSTRUCTION BETWEEN 20" AND 25" IN DEPTH, THE MAXIMUM HEIGHT IS TO BE REDUCED TO 44" FOR FORWARD APPROACH OR 46" FOR SIDE APPROACH, PROVIDED THE OBSTRUCTION IS NO MORE THAN 24" IN DEPTH. OBSTRUCTIONS SHALL NOT EXTEND MORE THAN 25" FROM THE WALL BENEATH A CONTROL.
19. PROVIDE AS-BUILTS DRAWING AT JOB COMPELTION TO OWNER.
20. ALL WORK SHALL BE INSTALLED PER ALL GOVERING CODES.
21. PROVIDE STARTERS FOR ROOF MOUNTED EXHAUST FAN (EF), SUPPLY FANS (MUA) AND START-STOP SWITCH. BOTH MAU AND EF SHALL RUN AND STOP TOGETHER AND SHALL BE CONTROLLED FROM THE SAME SWITCH.
22. ALL JUNCTION BOXES INSTALLED ABOVE OR DIRECTLY BELOW SUSPENDED CEILING SHALL BE SUPPORTED IN ACCORDANCE WITH NEC.
23. PORCELIAN WIRE NUTS SHALL BE USED WITH THE HEAT LAMP. THE USE OF PLASTIC WIRE NUTS WILL VOID THE MANUFACTURERS' WARRANTY. CONTRACTOR SHALL USE 90°C WIRE FOR CONNECTION TO HEAT STRIP UNITS PER MANUFACTURER'S RECOMMENDATION.
24. MC CABLE MAY BE USED IN CONCEALED LOCATIONS ABOVE CEILINGS OR IN WALLS WHERE ALLOWED BY LOCAL CODES. MC CABLE SHALL NOT BE USED TO ENTER PANEL BAORDS.

TERMS:
SHALL - ACTION THAT IS REQUIRED WITHOUT OPTION OR QUALIFICATION.
FURNISH - CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING.
INSTALL - CONTRACTOR SHALL BE RESPONSIBLE FOR LABOR AND CONSTRUCTION EQUIPMENT NECESSARY TO SET IN PLACE, CONNECT, CALIBRATE AND/OR TEST EQUIPMENT FURNISHED BY CONTRACTOR.
PROVIDE - CONTRACTOR SHALL FURNISH AND INSTALL.

APPLICABLE CODES

2022 CALIFORNIA ENERGY CODE

2022 CALIFORNIA ELECTRICAL CODE

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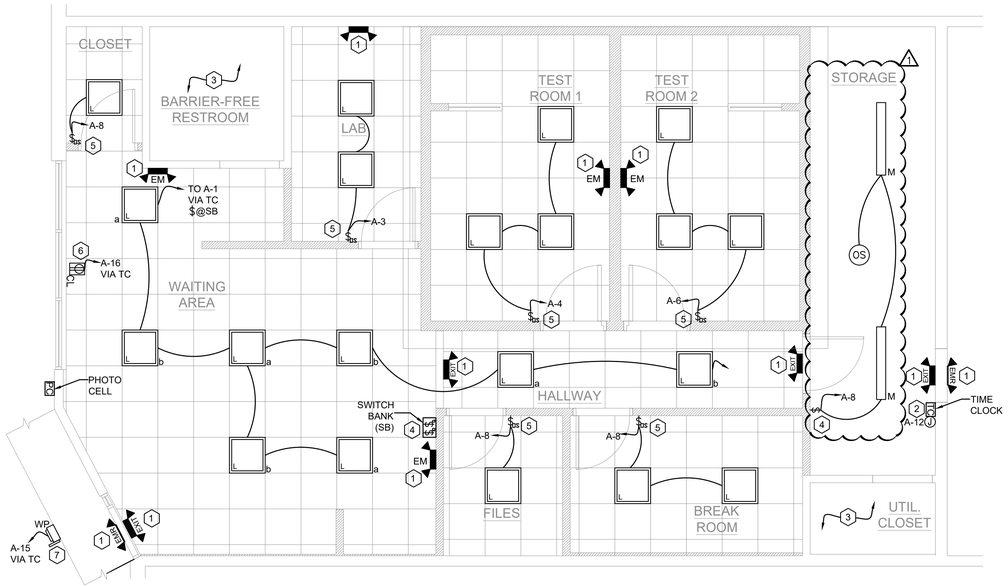
No.	Drawing Issues / Revisions / Building Comments	Date
1		02/17/25

Proposed
Interior Tenant Fit-out
for
HearingLife

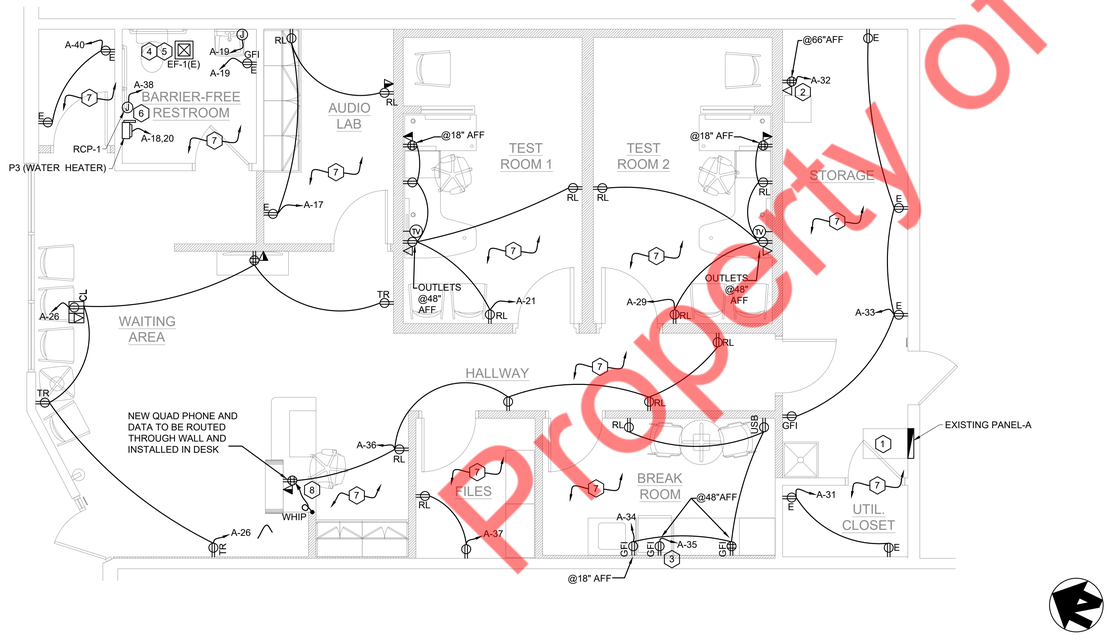
Drawing Title:
GENERAL NOTES AND LEGEND

Date: 10-29-24	Dwg No. E 0.1
Drawn By: NYE	
Checked By: NYE	
Job No: 24-059	1 of 6



1 ELECTRICAL LIGHTING PLAN

SCALE: 1/4" = 1'-0"



2 ELECTRICAL FLOOR PLAN

SCALE: 1/4" = 1'-0"

LIGHTING PLAN GENERAL NOTES:

A. ALL LIGHT FIXTURES NOT ON THE OCCUPANCY SENSOR / OTHER AUTOMATIC CONTROL SHALL BE CONTROLLED BY TIMER-CONTROLLED LIGHTING CONTACTOR(S).

B. EMERGENCY LIGHT FIXTURES SHALL TURN ON DURING POWER FAILURE WHEREAS ALL EXIT SIGNS SHALL BE PERMANENTLY ON. E.C. TO WIRE THE EMERGENCY LIGHTING FIXTURES AND EXIT SIGNS ACCORDINGLY.

C. THE OCCUPANCY SENSOR, TIMERS, AND OTHER APPROVED LIGHTING CONTROLS SHALL MATCH THE CONTROL FUNCTION REQUIREMENT SPECIFIED AS PER APPLICABLE CODE.

D. PROVIDE LINE VOLTAGE (UNLESS SPECIFIED) LIGHTING CONTROLS AND SENSORS, OR POWER PACK AS REQUIRED.

E. THE TIME CLOCK SHALL BE SET AS PER THE REQUIREMENT OF THE PROJECT SPACE.

F. EXISTING LIGHT FIXTURES WITH THEIR CIRCUIT & CONTROL TO REMAIN. E.C. SHALL VERIFY OPERABLE CONDITION OF LIGHT FIXTURES AND THEIR CIRCUIT & CONTROLS, PROVIDE NEW IF EXISTING INOPERABLE.

G. E.C. SHALL COORDINATE EXACT LOCATION & MOUNTING HEIGHT WITH ARCHITECT / OWNER OF NEW EQUIPMENTS RECEPTACLES AND GENERAL RECEPTACLES IN THE FIELD.

LIGHTING PLAN KEY NOTES: (#)

1. LOOP ALL EMERGENCY LIGHT FIXTURES, AND EXIT SIGNS AND WIRE THEM BACK TO THE EMERGENCY LIGHTING CIRCUIT (A-13) IN THE PANEL BOARD. THE CIRCUIT BREAKER SHALL HAVE A LOCKOUT.
2. E.C. SHALL COORDINATE WITH ARCHITECT/OWNER FOR EXACT LOCATION OF TIME CLOCK & REQUIREMENTS.
3. EXISTING LIGHTING FIXTURES ALONG WITH THEIR CIRCUITS AND CONTROLS SHALL REMAIN. E.C. TO VERIFY OPERABLE CONDITIONS OF LIGHT FIXTURE IN COORDINATION WITH ARCHITECT/OWNER.
4. SWITCH BANK (SB) FOR CONTROL OF INTERIOR LIGHT FIXTURES. ELECTRICAL CONTRACTOR SHALL COORDINATE LOCATION WITH OWNER PRIOR TO ROUGH-IN.
5. E.C. SHALL COORDINATE WITH ARCHITECT/OWNER FOR EXACT LOCATION & MOUNTING HEIGHT OF WALL OCCUPANCY SENSOR.
6. PROVIDE CEILING MOUNTED RECEPTACLES FOR SHOW WINDOW AS REQUIRED BY CODE. VERIFY WITH LOCAL ENERGY AGENCY. COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER.
7. E.C. SHALL VERIFY AVAILABILITY OF BUILDING SIGNAGE IN THE FIELD. ELSE PROVIDE NEW BUILDING SIGNAGE AS SHOWN ON PLAN. FOR EXACT LOCATION COORDINATE WITH ARCHITECT/OWNER IN THE FIELD.

