A. GENERAL CONDITIONS

1. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND ALL OTHER SPECIFICATION SECTIONS (IF PROVIDED AS PART OF THE CONTRACT) ARE A PART OF THIS CONTRACT.
2. THE TERM "CONTRACTOR" SHALL MEAN THE "MECHANICAL CONTRACTOR HIRED TO COMPLETE THE WORK OUTLINED IN THESE PLANS AND SPECIFICATIONS", UNLESS OTHERWISE SPECIFIED.
3. THE CONTRACTOR FOR THIS WORK IS REQUIRED TO REVIEW ALL DRAWINGS FOR ALL OTHER TRADES.
4. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING THEIR SUBCONTRACTORS WITH A FULL SET OF BID DOCUMENTS INCLUDING SPECIFICATIONS AND MUST COORDINATE ITS WORK AND INSPECTIONS AND THE WORK AND INSPECTION OF THEIR SUBCONTRACTORS WITH ALL OTHER TRADES ON SITE TO CONFORM WITH THE GENERAL CONTRACTOR'S TIME SCHEDULE.
5. BY SUBMITTING A QUOTATION OR PROPOSAL THE MECHANICAL CONTRACTOR EXPRESSLY STATES AND WARRANTS THAT ALL DRAWINGS AND SPECIFICATIONS HAVE BEEN THOROUGHLY REVIEWED, AND THAT THIS CONTRACTOR HAS BECOME FAMILIARIZED WITH JOB SITE CONDITIONS AND IS TOTALLY QUALIFIED TO PERFORM ALL OF THE WORK REQUIRED.
6. BEFORE SUBMITTING A FINAL PROPOSAL THE CONTRACTOR SHALL EXAMINE THE SITE OF THE PROPOSED WORK TO DETERMINE THE EXISTING CONDITIONS THAT MAY AFFECT THE PROPOSAL. IF DISCREPANCIES ARE NOTED BETWEEN THE DOCUMENTS AND THE EXISTING CONDITIONS THE ARCHITECT SHALL BE NOTIFIED AND THE CONTRACTOR SHALL RECEIVE CLARIFICATION BEFORE SUBMITTING A BID. THE SUBMISSION OF A PROPOSAL SHALL INDICATE THAT ALL CHARGES AND COSTS MADE NECESSARY BY EXISTING CONDITIONS ARE INCLUDED AND THAT THE COMPLETE SYSTEM AS DESCRIBED HEREIN WILL BE FURNISHED AT THE PROPOSED COST.
   A. THE HVAC SUBCONTRACTOR IS REQUIRED TO VISIT THE SITE DURING BIDDING AND VERIFY LOCATION(S) OF WHERE DUCTWORK IS INDICATED TO BE PLACED, THEIR ROUTES AND POSSIBLE INTERSECTION(S) WITH OTHER EQUIPMENT/WORK (PLUMBING, SPRINKLER, ELECTRICAL, ETC.) TO BE INSTALLED AND/OR EXISTING TO REMAIN AND TO VERIFY HEIGHTS TO "BE INSTALLED" TO MAINTAIN DESIGNED CEILING HEIGHTS AND HEAD ROOM. ANY DISCREPANCIES BETWEEN DESIGNED AND ACTUAL ARE TO BE TOLD TO THE GENERAL CONTRACTOR AND BE INDICATED ON THE BID FORM.
7. WHEN USED, THE TERM "PROVIDED BY CONTRACTOR" SHALL BE INTERPRETED AS MEANING "FURNISHED AND INSTALLED BY CONTRACTOR" WITH THE EXCEPTION WHERE ITEMS ARE "PROVIDED BY TENANT" SHALL BE INTERPRETED AS MEANING "FURNISHED BY TENANT (INSTALLED BY CONTRACTOR)", EXCEPT WHERE NOTED OTHERWISE.

B. GENERAL REQUIREMENTS

1. THE MECHANICAL SUBCONTRACTORS QUOTING ON THEIR SPECIFIC SCOPE OF WORK/SERVICES TO CONTACT THE LOCAL BUILDING DEPARTMENT/AGENCY TO DISCUSS CODE ISSUES/IDIOSYNCRASIES REGARDING THEIR SERVICES AND THE QUOTE ASSOCIATED WITH THE SERVICES TO THE GENERAL CONTRACTOR FOR THIS PROJECT. THIS CONTRACTOR TO BE FAMILIAR WITH THE SITE WHERE SUCH SERVICES/WORK WILL BE PERFORMED, THIS SPECIFIC USE AND THE IDIOSYNCRASIES ASSOCIATED WITH THE LIFE, SAFETY AND HEALTH ASSOCIATED WITH THIS WORK AND TO INDICATE ON THE QUOTE ANY ITEMS REQUIRED THAT ARE NOT NECESSARILY SHOWN ON THE DRAWINGS/SPECIFICATIONS.
2. THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, SERVICES, TOOLS, TRANSPORTATION, INCIDENTALS AND DETAILS NECESSARY TO PROVIDE COMPLETE AND FULLY FUNCTIONAL MECHANICAL SYSTEMS AS SHOWN ON THE DRAWINGS, AS CALLED FOR IN THE SPECIFICATIONS (IF SUPPLIED) AND AS REQUIRED BY JOB CONDITIONS. ALL WORK NOT SPECIFICALLY NOTED AS BEING BY THE LANDLORD SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR. CLOSELY COORDINATE THE ENTIRE INSTALLATION WITH LANDLORD AS REQUIRED. FIELD VERIFY THE EXACT TYPE, SIZE, LOCATION, REQUIREMENTS, ETC. OF EXISTING EQUIPMENT, PIPE AND DUCTS SERVING THE TENANT SPACE PRIOR TO SUBMISSION OF BID.
3. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT EACH OTHER AND ANY MATERIAL OR LABOR CALLED FOR IN ONE SHALL BE PROVIDED EVEN THOUGH NOT SPECIFICALLY MENTIONED IN BOTH. ANY MATERIAL OR LABOR WHICH IS NEITHER SHOWN ON THE DRAWINGS NOR CALLED FOR IN THE SPECIFICATIONS, BUT WHICH IS NECESSARY TO COMPLETE THE WORK OR WHICH IS USUALLY INCLUDED IN WORK OF SIMILAR CHARACTER, SHALL BE PROVIDED AS PART OF THE CONTRACT.
4. WHERE THE DRAWINGS AND / OR SPECIFICATIONS CALL FOR ITEMS THAT EXCEED CODES OR THE LANDLORD'S TENANT CRITERIA, THE CONTRACTOR IS STILL RESPONSIBLE FOR PROVIDING THE SYSTEM AS DESIGNED AND DESCRIBED ON THE DRAWINGS, UNLESS SPECIFICALLY NOTED OTHERWISE.
5. THE CONTRACTOR SHALL OBTAIN AND COMPLY WITH DETAILED REQUIREMENTS OF LEASE EXTRACTS FROM THE LANDLORD AND TENANT.
6. COORDINATE LOCATIONS OF ALL AIR OUTLETS WITH ALL WALLS, LIGHTS, SPRINKLER HEADS, CEILING TILES AND DECORATIVE CEILING FIXTURES PRIOR TO INSTALLATION.
7. ALL MECHANICAL WORK SHALL BE INSTALLED SO AS TO BE READILY ACCESSIBLE FOR OPERATION, SERVICE, MAINTENANCE AND REPAIR. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SUFFICIENT ACCESS TO ALL EQUIPMENT FOR SERVICE.
8. THE CONTRACTOR SHALL DO ALL CUTTING, CORE DRILLING, CHASING, OR CHANNELING AND PATCHING REQUIRED FOR ANY WORK UNDER THIS CONTRACT. CUTTING SHALL HAVE PRIOR APPROVAL BY THE TENANT'S CONSTRUCTION MANAGER AND THE LANDLORD OR LANDLORD'S REPRESENTATIVE. PATCHING SHALL MATCH FINISH OF SURROUNDING AREA.

C. CODES

1. ALL WORK SHALL BE PERFORMED IN A NEAT AND PROFESSIONAL MANNER USING GOOD CONSTRUCTION PRACTICES. ALL WORK SHALL CONFORM TO THE LATEST ADOPTED EDITION OF THE LANDLORD'S CRITERIA; THE STATE, COUNTY AND LOCAL CODES AND ORDINANCES; THE LATEST EDITIONS OF ASHRAE STANDARDS; THE LIFE SAFETY CODE; THE APPLICABLE BUILDING CODE; UNDERWRITERS LABORATORIES; THE NATIONAL ELECTRICAL CODE; NFPA 70, 90A, AND 96; AND ALL OTHER APPLICABLE CODES ENFORCED BY AUTHORITIES HAVING JURISDICTION. THE CHANGES REQUIRED BY ANY APPLICABLE CODES SHALL BE INCLUDED IN THE BID. AFTER THE CONTRACT IS ISSUED, NO ADDITIONAL COST DUE TO CODE ISSUES SHALL BE REIMBURSED BY THE TENANT TO THE CONTRACTOR.

D. LICENSES, PERMITS, INSPECTIONS AND FEES

1. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL LICENSES, PERMITS, INSPECTIONS AND FEES REQUIRED OR RELATED TO THIS WORK.
2. FURNISH TO THE TENANT'S CONSTRUCTION MANAGER ALL CERTIFICATES OF INSPECTION AND FINAL INSPECTION APPROVAL AT COMPLETION OF PROJECT.

E. DRAWINGS

1. DRAWINGS (PLANS AND SPECIFICATIONS) ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION AND INTENT OF THE MECHANICAL SYSTEMS. BECAUSE OF THE SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL DUCT AND PIPE OFFSETS, FITTINGS AND ACCESSORIES THAT MAY BE REQUIRED. THE MECHANICAL CONTRACTOR MUST OBTAIN APPROVED CONSTRUCTION DRAWINGS FROM THE GENERAL CONTRACTOR BEFORE BEGINNING ANY WORK.
2. THE LAYOUT SHOWN ON THE DRAWINGS IS BASED ON A PARTICULAR MAKE OF EQUIPMENT. IF ANOTHER MAKE OF EQUIPMENT IS USED WHICH REQUIRES MODIFICATION OR CHANGE OF ANY DESCRIPTION FROM THE DRAWINGS OR SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE AS PART OF THIS WORK, FOR MAKING ALL SUCH MODIFICATIONS AND CHANGES, INCLUDING THOSE INVOLVING OTHER TRADES WITH THE COST THEREOF INCLUDED IN THE BID. IN SUCH CASE, CONTRACTOR SHALL SUBMIT DRAWINGS AND SPECIFICATIONS PRIOR TO STARTING WORK SHOWING ALL SUCH MODIFICATIONS AND CHANGES. THE PROPOSAL SHALL BE SUBJECT TO THE APPROVAL OF THE TENANT'S CONSTRUCTION MANAGER.

F. EXISTING LEASE SPACE CONDITIONS

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF THE DEMOLITION OF EXISTING MECHANICAL WORK IN THE SPACE NOT SHOWN TO BE REUSED IN THE NEW TENANT SPACE.
2. IF REQUIRED BY THE LANDLORD OR CODES, ABANDONED PIPING AND / OR DUCTWORK MUST BE REMOVED TO POINT OF ORIGIN. CONFIRM THE EXTENT OF DEMOLITION PRIOR TO BID AND INCLUDE IN BID PROPOSAL.
3. ACTIVE LANDLORD OR OTHER TENANT SERVICES ENCOUNTERED IN WORK SHALL BE PROTECTED AND SUPPORTED. IF EXISTING SERVICES NOT ANTICIPATED REQUIRE RELOCATION, CONTACT THE TENANT'S CONSTRUCTION MANAGER IMMEDIATELY. ALL COSTS FOR REPAIR OF DAMAGES TO ACTIVE LANDLORD OR OTHER TENANT SERVICES DURING CONSTRUCTION SHALL BE PAID FOR BY THE CONTRACTOR CAUSING THE DAMAGE.
4. TIE-INS AND MODIFICATIONS TO EXISTING LANDLORD SERVICES MUST BE DONE WITH MINIMUM INTERRUPTION OF LANDLORD OPERATION AND DURING HOURS SPECIFIED BY THE LANDLORD. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING EXACT WORKING HOURS OF THIS WORK WITH THE LANDLORD PRIOR TO SUBMITTING THEIR BID. THE CONTRACTOR SHALL INCLUDE IN THEIR BID, ALL PREMIUM TIME REQUIRED TO PERFORM MODIFICATIONS DURING OTHER THAN NORMAL WORKING HOURS. ALL SUCH WORK MUST BE COORDINATED WITH THE LANDLORD.
5. EQUIPMENT AND MATERIALS IN TRANSIT SHALL UTILIZE FREIGHT ELEVATOR OR STAIRS. SAID EQUIPMENT OR MATERIALS SHALL BE DISASSEMBLED AS REQUIRED TO MEET THE RESTRICTIONS IMPOSED BY THE BUILDING OR ITS COMPONENT CONSTRAINTS AND THEN REASSEMBLED IN THE NEW WORK AREA.
6. ALL WORK SHALL BE DONE WITH A MINIMUM OF NOISE AND DISTURBANCE TO BUSINESS ROUTINE. ALL WORK SCHEDULES SHALL BE COORDINATED WITH, AND APPROVED BY, THE TENANTS CONSTRUCTION MANAGER.
7. SINCE THESE ARE SECURE FLOORS, ALL DELIVERIES, WORKERS, WORK OPERATORS, ETC., REQUIRED BY THE CONTRACTOR FOR WORK PERFORMED IN ANY AREA OR SITE BUILDING SHALL BE IN STRICT CONFORMANCE TO THE RULES AND REGULATIONS OF THE OWNER.
8. CONTRACTOR SHALL PROTECT THEIR WORK AND EQUIPMENT FROM DAMAGE, VANDALS, ETC. ANY ITEM THAT IS DAMAGED, VANDALIZED OR STOLEN PRIOR TO ACCEPTANCE OF BUILDING BY OWNER AND ARCHITECT SHALL BE REPLACED BY RESPECTIVE CONTRACTOR AT NO CHARGE TO TENANT.
9. IT IS SPECIFICALLY THE INTENTION OF THIS SPECIFICATION TO HOLD THE CONTRACTOR RESPONSIBLE FOR ALL DAMAGE DONE TO ANY EXISTING FACILITIES, EQUIPMENT, PAINTING, OR ARCHITECTURAL AND STRUCTURAL FEATURES OF THE BUILDING, BY EITHER THEIR OWN WORKMEN OR BY ANY OF THEIR SUBCONTRACTORS. THE CONTRACTOR SHALL REPAIR ANY DAMAGE DONE BY THEIR OWN WORKMEN OR SUBCONTRACTORS AND THE OWNER AT THEIR DISCRETION, MAY WITHHOLD PAYMENTS EQUAL TO THE REASONABLE COST OF THE REPAIRS.
10. THIS CONTRACTOR OR THEIR WORKMEN SHALL NOT BE PERMITTED TO USE ANY PART OF THE EXISTING BUILDING AS A SHOP WITHOUT THE APPROVAL OF THE OWNER AND ARCHITECT.
11. WHERE THE WORK MAKES TEMPORARY SHUTDOWN OF SERVICES UNAVOIDABLE, THEY SHALL BE MADE AT NIGHT OR AT SUCH TIMES AS WILL CAUSE THE LEAST INTERFERENCE WITH THE ESTABLISHED OPERATING ROUTINE.
12. THIS CONTRACTOR SHALL ARRANGE THE WORK SO AS TO ASSURE THAT SERVICES WILL BE SHUT DOWN ONLY DURING THE TIME ACTUALLY REQUIRED TO MAKE THE NECESSARY CONNECTION TO THE EXISTING WORK. THIS CONTRACTOR SHALL GIVE AMPLE WRITTEN NOTICE IN ADVANCE TO THE OWNER OF ANY REQUIRED SHUT DOWN.
13. ALL MOTORS, FANS, CONTROLS, FIXTURES, HVAC UNIT, DUCTWORK AND OTHER EQUIPMENT FOR USE IN THIS CONTRACT SHALL BE PROTECTED BY TARPAULIN OR BY BOXING AS SOON AS DELIVERED TO THE SITE AND SHALL BE KEPT CLEAN AND DRY. THE MOTORS, UNITS, FIXTURES, FANS, DUCTWORK AND MOVING PARTS SHALL BE KEPT COVERED SO AS TO ELIMINATE DIRT, DUST AND OTHER MATERIALS ENTERING THE PARTS DURING ERECTION AND CONSTRUCTION WORK ON THE BUILDING. SHOULD IT BE FOUND THAT ANY PARTS ARE DAMAGED DUE TO CARELESSNESS ON THE PART OF THE CONTRACTOR IN NOT PROVIDING PROPER PROTECTION, SUCH PART OR PARTS SHALL BE REPLACED BY THE CONTRACTOR AT THEIR OWN COST AND EXPENSE. ALL OPENINGS IN DUCTS, PIPING, CONDUITS, ETC., SHALL BE PROPERLY PROTECTED WITH TEMPORARY CAPS OR PLUGS AT ALL TIMES.
14. THE CONTRACTOR, IN REGARDS TO ANY SAWCUTTING, COREDRILLING OR ANY PENETRATING OF A CONCRETE SLAB, FLOOR AND/OR ROOF, IS REQUIRED TO SURVEY DURING BIDDING TO DETERMINE ANY ISSUES, INCLUDING BUT NOT LIMITED TO, NECESSITY OF X-RAYING OF A CONCRETE SLAB, WHERE SUCH MATERIAL BEING PENETRATED IS NOT PROJECTED AND/OR ROUTED INTO A SPACE(S) THAT CREATES A NON-CODE COMPLIANT CONDITION, THE NEED FOR WEATHERSTRIPPING, WATERPROOFING OR OTHER CONDITION AND TO NOTIFY THE OWNER IF A PROBLEM(S) MAY EXIST AND TO INCLUDE COSTS TO SOLVE THE ISSUE UNCOVERED, IN ADDITION TO, NOTIFYING THE ARCHITECT OF RECORD REGARDING SUCH ISSUE(S).

G. DISCREPANCIES IN DOCUMENTS

1. DRAWINGS (PLANS, SPECIFICATIONS AND DETAILS) ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION AND INTENT OF THE MECHANICAL SYSTEMS. WHERE DRAWING, EXISTING SITE CONDITIONS, SPECIFICATIONS OR OTHER TRADES CONFLICT OR ARE UNCLEAR, ADVISE THE GENERAL CONTRACTOR IN WRITING, PRIOR TO SUBMITTAL OF BID. THE GENERAL CONTRACTOR IS RESPONSIBLE TO ADVISE THE TENANT'S CONSTRUCTION MANAGER, IN WRITING, OF VARIATIONS TO THE CONTRACT DOCUMENTS PRIOR TO SUBMISSION OF BID. OTHERWISE, TENANT'S CONSTRUCTION MANAGER'S INTERPRETATION OF CONTRACT DOCUMENTS OR CONDITIONS SHALL BE FINAL WITH NO ADDITIONAL COMPENSATION PERMITTED.

H. TRADE NAMES AND MANUFACTURERS

1. WHERE TRADE NAMES AND MANUFACTURERS ARE USED ON THE DRAWINGS OR IN THE SPECIFICATIONS, THE EXACT EQUIPMENT SHALL BE USED AS A MINIMUM STANDARD FOR THE BASE BID. MANUFACTURERS CONSIDERED AS AN EQUIVALENT OR BETTER IN ALL ASPECTS TO THAT SPECIFIED WILL BE SUBJECT TO REVIEW IN WRITING BY THE TENANT'S CONSTRUCTION MANAGER PRIOR TO ACCEPTANCE. THE USE OF ANY UNAUTHORIZED EQUIPMENT SHALL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.

I. SHOP DRAWINGS

1. SUBMIT THREE COPIES OF MATERIAL LISTS AND SHOP DRAWINGS FOR ALL EQUIPMENT AND DUCT FABRICATION DRAWINGS TO THE TENANT'S CONSTRUCTION MANAGER FOR REVIEW PRIOR TO ORDERING EQUIPMENT. SUBMISSIONS MUST BE EARLY ENOUGH TO ALLOW THE TENANT'S CONSTRUCTION MANAGER EIGHT WORKING DAYS FOR REVIEW WITHOUT CAUSING DELAYS OR CONFLICTS TO THE JOB'S PROGRESS. SUBMITTALS SHALL BE IN ACCORDANCE WITH THE GENERAL CONDITIONS USING THE MANUFACTURER'S LISTED ON THE DRAWINGS. SHOP DRAWINGS SHALL INCLUDE ALL DATA THAT PERTAINS TO THE REQUIREMENTS SET FORTH ON THE DRAWINGS AND IN THE SPECIFICATIONS. THE SUBMITTAL SHALL INCLUDE BUT NOT BE LIMITED TO CUTS OR CATALOGS INCLUDING DESCRIPTIVE LITERATURE AND CHARACTERISTICS OF EQUIPMENT SHALL SHOW MAJOR DIMENSIONS, ROUGHING-IN DATA, CAPACITY, CURVES, PRESSURE DROPS, CODE COMPLIANCE, MOTOR AND DRIVE DATA AND ELECTRICAL DATA. OBSERVE SPECIAL INSTRUCTIONS WHEN REQUIRED. SUBMITTALS SHALL BEAR THE STAMP OF THE GENERAL AND SUBCONTRACTOR SHOWING THAT HE HAS REVIEWED AND CONFIRMED THAT THEY ARE IN CONFORMANCE WITH THE CONTRACT DOCUMENTS OR INDICATE WHERE EXCEPTIONS TAKE PLACE. LACK OF SUCH CONTRACTOR'S REVIEW WILL BE CAUSE FOR REJECTION WITHOUT REVIEW BY TENANT'S CONSTRUCTION MANAGER. ALL SHOP DRAWINGS MUST APPEAR IN THE OPERATION AND MAINTENANCE MANUALS LEFT ON SITE AT JOB COMPLETION.
   A. BY SUBMITTING SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND SIMILAR SUBMITTALS, THE CONTRACTOR REPRESENTS TO THE CLIENT AND ARCHITECT THAT THE CONTRACTOR HAS (1) REVIEWED AND APPROVED THEM, (2) DETERMINED AND VERIFIED MATERIALS, FIELD MEASUREMENTS AND FIELD CONSTRUCTION CRITERIA RELATED THERETO, OR WILL DO SO AND (3) CHECKED AND COORDINATED THE INFORMATION CONTAINED WITHIN SUCH SUBMITTALS WITH THE REQUIREMENTS OF THE WORK AND OF THE CONTRACT DOCUMENTS.
   B. THE CONTRACTOR SHALL PERFORM NO PORTION OF THE WORK FOR WHICH THE CONTRACT DOCUMENTS REQUIRE SUBMITTAL AND REVIEW OF SHOP DRAWINGS, PRODUCT DATA, SAMPLES OR SIMILAR SUBMITTALS UNTIL THE RESPECTIVE SUBMITTAL HAS BEEN APPROVED BY THE ARCHITECT.
   C. THE WORK SHALL BE IN ACCORDANCE WITH APPROVED SUBMITTALS EXCEPT THAT THE CONTRACTOR SHALL NOT BE RELIEVED OF THE RESPONSIBILITY FOR DEVIATIONS FROM REQUIREMENTS OF THE CONTRACT DOCUMENTS BY ANY APPROVAL OF SHOP DRAWINGS, PRODUCT DATA, SAMPLES OR SIMILAR SUBMITTALS UNLESS THE CONTRACTOR HAS SPECIFICALLY INFORMED THE CLIENT IN WRITING OF SUCH DEVIATION AT THE TIME OF SUBMITTAL AND
      C.1. THE ARCHITECT HAS GIVEN WRITTEN APPROVAL TO THE SPECIFIC DEVIATION AS A MINOR CHANGE IN THE WORK, OR
      C.2. A CHANGE ORDER OR CONSTRUCTION CHANGE DIRECTIVE HAS BEEN ISSUED AUTHORIZING THE DEVIATION.
      C.3. THE CONTRACTOR SHALL DIRECT SPECIFIC ATTENTION IN WRITING OR ON RESUBMITTED SHOP DRAWINGS, PRODUCT DATA, SAMPLES OR SIMILAR SUBMITTALS, TO REVISIONS OTHER THAN THOSE REQUESTED BY THE ARCHITECT ON PREVIOUS SUBMITTALS. IN THE ABSENCE OF SUCH WRITTEN NOTICE, THE ARCHITECT'S APPROVAL OF A RESUBMISSION SHALL NOT APPLY TO SUCH REVISIONS.
2. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND / OR THEIR SUBCONTRACTORS TO FURNISH SHOP DRAWINGS AND SUBMITTALS ON ANY AND ALL EQUIPMENT, DUCT, DAMPERS, CONTROLS ETC. TO THE TENANT'S CONSTRUCTION MANAGER OR ARCHITECT FOR THEIR REVIEW PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOT BE RELIEVED OF RESPONSIBILITY FOR ERRORS, OMISSIONS OR OTHER DEFICIENCIES OR DEVIATIONS IN SHOP DRAWINGS, PRODUCT DATA, SAMPLES OR SIMILAR SUBMITTALS BY THE TENANT'S CONSTRUCTION MANAGER'S OR ARCHITECT'S APPROVALS THEREOF.

J. RECORD DRAWINGS

1. THE CONTRACTOR SHALL MAINTAIN ONE COPY OF DRAWINGS AND SPECIFICATIONS ON THE JOB SITE TO RECORD DEVIATIONS FROM CONTRACT DRAWINGS, SUCH AS LOCATIONS OF CONCEALED PIPING VALVES AND DUCTS, REVISIONS, ADDENDUM'S AND CHANGE ORDERS, SIGNIFICANT DEVIATIONS MADE NECESSARY BY FIELD CONDITIONS, APPROVED EQUIPMENT SUBSTITUTIONS AND CONTRACTOR'S COORDINATION WITH OTHER TRADES AND EXACT ROUTING OF ALL SANITARY AND DOMESTIC WATER PIPING UNDER FLOOR.
2. AT COMPLETION OF THE PROJECT AND BEFORE FINAL APPROVAL, THE CONTRACTOR SHALL MAKE ANY FINAL CORRECTIONS TO DRAWINGS AND CERTIFY THE ACCURACY OF EACH PRINT BY SIGNATURE THEREON. THE DRAWINGS ARE TO BE TURNED OVER TO THE TENANT.

K. GUARANTEE, WARRANTY

1. THE MECHANICAL CONTRACTOR SHALL INCLUDE IN THE PROPOSAL A ONE YEAR GUARANTEE, WARRANTY ON ALL EQUIPMENT AND MATERIAL INSTALLED OR REFURBISHED, ALL MATERIALS AND WORK UNDER THE CONTRACT AND SHALL MAKE GOOD, REPAIR, OR REPLACE AT THEIR OWN EXPENSE, ANY DEFECTIVE WORK, MATERIAL OR EQUIPMENT WHICH MAY BE DISCOVERED WITHIN A PERIOD OF 12 MONTHS FROM THE DATE OF WRITTEN ACCEPTANCE OF THE INSTALLATION BY THE TENANT'S CONSTRUCTION MANAGER. IN CASE OF REPLACEMENT OR REPAIR OF EQUIPMENT DUE TO FAILURE WITHIN THE GUARANTEE PERIOD, THE GUARANTEE ON THAT PORTION OF WORK SHALL BE EXTENDED FOR A PERIOD OF 12 MONTHS FROM THE DATE OF SUCH REPLACEMENT OR REPAIR. THIS GUARANTEE, WARRANTY IS TO INCLUDE ALL LABOR, MATERIALS, PARTS, ETC. NECESSARY TO MAINTAIN THE SYSTEM IN SATISFACTORY OPERATION FOR A PERIOD OF ONE YEAR STARTING FROM THE DATE OF ACCEPTANCE OF THE SYSTEM BY THE TENANT. IT SHALL ALSO INCLUDE ONE SUMMER TO WINTER CHANGEOVER AND ONE WINTER TO SUMMER CHANGEOVER, A NEW SET OF FILTERS AT THE TIME OF STARTUP AND TWELVE (12) MONTHLY FILTER CHANGES DURING THE FIRST YEAR. THE NORMAL PREVENTATIVE MAINTENANCE WORK SHALL BE PERFORMED AT THE TIME OF THE FILTER CHANGES. USE ONLY #40 PLEATED TYPE AIR FILTERS.

L. OPERATIONS MANUALS

1. ONE COPY OF EACH OPERATION AND MAINTENANCE MANUAL FOR ALL EQUIPMENT FURNISHED ON THE JOB SHALL BE PROVIDED TO THE TENANT BOUND TOGETHER IN A 3 INCH, THREE RING BINDER. THE BINDER SHALL INCLUDE BUT NOT BE LIMITED TO INSTALLATION, MAINTENANCE AND OPERATING INSTRUCTIONS, PAMPHLETS OR BROCHURES, REVIEWED SHOP DRAWINGS AND WARRANTIES OBTAINED FROM EACH MANUFACTURER OF PRINCIPAL ITEMS OF EQUIPMENT.

M. SLEEVES

1. THE CONTRACTOR SHALL PROVIDE SLEEVES TO PROTECT EQUIPMENT OR FACILITIES IN THE INSTALLATION. EACH SLEEVE SHALL EXTEND THROUGH ITS RESPECTIVE FLOOR, WALL, OR PARTITION AND SHALL BE CUT FLUSH WITH EACH SURFACE EXCEPT SLEEVES THAT PENETRATE THE FLOOR, WHICH SHALL EXTEND 2 INCHES ABOVE THE FLOOR.
2. ALL SLEEVES AND OPENINGS THROUGH FIRE RATED WALLS AND / OR FLOORS SHALL BE FIRE SEALED WITH APPROVED SEALANTS RATED FOR THE APPLICATION SO AS TO MAINTAIN THE FIRE RATING OF THE ASSEMBLY. CONFORM TO THE U.L. ASSEMBLY RATING OF THE FLOOR OR WALL.
3. SLEEVES IN BEARING AND MASONRY WALLS, FLOORS AND PARTITIONS SHALL BE STANDARD WEIGHT STEEL PIPE FINISHED WITH SMOOTH EDGES. FOR OTHER THAN MASONRY PARTITIONS, THROUGH SUSPENDED CEILINGS OR FOR CONCEALED VERTICAL PIPING, SLEEVES SHALL BE 22 GAUGE GALVANIZED STEEL MINIMUM.
4. DUCT SLEEVES SHALL BE MINIMUM 14 GAUGE STEEL.

N. HANGERS

1. HANGERS SHALL INCLUDE ALL MISCELLANEOUS STEEL SUCH AS ANGLE IRON, BANDS, C-CLAMPS WITH RETAINING CLIPS, CHANNELS, HANGER RODS, ETC. NECESSARY FOR THE INSTALLATION OF WORK.
2. HANGERS SHALL BE FASTENED TO BUILDING STEEL, CONCRETE, OR MASONRY, BUT NOT TO PIPING OR DUCTWORK. DUCTWORK SHALL NOT BE SUPPORTED FROM ROOF DECKING AND/OR BRIDGING, BUT SHALL BE SUSPENDED FROM THE TOP CHORD OF BAR JOISTS, STEEL OR OTHER STRUCTURE. DUCTWORK SHALL CLEAR ALL SPRINKLERS AND OTHER OBSTACLES AND SHALL BE HUNG AS HIGH AS POSSIBLE IN WORK AND STORAGE AREAS. WHERE INTERFERENCE'S OCCUR, IN ORDER TO SUPPORT DUCTWORK OR PIPING, THE CONTRACTOR MUST INSTALL TRAPEZE TYPE HANGERS OR SUPPORTS WHICH SHALL BE LOCATED WHERE THEY DO NOT INTERFERE WITH ACCESS TO FIRE DAMPERS, VALVES, ACCESS DOORS AND OTHER EQUIPMENT SERVICE REQUIREMENTS AND/OR OTHER TRADES. HANGER TYPES AND INSTALLATION METHODS ARE SUBJECT TO LANDLORD CRITERIA.
3. HANGERS FOR ALL INSULATED PIPING SHALL BE SIZED AND INSTALLED FOR THE OUTER DIAMETER OF INSULATION. INSTALL 6 INCH LONG SPLIT CIRCLE GALVANIZED SADDLE BETWEEN THE HANGER AND THE PIPE INSULATION.
4. HANGERS AND PIPING OF DISSIMILAR METALS SHALL BE DI-ELECTRICALLY SEPARATED FROM ONE ANOTHER.

O. ACCESS DOORS

1. FURNISH STEEL ACCESS DOORS AND FRAMES, MINIMUM 16 INCHES BY 20 INCHES OR AS REQUIRED FOR ADEQUATE ACCESS TO THE GENERAL CONTRACTOR FOR ALL LOCATIONS WHERE NECESSARY TO PROVIDE ACCESS TO CONCEALED VALVES AND OTHER EQUIPMENT REQUIRING SERVICE OR INSPECTION. LOCATION, TYPE, SIZE AND NUMBER WILL BE DETERMINED BY THE CONTRACTOR AND APPROVED BY THE TENANT CONSTRUCTION MANAGER TO SUIT EQUIPMENT REQUIREMENTS. GENERAL CONTRACTOR WILL INSTALL ACCESS DOORS AND FRAMES.
2. ACCESS DOORS LOCATED IN FIRE-RATED WALLS, FLOORS, CEILING-FLOOR, OR CEILING-ROOF ASSEMBLIES SHALL BE FIRE RATED, U.L. LISTED AND LABELED.
3. ACCESS DOORS SHALL BE FLUSH TYPE, MANUFACTURED FROM 14 GAUGE STEEL, COMPLETE WITH FLUSH FLANGE TYPE FRAMES MANUFACTURED FROM 16 GAUGE STEEL, PROVIDED WITH ANCHORS. ACCESS DOORS SHALL BE SUITABLE FOR INSTALLATION IN WALL OR CEILING MATERIALS SHOWN IN ROOM FINISH SCHEDULES. PROVIDE ACCESS DOORS FOR ALL CONCEALED VALVES, VENTS, DAMPERS, FIRE DAMPERS, EXPANSION JOINTS, PULL BOXES, SHOCK ABSORBERS, DRAINS, MOTORS, FANS, PUMPS AND ANY OTHER ITEM REQUIRING SERVICE. DOORS IN PLASTER OR CONCRETE SURFACES SHALL HAVE A RECESSED DOOR WITH CONCRETE OR PLASTER FACING. DOORS IN CARPETED OR TILED AREAS SHALL BE RECESSED WITH TILE FACING. NO ACCESS DOORS ARE REQUIRED IN 2' x 2' AND 2' x 4' LAY-IN ACOUSTIC TILE CEILING. PROVIDE COLORED PINS TO DENOTE ACCESS TILES. FURNISH FACTORY MADE METAL ACCESS DOORS, COMPLETELY FLUSH, "ALLAN HEAD" SCREWDRIVER OPERATED, WITH FRAMES AND CAM-TYPE CATCH WITH STAINLESS STEEL STUD. DOORS SHALL BE NOT LESS THAN 1' x 1' FOR HAND ACCESS. DOORS IN WALLS AND CEILING SHALL BE PRIME COATED CARBON STEEL. FURNISH FIRE RATED DOORS FOR FIRE RATED CONSTRUCTION. RATING OF DOOR MUST BE SAME RATING AS CONSTRUCTION.

P. ELECTRIC MOTORS

1. FURNISH, INSTALL AND ALIGN ALL MOTORS REQUIRED FOR THIS EQUIPMENT, UNLESS THEY ARE FACTORY INSTALLED ON THE UNIT. ALL STARTERS AND ASSOCIATED WIRING AND SAFETY SWITCHES FOR SUCH MOTORS SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. STARTERS SHALL MEET ALL REQUIREMENTS AS DEFINED IN THE ELECTRICAL SPECIFICATIONS.
2. DESIGN, CONSTRUCTION AND PERFORMANCE CHARACTERISTICS OF MOTORS SHALL CONFORM TO ALL APPLICABLE PROVISIONS OF LATEST NEMA, ANSI, ISEE STANDARDS FOR ELECTRICAL EQUIPMENT. ALL MOTORS SHALL BE SUITABLE FOR OPERATION ON VOLTAGE VARIATION OF PLUS OR MINUS 10 PERCENT, 40 DEGREES C AMBIENT TEMPERATURE AND HAVE A SERVICE FACTOR OF NOT LESS THAN 1.15.

Q. LOW VOLTAGE (24 VOLT) WIRING

1. THE CONTRACTOR IS TO INSTALL ALL LOW VOLTAGE WIRING REQUIRED FOR THEIR EQUIPMENT. THIS WORK INCLUDES ALL TRANSFORMERS AND DEVICES TO MAKE THIS A COMPLETE FUNCTIONAL SYSTEM.
2. ALL WORK IS TO CONFORM TO THE ELECTRICAL SPECIFICATIONS AND THE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION.
3. ANY CONDUIT REQUIRED BY CODE OR THE LANDLORD WILL BE INSTALLED BY THE ELECTRICAL SUBCONTRACTOR.
4. SMOKE DETECTORS AND REMOTE TEST STATION:
   A. IONIZING TYPE ARE TO BE USED ON THE RETURN SIDE OF THE AHU AND PHOTO-TYPE ARE TO BE USED ON THE SUPPLY SIDE. ON ALL OTHER TYPES OF HVAC UNITS WHERE SMOKE DUCT DETECTORS ARE REQUIRED, USE FIELD INSTALLED IONIZING TYPE IN RETURN DUCTWORK AND PHOTO-TYPE ON THE SUPPLY LOCATED BEFORE THE FIRST TAKEOFF. ONCE ACTIVATED, THE SMOKE DETECTOR WILL SHUT DOWN HVAC UNIT.
   B. SMOKE DETECTORS SHALL HAVE THEIR OWN REMOTE KEY TEST STATION SYSTEM WITH AUDIBLE AND VISUAL ALARM, SIMPLEX MODEL 4098-9842 OR APPROVED EQUIVALENT. ALARM TO HAVE CANDELA SETTING OF 75 AND A HIGH VOLUME HORN TONE SETTING.
   C. ALARM SYSTEM MAY BE DELETED WHERE NOT REQUIRED BY LANDLORD OR BY LOCAL CODE.

-- SPECIFIC NOTES --

A. HEATING, VENTILATION AND AIR CONDITIONING

1. BEFORE STARTING WORK, THIS CONTRACTOR SHALL EXAMINE THE ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL PLANS AND SPECIFICATIONS TO SEQUENCE, COORDINATE AND INTEGRATE THE VARIOUS ELEMENTS OF THE HVAC SYSTEM, MATERIALS AND EQUIPMENT WITH OTHER CONTRACTORS TO AVOID INTERFERENCE'S AND CONFLICTS.

B. HVAC EQUIPMENT (REFER TO PLANS FOR SCHEDULE OF EQUIPMENT)

1. PRIMARY HVAC UNITS ARE TO BE AS SCHEDULED. EQUIVALENTS MAY BE SUBSTITUTED WITH WRITTEN APPROVAL ONLY. ALL COMPRESSORS ARE TO INCLUDE A 5 YEAR EXTENDED WARRANTY.
2. ALL EQUIPMENT SHALL BE COMPLETE IN EVERY RESPECT WITH ALL DEVICES, APPURTENANCES AND ACCESSORIES PROVIDED TO MEET THE DESIGN INTENT AND OPERATION OF THE SYSTEMS SHOWN ON THE DRAWINGS AND SPECIFIED.
3. EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. ALL AIR CONDITIONING EQUIPMENT MUST HAVE A CONDENSATE DRAIN AND BE TRAPPED IN ACCORDANCE WITH MANUFACTURER'S DATA. SEE DRAWINGS FOR ADDITIONAL DETAILS.
4. SECONDARY DRAIN PANS ARE REQUIRED TO BE INSTALLED BENEATH ALL INDOOR AIR CONDITIONING EQUIPMENT WITH THE EXCEPTION OF AIR TERMINAL BOXES. SECONDARY PANS ARE TO PROTECT ENTIRE UNIT. PROVIDE CONDENSATE PUMPS AS REQUIRED. CONDENSATE SHALL BE DIRECTED TO MOP SINK, LAVATORY TRAP OR OTHER APPROVED DRAIN.

C. TOILET EXHAUST FANS

1. WHERE SHOWN ON DRAWINGS PROVIDE A TOILET EXHAUST FAN COMPLETE WITH GRAVITY BACKDRAFT DAMPER. ALL DUCTWORK, ROOF OPENINGS AND CAPS NECESSARY TO PROVIDE A COMPLETE EXHAUST SYSTEM SHALL BE PROVIDED BY THE CONTRACTOR. REFER TO PLANS FOR APPLICABILITY.

D. VIBRATION ISOLATION DEVICES

1. VIBRATION ISOLATION DEVICES SHALL BE PROVIDED IN ALL SUPPORTS BETWEEN VIBRATING EQUIPMENT (FANS, ROOFTOP UNITS, WATER SOURCE HEAT PUMPS, AIR HANDLERS, FAN POWERED VAV BOXES, ETC.) AND STRUCTURE.
2. VIBRATING EQUIPMENT HUNG FROM STRUCTURE SHALL BE ISOLATED WITH RUBBER AND SPRING DEVICES. VIBRATING EQUIPMENT SUPPORTED FROM FLOOR OR DECK SHALL BE ISOLATED WITH HOUSED SPRING MOUNT DEVICES.
3. EXAMINE DEAD LOAD AND OPERATING LOAD CONDITIONS WHEN SELECTING DEVICES. ADJUST FOR PROPER ALIGNMENT AND LOADING. AVOID "GROUNDING" THE ISOLATOR.
4. CHECK HANGER ROD SIZE FOR ALLOWABLE LOADS AT THE ISOLATING DEVICE AND THE UPPER AND LOWER ATTACHMENTS TO STRUCTURES, DUCTS, EQUIPMENT, ETC.
5. CONSULT MANUFACTURER FOR APPLICATION DATA.

E. CURBS AND STEEL FRAMING FOR SUPPORT

1. THIS CONTRACTOR WILL PROVIDE ALL NECESSARY CURBS AND STEEL FRAMING REQUIRED TO INSTALL ALL HVAC EQUIPMENT. CURBS SHALL BE A MINIMUM OF 14 INCHES HIGH AND OF THE SAME MANUFACTURER AS THE EQUIPMENT SUPPORTED. INSULATE UNDER THE COMPRESSOR SECTION TO PREVENT CONDENSATION. ALL CURBS MUST BE INSTALLED SO THAT THE TOP OF CURBS ARE "DEAD" LEVEL. ALL PENETRATIONS OF EXISTING STRUCTURE SHALL BE DONE IN ACCORDANCE WITH THE LANDLORD'S GUIDELINES AT THIS CONTRACTOR'S EXPENSE. ALL CONNECTIONS TO ROOFTOP EQUIPMENT SHALL BE INSIDE THE CURB (CONDENSATE DRAIN, POWER WIRING, CONTROL WIRING, ETC.).

F. METAL DUCTWORK - NO FIBERGLASS DUCT ALLOWED

1. NO DUCTWORK SHALL BE FABRICATED PRIOR TO APPROVAL BY THE TENANT'S CONSTRUCTION MANAGER. DEVIATIONS FROM DESIGN MUST BE APPROVED BY TENANT'S CONSTRUCTION MANAGER PRIOR TO FABRICATION OR INSTALLATION. ALL DUCT SHOWN AS ROUND ABOVE A CEILING SHALL BE LONGITUDINAL SEAM DUCT AND SPIRAL WHERE EXPOSED, OR AS SHOWN ON THE DRAWINGS.
2. ALL DUCTWORK SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH SMACNA LOW VELOCITY AND "HVAC DUCT CONSTRUCTION STANDARDS MANUAL", LATEST EDITION AND ASHRAE USING PRIME SHEETS OF GALVANIZED STEEL. CONFORM TO THE REQUIREMENTS IN THE REFERENCED STANDARD FOR METAL THICKNESS, REINFORCING TYPES AND INTERVALS, TIE ROD APPLICATIONS AND JOINT TYPES AND INTERVALS. ALL SQUARE ELBOWS SHALL BE PROVIDED WITH DOUBLE WALLED VANES ON MAXIMUM 3" CENTERS. PROVIDE SEAL CLASS "C" ON ALL TRAVERSE JOINTS UNLESS SUPERSEDED BY MORE STRINGENT LOCAL CODES. ALL DUCT CONNECTIONS ARE TO BE RIGID AND LEAK FREE ASSEMBLIES.
3. DURING THE CONSTRUCTION PHASE OF THE PROJECT, ANY DUCTWORK INSTALLED IS TO BE COMPLETELY SEALED UP OF ANY OPENINGS, EITHER AT THE BEGINNING OR END OF A DUCT RUN OR AT A BRANCH, COLLAR DIFFUSER OR REGISTER TO AVOID DIRT OR OTHER CONTAMINANTS FROM ENTERING THE SYSTEM.
4. EXCEPT WHERE OTHERWISE INDICATED, CONSTRUCT DUCT SYSTEMS TO 2-INCH WATER GAUGE PRESSURE CLASSIFICATION (VERIFY WHETHER RETURN OR EXHAUST DUCT IS POSITIVE OR NEGATIVE PRESSURE). PRESSURE TEST DUCTS FOR LEAKAGE. REMAKE LEAKING JOINTS AND APPLY SEALANTS AS REQUIRED TO FABRICATE A SYSTEM THAT DOES NOT EXCEED 5 PERCENT LEAKAGE OR LESS AS STATED BY PRESSURE CLASS RATINGS IN SMACNA STANDARDS.
5. AS A MINIMUM, CROSSBREAK ALL FLAT SURFACES OR REINFORCE WITH A BEAD APPROXIMATELY 3/8 INCH WIDE BY 3/16 INCH DEEP ON 12 INCH CENTERS TO PREVENT VIBRATIONS.
6. INSTALL RIGID ROUND AND RECTANGULAR METAL DUCT WITH SUPPORT SYSTEMS INDICATED IN SMACNA STANDARDS. NO WOOD SHALL BE USED TO SUPPORT OR BRACE DUCTS. PROVIDE SWAY AND SEISMIC BRACING AS REQUIRED BY STATE AND LOCAL CODES OR BY LANDLORD.
7. WHERE DUCTS PASS THROUGH ROOFS, FLOORS AND FIRE RATED PARTITIONS, PROVIDE AS MINIMUM 1-1/2 INCH BY 1-1/2 INCH BY 1/8 INCH STEEL ANGLE FRAMES AT EACH SIDE OF OPENING. THE ANNULAR SPACE BETWEEN DUCT AND ANGLE FRAMES SHALL BE CAULKED WITH SILICONE SEALANT OR FIREPROOFED AS REQUIRED BY THE ASSEMBLY FIRE RATING. CONTRACTOR TO PROVIDE FIRE OR COMBINATION FIRE / SMOKE DAMPERS AT EACH PENETRATION WHERE REQUIRED BY CODE.
8. ALL TRAVERSE JOINTS AND SEAMS IN SUPPLY AIR DUCT SHALL BE SEALED AIR-TIGHT WITH DAP CMC DUCT SEALER. JOINTS ALSO SHALL BE RIVETED OR CONNECTED WITH SHEET METAL SCREWS.
9. SOFT ELASTOMER BUTYL GASKETS WITH ADHESIVE BACKING SHALL BE USED TO SEAL FLANGED JOINTS.
10. DUCT TRANSITIONS SHALL NOT EXCEED 30 DEGREES SLOPE EXCEPT AS SPECIFICALLY NOTED OTHERWISE.
11. PROVIDE ACCESS TO ALL MOTORIZED DAMPERS, FIRE DAMPERS, FIRE / SMOKE DAMPERS, CONTROLS AND OTHER ITEMS IN DUCTWORK THAT REQUIRE SERVICE OR INSPECTION. IF THE ACCESS PANEL LOCATION IS EXPOSED TO THE SALES AREA, IT MUST BE APPROVED BY THE TENANT'S CONSTRUCTION MANAGER PRIOR TO INSTALLATION. LAY-IN SUPPLY AND RETURN AIR DIFFUSERS, GRILLES AND REGISTERS WITH PLASTER FRAMES MAY BE USED AS ACCESS LOCATIONS.
12. ALL BRANCHES AND TAKEOFFS SHALL BE EQUIPPED WITH MANUAL VOLUME CONTROLLING DEVICES HAVING AN INDICATING AND LOCKING DEVICE.
13. DUCT SIZES SHOWN ON PLANS ARE CLEAR INSIDE AIR STREAM DIMENSIONS.

G. FLEXIBLE CONNECTIONS

1. FLEXIBLE COLLARS SHALL BE PROVIDED IN ALL CONNECTIONS BETWEEN VIBRATING EQUIPMENT (FANS, ROOFTOP UNITS, WATER SOURCE HEAT PUMPS, AIR HANDLERS, FAN POWERED VAV BOXES, ETC.) AND DUCTS OR CASINGS. ALSO PROVIDE FLEXIBLE CONNECTIONS WHERE DUCTS CROSS BUILDING EXPANSION JOINTS.
2. FLEXIBLE CONNECTIONS SHALL BE CONSTRUCTED OF NEOPRENE-COATED FLAMEPROOF FABRIC. PROVIDE ADEQUATE JOINT FLEXIBILITY TO ALLOW FOR MOVEMENT AND PREVENT THE TRANSMISSION OF VIBRATION.
3. FLEXIBLE CONNECTIONS ARE TO BE RATED FOR THE OPERATING PRESSURE OF THE SYSTEM.
4. FINAL CONNECTIONS TO EXHAUST FAN(S) SHALL BE WITH A HEAVY AIRTIGHT ACID RESISTANT FIRE RETARDANT FIBERGLASS NEOPRENE CONNECTOR, A MINIMUM OF SIX (6) INCHES IN LENGTH. THE CONNECTOR SHALL BE FASTENED TO EQUIPMENT AND DUCT WITH TWO FLEXIBLE REMOVABLE BRASS STRAPS OR ALTERNATE APPROVED METHOD.

H. THERMOSTATS

1. MOUNT THERMOSTATS 4'-0" (ADA-COMPLIANT), THERMOSTAT SENSORS 5'-0" ABOVE FINISHED FLOORS, OR AS SHOWN ON THE PLANS, AND SET DATE, TIME, TEMPERATURE, ETC. TURN OVER OPERATING INSTRUCTIONS TO TENANT REPRESENTATIVE.

I. FIRE DAMPERS, SMOKE DAMPERS

1. THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL FIRE DAMPERS AS REQUIRED BY LANDLORD AND / OR TENANT CRITERIA AND / OR CODES HAVING JURISDICTION. ALL FIRE DAMPERS SHALL COMPLY WITH THE REQUIREMENTS OF THE BOARD OF FIRE UNDERWRITERS, THE LOCAL FIRE MARSHAL AND SHALL BE LABELED AND APPROVED BY UNDERWRITERS LABORATORIES.
2. FIRE DAMPERS SHALL HAVE THE BLADES OUT OF THE AIR STREAM AND A 165- DEGREE 'F' FUSIBLE LINK.
3. PROVIDE ALL NECESSARY FRAMING AND SLEEVES FOR DAMPER MOUNTING PER UL AND CODE REQUIREMENTS.
4. PROVIDE DUCT ACCESS DOORS IN AN ACCESSIBLE LOCATION FOR ALL FIRE DAMPERS. DOOR IS TO BE 20-GAUGE GALVANIZED DOOR WITH QUICK-OPENING LATCH AND PIANO HINGE.
5. WHERE REQUIRED BY LOCAL CODES, LANDLORD AND IF INDICATED ON DRAWINGS, PROVIDE UL555S SMOKE DAMPER WITH FIRE / HEAT / SMOKE SENSOR, REVERSIBLE MOTOR AND INTERLOCK WITH FIRE ALARM SYSTEM.

J. FLEXIBLE AIR DUCT

1. FLEXIBLE DUCT FOR CONNECTIONS SHALL BE A FACTORY FABRICATED ASSEMBLY CONSISTING OF AN INNER SLEEVE, INSULATION AND AN OUTER MOISTURE BARRIER. THE INNER SLEEVE SHALL BE CONSTRUCTED OF A CONTINUOUS VINYL COATED SPRING STEEL WIRE HELIX FUSED TO A CONTINUOUS LAYER OF FIBERGLASS IMPREGNATED AND COATED VINYL. A 1-1/4" THICK LAYER OF INSULATING BLANKET OF FIBERGLASS WOOL SHALL ENCASE THE INNER SLEEVE AND BE SHEATHED WITH AN OUTER MOISTURE BARRIER OF A BI-DIRECTIONAL REINFORCED METALIZED VAPOR BARRIER. THE FLEXIBLE DUCT SHALL BE RATED FOR A MAXIMUM WORKING VELOCITY OF 6000 FPM AND SHALL BE LISTED BY THE UNDERWRITERS LABORATORIES UNDER THEIR UL-181 STANDARDS AS A CLASS 1 DUCT AND SHALL COMPLY WITH NFPA STANDARD - 90A. THE FLEXIBLE DUCT SHALL BE THERMAFLEX M-KC OR APPROVED EQUIVALENT. FLEXIBLE DUCT SHALL ROUTE FROM SHEET METAL DUCTWORK TO CEILING DIFFUSERS ONLY. THERE SHALL BE NO EXPOSED FLEXIBLE DUCT.
2. FLEXIBLE AIR DUCT MAY ONLY BE USED IN VERTICAL APPLICATIONS WITH PRIOR APPROVAL FROM THE TENANT'S CONSTRUCTION MANAGER.
3. FLEXIBLE DUCT SHALL NOT EXTEND OVER 5 FEET IN LENGTH AT ANY ONE LOCATION.

K. SUPPLY AND RETURN AIR TAKEOFF FITTINGS

1. RECTANGULAR DUCT
   A. PROVIDE 45-DEGREE RECTANGULAR TAKEOFFS FROM MAIN DUCTWORK TO RECTANGULAR BRANCHES.
2. SPIRAL DUCT
   A. PROVIDE SADDLE OR DIRECT CONNECTION OF A BRANCH DUCT INTO A LARGER DUCT. THE DIAMETER OF THE BRANCH SHALL NOT EXCEED TWO THIRDS OF THE DIAMETER OF THE MAIN. PROTRUSIONS INTO THE MAIN ARE NOT ALLOWED.

L. DAMPERS

1. PROVIDE MANUAL LOCKING QUADRANT VOLUME CONTROL DAMPERS WITH HANDLE OPERATORS IN EACH BRANCH DUCT AND AS SHOWN ON PLANS TO FACILITATE AIR BALANCING.
2. WHERE ACCESS TO BALANCING DAMPER IS RESTRICTED OR IN AREAS WITH SHEET ROCK CEILINGS, YOUNG REGULATORS SHALL BE USED.
3. ALL RECTANGULAR DAMPERS IN OUTSIDE AIR AND RELIEF AIR DUCTS ARE TO BE OPPOSED BLADE TYPE. ALL RECTANGULAR DAMPERS IN RETURN AIR DUCTS TO BE PARALLEL BLADE TYPE. ALL OUTSIDE AIR DUCT DAMPERS MUST ALSO BE OF THE LOW LEAKAGE TYPE.
4. ALL MOTORIZED DAMPERS NOT FURNISHED WITH EQUIPMENT ARE TO BE HONEYWELL DAMPERS.

M. DIFFUSERS, GRILLES AND REGISTERS

1. PROVIDE DIFFUSERS, GRILLES AND REGISTERS AS SCHEDULED. DEVICES TO BE COMPLETE WITH FRAMES AND ALL ACCESSORIES. ALL DIFFUSERS, GRILLES AND REGISTERS IN SHEET ROCK CEILINGS TO BE PROVIDED WITH PLASTER FRAMES. FINISH TO BE COORDINATED WITH INTERIOR FINISHES.
2. INSTALL ALL AIR DEVICES AS LOCATED ON THE ARCHITECTURAL REFLECTED CEILING PLAN OR THE MECHANICAL PLAN.

N. DUCTWORK INSULATION

1. ALL NEW SUPPLY AND RETURN AIR DUCTWORK WITHIN 10' OF HVAC UNIT SHALL BE ACOUSTICALLY LINED. DUCT SIZES SHOWN ON THE DRAWING ARE INTERNAL FREE AREA SIZES. INTERNAL LINER SHALL BE 1-INCH THICK DUCT LINER EQUIVALENT TO JOHNS MANVILLE "PERMACOTE LINACOUSTIC" ("R VALUE" = 6) AND SHALL BE APPLIED TO THE DUCTWORK WITH FIRE RESISTIVE ADHESIVES AND CADMIUM OR COPPER PLATED MECHANICAL FASTENERS.
2. 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. OUTDOORS; 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 OPENINGS TO THE OUTSIDE OR UNCONDITIONED SPACES; OR
   D. IN AN UNCONDITIONED CRAWLSPACE; OR
   E. IN OTHER UNCONDITIONED SPACES.
3. LEADING EDGES OF DUCT INSULATION SHALL BE OVERLAPPED BY ADJOINING INSULATION AT LEAST 6 INCHES MINIMUM AND THEN SEALED WITH FOIL VAPOR BARRIER ADHESIVE AND DUCT MASTIC SO THAT NO FIBERGLASS INSULATION IS VISIBLE.
4. ALL INSULATION ON EXISTING PIPING OR DUCTS THAT BECOMES WET, DAMAGED, DISTURBED OR GETS REMOVED SHALL BE REPLACED.
5. INSTALL INSULATION PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES. INSULATION MUST COMPLY WITH NFPA 90A.
6. ALL INSULATION SHALL HAVE A FLAME SPREAD RATING OF NOT MORE THAN 25 AND A SMOKE DEVELOPED RATING OF NO HIGHER THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM TEST: C411 OR AS REQUIRED BY LOCAL CODES.
7. EXTERIOR SUPPLY AND RETURN DUCT INSULATION:
   A. SERVICE: RECTANGULAR, SUPPLY-AIR AND RETURN-AIR DUCTS.
      A.1. MATERIAL: INSULATION BOARD, 6 PSF MINIMUM AND PLAIN FACING.
      A.2. THICKNESS: 2 INCHES.
      A.3. NUMBER OF LAYERS: TWO.
      A.4. TOTAL THICKNESS = 4".
      A.5. VAPOR RETARDER REQUIRED: YES.
   B. INORGANIC GLASS FIBERS PREFORMED AND BONDED BY THERMOSETTING RESIN. MUST COMPLY WITH ASTM C 612, TYPE 1A & 1B, KNAUF INSULATION OR APPROVED EQUIVALENT.
   C. INSULATION INSTALLED OUTDOORS: FLAME SPREAD RATING OF 25 OR LESS AND SMOKE DEVELOPED RATING OF 50 OR LESS.
8. APPLY INSULATION AS FOLLOWS:
   A. APPLY TWO-LAYER INSULATION WITH JOINTS TIGHTLY BUTTED AND STAGGERED AT LEAST 3 INCHES. SECURE LAYERS WITH ADHESIVE, MECHANICAL FASTENERS OR BANDING. FASTENERS SHALL BE LOCATED A MAXIMUM OF 3" FROM EACH EDGE AND NO GREATER THAN 12" APART.
   B. ON EXPOSED APPLICATIONS, FINISH INSULATION WITH A SKIM COAT OF MINERAL-FIBER, HYDRAULIC-SETTING CEMENT TO SURFACE OF INSTALLED INSULATION. WHEN DRY, APPLY FLOOD COAT OF LAGGING ADHESIVE AND PRESS ON ONE LAYER OF GLASS CLOTH OR TAPE. OVERLAP EDGES AT LEAST 1 INCH (25 MM). APPLY FINISH COAT OF LAGGING ADHESIVE OVER GLASS CLOTH OR TAPE. THIN THE FINISH COAT TO ACHIEVE SMOOTH FINISH. OUTDOOR JACKET: POLYGUARD PRODUCTS, INC. 'ALUMAGUARD 60' OR MFM BUILDING PRODUCTS CORP. 'FLEXCLAD 400'.

O. SYSTEM CLEANOUT

1. UPON COMPLETION OF INSTALLATION, CLEAN ENTIRE SYSTEM BEFORE INSTALLING AIR OUTLETS. CONTRACTOR TO PROVIDE A CERTIFICATION THAT CLEANING WAS ACCOMPLISHED PRIOR TO PROJECT CLOSEOUT.
2. FILTERS MUST BE IN UNITS AT ANY TIME FANS ARE OPERATED.

P. SYSTEM TESTING, ADJUSTING AND BALANCING

1. TESTING, ADJUSTING AND BALANCING OF ALL WORK SHALL BE COMPLETED BY AN INDEPENDENT CONTRACTOR WHO IS CURRENTLY LICENSED BY THE ASSOCIATED AIR BALANCING COUNCIL (AABC) OR NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB). NO OTHER BALANCE REPORTS WILL BE REVIEWED OR ACCEPTED. ALL BALANCING WORK MUST BE COMPLETE AND DONE IN ACCORDANCE WITH THE MOST RECENT STANDARDS OF THEIR SOCIETY. PAYMENT OF ALL COSTS FOR TESTING SHALL BE MADE BY THE HVAC CONTRACTOR.
2. THE CONTRACTOR SHALL INSTALL NEW FILTERS IN ALL UNITS PRIOR TO THE AIR BALANCING. THE COMPLETE AIR BALANCE SHALL TAKE PLACE WITH OUTSIDE AIR DAMPERS IN MINIMUM POSITION.
3. BALANCE AIR AND WATER QUANTITIES TO WITHIN PLUS OR MINUS 5 PERCENT OF THAT INDICATED ON THE DRAWINGS. ANY REQUIRED CHANGES IN SHEAVES, BELTS, PULLEYS OR THE ADDITION OF DAMPERS REQUIRED TO ACHIEVE SPECIFIED FLOW RATES SHALL BE PROVIDED BY THE HVAC CONTRACTOR WITH NO ADDITIONAL COST TO THE TENANT.
4. THE BALANCE REPORT SHALL INCLUDE AS A MINIMUM THE FOLLOWING INFORMATION:
   A. AABC OR NEBB CERTIFICATION NUMBER AND SIGNATURE OF BALANCING CONTRACTOR.
   B. INSTRUMENTATION LIST WITH LAST CALIBRATION DATES.
   C. MAKE AND MODEL NUMBERS OF ALL HVAC EQUIPMENT TESTED.
   D. AIR CFM AND STATIC PRESSURE READINGS (DISCHARGE AND SUCTION) AS MEASURED BY PITOT TUBE DUCT TRAVERSE AT THE UNITS.
   E. MOTOR NAMEPLATE DATA WITH ACTUAL FIELD VOLTAGE AND AMPERAGE READINGS FOR EACH LEG.
   F. MOTOR AND FAN RPM, SHEAVE SIZES AND BELT SIZES AND LENGTHS.
   G. OUTSIDE, RETURN, MIXED AND SUPPLY AIR TEMPERATURES AT FULL COOLING.
   H. WATER BALANCE DATA INCLUDING GPM WITH INLET AND OUTLET TEMPERATURE AND PRESSURE READINGS.
   I. MAKE AND MODEL NUMBERS OF ALL AIR DISTRIBUTION EQUIPMENT.
   J. FINAL BALANCED AIR VOLUMES AT ALL OUTLETS (INCLUDING RETURNS WHERE DUCTED).
   K. INDEXED PLAN WITH DIFFUSER AND RETURN LOCATIONS.
5. ALL CONTROL SEQUENCES SHALL BE TESTED AND OPERATING STATUS RECORDED IN THE REPORT.
6. THREE COPIES OF THE BALANCE REPORT SHALL BE SUBMITTED THROUGH THE GENERAL CONTRACTOR TO THE TENANT'S CONSTRUCTION MANAGER FOR REVIEW AND COMMENT.
7. THE BALANCING CONTRACTOR SHALL PERFORM ALL APPLICABLE TESTING AND BALANCING FUNCTIONS REQUIRED FOR THE SYSTEM DESIGNED IN THESE DRAWINGS. THE BALANCING CONTRACTOR SHALL RECHECK ANY ITEMS THAT THE TENANT DEEMS NECESSARY AT NO ADDITIONAL COST TO THE TENANT.
8. FINAL BALANCE REPORT SHALL BE INCLUDED IN THE OPERATION AND MAINTENANCE MANUAL.

Q. FINAL HVAC INSPECTIONS

1. ASIDE FROM NORMAL INTERIM INSPECTIONS OF WORK IN PLACE, THE TENANT SHALL HAVE THE RIGHT TO HAVE AN INDEPENDENT HVAC CONTRACTOR INSPECT THE FINISHED HVAC INSTALLATION UPON COMPLETION FOR COMPLIANCE WITH THE PLANS, SPECIFICATIONS AND CODES. THE INSTALLING CONTRACTOR WILL BE RESPONSIBLE TO BRING ALL ITEMS REPORTED BY THE INDEPENDENT HVAC CONTRACTOR UP TO PLANS AND SPECIFICATIONS REQUIREMENTS AT NO ADDITIONAL COST TO THE TENANT.

R. INDOOR AIR QUALITY

1. NO ANALYSIS HAS BEEN MADE WITH REGARD TO SOURCES OR POTENTIAL SOURCES OF INDOOR OR OUTDOOR AIR CONTAMINANTS OR LEVELS OF CONTAMINATION.
2. IT IS THE RESPONSIBILITY OF THE GENERAL AND MECHANICAL CONTRACTOR TO INFORM THE TENANT'S REPRESENTATIVE, LANDLORD AND TENANT'S ARCHITECT IF ANY SOURCE OR POTENTIAL SOURCE OF INDOOR AIR CONTAMINATION IS IDENTIFIED.
3. PRIOR TO ENCLOSING SPACES SUCH AS PLUMBING CHASES, AIR SHAFTS AND RETURN AIR PLENUMS CLEAN ALL AREAS THOROUGHLY. THE CONTRACTOR SHALL GUARANTEE THAT THE PLENUM CHAMBER USED FOR RE-CIRCULATING OF AIR WILL BE OF TIGHT CONSTRUCTION AND THAT ALL SOURCES OF CONTAMINATION FROM TRAPS, SOIL STACKS, DOWNSPOUTS, VENTS, EXHAUST DISCHARGES AND OTHER SOURCES WILL BE ENCLOSED SO THAT NO CONTAMINATED AIR WILL BE RE-CIRCULATED.
4. PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES SHUT OFF THE HVAC SYSTEM, BLOCK OFF ALL AIR GRILLS, DIFFUSERS AND OTHER OPENINGS OUTSIDE THE IMMEDIATE CONSTRUCTION AREA. OPENINGS TO ADJACENT TENANT SPACES SHALL BE COVERED WITH FILTER MEDIA TO PREVENT DUST AND OTHER AIRBORNE CONTAMINANTS FROM PASSING TO ADJOINING SPACES.
5. CONTRACTOR TO INSTALL TEMPORARY EXHAUST SYSTEM TO VENTILATE CONSTRUCTION SITE AND KEEP SITE UNDER SLIGHT NEGATIVE PRESSURE DURING ALL HOURS OF CONSTRUCTION, EVEN IF AFTER NORMAL BUSINESS HOURS.
6. CONTRACTOR TO INSTALL TEMPORARY BARRIERS TO PROTECT ADJACENT SPACES FROM DUST, PARTICULATES, VAPORS AND NOISE. WHERE TEMPORARY BARRIERS ARE INSTALLED ALWAYS MAINTAIN FIRE EXITS AND EXITWAYS.

THERMOSTATIC CONTROLS:

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. 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.
      C. 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.

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. SMOKE DETECTION SYSTEMS SHALL BE INSTALLED AND SEQUENCED TO FOLLOW CONTROLS OPERATIONS WITH THE REQUIREMENTS OF SECTION 609 OF CALIFORNIA MECHANICAL CODE 2022 TO CLOSE DAMPERS AND AUTOMATICALLY STOP THE FAN.
6. REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED FIRE-RATED WALL AND SMOKE WALL CONSTRUCTION AND LOCATION.
7. 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.
8. 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
   B. SMOKE CONTROL SYSTEMS - CALIFORNIA MECHANICAL CODE 2022 - 609
9. 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 - 609
10. ALL MECHANICAL EQUIPMENT SHALL BE TESTED BY A CALIFORNIA CERTIFIED ACCEPTANCE TEST TECHNICIAN.

ABBREVIATIONS

A/C	ABOVE CEILING
AD	ACCESS DOOR
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AUTO	AUTOMATIC
AC	AIR CONDITIONING
AHU	AIR HANDLING UNIT
BAL	BALANCING
BDD	BACKDRAFT DAMPER
B/F	BELOW FLOOR
B/G	BELOW GRADE
B'FLY	BUTTERFLY
BHP	BRAKE HORSEPOWER
BCO	BASE CLEANOUT
CFM	CUBIC FEET PER MINUTE
CBCR	CURVED BLADE CEILING REGISTER
CSD	CEILING SUPPLY DIFFUSER
CU	CONDENSING UNIT
CW	COLD WATER (DOMESTIC)
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
CWS	CONDENSER WATER SUPPLY
CWR	CONDENSER WATER RETURN
CON	CONCENTRIC
CO	CLEANOUT
COND	CONDENSATE
db	DRY BULB
DN	DOWN
DR	DRAIN
do	DITTO
dB	DECIBELS
DWG	DRAWING
EA	EACH
EAT	ENTERING AIR TEMPERATURE
ECC	ECCENTRIC
EF	EXHAUST FAN
EOD	EMERGENCY OVERFLOW DRAIN
ER	EXHAUST REGISTER
ESP	EXTERNAL STATIC PRESSURE
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
EFF	EFFICIENCY
EG	EXHAUST AIR GRILLE
F	FAHRENHEIT
FCO	FLOOR CLEAN OUT
FCU	FAN COIL UNIT
FSD	FIRE/SMOKE DAMPER
FD	FIRE DAMPER OR FLOOR DRAIN
FL DR	FLOOR DRAIN (only)
FLR	FLOOR
FOB	FLAT ON BOTTOM
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOT	FLAT ON TOP
FPM	FEET PER MINUITE
FPS	FEET PER SECOND
FT	FEET
G	GATE
GA	GAUGE
GPM	GALLONS PER MINUTE
GL	GLOBE
GCO	GRADE CLEANOUT
HD	HUB DRAIN
HP	HORSEPOWER
HTG	HEATING
HW	HOT WATER (DOMESTIC)
HWR	HOT WATER RETURN
HWRR	HOT WATER REVERSE RETURN
HWS	HOT WATER SUPPLY
Hz	HERTZ
ID	INSIDE DIMENSION
IN	INCHES
KW	KILOWATTS
LAT	LEAVING AIR TEMPERATURE
LB	POUNDS
LG	LINEAR GRILLE
LRG	LINEAR RETURN GRILLE
LWR	LOOP WATER RETURN
LWS	LOOP WATER SUPPLY
MIN	MINIMUM
MAX	MAXIMUM
MD	MANUAL DAMPER
MOD	MOTOR OPERATED DAMPER
MFR	MANUFACTURER
NC	NORMALLY CLOSED
NG	NATURAL GAS
NFWH	NON-FREEZE WALL HYDRANT
NO	NORMALLY OPEN
NOM	NOMINAL
OA	OUTSIDE AIR
OD	OUTSIDE DIMENSION
OBD	OPPOSED BLADE DAMPER
PIU	POWERED INDUCTION UNIT
PSI	POUNDS PER SQUARE INCH
RA	RETURN AIR
RAD	RADIUS
RG	RETURN AIR GRILLE
RED	REDUCER
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION / RETURN SLOTS
RTU	ROOFTOP UNIT
RR	RETURN REGISTER
SP	STATIC PRESSURE
SPS	STATIC PRESSURE SENSOR
SA	SUPPLY AIR
SAN	SANITARY
SD	SMOKE DAMPER / SLOT DIFFUSER
SEN	SENSIBLE
SQ	SQUARE
SR	SUPPLY REGISTER
ST	STORM
SS	SPLIT SYSTEM
SG	SUPPLY AIR GRILLE
TEMP	TEMPERATURE
TG	TRANSFER GRILLE
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
V	VENT
VA	VALVE
VTR	VENT THRU ROOF
VAV	VARIABLE AIR VOLUME
wb	WET BULB
WC	WATER COLUMN
WHA	WATER HAMMER ARRESTOR
WT	WEIGHT
W	WASTE

EVEREVE

TITLE:
MECHANICAL GENERAL NOTES AND ABBREVIATIONS

SHEET NUMBER:
M-001

Property of MV Engineers

ALL PENETRATIONS OF FIRE RATED CONSTRUCTION MUST BE RENEWED PER MANUFACTURER'S DETAILS OF THE SEALANT. THE DETAILS SHALL MEET OR EXCEED RATINGS OF CONSTRUCTION BEING PENETRATED. PENETRATION DETAILS SHALL BE EXACTLY AS TESTED BY AN APPROVED TESTING LABORATORY OR AGENCY AND SHALL INCLUDE THEIR SYSTEM NUMBERS.

TENANT SHALL SECURE A CONTRACT FOR FACTORY RECOMMENDED MAINTENANCE AND SERVICE OF THE HVAC UNITS SERVING THE PREMISES. A COPY OF THIS CONTRACT MUST BE DELIVERED TO THE LANDLORD'S ON-SITE MANAGEMENT STAFF PRIOR TO STORE OPENING.

AIR TEST AND BALANCE REPORT FOR SUPPLY, RETURN, OUTDOOR AIR INTAKE AND EXHAUST SYSTEMS TO QUANTITIES INDICATED, WITHIN 10% TOLERANCE, SUBMIT 3 REPORTS FROM INDEPENDENT TESTING AGENCY STATING EACH SYSTEM COMPLIANCE AND APPROVAL AUTHORIZATION.

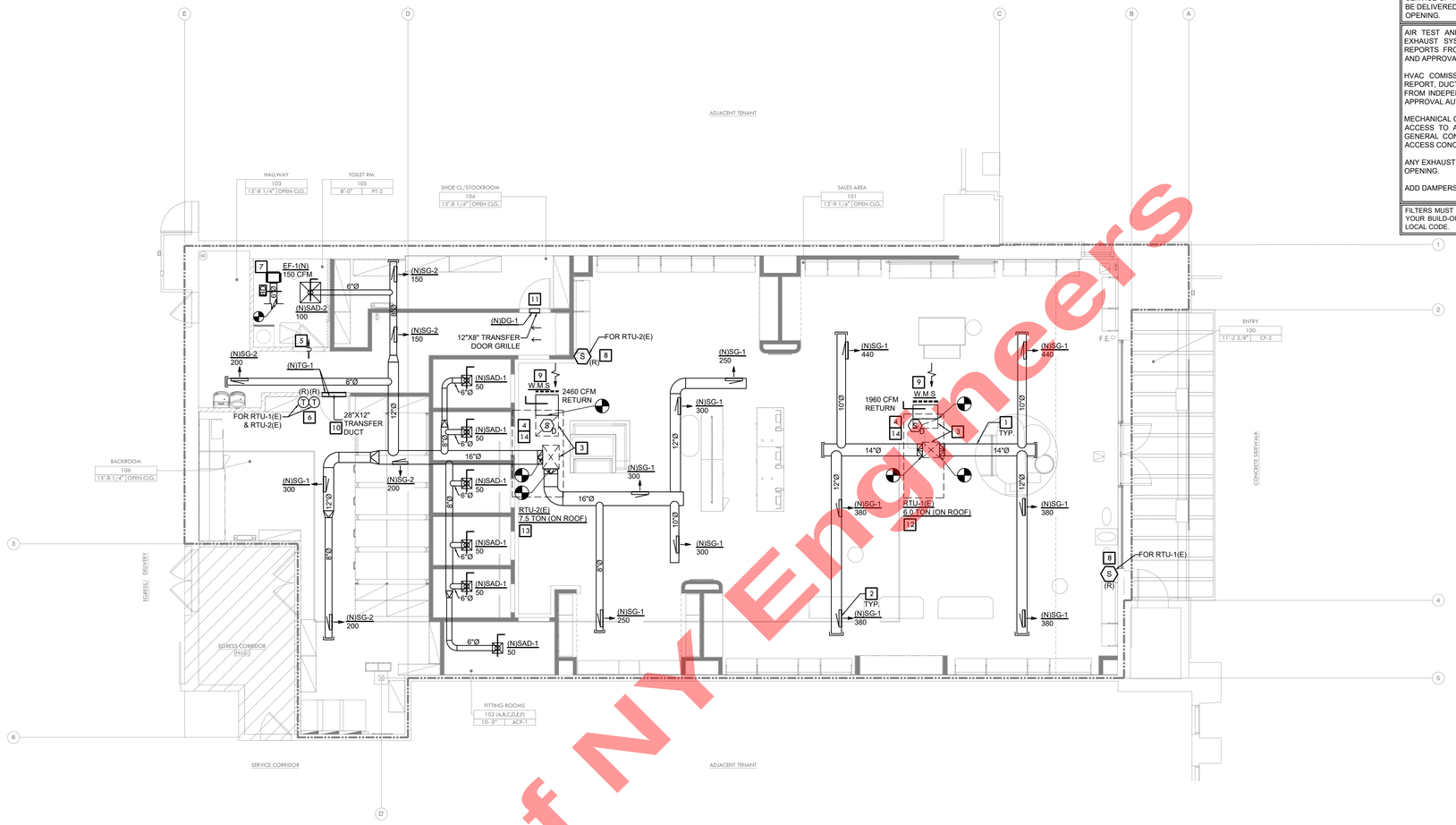
HVAC COMISSIONING FOR EACH HVAC SYSTEM, INCLUDING AIR TEST AND BALANCE REPORT, DUCTWORK, HVAC UNITS/EQUIPMENT, AND HVAC CONTROLS. SUBMIT 3 REPORTS FROM INDEPENDENT COMMISSIONING AGENCY STATING EACH SYSTEM COMPLIANCE AND APPROVAL AUTHORIZATION.

MECHANICAL CONTRACTOR AND GENERAL CONTRACTOR TO COORDINATE AND PROVIDE ACCESS TO ALL MECHANICAL UNITS FOR SERVICING. MECHANICAL CONTRACTOR AND GENERAL CONTRACTOR TO REVIEW ACCESS SCOPE AND REPORT ANY CONFLICTS OR ACCESS CONCERNS TO ARCHITECT AND ENGINEER IMMEDIATELY.

ANY EXHAUST DUCT MUST BE ATLEAST 10'-0" AWAY FROM ANY FRESH OUTSIDE AIR INTAKE OPENING.

ADD DAMPERS TO ALL THE GRILLS AND DIFFUSERS. BALANCE TO SCHEDULED AIRFLOW.

FILTERS MUST BE CHANGED AND ALL DUCT DETECTORS, IF EXISTING, MUST BE CLEANED WHEN YOUR BUILD-OUT CONSTRUCTION IS COMPLETED. REPLACE THE FILTER AS REQUIRED BY THE LOCAL CODE.



1 MECHANICAL FLOOR PLAN
3/16" = 1'-0"

MECHANICAL LEGEND

- CEILING SUPPLY AIR DIFFUSER (SAD)
- CEILING SUPPLY AIR DIFFUSER WITH BLANK-OFF SECTION
- EXHAUST FAN
- DUCT MOUNTED GRILLE
- WALL TRANSFER GRILLE (TG)
- THERMOSTAT
- TEMPERATURE SENSOR
- NEW DUCTWORK
- EXISTING DUCT TO REMAIN
- BD — GRAVITY DAMPER
- AHU — AIR HANDLING UNIT
- RTU — ROOF TOP UNIT
- EXISTING DIFFUSER/DUCT LOCATION
- NEW FLEX DUCT
- VD — VOLUME DAMPER
- VD1 — VOLUME DAMPER W/ REMOTE OPERATOR
- SAD 100 — TYPE OF AIR DEVICE / AIR QUANTITY (CFM)
- Z x Y — X, INCHES, SIDE OF DUCT SHOWING
- M — MOTORIZED DAMPER
- S — DUCT MOUNTED SMOKE DETECTOR
- (E) — EXISTING
- (R) — RELOCATE
- (N) — NEW
- FIELD CONNECTION
- FIELD DISCONNECTION
- U — DOOR UNDER CUT
- SUPPLY AIR FLOW
- RETURN AIR FLOW

NOTE:
SYMBOL LIST SHOWN IS FOR GENERAL REFERENCE ONLY. THE PRESENCE OF A SYMBOL DOES NOT IMPLY ITS USE ON THIS PROJECT. REFER TO DRAWINGS FOR SPECIFIC SYMBOLS USED.

KEY NOTES

1	FURNISH AND INSTALL GALVANIZED STEEL DUCTWORK. ALL SIZES SHOWN ARE CLEAR INTERNAL DIMENSIONS. SEE DUCT CONSTRUCTION SPECIFICATION FOR INSULATION REQUIREMENTS.
2	PROVIDE AND INSTALL GRILLE/ DIFFUSER ALONG WITH VOLUME DAMPER. CONTRACTOR SHALL BALANCE THE CFM AS SHOWN ON PLAN. COORDINATE WITH ARCHITECT/CLIENT FOR FINAL COLOR, STYLE, FINISH, FRAME ETC.
3	EXISTING DUCT PENETRATION FROM THE RTU TO REMAIN, CONTRACTOR SHALL CLEAN AND REFURBISH TO "LIKE NEW" CONDITION. VERIFY EXACT LOCATION CONNECT TO NEW DUCTWORK AS SHOWN ON THE PLAN. INSPECT, PATCH, REPAIR, AND/OR REPLACE INSULATION AS REQUIRED. COORDINATE IN FIELD PRIOR TO BID.
4	CONTRACTOR SHALL CLEAN AND REFURBISH EXISTING DUCT SMOKE DETECTOR IN RETURN AIR DUCTWORK TO "LIKE NEW" CONDITION. ENSURE SMOKE DETECTOR IS IN GOOD WORKING ORDER. REPLACE IN KINDS IF DAMAGED. PROVIDE NEW IF REQUIRED. UPON DETECTION OF SMOKE, DETECTOR SHALL SHUT DOWN UNIT. ELECTRICAL CONTRACTOR TO PROVIDE ALL WIRING CONNECTIONS. SMOKE DETECTOR SHALL BE COMPLIANT WITH LOCAL CODES. CONNECT TO TENANT'S FIRE ALARM PANEL AS REQUIRED. FIELD VERIFY EXACT LOCATION AND REQUIREMENTS PRIOR TO BID.
5	CONTRACTOR TO PROVIDE 1" DOOR UNDERCUT FOR AIR TRANSFER.
6	EXISTING THERMOSTAT AND RELATED WIRING TO CONTROL RTU TO BE RELOCATED AS SHOWN. MOUNT AT 48" AFF. VERIFY PROPER OPERATION IN FIELD. COORDINATE EXACT LOCATION WITH ARCHITECT. THE ENTIRE CONTROL SYSTEM SHALL BE PROVIDED COMPLETE IN EVERY RESPECT BY THE MECHANICAL CONTRACTOR.
7	PROVIDE NEW CEILING MOUNTED EXHAUST FAN WITH INTEGRATED GRILLES. COORDINATE WITH MANUFACTURER TO PROVIDE GRILLE FOR THE EXHAUST FAN CABINET. PROVIDE WITH GRAVITY DAMPER & CONNECT TO EXISTING EXHAUST DUCTWORK ALONG WITH TERMINATION. COORDINATE EXACT LOCATION, DISTANCE, & CONNECTION POINT IN FIELD. ENSURE TERMINATION OF THE EXHAUST DUCT AT ROOF PROVIDED WITH GOOSENECK AND INSECT SCREEN AND MINIMUM 10' AWAY FROM ANY FRESH AIR INTAKE.
8	EXISTING TEMPERATURE SENSORS TO BE RE-USED & RELOCATED. CONTRACTOR TO VERIFY IN FIELD, REPLACE IN KINDS IF DAMAGED. COORDINATE WITH EXISTING UNIT MANUFACTURER FOR COMPATIBLE CONTROLS AS REQUIRED.
9	PROVIDE WITH WIRE MESH WITH FULL DUCT SIZE AS SHOWN ON THE RETURN AIR DUCT. BALANCE THE RETURN AIR USING VOLUME DAMPER AS SHOWN.
10	IF WALL IS FULL HEIGHT CONTRACTOR SHALL PROVIDE NEW TRANSFER DUCT OF 28X12" WITH SAME SIZE GRILLE (TITUS-350RL) ON BOTH SIDES. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR WALL STRUCTURE PRIOR TO BID, IDENTIFY EXACT LOCATION ON SITE AND COORDINATE THE GRILLE COLOR, FINISH WITH ARCHITECT/OWNER.
11	PROVIDE DOOR GRILLE OF SIZE 12X8". COORDINATE WITH ARCHITECT FOR THE GRILLE COLOR, FINISH.
12	EXISTING MECHANICAL ROOFTOP UNIT (E)RTU-1 TO REMAIN. CLEAN AND REFURBISH TO "LIKE-NEW" CONDITION. REPAIR/REPLACE ANY ACCESSORIES AS REQUIRED TO PROVIDE A FULLY FUNCTIONING UNIT. VERIFY IN FIELD PRIOR TO BID. ENSURE UNIT IS BALANCED TO 2400CFM PER EXISTING AS-BUILT CONDITIONS AND BALANCE OUTSIDE AIR DAMPER TO 440 CFM. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO BID AND START OF WORK.
13	EXISTING MECHANICAL ROOFTOP UNIT (E)RTU-2 TO REMAIN. CLEAN AND REFURBISH TO "LIKE-NEW" CONDITION. REPAIR/REPLACE ANY ACCESSORIES AS REQUIRED TO PROVIDE A FULLY FUNCTIONING UNIT. VERIFY IN FIELD PRIOR TO BID. ENSURE UNIT IS BALANCED TO 3000CFM PER EXISTING AS-BUILT CONDITIONS AND BALANCE OUTSIDE AIR DAMPER TO 540 CFM. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO BID AND START OF WORK.
14	CONTRACTOR TO FIELD VERIFY THE EXACT LOCATION OF THE EXISTING ROOFTOP UNIT AND ITS PENETRATIONS.