LIGHTING FIXTURE SCHEDULE

CODE	TYPE	MANUFACTURER	PRODUCT #	DESCRIPTION	NOTES
			INTERIOR		
L	LED	JADEMAR LIGHTING	JPTR-DM-CPS-22-35W	24" X 24" LED RECESS MOUNTED	1
M	LED	ORACLE LIGHTING	TBD	4' ARCHITECTURAL LED FIXTURE	1,3
EM	LED	-	-	EMERGENCY LIGHT	2, 3
EXIT	LED	-	-	COMBO EMERGENCY LIGHT/EXIT SIGN	2, 3
EMR	LED	-	-	EXTERIOR REMOTE LIGHT HEAD	2, 3

1. COORDINATE AND VERIFY ALL FIXTURE INFORMATION, TYPES AND FINAL LOCATIONS WITH THE REFLECTED CEILING PLAN.
2. THE LIGHT FIXTURE SHALL HAVE MINIMUM OF 90 MINUTES OF BATTERY BACKUP.
3. COORDINATE EXACT MAKE/MODEL NUMBER WITH THE OWNER/ARCHITECT.

LIGHTING LEGEND

L	2 x 2 LEDALITE BY SIGNYFY MIKE MELOGRANO C: 973-934-6225
M	4' ARCHITECTURAL LED FIXTURE
EXIT	COMBO EMERGENCY LIGHT/EXIT SIGN
EM	EMERGENCY LIGHT
EMR	EXTERIOR REMOTE LIGHT HEAD

LIGHTING FIXTURE SCHEDULE GENERAL NOTES:

A. ALL NEW LIGHTING FIXTURES SHOWN ON THE LIGHTING FIXTURES SCHEDULE ARE SUBJECT TO THE ARCHITECT'S APPROVAL. E.C. SHALL COORDINATE MAKE, MODEL, FINISHES, AND OTHER CRITICAL PARAMETERS WITH THE ARCHITECT BEFORE PURCHASING.

B. THE ADDITIONAL ACCESSORIES (HOLDERS, TRACKS, ADAPTERS, DRIVERS, AND CURRENT LIMITERS) REQUIRED FOR THE PROPER WORKING OF THE LIGHTING FIXTURES SHALL BE PURCHASED SEPARATELY IF NOT PROVIDED ALONG WITH THE FIXTURES.

C. ALL LIGHTING FIXTURES SHALL BE LED-TYPE OPERABLE AT 120V UNLESS OTHERWISE NOTED.

D. ALL EMERGENCY LIGHTING FIXTURES AND EXIT SIGNS SHALL HAVE A MINIMUM OF 90 MINUTES OF BATTERY BACKUP OR AS REQUIRED BY AHJ.

E. WATTS PER FACE FOR EXIT SIGNS SHALL NOT EXCEED 5 WATTS.

F. FIXTURES LOCATED IN SPECIFIC AREAS (WET OR DAMP LOCATIONS, VAPOR EXPOSED, COLD STORAGE, AND BUILDING EXTERIOR) SHALL BE RATED FOR THE AREA BEING USED.

POWER PLAN GENERAL NOTES:

A. THE LOCATION OF ALL ELECTRICAL EQUIPMENT (NOT PROVIDED IN THE ARCHITECTURAL PLAN) SHALL BE VERIFIED WITH THE ARCHITECT/OWNER BEFORE BID.

B. POWER AND LOCATION OF ALL THE MECHANICAL AND PLUMBING UNITS SHALL BE COORDINATED WITH THE RESPECTIVE CONTRACTOR BEFORE BID.

C. THE DISCONNECT SWITCHES FOR THE BRANCH CIRCUIT SHOWN ON THE PLAN SHALL BE RATED EQUAL TO OR HIGHER THAN THE BREAKER RATING. REFER BREAKER RATING IN THE PANEL SCHEDULE AND PROVIDE DISCONNECT AS NEEDED.

D. ALL 125V-250V RECEPTACLES SUPPLIED BY SINGLE-PHASE CIRCUITS RATED 150V OR LESS TO GROUND, 50A OR LESS, AND ALL RECEPTACLES SUPPLIED BY THREE PHASE BRANCH CIRCUIT RATED 150V OR LESS TO GROUND, 100A OR LESS INSTALLED IN THE LOCATIONS SPECIFIED IN NEC 210.8(B)(1) THROUGH (12) SHALL HAVE GFCI PROTECTION.

E. GFI MARKED ON THE PLAN INDICATES THAT THE CIRCUIT SHALL BE GFI PROTECTED. E.C. SHALL PROVIDE A GFI RECEPTACLE DISCONNECT IN THE READILY ACCESSIBLE LOCATION. PROVIDE GFI BREAKER IN THE PANEL IF EITHER THE RECEPTACLE IS NOT AVAILABLE OR NOT ACCESSIBLE WHEN INSTALLED IN THE DESIRED LOCATION.

F. COORDINATE EXACT LOCATION AND ELECTRICAL CONNECTION REQUIREMENTS OF THE MOTORIZED DAMPERS AND THERMOSTATS IN THE FIELD. PROVIDE WIRING AS REQUIRED.

G. VERIFY THE LOCATION, RATING, AND OPERABLE CONDITION OF ALL THE EXISTING DEVICES REUSED. REPLACE IF FOUND INOPERABLE (WITHIN THE SCOPE OF WORK). BASE BID ACCORDINGLY.

H. ALL RECEPTACLES EXCEPT THOSE MARKED AS 'E' AND 'RL' ARE NEW

I. E.C. SHALL COORDINATE WITH THE ARCHITECT/OWNER/FURNITURE VENDOR FOR THE EXACT LOCATION AND MOUNTING HEIGHT OF THE ELECTRICAL OUTLET IN THE FIELD. MAKE PROVISION ACCORDINGLY.

J. ALL THE ELECTRICAL INSTALLATION AND WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE NEC 517.

POWER PLAN KEY NOTES: (#)

1. E.C. SHALL VERIFY RATING AND OPERABLE CONDITION OF EXISTING PANELS IN THE FIELD. INFORM THE ENGINEER OF THE RECORD OF ANY DISCREPANCY. BEFORE BID. ENSURE CLEAR WORKING SPACE OF 3 FEET IN FRONT OF THE PANELS.
2. PLYWOOD-BACKED OUTLETS FOR DATA AND TELEPHONE SERVICES. COORDINATE WITH THE ARCHITECT/OWNER/SERVICE PROVIDER FOR OTHER REQUIREMENTS. PROVIDE CONDUIT AND CONNECTION AS REQUIRED.
3. E.C. SHALL COORDINATE WITH ARCHITECT/VENDOR FOR EXACT CONNECTION TYPE AND POWER REQUIREMENTS FOR MINI FRIDGE IN THE FIELD AN PROVIDE ACCORDINGLY.
4. THE EXHAUST FAN IN THE ROOM SHALL BE CIRCUITED AND CONTROLLED ALONG WITH THE LIGHTING FIXTURES IN THE SAME ROOM. E.C. SHALL VERIFY THE OPERABLE CONDITION OF EXISTING MECHANICAL EQUIPMENT AND CONTROL IN THE FIELD. REPLACE WITH NEW IF FOUND INOPERABLE. IN COORDINATION WITH ARCHITECT/OWNER BASE BID ACCORDINGLY.
5. EF-1(E) SHALL INTERLOCK WITH RTU-1(E). E.C. SHALL COORDINATE WITH MECHANICAL CONTRACTOR ELSE REFER MECHANICAL DRAWING FOR DETAILS.
6. E.C. SHALL COORDINATE WITH THE PLUMBING CONTRACTOR FOR THE EXACT LOCATION AND ELECTRICAL CONNECTION REQUIREMENT OF THE UNIT IN THE FIELD. PROVIDE CIRCUIT AND CONTROL AS REQUIRED.
7. EC SHALL VERIFY THE OPERABLE CONDITION OF EXISTING (E) AND RELOCATED (RL) RECEPTACLES IN THE FIELD. PROVIDE NEW IF IN OPERABLE AND CONNECT TO THE NEW CIRCUIT.
8. ELECTRICAL CONTRACTOR TO PROVIDE AN EXTENDED WHIP FROM THE WALL, ALLOWING FOR FUTURE ATTACHMENT UNDER THE DESK. THE CONTRACTOR SHALL RETURN ONCE THE FURNITURE IS IN PLACE TO MAKE THE FINAL CONNECTION AND ENSURE PROPER INSTALLATION.

ABBREVIATIONS :

E - EXISTING

RL - RELOCATED

TR- TEMPER RESIST

CL- CEILING

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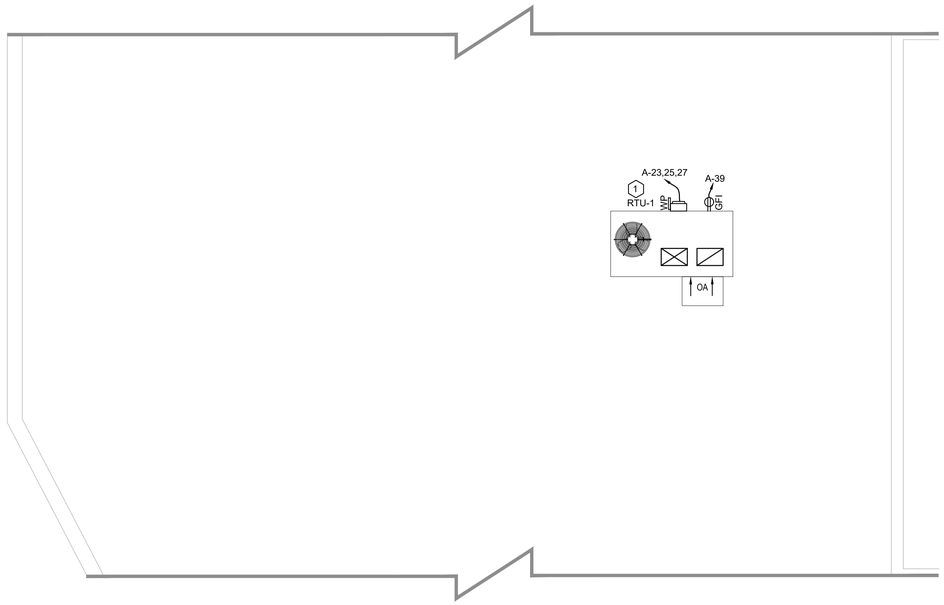
No.	Drawing Issues / Revisions	Date
1	Building Comments	02/17/25

Proposed Interior Tenant Fit-out for HearingLife

Drawing Title: ELECTRICAL POWER & LIGHTING PLANS

Date: 10-29-24	Dwg No. E 1.0
Drawn By: NYE	
Checked By: NYE	
Job No: 24-059	2 of 6



1 ELECTRICAL ROOF POWER PLAN

SCALE: 1/4" = 1'-0"

ROOF PLAN GENERAL NOTES:

A. ALL THE ELECTRICAL ELEMENT VIZ. CONDUITS, WIRING, AND DISCONNECT SWITCHES SHALL BE RATED FOR THE EXTERIOR USE.

B. THE DISCONNECT SWITCHES FOR THE BRANCH CIRCUIT SHOWN ON THE PLAN SHALL BE RATED EQUAL TO OR HIGHER THAN THE BREAKER RATING. REFER BREAKER RATING IN THE PANEL SCHEDULE AND PROVIDE DISCONNECT AS NEEDED.