GENERAL NOTES

1. ALL AIR DISTRIBUTION DEVICES SHALL BE COORDINATED WITH THE ARCHITECTURAL RCP & LIGHTING LAYOUT.
2. COORDINATE ALL WORK ON OTHER FLOORS AND IN OTHER TENANT SPACES WITH OWNERS REP. SO THAT WORK DOES NOT INTERFERE WITH OTHER TENANTS.
3. COORDINATE THE EXACT LOCATION OF ALL THERMOSTATS WITH FINAL FURNITURE LAYOUT, EQUIPMENT LAYOUT, ARCH AND OWNERS REPRESENTATIVE. CONTRACTOR SHALL TIE NEW T-STATS INTO BUILDING EMS AND UPDATE IT ACCORDINGLY.
4. PROVIDE ALL MANUFACTURER AND NEC REQUIRED CLEARANCE FOR ALL EQUIPMENT.
5. ENSURE ALL NEW BUILDING VENTS ARE FITTED WITH ANIMAL SCREENS EXCEPT OTHERWISE NOTED.
6. CONTRACTOR SHALL BALANCE EACH DEVICE WITH THE CFM SHOWN ON PLAN.
7. NEW DUCTWORK SHOWN ON 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.
8. EQUIPMENT SIZES, DIMENSIONS AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE ACTUAL EQUIPMENT SELECTED VENDOR DRAWINGS BEFORE FABRICATION OF DUCTWORK, PIPING ETC.
9. DUCT SIZES SHOWN ON PLANS ARE CLEAR INSIDE AIR STREAM DIMENSIONS.
10. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS FOR ALL HVAC BASED ON ACTUAL EQUIPMENT SELECTED PRIOR TO INSTALLATION.
11. CONTRACTOR SHALL COORDINATE EQUIPMENT WEIGHTS AND SUPPORTS BASED ON ACTUAL EQUIPMENT SELECTED.
12. MOUNT DUCTWORK AS HIGH AS POSSIBLE.
13. TEST AND BALANCE AIR SYSTEMS. PROVIDE REPORT TO G.C AND OWNER.
14. NEW DUCTWORK IN CONCEALED AREAS MAY BE RECTANGULAR WITH EQUIVALENT CROSS SECTIONAL FLOW AREA.
15. PROVIDE FIRE OR FIRE+SMOKE DAMPER WHEREVER DUCTS ARE CROSSING FIRE/SMOKE RATED WALLS/BARRIERS/ROOF PENETRATIONS. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR FIRE RATINGS OF THE WALLS.
16. PROVIDE CABLE OPERATED DAMPER IN INACCESSIBLE CEILINGS.
17. COORDINATE FINAL LOCATION OF ALL HAVC EQUIPMENT WITH STRUCTURAL ENGINEER/ OWNER/ ARCHITECT.
18. PROVIDE ACCESS DOOR FOR HVAC UNITS & FANS)AS PER MANUFACTURER RECOMMENDATIONS.
19. R-6 INSULATION (INTERNAL FOR EXPOSED DUCTS AND EXTERNAL FOR CONCEALED DUCTS) FOR SUPPLY & RETURN AIR DUCTS. PROVIDE ACOUSTIC INSULATION ON MAIN SUPPLY AND RETURN DUCTS UP TO 10 FT.FROM HVAC UNIT.
20. FLEX DUCT MUST NOT EXCEED 5'-0" IN LENGTH.
21. ALL EXPOSED DUCTWORKTO BE INTERNALLY OR EXTERNALLY WRAPPED AND PAINTED. THE DUCT DIMENSION SHOWN ARE CLARE INSIDE DIMENSION. COORDINATE WITH ARCHITECT FOR THE COLOR.

EXISTING UNIT REUSE

EXISTING HVAC EQUIPMENT REMAINING IN USE

1. EXISTING HVAC EQUIPMENT BEING REUSED SHALL BE INSPECTED AND TESTED AS RECOMMENDED BY THE EQUIPMENT MANUFACTURERS' IOM. INSPECTION AND TESTING SHALL BE IN THIS CONTRACTOR'S BASE BID, INCLUDING BUT NOT LIMITED TO:

A. INSPECT UNIT CABINET, VENTS, AND REFRIGERANT LINES AND INSULATION.
B. GAS HEATING UNITS: INSPECT GAS TRAIN FOR LEAKS, INSPECT GAS HEAT EXCHANGER, AND GAS IGNITION SYSTEM.
C. TEST ALL COMPONENTS FOR EXCESS VIBRATION.
D. INSPECT FAN MOTORS, BLOWERS, AND BLADES. ENSURE CORRECT FAN ROTATION.
E. LUBRICATE MOVING PARTS.
F. TEST UNIT CONTROLS, INCLUDING BUT NOT LIMITED TO: HEATING AND COOLING CONTROL AND UNIT RESPONSE, RETURN, AND OUTSIDE AIR.
G. CLEAN AIR-SIDE OF EVAPORATOR COIL(S), FLUSH CONDENSING COIL(S) CLEAN WITH WATER. COMB BENT EVAPORATOR AND CONDENSER COIL FINS.
H. TEST FAN BELT(S) TENSION, REPLACE WORN BELT(S) AND PULLEYS.
I. INSPECT AND TEST REFRIGERANT SYSTEM: RUN COMPRESSOR, TEST SYSTEM PRESSURE, AND CHECK FOR LEAKS.
J. CLEAN AND FLUSH CONDENSATE DRAIN PAN AND CONDENSATE DRAIN PIPING.

2. AFTER INSPECTION AND TESTING, THIS CONTRACTOR SHALL PROVIDE OWNER WITH AN ITEMIZED LIST OF EQUIPMENT REPAIRS AND REPAIR COSTS NOT INCLUDED IN BASE BID MAINTENANC

BID NOTE:

THE CONTRACTOR SHALL VERIFY THE EXISTING DUCTWORK CONDITIONS ON SITE AND PROVIDE ALTERNATIVE PRICING FOR RETAINING THE EXISTING DUCTWORK WHEREVER FEASIBLE. FINAL DECISION ON REUSING THE EXISTING RECTANGULAR DUCTWORK SHALL BE COORDINATED WITH THE ARCHITECT.

DEMOLITION NOTE

CONTRACTOR SHALL DEMOLISH ALL THE EXISTING DUCTWORK ALONG WITH SUPPORTS UPON FINAL CONFIRMATION FROM THE ARCHITECT/ CLIENT.

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EVEREVE

TITLE:
MECHANICAL FLOOR PLAN

SHEET NUMBER:
M-100

EXISTING GAS FIRED ROOF TOP UNIT SCHEDULE

UNIT ID	MANUFACTURER	MODEL	AREA SERVED	NOMINAL TONS	SUPPLY FAN			HEATING		COOLING							ELECTRICAL					APPROX.WEIGHT LBS
					TOTAL	OUTSIDE	ESP	GAS HEATING		TOTAL	SENSIBLE	AMBIENT	ENTERING	LEAVING	EER	IEER	VOLTS	PHASE	Hz	MCA(A)	MOCP(A)	
					CFM	AIR CFM	IN OF WC	INPUT MBH	OUTPUT MBH	MBH	MBH	DB (˚F)	DB / WB(˚F)	DB / WB(˚F)								
RTU-1(E)	LENNOX (V.I.F)	KGB074S4TM3Y (V.I.F)	SEE PLAN	6.0 (V.I.F)	2400	440	S.A.E	108 (V.I.F)	86 (V.I.F)	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	208/230 (V.I.F)	3 (V.I.F)	60 (V.I.F)	35 (V.I.F)	50 (V.I.F)	S.A.E
RTU-2(E)	LENNOX (V.I.F)	KGC092S4MS1Y (V.I.F)	SEE PLAN	7.5 (V.I.F)	3000	540	S.A.E	130 (V.I.F)	104 (V.I.F)	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	208/230 (V.I.F)	3 (V.I.F)	60 (V.I.F)	42 (V.I.F)	50 (V.I.F)	S.A.E

NOTES / ACCESSORIES - SAE: SAME AS EXISTING, VIF: VERIFY IN FIELD.

1. EXISTING RTUs WITH ALL ACCESSORIES TO REMAIN SAME AND TO BE REUSED.
2. CONTRACTOR TO FIELD VERIFY IF ALL RTUs ARE WORKING AT THEIR 100% RATED CAPACITY. INFORM TO DESIGN ENGINEER IF ANY DISCREPANCIES ARE FOUND IN PERFORMANCE PRIOR TO CONSTRUCTION.
3. REPLACE FILTERS AS REQUIRED. IF FILTERS ARE BEING REPLACED, PROVIDE FILTERS WITH A MINIMUM MERV-13 RATING. V.I.
4. CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND CONFIGURATION OF RTUs ON SITE.
5. BALANCE OUTSIDE AIR DAMPER AS PER CFM SHOWN ON SCHEDULE.
6. REMOTE SENSORS SHALL BE PROVIDED ON WALL & WIRED BACK TO PROGRAMMABLE, 24 HOUR, 7 DAY, THERMOSTATS

FAN SCHEDULE

TAG	MANUFACTURER	MODEL	LOCATION	AREA SERVED	FAN PERFORMANCE			ELECTRICAL DATA					WEIGHT	CONTROL
					CFM	ESP	FAN RPM	MCA	MOCP	VOLTS	PHASE	HZ	LBS	
EF-1 (N)	GREENHECK	CSP-A390-VG	SEE PLAN	SEE PLAN	150	0.8	1521	1.9	15	115	1	60	30	MOTION SENSOR

NOTES & ACCESSORIES:

1. PROVIDE VIBRATION ISOLATORS, DISCONNECT SWITCH, INTEGRAL BACKDRAFT DAMPER, & ALL ACCESSORIES REQUIRED BY VENDOR FOR PROPER OPERATION.
2. INTERLOCK WITH LIGHT SWITCH/OCCUPANCY SENSOR.
3. VERITY ELECTRICAL VOLTAGE AND PHASE WITH ELECTRICAL CONTRACTOR PRIOR TO ORDERING UNIT.
4. PROVIDE FAN SPEED CONTROLLER FOR BALANCING PURPOSE.
5. PROVIDE FAN WITH INTEGRATED GRILLE.

BUILDING AIR BALANCE

UNIT TAG	SUPPLY AIR	OUTSIDE AIR	RETURN AIR	EXHAUST AIR
RTU-1 (E)	2400	440	1230	-
RTU-2 (E)	3000	540	1540	-
EF-1 (N)	-	-	-	150 CFM
TOTAL:	5400 CFM	980 CFM	2770 CFM	150 CFM
BUILDING PRESSURE:			**830 CFM**	**POSITIVE**

AIR TERMINAL

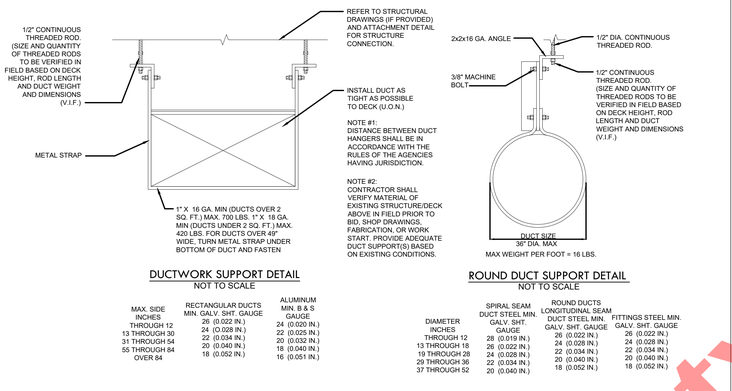
TAG	MANUFACTURER	MODEL	TYPE	CFM RANGE	NECK SIZE	NOMINAL FACE SIZE	REMARKS	NOTES
SG-1	TITUS	S300FL	SUPPLY GRILLE	201-400	20"X6"	22"X8"	DUCT MOUNT	1-4
SG-2				0-200	18"X6"	20"X8"	DUCT MOUNT	1-4
SAD-1		TMS	SUPPLY DIFFUSER	0-150	6" DIA	12"X12"	CEILING MOUNT	1-4
SAD-2				0-150	6" DIA	24"X24"	CEILING MOUNT	1-4
TG-1		350RL	TRANSFER GRILLE	500-800	28"X12"	30"X14"	WALL/ DUCT MOUNT	1-4

NOTES:

1) BORDER TYPE TO BE COMPATIBLE WITH CEILING/WALL TYPE.
2) COLOR AND FINISH TO BE REVIEWED AND APPROVED BY THE ARCHITECT.
3) PROVIDE OPPOSED BLADE DAMPER AS ACCESSARY FOR ALL AIR TERMINAL FOR AIR BALANCING OR ELSE PROVIDE DAMPER IN DUCTS.WHERE LOCATED IN INACCESSIBLE AREAS, PROVIDE CABLE OPERATED DAMPER LOCATED IN THE BRANCH, OPERABLE THROUGH THE FACE OF THE DIFFUSER (KEY OPERATED).
4) INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS.

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

SL NO	ROOM NAME	AREA	OCCUPANCY AS PER CMC 2022 PEOPLE/1000SQ.FT	OCCUPANCY AS PER CMC 2022	FINAL PEOPLE NO.	OA FLOW RATE CFM/SQ.FT	CALCULATED VENT CFM	EFFECTIVENESS 0.8	PROVIDED OA CFM	EXHAUST RATE CFM/SQFT OR CFM PER UNIT	OBTAINED EXHAUST CFM	TOTAL EXHAUST CFM
1	SALES AREA	2305	15	35	35	0.25	576	720	725	-	-	-
2	FITTING ROOM	250	2	1	6	0.15	38	47	50	-	-	-
3	BACKROOM	530	2	2	2	0.15	80	99	100	-	-	-
4	SHOW CL/STOCK ROOM	135	2	1	1	0.15	20	25	30	-	-	-
5	CORRIDOR	225	0	0	0	0.15	34	42	45	-	-	-
6	SERVICE CORRIDOR	150	0	0	0	0.15	23	28	30	-	-	-
7	TOILET	60	0	0	0	0	0	0	0	0.6	40	70
	TOTAL	**3655**	**-**	**39**	**44**	**-**	**770**	**962**	**980**	**-**	**40**	**70**



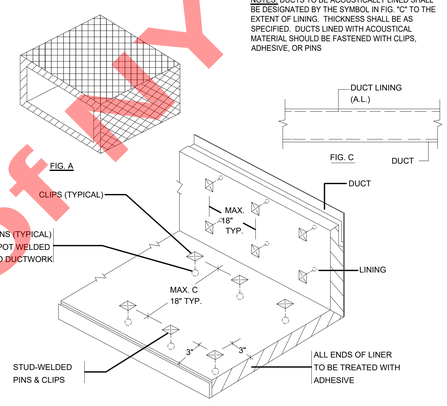
DUCTWORK SUPPORT DETAIL
NOT TO SCALE

MAX. SIDE INCHES	RECTANGULAR DUCTS MIN. GALV. SHT. GAUGE	ALUMINUM MIN. B & S GAUGE
THROUGH 12	26 (0.022 IN.)	24 (0.020 IN.)
13 THROUGH 30	24 (0.028 IN.)	22 (0.025 IN.)
31 THROUGH 54	22 (0.034 IN.)	20 (0.032 IN.)
55 THROUGH 84	20 (0.040 IN.)	18 (0.040 IN.)
OVER 84	18 (0.052 IN.)	16 (0.051 IN.)

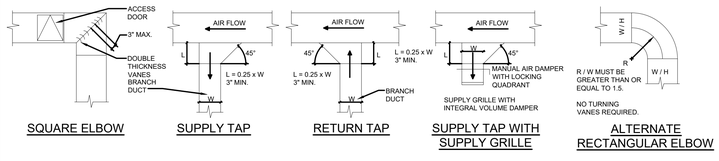
ROUND DUCT SUPPORT DETAIL
NOT TO SCALE

DIAMETER INCHES	SPIRAL SEAM DUCT STEEL MIN. GALV. SHT. GAUGE	ROUND DUCTS LONGITUDINAL SEAM DUCT STEEL MIN. GALV. SHT. GAUGE	FITTINGS STEEL MIN. GALV. SHT. GAUGE
THROUGH 12	28 (0.019 IN.)	26 (0.022 IN.)	26 (0.022 IN.)
13 THROUGH 18	26 (0.022 IN.)	24 (0.028 IN.)	24 (0.028 IN.)
19 THROUGH 28	24 (0.028 IN.)	22 (0.034 IN.)	22 (0.034 IN.)
29 THROUGH 36	22 (0.034 IN.)	20 (0.040 IN.)	20 (0.040 IN.)
37 THROUGH 52	20 (0.040 IN.)	18 (0.052 IN.)	18 (0.052 IN.)

DUCT SUPPORT DETAIL — SCALE NTS — 1

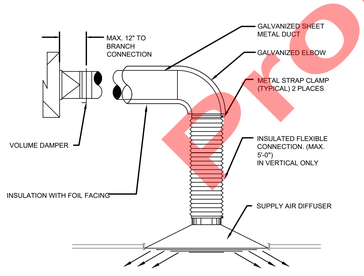


ACOUSTICAL TREATMENT DUCT LINING — SCALE NTS — 2

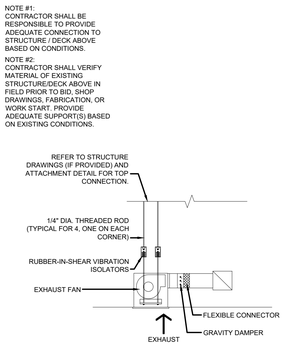


SQUARE ELBOW | SUPPLY TAP | RETURN TAP | SUPPLY TAP WITH SUPPLY GRILLE | ALTERNATE RECTANGULAR ELBOW

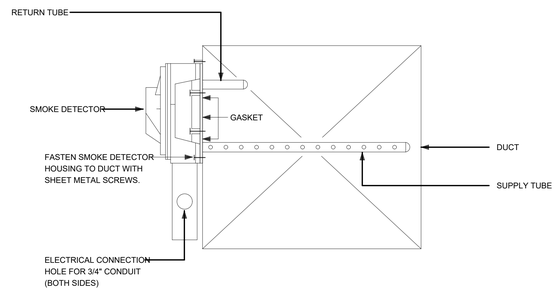
STANDARD DUCTWORK DETAILS — SCALE NTS — 3



STANDARD SUPPLY DIFFUSER DETAILS — SCALE NTS — 4



CEILING EXHAUST FAN DETAIL — SCALE NTS — 5



SMOKE DETECTOR DUCT MOUNTING DETAIL — SCALE NTS — 6

Property of NY Engineers

EVEREVE

TITLE: MECHANICAL SCHEDULES & DETAILS

SHEET NUMBER: M-200

STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-E
This document is used to demonstrate compliance for mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.4, or 141.0(b)2 for alterations.	
Project Name: EVEREVE	**Report Page:** (Page 1 of 8)
Project Address:	**Date Prepared:** 2025-08-25T07:49:13-04:00

A. GENERAL INFORMATION

01	Project Location (city)	ROSEVILLE	04	Total Conditioned Floor Area	3799
02	Climate Zone	11	05	Total Unconditioned Floor Area	0
03	Occupancy Types Within Project:		06	# of Stories (Habitable Above Grade)	0
● Retail					

B. PROJECT SCOPE

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

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

STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-E
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C. COMPLIANCE RESULTS

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

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

D. EXCEPTIONAL CONDITIONS

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

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

E. ADDITIONAL REMARKS

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

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

This section does not apply to this project.

STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-E
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G. PUMPS

This section does not apply to this project.

H. FAN SYSTEMS & AIR ECONOMIZERS

This section does not apply to this project.

I. SYSTEM CONTROLS

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

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

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

J. VENTILATION AND INDOOR AIR QUALITY

This table is used to demonstrate compliance with mandatory ventilation requirements in 120.1 120.2(e)3B 140.4(p) and 140.4(q) for all nonresidential and hotel/motel and d:t24ref\ninlink\160.2_160.3(o)3D, 170.2(s)4N, 170.2(q)4O for high-rise residential occupancies. For alterations, only ventilation systems being altered within the scope of the permit application need to be documented in this table. In lieu of this table, the required outdoor ventilation rates and airflows may be shown on the plans or the calculations can be presented in a spreadsheet.

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

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K. TERMINAL BOX CONTROLS

This section does not apply to this project.

L. DISTRIBUTION (DUCTWORK and PIPING)

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

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

Duct Leakage Testing

The answers to the questions below apply to the following duct systems:	F. METAL DUCTWORK	**NR/ Common Use:** Duct leakage testing shall not exceed 15% per NA7.5.3 required for these systems?	No

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CALIFORNIA ENERGY COMMISSION

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L. DISTRIBUTION (DUCTWORK and PIPING)

	ON M-001 : MECHANICAL GENERAL NOTES AND ABBREVIATIONS	**Dwelling Units:** Total duct leakage of duct system shall not exceed 15% or duct system to outside shall not exceed 10% per RA3.1.4 required for systems?	---
		Duct leakage testing per CMC Section 603.9.2 required for these systems?	Yes
11	No	The scope of the project includes only duct systems serving healthcare facilities	
12	Yes	Duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system.	
13	Yes	The space conditioning system serves less than 5,000 ft² of conditioned floor area.	
14	No	The combined surface area of the ducts is more than 25% of the total surface area of the entire duct system:	
15	No	The scope of the project includes extending an existing duct system, which is constructed, insulated or sealed with asbestos.	
16	No	The scope of the project includes an existing duct system that is documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Reference Nonresidential Appendix NA2.	
17	Yes	All Ductwork and plenums with pressure class ratings shall be constructed to Seal Class A	
18	No	All ductwork is an extension of an existing duct system	
19	No	Ductwork serving individual dwelling unit	
20		< 25 ft of new or replacement space conditioning ducts installed	
21	R-8	Duct Insulation R-value	
22	No	Ductwork Existing To Remain	
23	Yes	Duct System Connected To Altered Space Conditioning System	

M. COOLING TOWERS

This section does not apply to this project.

STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-E
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N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

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

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

O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

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

Form/Title	Systems/Spaces To Be Field Verified
NRCA-MCH-02-A - Outdoor Air must be submitted for all newly installed HVAC units. Note: MCH-02-A can be performed in conjunction with MCH-07-A Supply Fan VFD Acceptance (if applicable) since testing activities overlap.	
NRCA-MCH-03-A - Constant Volume Single Zone HVAC NOTE: This form does not automatically move to "Yes". If Constant Volume Single Zone HVAC Systems are included in the scope, permit applicant should move this form to "Yes".	THERMOSTATIC CONTROLS

P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

There are no NRCV forms required for this project.

STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-E
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Q. MANDATORY MEASURES DOCUMENTATION LOCATION

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

01		02
Compliance with Mandatory Measures documented through MCH Mandatory Measures Note Block	No	Plan sheet or construction document location
03		04
Mandatory Measure		**Plan sheet or construction document location**
Duct Insulation per 120.4		R-8
The air duct and plenum system is designed per 120.4(a)-(f)		M-001 : MECHANICAL GENERAL NOTES AND ABBREVIATIONS
Kitchen range hoods shall be rated for sound in accordance with Section 7.2 of ASHRAE 62.2		NA

STATE OF CALIFORNIA
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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Akshay Saseendran	Documentation Author Signature:
Company: NY ENGINEERS	Signature Date:
Address:	CEA/ HERS Certification Identification (if applicable):
City/State/Zip:	Phone:

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

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

Responsible Designer Name: Michael Tobias	Responsible Designer Signature:
Company: NY Engineers	Date Signed: 2025-08-25
Address: 382 NE 191ST Street Suite 49764	License:
City/State/Zip: Miami, FL 33179	Phone:

Engineer Set
Property of NY

EVEREVE

TITLE:
ENERGY ANALYSIS (TITLE 24)

SHEET NUMBER:
M-300

ELECTRICAL SPECIFICATIONS

SUMMARY

A. GENERAL AND SUPPLEMENTARY CONDITIONS WITHIN THE SPECIFICATIONS ARE HEREBY INCORPORATED AND BECOME PART OF THESE SPECIFICATIONS AND AS SUCH SHALL BE APPLICABLE TO THE WORK OF THE ELECTRICAL CONTRACT.

B. PRIOR TO SUBMISSION OF A BID PROPOSAL, THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS AND LIMITATIONS THAT IMPACT THE WORK OF THIS CONTRACT. NO ADDITIONAL COSTS TO THE OWNER SHALL BE PERMITTED FOR CHANGES TO THE WORK AS A RESULT OF THE CONTRACTORS FAILURE TO VISIT THE SITE PRIOR TO BIDDING AND IDENTIFY ITEMS THAT WERE ABLE TO BE VERIFIED DURING A SITE VISIT PRIOR TO THE SUBMISSION OF A BID PROPOSAL.

C. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIAL, EQUIPMENT, RIGGING, AND MISCELLANEOUS ITEMS AS REQUIRED FOR A COMPLETE, OPERATIONAL, FUNCTIONAL AND CODE COMPLIANT ELECTRICAL INSTALLATION AS SHOWN ON THE DRAWINGS AND AS SPECIFIED IN THESE SPECIFICATIONS.

LANDLORDS REQUIREMENTS

A. ALL WORK OF THIS CONTRACT SHALL BE COMPLETED IN STRICT ACCORDANCE WITH ALL APPLICABLE LANDLORD REQUIREMENTS INCLUDING BUT NOT NECESSARILY LIMITED TO; LANDLORD'S WORK LETTER, LANDLORD'S CONSTRUCTION CRITERIA AND/OR THE TENANT/LANDLORD AGREEMENT. THIS CONTRACTOR SHALL EXAMINE THESE DOCUMENTS PRIOR TO THE SUBMISSION OF A BID PROPOSAL.

B. ALL APPLICABLE LANDLORD REQUIREMENTS INCLUDING BUT NOT NECESSARILY LIMITED TO THE LANDLORD'S WORK LETTER, LANDLORDS CONSTRUCTION CRITERIA AND/OR THE TENANT/LANDLORD AGREEMENT DOCUMENTS SHALL BE CONSIDERED PART OF THESE SPECIFICATIONS.

EXISTING CONDITIONS

A. THE CONTRACT DOCUMENTS ARE BASED ON INFORMATION PROVIDED TO THE CONSULTANT AT THE TIME OF DESIGN. THIS CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO SUBMITTING A BID PROPOSAL.

BIDS AND SUBSTITUTIONS

A. PRIOR TO SUBMISSION OF A BID PROPOSAL, CONTRACTOR SHALL THOROUGHLY REVIEW THE BID INSTRUCTIONS AND ALL CIVIL, ARCHITECTURAL, STRUCTURAL, FOOD SERVICE AND MEPFP AND TELECOMMUNICATION CONSTRUCTION DOCUMENTS.

B. SHOULD THE CONTRACTOR WISH TO SUBMIT AN ALTERNATE PRODUCT TO THE MANUFACTURERS NAMED IN THESE SPECIFICATIONS OR ON THE DRAWINGS FOR ANY EQUIPMENT, THE CONTRACTOR SHALL SUBMIT A VOLUNTARY ALTERNATIVE A MINIMUM OF SEVEN (7) CALENDAR DAYS PRIOR TO BID, STATING THE MANUFACTURER'S NAME, MODEL NUMBER, WRITTEN, DETAILED PRODUCT DATA.

C. WORK PERFORMED OR CONSTRUCTED WITH UNAPPROVED EQUALS IS AT CONTRACTOR'S RISK AND ANY REQUIRED CORRECTION OF WORK INCORPORATING UNAPPROVED EQUALS SHALL BE AT CONTRACTOR'S SOLE COST AND EXPENSE.

D. D. NO SUBSTITUTIONS PERMITTED FOR LIGHTING FIXTURES.

QUALITY ASSURANCE

A. ALL MATERIALS AND EQUIPMENT SHALL BE NEW.

B. PROVIDE PERMITS, INSPECTIONS, FINAL CERTIFICATES OF INSPECTION BY THE AUTHORITY HAVING JURISDICTION, PERMIT AND INSPECTION FEES AND ALL MATERIALS, EQUIPMENT AND LABOR AS REQUIRED FOR A COMPLETE, FUNCTIONAL, FULLY OPERATIONAL AND CODE COMPLIANT ELECTRICAL SYSTEM.

C. THIS CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR AND ACCESSORIES FOR A COMPLETE FUNCTIONAL AND CODE COMPLIANT ELECTRICAL INSTALLATION, WHETHER OR NOT SHOWN ON THE DRAWINGS OR SPECIFIED IN THESE SPECIFICATIONS.

D. EC SHALL VERIFY THE VOLTAGE AND AMPERAGE REQUIREMENTS OF ALL EQUIPMENT DELIVERED TO THE SITE PRIOR TO CONNECTION. EC SHALL NOTIFY THE OWNER OF ANY DIFFERENCES

E. REQUIREMENTS OF REGULATORY AGENCIES:

1. PERMITS: ARRANGE AND PAY FOR ALL PERMITS, INSPECTIONS AND UTILITY CONNECTIONS REQUIRED.
2. PROVIDE ALL TESTS AND INSPECTIONS REQUIRED BY THE AUTHORITY HAVE JURISDICTION.
3. PROVIDE A SIGNED CERTIFICATE OF INSPECTION AT THE COMPLETION OF THE PROJECT. INCLUDE IN OPERATION AND MAINTENANCE MANUALS.

F. CODES AND STANDARDS

1. COMPLY WITH SPECIFIED CODES AND STANDARDS. IF CONFLICT EXISTS BETWEEN CODES OR STANDARDS AND DRAWINGS, PROJECT MANUAL OR ADDENDA REQUIREMENTS, REQUEST CLARIFICATION FROM ARCHITECT/ENGINEER.
2. CONFORM TO THE INSTALLATION RULES AND REGULATIONS OF THE CODES AND STANDARDS LISTED INCLUDING ALL SUBSEQUENTLY PUBLISHED AMENDMENTS THERETO ISSUED PRIOR TO THE DATE OF THE BIDDING DOCUMENTS.
3. CONFORM TO THE REQUIREMENTS OF ALL LOCAL, STATE AND FEDERAL AGENCIES WHICH HAVE AUTHORITY OVER THIS PROJECT.
4. COMPLY WITH THE APPLICABLE EDITION OF THE FOLLOWING CODES AND STANDARDS THAT HAVE BEEN ADOPTED BY AND ARE ENFORCED BY THE AUTHORITY HAVING JURISDICTION:

a. INTERNATIONAL BUILDING CODE.
b. INTERNATIONAL ENERGY CONSERVATION CODE
c. INTERNATIONAL MECHANICAL CODE
d. NATIONAL ELECTRICAL CODE
e. INTERNATIONAL FIRE CODE
f. LIFE SAFETY CODE, NFPA 101
g. AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES
h. ALL LOCAL CODES AND ORDINANCES ADOPTED AND ENFORCED BY THE AUTHORITY HAVING JURISDICTION.

G. REFERENCED STANDARDS:

1. ALL EQUIPMENT, APPARATUS, MATERIALS AND SYSTEMS SHALL BE RATED, TESTED, FABRICATED AND INSTALLED IN ACCORDANCE WITH THE APPLICABLE INDUSTRY STANDARDS.
2. ALL EQUIPMENT, APPARATUS, MATERIALS AND SYSTEMS SHALL BE LISTED AND LABELED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (UL, ETL, ETC).

ELECTRICAL CONTRACT DOCUMENTS

A. THE ELECTRICAL DRAWINGS (DRAWINGS) AND THE SPECIFICATIONS SHALL TOGETHER FORM A SET OF CONTRACT DOCUMENTS FOR THE ELECTRICAL WORK. NEITHER THE DRAWINGS OR THE SPECIFICATIONS SHALL BE COMPLETE WITHOUT THE OTHER. ANY ITEM SHOWN ONLY ON THE DRAWINGS OR SPECIFIED ONLY IN THE SPECIFICATIONS SHALL BE CONSIDERED AS IF SHOWN AND SPECIFIED IN BOTH.

B. ELECTRICAL DRAWINGS AND SPECIFICATIONS: COMPLY WITH THE FOLLOWING REQUIREMENTS:

1. CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH ALL DRAWINGS AND SPECIFICATIONS WITHIN THE CONTRACT DOCUMENTS, INCLUDING, BUT NOTNECESSARILY LIMITED TO, GEOTECHNICAL, LANDSCAPE, CIVIL, ARCHITECTURAL, STRUCTURAL, FOOD SERVICE, MECHANICAL, PLUMBING, TELECOMMUNICATION AND FIRE PROTECTION DRAWINGS AND SPECIFICATIONS.
2. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO INDICATE APPROXIMATE LOCATION ONLY OF ELECTRICAL WORK. THE ACTUAL LOCATION OF ANY ELECTRICAL WORK SHALL NOT INTERFERE WITH THE LOCATION,CLEARANCES, ETC. REQUIRED BY THE WORK OF OTHER TRADES.
3. PRIOR TO ROUGH-IN, CONTRACTOR SHALL COORDINATE ALL DEVICE LOCATIONS WITH THE ARCHITECTURAL WALL ELEVATIONS, CASEWORK/CABINETRY ELEVATIONS AND DETAILS AND THE FINAL, APPROVED FOOD SERVICE SHOP DRAWINGS.

C. DEFINITIONS: THE FOLLOWING TERMS ARE USED ON THE ELECTRICAL DRAWINGS AND IN THE SPECIFICATIONS AND SHALL BE DEFINED AS FOLLOWS:

1. CONTRACTOR - THE ELECTRICAL CONTRACTOR OR ANY OF THEIR SUB-CONTRACTORS.
2. WORK ALL MATERIAL, LABOR, TRANSPORTATION OF THE ELECTRICAL CONTRACTOR OR ANY OF THEIR SUB-CONTRACTORS.
3. FURNISH PURCHASE, SUBMIT FOR REVIEW AND APPROVAL, COORDINATE WITH THE CONTRACT DOCUMENTS AND DELIVER TO THE PROJECT SITE IN NEW, UNDAMAGED CONDITION, STORE AS DIRECTED, PROTECT FROM DAMAGE DURING STORAGE.
4. INSTALL INSTALL IN PLACE, MAKE READY FOR CONNECTION TO THE REQUIRED SERVICE.
5. CONNECT CONNECT TO THE REQUIRED SERVICE AS REQUIRED FOR PROPER OPERATION, TEST FOR PROPER OPERATION AND FUNCTIONALITY IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS AND REQUIREMENTS SPECIFIED WITHIN THESE SPECIFICATIONS AND TURN OVER TO THE OWNER IN FULL OPERATING CONDITION.
6. PROVIDE FURNISH, INSTALL AND CONNECT AS DEFINED HEREIN FOR A COMPLETE, FUNCTIONAL AND CODE COMPLIANT INSTALLATION READY FOR INTENDED USE.
7. FINISHED SPACE SPACES HAVING WALLS PAINTED OR FINISHED WITH WALL COVERING, LAY-IN OR DRYWALL CEILINGS, AND FINISHED FLOORING MATERIALS. EXAMPLES OF FINISHED SPACES INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, ALL SPACES IN A DWELLING UNIT, OFFICES, LOBBIES, CORRIDORS, TOILET ROOMS, ETC.
8. UNFINISHED SPACES SPACES WITH UNFINISHED WALLS AND FLOORS AND TYPICALLY ARE NOT EQUIPPED WITH A CEILING. EXAMPLES INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, MECHANICAL ROOMS, ELECTRICAL ROOMS, SERVICE AREAS, ETC.
9. SHALL-ACTION THAT IS REQUIRED WITHOUT OPTION OR QUALIFICATION.
10. REMOVE DETACH ITEMS FROM EXISTING CONSTRUCTION AND LEGALLY DISPOSE OF THEM OFF SITE UNLESS INDICATED TO BE REMOVED AND SALVAGED OR REMOVED AND RE-INSTALLED.
11. REMOVE AND SALVAGE CAREFULLY DETACH FROM EXISTING CONSTRUCTION IN A MANNER TO PREVENT DAMAGE AND DELIVER TO OWNER READY FOR RE-USE.
12. REMOVE AND REINSTALL - DETACH ITEMS FROM EXISTING CONSTRUCTION, PREPARE FOR RE-USE, RE-INSTALL AND RECONNECT WHERE INDICATED SUCH THAT THE RE-INSTALLED ITEM IS FULLY OPERATIONAL.
13. EXISTING TO REMAIN EXISTING ITEMS OF CONSTRUCTION THAT ARE NOT TO BE PERMANENTLY REMOVED AND THAT ARE NOT OTHERWISE INDICATED TO BE REMOVED, REMOVED AND SALVAGED OR REMOVED AND RE-INSTALLED.

SUBMITTALS

A. REVIEW OF THE SHOP DRAWINGS IS RENDERED AS A SERVICE ONLY AND SHALL NOT BE CONSIDERED AS A GUARANTEE OF MEASUREMENTS OR OF BUILDING CONDITIONS; NOR SHALL IT BE CONSTRUED AS RELIEVING THE CONTRACTOR'S OF BASIC RESPONSIBILITIES UNDER HIS CONTRACT. ARCHITECT/ENGINEER WILL REVIEW SHOP DRAWINGS ONLY FOR CONFORMANCE WITH DESIGN CONCEPT OF THE PROJECT. REVIEW BY THE ARCHITECT/ENGINEER SHALL NOT BE CONSTRUED:

1. AS PERMITTING ANY DEPARTURE FROM THE CONTRACT REQUIREMENTS.
2. AS RELIEVING THE CONTRACTOR OF THE RESPONSIBILITY FOR ANY ERROR IN DETAILS, DIMENSIONS OR OTHERWISE THAT MAY EXIST.
3. AS APPROVED DEPARTURES FROM ADDITIONAL DETAILS OR INSTRUCTIONS PREVIOUSLY FURNISHED BY THE ARCHITECT/ENGINEER.

B. SHOP DRAWINGS:

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

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

ELECTRICAL COORDINATION DRAWINGS

A. PREPARE ELECTRICAL COORDINATION DRAWINGS AS REQUIRED BY THE WORK AND AS DIRECTED BY THE GENERAL CONTRACTOR.

B. MEET WITH REPRESENTATIVES OF THE OTHER DISCIPLINES/TRADES TO COORDINATE THE ELECTRICAL WORK WITH THE WORK OF EACH DISCIPLINE AND TO OBTAIN INFORMATION REGARDING THEIR WORK THAT IS TO BE INDICATED ON THE COORDINATION DRAWINGS.

POWER SYSTEM STUDIES - GENERAL

A. PROVIDE COMPUTER-BASED, POWER SYSTEM STUDIES THAT INCLUDES:

1. A SHORT CIRCUIT STUDY TO DETERMINE THE MINIMUM INTERRUPTING CAPACITY OF CIRCUIT PROTECTIVE DEVICES;
2. AN ARC-FLASH STUDY TO DETERMINE THE ARC-FLASH HAZARD DISTANCE AND THE INCIDENT ENERGY TO WHICH PERSONNEL COULD BE EXPOSED DURING WORK ON OR NEAR ELECTRICAL EQUIPMENT.

B. STUDIES SHALL BE PERFORMED UTILIZING COMPUTER PROGRAMS THAT ARE DISTRIBUTED NATIONALLY AND ARE IN WIDE USE. SOFTWARE ALGORITHMS SHALL COMPLY WITH REQUIREMENTS OF STANDARDS AND GUIDES SPECIFIED IN THIS SECTION. MANUAL CALCULATIONS ARE UNACCEPTABLE.

C. SOFTWARE DEVELOPERS: SUBJECT TO COMPLIANCE WITH SPECIFIED REQUIREMENTS, PERFORM STUDIES UTILIZING SOFTWARE PRODUCTS BY ONE OF THE FOLLOWING:

1. EASY POWER
2. POWER ANALYTICS CORPORATION
3. SKM SYSTEMS ANALYSIS

D. ALL STUDIES SHALL BE BASED ON THE DEVICE CHARACTERISTICS OF ACTUAL EXISTING COMPONENTS AND THE NEW COMPONENTS BEING INSTALLED..

E. PROVIDE ALL FIELD LABOR AS REQUIRED TO OBTAIN ALL DATA NECESSARY TO CONDUCT THE STUDIES SPECIFIED HEREIN.

F. SUBMIT STUDIES FOR REVIEW BEFORE SUBMITTING THE SYSTEM OVERCURRENT PROTECTIVE DEVICE AND POWER DISTRIBUTION EQUIPMENT SUBMITTALS. SUBMIT STUDY REPORT FOR REVIEW PRIOR TO RECEIVING FINAL APPROVAL OF THE OVERCURRENT PROTECTIVE DEVICE AND DISTRIBUTION EQUIPMENT SUBMITTALS.

G. WHERE FORMAL COMPLETION OF STUDIES WILL CAUSE A DELAY IN THE ORDERING AND MANUFACTURING OF OVERCURRENT PROTECTIVE DEVICES AND POWER DISTRIBUTION EQUIPMENT, OBTAIN APPROVAL FROM ENGINEER FOR PRELIMINARY SUBMITTAL OF SUFFICIENT STUDY DATA TO ENSURE THAT THE SELECTION OF DEVICES AND ASSOCIATED CHARACTERISTICS IS SATISFACTORY AND IN COMPLIANCE WITH THE RESULTS OF THE STUDIES BEING PERFORMED.

H. POWER SYSTEM STUDY SHALL BE SIGNED AND SEALED BY THE PROFESSIONAL ENGINEER RESPONSIBLE FOR PREPARING THE STUDY.

SHORT CIRCUIT STUDY

A. PROVIDE A COMPUTER-BASED, SHORT CIRCUIT STUDY TO DETERMINE THE MINIMUM INTERRUPTING CAPACITY OF CIRCUIT PROTECTIVE DEVICES.

B. FOR NEW EQUIPMENT, USE CHARACTERISTICS SUBMITTED UNDER THE PROVISIONS OF ACTION SUBMITTALS AND INFORMATION SUBMITTALS FOR THIS PROJECT.

C. FOR EXISTING RELOCATED EQUIPMENT AND EXISTING EQUIPMENT THAT IS EXISTING TO REMAIN, OBTAIN REQUIRED ELECTRICAL DISTRIBUTION SYSTEM DATA BY FIELD INVESTIGATION AND SURVEYS, CONDUCTED BY QUALIFIED TECHNICIANS AND ENGINEERS.THE QUALIFICATIONS OF TECHNICIANS AND ENGINEERS SHALL BE QUALIFIED AS DEFINED BY NFPA 70E.

D. GATHER AND TABULATE ALL REQUIRED DATA TO SUPPORT THE SHORT-CIRCUIT STUDY. COMPLY WITH RECOMMENDATIONS IN IEEE 551 AS TO THE AMOUNT OF DETAIL THAT 15 REQUIRED TO BE ACQUIRED IN THE FIELD.

E. BEGIN SHORT-CIRCUIT CURRENT ANALYSIS AT THE SERVICE, EXTENDING DOWN TO THE SYSTEM OVERCURRENT PROTECTIVE DEVICES AS FOLLOWS:

1. TO NORMAL SYSTEM LOW-VOLTAGE LOAD BUSES WHERE FAULT CURRENT IS 10 KA OR LESS.

ARC FLASH HAZARD STUDY

A. PROVIDE A COMPUTER-BASED, ARC-FLASH HAZARD STUDY TO DETERMINE THE ARC-FLASH HAZARD DISTANCE AND THE INCIDENT ENERGY TO WHICH PERSONNEL COULD BE EXPOSED DURING WORK ON OR NEAR EXISTING AND NEW ELECTRICAL EQUIPMENT.

B. ELECTRICAL SURVEY DATA: GATHER AND TABULATE ALL REQUIRED INPUT DATA TO SUPPORT STUDY. COMPLY WITH RECOMMENDATIONS IN IEEE 1584 AND NFPA 70E AS TO THE AMOUNT OF DETAIL THAT IS REQUIRED TO BE ACQUIRED IN THE FIELD.

C. FOR NEW EQUIPMENT, USE CHARACTERISTICS SUBMITTED UNDER THE PROVISIONS OF ACTION SUBMITTALS AND INFORMATION SUBMITTALS FOR THIS PROJECT.

D. FOR EXISTING EQUIPMENT, WHETHER OR NOT RELOCATED, OBTAIN REQUIRED ELECTRICAL DISTRIBUTION SYSTEM DATA BY FIELD INVESTIGATION AND SURVEYS, CONDUCTED BY QUALIFIED TECHNICIANS AND ENGINEERS.

E. HAZARD LABELS SHALL HAVE AN ORANGE HEADER WITH THE WORDING, "WARNING, ARC-FLASH HAZARD," AND SHALL INCLUDE THE FOLLOWING INFORMATION TAKEN DIRECTLY FROM THE ARC-FLASH HAZARD ANALYSIS:

1. LOCATION DESIGNATION
2. NOMINAL VOLTAGE.
3. FLASH PROTECTION BOUNDARY.
4. HAZARD RISK CATEGORY.
5. INCIDENT ENERGY.
6. WORKING DISTANCE
7. ENGINEERING REPORT NUMBER, REVISION NUMBER, AND ISSUE DATE.

F. ARC FLASH HAZARD WARNING LABELS SHALL BE A 3.5-BY-5-INCH THERMAL TRANSFER LABEL OF HIGH-ADHESION POLYESTER FOR EACH WORK LOCATION INCLUDED IN THE ANALYSIS.

G. LABELS SHALL BE MACHINE PRINTED, WITH NO FIELD-APPLIED MARKINGS.

RECORD DOCUMENTS

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

B. CONTRACTOR SHALL PROVIDE THE TENANT WITH THE FINAL AS-BUILT SET OF DRAWINGS AT THE COMPLETION OF THE WORK.

COORDINATION WITH LANDLORD AND UTILITY COMPANIES

A. PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL COORDINATE THE WORK OF THIS CONTRACT WITH THE LANDLORD'S AUTHORIZED REPRESENTATIVE AND AUTHORIZED REPRESENTATIVES OF EACH SERVING UTILITY THAT WILL PROVIDE SERVICE TO THIS SITE, INCLUDING BUT NOT NECESSARILY LIMITED TO, ELECTRIC, TELEPHONE AND CABLE/SATELLITE TV SERVICE PROVIDERS.

B. CONTRACTOR SHALL MEET WITH AUTHORIZED REPRESENTATIVES OF THE LANDLORD AND EACH UTILITY TO DISCUSS LANDLORD UTILITY COMPANY SCOPE OF WORK, CONTRACTOR SCOPE OF WORK, POINT OF SERVICE PICK-UP, DETAILS REGARDING SYSTEM INTERFACE, UTILITY COMPANY STANDARDS TO BE COMPLIED WITH, ETC.

COORDINATION WITH OTHER TRADES

A. ELECTRICAL WORK SHALL BE INSTALLED SO AS TO NOT CONFLICT WITH THE WORK OF OTHER TRADES.

B. SET ALL SLEEVES AND CUT AND PATCH ALL MISCELLANEOUS HOLES NECESSARY FOR THE CONVENIENT AND PROPER INSTALLATION OF THE WORK.

C. CONFER WITH THE OTHER CONTRACTORS REGARDING THE LOCATION AND SIZE OF PIPES, EQUIPMENT, DUCTS, OPENINGS AND SPECIAL ARCHITECTURAL TREATMENTS IN ORDER THAT THERE MAY BE NO INTERFERENCES BETWEEN THE INSTALLATION OR THE PROGRESS OF THE WORK OF ANY CONTRACTOR ON THE PROJECT.

D. ALL LINE VOLTAGE WIRING AND FINAL CONNECTIONS TO COMPLETE MECHANICAL SYSTEMS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.

E. PROVIDE FINAL ELECTRICAL CONNECTIONS TO EQUIPMENT FURNISHED/PROVIDED BY OTHERS, (HVAC EQUIPMENT, PLUMBING EQUIPMENT, COMMERCIAL KITCHEN EQUIPMENT, ETC.

F. COORDINATE THE NEMA CONFIGURATION OF THE RECEPTACLE TO BE PROVIDED WITH THE NEMA PLUG CONFIGURATION OF THE CORD/PLUG ASSEMBLY FURNISHED WITH THE EQUIPMENT TO BE INSTALLED. PROVIDE RECEPTACLES HAVING A NEMA CONFIGURATION THAT MATCHES THE NEMA CONFIGURATION OF THE PLUG ON THE EQUIPMENT.

G. PROVIDE FINAL COORDINATION OF AVAILABLE POWER (VOLTAGE/PHASE) WITH OTHER TRADES PRIOR TO THEIR ORDERING OF EQUIPMENT.

H. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION REGARDING ELECTRICAL WORK TO BE PROVIDED ASSOCIATED WITH MECHANICAL EQUIPMENT.

I. WHERE ELECTRICAL WORK (CONDUIT BOXES, RECEPTACLES, DISCONNECT SWITCHES, ETC.) ARE SECURED DIRECTLY TO THE HOUSING OF MECHANICAL EQUIPMENT, THEY SHALL BE INSTALLED ON A PORTION OF THE EQUIPMENT HOUSING NOT REQUIRED TO BE REMOVED FOR ROUTINE MAINTENANCE. PRIOR TO INSTALLATION, COORDINATE ALL ELECTRICAL WORK AT MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR.

TEMPORARY POWER

A. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED TEMPORARY CONSTRUCTION POWER AND LIGHTING TO ALLOW ALL CONTRACTORS AND SUB-CONTRACTORS TO PERFORM THE WORK OF THEIR CONTRACTS.

B. PRIOR TO THE SUBMISSION OF A BID PROPOSAL, THE CONTRACTOR SHALL CONTACT THE GENERAL CONTRACTOR TO COORDINATE THE TYPE OF EQUIPMENT TO BE UTILIZED DURING THE WORK OF THIS CONTRACT

SEQUENCING AND SCHEDULING

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

FIRE STOPPING

A. PROVIDE FIRE STOPPING FOR PENETRATIONS BY CONDUIT OR CABLES AND OTHER EQUIPMENT THROUGH FIRE-RATED VERTICAL BARRIERS (WALLS AND PARTITIONS), HORIZONTAL BARRIERS (FLOOR/CEILING ASSEMBLIES) AND VERTICAL SHAFT WALLS AND PARTITIONS.

B. FIRESTOP SYSTEM INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF ASME E 814 OR UL 1479 TESTED ASSEMBLIES THAT PROVIDE A FIRE RATING EQUAL TO OR GREATER THAN THAT OF THE CONSTRUCTION BEING PENETRATED.

SEISMIC RESTRAINT

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

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

CUTTING & PATCHING

A. PRIOR TO CORE DRILLING OR SAW CUTTING OPERATIONS, CONTRACTOR SHALL X-RAY OR GROUND PENETRATING RADAR (GPR) THE EXISTING SLAB TO DETERMINE THE LOCATION OF ANY EXISTING UTILITIES, STRUCTURAL MEMBERS. ETC. COORDINATE ALL SCANNING, CUTTING AND CORE DRILLING OPERATIONS WITH GC AND LANDLORD PRIOR TO COMMENCEMENT OF WORK.

B. CORE-DRILL OR SAW-CUT EXISTING FLOORS, WALLS, ROOF, ETC., AS REQUIRED FOR THE INSTALLATION OF THE ELECTRICAL WORK. EXISTING UTILITIES AND STRUCTURAL COMPONENTS, INCLUDING BUT NOT NECESSARILY LIMITED TO, COLUMNS, BEAMS, GIRDERS, PLATES OR JOISTS SHALL NOT BE CUT.

C. PATCH SURROUNDING AREAS FLUSH WITH ADJACENT SURFACES AND PREPARE TO RECEIVE SPECIFIED FINISHES.

D. PATCH AND REPAIR ROOF TO MATCH EXISTING ROOFING SYSTEM. ALL ROOF WORK SHALL BE PERFORMED TO MEET THE WARRANTY REQUIREMENTS OF THE EXISTING ROOFING SYSTEM.

GROUNDING

A. PROVIDE ELECTRICAL SYSTEM AND EQUIPMENT GROUNDING IN ACCORDANCE WITH APPLICABLE N.E.C. REQUIREMENTS.

B. THE METALLIC CONDUIT SYSTEM SHALL BE GROUNDED AND BONDED TO FORM AN EQUIPMENT GROUNDING CONDUCTOR.

C. PROVIDE AN INSULATED EQUIPMENT GROUND CONDUCTOR WITHIN ALL FEEDERS AND BRANCH CIRCUITS. THIS EQUIPMENT GROUND CONDUCTOR SHALL BE IN ADDITION TO THE EQUIPMENT GROUND CONDUCTOR FORMED BY THE METALLIC CONDUIT SYSTEM.

D. PROVIDE AN ISOLATED GROUND CONDUCTOR IN ADDITION TO THE EQUIPMENT GROUNDING CONDUCTOR IN SELECT BRANCH CIRCUITS AS NOTED ON THE DRAWINGS.

E. PROVIDE A #6 AWG GREEN INSULATED GROUNDING CONDUCTOR FROM THE GROUND BAR AT TELEPHONE TERMINAL BOARD TO THE ELECTRICAL SERVICE GROUND.

F. PROVIDE A COPPER GROUNDING BAR AT THE TELEPHONE TERMINAL BACKBOARD. GROUNDING BAR SHALL BE % INCH X 4 INCHES X 12 INCHES, PRE-DRILLED FOR CONDUCTOR TERMINATIONS, WITH NON-METALLIC STAND-OFF BRACKETS WITH INSULATORS. CHATSWORTH PRODUCTS 10622-012 OR APPROVED EQUAL.

EQUIPMENT IDENTIFICATION

A. PROVIDE EQUIPMENT LABELS ON PANELBOARDS, DISCONNECT SWITCHES, CONTACTORS, TRANSFORMERS, CONTROLS, ETC. EQUIPMENT LABELS SHALL BE ENGRAVED PHENOLIC RESIN NAMEPLATES ATTACHED TO ENCLOSURE WITH MECHANICAL FASTENERS. SELF-ADHESIVE NAMEPLATES ARE NOT ACCEPTABLE. LETTERING SHALL BE 1/2" HIGH, BLACK TEXT ON WHITE BACKGROUND.

B. ENGRAVED NAMEPLATES ATTACHED TO COMPONENTS SHALL IDENTIFY THE EQUIPMENT DESIGNATION, NAME OF THE "UPSTREAM POWER SOURCE (AS APPLICABLE), VOLTAGE AND PHASE.

C. THE COVERS OF ALL OUTLET AND JUNCTION BOXES INSTALLED ABOVE CEILINGS AND INSTALLED EXPOSED IN UNFINISHED SPACES SHALL BE LABELED TO IDENTIFY THE SERVING PANEL, VOLTAGE, PHASE AND CIRCUIT NUMBERS CONTAINED WITHIN THE BOX. LABEL SHALL BE LEGIBLY HANDWRITTEN WITH BLACK, FELT TIP PERMANENT MARKER.

D. THE COVER PLATES OF ALL WIRING DEVICES SHALL BE LABELED TO IDENTIFY THE SERVING PANEL AND THE CIRCUITS SERVING THE DEVICE, LABELS SHALL BE MACHINE PRINTED, BLACK TEXT ON A CLEAR, SELF ADHESIVE LABEL

CONDUIT AND FITTINGS

A. ALL INTERIOR AND EXTERIOR CONDUITS SHALL BE INSTALLED AND SUPPORTED IN ACCORDANCE WITH N.E.C. REQUIREMENTS.

B. MINIMUM CONDUIT SIZE SHALL BE N" TRADE SIZE. SWITCH LEGS SHALL BE ½" TRADE SIZE.

C. WITHIN INTERIOR FINISHED SPACES, ALL CONDUIT SHALL BE INSTALLED CONCEALED WITHIN NEW AND EXISTING WALLS AND ABOVE NEW AND EXISTING CEILINGS.

D. CONDUIT INSTALLED WITHIN THE INTERIOR OF THE BUILDING SHALL BE GALVANIZED ELECTRICAL METALLIC TUBING (EMT). CONDUIT FITTINGS FOR INDOOR EMT CONDUITS SHALL BE CAST METAL, COMPRESSION TYPE.

E. EMT SHALL BE USED FOR INTERIOR FEEDERS AND BRANCH CIRCUITS INSTALLED EXPOSED IN UNFINISHED SPACES, CONCEALED ABOVE NEW OR EXISTING CEILINGS OR CONCEALED WITHIN EXISTING AND NEW INTERIOR PARTITIONS.

F. CONDUITS INSTALLED EXPOSED ON THE EXTERIOR OF THE BUILDING SHALL BE GALVANIZED RIGID STEEL FITTINGS SHALL BE THREADED TYPE.

G. CONDUITS INSTALLED UNDER SLAB ON GRADE CONSTRUCTION SHALL BE RIGID NON-METALLIC (RNC), SCHEDULE 40 PVC. RNC COMPLYING WITH NEMA TC 2 AND UL 651 UNLESS OTHERWISE INDICATED. FITTINGS FOR RIGID NON-METALLIC CONDUIT SHALL COMPLY WITH NEMA TC 3; MATCH TO CONDUIT TYPE AND MATERIAL

H. PROVIDE CONDUIT EXPANSION FITTINGS IN ALL CONDUIT RUNS THAT EXTEND ACROSS BUILDING EXPANSION JOINTS AND WHERE MOVEMENT MAY BE ENCOUNTERED.

I. CONDUIT SHALL BE SUPPORTED FROM STRUCTURE ONLY.

J. PVC CONDUIT SHALL ONLY BE USED BELOW GRADE

K. PROVIDE FLEXIBLE METAL CONDUIT FOR CONNECTIONS TO VIBRATING EQUIPMENT WITHIN INTERIOR DRY LOCATIONS, MAXIMUM CONDUIT LENGTH SHALL BE 36 INCHES.

L. PROVIDE LIQUID-TIGHT FLEXIBLE METAL CONDUIT FOR CONNECTIONS TO VIBRATING EQUIPMENT IN WET OR OUTDOOR LOCATIONS. MAXIMUM CONDUIT LENGTH SHALL BE 36 INCHES.

M. PROVIDE FLEXIBLE METAL CONDUIT FOR FINAL CONNECTIONS TO RECESSED LIGHT FIXTURES (FIXTURE WHIPS). MAXIMUM CONDUIT LENGTH SHALL BE 72 INCHES.

N. CONDUITS THAT EXTEND UP TO THE ROOF LEVEL TO SERVE ROOF MOUNTED MECHANICAL EQUIPMENT INSTALLED ON A CURB SHALL BE ROUTED WITHIN THE EQUIPMENT CURB. COORDINATE ELECTRICAL WORK WITH MECHANICAL EQUIPMENT INSTALLER.

O. PROVIDE CONDUIT SEALING FITTINGS IN ALL CONDUITS THAT EXTEND FROM NON-CONDITIONED SPACES TO CONDITIONED SPACES PER NEC 300.7(A). PROVIDE EXPANSION JOINTS FOR CONDUIT AS REQUIRED TO COMPENSATE FOR THERMAL EXPANSION AND CONTRACTION.

P. ACCEPTABLE MANUFACTURERS FOR GALVANIZED RIGID CONDUIT, EMT, FLEXIBLE METAL-CONDUITS AND LIQUID-TIGHT FLEXIBLE METAL CONDUITS SHALL BE ALLIED, REPUBLIC,WHEATLAND, ELECTRI-FLEX AND ANACONDA.

Q. ACCEPTABLE MANUFACTURERS FOR CONDUIT FITTINGS SHALL BE THOMAS AND BETTS OR APPROVED EQUAL.

CONDUCTORS

A. ALL WIRING SHALL BE INSTALLED IN CONDUIT.

B. ALL CONDUCTORS SHALL BE SOFT DRAWN, ANNEALED COPPER, #12 AWG MINIMUM.

C. CONDUCTORS #12 AND #10 AWG SHALL BE SOLID; #8 AWG AND LARGER SHALL BE STRANDED.

D. THE USE OF ALUMINUM CONDUCTORS IS NOT ACCEPTABLE.

E. EXPOSED, INTERIOR FEEDERS: TYPE THHN-THWN, SINGLE CONDUCTORS IN CONDUIT.

F. FEEDERS INSTALLED CONCEALED IN CEILINGS, WALLS, PARTITIONS: TYPE THHN-THWN, SINGLE CONDUCTORS IN CONDUIT.

G. FEEDERS INSTALLED CONCEALED IN CONCRETE, BELOW SLABS-ON-GRADE AND UNDERGROUND: TYPE THHN-THWN, SINGLE CONDUCTORS IN PVC CONDUIT.

H. EXPOSED, INTERIOR, BRANCH CIRCUITS: TYPE THHN-THWN, SINGLE CONDUCTORS IN CONDUIT.

I. BRANCH CIRCUITS CONCEALED IN EXISTING AND NEW CEILINGS, WALLS, AND PARTITIONS: TYPE THHN-THWN, SINGLE CONDUCTORS IN CONDUIT.

J. BRANCH CIRCUITS CONCEALED BELOW SLABS-ON-GRADE, AND UNDERGROUND: TYPE THHN-THWN, SINGLE CONDUCTORS IN CONDUIT.

K. ACCEPTABLE MANUFACTURERS FOR CONDUCTORS: GENERAL CABLE COMPANY, CAROL, ANACONDA, ROME, SOUTHWIRE.

L. CLASS 1 CONTROL CIRCUITS: TYPE THHN-THWN, IN CONDUIT.

M. CLASS 2 CONTROL CIRCUITS: POWER-LIMITED PLENUM RATED CABLE, CONCEALED IN BUILDING FINISHES.

N. THE USE OF NON-METALLIC-SHEATHED CABLE (TYPE NM) AND ARMORED CABLE (TYPE AC OR BX) IS NOT ACCEPTABLE.

O. WIRE CONNECTORS SHALL BE EQUAL TO SCOTCH LOCK FOR #8 AWG AND SMALLER, THOMAS AND BETTS LOCK-TITE FOR #6 AND LARGER.

P. PROVIDE #10 AWG CONDUCTORS FOR BRANCH CIRCUITS HAVING A CONDUCTOR LENGTH LONGER THAN 75 FEET.

Q. SIZE OF CONDUCTORS AND CABLES INDICATED OR SPECIFIED ARE IN AMERICAN WIRE GAGE (AWG - BROWN AND SHARPE).

R. INSTALL ALL WIRING IN APPROVED RACEWAY AND ENCLOSURES, EXCEPT WHERE SPECIFIED OR INDICATED, FOR LOW-VOLTAGE WIRING OR, WHERE TYPE MC CABLE IS INDICATED, SPECIFIED AS ACCEPTABLE, OR BOTH.

S. SUPPORT ALL CONDUCTORS AND CABLES IN VERTICAL INSTALLATIONS, AS REQUIRED BY NFPA-70, BY INSTALLING CABLE SUPPORTS OR PLUG-TYPE CONDUIT RISER SUPPORTS, OR WIRE-MESH SAFETY GRIPS.

T. INSTALL ALL CONDUCTORS AND CABLE IN RACEWAYS CONTINUOUS WITHOUT TAPS OR SPLICES. SPLICE OR TAP ONLY IN APPROVED BOXES AND ENCLOSURES WITH APPROVED SOLDERLESS CONNECTORS, OR CRIMP CONNECTORS AND TERMINAL BLOCKS FOR CONTROL WIRING, AND KEEP TO THE MINIMUM REQUIRED. INSULATE ALL SPLICES, TAPS, AND JOINTS AS REQUIRED BY CODE.

U. ALL MATERIALS USED TO TERMINATE, SPLICE OR TAP CONDUCTORS: DESIGNED, PROPERLY SIZED, AND UL LISTED FOR THE SPECIFIC APPLICATION AND CONDUCTORS INVOLVED, AND INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, USING THE MANUFACTURER'S RECOMMENDED TOOLS.

V. WHERE WIRING IS INDICATED AS INSTALLED, BUT THE CONNECTION IS INDICATED "FUTURE" OR "BY OTHER DIVISION, TRADES, OR CONTRACTS", LEAVE A MINIMUM OF 3' FOOT "PIGTAIL" AT THE BOX, TAPE THE ENDS OF CONDUCTORS, AND COVER THE BOX.

W. VOLTAGE DROP IN BRANCH CIRCUITS SHALL NOT EXCEED 3 PERCENT.

X. WHEN NEW CONDUCTORS ARE CONNECTED TO EXISTING CONDUCTORS, THE NEW CONDUCTORS SHALL BE OF THE SAME AWG, CONDUCTOR MATERIAL, INSULATION TYPE TEMPERATURE RATING,. ETC. AS THE EXISTING CONDUCTORS TO WHICH BEING CONNECTED.

Y. ALL LINE VOLTAGE WIRING IS TO BE IN CONDUIT AND ALL LOW VOLTAGE WIRING IS TO BE IN PLENUM RATED OR IN CONDUIT.

TYPE MC CABLE

A. MC CABLE IS PERMITTED ONLY FOR FINAL CONNECTIONS (E.G., FROM OUTLET BOXES TO LIGHT FIXTURES, MOTORS, OR APPLIANCES), MAXIMUM LENGTH 6 FEET.

B. TYPE MC CABLE: 600V, UNJACKETED: ANSI E119 AND E814, UL STANDARDS 44 OR 83 (AS APPLICABLE), AND 1569, NFPA 70 ARTICLE 330; ALUMINUM OR GALVANIZED STEEL INTERLOCKED ARMOR; THHM- OR XHHW-INSULATED CONDUCTORS; COLOR CODE: ICEA METHOD 1, WITH GREEN INSULATED GROUNDING CONDUCTOR.

C. USES PERMITTED

C.1. IN LIEU OF FLEXIBLE CONDUIT AND WIRING FROM LIGHT FIXTURES IN ACCESSIBLE CEILINGS TO JUNCTION BOXES (ATTACHED TO BUILDING STRUCTURE) ABOVE THE CEILING. PROVIDE CABLE WHIPS OF SUFFICIENT LENGTHS TO ALLOW FOR RELOCATING EACH LIGHT FIXTURE WITHIN A 5' FOOT RADIUS OF ITS INSTALLED LOCATION, BUT NOT EXCEEDING 6' FEET IN UNSUPPORTED LENGTHS.

C.2. FOR VERTICAL DROPS IN STUD WALLS.

D. USES NOT PERMITTED:

D.1. HOMERUNS TO PANELSBOARDS.

D.2. WHERE EXPOSED TO VIEW.

D.3. WHERE EXPOSED TO DAMAGE.

D.4. HAZARDOUS LOCATIONS.

D.5. WET LOCATIONS.

D.6. INSTALLED HORIZONTALLY WITHIN STUD WALL.

D.7. WHEN RESTRICTED OTHERWISE ABOVE, AND WHEN SPECIFICALLY DISALLOWED BY THE LOCAL AHJ, OWNER OR BOTH.

E. PRIOR TO THE SUBMISSION OF A BID PROPOSAL, EC SHALL VERIFY THE PERMISSIBLE USE OF MC CABLE WITH THE AHJ.

CONDUCTOR COLOR CODING

A. PROVIDE COLOR CODING SYSTEM AS LISTED BELOW FOR ALL FEEDERS AND BRANCH CIRCUITS AND USED AS A BASIS FOR BALANCING LOAD ON PANELS, AND TO BE PHASE IDENTIFICATION.

B. COLOR CODING FOR CONDUCTOR #12 AWG THROUGH #6 AWG SHALL CONSIST OF COLOR CODED THERMOPLASTIC INSULATION OF THE COLORS SPECIFIED HEREIN.

C. COLOR CODING FOR CONDUCTORS #8 AWG AND LARGER SHALL BE FIELD APPLIED SELF ADHESIVE TAPE OF THE COLOR SPECIFIED HEREIN FOR THE PARTICULAR PHASE.

D. 120/208V: PHASE A--BLACK, PHASE B--RED, PHASE C--BLUE, NEUTRAL--WHITE, EQUIPMENT GROUND--GREEN, ISOLATED GROUND--GREEN WITH DISTINCTIVE WHITE OR YELLOW MARKINGS.

E. 277/480V: BROWN-A, ORANGE-B YELLOW-C, NEUTRAL WHITE OR GRAY, EQUIPMENT GROUND - GREEN.

BOXES AND FITTINGS

A. ALL OUTLET BOXES SHALL BE UL LISTED AND LABELED FOR USE IN THE SPACE THEY OCCUPY AND THE PURPOSE THEY SERVE.

B. SHEET METAL OUTLET AND DEVICE BOXES FOR DRY, INTERIOR APPLICATIONS: COMPLY WITH NEMA OS 1 AND UL 514A.

C. CAST-METAL OUTLET AND DEVICE BOXES FOR EXTERIOR APPLICATIONS: COMPLY WITH NEMA FB 1, FERROUS ALLOY, TYPE FS OR FD, WITH GASKETED COVER.

D. OUTLET BOXES INSTALLED WITHIN FIRE RATED ASSEMBLIES SHALL HAVE A FIRE RATING EQUAL TO OR GREATER THAN THE RATING OF THE WALL IN WHICH IT IS INSTALLED.

E. OUTLET BOXES SHALL BE 4 INCHES SQUARE BY 2 1/8 INCHES DEEP, EXCEPT FOR 2" PARTITIONS SHALL BE AT LEAST 1-1/2" DEEP.

F. OUTLET BOXES FOR VOICE AND DATA DEVICES SHALL BE 4 11/16 INCHES SQUARE BY 2 1/8 INCHES DEEP.

G. ALL PULLBOXES SHALL BE CONSTRUCTED OF GALVANIZED STEEL, OF METAL GAUGE AND PHYSICAL SIZE AS REQUIRED BY THE N.E.C. FOR THE NUMBER AND SIZE OF CONDUITS AND CONDUCTORS ASSOCIATED WITH THE PULLBOX.

H. FIXTURE OUTLET BOXES IN/OR ON CEILINGS SHALL NOT BE LESS THAN 1-1/2" DEEP OR LESS THAN 4" SQUARE. ALL OUTLET BOXES INTENDED TO SUPPORT FIXTURES SHALL BE EQUIPPED WITH 3/8" FIXTURE STUDS FASTENED THROUGH THE BOTTOM OF THE BOX WITH FOUR BOLTS.

I. PULLBOXES AND JUNCTION BOXES THAT ARE CUSTOM FABRICATED FOR THE APPLICATION SHALL BE FABRICATED BY A SHOP/FACILITY THAT IS CERTIFIED BY A NRTL FOR THE FABRICATION OF SUCH ENCLOSURES.

J. NEW OUTLET BOXES INSTALLED WITHIN NEW OR EXISTING STUD WALL CONSTRUCTION SHALL BE MOUNTED TO A STUD OR MOUNTED IN A BRACKET THAT SPANS STUD-TO-STUD, CADDY TSGB BRACKET OR APPROVED EQUAL. THE USE OF "OLD WORK" TYPE BOXES THAT. SECURE ONLY TO THE DRYWALL ARE NOT ACCEPTABLE.

K. ACCEPTABLE MANUFACTURERS FOR BOXES: APPLETON, STEEL CITY, RACO.

PANELBOARDS

A. CIRCUIT BREAKERS SHALL BE MOLDED CASE, BOLT-ON TYPE SUITABLE FOR VOLTAGE AND AMPERE RATINGS INDICATED ON DRAWINGS AND IN PANEL SCHEDULES. REFER TO THE PANEL SCHEDULES ON THE DRAWINGS FOR ADDITIONAL ACCESSORIES TO BE PROVIDED AT SELECT CIRCUIT BREAKERS.

B. CIRCUIT BREAKERS SHALL HAVE A MINIMUM AMPERE INTERRUPTING CAPACITY (AIC) OF 10,000 AMPERES FOR 120/208V SYSTEMS, 14,000 FOR 277/480V SYSTEMS.

C. WHERE THE POWER SYSTEM STUDY IDENTIFIES AVAILABLE FAULT CURRENT VALUES AT EXISTING THAT ARE HIGHER THAN THE MINIMUM AIC RATINGS SPECIFIED HEREIN, PROVIDE CIRCUIT BREAKERS IN THE PANELS THAT HAVE AIC RATINGS GREATER THAN THE AVAILABLE FAULT CURRENT AT THE PANEL AS DETERMINED BY THE POWER SYSTEM STUDY.

D. CIRCUIT BREAKERS SERVING LIGHTING CIRCUITS SHALL BE RATED FOR SWITCH DUTY.

E. CIRCUIT BREAKERS SERVING HVAC EQUIPMENT SHALL BE HACR RATED.

F. ALL LUGS SHALL BE OF THE SOLDERLESS TYPE AND RATED AT A MINIMUM OF 75°C.

G. PROVIDE NEW CIRCUIT DIRECTORIES WITHIN EXISTING PANELS TO REFLECT THE WORK OF THIS CONTRACT. DIRECTORY SHALL BE TYPEWRITTEN OR COMPUTER GENERATED. HANDWRITTEN CIRCUIT DIRECTORIES ARE NOT ACCEPTABLE.

H. UTILIZE FINAL, OWNER ASSIGNED ROOM NAMES AND NUMBERS TO IDENTIFY SPACES WITHIN THE CIRCUIT DIRECTORIES. COMPLY WITH NEC 408.4 WHEN IDENTIFYING CIRCUITS IN CIRCUIT DIRECTORIES.

I. PANEL CIRCUITS SHALL BE CONFIGURED SUCH THAT THE LOAD IS DISTRIBUTED EVENLY ACROSS ALL THREE PHASES TO WITHIN 10%.

J. EXISTING PANELBOARDS SHALL BE LABELED TO IDENTIFY THE AMOUNT OF FAULT CURRENT AVAILABLE AT THE PANEL AS DETERMINED BY THE POWER SYSTEM STUDY TO BE PERFORMED. LABEL SHALL BE MACHINE PRINTED, BLACK TEXT ON CLEAR, SELF ADHESIVE TAPE. INSTALL LABEL ADJACENT TO PANELBOARDS ENGRAVED NAMEPLATE.

K. ALL NEW AND EXISTING PANELBOARDS SHALL BE LABELED TO IDENTIFY THE ARC FLASH HAZARD CHARACTERISTICS AT THE PANEL AS DETERMINED BY THE POWER SYSTEM STUDY TO BE PERFORMED.

L. ALL "SPARE" CIRCUIT BREAKERS SHALL BE SET TO THE "OFF" POSITION.

M. PROVIDE HANDLE TIES ON ALL MULTI-WIRE BRANCH CIRCUITS IN ACCORDANCE WITH NEC 210.4(B).

N. WHEN NEW CIRCUIT BREAKERS ARE ADDED TO AN EXISTING PANEL, THE NEW CIRCUIT BREAKERS SHALL BE OF THE SAME MANUFACTURE AS THE EXISTING PANEL, SHALL BE OF A 'LETTER TYPE' COMPATIBLE WITH THE EXISTING PANEL SUCH THAT THE UL LISTING OF THE EXISTING PANEL IS MAINTAINED AND SHALL HAVE AN AIC RATING EQUAL TO OR GREATER THAN THE AIC RATING OF THE EXISTING OVERCURRENT PROTECTIVE DEVICES WITHIN THE EXISTING PANEL.

SWITCHES

A. TOGGLE SWITCHES SHALL BE SINGLE POLE, 3-WAY OR 4-WAY AS NOTED ON THE DRAWINGS, 20 AMPERES, 120/277 VOLT AC TYPE, SPECIFICATION GRADE WITH SCREW TERMINALS. HUBBELL 1221-X, 1223-X OR 1224-X OR APPROVED EQUIVALENT BY ONE OF THE ADDITIONAL MANUFACTURERS SPECIFIED HEREIN.

B. TOGGLE SWITCHES SHALL BE MOUNTED AT DOORS, INSTALLED ADJACENT TO THE TRIM ON THE STRIKING SIDE OF THE DOOR, REGARDLESS OF THE LOCATION INDICATED ON THE DRAWINGS. VERIFY ALL DOOR SWINGS PRIOR TO INSTALLATION OF OUTLET BOXES FOR SWITCHES.

C. DEVICE COLOR SHALL BE AS SELECTED BY THE OWNER/ARCHITECT.

D. PROVIDE A NEUTRAL CONDUCTOR TO ALL SWITCH LOCATIONS.

E. SWITCHES SHALL BE INSTALLED SURFACE MOUNTED IN UNFINISHED AREA. FLUSH MOUNTED IN FINISHED SPACES.

F. ADDITIONAL ACCEPTABLE MANUFACTURERS FOR SWITCHES: LEGRAND, LEVITON.

RECEPTACLES

A. RECEPTACLES SHALL BE 20 AMP, 125 VOLT, 2-POLE, 3-WIRE, GROUNDING TYPE, NEMA 5-20R WITH SCREW TERMINALS. HUBBELL 5362-W OR APPROVED EQUAL BY ONE OF THE ADDITIONAL MANUFACTURERS SPECIFIED HEREIN.

B. GFCI RECEPTACLES SHALL BE 20 AMP, 125 VOLT, 2-POLE, 3-WIRE, GROUNDING TYPE, NEMA 5-20R FEED THROUGH TYPE CAPABLE OF PROTECTING DOWNSTREAM RECEPTACLES ON A SINGLE CIRCUIT, SOLID STATE GROUND FAULT SENSING AND SIGNALING, 5 MILLIAMP TRIP LEVEL, NEMA 5-20R WITH SCREW TERMINALS. HUBBELL GF5362-X OR APPROVED EQUAL BY ONE OF THE ADDITIONAL MANUFACTURERS SPECIFIED HEREIN.

C. ISOLATED GROUND RECEPTACLES SHALL BE ORANGE, 20 AMP, 125 VOLT, 2-POLE, 3-WIRE, GROUNDING TYPE, NEMA 5-20R WITH SCREW TERMINALS. HUBBELL IG-5362-W OR APPROVED EQUAL BY ONE OF THE ADDITIONAL MANUFACTURERS SPECIFIED HEREIN.

D. PROVIDE SPECIAL PURPOSE RECEPTACLES HAVING NEMA CONFIGURATIONS THAT MATE AND MATCH THE NEMA PLUG CONFIGURATION PROVIDED WITH THE EQUIPMENT TO BE CONNECTED.

E. COVER PLATES FOR EXTERIOR RECEPTACLES SHALL BE RATED FOR "WEATHERPROOF WHILE IN USE".

F. DEVICE COLOR SHALL BE AS SELECTED BY THE OWNER/ARCHITECT.

G. QUAD RECEPTACLES SHALL CONSIST OF (2) DUPLE3X RECEPTACLES INSTALLED IN A SINGLE BOX UNDER A SINGLE COVER PLATE.

H. RECEPTACLES SHALL BE INSTALLED SURFACE MOUNTED IN UNFINISHED SPACES, FLUSH MOUNTED IN FINISHED SPACES.

I. ADDITIONAL ACCEPTABLE MANUFACTURERS FOR SWITCHES AND RECEPTACLES: LEGRAND, LEVITON.

GFCI PROTECTION:

A. ALL KITCHEN SINGLE PHASE RECEPTACLES RATED 150 VOLTS TO GROUND OR LESS, 50 AMPS OR LESS AND THREE PHASE RECEPTACLES RATED 150 VOLTS TO GROUND OR LESS, 100 AMPS OR LESS SHALL HAVE GROUND FAULT CIRCUIT INTERRUPTER PROTECTION FOR PERSONNEL IN ACCORDANCE WITH NEC 210.8, (B), (1) (10), OR THE EQUIVALENT REQUIREMENT WITHIN THE APPLICABLE ELECTRICAL CODE.

B. THE "GFCI" NOTATION AT A DEVICE OR CIRCUIT BREAKER INDICATES THAT GFCI PROTECTION SHALL BE PROVIDED FOR THE CIRCUIT OR CIRCUITS INDICATED. GFCI PROTECTION SHALL BE PROVIDED BY ONE OF THE FOLLOWING MEANS:

1. INTEGRAL GFCI PROTECTION WITHIN THE DEVICE (NEMA 5-20R RECEPTACLES), WHEN THE DEVICE IS ABLE TO BE INSTALLED IN A READILY ACCESSIBLE LOCATION AS DEFINED BY THE APPLICABLE ELECTRICAL CODE.
2. GFCI CIRCUIT BREAKER INSTALLED WITHIN THE PANEL FOR SERVICE TO THE CIRCUIT OR CIRCUITS.
3. GFCI CIRCUIT BREAKER INSTALLED WITHIN AN INDIVIDUAL ENCLOSURE EXTERNAL TO THE PANEL FOR SERVICE TO THE CIRCUIT.
4. DEAD-FRONT GFCI DEVICE INSTALLED IN A READILY ACCESSIBLE LOCATION AS DEFINED BY THE NEC (APPLICABLE TO 20 AMP, 120 VOLT CIRCUITS).
5. AN INDIVIDUALLY MOUNTED EXTERNAL SPECIAL PURPOSE GROUND FAULT CIRCUIT INTERRUPTER (SPGFCI) DEVICE SIMILAR TO "SHOCK BLOCK" PRODUCTS AS MANUFACTURED BY LITTLEFUSE, OR APPROVED EQUAL.
6. DEAD FRONT DEVICES SHALL BE BE LABELED TO IDENTIFY THE CIRCUIT AND THE LOAD SERVED BY THE DEVICE.

COVER PLATES FOR TOGGLE SWITCHES AND RECEPTACLES

A. COVER PLATES SHALL BE NYLON, OF CONFIGURATION TO MATCH THE WIRING DEVICE.

B. CONFIGURATION AND COLOR OF COVER PLATE SHALL MATCH THAT OF THE WIRING DEVICE THAT THE PLATE WILL BE INSTALLED ON.

C. COVER PLATE COLOR SHALL BE AS SELECTED BY THE OWNER/ARCHITECT.

D.

E. ADDITIONAL ACCEPTABLE MANUFACTURERS FOR COVER PLATES: LEGRAND, LEVITON.

MOUNTING HEIGHTS FOR ELECTRICAL DEVICES AND EQUIPMENT

A. DEVICES AND EQUIPMENT SHALL BE INSTALLED AT THE MOUNTING HEIGHTS NOTED BELOW UNLESS NOTED OTHERWISE ON THE DRAWINGS OR REQUIRED BY APPLICABLE CODES AND STANDARDS:

1. TOGGLE SWITCHES, WALL SWITCH OCCUPANCY SENSORS, VACANCY SENSORS AND DIMMERS FOR LIGHTING CONTROL-TOP OF DEVICE 48" AFF.
2. CONVENIENCE RECEPTACLES TOP OF DEVICE 18" AFF.
3. CONVENIENCE RECEPTACLES AT COUNTERTOPS-BOTTOM OF DEVICE 44" AFF OR AS NOTED ON THE DRAWINGS .
4. RECEPTACLES AT FACILITY EQUIPMENT AS INDICATED ON THE FINAL, APPROVED FOOD SERVICE SHOP DRAWINGS.
5. TELEPHONE AND DATA OUTLETS-TOP OF DEVICE 18" AFF, 44" AFF WHEN INSTALLED AT COUNTER TOPS.
6. DISCONNECT SWITCHES - TOP OF ENCLOSURE 66" AFF .

DISCONNECT SWITCHES

A. DISCONNECT SWITCHES SHALL BE HEAVY DUTY TYPE, UL LISTED AND LABELED, EQUIPPED WITH A LUG FOR TERMINATION OF THE EQUIPMENT GROUNDING CONDUCTOR.

B. DISCONNECT SWITCHES SHALL BE LOCKABLE WITH NEMA 1 ENCLOSURES FOR DRY, INDOOR APPLICATIONS; NEMA 3R ENCLOSURES FOR OUTDOOR OR WET LOCATION APPLICATIONS.

C. TOGGLE DISCONNECTS SHALL BE 20A OR 30A AS REQUIRED. SINGLE POLE, 2-POLE OR 3-POLE AS REQUIRED, SINGLE THROW, MOTOR RATED SWITCH WITHOUT OVERLOAD PROTECTION. NEMA 1, 3R OR 4X STAINLESS STEEL ENCLOSURE AS REQUIRED BY APPLICATION, PADLOCK ATTACHMENT.

D. ALL DISCONNECT SWITCHES SHALL BE EQUIPPED WITH AN ENGRAVED NAMEPLATE TO IDENTIFY THE SERVING PANEL, CIRCUIT NUMBERS AND THE LOAD SERVED BY THE SWITCH.

E. ACCEPTABLE MANUFACTURERS FOR DISCONNECT SWITCHES: SCHNEIDER, ABB, SIEMENS OR EATON.

MOTOR CONTROLLERS

A. PROVIDE ENCLOSED MOTOR CONTROLLERS AS SPECIFIED HEREIN FOR CONTROL OF MOTORS RATED FOR 600 VOLTS AND LESS.

B. FRACTIONAL HORSEPOWER MANUAL CONTROLLERS: "QUICK-MAKE, QUICK-BREAK" TOGGLE OR PUSH-BUTTON ACTION; PILOT LIGHT TO INDICATE "MOTOR RUNNING", MARKED TO SHOW WHETHER UNIT IS OFF, ON, OR TRIPPED.