C. GFI MARKED ON THE PLAN INDICATES THAT THE CIRCUIT SHALL BE GFI PROTECTED. E.C. SHALL PROVIDE A GFI BREAKER IN THE PANEL FOR THE INDICATED CIRCUIT IF EITHER THE RECEPTACLE IS NOT AVAILABLE OR NOT ACCESSIBLE.

D. A 125-VOLT, SINGLE-PHASE, 15- OR 20-AMPERE-RATED RECEPTACLE OUTLET SHALL BE INSTALLED AT AN ACCESSIBLE LOCATION WITHIN 7.5 M (25 FT) OF THE EQUIPMENT AS SPECIFIED IN 210.63(A) AND (B) AS PER NEC 210.63.

ROOF PLAN KEY NOTES: (#)

1. E.C. SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR FOR THE EXACT LOCATION AND ELECTRICAL CONNECTION REQUIREMENT OF THE HVAC UNIT IN THE FIELD. PROVIDE CIRCUIT AND CONTROLS AS REQUIRED.

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Proposed
Interior Tenant Fit-out
for
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Drawing Title:
ELECTRICAL ROOF POWER PLAN

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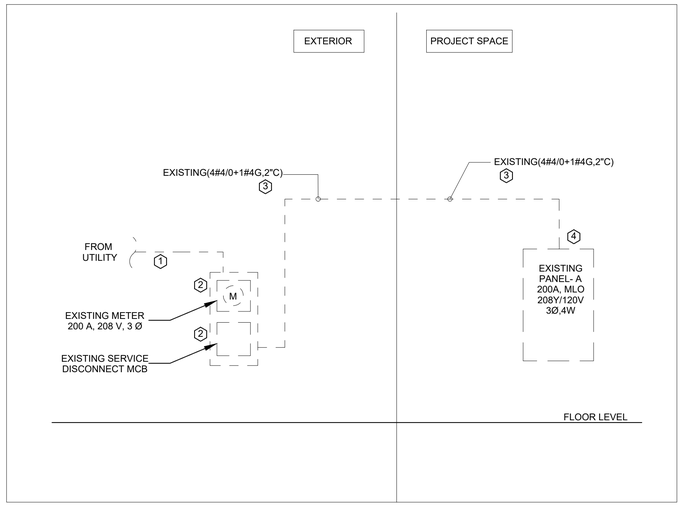

1 ELECTRICAL RISER DIAGRAM

SCALE: 1/4" = 1'-0"

PANEL:	A	(EXISTING)								MOUNTING:	RECESSED		
208Y/120	VOLTS	PHASE	3		-	-			DEMAND LOAD	42.65		PANEL LOCATION:	STORAGE
200A***	MLO	WIRE	4		-	-			DEMAND CURRENT	118.51		FED FROM:	EXISTING METER
NOTE:													

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20	LIGHTING WAITING ROOM	L	0.21	2#12, #12G, 3/4"C	0.71			2#12, #12G, 3/4"C	0.50	L	LIGHTING BATHROOM +EF-1 (E)	20	2
3	20	LIGHTING LAB	L	0.07	2#12, #12G, 3/4"C		0.18		2#12, #12G, 3/4"C	0.11	L	LIGHTING TEST ROOM	20	4
5	20/2P	SPARE						0.11	2#12, #12G, 3/4"C	0.11	L	LIGHTING TEST ROOM	20	6
7						0.23			2#12, #12G, 3/4"C	0.23	L	LIGHTING BREAK ROOM, CLOSET, FILES, STORAGE	20	8
9	20	SPARE	L	0.07	2#12, #12G, 3/4"C		0.07					SPARE	20	10
11	20	SPARE						1.00	2#12, #12G, 3/4"C	1.00	L	TIME CLOCK	20	12
13	20*	EMERGENCY LIGHTING	L	0.02	2#12, #12G, 3/4"C	0.23			2#12, #12G, 3/4"C	0.21	L	LIGHTING WATING AREA	20	14
15	20	BUILDING SIGNAGE	L	1.20	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.80	L	SHOW WINDW RECEPTACLE	20	16
17	20	AUDIO LAB RECEPTACLE	R	0.54	2#12, #12G, 3/4"C			6.44	2#4, #8G, 1"C	5.90	O	P3 (WATER HEATER)	70/2P**	18
19	20	RESTROOM RECEPTACLE	R	0.18	2#12, #12G, 3/4"C	6.08				5.90	O			20
21	20	TEST ROOM RECEPTACLES RECEPTACLE	R	1.08	2#12, #12G, 3/4"C		1.08					SPARE	EXISTING	22
23	50/3P	RTU-1	H	4.97	3#8, #10G, 3/4"C			4.97						24
25			H	4.97		6.05			2#12, #12G, 3/4"C	1.08	R	WAITING AREA RECEPTACLE	20	26
27			H	4.97			4.97					SPARE	EXISTING	28
29	20	TEST ROOM RECEPTACLES RECEPTACLE	R	1.08	2#12, #12G, 3/4"C			1.08						30
31	20	UTILITY CLOSET RECEPTACLE	R	0.36	2#12, #12G, 3/4"C	0.72			2#12, #12G, 3/4"C	0.36	R	DATA RACK RECEPTACLE	20	32
33	20	STORAGE RECEPTACLE	R	0.72	2#12, #12G, 3/4"C		1.62		2#12, #12G, 3/4"C	0.90	R	BREAK ROOM RECEPTACLE	20	34
35	20	MINI FREEZE RECEPTACLE	E	1.00	2#12, #12G, 3/4"C			2.08	2#12, #12G, 3/4"C	1.08	R	HALL WAY RECEPTACLE	20	36
37	20	FILES AREA RECEPTACLE	R	0.36	2#12, #12G, 3/4"C	0.46			2#12, #12G, 3/4"C	0.10	M	RCP-1 (RECIRCULATION PUMP)	20	38
39	20	ROOF SERVICE RECEPTACLE	R	0.18	2#12, #12G, 3/4"C		0.54		2#12, #12G, 3/4"C	0.36	R	CLOSET RECEPTACLE	20	40
41	20	SPARE						0.00				SPARE	20	42
						14.48	11.46	15.68						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD		
TOTAL LIGHTING	L	5.52	125%	6.91			
TOTAL RECEPTACLE	R	8.28	100%	8.28	TOTAL CONNECTED LOAD	41.61	KVA
TOTAL HVAC	H	14.91	100%	14.91	TOTAL DEMAND LOAD	42.65	KVA
TOTAL MOTOR	M	0.10	100%	0.10	TOTAL CONNECTED CURRENT	115.65	AMP
TOTAL EQUIPMENTS	E	1.00	65%	0.65	TOTAL DEMAND CURRENT	118.51	AMP
TOTAL OTHER	O	11.80	100%	11.80			

RISER DIAGRAM KEYED NOTES:

1. EXISTING ELECTRICAL SERVICE FEEDER FROM EXISTING METER CENTER FOR THE PROJECT SPACE TO REMAIN. VERIFY LOCATION, RATING, AND OPERABLE CONDITION IN THE FIELD. INFORM THE ENGINEER ON RECORD OF ANY DISCREPANCY. BEFORE BID.
2. E.C. TO VERIFY THE LOCATION, RATING, AND OPERABLE CONDITION OF THE EXISTING METER AND DISCONNECT IN THE FIELD. REPLACE IF FOUND INOPERABLE, BASE BID ACCORDINGLY.
3. E.C. TO VERIFY RATING AND OPERABLE CONDITION OF CABLE IN FIELD. REPLACE IF EXISTING FEEDER IS EITHER UNDERRATED OR INOPERABLE. INFORM EOR OF ANY DISCREPANCY PRIOR TO THE BID.
4. E.C TO VERIFY RATING AND OPERABLE CONDITION OF THE EXISTING PANEL & BREAKERS. REPLACE IF FOUND INOPERABLE, BASE BID ACCORDINGLY.

RISER DIAGRAM GENERAL NOTES

A. AIC RATING FOR PANEL AND ALL BRANCH CIRCUIT BREAKERS: CONTRACTOR THE ELECTRICAL WORK SHALL BE PERFORMED IN COMPLIANCE WITH THE NEC, LOCAL CODES AND AHJ.

B. THE EXACT POWER DISTRIBUTION AND SCOPE OF WORK WITH THE LANDLORD/OWNER BEFORE BID.

C. COORDINATE AVAILABLE FAULT CURRENT WITH UTILITY/LANDLORD/OWNER. CALCULATE THE EXACT AIC RATING OF EACH EQUIPMENT IN THE FIELD. PROVIDE THE EQUIPMENT ACCORDINGLY. AIC RATING SHALL BE WRITTEN ON EACH EQUIPMENT PER STANDARD.