1. CONFIGURATION: NON-REVERSING.
2. OVERLOAD RELAYS: INVERSE-TIME-CURRENT CHARACTERISTICS; NEMA ICS 2, CLASS 10 TRIPPING CHARACTERISTICS; HEATERS MATCHED TO NAMEPLATE FULL-LOAD CURRENT OF ACTUAL PROTECTED MOTOR; EXTERNAL RESET PUSH BUTTON.
3. FLUSH MOUNTED WITHIN FINISHED SPACES; SURFACE MOUNTED WITHIN UNFINISHED SPACES.
4. ACCEPTABLE MANUFACTURERS: SCHNEIDER, ABB, SIEMENS, EATON.

FUSES

A. PROVIDE CARTRIDGE FUSES RATED FOR 250 VAC AND 600 VAC AND LESS FOR USE AS SPECIFIED HEREIN.

B. COORDINATE FUSE RATINGS WITH UTILIZATION EQUIPMENT NAMEPLATE LIMITATIONS OF MAXIMUM FUSE SIZE AND WITH SYSTEM SHORT-CIRCUIT CURRENT LEVELS.

C. CARTRIDGE FUSE APPLICATIONS:

1. CIRCUITS, UP TO AND INCLUDING 600 AMPS: CLASS J, BUSSMANN LPJ.
2. CONTROL POWER TRANSFORMER (CPT) CIRCUITS: CLASS CC, TIME DELAY, CONTROL TRANSFORMER DUTY.
3. BASIS OF DESIGN FOR FUSES SHALL BE BUSSMANN. ADDITIONAL ACCEPTABLE MANUFACTURERS FOR SPECIFIED FUSES SHALL BE LITTLEFUSE AND MERSEN.

LIGHTING FIXTURES AND LIGHTING CONTROLS

A. ROWAN TO SUPPLY ALL LIGHT FIXTURES.

B. EC TO INSTALL AND CONNECT ALL LIGHT FIXTURES.

C. EC TO FURNISH, INSTALL, AND CONNECT ALL LIGHTING CONTROLS/SWITCHES/SENSORS.

ROUGH-IN SYSTEM FOR VOICE AND DATA

A. PROVIDE A ROUGH-IN SYSTEM AS SPECIFIED HEREIN FOR SERVICE TO THE OWNER'S VOICE AND DATA NETWORK.

B. PROVIDE A PLYWOOD BACKBOARD FOR TERMINATION OF TELEPHONE SERVICE AND DISTRIBUTION COMPONENTS. PLYWOOD BACKBOARD SHALL BE 2' X 3' X 3/4", FIRE RATED, PAINTED WITH TWO (2) COATS OF LIGHT GRAY ENAMEL PAINT. MASK FIRE RATED LABEL TO PREVENT THE LABEL FROM BEING PAINTED OVER.

C. OUTLET BOXES FOR TELEPHONE AND DATA DEVICES SHALL CONSIST OF 4 11/16 IN SQUARE BY 2 1/8 INCH DEEP OUTLET BOXES WITH SINGLE DEVICE COVER.

D. PROVIDE A 3" EMPTY CONDUIT WITH PULLSTRING FROM THE WALL MOUNTED PLYWOOD TELEPHONE TERMINAL BOARD IN THE TENANT SPACE TO THE LANDLORDS TELEPHONE DISTRIBUTION OR POINT OF SERVICE DELIVERY. PROVIDE A NYLON BUSHING ON EACH END OF CONDUIT FOR CABLE PROTECTION.

E. ROUGH-IN FOR WIRING DROPS TO WALL MOUNTED VOICE AND DATA DEVICES SHALL BE INSTALLED WITHIN EMT CONDUIT, 1". PROVIDE A CONDUIT STUB FROM THE DEVICE BOX TO ABOVE ACCESSIBLE CEILING. PROVIDE A PLENUM RATED NYLON BUSHING ON THE END OF THE CONDUIT STUB FOR PROTECTION OF THE WIRING.

F. PRIOR TO BEGINNING WORK, THIS CONTRACTOR SHALL FULLY COORDINATE HIS CONSTRUCTION OPERATIONS AND ALL TERMINATION LOCATIONS WITH AUTHORIZED REPRESENTATIVE OF THE TELEPHONE UTILITY COMPANY AND THE OWNER'S DATA NETWORK PROVIDER BY TIMELY NOTICE OR SCHEDULING OF SERVICE EQUIPMENT DATES, SERVICE MODIFICATION DATES AND NOTIFICATION OF REQUIRED OWNER AUTHORIZATIONS INVOLVING THE UTILITY COMPANY.

DUCT MOUNTED SMOKE DETECTORS

A. PROVIDE A 120 VOLT POWER SOURCE TO ALL DUCT MOUNTED SMOKE DETECTORS INSTALLED WITHIN NEW AND EXISTING MECHANICAL EQUIPMENT.

B. PROVIDE A DUCT MOUNTED SMOKE DETECTORS WITHIN NEW AND EXISTING MECHANICAL EQUIPMENT AS REQUIRED BY APPLICABLE CODES. FINAL ELECTRICAL CONNECTION AND ALL INTERLOCK WIRING BY THE ELECTRICAL CONTRACTOR.

C. PROVIDE ALL INTERLOCK WIRING IN CONDUIT BETWEEN ALL DUCT DETECTORS SUCH THAT UPON DETECTING SMOKE IN ANY ONE DETECTOR, ALL ROOF TOP UNITS SHALL BE SHUT DOWN.

D. PROVIDE TEST/RESET SWITCH AND PIEZO ALERT SOUNDER AND REMOTE ANNUNCIATOR ALARM LED MOUNTED AS DIRECTED BY LOCAL AHJ. EC TO PROVIDE ALL REQUIRED INTERLOCK WIRING BETWEEN DUCT DETECTOR AND REMOTE SWITCH.

E. REFER TO DETAILS ON MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.

TESTING

A. PROVIDE ALL TESTS AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.

B. PROVIDE THE TESTS AS OUTLINED HEREINAFTER AND OTHER TESTS REQUIRED TO ESTABLISH THE ADEQUACY, QUALITY, SAFETY, COMPLETED STATUS AND SUITABLE OPERATION OF EACH SYSTEM.

C. PROMPTLY CORRECT ANY FAILURES, DEFICIENCIES AND/OR DEFECTS REVEALED BY THESE TESTS. AFTER CORRECTING FAILURES, DEFICIENCIES OF DEFECTS, CONDUCT NEW TESTING TO VERIFY THAT THE DEFICIENCY HAS BEEN RECTIFIED AND THE SYSTEM IS FUNCTIONING PROPERLY.

D. NEW AND EXISTING PANELBOARDS SHALL HAVE PHASE CURRENTS BALANCED TO WITHIN +/- 10% VARIATION BETWEEN AVERAGE PHASE CURRENT AND MEASURED INDIVIDUAL PHASE.

E. AN OPERATIONAL TEST OF THE EMERGENCY LIGHTING/EXIT SIGNAGE SYSTEM SHALL BE PERFORMED IN THE PRESENCE OF THE OWNER AND THE AUTHORITY HAVING JURISDICTION TO DEMONSTRATE PROPER OPERATION AND COMPLIANCE WITH APPLICABLE CODES AND SPECIFIED REQUIREMENTS.

OPERATION AND MAINTENANCE MANUALS

A. THIRTY (30) DAYS PRIOR TO SUBSTANTIAL COMPLETION, SUBMIT OPERATING AND MAINTENANCE MANUALS FOR EQUIPMENT TO ENGINEER FOR APPROVAL. INCLUDE ONE COPY OF EACH FINAL APPROVED SUBMITTAL FOR RECORD PURPOSES, INDICATING THE ACTUAL PRODUCT INSTALLED. INCLUDE SIGNIFICANT CHANGES IN THE PRODUCT DELIVERED TO PROJECT SITE AND CHANGES IN MANUFACTURER'S WRITTEN INSTRUCTIONS FOR INSTALLATION.

8. PROVIDE COMPREHENSIVE CONTACT LIST INCLUDING CONTRACTOR AND SUBCONTRACTOR'S NAMES, ADDRESSES, TELEPHONE AND CONTACT PERSON FOR OWNER'S USE.

TRAINING OF OWNER'S DESIGNATED PERSONNEL

A. PREPARE AND SUBMIT OPERATING INSTRUCTIONS AND PROVIDE ON-SITE TRAINING OF OWNER'S PERSONNEL IN USE AND MAINTENANCE OF OPERATING EQUIPMENT.

WARRANTY

A. THE CONTRACTOR SHALL GUARANTEE ALL MATERIALS, EQUIP JALS, EQUIPMENT AND THE INSTALLATION TO BE FREE OF DEFECTS THAT MAY DEVELOP IN ANY PART OF THEIR WORK CAUSED BY FAULTY WORKMANSHIP, MATERIAL OR EQUIPMENT FAILURES, FOR A MINIMUM OF ONE (1) YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION OR FOR AS LONG AS NORMAL EQUIPMENT MANUFACTURER WARRANTIES ARE IN EFFECT FROM THE DATE OF OWNER ACCEPTANCE OF THE PROJECT, WHICHEVER IS LATER.

B. DURING THE ONE (1) YEAR WARRANTY PERIOD, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE PREMISES CAUSED BY DEFECTS IN WORKMANSHIP OR DEFECTS IN THE WORK OR EQUIPMENT FURNISHED AND/OR INSTALLED UNDER THE WORK OF THE ELECTRICAL CONTRACT.

FIRE ALARM SYSTEM

A. FIRE ALARM SYSTEM WORK IS A DELEGATED DESIGN AND IS NOT INCLUDED AS PART OF THE ELECTRICAL SCOPE OF WORK.

B. FIRE ALARM SYSTEM WORK SHALL BE PROVIDED BY THE GENERAL CONTRACTOR AS A DELEGATED DESIGN.

C. GENERAL CONTRACTOR (GC) SHALL BE RESPONSIBLE FOR RETAINING THE SERVICES OF A FIRE ALARM SYSTEM VENDOR/DESIGN PROFESSIONAL TO PREPARE THE FIRE ALARM SYSTEM DESIGN, DETAILS, CALCULATIONS, ETC. AS REQUIRED BY ALL APPLICABLE CODES AND THE AUTHORITY HAVING JURISDICTION.

D. GC/VENDOR/DESIGN PROFESSIONAL SHALL BE RESPONSIBLE FOR VERIFYING ALL APPLICABLE CODE REQUIREMENTS AND ALL LOCAL FIRE ALARM SYSTEM REQUIREMENTS WITH THE LOCAL AUTHORITY HAVING JURISDICTION.

E. GC/VENDOR/DESIGN PROFESSIONAL SHALL BE RESPONSIBLE FOR PROVIDING ALL REQUIRED SUBMITTAL DRAWINGS TO THE AUTHORITY HAVING JURISDICTION FOR REVIEW AND APPROVAL PRIOR TO COMMENCING WORK.

F. GC/VENDOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS FOR THE FIRE ALARM WORK

DEMOLITION

A. REMOVE ALL ELECTRICAL FIXTURES (EQUIPMENT, CONDUIT, WIRING, DEVICES, AND SYSTEMS, ETC.) THAT ARE NOT BEING REUSED.

B. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL UPON REMOVAL OF ALL SALVAGED ITEMS. OTHERWISE, REMOVE ALL DEMOLISHED ITEMS FROM SITE. NO EQUIPMENT OR ACCESSORIES SHALL BE ABANDONED IN PLACE. DEMOLISHED ITEMS SHALL NOT BE RE-INSTALLED WITHOUT PRIOR WRITTEN APPROVAL FROM THE OWNER OR AS DIRECTED ON PLANS.

SCOPE OF WORK:

- REUSE EXISTING 400 AMP, 120/208V, 3-PH, 4-WIRE ELECTRICAL SERVICE/FEEDER FOR THE PROJECT SPACE.
- REUSE EXISTING ELECTRICAL DISTRIBUTION & SERVICE EQUIPMENTS.
- REUSE EXISTING ELECTRICAL PANELS-
  'DP' 400 AMP (MCB), 120/208V, 3PH, 4W
  'A' 225 AMP (MLO), 120/208V, 3PH, 4W
  'B' 225 AMP (MLO), 120/208V, 3PH, 4W
  (V.I.F.)
- PROVIDE ALL REQUIRED RECEPTACLES FOR GENERAL AND EQUIPMENT USE, ALONG WITH ALL ASSOCIATED WIRING AND LIGHTING FOR THE PROPOSED TENANT SPACE.

EVEREVE

TITLE:

ELECTRICAL SPECIFICATIONS

SHEET NUMBER:

E-001

Property of NV Engineers

ELECTRICAL PANEL SCHEDULE AND LOAD SUMMARY

ELECTRICAL PANEL SCHEDULE

PANELBOARD			DP	VOLTAGE		120 / 240 V	PHASE		3	WIRE		4							
PANEL TYPE			MLO	MAINS		NA	BUS RATING		400A	AIC RATING		42KAIC (V.I.F.)							
NEMA TYPE ENCLOSURE			1	MOUNTING		SURFACE	OPTIONS			NOTE		EXISTING PANEL							
CKT. NO.	EQT TAG	CKT TAG	DESCRIPTION	POLE	WIRE SIZE	BKR. SIZE	TOTAL WATTS	PHASE	TOTAL WATTS	BKR. SIZE	WIRE SIZE	POLE	DESCRIPTION	CKT TAG	EQT TAG	CKT. NO.			
1							5,044	A					SPACE			2			
3		(E)	RTU-2 (E)	3	8	50	5,044	B					SPACE			4			
5							5,044	C					SPACE			6			
7			SPARE	1		20		A	4,803										
9			SPARE	1		20		B	4,803	50	8	3	EXISTING RTU (SERVING TO ANOTHER SPACE)	(E)		10			
11			SPARE	1		20		C	4,803							12			
13			SPARE	1		20		A		20		1	SPARE			14			
15			SPARE	1		20		B		20		1	SPARE			16			
17			SPARE	1		20		C		20		1	SPARE			18			
19			SPARE	1		20		A		20		1	SPARE			20			
21							4,803	B		20		1	SPARE			22			
23		(E)	EXISTING RTU (SERVING TO ANOTHER SPACE)	3	8	50	4,803	C		20		1	SPARE			24			
25							4,803	A		20		1	SPARE			26			
27			SPARE	1		20		B		20		1	SPARE			28			
29			SPARE	1		20		C								30			
31							4,203	A	2,330							32			
33		(E)	RTU-1 (E)	3	8	50	4,203	B	3,550	100	3	3	PANEL A			34			
35							4,203	C	3,600							36			
37			SPARE	1		20		A	4,920							38			
39			SPACE					B	3,600	100	3	3	PANEL B			40			
41			SPACE					C	5,880							42			

ALL PHASES TO BE BALANCED TO WITHIN 7%

A=	26,103	WATTS
B=	26,003	WATTS
C=	28,333	WATTS

TOTAL CONNECTED LOAD	80,439	WATTS	224	AMPS
TOTAL DEMAND LOAD	97,039	WATTS	270	AMPS

(E) EXISTING TO REMAIN
(N) NEW CIRCUIT
GFCI GROUND FAULT CURRENT INTERRUPTER
IG CIRCUITS WITH ISOLATED GROUND
TC CIRCUITS ON TIMECLOCK
EMS ROUTING TO THE EMS PANEL
C BREAKER LOCK
a,b,c SWITCHES CONTROLLING LIGHTS

ELECTRICAL PANEL SCHEDULE

PANELBOARD			B	VOLTAGE		120 / 208 V	PHASE		3	WIRE		4	1	2					
PANEL TYPE			MLO	MAINS		NA	BUS RATING		225A	AIC RATING		10KAIC							
NEMA TYPE ENCLOSURE			1	MOUNTING		SURFACE	OPTIONS			NOTE		EXISTING PANEL							
CKT. NO.	EQT TAG	CKT TAG	DESCRIPTION	POLE	WIRE SIZE	BKR. SIZE	TOTAL WATTS	PHASE	TOTAL WATTS	BKR. SIZE	WIRE SIZE	POLE	DESCRIPTION	CKT TAG	EQT TAG	CKT. NO.			
1			SPACE			20		A	900	20	12	1	FEATURED WALL OUTLETS	(N)		2			
3			SPARE	1		20		B	400	20	12	1	DRINKING FOUNTAIN (DF-1)	(N)		4			
5		(N)	TV OUTLET	1	12	20	360	C	1,080	20	12	1	SALES AREA OUTLETS	(N)		6			
7		(N)	TV OUTLET	1	12	20	360	A	600	20	12	1	U/C REF	(N)	GFCI	8			
9		(N)	CASH REGISTERS RECEPTACLE	1	12	20	1,080	B	500	20	12	1	TELEPHONE BOARD	(N)		10			
11		(N)	BACKWRAP OUTLET	1	12	20	360	C	1,080	20	12	1	FITTING ROOM OUTLET	(N)		12			
13			SPARE	1		20		A	1,800	20	12	1	MICROWAVE	(N)		14			
15		(N)	HALLWAY GENERAL RECEPTACLE	1	12	20	720	B	540	20	12	1	BACKROOM GENERAL RECEPTACLE	(N)		16			
17			SPARE	1		20		C	600	20	12	1	REFRIGERATOR	(N)	GFCI	18			
19			SPARE	1		20		A	1,080	20	12	1	CONVENIENCE OUTLET	(N)		20			
21			SPARE	1		20		B		20		1	SPARE			22			
23			SPARE	1		20		C	2,400	25	10	1	WATER HEATER (EWH)	(E)		24			
25		(N)	RESTROOM GFI RECEPTACLE	1	12	20	180	A					SPACE			26			
27		(E)	RTU SERVICE RECEPTACLE	1	12	20	360	B					SPACE			28			
29			SPACE					C					SPACE			30			
31			SPACE					A					SPACE			32			
33			SPACE					B					SPACE			34			
35			SPACE					C					SPACE			36			
37								A					SPACE			38			
39			SPARE	3		60		B					SPACE			40			
41								C					SPACE			42			

ALL PHASES TO BE BALANCED TO WITHIN 7%

A=	4,920	WATTS
B=	3,600	WATTS
C=	5,880	WATTS

TOTAL CONNECTED LOAD	14,400	WATTS	40	AMPS
TOTAL DEMAND LOAD	14,400	WATTS	40	AMPS

(E) EXISTING TO REMAIN
(N) NEW CIRCUIT
GFCI GROUND FAULT CURRENT INTERRUPTER
IG CIRCUITS WITH ISOLATED GROUND
CLP CURRENT LIMITER PANEL
LCP LIGHTING CONTROL PANEL
C BREAKER LOCK
a,b,c SWITCHES CONTROLLING LIGHTS

ELECTRICAL PANEL SCHEDULE

PANELBOARD			A	VOLTAGE		120 / 208 V	PHASE		3	WIRE		4	1	2					
PANEL TYPE			MLO	MAINS		NA	BUS RATING		225A	AIC RATING		10KAIC							
NEMA TYPE ENCLOSURE			1	MOUNTING		SURFACE	OPTIONS			NOTE		EXISTING PANEL							
CKT. NO.	EQT TAG	CKT TAG	DESCRIPTION	POLE	WIRE SIZE	BKR. SIZE	TOTAL WATTS	PHASE	TOTAL WATTS	BKR. SIZE	WIRE SIZE	POLE	DESCRIPTION	CKT TAG	EQT TAG	CKT. NO.			
1	TC/C2/a	(N)	DECORATIVE & WING WALL LTS	1	12	20	100	A	180	20	12	1	3-WAY MIRROR OUTLET	(N)		2			
3	TC/C2/b	(N)	SALES AREA TRACK LTS	1	12	20	1,300	B		20		1	SPARE			4			
5	TC/C2/c	(N)	SALES AREA TRACK LTS	1	12	20	1,300	C		20		1	SPARE			6			
7		(N)	TIME CLOCK	1	12	20	200	A		20		1	SPARE			8			
9	TC/C2/d	(N)	SALES AREA FAN	1	12	20	300	B		20		1	SPARE			10			
11		(N)	FEETING ROOMS LTS/MIRROR LTS	1	12	20	500	C					SPACE			12			
13		(N)	BACKROOM/STOCKROOM LIGHTS	1	12	20	250	A					SPACE			14			
15	TC/C1	(N)	STOREFRONT LTS	1	12	20	200	B					SPACE			16			
17		(N)	HALLWAY LTS	1	12	20	300	C					SPACE			18			
19			SPARE	1		20		A					SPACE			20			
21		(N)	RESTROOM LTS & EF-1	1	12	20	150	B		20		1	SPARE			22			
23			SPARE	1		20		C		20		1	SPARE			24			
25			SPACE					A		20		1	SPARE			26			
27			SPARE	1		20		B		20		1	SPARE			28			
29			SPARE	1		20		C	1,200	20	12	1	STOREFRONT SIGN/BLADE SIGN	(N)	TC/C1	30			
31			SPARE	1		20		A	1,600	20	12	1	SHOW WINDOW	(N)	TC/C1	32			
33			SPARE	1		20		B	1,600	20	12	1	SHOW WINDOW	(N)	TC/C1	34			
35			SPARE	1		20		C		20		1	SPARE			36			
37			SPARE	1		20		A		20		1	SPARE			38			
39			SPACE					B		20		1	SPARE			40			
41		(N)	NIGHT LTS	1	12	20	300	C		20		1	SPARE			42			

ALL PHASES TO BE BALANCED TO WITHIN 7%

A=	2,330	WATTS
B=	3,550	WATTS
C=	3,600	WATTS

TOTAL CONNECTED LOAD	9,480	WATTS	27	AMPS
TOTAL DEMAND LOAD	11,680	WATTS	33	AMPS

(E) EXISTING TO REMAIN
(N) NEW CIRCUIT
GFCI GROUND FAULT CURRENT INTERRUPTER
IG CIRCUITS WITH ISOLATED GROUND
CLP CURRENT LIMITER PANEL
LCP LIGHTING CONTROL PANEL
C BREAKER LOCK
a,b,c SWITCHES CONTROLLING LIGHTS

ELECTRICAL LOAD SUMMARY

DESCRIPTION	NEC CONNECTED kW	VOLT	PHASE	NEC DEMAND FACTOR	NEC DEMAND kW
LIGHTING- 120V	1.8	120	1	1.25	2.3
TRACK LIGHTS	2.6	120	1	TRACK LENGTH	3.3
RECEPTACLES	9.7	120	1	>10kW=10+[0.5*(kW-10)]	9.7
STOREFRONT SIGN	1.2	120	1	1.25	1.5
S/W OUTLETS	3.2	120	1	1.25	4.0
PANTRY EQUIPMENT	3.0	120	1	1.00	3.0
ROOFTOP UNITS	56.6	208	3	1.00	56.6
HOT WATER HEATER	2.4	120	1	1.00	2.4
TOTALS	80.4				82.6

NOTES:

* USE GREATER VALUE OF THE TWO CATEGORIES.

** 125% OF THE LARGEST MOTOR OR COMPRESSOR IN SYSTEM APPLIED ONLY ON ONE UNIT.

*** N.E.C. ARTICLE 220-12 REQUIREMENT (200 VA PER FOOT OF SHOW WINDOW) MINUS ACTUAL SHOW WINDOW LIGHTING kVA.

N.E.C. DEMAND kVA x 1,000 / SYSTEM VOLTAGE x 1.732 = MINIMUM FEEDER AMPERAGE

82.6 x 1000 = 82,639

208 x 1.732 = 360

229.4 AMPS USE (EXISTING) 400AMP FEEDER FROM 'MDP' PANEL

PANEL SCHEDULE GENERAL NOTES:

1. ALL CIRCUITING SHOWN IS FOR REFERENCE PURPOSE ONLY. E.C. SHALL VERIFY CIRCUITING OF THE EXISTING DEVICES ON FIELD AND INFORM ENGINEER FOR DISCREPANCIES.
2. ELECTRICAL CONTRACTOR TO VERIFY THE EXACT PANEL SIZES AND INCOMING FEEDER SIZE.
3. ALL EXISTING TO REMAIN ELECTRICAL DEVICES/EQUIPMENTS SHALL BE CONNECTED TO RESPECTIVE NEW/EXISTING PANELS. E.C. TO VERIFY EXACT DETAILS & CIRCUIT NUMBER ON FIELD.
4. ELECTRICAL CONTRACTOR TO COORDINATE WITH THE MANUFACTURER OF EQUIPMENT FOR THE WIRE SIZE & RATING OF MOCP BEFORE THE COMMENCEMENT OF WORK.
5. ELECTRICAL CONTRACTOR TO COORDINATE EXACT LOCATION AND ELECTRICAL REQUIREMENT OF PLUMBING/MECHANICAL EQUIPMENTS WITH RESPECTIVE SYSTEM CONTRACTOR/OWNER/ARCHITECT.
6. E.C. SHALL VERIFY THE EXACT CIRCUIT, CIRCUIT NUMBER IN FIELD & ADJUST / MODIFY CIRCUITING AS REQUIRED.

EXISTING PANELBOARD KEYED NOTE: [#]

1. NEW BREAKERS MAY BE REQUIRED FOR USE IN THE EXISTING PANELBOARD TO MATCH RATING INDICATED IN THE PANEL SCHEDULE. PRIOR TO BID/PRICING, THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL EXISTING-TO-REMAIN PANELBOARD MANUFACTURER AND MODEL NUMBER TO ENSURE THAT REPLACEMENT BREAKERS ARE AVAILABLE. WHERE BREAKER AVAILABILITY ISSUES ARISE, NOTIFY THE PROJECT MANAGER PRIOR TO BID/PRICING.
2. DESIGNATED CIRCUIT NUMBER SHOWN ON THE PANEL SCHEDULE FOR A CERTAIN LOAD, MAY BE DIFFERENT THAN THE ACTUAL CIRCUIT NUMBER IN THE EXISTING PANELBOARD. ALL EXISTING-TO-REMAIN ELECTRICAL LOADS SHALL REMAIN CONNECTED TO THE SAME BREAKER AND CIRCUIT DESIGNATION. AVAILABLE SPARES AND SPACES SHALL BE UTILIZED TO FEED THE NEW LOADS.

CODE NOTE PER NEC 408.4: EVERY CIRCUIT AND CIRCUIT MODIFICATION SHALL BE LEGIBLY IDENTIFIED AS ITS CLEAR, EVIDENT, AND SPECIFIC PURPOSE OR USE. THE IDENTIFICATION SHALL INCLUDE SUFFICIENT DETAIL TO ALLOW EACH CIRCUIT TO BE DISTINGUISHED FROM ALL OTHERS. CIRCUIT DIRECTORY SHALL BE LOCATED ON THE FACE OR INSIDE THE PANEL DOOR IN THE CASE OF THE PANELBOARD.

CONTRACTOR TO VERIFY ANY EXISTING CIRCUITS TO REMAIN, MAINTAIN AS REQUIRED. CONTRACTOR TO MAKE UNUSED BRANCH CIRCUIT BREAKER SPARE AND AVAILABLE FOR NEW CIRCUIT.

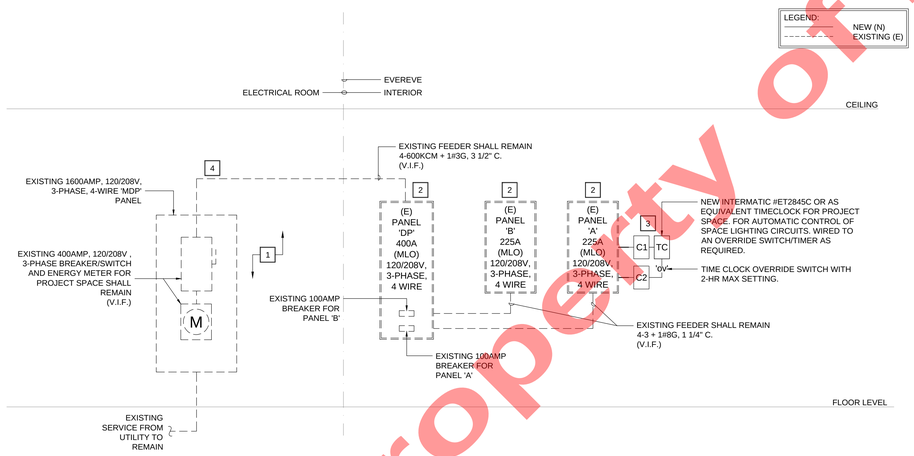
ALL ELECTRICAL WORK SHALL BE DESIGNED PER 2022 CALIFORNIA ELECTRICAL CODE (CEC-2020), AND CALIFORNIA ENERGY COMPLIANCE CODE 2022 (TITLE 24)

ALL ELECTRICAL EQUIPMENT SHALL BE LABELED, LISTED, OR CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY ACCREDITED BY THE UNITED STATES OCCUPATIONAL SAFETY HEALTH ADMINISTRATION.

THE MAXIMUM COMBINED VOLTAGE DROP ON BOTH INSTALLED FEEDER CONDUCTORS AND BRANCH CIRCUIT CONDUCTORS TO THE FARTHEST CONNECTED LOAD OR OUTLET SHALL NOT EXCEED 5 PERCENT.

⚠1 ALL NEW BREAKERS SHALL MATCH THE EXISTING 'AIC' RATINGS OF THE ELECTRICAL PANEL AS PER CEC SECTION 110.9

ELECTRICAL RISER DIAGRAM



RISER DIAGRAM NOTES:

A. HVAC CIRCUIT BREAKERS TO BE "HACR" TYPE WHERE REQUIRED BY EQUIPMENT NAMEPLATE PER N.E.C.

B. BALANCE ALL PANELS AND ELECTRICAL EQUIPMENT, UNDER LOAD CONDITIONS, TO ±7% BETWEEN PHASES: A/B, B/C, C/A REGARDLESS OF CIRCUITING INDICATED. PROVIDE BALANCE SHEET TO CONSTRUCTION MANAGER AT PUNCHLIST.

C. PROPER CLEARANCE MUST BE MAINTAINED ABOUT ELECTRICAL EQUIPMENT PER N.E.C. FIELD VERIFY EXACT MOUNTING SPACE AVAILABLE IN ELECTRICAL ROOM/AREA PRIOR TO INSTALLATION OF ELECTRICAL EQUIPMENT.

D. MAKE ALL FINAL ELECTRICAL CONNECTIONS FOR A COMPLETE ELECTRICAL DISTRIBUTION SYSTEM. ALL CONNECTIONS/DISCONNECTIONS TO LANDLORDS/UTILITIES SERVICE EQUIPMENT SHALL BE AS DIRECTED BY LANDLORDS/UTILITIES SITE REPRESENTATIVE. TENANT GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TERMINATION/DETERMINATION EXPENSES.

F. SYSTEM SHALL BE GROUNDED TO THE MAIN BUILDING'S GROUNDING SYSTEM.

G. DISCONNECT SWITCHES AND PANELS SHALL BE INSTALLED ON PLYWOOD BACKERBOARDS.

H. TENANT CONTRACTOR MUST VERIFY ELECTRICAL SERVICE, SUB-FEED WIRING AND PANELS PRIOR TO START OF TENANT'S ELECTRICAL WORK. TENANT GENERAL CONTRACTOR SHALL MAKE APPLICATION TO THE LOCAL UTILITY FOR CONTINUED METERED ELECTRIC SERVICE IN THE TENANT'S NAME. TENANT GENERAL CONTRACTOR SHALL CONFIRM ALL LOCAL UTILITY GUIDELINES AND REQUIREMENTS PRIOR TO BID, SHALL INCLUDE THE COSTS OF THESE REQUIREMENTS IN THE BID, AND SHALL COMPLY WITH THEM DURING CONSTRUCTION. AVAILABLE FAULT CURRENT AT SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED IN THE FIELD WITH THE MAXIMUM AVAILABLE FAULT CURRENT PER NATIONAL ELECTRICAL CODE ARTICLE 110.24.

I. CONTRACTOR SHALL VERIFY INCOMING SERVICE AMPERAGE, WIRE SIZING AND DISTRIBUTION.

J. CONTRACTOR SHALL COORDINATE WITH BASE BUILDING FOR THE EXACT LOCATION OF THE EXISTING SWITCH GEAR AND EXACT POWER DISTRIBUTION .

K. CONTRACTOR SHALL VERIFY OPERABLE CONDITION INFIELD OF ALL EXISTING TO REMAIN ELECTRICAL DEVICES/EQUIPMENTS AND REPLACE WITH NEW IF FOUND INOPERABLE.

VERIFY THE FOLLOWING PRIOR TO BID/ PRICING:

- EXISTING CONDUIT AND FEEDERS SIZE BETWEEN TENANT SPACE AND LANDLORD SWITCHBOARD.
- EXISTING MAIN SERVICE DISCONNECT RATING.
- EXISTING METER.

IF THE EXISTING SERVICE DISCONNECT AND FEEDERS ARE RATED FOR LESS THAN THE RATING SHOWN ON THIS RISER NOTIFY THE PROJECT MANAGER AND ENGINEER IMMEDIATELY PRIOR TO SUBMITTING BID/ PRICING PACKAGE SO DRAWINGS CAN BE REVISED AND UPDATED ACCORDINGLY

CONTRACTOR TO VERIFY EXISTING CONDUIT DURING BIDDING STAGE AND REPORT TO TENANT ARCHITECT ANY DISCREPANCIES THAT IS DIFFERENT THAN SHOWN ON PLANS.

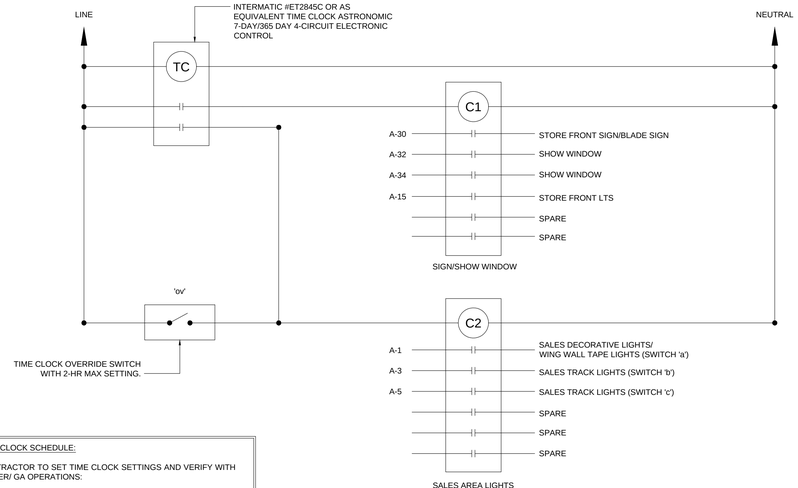
ELECTRICAL WORK BEING SHOWN IN SCHEMATIC IS EXISTING UNLESS OTHERWISE NOTED.

CONTRACTOR TO PROVIDE NEW NAME PLATE ON ELECTRICAL METER FOR IDENTIFICATION.

RISER KEY NOTES

1	ELECTRICAL CONTRACTOR SHALL COORDINATE WITH LANDLORD/OWNER FOR EXACT POWER DISTRIBUTION, LOCATION PRIOR TO COMMENCING ANY WORK. INFORM ENGINEER ON RECORD FOR ANY DISCREPANCIES. BASE BID ACCORDINGLY.
2	EXISTING ELECTRICAL PANEL FOR THE PROJECT SPACE SHALL REMAIN. CONTRACTOR SHALL VERIFY THE EXACT RATING, VOLTAGE, PHASE & OPERABLE CONDITION & LOCATION WITH ARCHITECT/OWNER IN FIELD. INFORM ENGINEER IF FOUND ANY DISCREPANCY. BASE BID ACCORDINGLY.
3	NEW TIME CLOCK AND LIGHTING CONTACTOR FOR THE PROJECT SPACE. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY EXACT OPERABLE CONDITION OF EXISTING TIMECLOCK. REUSE IF POSSIBLE OTHERWISE PROVIDE NEW AS SHOWN. BASE BID ACCORDINGLY.
4	EXISTING FEEDERS TO REMAIN. ELECTRICAL CONTRACTOR TO VERIFY OPERABLE CONDITION OF FEEDERS IN FIELD AND PROVIDE NEW IF FOUND INOPERABLE. BASE BID ACCORDINGLY.

TIME CLOCK AND LIGHTING CONTACTOR DETAILS



TIME CLOCK SCHEDULE:

CONTRACTOR TO SET TIME CLOCK SETTINGS AND VERIFY WITH OWNER/ GA OPERATIONS:

1. DURING SET "OFF" TIME LIGHTING TO BE CONTROLLED BY A 2-HR MANUAL OVERRIDE SWITCH.
2. STOREFRONT SIGN AND BLADE SIGN ON TIME CLOCK SET TIME CLOCK "ON @ 5 PM; OFF @ 11PM".
3. INTERIOR STORE FRONT WINDOW LIGHTS ON TIME CLOCK SET TIME CLOCK "ON @ 8 AM; OFF @ 11PM".
4. INTERIOR LIGHTS ON TIME CLOCK SET TIME CLOCK "ON @ 8 AM; OFF @ 11PM".

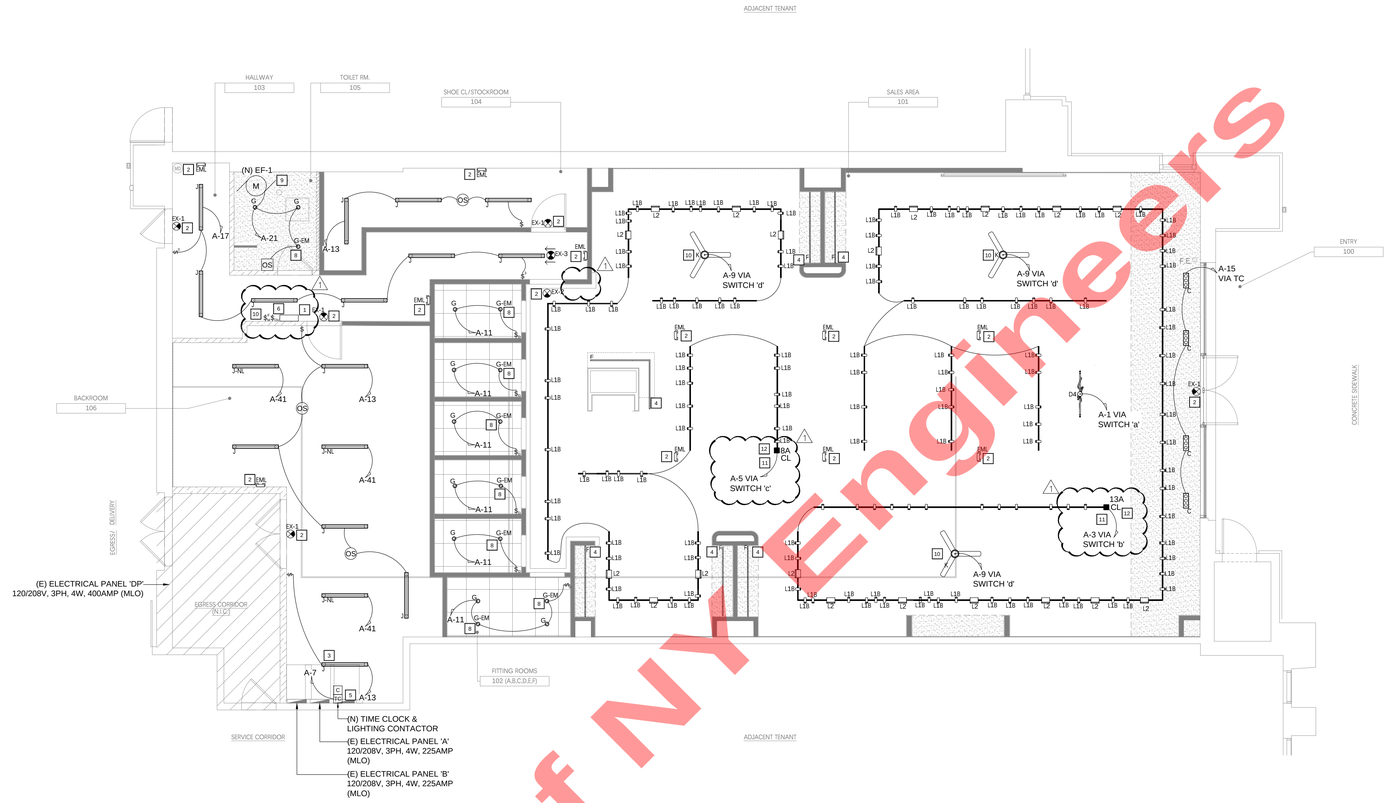
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TITLE:
ELECTRICAL PANELBOARD AND RISER DIAGRAM

SHEET NUMBER:
E-100

LEGEND:
NEW (N)
EXISTING (E)



1 ELECTRICAL LIGHTING PLAN
3/16" = 1'-0"

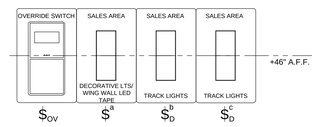
LIGHTING FIXTURE SCHEDULE

SYMBOL	TAG	LAMPS	MANUF./SERIES	DESCRIPTION	MOUNT	VOLTS	WATTS	QTY.	PROV. BY	INSTALL BY	LOCATION
C	C	OMNISPOT 3-HEAD1000LM FLOOD DISTRIBUTION WHITE FLANGE AND FINISH. DIMMING DRIVER	LIGHTOLIER LCRM10H3	DOWN LIGHT	RECESSED	120V	39W	4	TENANT	GC	ENTRY
D4	D4	CUSTOM PENDANT 4' TRACER BAR WITH ROPE LIGHT, GOLD FINISH, REMOTE DRIVER	LUKE LAMP CO. CUSTOM SERIES	4' ROPE LED LIGHT	SUSPENDED. BOTTOM OF BAR @ 8'-4" A.F.F U.N.O. COORDINATE HEIGHT WITH OWNER.	120V	35W	1	TENANT	GC	SALES AREA
EML	EML	EMERGENCY FIXTURE, WHITE FINISH, 90 MINUTE BATTERY PACK	EXITRONIX LED 90		WALL MOUNTED, BOTTOM @ 11'-1 3/4" A.F.F. U.N.O.	120V	2.2W	12	TENANT	GC	FOH/BOH
EX-1	EX-1	THERMOPLASTIC EXIT SIGN, WHITE HOUSING, RED LETTERS, SELF-TEST/ SELF DIAGNOSTICS	EXITRONIX LED CAT No: VLED-U-WH-EL90-R		WALL MOUNTED, BOTTOM @ 9'-9 3/8" A.F.F U.N.O.	120V	2.2W	9	TENANT	GC	FOH
EX-2	EX-2	THERMOPLASTIC EXIT SIGN, BLACK HOUSING, RED LETTERS, SELF-TEST/ SELF DIAGNOSTICS	EXITRONIX LED CAT No: VLED-U-BL-EL90L-R		WALL MOUNTED, BOTTOM @ 9'-9 3/8" A.F.F U.N.O.	120V	1.5W	1	TENANT	GC	FOH
F	F	LED TAPE LIGHT 24", WHITE FINISH, ALUMINUM CHANNEL FOR INVISILED, SIM, W9. SYMMETRICAL RECESSED CHANNEL POWER FEED. 120V/24V 60W ET8 TAPE LIGHT TRANSFORMER	WAC LIGHTING	TAPE LED LIGHT	RECESSED	120V	2.2W/FT	-	TENANT	GC	SALES AREA
G	G	4" DOWNLIGHT, 55 DEGREE BEAM ANGLE, NO LENS, WHITE TRIM AND BEZEL, DAMP LOCATION LISTED	ALPHABET LIGHTNING, CAT. No.: NU4-RDLP-SW-30LM-35K-90-HE40-UNV-NC-DIM10	DOWN LIGHT	RECESSED	120V	26W	24	TENANT	GC	FITTING ROOMS/ ENTRY
J	J	4" LINEAR STRIP, ACRYLIC LENS, WHITE FINISH	LITHONIA LIGHTNING, CAT. No.: CSS-L48-4000LM-MVOLT-35K-80CRI	UTILITY LIGHT	BOTTOM @11'-1 5/8" A.F.F. U.O.N.	120V	35W	17	TENANT	GC	BOH
J-NL	J-NL	4" LINEAR STRIP, ACRYLIC LENS, WHITE FINISH	LITHONIA LIGHTNING, CAT. No.: CSS-L48-4000LM-MVOLT-35K-80CRI	UTILITY LIGHT	BOTTOM @11'-1 5/8" A.F.F. U.O.N.	120V	35W	3	TENANT	GC	BOH
L1B	L1B	SMALL LUCIE LCS 2.5" TRACKHEAD, NARROW 25 DEGREE FLOOD OPTIC, 90 CRI, WHITE FINISH, J-TYPE TRACK ADAPTOR	SOLIAS, CAT. No.: LCS-1-NFL-935-1600-PW-J	TRACK LIGHTNING (SPOT LIGHTS)	-	120V	16W	138	TENANT	GC	SALES AREA
L2	L2	WALL WASHING TRACKHEAD, 90 CRI, WHITE FINISH, J TYPE TRACK ADAPTOR	SOLIAS, CAT. No.: LWW-1F-1-A-935-1500-PW-J	TRACK LIGHTNING (WALL WASH)	-	120V	16W	19	TENANT	GC	SALES AREA
T	T	SINGLE CIRCUIT TRACK. LENGHTS PER PLAN WHITE FINISH. PROVIDE ALL REQUIRED ACCESORIES FOR A COMPLETE INSTALLATION	CONTECH CAT.NO LT	TRACK	BOTTOM @11'-0" A.F.F. U.O.N.	120V	-	-	TENANT	GC	SALES AREA
U	U	VISUAL COMFORT MODERN COLLECTION ASPEN 36" OUTDOOR WALL- ETL RATED	VISUAL COMFORT	SCONCE	WALL MOUNTED, SEE EXTERIOR ELEVATION	120V	-	-	GC	GC	ENTRY

KEY NOTES

1	NEW MASTER SWITCH BANK LOCATION. SEE DETAIL IN THIS SHEET FOR ADDITIONAL INFORMATION. VERIFY/CONFIRM LOCATION WITH OWNER PRIOR TO INSTALLATION AND ROUGH-IN.
2	ALL NEW/EXISTING/RELOCATED EXIT SIGNS & EMERGENCY LIGHTS TO BE CONNECTED TO LOCAL LIGHTING CIRCUIT AHEAD OF SWITCHING.
3	THIS LIGHT FIXTURE SHALL NOT BE CONTROLLED BY AUTOMATIC MEANS ONLY AS PER NEC 110.26(D).
4	FIXTURE TYPE 'F' TO BE HARDWIRED TO J-BOX LOCATED ABOVE WING WALL CEILING. CONTRACTOR TO PROVIDE (1) QUAD ON TOP OF WING WALLS FOR (2) LIGHT DRIVERS (ONE FROM EACH SIDE). COORDINATE LOCATION AND EXACT MOUNTING HEIGHT OF RECEPTACLE WITH ELECTRICAL POWER PLAN DRAWINGS PRIOR TO ROUGH IN.
5	NEW TIME CLOCK AND LIGHTING CONTACTOR FOR THE PROJECT SPACE. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY EXACT OPERABLE CONDITION OF EXISTING TIMECLOCK. REUSE IF POSSIBLE OTHERWISE PROVIDE NEW AS SHOWN. BASE BID ACCORDINGLY.
6	COORDINATE THE EXACT LOCATION OF OVERRIDE SWITCH WITH ARCHITECT/OWNER IN FIELD.
7	ELECTRICAL CONTRACTOR SHALL VERIFY EXACT OPERABLE CONDITION OF EXISTING LIGHTING CONTROLS. REUSE IF POSSIBLE, OTHERWISE PROVIDE NEW AS SHOWN. BASE BID ACCORDINGLY.
8	LIGHT FIXTURES DESIGNATED WITH EM TO REMAIN ENERGIZED AT EMERGENCY (POWER OUT) CONDITION. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH LIGHTING VENDOR FOR EXACT REQUIREMENT. PROVIDE AS REQUIRED. PRIOR TO COMMENCING ANY WORK. BASE BID ACCORDINGLY.
9	NEW EXHAUST FAN INTERLOCKED WITH LIGHT SWITCH. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION AND SPECIFICATIONS.
10	ELECTRICAL CONTRACTOR SHALL COORDINATE WITH MANUFACTURER FOR EXACT ELECTRICAL AND CONTROL REQUIREMENTS. PRIOR TO ROUGH IN. PROVIDE AS REQUIRED. COORDINATE EXACT LOCATION AND QUANTITY FOR THE FAN SWITCHES WITH ARCHITECT/OWNER IN FIELD.
11	ELECTRICAL CONTRACTOR SHALL VERIFY LIGHT FIXTURES REQUIRING PHASE CUT DIMMING AND OR ELV/TRIAC DIMMING. PROVIDE APPROPRIATE DIMMER SWITCHES AND DEDICATED CIRCUITING AS REQUIRED.
12	ELECTRICAL CONTRACTOR SHALL ENSURE THAT TRACK LIGHTING CURRENT LIMITERS ARE INSTALLED IN ACCORDANCE WITH, AND COMPLY WITH, THE 2022 CALIFORNIA ENERGY CODE, SECTION 110.9(C)

MASTER SWITCHBANK DETAIL



NOTE:

1. ALL TRACK LIGHTING ARE CONTROLLED VIA DIMMER SWITCHES. DIMMER SWITCHES SHALL BE RATED FOR TOTAL LOAD OF SWITCHED CIRCUIT AND LAMP TYPE AS REQUIRED.
2. ELECTRICAL CONTRACTOR TO LABEL ALL DIMMER SWITCHES AS SHOWN IN THE DIAGRAM.
3. REFER TO LIGHTING CONTROL OVERVIEW FOR LIGHTING CONTROL REQUIREMENTS ON SHEET E-100 EXACT TIME SCHEDULE PROGRAMMING SHALL BE COORDINATED WITH TENANT REPRESENTATIVE ON SITE.
4. PROVIDE OCCUPANCY SENSORS COMPLETE WITH ALL CABLES, MOUNTING HARDWARE, AND ACCESSORIES AS REQUIRED.
5. COORDINATE EXACT MOUNTING HEIGHT OF OCCUPANCY SENSORS ON SITE. MOUNT SENSORS WITH THE RECEIVERS FACING THE AREA OF COVERAGE.
6. CONTRACTOR SHALL CALIBRATE SENSITIVITY AND COVERAGE SETTINGS OF EACH SENSOR AFTER INSTALLATION TO ENSURE PROPER OPERATION OF UNIT. COORDINATE TIME DELAY SETTINGS OF EACH SENSOR WITH OWNER.
7. COORDINATE WITH LIGHTING CONTROL SYSTEM VENDOR FROM MANUFACTURER TO COMMISSION THE COMPLETE LIGHTING CONTROL SYSTEM PROVIDED AS PART OF THIS SCOPE OF WORK. PROVIDE DOCUMENTATION PER DEVICE TO SHOW OPERATION IS ACCORDANCE WITH LOCAL GOVERNING CODES.
8. LOW VOLTAGE DEVICES (i.e., SPEAKERS, SECURITY SYSTEM DEVICES, CAMERAS & WIFI ANTENNA'S) ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL COORDINATE FINAL LOCATION, QUANTITY WITH ARCHITECT/OWNER AND EXACT ELECTRICAL REQUIREMENTS WITH SYSTEM VENDOR PRIOR TO ROUGH PER THE SITE CONDITIONS. PROVIDE POWER & DATA OUTLETS AS REQUIRED. ALSO VERIFY OPERABLE CONDITION OF EXISTING LOW VOLTAGE DEVICES (IF ANY), PROVIDE NEW IF FOUND INOPERABLE.

'a,b,c,d' - SWITCHES

'ov' - 2-HR OVERRIDE BYPASS SWITCH. ADJUST TO ON/OFF SCHEDULE DIRECTED BY TENANT REPRESENTATIVE.

OS - LOW VOLTAGE DUAL TECHNOLOGY CEILING MOUNTED OCCUPANCY SENSOR WITH UNIVERSAL VOLTAGE POWER PACK - HUBBEL OMINIDT-100 UVPPM OR EQUAL.

OS$_D$ - WALL MOUNTED OCCUPANCY SENSOR WITH DIMMING CAPABILITIES (WATTSTOPPER PW-211 OR EQUAL) AT+46" A.F.F. SENSOR "ON" SETTING TO BE SET TO AUTOMATIC IN FIELD.

OS - WALL MOUNTED OCCUPANCY SENSOR (WATTSTOPPER PW-201 OR EQUAL) AT+46" A.F.F. SENSOR "ON" SETTING TO BE SET TO AUTOMATIC IN FIELD.

^{3} - WALL MOUNTED MANUAL 3-WAY TOGGLE SWITCH.

$_D$ - WALL MOUNTED DIMMER SWITCH

$_M$ - MOTOR WALL SWITCH

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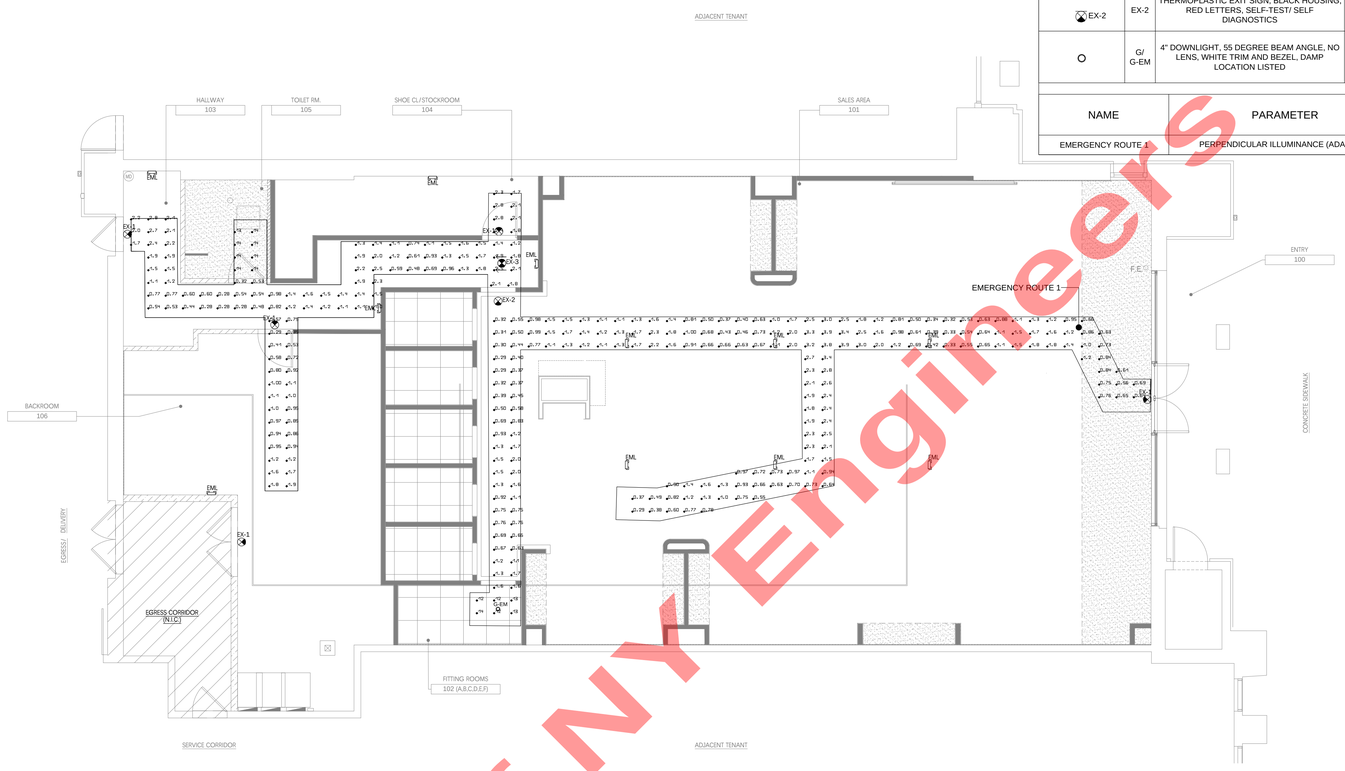
TITLE:
ELECTRICAL LIGHTING PLAN

SHEET NUMBER:
E-200

LIGHTING FIXTURE SCHEDULE

SYMBOL	TAG	LAMPS	MANUF./SERIES	DESCRIPTION	MOUNT	VOLTS	WATTS	PROV. BY	INSTALL BY	LOCATION
EML	EML	EMERGENCY FIXTURE, WHITE FINISH, 90 MINUTE BATTERY PACK	EXITRONIX LED 90	-	WALL MOUNTED. BOTTOM @ 11'-1 3/4" A.F.F U.N.O.	120V	2.2W	TENANT	GC	FOH/BOH
EX-1	EX-1	THERMOPLASTIC EXIT SIGN, WHITE HOUSING, RED LETTERS, SELF-TEST/ SELF DIAGNOSTICS	EXITRONIX LED CAT No: VLED-U-WH-EL90-R	-	WALL MOUNTED. BOTTOM @ 9'-9 3/8" A.F.F U.N.O.	120V	2.2W	TENANT	GC	FOH
EX-2	EX-2	THERMOPLASTIC EXIT SIGN, BLACK HOUSING, RED LETTERS, SELF-TEST/ SELF DIAGNOSTICS	EXITRONIX LED CAT No: VLED-U-BL-EL90L-R	-	WALL MOUNTED. BOTTOM @ 9'-9 3/8" A.F.F U.N.O.	120V	1.5W	TENANT	GC	FOH
	G/ G-EM	4" DOWNLIGHT, 55 DEGREE BEAM ANGLE, NO LENS, WHITE TRIM AND BEZEL, DAMP LOCATION LISTED	ALPHABET LIGHTNING. CAT. No.: NU4-RDLP-SW-30LM-35K-90-HE 40-UNV-NC-DIM10	DOWN LIGHT	RECESSED	120V	26W	TENANT	GC	FITTING ROOMS/ ENTRY

NAME	PARAMETER	MIN	MAX	AVERAGE
EMERGENCY ROUTE 1	PERPENDICULAR ILLUMINANCE (ADAPTIVE)	0.48 fc	14 fc	8.2 fc



1 EGRESS EMERGENCY LIGHTING PHOTOMETRIC STUDY
3/16" = 1'-0"

NOTE:

ELECTRICAL CONTRACTOR SHALL REARRANGE (IF REQUIRED) THE EMERGENCY FIXTURES TO PROVIDE INITIAL ILLUMINATION THAT IS NOT LESS THAN AN AVERAGE OF 1 FOOTCANDLE (11 LUX) AND A MINIMUM AT ANY POINT OF 0.1 FOOTCANDLE (1 LUX) MEASURED ALONG THE PATH OF EGRESS AT FLOOR LEVEL. ILLUMINATION LEVELS SHALL BE PERMITTED TO DECLINE TO 0.6 FOOTCANDLE (6 LUX) AVERAGE AND A MINIMUM AT ANY POINT OF 0.06 FOOTCANDLE (0.6 LUX) AT THE END OF THE EMERGENCY LIGHTING TIME DURATION. A MAXIMUM-TO-MINIMUM ILLUMINATION UNIFORMITY RATIO OF 40 TO 1 SHALL NOT BE EXCEEDED

EXITRONIX emergency lighting

LED-90 Series

Thermoplastic LED Emergency Lighting Unit

Model: _____ Date: _____
Accessories: _____
Job Name: _____ Type: _____



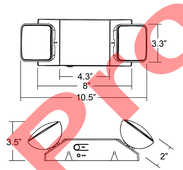
The LED-90 Series combines a low-profile, contemporary appearance with LED economy and dependability. Fully adjustable heads complement any application.

FEATURES & BENEFITS

- Each head contains eight long-lasting, efficient, ultrabright, white LEDs consuming 1.1W per head
- Rugged, injection-molded UL 94 5VA flame-retardant, high-temperature thermoplastic housing
- Remote capable - up to two 1.5W MLED remote heads
- UL Listed 90 minute emergency run time, 24 hour recharge time
- Suitable for Damp Locations

SPECIFICATIONS

Illumination:	Each head contains eight long-lasting, efficient, ultrabright, white LEDs consuming 1.1W per head
Housing:	Low-profile, streamlined, die-cast aluminum housing
Input:	120/2777VAC Dual primary, 60Hz
Battery:	Maintenance-free NiCad battery
Operating Temp:	0°C to 40°C (32°F to 104°F)
Run Time:	UL Listed 90 minute emergency run time, 24 hour recharge time
Mounting:	Ceiling or wall mount with universal J-box mounting pattern and rear keyhole slots, includes top and side conduit entry options
Finishes:	Black or White
Options:	G2 - Guardian Self-test/Self-diagnostics R - Remote Capable (6W)
Certfications:	UL 924 Listed for Damp Locations, meets or exceeds NEC requirements and NFPA 101
Warranty:	Any component that fails due to a manufacturing defect is guaranteed for five years with a separate five year prorated warranty on the battery. The warranty does not cover physical damage, abuse or instances of uncontrollable natural forces.



ORDERING INFORMATION Example: LED-90-BL-G2

Series	Finish	Options (Factory Installed)	Accessories[2] (Field Installed)
LED-90	BLANK = White	G2 = Self-test/Self-diagnostics	WG-S = Wire Guard (Back Mount)
	BL = Black	R[1] = Remote Capacity	WPV-2 = Wet Location/Vandal Guard (Back Mount)
			XG-90 = Poly Guard (Back Mount)

Notes
[1] For use with single or double MLED remote lamps only
[2] Order as separate line item

Specifications are subject to change without notice.
Installation must be performed in accordance with Barron Lighting Group installation instructions.

BARRON lighting group
800.533.3948 • barronltg.com

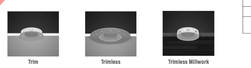
alphabet

NU4

4" Round Downlight Standard White

NSF AT DF PR wet rated





PROJECT INFORMATION			
JOB NAME		TYPE	
ORDERING CODE			

20° - 65° BEAM
(Note: Specifications are subject to change without notice)

14mm COB PERFORMANCE DATA

LED LIGHT ENGINE	NOMINAL DELIVERED LUMENS	SYSTEM WATTAGE
10LM	990LM @30K/80CRI	9W
15LM	1485LM @30K/80CRI	12W
20LM	2095LM @30K/80CRI	17W
25LM	2540LM @30K/80CRI	21W
30LM	3090LM @30K/80CRI	26W
35LM	3580LM @30K/80CRI	31W
40LM	4180LM @30K/80CRI	37W
10LM	840LM @30K/90CRI	9W
15LM	1260LM @30K/90CRI	12W
20LM	1780LM @30K/90CRI	17W
25LM	2160LM @30K/90CRI	21W
30LM	2620LM @30K/90CRI	26W
35LM	3040LM @30K/90CRI	31W
40LM	3550LM @30K/90CRI	37W
Notes	Delivered lumens based on 25D optic with no lens, (see page 2)	

12° BEAM
(Note: Specifications are subject to change without notice)

10mm COB PERFORMANCE DATA

LED LIGHT ENGINE	NOMINAL DELIVERED LUMENS	SYSTEM WATTAGE
10LM	850LM @30K/80CRI	9W
15LM	1580LM @30K/80CRI	17W
20LM	2090LM @30K/80CRI	23W
10LM	690LM @30K/90CRI	9W
15LM	1340LM @30K/90CRI	17W
20LM	1710LM @30K/90CRI	23W
Notes	Delivered lumens based on 12D optic no lens, (see page 2)	

8° BEAM
(Note: Specifications are subject to change without notice)

6mm COB PERFORMANCE DATA

LED LIGHT ENGINE	NOMINAL DELIVERED LUMENS	SYSTEM WATTAGE
10LM	790LM @30K/80CRI	12W
15LM	1250LM @30K/80CRI	20W
10LM	670LM @30K/90CRI	12W
15LM	1060LM @30K/90CRI	20W
Notes	Delivered lumens based on 8D optic no lens, (see page 2)	

FEATURES
- 3/4" bezel regress with 1/16" micro flange
- 8° - 70° optical beam control
- UGR < 19
- Up to 110 LPW
- Glare control, specialty optics, trim options, and custom finishes available
- Microban® antimicrobial finish available on all exposed painted surfaces

DIMMING AND CONTROLS
- eldoLED flicker free 0-10V dimming to 0% and 1%
- eldoLED flicker free DALI dimming to 0% and 1%
- DMX dim to zero
- Lutron Hi-lume 1% 3-wire/Ecosystem
- Lutron athena wireless node
- Leading & trailing edge (Triac/ELV) dimming to 1%
- Casambi dimming to 1.0%
- NLight control interface dimming to 0%

CONSTRUCTION
- Lexan® (PC) highly resistant to impact and heat (240°F)
- Optional material for wireless signal connectivity
- Shatter proof acrylic bezel lens
- Electrocoated 16-gauge cold-rolled steel construction
- Accommodates ceiling thickness from 1/8" to 1-3/4"

LED
- 90 CRI: 5DCM = 2-step MacAdam Ellipse, Lumen Maintenance: L_{70} > 66,000 hrs
- 80 CRI: 5DCM = 2-step MacAdam Ellipse, Lumen Maintenance: L_{70} > 66,000 hrs

LISTING
- ULus Listed to UL1598 & UL2108; cUL Listed to CSA C22.2 #250.0
- IP65 with lens - Suitable for wet locations with lens - Suitable for damp locations without lens
- Non-conductive, dead-front construction (shower approved)
- NSF/ANSI-2 with lens (Non-Food and Splash Zones)
- **Declare.** - LBC Red List Approved
- 5 Year Limited warranty

ELECTRICAL
- 120V-277V, 120 only Triac / ELV
- Power factor ≥ 0.9
- 2kV driver input surge protection
- Remote and Integral (ITE) emergency test switch
- 7W, 10W (TZG CEC) and 12W EM 90min battery
- Max. ambient installation temperature 95°F (35°C)
- Low Voltage Luminaire option, see page 11.

FIXTURE HEIGHT

10LM - 30LM LOW LUMENS



35LM - 40LM HIGH LUMENS



TRIMMED



TRIMLESS



MILLWORK



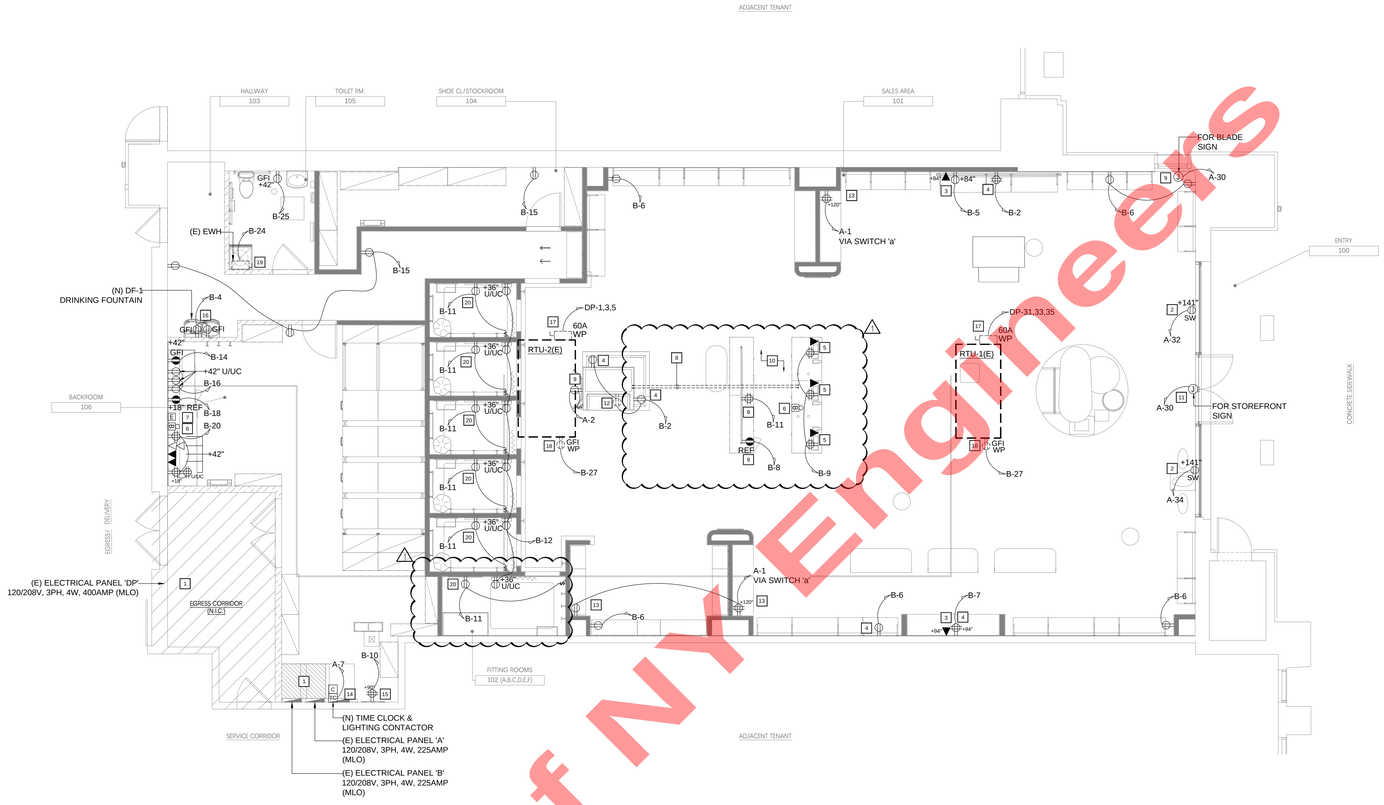
Property of NY Engineers

EVEREVE

TITLE:
EGRESS EMERGENCY LIGHTING PHOTOMETRIC STUDY

SHEET NUMBER:
E-201

LEGEND:
NEW (N)
EXISTING (E)



NOTE:
ALL WIRES TO BE COPPER AND IN CONDUIT, INCLUDING LOW VOLTAGE

1 ELECTRICAL POWER PLAN
3/16" = 1'-0"

GENERAL NOTES

1. EXACT LOCATION, CUT-OUTS AND MOUNTING HEIGHTS FOR WIRING DEVICES IN CASEWORK SHALL BE COORDINATED WITH OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.
2. VERIFY ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO BID. NOTIFY OWNER OF ANY DISCREPANCIES. IF ACCEPTABLE TO OWNER'S REPRESENTATIVE, EXISTING EQUIPMENT MAY BE RE-USED. IF NOT ACCEPTABLE, FURNISH AND INSTALL NEW.
3. ALL RECEPTACLES, DATA AND TELEPHONE OUTLETS ARE TO BE MOUNTED AT +18" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE.
4. PRIOR TO CONNECTION ELECTRICAL CONTRACTOR SHALL VERIFY THE VOLTAGE AND AMPERAGE REQUIREMENTS OF ALL EQUIPMENT DELIVERED TO THE SITE. ELECTRICAL CONTRACTOR SHALL NOTIFY OWNER OF ANY DIFFERENCE.
5. ELECTRICAL CONTRACTOR TO VERIFY PLUG TYPE, AMPERAGE, VOLTAGE, AND LOCATION PRIOR TO BID AND ROUGH IN.
6. ELECTRICAL CONTRACTOR TO VERIFY ALL POWER REQUIREMENTS WITH EQUIPMENT MANUFACTURER. PROVIDE HACR BREAKERS AS REQUIRED.
7. WHEN POSSIBLE, OUTLETS TO BE MOUNTED ABOVE BACKSPLASH FOR COUNTER TOP EQUIPMENT AND BELOW COUNTER FOR UNDER COUNTER EQUIPMENT. PROVIDE POWER BELOW COUNTER FOR FRONT SERVING LINE COUNTER TOP EQUIPMENT. SEE ARCHITECTURAL DRAWINGS FOR COUNTER TOP HEIGHTS.
8. TENANT CONTRACTOR MUST COORDINATE ROUTING OF ANY UNDER SLAB CONDUIT WITH THE LANDLORD'S REPRESENTATIVE.
9. CONTRACTOR TO COORDINATE ELECTRICAL CONNECTIONS WITH MILLWORKER PRIOR TO COMMENCEMENT OF ANY DRILLING.
10. ALL FLOOR PENETRATIONS MUST BE SEALED, FIREPROOFED AND PATCHED AS REQUIRED.
11. CONTRACTOR TO MAKE FINAL CONNECTIONS FROM DRIVERS TO J-BOXES PER DRIVER MANUFACTURER REQUIREMENT. CONTRACTOR TO MOUNT/LABEL DRIVERS ON PLYWOOD PANELS.
12. ALL MILLWORK DRIVERS MUST BE RATED TO COMPLY WITH LOCAL CODE AND JURISDICTION.
13. NO ELECTRICAL DEVICES SHALL BE MOUNTED ON ANY WALLS, OR CEILINGS WITHOUT FIRST DISCUSSING WITH THE ARCHITECT.

ELECTRICAL LEGEND

LEGEND	DESCRIPTION
	HOME RUN
	SIMPLEX RECEPTACLE @ 18" A.F.F. U.N.O. MOUNTED AT CODE HEIGHT
	DUPLEX RECEPTACLE @ 18" A.F.F. U.N.O. MOUNTED AT CODE HEIGHT.
GFI	GROUND FAULT PROTECTED DUPLEX RECEPTACLE
GFI	DEDICATED GROUND FAULT PROTECTED DUPLEX RECEPTACLE.
	QUAD RECEPTACLE @ 18" A.F.F. U.N.O. MOUNTED AT CODE HEIGHT.
U/UC	DUPLEX RECEPTACLE COMBO USB/USB-C WHITE FINISH (RECESSED OUTLET 22SYSTEM DOUBLE OUTLET KIT)
	SINGLE OUTLET/SPECIAL RECEPTACLE
	DUPLEX RECEPTACLE - FLOOR
	QUAD RECEPTACLE - FLOOR
	DUPLEX RECEPTACLE - CEILING
	TELEPHONE OUTLET
	DATA OUTLET
	TELEPHONE / DATA COMBINATION OUTLET
	DATA RECEPTACLE - FLOOR
	TELEPHONE RECEPTACLE - FLOOR
	TELEPHONE / DATA COMBINATION RECEPTACLE - FLOOR
	DATA RECEPTACLE-CEILING
J	JUNCTION BOX-CEILING
J	JUNCTION BOX-WALL
	DISCONNECT SWITCH
	ELECTRICAL PANEL.
(SD)	DUCT SMOKE DETECTOR
T	THERMOSTAT

SP	SOUND SPEAKER (AUDIO) MUSIC SYSTEM TO BE CONNECTED TO RELAY THAT INTERUPTS AUDIO DURING A FIRE ALARM ACTIVATION, SEE ELECTRICAL DRAWINGS. INSTALL PENDANT IN SALES AREA AND SURFACE MOUNTED IN FR.
MD	MOTION DETECTOR
SC	360 CAMERA
SCC	SECURITY CAMERA WITH STEM SUPPORT (MUST BE LOWER THAN THE LIGHTS)
WiFi	WIFI ANTENNA
DC	WIRELESS DOOR CONTACT
H	HOUSING FOR 240W DRIVERS
MD	MOTORISED DAMPER
M	INDOOR AC UNIT/EXHAUST FAN
S_M	MOTOR RATED SWITCH
J	FLOOR MOUNTED JUNCTION BOX
ST	SHOPPER TRACK
KP	ALARM KEYPAD
E	SERVICE 120V:24V TRANSFORMER FOR DOORBELL CHIME, EDWARDS #592.
B	SERVICE BELL CHIME. EDWARDS #340-4G5-24VAC.

NOTE:
1. NOT ALL SYMBOLS MAY APPEAR ON DRAWINGS.
2. ALL OUTLETS TO BE WHITE.

ABBREVIATION:
(E) - EXISTING; (R) - EXISTING RELOCATED; (C) - CEILING MOUNTED (F) - FLOOR MOUNTED; (SW)- SHOW WINDOW; (USB) - USB/ DUPLEX COMBINATION RECEPTACLE; (AC) - ABOVE COUNTER/DESK RECEPTACLE; (BC) - BELOW COUNTER/DESK RECEPTACLE; (SL) - SHELF LEVEL RECEPTACLE

KEY NOTES

1	EXISTING ELECTRICAL PANELS SHALL REMAIN. ELECTRICAL CONTRACTOR SHALL VERIFY EXACT RATING, VOLTAGE, PHASE, OPERABLE CONDITION IN FIELD. REPLACE WITH NEW IF FOUND INOPERABLE. BASE BID ACCORDINGLY. E.C. SHALL MAINTAIN CLEARANCE FOR ELECTRICAL PANEL PER NEC 110.26 (A) (1). REFER SHEET E-4.0 ELECTRICAL RISER DIAGRAM FOR MORE INFORMATION.
2	ELECTRICAL CONTRACTOR SHALL FIELD VERIFY THE OPERABLE CONDITION OF EXISTING SHOW WINDOW RECEPTACLE, REUSE IF POSSIBLE. OTHERWISE, PROVIDE NEW SHOW WINDOW RECEPTACLE AS PER PLANS AND CEC 220.43(A) IF REQUIRED.
3	PROVIDE OUTLETS FOR EETV. ALL EETV OUTLETS REMAIN ON FOR 24/7. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT/EQUIPMENT MANUFACTURER FOR THE EXACT LOCATION, MOUNTING HEIGHT, AND EXACT REQUIREMENTS PRIOR TO ROUGH-IN AND PROVIDE AS REQUIRED.
4	POWER FOR FEATURE WALL ASSEMBLY. MOUNT RECEPTACLE IN BUILDING WALL CONCEALED WITHIN FINISH WALL PANELS. COORDINATE EXACT LOCATION WITH VENDOR DRAWINGS.
5	INSTALL QUAD RECEPTACLES WITH DEDICATED GROUND AND PROVIDE A DATA BACKBOX WITHIN CASEWORK. COORDINATE MOUNTING REQUIREMENTS WITH THE CASEWORK MANUFACTURER. DATA CABLES SHALL BE CONTINUOUS FROM PATCH PANEL TO THE DATA BACKBOX. POS OUTLETS REMAIN ON FOR 24/7. COORDINATE WITH ARCHITECT/OWNER/LANDLORD FOR EXACT REQUIREMENTS PROVIDE AS REQUIRED.
6	SERVICE BELL CHIME. EDWARDS #340-4G5-24VAC. CONNECT TO 120V:24V TRANSFORMER. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT/EQUIPMENT MANUFACTURER FOR THE EXACT LOCATION, MOUNTING HEIGHT, AND EXACT REQUIREMENTS PRIOR TO ROUGH-IN AND PROVIDE AS REQUIRED.
7	SERVICE 120V:24V TRANSFORMER FOR DOORBELL CHIME, EDWARDS #592. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT/EQUIPMENT MANUFACTURER FOR THE EXACT LOCATION, MOUNTING HEIGHT, AND EXACT REQUIREMENTS PRIOR TO ROUGH-IN AND PROVIDE AS REQUIRED.
8	PROVIDE 3/4" CONDUIT TO CASHIERS DESK FOR CIRCUITING ASSOCIATED DEDICATED GROUND QUAD DUPLEX RECEPTACLES AND 1 1/2" CONDUIT DEDICATED FOR LOW VOLTAGE DATA CABLING AND DOORBELL CHIME CABLE. SAWCUT FLOOR FOR INSTALLATION OF CONDUITS. PATCH AND REPAIR FLOOR TO MATCH EXISTING. CONTRACTOR TO NOTIFY LANDLORD PRIOR TO ANY SLAB MODIFICATIONS OR REMOVAL AND VERIFY THAT WORK SHALL NOT CONFLICT WITH ANY EXISTING STRUCTURAL, UTILITY, OR OTHER UNDER-SLAB CONDITIONS.
9	ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT/EQUIPMENT MANUFACTURER FOR THE EXACT LOCATION, MOUNTING HEIGHT, AND EXACT REQUIREMENTS PRIOR TO ROUGH-IN AND PROVIDE AS REQUIRED. PRIOR TO ROUGH IN.
10	PROVIDE SIX(6) CATSE IN 1-1/2 CONDUIT TO PATCH PANEL. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT/EQUIPMENT MANUFACTURER FOR THE EXACT LOCATION, MOUNTING HEIGHT, AND EXACT REQUIREMENTS PRIOR TO ROUGH-IN AND PROVIDE AS REQUIRED.
11	ROVIDE CEILING JUNCTION BOX THROUGH ACCESS PANEL FOR NEW ILLUMINATED STOREFRONT SIGN. E.C. TO COORDINATE WITH SIGN VENDOR FOR EXACT LOCATION & REQUIREMENTS PRIOR TO INSTALLATION. BASE BID ACCORDINGLY.
12	ELECTRICAL CONTRACTOR SHALL FIELD VERIFY THE OPERABLE CONDITION AND CIRCUITING OF EXISTING RECEPTACLES. PROVIDE NEW AS SHOWN IF FOUND INOPERABLE. BASE BID ACCORDINGLY. PRIOR TO ROUGH IN.
13	FIXTURE TYPE 'F' TO BE HARDWIRED TO J-BOX LOCATED ABOVE WING WALL CEILING. CONTRACTOR TO PROVIDE (1) QUAD ON TOP OF WING WALLS FOR (2) LIGHT DRIVERS (ONE FROM EACH SIDE). COORDINATE LOCATION AND EXACT MOUNTING HEIGHT OF RECEPTACLE WITH ELECTRICAL POWER PLAN DRAWINGS PRIOR TO ROUGH IN.
14	NEW TIME CLOCK AND LIGHTING CONTACTOR FOR THE PROJECT SPACE. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY EXACT OPERABLE CONDITION OF EXISTING TIMECLOCK. REUSE IF POSSIBLE OTHERWISE PROVIDE NEW AS SHOWN. BASE BID ACCORDINGLY.
15	NEW TELEPHONE BOARD FOR PROJECT SPACE. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT/EQUIPMENT MANUFACTURER FOR THE EXACT LOCATION, MOUNTING HEIGHT, AND EXACT REQUIREMENTS PRIOR TO ROUGH-IN AND PROVIDE AS REQUIRED.
16	ALL PLUMBING EQUIPMENT SHALL BE PROVIDED WITH THE REQUIRED ROUGH-INS, MOCP, AND WIRE SIZES. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MANUFACTURER FOR THE EXACT TYPE OF ROUGH-INS AND WIRE SIZE AT THE COMMENCEMENT OF WORK.
17	EXISTING ROOFTOP UNITS SHALL REMAIN. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY OPERABLE CONDITION OF EXISTING DISCONNECT AND WIRING. PROVIDE NEW IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
18	ALL OUTDOOR ELECTRICAL EQUIPMENT SHALL BE NEMA 3R RATED. IF FACTORY MOUNTED POWERED CONVENIENCE OUTLET NOT PROVIDED, 120V 20A GFI WEATHER PROOF RECEPTACLE SHALL BE PROVIDED WITHIN 25FT OF ALL HVAC EQUIPMENT. FIELD COORDINATE EXACT LOCATION AND ADD ADDITIONAL RECEPTACLES IF REQUIRED. BASE BID ACCORDINGLY.
19	EXISTING WATER HEATER (EX.EWH). ELECTRICAL CONTRACTOR SHALL VERIFY THE EXACT OPERABLE CONDITION WITH ARCHITECT/OWNER IN FIELD. VERIFY THE EXACT DISCONNECT SIZE FOR THE WATER HEATER. INFORM ENGINEER IN CASE OF ANY DISCREPANCY. BASE BID ACCORDINGLY.
20	PROVIDE OUTLET FOR MIRROR LIGHTS. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH ARCHITECT/MANUFACTURER/VENDOR FOR THE EXACT REQUIREMENTS, LOCATION AND MOUNTING HEIGHT. PROVIDE AS REQUIRED. BASE BID ACCORDINGLY

Property of NY Engineers

EVEREVE

TITLE:
ELECTRICAL POWER PLAN

SHEET NUMBER:
E-300

ENERGY ANALYSIS

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Evereve_CA	Report Page:	(Page 1 of 9)
Project Address:	Date Prepared:	2025-10-07T10:25:47-04:00

This document is used to demonstrate compliance with requirements in 110.9, 110.12(c), 130.0, 130.1, 140.6 and 141.0(b)2 for indoor lighting scopes using the prescriptive path for nonresidential and hotel/motel occupancies. It is also used to document compliance with requirements in 160.5, 170.2(e) and 180.2(b)4 for indoor lighting scopes using the prescriptive path for multifamily occupancies. Multifamily includes dormitory and senior living facilities.

A. GENERAL INFORMATION

01	Project Location (city)	Roseville, CA	04 Total Conditioned Floor Area (ft²)	3,799
02	Climate Zone	11	05 Total Unconditioned Floor Area (ft²)	0
03	Occupancy Types Within Project (select all that apply):		06 # of Stories (Habitable Above Grade)	0

● Retail

B. PROJECT SCOPE

This table includes any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.6 / 170.2(e) or 141.0(b)2 / 180.2(b)4 for alterations.