D. ENSURE THE COMBINED VOLTAGE DROP OF THE FEEDER AND BRANCH CIRCUIT SHALL NOT EXCEED 5% PER CODE.

E. PROVIDE GEC AND EGC AS PER 250.66 & 250.122 RESPECTIVELY, AS NEEDED. PROVIDE SEPARATE GROUND CONDUCTORS IN ALL CONDUITS.

F. THE PART OF RISER MARKED AS EXISTING IS FOR REFERENCE PURPOSE ONLY. E.C. SHALL VERIFY THE EXACT POWER DISTRIBUTION (INCLUDING RISER IN THE FIELD. INFORM THE ENGINEER OF THE RECORD OF ANY DISCREPANCY FOUND.

G. VERIFY THE LOCATION, RATING, AND OPERABLE CONDITION OF ALL THE EXISTING DEVICES REUSED. REPLACE IF FOUND INOPERABLE (WITHIN THE SCOPE OF WORK). BASE BID ACCORDINGLY.

H. ADDITION OR ALTERATION TO THE EXISTING SYSTEM SHALL NOT BE DONE WITHOUT THE WRITTEN CONSENT OF THE OWNER.

I. REUSE OF THE EXISTING EQUIPMENT IS SUBJECT TO THE VERIFICATION OF THE LOCATION, RATING, OPERABLE CONDITION AND FAULT CURRENT IN THE FIELD. REPLACE THE EXISTING EQUIPMENT WITH A NEW ONE IF THE EXISTING EQUIPMENT CAN NOT BE REUSED DUE TO ANY OF THE REASONS MENTIONED EARLIER.

PANEL SCHEDULE NOTES

A. CONTRACTOR SHALL VERIFY BREAKER AND BRANCH CIRCUIT REQUIREMENTS FOR THE EQUIPMENT IN THE FIELD.

B. THE ELECTRICAL LOAD IS BALANCED WITHIN 10% FOR ALL 3 PHASES.

C. THE VOLTAGE DROP FOR THE BRANCH CIRCUIT SHALL NOT EXCEED 2% OR 5% IN COMBINATION WITH THE FEEDER CIRCUIT.

D. GFI MARKED ON THE PLAN INDICATES THAT THE CIRCUIT SHALL BE GFI PROTECTED. E.C. SHALL PROVIDE A GFCI BREAKER IN THE PANEL FOR THE INDICATED CIRCUIT IF EITHER THE RECEPTACLE IS NOT AVAILABLE OR NOT READILY ACCESSIBLE.
COORDINATE AVAILABLE FAULT CURRENT (AIC RATING) WITH UTILITY/LANDLORD/OWNER. CALCULATE THE EXACT AIC RATING OF EACH PANEL IN THE FIELD. AIC RATING SHALL BE WRITTEN ON EACH PANEL AS PER STANDARD.

E. PROVIDE BREAKER LOCKING DEVICES IN THE PANELS, WHERE EVER REQUIRED BY CODE. INCLUDING BUT NOT LIMITED TO EMERGENCY LIGHTING, FIRE ALARM CIRCUITS, AND HARD-WIRED EQUIPMENT.

F. THE BREAKER FEEDING HVAC UNITS SHALL BE HACR TYPE.

G. THE CONTRACTOR SHALL MODIFY THE BREAKERS OF THE EXISTING PANEL (WHEREVER REQUIRED) TO BE IN LINE WITH THE PANEL SCHEDULE.

H. THE CONTRACTOR IS TO PROVIDE A CIRCUIT DIRECTORY FOR EACH PANEL BOARD.

PANEL SCHEDULE ABBREVIATIONS

L	-	LIGHTING
R	-	RECEPTACLE
H	-	HVAC
E	-	EQUIPMENT
M	-	MOTOR
O	-	OTHER
*	-	PROVIDE LOCKOUT BREAKER
**	-	PROVIDE NEW BREAKER AS MARKED IN THE PANEL SCHEDULE.
***	-	EXISTING TO REMAIN

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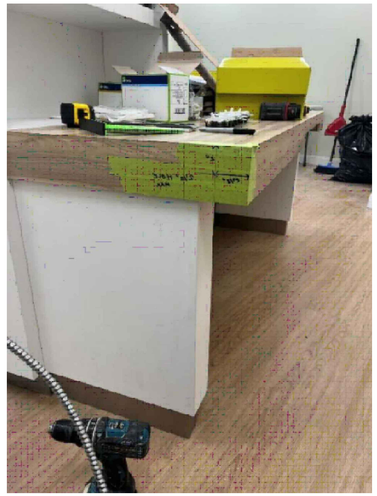
No.	Drawing Issues / Revisions	Date
1	Building Comments	02/17/25

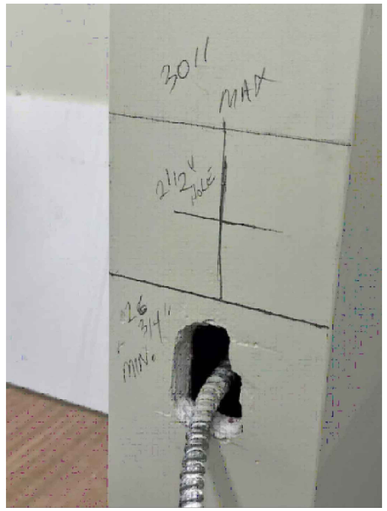
Proposed Interior Tenant Fit-out for HearingLife

Drawing Title: ELECTRICAL SCHEDULE & RISER DIAGRAM

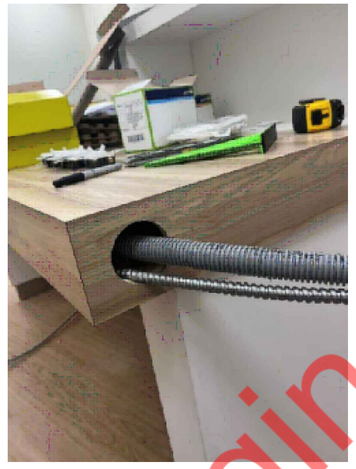
Date:	Dwg No.
10-29-24	E 2.0
Drawn By: NYE	
Checked By: NYE	
Job No: 24-059	4 of 6



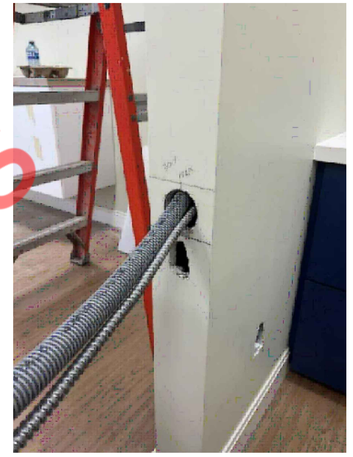
1 E3.1 SETTING UP HOLE CENTRE LOCATION ON SIDE FACE OF DESK TOP



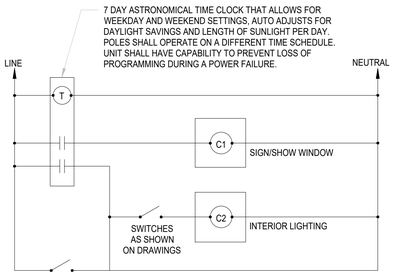
2 E3.1 LOCATING CENTRE OF HOLE ON EDGE OF WALL FOR POWER AND DATA FEEDS



3 E3.1 POWER AND DATA FEED ENTERING THROUGH HOLE AT SIDE FACE OF DESKTOP WALL

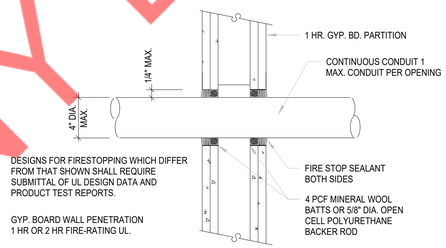


4 E3.1 POWER AND DATA FEEDS COMING THROUGH WALL OPENING



COORDINATE NUMBER OF POLES REQUIRED ON EACH CONTACTOR WITH PANEL SCHEDULES.
MINIMUM INTERRUPTING RATING FOR ALL RELAYS AND CONTACTORS SHALL BE 10,000 A.I.C.

5 E3.0 LIGHTING CONTROL DIAGRAM
NOT TO SCALE



DESIGNS FOR FIRESTOPPING WHICH DIFFER FROM THAT SHOWN SHALL REQUIRE SUBMITTAL OF UL DESIGN DATA AND PRODUCT TEST REPORTS.

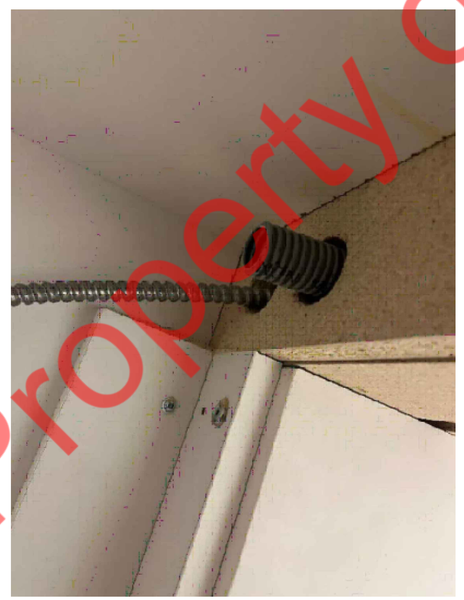
GYP. BOARD WALL PENETRATION
1 HR OR 2 HR FIRE-RATING UL.

NOTE:

THIS DETAIL USED IN BOTH 1 HR. AND 2 HR. PARTITIONS. THIS DETAIL USED FOR BOTH DRYWALL AND PLASTER/STUD PARTITIONS, DESIGNATED AS IF. FIELD VERIFY CONDITIONS.