Scope of Work		Conditioned Spaces		Unconditioned Spaces	
01		02	03	04	05
My Project Consists of (check all that apply):		Calculation Method	Area (ft²)	Calculation Method	Area (ft²)
☒	New Lighting System	Area Category Method	3799	N/A	0
☐	New Lighting System - Parking Garage	N/A	0	N/A	0
	Total Area of Work (ft²)	3799			

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Evereve_CA	Report Page:	(Page 2 of 9)
	Date Prepared:	2025-10-07T10:25:47-04:00

C. COMPLIANCE RESULTS

If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D, for guidance.

Lighting in conditioned and unconditioned spaces must not be combined for compliance per 140.6(b)1 /170.2(e)	Allowed Lighting Power per 140.6(b) /170.2(e) (Watts)						Adjusted Lighting Power per 140.6(a) /170.2(e) (Watts)					Compliance Results
	01	02	03	04		05		06	07 Adjustments		08	09
	Complete Building 140.6(c)1	Area Category 140.6(c)2 /170.2(e)4	Area Category Additional 140.6(c)2(G) / 170.2(e)4Av (+)	Tailored 140.6(c)3 / 170.2(e)4B (+)	=	**Total Allowed** (Watts)	≥	Total Designed (Watts)	PAF Lighting Control Credits 140.6(a2 /170.2(e)1B (-)	=	**Total Adjusted** (Watts) *Includes Adjustments	**05 must be >= 08 140.6 /170.2(e)**
	(See Table I)	(See Table I)	(See Table J)	(See Table K)				(See Table F)	(See Table P)			
Conditioned		2,805.07	796.78		=	3,601.85	≥	3,565		=	3565	COMPLIES
Unconditioned					=		≥			=		
Controls Compliance (See Table H for Details)												COMPLIES
Rated Power Reduction Compliance (See Table Q for Details)												

D. EXCEPTIONAL CONDITIONS

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

Track Lighting has been included in this project, details are provided in Table G.

E. ADDITIONAL REMARKS

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

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: Evereve_CA	Report Page:	(Page 3 of 9)
	Date Prepared:	2025-10-07T10:25:47-04:00

F. INDOOR LIGHTING FIXTURE SCHEDULE

This table includes all planned permanent and portable lighting other than dwelling unit/ hotel/ motel room lighting. Multifamily dwelling unit and hotel/motel room lighting is documented in Table T. If using Table T to document lighting in multifamily common use areas providing shared provisions for living, eating, cooking or sanitation, those luminaires are not included here.

Designed Wattage: Conditioned Spaces

01 Name or Item Tag	02 Complete Luminaire Description	03 Modular (Track) Fixture	04 Small Aperture & Color Change -	05 Watts per luminaire[1]	06 How is Wattage determined	07 Total Number of Luminaires	08 Excluded per 140.6(a)3 / 170.2(e)3C	09 Design Watts	10 Field Inspector Pass	10 Field Inspector Fail
C	DOWN LIGHT	No	NA	39	Mfr. Spec	4	Exempt	---	☐	☐
D4	4" ROPE LED LIGHT	No	NA	35	Mfr. Spec	1	Exempt	---	☐	☐
F	LED TAPE LIGHT 24"	No	NA	2.2	Mfr. Spec	41	Exempt		☐	☐
G	4" DOWNLIGHT	No	NA	26	Mfr. Spec	17	No	442	☐	☐
J	4" LINEAR STRIP	No	NA	35	Mfr. Spec	17	No	595	☐	☐
L1B, L2	TRACK LIGHTS	Yes	NA	2,528	See Other Section	1	No	2,528	☐	☐
					Total Designed Watts: CONDITIONED SPACES			3,565		

[1]*FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per 140.6(a)4B /170.2(e)2D is adjusted to be 75%.(80% of their rated wattage. Table F automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05.*

[2]*Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per 130.0(c) /160.5(b). Wattage used must be the maximum rated for the luminaire, not the lamp.*

G. MODULAR LIGHTING SYSTEMS

This table calculates wattage for modular lighting systems/ track lighting fixtures indicated on Table F and transfers wattage to Table F.

01 Name or Item Tag	02 Complete Track Description	03 Calculation Method per 130.0(c)6						04 Track Wattage
L1B, L2	TRACK LIGHTS	☒	i Installed Luminaires vs Default 30 W/ft	☐	ii Current Limiter	☐	iii Overcurrent Protection Panel	☐	iv Power supplied by driver, power supply or transformer[1]	

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G. MODULAR LIGHTING SYSTEMS

	Number of luminaires in system	x	Rated Watts per luminaire	=	Total Watts	OR	Linear ft of track or busway	x	Default W/LF 30	=	Total Watts	2528
	158		16		2528							

[1]*FOOTNOTE: For power-over-Ethernet lighting systems, power provided to installed non-lighting devices may be subtracted from the total power rating of the power-over-Ethernet system.*

H. INDOOR LIGHTING CONTROLS (Not including PAFs)

This table includes lighting controls for conditioned and unconditioned spaces.

Building Level Controls

01	02	03 Field Inspector Pass	03 Field Inspector Fail
Mandatory Demand Response 110.12(c)	Shut-off controls 130.1(c) / 160.5(b)4C	☐	☐
NA < 4,000W subject to multilevel	Whole Building Auto Time Switch	☐	☐

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H. INDOOR LIGHTING CONTROLS (Not including PAFs)

Area Level Controls

04 Area Description	05 Complete Building or Area Category Primary Function Area	06 Manual Area Controls 130.1(a) /160.5(b)4A	07 Multi-Level Controls 130.1(b) /160.5(b)4B	08 Shut-Off Controls 130.1(c) //160.5(b)4C	09 Primary/Sky lit Daylighting 130.1(d) /160.5(b)4D	10 Secondary Daylighting 130.1(d) /160.5(b)4D	11 Interlocked Systems 140.6(a)1/1 70.2(e)2A	12 Field Inspector Pass	12 Field Inspector Fail
SALES AREA	Retail Merchandise Sales Wholesale Showroom	Auth. Personnel	Dimmer	Auto. Time Switch	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
FITTING ROOMS	Retail Fitting Rm	Auth. Personnel	Dimmer	See Building Level	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
BACKROOM	Lounge	Auth. Personnel	Multilevel Switch	Occupancy Sensor	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
HALLWAY	Corridor	Readily Accesible	Multilevel Switch	See Building Level	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
TOILET RM.	Restroom	Readily Accesible	NA: Enclosed area <100SF	Occupancy Sensor	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
							13		
							Plan Sheet Showing Daylit Zones:		

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS

Each area complying using the Complete Building or Area Category Methods per 140.6(b) are included in this table. Column 06 indicates if additional lighting power allowances per 140.6(c) or adjustments per 140.6(e) are being used .

Conditioned Spaces

01 Area Description	02 Complete Building or Area Category Primary Function Area	03 Allowed Density (W/ft²)	04 Area (ft²)	05 Allowed Wattage (Watts)	06 Additional Allowance / Adjustment Area Category	06 Additional Allowance / Adjustment PAF
SALES AREA	Retail Merchandise Sales Wholesale Showroom	0.95	2,276.5	2,162.67	Yes	No

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I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS

FITTING ROOMS	Retail Fitting Rm	0.6	247	148.2	No	No
BACKROOM	Lounge	0.55	664	365.2	No	No
HALLWAY	Corridor	0.4	225	90	No	No
TOILET RM.	Restroom	0.65	60	39	No	No
			TOTALS:	3,472.5	2,805.07	See Tables J, or P for detail

J. ADDITIONAL ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING SYSTEM

All areas indicated in Table I as using an additional allowance using the Area Category Method have been included in this table to calculate the additional allowance per Table 140.6-C /170.2-M.

Conditioned Spaces

01 Area Description	02 Primary Function Area	03 Applicable Qualifying Lighting System from Table 140.6-C	04 Allowed Density (W/ft² or W/lf or W/unit)	05 Ltg Area, Length or ATM/Mirror (ft², lf or #)	06 Extra Allowance (Watts)	07 Luminaire Name or Item Tag	08 Watts per Luminaire	09 Number of Luminaires	10 Total Design Watts
SALES AREA	Retail Merchandise Sales Wholesale Showroom	DecorativeDisplayE	0.35	2276.5	796.78	F	2.2	41	90.2
						D4	35	1	35
						C	39	4	156
						L1B, L2	2528	1	2528
Total Design Watts	Calculated Allowance (Watts):	Total Additional Allowance for this area:							
2809.2	796.78	796.78							
	11								
Total Additional Allowance (Watts) CONDITIONED SPACES		796.78							

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K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE

This section does not apply to this project.

L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY

This section does not apply to this project.

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING

This section does not apply to this project.

N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED DECORATIVE /SPECIAL EFFECTS

This section does not apply to this project.

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE

This section does not apply to this project.

P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))

This section does not apply to this project.

Q. RATED POWER REDUCTION COMPLIANCE FOR ONE-FOR-ONE ALTERATIONS

This section does not apply to this project.

R. 80% LIGHTING POWER FOR ALL ALTERATIONS - CONTROLS EXCEPTIONS

This section does not apply to this project.

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S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF)

This section does not apply to this project.

T. DWELLING UNIT LIGHTING

This section does not apply to this project.

U. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

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

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

V. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

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

Form/Title	Systems/Spaces To Be Field Verified
NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	SALES AREA; FITTING ROOMS; BACKROOM; HALLWAY; TOILET RM.

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Michael Tobias	Documentation Author Signature:
Company: NY Engineers	Signature Date: 2025-10-07
Address: 382 NE 191ST Street Suite 49674	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Miami, FL 33179	Phone:

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

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

Responsible Designer Name: Michael Tobias	Responsible Designer Signature:
Company: NY Engineers	Date Signed: 2025-10-07
Address: 382 NE 191ST Street Suite 49674	License: M33750
City/State/Zip: Miami, FL 33179	Phone:

Property of NY Engineers

EVEREVE

TITLE:
ENERGY ANALYSIS (TITLE 24)

SHEET NUMBER:
E-600

SYMBOL	DESCRIPTION
	EXISTING SANITARY PIPING (S)
	EXISTING VENT PIPING (V)
	DOMESTIC COLD WATER PIPING (CW)
	DOMESTIC HOT WATER PIPING (HW)
	DOMESTIC HOT WATER RETURN PIPING (HWR)
	CAPPED PIPING
	SANITARY PIPING (S)
	VENT PIPING (V)
	EXISTING DOMESTIC COLD WATER
	TOP CONNECTION, 45° OR 90°
	BOTTOM CONNECTION
	PIPE UP
	PIPE DOWN
	FLOOR CLEANOUT (PLAN / RISER VIEW) (FCO)
	BALL / GATE VALVE
	FIELD CONNECTION
	THERMOSTATIC MIXING VALVE (SET TO 110°F)
	WALL CLEANOUT (PLAN / RISER VIEW) (WCO)
	FLOOR DRAIN (PLAN / RISER VIEW) (FD)
	BALANCING VALVE
	HOT WATER CIRCULATING PUMP (RCP)

IDENTIFIER	DESCRIPTION
CW	COLD WATER
DN	DOWN
EQUIP	EQUIPMENT
EWH	ELECTRIC WATER HEATER
E/EX.	EXISTING FIXTURE/EQUIPMENT
ET	EXPANSION TANK
FD	FLOOR DRAIN
GC	GENERAL CONTRACTOR
HW	HOT WATER
HWR	HOT WATER RETURN
LAV	LAVATORY
MS	MOP SINK
(N)	NEW FIXTURE/EQUIPMENT
RCP	RE-CIRCULATION PUMP
S	SANITARY
SK	SINK
V	VENT
V.I.F.	VERIFY IN FIELD
WC	WATER CLOSET
DF	DRINKING FOUNTAIN

NOTE: SYMBOL LIST SHOWN IS FOR GENERAL REFERENCE ONLY. THE PRESENCE OF A SYMBOL DOES NOT IMPLY ITS USE ON THIS PROJECT. REFER TO DRAWINGS FOR SPECIFIC SYMBOLS USED.

1 PLUMBING LEGENDS AND ABBREVIATIONS

SCALE: N.T.S.

MARK	FIXTURE	SAN	VENT	C.W.	H.W.	H.W.R.	REMARK
MS-1	MOP SINK: PRECAST TERRAZZO, 24" OVERALL HEIGHT, 24" OVERALL LENGTH, 12" BOWL DEPTH	3"	2"	3/4"	3/4"	--	STERN-WILLIAMS SERVICEPTOR SB-900. USE WITH ZURN Z843M1-XL-CS- SERVICE SING FAUCET, FERGUSON BP-2-24X36 WALL GUARDS AND 8A VACUUM BREAKER.
WC-1	ADA-COMPLIANT, FLOOR-MOUNTED WATER CLOSET WITH FLOOR OUTLET; ONE-PIECE DESIGN INTEGRATING THE FLUSH TANK AND BOWL INTO A SEAMLESS UNIT. CONSTRUCTED OF WHITE VITREOUS CHINA WITH A COMPACT ELONGATED BOWL.	4"	2"	3/4"	--	--	KOHLER SANTA ROSA, MODEL K-30810 — ADA-COMPLIANT, FLOOR-MOUNTED WATER CLOSET WITH FLOOR OUTLET. ONE-PIECE DESIGN INTEGRATING THE FLUSH TANK AND BOWL INTO A SEAMLESS UNIT. CONSTRUCTED OF WHITE VITREOUS CHINA WITH A COMPACT ELONGATED BOWL. 1.28 GPF WITH LEFT-HAND POLISHED CHROME TRIP LEVER. PROVIDE ALL REQUIRED ACCESSORIES AS PER MANUFACTURER'S RECOMMENDATIONS. 1
LAV-1	LAVATORY, WALL MOUNTED, ACCESSIBLE, WHITE VITREOUS CHINA, 22"x18". SELF-CLOSING SINGLE SENSOR FAUCET. HOLE PROVIDED FOR CONCEALED ARM CARRIER. 110 VAC POWER INPUT.	2"	1-1/2"	1/2"	1/2"	--	KOHLER PINOIR K-2035-1, WALL-MOUNTED LAVATORY, WHITE VITREOUS CHINA. LAVATORY FAUCET SHALL BE SELF-CLOSING, SLOAN OPTIMA ETF-410, IN COMPLIANCE WITH 2022 CALIFORNIA PLUMBING CODE (CPC) SECTION 407.4. LAVATORY FAUCET SHALL HAVE A MAXIMUM FLOW RATE OF 0.5 GALLONS PER MINUTE AT 60 PSI, IN COMPLIANCE WITH THE 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), SECTION 5.303.3. MIXING VALVE: WATTS (LFUSG-B) / SLOAN (MIX-135-A), INSULATION KIT-TRUEBRO (LAV-GUARD), BROCAR PRODUCTS (TRAP MCGUIRE (PROWRAP), PLUMBEREX (PRO-EXTREME). PROVIDE ALL REQUIRED ACCESSORIES AS PER MANUFACTURER'S RECOMMENDATIONS.
DF-1	WALL HUNG, BI-LEVEL UNITS, ADA COMPLIANT WITH MATCHING STAINLESS STEEL CABINETS.	2"	1-1/2"	1/2"	--	--	EZH2O BOTTLE FILLING STATION. ELKAY LZSTL8WSLK. 1.5 HP MOTOR, 120 V -1 PHASE, CORD AND PLUG, PLAIN RECEPTACLE MOUNTED WITHIN EWC LOWER ENCLOSURE, GFCI BREAKER. CHILLING CAPACITY OF 8.0 GPH.
EX. EWH	EXISTING TO REMAIN.	--	--	E	E	--	EXISTING WATER HEATER & EXPANSION TANK TO BE REMAIN WITH ASSOCIATED ACCESSORIES AND FITTINGS TO REMAIN.
EX. FD.	EXISTING TO REMAIN.	E	E	--	--	--	

NOTE: CONTRACTOR TO CROSS REFERENCE ALL LISTED PLUMBING FIXTURES WITH ARCHITECT / OWNER PROVIDED DIP (DESIGN INTENT PACKAGE) TO ENSURE ALL PLUMBING RELATED ITEMS ARE COORDINATED PROPERLY.

CONTRACTOR NOTE:
CONTRACTOR SHALL DISINFECT ALL NEW OR REPAIRED POTABLE WATER SYSTEMS PRIOR TO USE, IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. THE DISINFECTION METHOD SHALL COMPLY WITH THE HEALTH AUTHORITY REQUIREMENTS OR AS SPECIFIED IN 2022 CALIFORNIA PLUMBING CODE (CPC) SECTION 609.10(1) THROUGH (4). 1

2 PLUMBING FIXTURE SCHEDULE

SCALE: N.T.S.

PLUMBING SPECIFICATIONS

1. GENERAL

THE "ARCHITECTURAL GENERAL CONDITIONS" GOVERN WORK UNDER THIS SECTION.

BEFORE SUBMITTING A PROPOSAL, THIS CONTRACTOR SHALL VISIT THE SITE OF THE WORK AND SHALL CAREFULLY EXAMINE THE DRAWINGS AND SPECIFICATIONS. IT IS EXPRESSLY UNDERSTOOD THAT THIS PROPOSAL IS BASED ON THE ABOVE REQUIREMENTS AND THAT IT COVERS EVERYTHING NECESSARY TO DO AND COMPLETE THE WORK.

2. INSPECTION AND COOPERATION

NO DEVIATION FROM THE DRAWINGS AND /OR SPECIFICATIONS WILL BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF ARCHITECT OR ENGINEER. THIS CONTRACTOR SHALL COOPERATE WITH THE OTHER CONTRACTORS TO ALLOW FOR THE INSTALLATION OF THEIR WORK AS WELL AS HIS OWN.

THIS CONTRACTOR SHALL BE RESPONSIBLE FOR HIS WORK FITTING IN PLACE WITHOUT CONFLICT WITH THE OTHER TRADES, WHERE PROPER PLANNING COULD AVOID INTERFERENCE.

3. CODES AND PERMITS

NOTHING IN THE DRAWINGS AND/OR SPECIFICATIONS SHALL BE INTERPRETED TO CONFLICT WITH ANY CITY OR PROVINCIAL LAW, REGULATION, CODE, ORDINANCE, RULING, OR FIRE UNDERWRITER'S REQUIREMENT APPLICABLE TO THIS CLASS OF WORK.

SHOULD THE DRAWINGS AND/OR SPECIFICATIONS CONFLICT WITH SUCH LAWS OR ORDINANCES, THE CONFLICTING PORTION OF THE WORK SHALL BE INSTALLED STRICTLY IN ACCORDANCE WITH SUCH LAWS AND ORDINANCES WITHOUT EXTRA COST.

THIS CONTRACTOR SHALL SECURE AND PAY FOR ALL NECESSARY PERMITS AND INSPECTIONS REQUIRED FOR THIS INSTALLATION OF HIS WORK.

4. ACCURACY OF DATA

THE INFORMATION GIVEN HEREIN AND ON THE DRAWINGS IS AS EXACT AS COULD BE SECURED, BUT ITS EXTREME ACCURACY IS NOT GUARANTEED. THIS CONTRACTOR SHALL EXAMINE THE LOCATIONS AND VERIFY ALL MEASUREMENTS, DISTANCES, ELEVATIONS AND EXISTING PIPE SIZES BEFORE STARTING THE WORK.

THIS CONTRACTOR SHALL PROVIDE ALL NECESSARY OFFSETS, RAISED AND DROPS IN PIPING AND DUCTWORK AS REQUIRED BY BUILDING CONDITIONS AT NO ADDITIONAL COST.

PLUMBING DRAWINGS SHALL NOT BE USED FOR GENERAL CONSTRUCTION DIMENSIONS OR FOR TYPE OF MATERIAL USED. FOR EXACT BUILDING LAYOUT, DIMENSIONS AND BUILDING MATERIAL USED, THIS CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS.

5. SHOP DRAWINGS

FIVE (5) COPIES OF ALL SHOP OR INSTALLATION DRAWINGS, FOUNDATION PLANS, EQUIPMENT OR APPARATUS DRAWINGS SHALL BE FURNISHED BY THIS CONTRACTOR. THESE DRAWINGS SHALL BE CLEARLY MARKED INDICATING WHICH ITEMS ARE TO BE SUPPLIED AND SHALL STATE CAPACITIES, SIZES AND GENERAL DESCRIPTION OF ALL EQUIPMENT. ANY CHANGES FROM THE SPECIFIED ITEMS SHALL BE NOTED ON THE SUBMITTALS.

SHOP DRAWINGS OF SPECIAL APPARATUS OR EQUIPMENT WHICH IS TO BE FABRICATED INDIVIDUALLY FOR THIS PROJECT AND IS NOT DESCRIBED BY STANDARD MANUFACTURER'S DRAWINGS OR BULLETINS SHALL BE SUBMITTED FOR PROCESSING BEFORE FABRICATION.

THESE DRAWINGS SHALL BE SUBMITTED IN A TIMELY MANNER.

IT SHALL BE THIS CONTRACTORS RESPONSIBILITY TO MAINTAIN LIAISON WITH ALL PARTIES CONCERNED WITH THE MATERIAL SUBMITTED. THIS CONTRACTOR SHALL NOT PURCHASE ANY EQUIPMENT UNTIL SHOP DRAWINGS HAVE BEEN PROCESSED.

THIS CONTRACTOR SHALL SUBMIT NO DRAWINGS WITHOUT NOTATION OF EACH COPY INDICATING DATE OF CONTRACTOR'S REVIEW AND SIGNATURE OF CHECK FOR CONTRACTOR TOGETHER WITH CONTRACTOR'S NAME AND PROJECT IDENTIFICATION.

ARCHITECT'S PROCESSING WILL NOT CONSTITUTE A COMPLETE CHECK BUT WILL INDICATE ONLY THAT GENERAL METHOD OF CONSTRUCTION AND DETAILING IS SATISFACTORY.

ARCHITECT'S PROCESSING WILL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR ERRORS SINCE THIS CONTRACTOR IS SOLELY RESPONSIBLE FOR DIMENSIONS AND DESIGNS OF ADEQUATE CONNECTIONS, DETAILS AND SATISFACTORY CONSTRUCTION OF ALL WORK, AS WELL AS FURNISHING MATERIALS AND WORKMANSHIP REQUIRED BY DRAWINGS AND SPECIFICATIONS WHICH MAY NOT BE INDICATED ON THE SUBMITTALS WHEN APPROVED.

6. SUBSTITUTIONS OF EQUIPMENT OR MATERIAL

THE BRAND NAMES OF EQUIPMENT OR MATERIALS SPECIFIED HEREIN SHALL ESTABLISH QUALITY, CAPACITY, TYPE AND DIMENSIONS TO BE INCLUDED IN THE BASE BID.

APPROVAL OF SUBSTITUTED ITEMS WILL BE BASED ON ABILITY AND CAPACITY TO PERFORM FUNCTION SERVED, QUALITY AND AVAILABILITY OF PARTS AND SERVICE, QUALITY OF EQUIPMENT, DELIVERY SCHEDULE, ETC. THE ARCHITECT SHALL REVIEW ALL SUCH REQUESTS BUT RESERVES THE SOLE RIGHT OF JUDGEMENT TO APPROVE OR REJECT THE PROPOSED SUBSTITUTIONS.

ACCEPTANCE OR REJECTION OF PROPOSED SUBSTITUTIONS SHALL NOT CAUSE ADDITIONAL COST. ANY CHANGES OF PIPING, DUCTWORK, ELECTRICAL CONTROLS OR INSTALLATION REQUIRED BECAUSE OF THE SUBSTITUTION OR EQUIPMENT SHALL BE PAID FOR BY THIS CONTRACTOR PROPOSING THE SUBSTITUTION.

7. ERECTION OF APPARATUS

ALL WORK SHALL BE DONE UNDER THE PERSONAL SUPERVISION OF THIS CONTRACTOR WHO SHALL PROVIDE A COMPETENT FOREMAN TO LAY OUT ALL WORK. ALL WORK SHALL BE LAID OUT WITH DUE REGARD FOR THE SPACE REQUIREMENTS OF THE OTHER CONTRACTORS. THIS CONTRACTOR SHALL REPORT ANY CONFLICTS OR DIFFICULTIES IN REGARD TO THE INSTALLATION IMMEDIATELY.

WHERE CROWDED LOCATIONS EXIST OR WHERE THERE IS A POSSIBILITY OF CONFLICT BETWEEN TRADES, THIS CONTRACTOR SHALL MAKE COMPOSITE DRAWINGS SHOWING THE EXACT LOCATIONS OF PIPES, DUCT, CONDUIT AND EQUIPMENT. DRAWINGS SHALL BE BASED ON FIELD MEASUREMENTS AND AFTER CONSULTATION AND AGREEMENT BETWEEN THE TRADES, SHALL BE APPROVED BY ZARA REPRESENTATIVE BEFORE INSTALLATION OF THE WORK.

EQUIPMENT OF A TYPE TO REQUIRE REPLACEMENT, SERVICING, ADJUSTING OR MAINTENANCE SHALL BE LOCATED TO ALLOW EASY ACCESS AND SPACE FOR REMOVAL OF INTERNAL ASSEMBLIES, IT REQUIRED.

8. EQUIPMENT SUPPORTS

ANY STRUCTURAL STEEL MEMBERS REQUIRED TO ADAPT THE EQUIPMENT AND PIPING AS FURNISHED BY THIS CONTRACTOR, TO THE BUILDING STEEL OR STRUCTURE, SHALL BE INCLUDED IN THE BID OF THE CONTRACTOR FURNISHING THE EQUIPMENT OR PIPING. HANGING OF ALL EQUIPMENT AND REQUIRED SUPPORTING STEEL AND BRACING SHALL BE FURNISHED BY THE CONTRACTOR WHO SUPPLIES THE EQUIPMENT.

9. CUTTING AND PATCHING

THIS CONTRACTOR SHALL INCLUDE ALL CUTTING, PATCHING AND PAINTING OF PATCHED AREAS REQUIRED FOR AND RESULTING FROM THE INSTALLATION OF ALL OF THIS CONTRACTOR'S WORK, EXCEPT WHERE NOTED OTHERWISE.

ALL OPENINGS AROUND PIPE PENETRATIONS THROUGH SMOKE OR FIRE-RATED FLOORS, CEILINGS OR WALLS SHALL BE SEALED AIRTIGHT WITH MATERIAL HAVING A RATING EQUAL TO THE MATERIAL OF THE WALL, CEILING AND/OR FLOOR PENETRATED.

ALL PATCHING SHALL BE NEATLY FINISHED TO THE SATISFACTION OF THE ARCHITECT.

10. ACCESS PANELS

THIS CONTRACTOR SHALL LOCATE AND FURNISH FOR INSTALLATION BY THE GENERAL CONTRACTOR, ALL ACCESS PANELS AS REQUIRED FOR ACCESS TO VALVES, AND THE PROPER SERVICING OF EQUIPMENT AND LINES INSTALLED UNDER THE CONTRACT.

ALL PANELS SHALL BE MILCOR, STYLE "M" FOR MASONRY, "A" FOR ACOUSTICAL TILE AND "K" FOR PLASTER; EXCEPT FOR FIRE-RATED UL 1-1/2 HOUR AND "B" LABEL ACCESS PANELS SHALL BE FURNISHED IN FIRE-RATED WALLS AND CEILINGS AS INDICATED ON THE DRAWINGS. ACCESS DOORS SHALL BE 12" X 12" MINIMUM SIZE FOR VALVES.

11. DIELECTRIC UNIONS

FOR THE PREVENTION OF ELECTROLYTIC CORROSION AT CONNECTIONS BETWEEN PIPE OF DISSIMILAR METALS OR BETWEEN PIPE AND EQUIPMENT CONNECTIONS OF DISSIMILAR METALS, PROVIDE DIELECTRIC UNIONS OR FLANGES.

12. JOINTS AND FITTINGS

THREADS ON SCREWED PIPE SHALL BE STANDARD, CLEAN BUTT AND TAPERED. PIPE SHALL BE REAMED OF BURRS AND KEPT CLEAN OF SCALE, DIRT AND SHAVINGS. TREADS SHALL BE MADE WITH FLAKED GRAPHITE AND LUBRICATING OIL OR APPROVED PIPE COMPOUND ON THE MALE THREAD ONLY.

COPPER-TO-STEEL AND COPPER-TO-BRASS JOINTS SHALL BE MADE WITH SILVER SOLDER. ALL OTHER COPPER-TO-COPPER JOINTS ABOVE GROUND SHALL BE MADE WITH LEAD FREE SOLDER. COPPER PIPE SHALL BE CUT SQUARE, BURRS REMOVED AND CARE SHALL BE GIVEN TO KEEP THE LINES FREE OF DIRT AND MOISTURE. ALL TUBING AND FITTINGS SHALL BE THOROUGHLY CLEANED.

WELDED PIPE SHALL HAVE BUTT WELDED SINGLE "V" TYPE JOINTS FOR WHICH PIPE HAS BEEN BEVELED TO 45 DEGREES. WELD SHALL BE ONE-FOURTH GREATER THICKNESS THAN THE PIPE. CONNECTIONS TO EQUIPMENT, ACCESSORIES, ETC. SHALL BE MADE BY MEANS OF FLANGES AND/OR ADAPTERS.

UNIONS SHALL BE PROVIDED AT EACH SCREWED VALVE AND UNIONS OR FLANGES AT EACH EQUIPMENT CONNECTION.

13. EXPANSION JOINTS

FURNISH AND INSTALL FLEXONICS EXPANSION JOINTS IN PIPING SYSTEM WHERE SHOWN OR NECESSARY FOR EXPANSION AND CONTRACTION.

EXPANSION JOINTS IN PIPE 4" AND GREATER SHALL BE THE PACKLESS TYPE WITH STAINLESS STEEL BELLOWS AND HAVE WELDED OR FLANGED END. JOINTS SHALL HAVE TRAVERSE AS INDICATED ON THE PLANS. EXPANSION JOINTS SHALL BE OF THE CONTROLLED FLEXING TYPE.

EXPANSION JOINTS IN COPPER PIPE UNDER 4" IN SIZE SHALL BE OF THE COMPENSATOR TYPE CONSTRUCTED OF TWO-PLY STAINLESS STEEL BELLOWS AND CARBON STEEL SHROUDS AND END FITTINGS, INTERNAL GUIDES AND ANTI-TORQUE DEVICES.

EXPANSION JOINTS IN STEEL PIPE UNDER 4" IN SIZE SHALL BE OF THE COMPENSATOR TYPE CONSTRUCTED OF TWO-PLY STAINLESS STEEL ELBOWS AND CARBON STEEL SHROUDS AND END FITTINGS, INTERNAL GUIDES AND ANTI-TORQUE DEVICES.

PROVIDE GUIDES ON EACH SIDE OF EXPANSION JOINT, AT 4" PIPE DIAMETERS, 14 PIPE DIAMETERS, AND A THIRD GUIDE AS RECOMMENDED BY THE MANUFACTURER.

14. PIPE FLEXIBLE CONNECTIONS

FLEXIBLE PIPE CONNECTIONS SHALL BE RESISTOFLEX #R6904 OR APPROVED EQUAL FLEXIBLE CONNECTIONS MADE FROM TEFLON.

PROVIDE FOR MOVEMENT IN PIPING BY USE OF SWING JOINTS AT CONNECTION OF ALL BRANCHES TO MAINS AND RISERS. ALL BRANCHES FROM MAINS AND RISERS SHALL HAVE 1/4" CLEARANCE BETWEEN PIPE INSULATION AND SLEEVE TO PERMIT PIPE MOVEMENT.

15. VALVES

THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL VALVES OF ONE MANUFACTURER, FIGURE NUMBER AND TYPE THROUGHOUT THE ENTIRE INSTALLATION OF THE WORK, UNLESS OTHERWISE SPECIFIED. THE FOLLOWING NUMBERS ARE FROM THE CRANE CATALOG. EQUAL VALVES OF REPUTABLE MANUFACTURERS, SUCH AS HAMMOND, NIBCO-SCOTT AND/OR JENKINS WILL BE CONSIDERED EQUIVALENT.

ALL VALVES SHALL BE BUILT FOR A MINIMUM OF 125 PSIG WORKING PRESSURE.

GATE VALVES 2-1/2" AND SMALLER SHALL BE #438 (SCREWED ENDS) OR #1320 (SOLDER-JOINT ENDS) WITH BRONZE BODY, BRONZE TRIM AND RISING STEM.

CHECK VALVES 2-1/2" AND SMALLER SHALL BE #36 (SCREWED ENDS) OR #1342 (SOLDER-JOINT ENDS) SWING-TYPE WITH BRONZE BODY AND BRONZE TRIM.

BUTTERFLY VALVES 2" AND LARGER SHALL BE #12F, IRON BODY, CAST-IRON WAFER W/LOCK LEVER.

BALL VALVE UP TO 3" IN SIZE SHALL BE APOLLO SERIES #70 BRONZE VALVE WITH CHROME-PLATED BALL AND TEFLON SEAT.

GAS LINE COCKS UP TO 4" SHALL BE #320.

HOSE END VALVES SHALL BE #438 GATE VALVES WITH HOSE END NIPPLES.

16. PIPE SLEEVES AND COLLARS

THIS CONTRACTOR SHALL LAY OUT ALL HIS WORK AND SET SLEEVES IN NEW CONSTRUCTION AS CONCRETE FORMS AND WALL ARE ERECTED SO AS TO BE ABLE TO INSTALL HIS WORK WITHOUT CUTTING OR BREAKING OF FLOORS OR WALLS. ALL SLEEVES FOR INSULATED PIPING SHALL BE LARGE ENOUGH TO ALLOW INSULATION TO PASS THROUGH SLEEVE.

ALL SLEEVES PASSING THROUGH FLOORS WHICH ARE WATERPROOFED SHALL BE COPPER TUBING SLEEVES EXTENDING 1" ABOVE FINISHED FLOOR. ALL OTHER SLEEVES SHALL BE 24 GAUGE GALVANIZED PIPES AND SLEEVES TO BE THOROUGHLY PACKED WITH OAKUM AND THE REMAINING SPACE FILLED WITH MASTIC AND MUST BE WATERTIGHT.

ALL SLEEVES PASSING THROUGH INNER WALLS SHALL BE STANDARD PIPE THIMBLES EQUAL TO THE THICKNESS OF THE WALL.

SPACES BETWEEN PIPES AND SLEEVES THROUGH OUTSIDE WALLS, ABOVE GRADE, SHALL BE CAULKED WITH CAULKING COMPOUND; THOSE BELOW GRADE SHALL BE MADE WATERTIGHT.

SPACE AROUND ALL PIPING THROUGH FIRE OR SMOKE RATED PARTITIONS OR FLOORS SHALL BE SEALED AIRTIGHT WITH MATERIAL AS SPECIFIED UNDER FIRESTOPPING.

ALL PIPE PENETRATIONS OF SLABS ON GRADE SHALL BE WRAPPED WITH #15 BUILDING FELTS OR FOAM WRAP.

17. HANGERS

A. PIPE HANGER AND SUPPORT PRODUCTS INSTALLATION
   a. VERTICAL PIPING: MSS TYPE 8 OR 42 CLAMPS.
   b. INDIVIDUAL, STRAIGHT, HORIZONTAL PIPING RUNS: 100 FEET AND LESS: MSS TYPE 1, ADJUSTABLE, STEEL CLEVIS HANGERS. LONGER THAN 100 FEET: MSS TYPE 43, ADJUSTABLE ROLLER HANGERS. LONGER THAN 100 FEET IF INDICATED: MSS TYPE 49, SPRING CUSHION ROLLS.
   c. MULTIPLE, STRAIGHT, HORIZONTAL PIPING RUNS 100 FEET OR LONGER:MSS TYPE 44, PIPE ROLLS. SUPPORT PIPE ROLLS ON TRAPEZE.
   d. BASE OF VERTICAL PIPING: MSS TYPE 52, SPRING HANGERS.

B. SUPPORT VERTICAL PIPING AND TUBING AT BASE AND AT EACH FLOOR.

C. ROD DIAMETER MAY BE REDUCED ONE SIZE FOR DOUBLE-ROD HANGERS, TO A MINIMUM OF 3/8 INCH.

D. INSTALL HANGERS FOR COPPER TUBING WITH THE FOLLOWING MAXIMUM HORIZONTAL SPACING AND MINIMUM ROD DIAMETERS:

   a. NPS 3/4 AND SMALLER: 60 INCHES WITH 3/8-INCH ROD.
   b. NPS 1 AND NPS 1-1/4: 72 INCHES WITH 3/8-INCH ROD.
   c. NPS 1-1/2 AND NPS 2: 96 INCHES WITH 3/8-INCH ROD.
   d. NPS 2-1/2: 108 INCHES WITH 1/2-INCH ROD.
   e. NPS 3 TO NPS 5: 10 FEET WITH 1/2-INCH ROD.

E. INSTALL SUPPORTS FOR VERTICAL COPPER TUBING EVERY 10 FEET.

F. INSTALL HANGERS FOR STEEL PIPING WITH THE FOLLOWING MAXIMUM HORIZONTAL SPACING AND MINIMUM ROD DIAMETERS:

   a. NPS 1-1/4 AND SMALLER: 84 INCHES WITH 3/8-INCH ROD.
   b. NPS 1-1/2: 108 INCHES WITH 3/8-INCH ROD.
   c. NPS 2: 10 FEET WITH 3/8-INCH ROD.
   d. NPS 2-1/2: 11 FEET WITH 1/2-INCH ROD.
   e. NPS 3 AND NPS 3-1/2: 12 FEET WITH 1/2-INCH ROD.
   f. NPS 4 AND NPS 5: 12 FEET WITH 5/8-INCH ROD.

G. INSTALL SUPPORTS FOR VERTICAL STEEL PIPING EVERY 15 FEET.

H. SUPPORT PIPING AND TUBING NOT LISTED IN THIS ARTICLE ACCORDING TO MSS SP-69 AND MANUFACTURER'S WRITTEN INSTRUCTIONS.

18. DAMAGE BY LEAKS

THIS CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO THE GROUNDS, WALKS, ROADS, ALL BUILDING COMPONENTS AND FINISHES, PIPING SYSTEMS, ELECTRICAL SYSTEMS AND THEIR EQUIPMENT AND CONTENT, CAUSED BY LEAKS IN THE PIPING SYSTEMS BEING INSTALLED OR HAVING BEEN INSTALLED HEREIN. ALL REPAIRS WILL BE MADE AT THIS CONTRACTOR'S EXPENSE.

19. PIPE MARKERS

FURNISH AND INSTALL BRADY #B-350 THIN FILM OR APPROVED EQUAL PIPE MARKERS. MARKERS SHALL BE 1-1/8" HIGH FOR PIPES 3" AND UNDER AND 2-1/4" HIGH FOR PIPES OVER 3". MARKERS SHALL INDICATE TYPE OF SERVICE AND DIRECTION OF FLOW.

PIPE MARKERS SHALL BE LOCATED:

- AT EQUIPMENT CONNECTIONS
- AT ACCESS DOORS
- AT BRANCH MAINS
- ON ALL ACCESSIBLE PIPE A MAXIMUM OF 75' BETWEEN MARKERS.

20. FLOOR, WALL AND CEILING PLATES

PIPES PASSING THROUGH FLOORS AND FINISHED CEILINGS, FITTED WITH CHROME- PLATED PLATES OR ESCUTCHEONS LARGE ENOUGH TO COMPLETELY CLOSE OPENING AROUND PIPE OR PIPE COVERING AND FLOOR SUPPORT IN THE CASE OF VERTICAL PIPING, SECURELY HELD IN PLACE; CAULK WATERTIGHT AROUND PIPE IN UNFINISHED ROOMS.

21. CLEANUP AND ADJUSTMENT

ALL PARTS WORK LEFT CLEAN: EQUIPMENT, FIXTURES, VALVES, PIPES AND FITTINGS CLEANED OF GREASE AND METAL CUTTINGS. ANY DISCOLORATION OR OTHER DAMAGE TO PORTIONS OF BUILDING, ITS FINISH OR FURNISHING DUE TO THIS CONTRACTORS FAILURE TO PROPERLY CLEAN INTERIOR OF PIPING, REPAIRED AT THIS CONTRACTOR'S EXPENSE. ALL AUTOMATIC CONTROL DEVICES ADJUSTED FOR PROPER OPERATION. ALL SURPLUS MATERIALS AND ANY RUBBISH REMOVED AS IT ACCUMULATES. ALL EQUIPMENT LEFT IN SAFE, PROPER OPERATING CONDITION.

DAMAGE TO ANY PORTIONS MUST BE REPAIRED OF THE PART REPLACED BY THIS CONTRACTOR AND ALL PARTS LEFT WITHOUT DENTS, SCRATCHES, THROUGH THE FINISH PAINT, LOOSE PLASTER, STAINS OR OTHER BLEMISHES.

22. PIPE TESTING AND START-UP

ALL PIPING TO BE TESTED IN ACCORDANCE WITH THE FOLLOWING:

- WATER - 100 PSI WATER PRESSURE

ALL TESTING MUST HOLD FOR AT LEAST 24 HOURS WITHOUT LOSS OF PRESSURE OR VACUUM. ALL CONCEALED PIPING SHALL BE TESTED IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE PRIOR TO COVERING. BEFORE STARTING ANY SYSTEM, ALL MECHANICAL AND ELECTRICAL EQUIPMENT SHALL BE LUBRICATED BY THIS CONTRACTOR. TEST ENTIRE PLANT FOR HEATING, VENTILATING, AND AIR CONDITIONING UNDER FULL LOAD CONDITIONS FOR A PERIOD OF NOT LESS THAT ONE (1) WEEK DURING WHICH TIME THE AARON BROTHERS OPERATING PERSONNEL SHALL BE FULLY INSTRUCTED IN THE OPERATION AND MAINTENANCE OF THE PLANT. AFTER THE PLANT IS IN FULL OPERATION, THIS CONTRACTOR IS TO FURNISH WHATEVER ADDITIONAL SERVICE IS REQUIRED TO RECALIBRATE AND RESET CONTROLS, VALVES, BALANCING COCKS, ETC. TO ENSURE PROPER OPERATION OF THIS SYSTEM.

23. TESTING AND BALANCING

THIS CONTRACTOR SHALL AT THE TIME OF INSTALLATION ENSURE THAT ALL DEVICES TO COMPLETE TESTING AND BALANCING AS DIRECTED HEREIN ARE FURNISHED AND INSTALLED DURING FABRICATION AND INSTALLATION OF WORK.

24. SEISMIC RESTRAINTS ON PLUMBING EQUIPMENT

ALL PLUMBING EQUIPMENT SHALL BE PROVIDED WITH SEISMIC RESTRAINING SERVICES AS REQUIRED BY LOCAL BUILDING CODES. CONTRACTOR SHALL HAVE LOCAL BUILDING OFFICE REVIEW EACH PIECE OF EQUIPMENT WHEN INSTALLED AND THE CONTRACTOR SHALL INSTALL ALL REQUIRED TIE DOWN, ANCHORS, STRAPS OR OTHER DEVICES REQUIRED.