6 E3.0 FIRE RATED - CONDUIT PENETRATION DETAIL
NOT TO SCALE

7 E3.1 DATA AND POWER FEED THROUGH DESKTOP CARCASS



8 E3.1 DATA AND POWER FEED ENTERING FRONT OF WHITE DESK CARCASS

9 E3.1 DATA AND POWER FEED ENTERING FRONT OF WHITE DESK CARCASS

10 E3.1 FINAL RECEPTION DESK INSTALLATION.NO WIRING EXPOSED
NOTE THE RELATIONSHIP BETWEEN DESK LEG TO WALL

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No.	Drawing Issues / Revisions	Date
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Proposed
Interior Tenant Fit-out
for
HearingLife

Drawing Title:
ELECTRICAL DETAILS

Date: 10-29-24	Dwg No. E 3.0
Drawn By: NYE	
Checked By: NYE	
Job No: 24-059	5 of 6

PLUMBING FIXTURE SCHEDULE

ID	QTY	DESCRIPTION	MANUFACTURER	MODEL NO.	CONNECTION SIZES CW	HW	WASTE	VENT	DESCRIPTION	REMARKS	SUPPLIED BY	INSTALLED BY
P1	1	LAVATORY - WALL HUNG	AMERICAN STANDARD	LUCERNE	1/2"	1/2"	2"	1 1/2"	LUCERNE, ADA COMPLIANT, FAUCET HOLES 4" CENTERS, VITREOUS CHINA WHITE	AUTOMATIC FAUCET (STANDARD): SLOAN #ETF-600-B-BDT, W/ TRANSFORMER #EL-154 AND 0.5 GPM AERATOR #ETEF-1024-A.	GC	GC
P2	1	WATER CLOSET - FLOOR MOUNTED	AMERICAN STANDARD	CADET PRO #215AA.104	3/4"		3"	2"	PRESSURE ASSIST OPTION: AMERICAN STANDARD CADET FLOWISE WIGHTHEIGHT ELONGATED, PRESSURE ASSIST 1.1 GPF #2467.00 (LEFT TRIP) #2467.XXX (SPECIFY RIGHT TRIP)	-	GC	GC
P3	1	TANKLESS WATER HEATER	TITAN	SCR2(N-120)	1/2"	1/2"	-	-	REFER TO THE TANKLESS WATER HEATER SCHEDULE.	INSTALL ABOVE CEILING IN RESTROOM	GC	GC
P4	1	BREAK ROOM SINK & FAUCET	ELKAY	LUSTERONE LRAD131655	1/2"	1/2"	2"	1 1/2"	ELKAY AVADO SINGLE HOLE, ADA COMPLIANT GOOSENECK FAUCET W/ LEVER HANDLE	FAUCET : LKAV3021 W/ CHRME FINISH OR EQUAL.	GC	GC
P5	1	MOP SINK	AMERICAN STANDARD	FIAT SHOWERS MSB2424100	3/4"	3/4"	3"	2"	-	DELTA FAUCET 28T9 - ROUGH CHROME, AND INSTALLATION KIT FOR WALL MOUNT COMMERCIAL FAUCET.	GC	GC

TANKLESS WATER HEATER SCHEDULE

ID	DESCRIPTION	QUANTITY	MANUFACTURER	MODEL NO.	VOLT	PH	KW	FLOW RATE	DESCRIPTION	TRIM AND REMARKS	SUPPLIED BY	INSTALLED BY
P3	WATER HEATER	1	TITAN	SCR-2 (N-120)	220 V	1	11.8	1.5 GPM @64°F	TANKLESS ELECTRIC WATER HEATER, 7"WX10"HX2.75"D,	2.0GAL EXPANSION TANK AMTROL ST-5 OR EQUAL	GC	GC

NOTES:
WATER HEATER SIZED FOR 1.5 GPM @ 64°F RISE.

PUMP SCHEDULE

ID	QUANTITY	DESCRIPTION	MANUFACTURER	MODEL NO.	VOLT	PH	TRIM AND REMARKS	SUPPLIED BY	INSTALLED BY
RCP-1	1	RECIRCULATION PUMP	GRUNDFOS	ALPHA2	120 V	1	2 GPM @ 3.0 FT. HD. INSTALL NEAR WATER HEATER PER MANUFACTURER'S RECOMMENDATIONS.(1) CIRCULATION PUMP FOR (3) WATER HEATERS. PROVIDE AQUASTAT WITH TIMER KIT	-	-

PLUMBING LEGEND

SYMBOL	DESCRIPTION
SAN	SANITARY SEWER (UNDERFLOOR)
	VENT PIPING
	COLD WATER
	HOT WATER
	RECIRCULATING HOT WATER
	CHECK VALVE
	BALANCING VALVE
	FLOOR DRAIN
	PIPE UP OR DOWN
	PIPE UP
	UNION
	ISOLATION VALVE
	CAP ON END OF PIPE
	CLEANOUT
	REDUCED PRESSURE BACKFLOW PREVENTER
	POINT OFF CONNECTION

PLUMBING ABBREVIATIONS

ABBREVIATIONS	DESCRIPTION
CW	COLD WATER
HW	HOT WATER
HWR	HOT WATER RETURN
SAN	SANITARY
V	VENT
AFF/AFG	ABOVE FINISHED FLOOR/GRADE
AHJ	AUTHORITY HAVING JURISDICTION
BFP	BACKFLOW PREVENTER
CO	CLEANOUT
ETR	EXISTING TO REMAIN
FFCO/FGCO	FLUSH FLOOR/GRADE CLEANOUT
GC	GENERAL CONTRACTOR
IW	INDIRECT WASTE
PC	PLUMBING CONTRACTOR
TYP	TYPICAL
VTR	VENT THRU ROOF
WCO	WALL CLEANOUT
ET-1	EXPANSION TANK
RP-1	HOT WATER CIRCULATION PUMP
FD	FLOOR DRAIN
HD	HUB DRAIN
FS	FLOOR SINK

PLUMBING NOTES AND SPECIFICATIONS

WASTE AND VENT PIPING

A. PROVIDE SCHEDULE 40 POLYVINYL CHLORIDE PIPE FOR ALL SOIL, WASTE AND VENT PIPING WHERE PERMITTED BY LOCAL CODES. WHERE PVC PIPING IS NOT PERMITTED BY LOCAL CODES, USE STANDARD WEIGHT CAST IRON PIPING. ALL PIPING ABOVE GRADE MAY HAVE HUBLESS FITTINGS. PLASTIC PIPING SHALL NOT BE USED IN RETURN AIR PLENUM. COORDINATE THIS REQUIREMENT WITH H.V.A.C. CONTRACTOR PRIOR TO INSTALLATION.

B. FIELD VERIFY INVERT ELEVATIONS OF ALL NEW AND EXISTING SANITARY SEWERS PRIOR TO ROUGH-IN.

C. ELEVATION OF FLOOR DRAINS SHALL BE HELD 1/2" BELOW FINISH FLOOR TILE.

D. CLEANOUTS SHALL BE INSTALLED FLUSH WITH FINISHED GRADE/FINISHED FLOORS.

E. PLUMBING VENTS SHALL BE MINIMUM 10'-0" FROM OUTSIDE AIR INTAKES. WHERE STATE OR LOCAL CODES REQUIRE MORE SEPARATION, PROVIDE OFFSET TO MEET THE MORE STRINGENT REQUIREMENTS. COORDINATE LOCATION WITH H.V.A.C. CONTRACTOR.

F. SOIL, WASTE AND VENT PIPING SHALL BE SERVICE WEIGHT CAST IRON OR SCHEDULE 40 PVC DWV PLASTIC PIPE WHERE ALLOWED BY LOCAL AUTHORITY HAVING JURISDICTION FOR THIS INSTALLATION. PROVIDE 3M FIRE BARRIER CAULK CP-25 CAULKING, OR U.L. APPROVED EQUAL, AT PENETRATIONS OF FIRE RATED ASSEMBLIES.

G. SOIL, WASTE AND VENT PIPING SHALL BE UNIFORMLY GRADED AND SHALL HAVE A SLOPE OF NOT LESS THAN 1/4" PER FOOT FOR PIPING 3" IN DIAMETER AND SMALLER AND 1/8" PER FOOT FOR PIPE LARGER THAN 3" IN DIA.

DOMESTIC WATER PIPING

A. INTERIOR DOMESTIC WATER: CROSS-LINKED POLYETHYLENE (PEX) PLASTIC TUBING. PEX-A GRADE. ASTM F-876, ASTM F-877 (100 PSI AT 180°F). BRASS, COPPER OR ENGINEERED PLASTIC (EP) FITTINGS. ASTM F-1960. PIPING, FITTINGS AND JOINTS TO COMPLY WITH NSF 61-G, NSF 61 AND NSF 372. COLD EXPANSION FITTING WITH PEX REINFORCING RINGS, ASTM F-1960 OR COLD EXPANSION FITTING WITH METAL COMPRESSION SLEEVE, ASTM 2080.

B. EXTERIOR DOMESTIC WATER: TYPE 'K' SOFT DRAWN COPPER WITH FLARE FITTINGS ONLY.

C. PROVIDE 1" THICK FIBERGLASS PIPE INSULATION WITH SERVICE JACKET ON ALL DOMESTIC WATER PIPING. DOMESTIC COLD WATER PIPE INSULATION SHALL HAVE A CONTINUOUS VAPOR BARRIER.

D. DOMESTIC WATER PIPING SHALL BE DISINFECTED PRIOR TO USE BY BUILDING OCCUPANTS. DISINFECT PER REQUIREMENTS OF LOCAL HEALTH DEPT., STATE AND LOCAL PLUMBING CODE.

E. PLUMBING HOSE BIBBS OR VALVES WITH THREADED CONNECTIONS SHALL BE PROVIDED WITH VACUUM BREAKERS AND APPROVED MEANS OF BACKFLOW PREVENTION AS REQUIRED BY STATE AND LOCAL CODES.

F. PROVIDE SHUT-OFF VALVES ON ALL EQUIPMENT AND STOP COCKS IN HOT AND COLD WATER PIPING TO ALL PLUMBING FIXTURES.

G. PROVIDE DIELECTRIC UNIONS AT ALL PIPING CONNECTIONS WHERE DISSIMILAR METAL PIPING IS JOINED.

H. VALVES SERVING DOMESTIC WATER SYSTEMS SHALL BE BALL VALVES OR APPROVED EQUAL. ALL VALVES SHALL BE LOCATED SO AS TO BE ACCESSIBLE BY MAINTENANCE PERSONNEL.

I. WATER PIPING SHOWN ROUTED IN EXTERIOR WALLS SHALL BE LOCATED INSIDE THE BUILDING INSULATION AND FINISHED WALL TO PREVENT FREEZE DAMAGE.

PLUMBING GENERAL NOTES

1. REFER TO PLUMBING SPECIFICATION ELSEWHERE IN DRAWINGS FOR FURTHER INFORMATION AND REQUIREMENTS FOR PLUMBING CONTRACTOR.
2. SUSPEND ALL HORIZONTAL SERVICE PIPING SHOWN ON THIS PROJECT SUCH AS, BUT NOT LIMITED TO WATER, SANITARY WASTE/VENT, STORM WATER, GAS, ETCETERA FROM UNDERSIDE OF ROOF AND/OR FLOOR STRUCTURE, UNLESS OTHERWISE NOTED OR INDICATED. HOLD SUCH PIPING HIGH AS POSSIBLE. EXTEND PIPING DOWN IN WALLS, PARTITIONS, CHASES, ETCETERA TO SERVE FIXTURES AND EQUIPMENT AS SHOWN ON PLANS.
3. CONTRACTORS AND SUB-CONTRACTORS SHALL CAREFULLY REVIEW THE CONSTRUCTION DOCUMENTS. INFORMATION REGARDING THE COMPLETE WORK IS DISPERSED THROUGHOUT THE DOCUMENT SET AND CANNOT BE ACCURATELY DETERMINED WITHOUT REFERENCE TO THE COMPLETE DOCUMENT SET.
4. COORDINATE WITH THE WORK OF OTHER SECTIONS, EQUIPMENT FURNISHED BY OTHERS, REQUIREMENTS OF THE OWNER, AND WITH THE CONSTRAINTS OF THE EXISTING CONDITIONS OF THE PROJECT SITE. PROVIDE PIPE RISES, DROPS, AND OFFSETS, AS REQUIRED FOR FIELD INSTALLATION AND TRADE COORDINATION. NOTIFY ARCHITECT OF ANY DISCREPANCIES BEFORE STARTING WORK.
5. DRAWINGS FOR PLUMBING WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENT. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS. REFER TO MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS. PROVIDE PIPING, CONNECTIONS, FITTINGS, VALVES, OFFSETS, ETCETERA AND ALL MATERIALS NECESSARY FOR A COMPLETE SYSTEM. SUBMIT SHOP DRAWINGS PER THE SPECIFICATIONS.
6. ALL WORK SHALL COMPLY WITH STATE AND LOCAL CODE REQUIREMENTS AS APPROVED AND AMENDED BY THE GOVERNING CITY, INCLUDING APPLICABLE SECTIONS OF ANY INTERIM AMENDMENTS AT THE TIME OF THE PROPOSAL. PURCHASE ALL PERMITS ASSOCIATED WITH THE WORK. OBTAIN ALL INSPECTIONS REQUIRED BY CODE.
7. PROVIDE BACKFLOW PREVENTION DEVICES, (BPD) IN WATER LINES FEEDING PLUMBING FIXTURES AND/OR EQUIPMENT, AS SHOWN ON PLANS AND ELSEWHERE AS REQUIRED BY LOCAL AUTHORITIES. USE DEVICES OF APPROVED TYPE AND MANUFACTURER (ATMOSPHERIC VACUUM, PRESSURE VACUUM, DOUBLE CHECK, AND REDUCED PRESSURE).
8. VERIFY SERVICE CONNECTION POINTS, SIZES, ELEVATIONS, AND METERING LOCATIONS FOR PROJECT WITH LOCAL UTILITIES COMPANY'S AND/OR CIVIL ENGINEER. SERVICES TO INCLUDE BUT NOT LIMITED TO DOMESTIC WATER, FIRE, SANITARY SEWER, STORM SEWER, GAS, ETCETERA.
9. WATER HAMMER ARRESTER SHALL BE INSTALLED THROUGHOUT PLUMBING WATER SYSTEMS AS REQUIRED PER DETAIL.
10. ALL PLUMBING LINES NEED TO BE JET SPRAYED, CLEANED AND CHLORINATED. GREASE TRAPS NEED TO BE PUMPED AND CLEANED. GC TO PROVIDE PROOF OF COMPLIANCE.

ENERGY CONSERVATION NOTE

1. ALL DOMESTIC WATER PIPING ABOVE GRADE SHALL BE INSULATED WITH FIRE-RETARDENT, FACTORY APPLIED JACKET.PROVIDE COLD WATER PIPING WITH FACTORY-APPLIED VAPOR BARRIER.INSULATION REQUIREMENT SHOULD COMPLY WITH CALIFORNIA STATE ENERGY CODE 2022, SECTION 150.0.
2. INSULATION REQUIREMENT SHOULD COMPLY WITH CALIFORNIA STATE ENERGY CODE 2022. REFER BELOW TABLE FOR MINIMUM PIPE INSULATION HICKNESS ACC. TO CALIFORNIA PLUMBING CODE 2022 SECTION 609.12, 2022 CALIFORNIA ENERGY CODE 2022 SECTION 120.3

MINIMUM PIPE INSULATION THICKNESS

FLUID OPERATING TEMPERATURE RANGE AND USAGE (°F)	INSULATION CONDUCTIVITY		NOMINAL PIPE OR TUBE SIZE (INCHES)				
	CONDUCTIVITY BTU· IN./ (H· FT2· °F)	MEAN RATING TEMPERATURE, °F	<1	1 to < 1½	1½ to < 4	4 to < 8	<8 `
141-200	0.25-0.29	125	1.5	1.5	2	2	2
105-140	0.22-0.28	100	1.0	1.0	1.5	1.5	1.5
40-60	0.21-0.27	75	0.5	0.5	1.0	1.0	1.0

3. AS PER CALIFORNIA STATE ENERGY CODE 2022, SECTION 613.5, TEMPERATURE CONTROL VALVE SHALL BE PROVIDED TO AUTOMATICALLY REGULATE THE TEMPERATURE OF HOT WATER DELIVERED TO PLUMBING FIXTURE TO A RANGE OF 105°F (41°C) MINIMUM TO 120°F (49°C) MAXIMUM.
4. AS PER CALIFORNIA STATE ENERGY CODE 2022, SYSTEMS DESIGNED TO MAINTAIN USAGE TEMPERATURES IN HOT WATER PIPES, SUCH AS RECIRCULATING HOT WATER SYSTEM SHALL BE EQUIPED WITH AUTOMATIC TIME SWITCHES OR OTHER CONTROLS THAT CAN BE SET TO SWITCH OF THE USAGE TEMPERATURE MAINTAINANCE SYSTEM DURING EXTENDED PERIOD WHEN HOT WAER IS NOT REQUIRED .
5. AS PER CALIFORNIA STATE ENERGY CODE 2022, SERVICE WAER HEATING EQUIPMENT SHALL BE EQUIPED WITH AUTOMATIC TEMPERATURE CONTROLS CAPABLE OF ADJUSTING FROM THE LOWEST TO THE HIGHEST ACCEPTABLE TEMPERATURE SETTING FOR THE INTENDED USE AS PER TABLE 613.1 OF THE CALIFORNIA STATE PLUMBING CODE.

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Proposed
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Drawing Title:
GENERAL NOTES, SPECIFICATIONS AND LEGENDS

Date:	Dwg No.
10-29-24	P 0.1
Drawn By: NYE	
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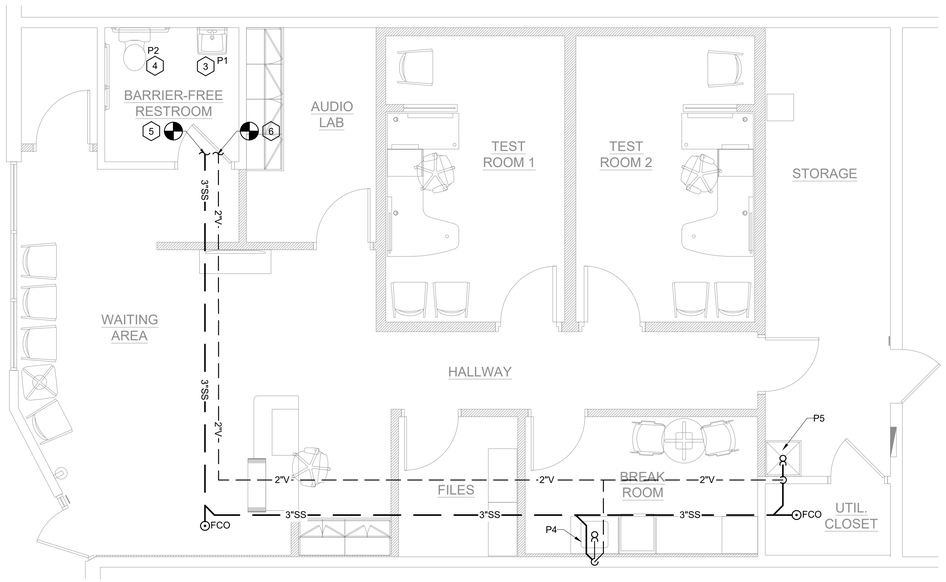
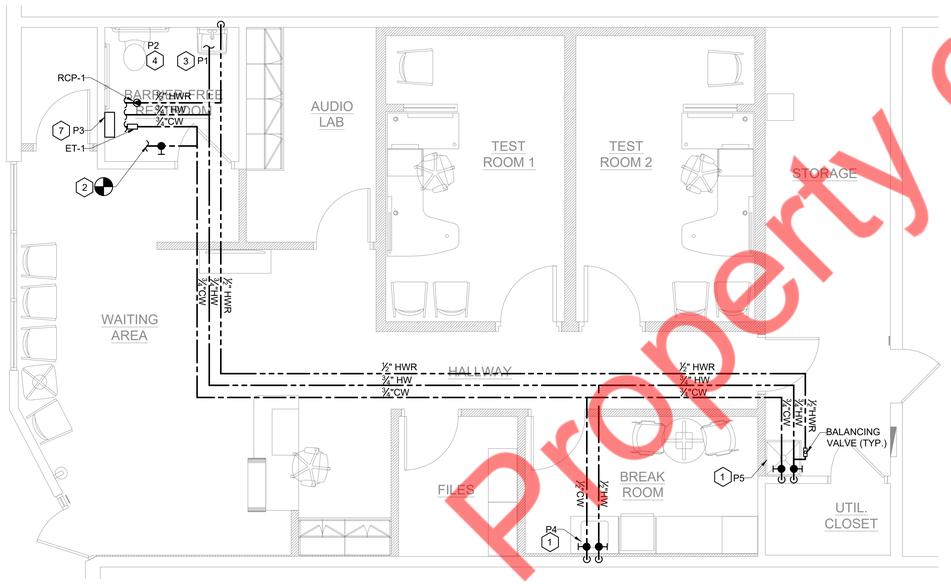
Job No: 24-059	1 of 6



1 PLUMBING PLAN - WASTE & VENT

SCALE: 1/4" = 1'-0"



2 PLUMBING PLAN - DOMESTIC WATER

SCALE: 1/4" = 1'-0"

ELECTRONIC TANKLESS WATER HEATER THE NIAGARA TITAN-SCR2

*Leading the way, in tankless water heater technology, **NIAGARA INDUSTRIES,** Is pleased, to unveil the tankless water heater for the 21stCentury.*

TITAN-SCR2

*In Keeping with the reliability and performance of our classic **TITAN-ATC** Electronic Tankless Water Heater. We have developed the newer and more advanced **TITAN-SCR2**. The new **TITAN-SCR2** incorporates new space age technology and features a faster and more accurate temperature sampling system, a manual resetable thermostat and new air/water deferential analyzing system to prevent dry starts, (which is a Key problem for other tankless systems on the market today). By heating water only as it is needed the **TITAN-SCR2** Tankless Water Heater eliminates the need for bulky water heater that heat water continuously. This can reduce hot water cost up to 60% over conventional electric water heaters. The **TITAN-SCR2's** high efficiency is in part due to its dedicated analog microprocessor that samples input and output temperatures 21 times per second.*

*This power control system analyzes the data and manages power usage for maximum efficiency and temperature stability. At rest, the **TITAN-SCR2** uses no power at all.*

*Available in seven models, the **TITAN-SCR2** is ideal for a wide range of applications. One **TITAN-SCR2** unit can supply the hot water needs of homes and apartments and in some applications, energy savings can pay back the units cost in less than one year.*

*Due to its shielded incoloy heating elements and copper & brass casing, the **TITAN-SCR2** is ideal in any application where mineral deposits shorten the life of conventional water heater.*

*The **TITAN-SCR2** Tankless Water Heater comes with a 10 year warranty on all water carrying components and all other parts are warrant for one year. Installation is quick and easy, requiring no venting and the **TITAN-SCR2's** compact size allows installation almost anywhere.*
*The **TITAN-SCR2** is without a doubt the tankless water for the 21st Century.*

Check Specification On Unit Used
Voltage, Amperage, Breaker and Wire may vary depending on local electrical standards, consult a professional plumber or electrician for guidance.

IMPORTANT NOTICE

The electrical specifications are based on 220 volts. It should be noted that higher voltage will increase power, just as lower voltage will have the reverse effect. The (POWER MODE CONTROL) can be adjusted to compensate, allowing the user to increase or decrease water temperature. User must determine the suitability of the unit for their application. The flow of water can also determine temperature in areas with cold weather. This factor must be considered, areas with colder climates. In some cases a combination of two units will be needed. DO NOT OVER HEAT WATER. Water temperature from 105F to 120F is adequate for all practical purposes.

Wire size will be determined by the model. (Consult an electrician)

DO NOT WASTE ENERGY

USES

Houses - Apartments
Condominiums - Beauty Salons
Hospitals - Boats - Laboratories - Campers
Offices - Schools - Cottages - Restaurants
Barber Shops - Warehouses and Anywhere
hot water is needed.

MODELS	MAX KW AT 220 V	VOLTS	MAX AMPS AT 220 V
N - 120	11.8 KW	220 V	54
N - 100	10.8 KW	220 V	49
N - 85	8.5 KW	220 V	38
N - 75	7.5 KW	220 V	34
N - 64	6.4 KW	220 V	29
N - 42	4.2 KW	220 V	19
N – 10	3.2 KW	110 V	29

• N – 10 uses 110 Volts and will supply only warm water

Patented • Made in USA #5408578

NOTE: that the KW and Amps are controlled by the setting on the Power Model Control.

TITAN-SCR2
ELECTRONIC TANKLESS WATER HEATER
only 10" x 7" x 3"
American Technology at its best!

Compliance	*UL # 499*
Standards	*ANSI-Z.10.03*
Tested	*Applied Research # 29.580*
Dade Approval	*# 97- 0627-16*
Dimensions	*10" x 7" x 3"*
Weight	*8 Pounds*
Materials	*Brass Casing*
Pipe Fitting	*¾" Standard Pipe*
Pressure Requirements	*5 PSI-Min / 150 PSI-Max*
Voltage	*220 VAC Std. (208 / 277 Avail)*
Elements	*Dual incoloy Nichrome*
Energy Efficiency	*Up to 99.5 %*
Activation	*0.4 GPM-on / 0.3 GPM-off*
Indicators	*Red-on / Green- stand by*
Warranty	*10 Years on casing*
	1 Year on components
Protection	*Micro temperature Thermostat*
	Manual Resetable Thermostat

GENERAL NOTES:

1. REFER TO RISER DIAGRAMS FOR WATER AND WASTE PIPE SIZES.
2. PROVIDE BRANCH PRV IF PRESSURE EXCEEDS 80 PSI.
3. PROVIDE ACCESS PANELS FOR WATER HAMMER ARRESTOR, CLEANOUT & SHUT-OFF VALVES AS REQUIRED.
4. CONTRACTOR TO COORDINATE WITH WATER HEATER MANUFACTURERS FOR INSTALLATION REQUIREMENTS.
5. CONTRACTOR TO FIELD VERIFY AVAILABILITY OF EXISTING BACKFLOW PREVENTER AND WATER METER. PROVIDE NEW IF NOT EXISTING. CONTRACTOR TO COORDINATE WITH THE LANDLORD FOR BFP REQUIREMENTS AND LOCATION. NO TAP OFF TO BE TAKEN BEFORE BFP. BASE BID ACCORDINGLY.
6. REMOVE ANY ABANDONED UTILITIES/ EQUIPMENT, SUCH AS HVAC UNITS, CURBS, DUCTS, PLUMBING VENTS, AND WIRING FROM THE PREMISES. CAP UTILITIES AT POINT OF ORIGIN AND COORDINATE THIS WORK WITH CENTER MANAGEMENT.
7. PATCH AND REPAIR EXISTING DEMISING WALLS AS NECESSARY TO MAINTAIN THE REQUIRED FIRE RATING.

PLUMBING KEY NOTES: (#)

1. EXTEND CW, HW LINES DOWN IN WALL TO FIXTURES AND CONNECT. REFERENCE DOMESTIC WATER RISER DIAGRAM FOR ADDITIONAL INFORMATION
2. EXTEND 3/4" NEW WATER LINE WITH SHUT-OFF VALVE AND CONNECT TO EXISTING WATER LINE. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION AND SIZE OF EXISTING WATER LINE. BASE BID ACCORDINGLY.
3. EXISTING LAVATORY WITH EXISTING SANITARY, VENT AND WATER PIPING WITH ASSOCIATED ACCESSORIES AND FITTINGS TO REMAIN. CONTRACTOR TO FIELD VERIFY EXISTING CONDITION OF EXISTING PIPING AND FIXTURE, REPLACE IF REQUIRED.
4. EXISTING WATER CLOSET WITH EXISTING SANITARY, VENT AND WATER PIPING WITH ASSOCIATED ACCESSORIES AND FITTINGS TO REMAIN. CONTRACTOR TO FIELD VERIFY EXISTING CONDITION OF EXISTING PIPING AND FIXTURE, REPLACE IF REQUIRED.
5. EXTEND NEW 3" SANITARY LINE TO EXISTING SANITARY AND CONNECT. PLUMBING CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION AND INVERT PRIOR TO ROUGH-IN.
6. EXTEND NEW 2" VENT LINE TO EXISTING VENT AND CONNECT. PLUMBING CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION PRIOR TO ROUGH-IN.
7. WATER HEATER T&P RELIEF VALVE AND DRAIN LINE. EXTEND DRAIN LINE TO NEAREST EXISTING FLOOR DRAIN AND SPILL. DRAIN LINE TO BE A MIN. OF 2" ABOVE FLOOD RIM LEVEL OF FLOOR DRAIN.

SIZE	DEVICE	
3/4"	(E) BACKFLOW PREVENTER	12.5 PSI
3/4"	(E) WATER METER	7.5 PSI
	STATIC HEAD	8.7 PSI
	FIXTURE LOSS	15.0 PSI
	TOTAL BLDG. LOSS	43.7 PSI

BLDG. WATER PRESS: 50 PSI
TOTAL BLDG. LOSS: 43.7 PSI
DIFFERENCE: 6.3 PSI

MAXIMUM DEVELOPED LENGTH: 150 FT.

MAX. PRESSURE DROP ALLOWANCE / 100 FT OF PIPE:
=(6.3 / 150) X 100 = 4.2 PSI

SANITARY SEWER FIXTURE LOAD CALCULATION

MARK	FIXTURE/EQUIPMENT	QUANTITY	WASTE	
			WASTE F.U. PER FIXTURE	TOTAL F.U. PER FIXTURE
P1	EXISTING LAVATORY	1	1.0	1.0
P2	EXISTING WATER CLOSET	1	6.0	6.0
P4	BREAK ROOM SINK	1	1.0	1.0
P5	MOP SINK	1	3.0	3.0
				11.0

MAXIMUM WASTE DEMAND AT 11.0 F.U. = 4" SANITARY SEWER WASTE

FIXTURE UNITS BASED ON 2022 CALIFORNIA PLUMBING CODE (UPC 2021)

WATER FIXTURE LOAD CALCULATIONS

MARK	FIXTURE/EQUIPMENT	QTY	WATER			
			CW F.U. PER FIXTURE	HW F.U. PER FIXTURE	TOTAL WSFU PER TYPE	TOTAL F.U. PER FIXTURE
P1	EXISTING LAVATORY	1	0.75	0.75	1.0	1.0
P2	EXISTING WATER CLOSET	1	2.5	-	2.5	2.5
P3	TANKLESS WATER HEATER	1	-	-	-	-
P4	BREAK ROOM SINK	1	0.75	0.75	1.0	1.0
P5	MOP SINK	1	2.25	2.25	3.0	3.0
TOTAL						7.5

MAXIMUM WATER DEMAND AT 7.5 F.U. = 10 GPM = 3/4" BUILDING SUPPLY AND BRANCHES.

FIXTURE UNITS BASED ON 2022 CALIFORNIA PLUMBING CODE (UPC 2021) TABLE 610.3
PIPE SIZES BASED ON 2022 CALIFORNIA PLUMBING CODE (UPC 2021) TABLE 610.4

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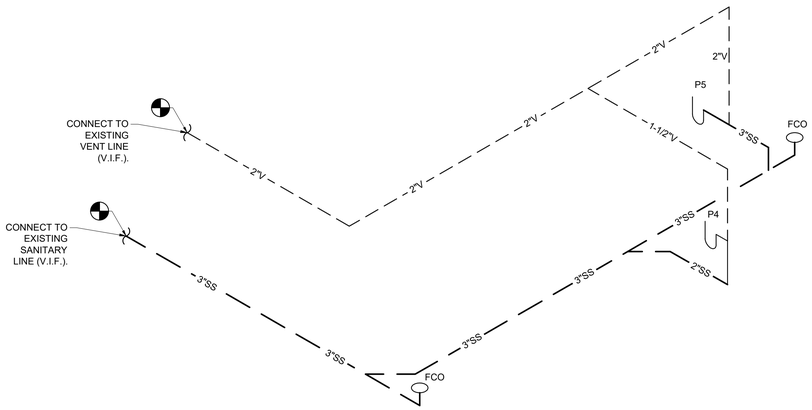
No.	Drawing Issues / Revisions	Date
1	Building Comments	02/17/25

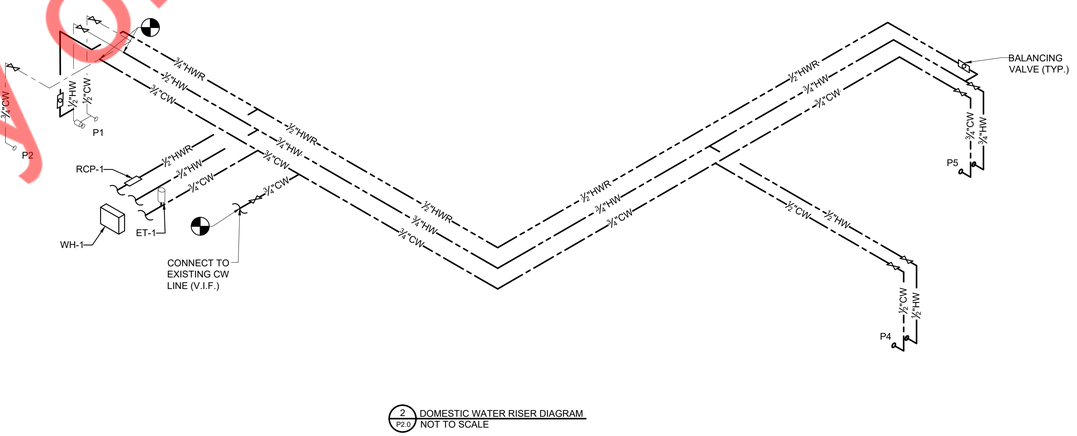
Proposed Interior Tenant Fit-out for HearingLife

Drawing Title: PLUMBING FLOOR PLAN

Date: 10-29-24
Drawn By: NYE
Checked By: NYE
Job No: 24-059
Dwg No. P 1.0
2 of 6



1 P2.0 SANITARY WASTE AND VENT RISER DIAGRAM
NOT TO SCALE



2 P2.0 DOMESTIC WATER RISER DIAGRAM
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Drawing Title:
PLUMBING RISERS

Date: 10-29-24	Dwg No. P 2.0
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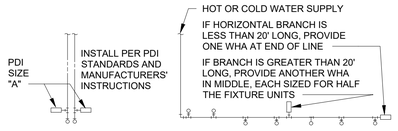
Checked By: NYE	
Job No: 24-059	3 of 6



SINGLE FIXTURE

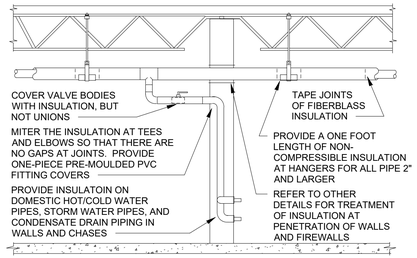
PDI SIZE	PIPE SIZE	FIXTURE UNIT LOAD
A	1/2"	1-11
B	3/4"	12-32
C	1"	33-60
D	1-1/4"	61-113
E	1-1/2"	114-154
F	2"	155-330

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	--

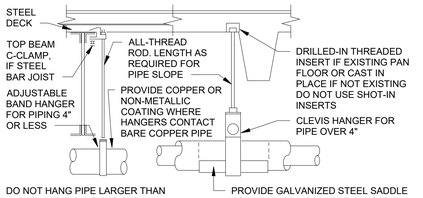
PROVIDE WATER HAMMER ARRESTERS BY SIOUX CHIEF, PRECISION PLUMBING PRODUCTS, WATTS OR APPROVED EQUAL WITH PISTON AND O-RING CONSTRUCTION, HAVING PDI #WH-201, ASSE #1010 AND ANSI #A112.26.1M CERTIFICATION. INSTALL IN HORIZONTAL OR VERTICAL POSITION, BUT NEVER UPSIDE DOWN. INSTALL INLINE WITH WATER FLOW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

1 P3.0 WATER HAMMER ARRESTORS
NOT TO SCALE



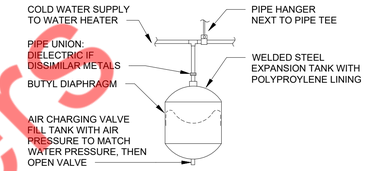
PROVIDE FIBERGLASS INSULATION WITH ALL-SERVICE JACKET WITH VAPOR BARRIER ON ALL COLD/HOT WATER PIPING AND CONDENSATE DRAIN PIPE. REFER TO SPECIFICATIONS FOR FURTHER INFORMATION REGARDING INSULATION. INSTALL ALL ITEMS PER SPECIFICATIONS AND MANUFACTURERS INSTRUCTIONS. MAINTAIN VAPOR BARRIER ON COLD PIPING BY MEANS OF SEALANT AND TAPE. FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES SHALL NOT EXCEED 25/50. SEAL EXPOSED ENDS OF FIBERGLASS INSULATION WITH ADHESIVE MASTIC.

2 P3.0 PIPE INSULATION DETAIL
NOT TO SCALE



PROVIDE UPPER ATTACHMENT AS REQUIRED FOR CASES NOT SHOWN HERE. DO NOT INSTALL HANGER INSIDE INSULATION OR OTHERWISE PENETRATE VAPOR BARRIER. DO NOT HANG ONE PIPE FROM ANOTHER EXCEPT IN CHASES. TRAPEZE HANGERS MAY BE USED FOR MULTIPLE PARALLEL PIPES. HANGER SPACING FOR PIPE SIZE:: COPPER: 4"=12'-0"; 3"=11'-0"; 2-1/2"=10'-0"; 2"=9'; 1-1/2"=8'-0"; 1-1/4"=7'-0"; 3/4"=6'; 1/2"=5'. CAST IRON: 10' AND ONE NEAR ALL JOINTS. STEEL: 4"=14'; 3"=12'; 2-1/2"=11'; 2"=10'; 1-1/2"=9'; 1"=7', 3/4"=6'; 1/2"=5'. LOCATE HANGERS AS CLOSE AS POSSIBLE TO TURNS AND TEES OF PIPE. PROVIDE SUPPLEMENTARY STEEL STRUTS BETWEEN JOISTS IF REQUIRED, LOCATE PIPE AGAINST SWAYING DUE TO CHANGES IN WATER VELOCITY. PROVIDE SEISMIC BRACING IF/AS REQUIRED BY LOCAL AUTHORITIES. CHAINS OR PERFORATED STRAP IRON OR STEEL IS NOT ACCEPTABLE. REFER TO CODES AND SPECIFICATIONS FOR FURTHER INFORMATION.

3 P3.0 PIPE HANGERS
NOT TO SCALE

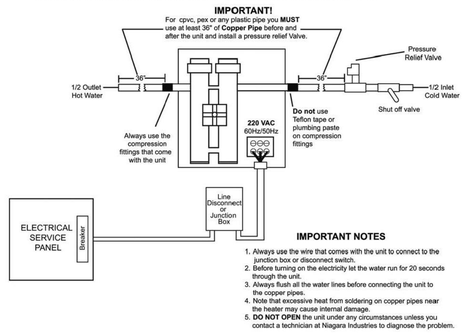


PIPING ARRANGEMENT SHOWN IS SCHEMATIC. ADJUST TO SUIT FIELD CONDITIONS. MAKE PIPE SAME SIZE AS TANK FITTING. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION PROCEDURE. VERIFY PROPER OPERATION WHEN INSTALLED

EXPANSION TANK INSTALLATION SHALL OCCUR ONLY WHEN THERE IS A BACKLOW PREVENTION DEVICE INSTALLED WITHIN THE TENANT SPACE WATER SYSTEM OR BUILDING WATER SYSTEM.

4 P3.0 EXPANSION TANK
NOT TO SCALE

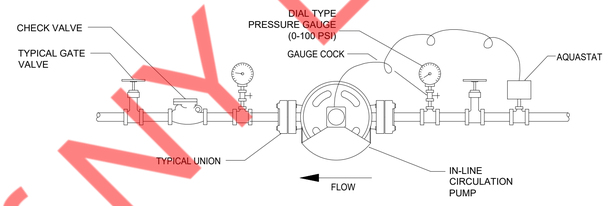
INSTALLATION DIAGRAM FOR TITAN SCR2 SERIES



IMPORTANT NOTES

1. Always use the wire that comes with the unit to connect to the junction box or disconnect switch.
2. Before turning on the electricity let the water run for 20 seconds through the unit.
3. Always flush all the water lines before connecting the unit to the copper pipes.
4. Note that excessive heat from soldering on copper pipes near the heater may cause internal damage.
5. **DO NOT OPEN** the unit under any circumstances unless you contact a technician at Niagara Industries to diagnose the problem.

5 P3.0 WATER HEATER INSTALLATION DIAGRAM
NOT TO SCALE



6 P3.0 RECIRCULATION PUMP
NOT TO SCALE

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Drawing Title: PLUMBING DETAILS

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Drawn By: NYE	
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Job No: 24-059	4 of 6