25. GUARANTEE

THIS CONTRACTOR SHALL GUARANTEE ALL EQUIPMENT, MATERIALS, AND LABOR FURNISHED UNDER THIS CONTRACT TO BE FREE FROM DEFECTS FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION AND SHALL REPAIR OR REPLACE ANY EQUIPMENT OR MATERIAL WHICH IS DEFECTIVE OR IMPROPERLY INSTALLED. IN ADDITION, THIS CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY DAMAGE TO THE BUILDINGS AND ITS CONTENTS OR OTHER EQUIPMENT, CAUSED BY DEFECTS OR IMPROPER INSTALLATION OF EQUIPMENT OR MATERIALS INSTALLED UNDER THIS SECTION OF THE SPECIFICATIONS.

26. TEMPORARY WATER

TEMPORARY WATER SERVICE TO THE BUILDING SHALL BE PROVIDED BY THIS CONTRACTOR TO THE BUILDING FOR CONSTRUCTION PURPOSES. THIS CONTRACTOR TO MAINTAIN WATER SERVICE AS REQUIRED DURING CONSTRUCTION.

27. SANITARY SEWERS

THIS CONTRACTOR SHALL CONNECT SANITARY SEWER AS INDICATED ON THE DRAWINGS. VERIFY DIRECTION OF FLOW PRIOR TO ANY ROUGH-IN WORK.

EACH PIPE SHALL BE LAID TO THE LINE AND GRADE INDICATED ON THE PLANS AND SUCH A MANNER AS TO FORM A CLOSE CONCENTRIC JOINT WITH THE ADJOINING PIPE AND TO PRESENT OFFSETS IN FLOW LINE. ALL PIPE SHALL BE LAID WITH THE BELLS UPHILL.

THE SUB-GRADES SHALL BE KEPT FREE FROM WATER WHILE PIPES ARE BEING LAID. ALL PIPE SHALL BE LAID WITH ENDS ABUTTING AND TRUE TO LINE AND GRADE. THEY SHALL BE FITTED AND MATCHED SO THAT THEY WILL FORM A SEWER WITH A SMOOTH AND UNIFORM INVERT.

EACH JOINT SHALL BE CLEANED AS IT IS LAID AND ALL BELLS SHALL BE CLEANED BEFORE PIPES ARE JOINED.

PVC SEWER PIPE MAY BE USED IN LIEU OF THAT SPECIFIED ABOVE IF ALLOWED BY LOCAL CODES.

28. WASTE, SOIL, DRAIN AND VENT PIPING

THE DRAINS, SOIL WASTE AND VENT PIPE AND FITTINGS INCLUDING EXTENSIONS TO SEWERS SHALL BE OF SAND SPUN SERVICE WEIGHT CAST IRON PIPE OF THE SIZES INDICATED ON THE DRAWINGS. PIPE AND FITTINGS TO BE COATED ON THE INSIDE AND OUTSIDE WITH COAL TAR PITCH, CYLINDRICAL AND FREE FROM CRACKS OR OTHER DEFECTS.

ALL TRENCHES TO BE DUG WITH GRADUAL FALL, THE PIPING TO BE STRAIGHT AND THOROUGHLY YARNED WITH OAKUM AND POURED WITH MOLTEN LEAD AND THOROUGHLY CAULKED WITH CAULKING IRONS.

THE ARRANGEMENT OF THE SYSTEM SHALL BE AS SHOWN ON THE DRAWINGS AND AS DIRECT AS POSSIBLE, AVOIDING ALL UNNECESSARY OFFSETS. THE STACKS SHALL BE FIRMLY SECURED IN POSITION WITH WROUGHT IRON CLAMPS AT EACH FLOOR.

ALL CHANGES IN DIRECTION OF SOIL OR WASTE PIPE SHALL BE MADE BY MEANS OF "Y" BRANCHES AND 1/8 BENDS. NINETY DEGREE SHORT TURN FITTINGS WILL NOT BE PERMITTED EXCEPT TO INDIVIDUAL FIXTURE CONNECTIONS OR WHERE THE FLOW IS FROM THE HORIZONTAL TO THE VERTICAL.

HANDHOLES WITH CAST IRON FERRULES AND HEAVY BRASS SCREWS FOR CLEANOUTS SHALL BE PLACED AT ENDS AND ALL CHANGES IN DIRECTION OF SOIL AND WASTE PIPE WHERE NOT OTHERWISE SHOWN OR WHERE REQUIRED AND BROUGHT UP TO THE FLOOR LINE WHERE PIPING IS CONCEALED BY MEANS OF "Y"S OR SUITABLE BENDS.

ALL TRAP SCREWS MUST BE OF FULL SIZE OF PIPE UP TO 4" AND 4" FOR ALL OVER THIS SIZE. CONNECTIONS BETWEEN OUTLETS OF FIXTURES AND SOIL OR WASTE PIPE SHALL BE MADE WITH "Y" BRANCHES TO "TY" BRANCHES WHEREVER POSSIBLE. ALL HORIZONTAL SOIL WASTE AND VENT PIPE SHALL BE GRADED TOWARD OUTLETS AND PIPE NOT BURIED SHALL BE INSTALLED ABOVE THE CEILING OR CLOSE AS POSSIBLE TO THE CONSTRUCTION ABOVE WHERE THERE IS NO CEILING.

THE STACKS SHALL BE EXTENDED THROUGH ROOF OF BUILDING TO POINTS NOT LESS THAT 12" ABOVE ROOF. EXTENSIONS THROUGH ROOF SHALL BE MADE WATER- TIGHT BY MEANS OF A LEAD FLASHING OF FOUR POINTS SHEET LEAD SPREAD OVER A DISTANCE OF NOT LESS THAN TWELVE INCHES (12") AROUND PIPE. THIMBLE TO BE SOLDERED TO BASE AND EXTENDED OVER AND TURNED DOWN INTO END OF PIPE IN AN APPROVED MANNER.

ALL CLEANOUTS IN FLOORS TO BE JOSAM #8360 OR AMERICAN FOUNDRY #427 ADJUSTABLE CLEANOUT WITH CAST IRON BODY, CAST BRASS SCORIATED COVER WITH LETTERS C.O. CAST IN TOP AND CONCEALED BRASS PLUG.

CLEANOUTS SHALL BE INSTALLED IN BASE OF EACH STACK. CONCEALED CLEANOUTS SHALL HAVE JOSAM #8600 OR AMERICAN FOUNDRY #71-F CAST BRASS CHROMIUM PLATED FLAT ACCESS COVER PLATES.

FERRULES SHALL BE EXTRA HEAVY RED BRASS, EXTRA LONG AND SMOOTH ON THE INSIDE. FOR WASTE, SOIL AND VENT CONNECTION THE LEAD SHALL EXTEND THROUGH THE FERRULES, BE TURNED BACK, WIPED WITH SOLDER AND CAULKED INTO THE HUB.

ALL JOINTS OF CAST IRON PIPE SHALL BE MADE WITH JUTE AND PURE SOFT LEAD BEDDED IN WITH HAMMER AND CAULKING IRON, USING FOR EACH JOINT TWELVE OUNCES OF LEAD TO EACH INCH OF DIAMETER OF PIPE ON WHICH THE JOINT IS MADE. ALL JOINTS SHALL BE FILLED AT ONE POURING, IF IT FAILS TO RUN FULL IT SHALL BE DUG OUT AND RE-POURED AND CAULKED WITH PROPER TOOLS. JOINTS BETWEEN LEAD AND CAST IRON SHALL BE MADE WITH BRASS FERRULES, WIPED TO THE LEAD PIPE AND CAULKED INTO THE HUB OF THE CAST IRON FITTINGS. AT THE CONTRACTOR'S OPTION HE MAY USE NO-HUB PIPE, FITTINGS, COUPLING AND GASKETS IN LIEU OF LEAD JOINTS IF APPROVED BY THE LOCAL CODES AND ORDINANCES.

AT THE CONTRACTOR'S OPTION, DWV COPPER PIPING AND FITTINGS MAY BE USED IF APPROVED BY LOCAL CODES AND ORDINANCES.

IF APPROVED BY THE LOCAL CODES, SCHEDULE 40 PVC PIPE WITH DWV FITTINGS MAY BE USED FOR THE WASTE AND VENT SYSTEM. PVC PIPE AND FITTINGS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL CODES. ENCASEMENT OF PVC PIPES WITHIN RATED SHAFTS SHALL BE THE COST OF THIS CONTRACTOR.

29. VENT FLASHING

EACH VENT FLASHING SHALL BE MADE WATER-TIGHT WITH THE ROOF BY PROPER LEAD FLASHING. FLASHING SHALL BE LEAD FOUR (4) POUNDS PER SQUARE FOOT.

30. PLUMBING FIXTURES AND TRIM

PLUMBING FIXTURES SHALL BE FURNISHED AND INSTALLED IN A NEAT AND WORKMANLIKE MANNER WITH PROPER CONNECTIONS TO SUPPLY AND DRAINAGE PIPING. ALL FIXTURES SHALL BE FREE OF FLAWS AND DEFECTS OF ANY SORT IN MATERIAL AND WORKMANSHIP AND SHALL OPERATE PERFECTLY WHEN INSTALLED IN ACCORDANCE WITH MANUFACTURER'S DIRECTION.

MATERIALS: FIXTURES SHALL BE THE STANDARD PRODUCT OF ONE OF THE MANUFACTURER'S LISTED BELOW, OR ANY EQUAL UNIT APPROVED BY THE ENGINEER.

ZURN, KOHLER, CRANE, AMERICAN STANDARD, ELJER, GROHE, DELTA, ELKAY

INSTALLATION: THIS CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF THE PLUMBING FIXTURES AND ACCESSORIES DURING CONSTRUCTION. HE SHALL REPLACE AT HIS EXPENSE ANY MATERIAL THAT IS MARRED, SCRATCHED, DEFACED AND/OR BROKEN. FIXTURES SHALL BE COVERED WITH BUILDING PAPER AND WOODEN CRATES DURING CONSTRUCTION.

CONTRACTOR SHALL PROVIDE ROUGH-IN AND SHALL CONNECT ALL FIXTURES TO THE PLUMBING SYSTEM. ALL FIXTURES TO BE INSTALLED TO DIMENSIONS WITH CHROME-PLATED SUPPLIES WITH STOPS.

ALL FIXTURES INSTALLED TO DIMENSIONS SHOWN ON THE DRAWINGS. ALL WATER CLOSETS SHALL HAVE CAULKING BETWEEN THE FLOOR AND UNDERSIDE OF THE WATER CLOSET.

PLUMBING EQUIPMENT: (REFER TO SCHEDULE ON THE DRAWINGS)

31. INSULATION

ALL INSULATION SHALL HAVE COMPOSITE (INSULATION, JACKET OR FACINGS AND ADHESIVE USED TO ADHERE THE FACING OR JACKET TO THE INSULATION) FIRE AND SMOKE HAZARD RATINGS AS TESTED BY PROCEDURE ASTM E-84, NFPA 225 UL 723 NOT EXCEEDING:

FLAME SPREAD 25
SMOKE DEVELOPED 50

ALL ACCESSORIES SUCH AS ADHESIVES, MASTICS, CEMENTS, TAPES AND CLOTH FOR FITTINGS SHALL HAVE THE SAME COMPONENTS RATINGS AS LISTED ABOVE.

INSULATION SHALL BE APPLIED ON CLEAN, DRY SURFACES AND AFTER INSPECTION AND RELEASE FOR INSULATION APPLICATION. ALL INSULATION SHALL BE CONTINUOUS THROUGH WALL AND CEILING OPENINGS AND SLEEVES. INSULATION ON ALL COLD SURFACES WHERE VAPOR BARRIER JACKETS ARE USED, WILL BE APPLIED WITH A CONTINUOUS, UNBROKEN VAPOR SEAL, INCLUDING ALL FITTINGS AND VALVES. ALL INSULATION TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S. FITTINGS SHALL BE FINISHED WITH 1/4" COAT OF INSULATING CEMENT AND CANVAS.

INSULATION SCHEDULE:

DOMESTIC COLD WATER - 1" THICK ARMAFLEX (FLAME SPREAD 25/ SMOKE DEVELOPED 50)

DOMESTIC HOT WATER - 1" THICK ARMAFLEX (FLAME SPREAD 25/ SMOKE DEVELOPED 50)

ALL MATERIALS USED SHALL COMPLY WITH APPLICABLE BUILDING, PLUMBING & LOCAL CODES.

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.

NOTES:

1. RESPONSIBILITY MATRIX: LANDLORD IS DELIVERING POSSESSION TO THE TENANT IN "AS IS" CONDITION.

2. EXISTING CONDITIONS: TENANT CONTRACTOR TO FIELD VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS.

3. DEMOLITION:

a. SANITARY LINES: TENANT CONTRACTOR TO REMOVE ABANDONED SANITARY PIPING BACK TO THE BUILDING MAIN SANITARY LINE.
b. CONDENSING UNITS: TENANT CONTRACTOR TO REMOVE ANY ABANDONED CONDENSING UNITS, REFRIGERANT LINES, AND CONDUIT ASSOCIATED WITH WALK IN BOXES.
c. GAS LINE: TENANT CONTRACTOR TO CAP EXISTING ABANDONED GAS PIPE ABOVE CEILING WITHIN THE PREMISES.
d. ROOF TOP EQUIPMENT: TENANT CONTRACTOR TO REMOVE ANY ABANDONED ROOF TOP EQUIPMENT AND ASSOCIATED REFRIGERANT LINES AND CONDUIT.

4. FIRE PROTECTION: TENANT CONTRACTOR TO SUBMIT COUNTY APPROVED SPRINKLER SHOP DRAWINGS TO LANDLORD FOR RECORD PURPOSES. TENANT CONTRACTOR TO INSTALL CONCEALED OR SEMI-RECESSED SPRINKLER HEADS.

5. FLOOR PENETRATIONS: TENANT CONTRACTOR MUST SUBMIT A CORE DRILL LOCATION PLAN FOR LANDLORD APPROVAL. ONCE APPROVED, ANY PENETRATIONS MUST BE GPR'D PRIOR TO CORING. TENANT CONTRACTOR MUST HIRE LANDLORD'S STRUCTURAL ENGINEER TO REVIEW AND APPROVE ALL CORE DRILLS AT TENANT EXPENSE.

6. WATER SUB-METER: TENANT TO MAINTAIN OPERATION OF EXISTING WATER SUBMETER WITH TRANSMITTER OR REPLACE WITH SUBMETER/TRANSMITTER PURCHASED FROM RESOURCE ENERGY AT TENANT EXPENSE.

7. REFRIGERANT LINES: TENANT CONTRACTOR TO COORDINATE ROUTING OF ANY NEW REFRIGERANT LINES FROM THE PREMISES TO THE ROOF WITH LANDLORD'S REPRESENTATIVE.

8. CONDENSING UNITS: TENANT CONTRACTOR TO COORDINATE FINAL LOCATIONS OF ANY NEW ROOFTOP CONDENSING UNITS WITH LANDLORD'S REPRESENTATIVE.

9. ROOF PENETRATIONS: TENANT CONTRACTOR MUST HIRE KGS CONSTRUCTION TO PERFORM ANY ROOF PENETRATION WORK AT TENANT EXPENSE.

3 PLUMBING GENERAL NOTES

SCALE: N.T.S.

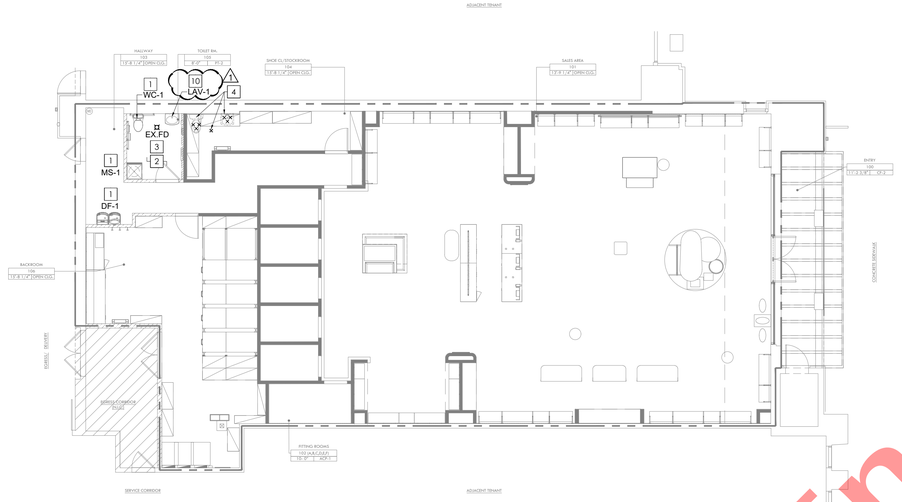
EVEREVE

TITLE:

PLUMBING SYMBOLS, ABBREVIATIONS, NOTES & SCHEDULE

SHEET NUMBER:

P-001



PLUMBING LINES SHOWN ON PLAN ARE FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY LOCATION AND DIRECTION OF EXISTING PIPES IN FIELD. ADJUST DESIGN ACCORDINGLY. X-RAY SLAB AS REQUIRED

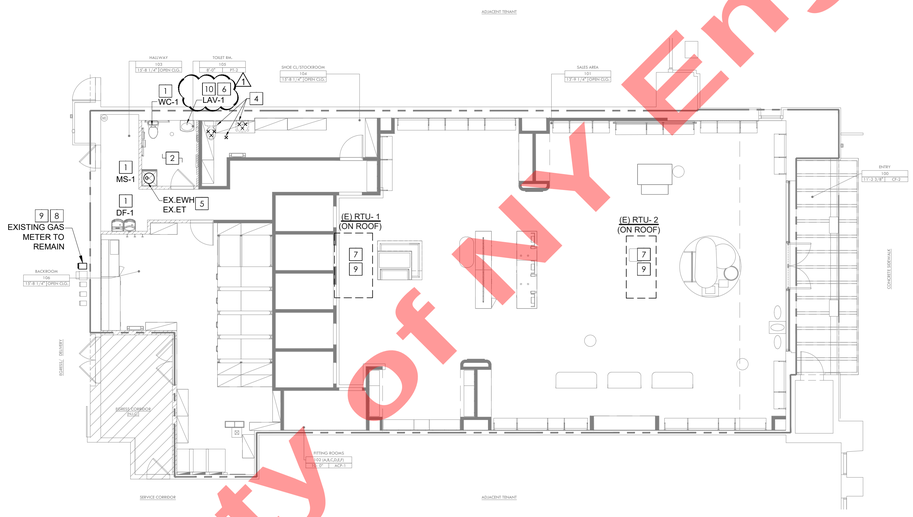
CONTRACTOR TO ADJUST PLUMBING PIPES FOR PLUMBING FIXTURE IN TOILET ROOM DUE TO NEW FLOORING AND FIXTURE

DEMOLITION NOTE:

CAP AND SEAL ANY UNUSED PLUMBING OPENINGS AND REMOVE AND PLUMING FIXTURE NOT BEING USED. VERIFY THE LOCATION OF ALL THE PIPING AD FIXTURES IN THE FIELD. IN CASE OF ANY DISCREPANCY, CONTACT ENGINEER OF RECORD PRIOR TO START WORKING.

1 SANITARY & VENT PLAN

SCALE: 1/8"=1'-0"



PLUMBING LINES SHOWN ON PLAN ARE FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY LOCATION AND DIRECTION OF EXISTING PIPES IN FIELD. ADJUST DESIGN ACCORDINGLY. X-RAY SLAB AS REQUIRED

VERIFY IF SPACE HAS EXISTING WATER METER, BACKFLOW PREVENTER, AND SHUT-OFF VALVE PRIOR TO BID. IF NOT PROVIDE NEW ASSEMBLY PER CODE

CONTRACTOR NOTE:
CONTRACTOR SHALL DISINFECT ALL NEW OR REPAIRED POTABLE WATER SYSTEMS PRIOR TO USE, IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. THE DISINFECTION METHOD SHALL COMPLY WITH THE HEALTH AUTHORITY REQUIREMENTS OR AS SPECIFIED IN CALIFORNIA PLUMBING CODE (CPC) SECTION 609.10(1) THROUGH (4). 1

2 WATER SUPPLY & GAS PLAN

SCALE: 1/8"=1'-0"

PLUMBING KEY NOTES

1	EXISTING WATER CLOSET, MOP SINK AND DRINKING FOUNTAIN TO BE REPLACED WITH NEW PLUMBING FIXTURES IN THE EXISTING LOCATIONS WITH THE EXISTING PLUMBING LINES WITH ASSOCIATED ACCESSORIES AND FITTINGS TO REMAIN. CONTRACTOR TO VERIFY IN FIELD, THE CONDITION OF EXISTING PLUMBING PIPING AND REPLACE IF PIPES ARE NOT IN GOOD CONDITION. REFER PLUMBING FIXTURE SCHEDULE FOR MORE DETAILS ON SHEET P-001.
2	CONTRACTOR TO FILED VERIFY THE EXISTING PLUMBING MAIN LINES IN THE SPACE ARE IN GOOD CONDITION. REPLACE THE PIPES IF NOT IN GOOD CONDITION AND NOTIFY THE ENGINEER IF ANY DISCREPANCIES IN THE FILED PRIOR TO BID.
3	EXISTING FLOOR DRAIN TO BE REMAIN AT THE EXISTING LOCATION WITH EXISTING SANITARY, VENT LINES & ASSOCIATED ACCESSORIES AND FITTINGS. CONTRACTOR TO VERIFY IN FIELD & CHECK SAME TO BE IN GOOD CONDITION. CONTRACTOR TO CLEAN AND SCOPE OUT EXISTING FLOOR DRAIN TO LIKE NEW CONDITION.
4	EXISTING PLUMBING FIXTURES TO BE DEMOLISHED AS SHOWN. EXISTING PLUMBING LINES TO BE DEMOLISHED AND SAME TO BE CAPPED AT FIXTURE.
5	EXISTING ELECTRIC WATER HEATER (EX. EWH) TO BE REMAIN IN THE EXISTING LOCATION WITH THE EXISTING WATER LINES AND ASSOCIATED ACCESSORIES, FITTINGS. CONTRACTOR TO VERIFY IN FIELD, CONDITION OF EXISTING WATER HEATER AND ACCESSORIES, REPLACE IF PIPES ARE NOT IN GOOD CONDITION
6	PROVIDE THERMOSTATIC MIXING VALVE SET AT 110°F IF IT DOES NOT EXIST.
7	EXISTING RTU TO REMAIN WITH EXISTING GAS PIPE CONNECTIONS, ACCESSORIES AND FITTINGS IN THE EXISTING LOCATION. CONTRACTOR TO VERIFY IN FIELD EXACT LOCATION OF EXISTING PIPING / EQUIPMENT & CHECK SAME TO BE IN WORKING CONDITION, IF NOT IN GOOD CONDITION PROVIDE NEW PIPING/EQUIPMENT.
8	EXISTING GAS METER TO BE REMAIN IN THE EXISTING LOCATIONS ALONG WITH ALL ASSOCIATED ACCESSORIES AND FITTINGS. CONTRACTOR TO VERIFY IN FIELD, CONDITION OF EXISTING GAS METER AND PIPING REPLACE IF PIPES ARE NOT IN GOOD CONDITION.
9	CONTRACTOR TO FIELD VERIFY THE CONDITION OF EXISTING GAS PIPING, IF EXISTING GAS PIPING FOUND NOT TO BE IN GOOD CONDITION REPLACE THE EXISTING GAS PIPING WITH NEW PIPING.
10	EXISTING LAVATORY TO BE REPLACED WITH NEW PLUMBING FIXTURE AT A SLIGHTLY RELOCATED POSITION. THE EXISTING PLUMBING LINES WITH ASSOCIATED ACCESSORIES AND FITTINGS TO REMAIN. CONTRACTOR TO VERIFY IN FIELD, THE CONDITION OF EXISTING PLUMBING PIPING AND REPLACE IF PIPES ARE NOT IN GOOD CONDITION. REFER PLUMBING FIXTURE SCHEDULE FOR MORE DETAILS ON SHEET P-001. 1

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TITLE:

PLUMBING PLANS

SHEET NUMBER:

P-100

SPRINKLER GENERAL NOTES

1. ALL SPRINKLER WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA-13-2022 AND ALL LOCAL AUTHORITIES.
2. ALL SPRINKLER WORK SHALL COMPLY WITH BUILDING STANDARDS AND REQUIREMENTS.
3. ALL SPRINKLER HEADS SHALL BE INSTALLED AT CENTER OF TILE IF CEILING IS PROVIDED.
4. GENERAL CONTRACTOR SHALL COORDINATE FINAL FURNITURE/ EQUIPMENT HEIGHT ELEVATIONS AND LOCATIONS WITH SPRINKLER INSTALLATION. ENGINEER SHALL BE NOTIFIED WHEN FURNITURE/ EQUIPMENT IS LESS THAN 18" TO UNDERSIDE OF CEILING.
5. THE SPRINKLER SYSTEMS ARE TO BE HYDROSTATIC TESTED FOR A (2) HOUR MINIMUM AT 200 PSI. PRESSURE AND ARE TO BE WITNESSED BY AUTHORIZED BUILDING PERSONNEL. COORDINATE ALL TESTING WITH BUILDING MANAGER.
6. PIPES SIZES SHOWN ARE BASED ON DESIGN PIPING LAYOUTS ONLY. ACTUAL PIPE SIZES SHALL BE DETERMINED BY CONTRACTORS HYDRAULIC CALCULATIONS BASED ON HIS INSTALLATION DRAWINGS. CONTRACTOR SHALL ALLOW FOR THIS AND INCLUDE THIS IN HIS CONTRACT PRICE.
7. DRAWING INDICATES SPRINKLER SYSTEM DESIGN ONLY. CONTRACTOR RESPONSIBLE FOR OFFSETS, DROPS AND RISES FOR COORDINATION WITH OTHER TRADES.
8. G.C. SHALL BE RESPONSIBLE FOR ALL FINAL TESTS AND INSPECTIONS OF COMPLETED WORK REQUIRED BY THE BUILDING MANAGEMENT PRIOR TO OCCUPANCY OF SPACE.
9. ALL SPRINKLER WORK SHALL BE TESTED AND MADE OPERATIONAL PRIOR TO CARPET AND FURNITURE INSTALLATION. G.C. SHALL REPAIR AND/OR REPLACE ALL FINISHES DAMAGED BY DEFECTIVE SPRINKLER WORK AT HIS EXPENSE.
10. ALL BURNING, CUTTING, SOLDERING AND WELDING SHALL BE COORDINATED WITH BUILDING FIRE SYSTEMS WITH BUILDING MANAGEMENT, AS REQUIRED.
11. G.C. SHALL BE RESPONSIBLE FOR OBTAINING PERMITS AND APPROVALS REQUIRED BY BUILDING INSPECTOR AND FIRE MARSHALL IN CONJUNCTION WITH CHANGES TO EXISTING SPRINKLER SYSTEM.
12. REFER TO ENGINEERING DRAWINGS FOR SPRINKLER HEADS, LIGHT SENSORS AND FIRE DETECTION DEVICES.
13. ALL WORK TO BE DONE DURING THE HOURS DESIGNATED BY OWNER.
14. UPON COMPLETION OF ALL SPRINKLER WORK, CONTRACTOR SHALL TEST AND INSPECT ENTIRE SPRINKLER SYSTEM. ENTIRE SYSTEM SHALL BE FULLY OPERATIONAL AND APPROVED IN COMPLIANCE WITH ALL AHJ.
15. UPON SUCCESSFUL COMPLETION OF ALL TESTING, CONTRACTOR SHALL PRIME AND PAINT ALL EXPOSED SPRINKLER PIPING. COLOR AND FINISH SHALL BE AS PER ARCHITECT.
16. CONTRACTOR SHALL INCLUDE IN HIS BID THE COST TO PROVIDE (5) FIVE ADDITIONAL SPRINKLERS INSTALLED. EXACT LOCATIONS OF THESE SPRINKLER HEADS SHALL BE DETERMINED IN FIELD.
17. FOR SPRINKLER WORK DONE IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA-13-2022. HYDROSTATIC TESTS IN ACCORDANCE WITH REFERENCE STANDARD NFPA 13-2022, AS MODIFIED FOR ROSEVILLE, CALIFORNIA ARE NECESSARY.
18. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AND SHALL INSTALL NEW WORK TO CLEAR DUCTWORK AND LIGHTING FIXTURES.
19. ALL SPRINKLER WORK SHALL COMPLY WITH BUILDING STANDARDS AND REQUIREMENTS.
20. DRAWING INDICATES SPRINKLER SYSTEM DESIGN ONLY. CONTRACTOR RESPONSIBLE FOR OFFSETS, DROPS AND RISES FOR COORDINATION WITH OTHER TRADES.
21. PROVIDE AUXILIARY DRAINS AT TRAPPED SECTIONS OF PIPING AS REQUIRED BY NFPA 13-2022.
22. COMPOSITE DRAWINGS
    CONTRACTOR SHALL BE GIVEN A SEPIA TRANSPARENCIES TO IMPOSE THEIR WORK FOR A COORDINATED ALLOCATION OF SPACE. PROCEDURE SHALL INCLUDE HVAC CONTRACTOR TO INDICATE DUCT WORK, PIPING, STRUCTURAL AND ARCHITECTURAL DETAILS. SEPIAS SHALL BE GIVEN TO PLUMBING, SPRINKLER AND ELECTRICAL TRADES WHO WILL DRAW HIS WORK ON DRAWINGS. HVAC CONTRACTORS SHALL HOLD A COORDINATION MEETING WITH ALL CONTRACTORS TO ELIMINATE INTERFERENCE OR CONFLICTS IN INSTALLING WORK. IF UNABLE TO EACH AGREEMENT ISSUE, ARCHITECT SHALL MAKE BINDING DECISION.
23. CONTRACTOR SHALL COORDINATE SPRINKLER MAIN AND BRANCHES WITH NEW CONSTRUCTION TO AVOID CONFLICTS WITH CEILING HEIGHTS, DUCTWORK, LIGHTING FIXTURES, BEAMS. CONTRACTOR TO ADJUST PIPING ACCORDINGLY TO ACCOMMODATE NEW CONSTRUCTION.

SPRINKLER DRAWING LIST

SP-001 SPRINKLER NOTES, SYMBOLS & SPECIFICATIONS

SP-100 SPRINKLER PLAN

SP-200 SPRINKLER DETAILS

SPACING BETWEEN SPRINKLER HEADS

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

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

PROTECTION AREA OF SPRINKLER HEADS

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

GENERAL NOTES:

1. FOR SPRINKLER WORK ONLY.
2. ALL SPRINKLER HEADS MEET DESIGN CRITERIA PER COVERAGE.

BUILDING DEPARTMENT SPRINKLER NOTES

1. THE INSTALLATION, COMPONENTS, SIZING, SPACING, CLEARANCES, POSITION AND TYPE OF SYSTEMS SHALL CONFORM TO CALIFORNIA BUILDING CODE (VOLUMES 1 & 2) 2022, (IPC 2021),SECTION 903.
2. ONLY APPROVED MATERIALS SHALL BE USED AS PER THE CALIFORNIA BUILDING CODE (VOLUMES 1 & 2) 2022.
3. DIRECT CONNECTION OF SPRINKLERS TO THE PUBLIC WATER SYSTEM SHALL CONFORM TO THE CALIFORNIA BUILDING CODE (VOLUMES 1 & 2) 2022, SECTION 903.3.5.
4. SPRINKLER SHALL BE PROTECTED AGAINST FREEZING AND INJURY AS PER NFPA 13-2022 CHAPTER 16 SECTION 16.4.
5. THE OCCUPANCY OF THE AREAS TO BE SPRINKLERED IN ACCORDANCE WITH THE CALIFORNIA BUILDING CODE (VOLUMES 1 & 2) 2022, SECTION 903.2.
6. PIPING, FITTINGS, SPECIFICATIONS, PIPE SCHEDULES, SYSTEM TEST PIPES, PROTECTION AGAINST CORROSION, DAMAGE, VALVES, HANGERS, SPRINKLERS GUARDS AND SHIELDS SHALL BE AS PER WITH THE CALIFORNIA BUILDING CODE (VOLUMES 1 & 2) 2022, SECTION 903.
7. STOCK OF EXTRA SPRINKLERS WILL BE FURNISHED AS PER NFPA 13-2022 SECTION 16.2.7 (REQUIRED FOR EACH TEMPERATURE RATING).
8. SPRINKLER ALARM SHALL BE IN ACCORDANCE WITH THE CALIFORNIA BUILDING CODE (VOLUMES 1 & 2) 2022, SECTION 907.
9. SPACING, LOCATION AND POSITION OF SPRINKLER WILL BE AS PER THE CALIFORNIA BUILDING CODE (VOLUMES 1 & 2) 2022, SECTION 903.3.
10. ALL BLIND SPACES EXCEEDING 6" IN WIDTH OR DEPTH WHICH CONTAIN COMBUSTIBLE MATERIAL WILL BE SPRINKLERED.
11. ALL PIPE PASSING THROUGH WALLS WILL COMPLY WITH SECTION THE CALIFORNIA BUILDING CODE (VOLUMES 1 & 2) 2022, SECTION 714.
12. THERE IS NO HIGH PILED STORAGE AS DEFINED IN THE CALIFORNIA BUILDING CODE (VOLUMES 1 & 2) 2022, SECTION 3201.
13. DISTANCE OF SPRINKLERS FROM HEAT SOURCE SHALL BE AS PER NFPA 13-2022, SECTION 9.4.2.5.
14. THIS APPLICATION IS NOT FILLED AS A RESULT OF ACTION BY THE FIRE COMMISSIONER AS AUTHORIZED BY BS & TO MODIFY THE CERTIFICATE OF OCCUPANCY NOR IS SUCH ACTION PENDING.
15. ALL VALVES SHALL BE IDENTIFIED AS REQUIRED BY NFPA 13-2022, SECTION 16.9.
16. A ONE PIECE REDUCING FITTING OF GOOD DESIGN SHOULD BE USED WHEREVER A CHANGE IS MADE IN THE SIZE OF PIPE, AS PER NFPA 13-2022, SECTION 16.8.5
17. ALL VALVES ON CONNECTIONS TO WATER SUPPLIES TO SPRINKLER SHALL BE APPROVED O.S. & Y. OR APPROVED INDICATOR TYPE.
18. DRAIN VALVES AND TEST VALVES SHALL BE APPROVED TYPE AS PER NFPA-13-2022, SECTION 16.9.1.
19. HANGERS SHOULD BE SUPPORTED BY WROUGHT IRON U TYPE OR APPROVED ADJUSTABLE HANGERS. HANGERS SHALL BE OF THE TYPE APPROVED FOR USE WITH THE PIPE OR TUBE INVOLVED, AS PER NFPA-13-2022, SECTION 17.
20. TEMPERATURE RATING SHALL COMPLY WITH NFPA-13-2022, SECTION 9.4.2.
21. 18" MINIMUM CLEARANCE TO BELOW SPRINKLER DEFLECTOR AS PER NFPA-13-2022, SECTION 9.5.5.2.
22. MINIMUM BRANCH PIPE SIZE TO BE ONE INCH (1").
23. THIS APPLICATION IS MADE ONLY FOR WORK INDICATED ON THE 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.
24. WET SPRINKLER SYSTEM SUBJECTED TO FREEZING SHOULD COMPLY WITH NFPA 13-2022, SECTION 8.6.
25. INSPECTION AND TESTS OF SPRINKLERS SHALL BE CONDUCTED AS PER CALIFORNIA BUILDING CODE (VOLUMES 1 & 2) 2022, SECTION 904.4.

SPRINKLER LEGENDS AND ABBREVIATIONS

● (N)	NEW CONCEALED PENDENT SPRINKLER HEAD
● (E)	EXISTING CONCEALED PENDENT SPRINKLER HEAD
◉ (N)	NEW UPRIGHT SPRINKLER HEAD
◉ (E)	EXISTING UPRIGHT SPRINKLER HEAD TO REMAIN
◉ (RE) ◉	EXISTING UPRIGHT SPRINKLER HEAD TO BE RELOCATED
(D)	EXISTING TO BE DEMOLISHED

HAZARD CLASSIFICATION AND DESIGN DENSITY

OCCUPANCY:	LIGHT HAZARD
MINIMUM DESIGN DENSITY:	0.10 GPM/SQ. FT.
OCCUPANCY:	ORDINARY HAZARD
MINIMUM DESIGN DENSITY:	0.15 GPM/SQ. FT.

PART 1 - GENERAL

1.01 REQUIREMENTS

A. THE SPRINKLER CONTRACTOR SHALL BE A LICENSED, AUTHORIZED INSTALLER OF SPRINKLER SYSTEMS AND SHALL HAVE HAD A MINIMUM OF FIVE YEARS EXPERIENCE IN THE INSTALLATION OF SPRINKLER SYSTEMS IN THE CITY CODE.

B. BEFORE SUBMITTING HIS BID, THE SPRINKLER CONTRACTOR SHALL VISIT THE SITE AND SHALL FULLY FAMILIARIZE HIMSELF WITH, AND BECOME FAMILIAR WITH THE DIFFICULTIES THAT WILL ATTEND THE EXECUTION OF THIS WORK. CONTRACTOR SHALL PERFORM THIS PRIOR TO SUBMITTING HIS PROPOSAL. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE, AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.

C. UPON REVIEW OF THE DRAWINGS AND SPECIFICATIONS, PRIOR TO SUBMITTING HIS PROPOSAL, THE SPRINKLER CONTRACTOR SHALL INFORM ARCHITECT AND/OR ENGINEER OF ANY DISCREPANCIES OR REQUEST CLARIFICATION IN WRITING, IF NECESSARY, CONCERNING THE INTENT OF THE PLANS AND SPECIFICATIONS TO PROVIDE A COMPLETE SPRINKLER SYSTEM INSTALLATION. LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OF MATERIALS SHOULD SUCH PROCEDURE NOT BE FOLLOWED.

D. THE SCHEDULING OF THE SPRINKLER WORK SHALL BE COORDINATED WITH BUILDING MANAGEMENT, WITH OTHER CONTRACTORS AND WITH THE ENGINEER.

E. NECESSARY SHUT-DOWNS OF BASE BUILDING SPRINKLER SYSTEM MUST BE COORDINATED WITH BUILDING MANAGEMENT. SHUT-DOWNS OF BASE BUILDING SYSTEMS SHALL TAKE PLACE AFTER OR BEFORE NORMAL BUSINESS HOURS AND SHALL BE CONSIDERED OVERTIME WORK. THE CONTRACTOR MUST GIVE BUILDING MANAGEMENT AND CITY FIRE DEPARTMENT 48 HOURS NOTICE PRIOR TO SHUT-DOWN OF SPRINKLER, OR OTHER SYSTEMS.

1.02 WORK INCLUDED

A. WORK SHALL INCLUDE ALL SPRINKLER WORK FURNISHED AND INSTALLED AS INDICATED ON THE PLANS AND AS SPECIFIED HEREIN.

1. ALL WORK SHALL COMPLY WITH REQUIREMENTS OF THE CITY BUILDING CODE, NFPA 13-2022, LOCAL FIRE DEPARTMENT AND OWNERS INSURANCE RATING ORGANIZATION.
2. PROVIDE COMPLETE NEW SPRINKLER SYSTEM CONNECTING TO EXISTING SPRINKLER SYSTEM ALARM CHECK VALVE ASSEMBLY.
3. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION OF WORK. SCALED DIMENSIONS SHALL NOT BE USED. ANY DIMENSIONS NOT SHOWN SHALL BE OBTAINED FROM FIELD MEASUREMENTS.
4. PROVIDE COMPUTER GENERATED HYDRAULIC CALCULATIONS IN ACCORDANCE WITH CALIFORNIA BUILDING CODE OR LOCAL AHJ. BUILDING DEPARTMENT AND NFPA 13-2022 STANDARDS.

1.03 SHOP DRAWINGS AND SUBMITTALS

A. THE CONTRACTOR SHALL SUBMIT, FOR APPROVAL, FULLY COORDINATED SHOP DRAWINGS, CAPACITY, DATA, AND CATALOG CUTS OF THE FOLLOWING:

1. PIPE AND FITTINGS
2. VALVES
3. HANGERS AND SUPPORTS
4. SPRINKLER PIPING LAYOUT
5. TESTS
6. SPRINKLER HEADS

B. THE SPRINKLER SYSTEM SHALL BE HYDRAULICALLY DESIGNED. CONTRACTOR SHALL SUBMIT CALCULATIONS WITH SHOP DRAWINGS. CALCULATIONS SHALL BE PERFORMED IN ACCORDANCE WITH REQUIREMENTS OF NFPA 13-2022, AND CALIFORNIA BUILDING CODE (VOLUMES 1 & 2) 2022.

C. ADD APPROPRIATE HOSE ALLOWANCE.

D. THE SPRINKLER CONTRACTOR SHALL OBTAIN THE LATEST FIRE PUMP TEST AT THE SITE TO VERIFY THE AVAILABLE WATER SUPPLY.

1.04 BUILDING DEPARTMENT FILING, PERMITS AND CERTIFICATES

A. THE SPRINKLER CONTRACTOR SHALL FILE ALL REQUIRED DRAWINGS AND HYDRAULIC CALCULATIONS WITH THE BUILDING DEPARTMENT, AND BE RESPONSIBLE FOR OBTAINING FINAL APPROVAL.

B. ARRANGE FOR INSPECTION AND TESTS OF ANY AND ALL PARTS OF THE WORK AS REQUIRED BY AUTHORITIES HAVING JURISDICTION AND PAY ALL CHARGES FOR SAME.

1.05 INSPECTION AND TESTING

A. THE SPRINKLER SYSTEM SHALL BE INSPECTED AND TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY BUILDING CODE FIRE DEPARTMENT INSPECTOR.

B. THE SPRINKLER SYSTEM SHALL BE SUBJECTED TO A HYDROSTATIC PRESSURE TEST FOR A PERIOD OF TWO HOURS AT A PRESSURE OF AT LEAST 200 PSIG OR 50 PSI IN EXCESS OF THE MAXIMUM PRESSURE TO BE MAINTAINED WHEN THE MAXIMUM PRESSURE IN THE SYSTEM IS IN EXCESS OF 150 PSI AS PER NFPA 13-2022.

C. THE BUILDING DEPARTMENT SHALL BE NOTIFIED THAT THE SYSTEM IS READY FOR REINSPECTION AND TESTING. THE BUILDING DEPARTMENT INSPECTOR SHALL WITNESS THE TEST. FINAL APPROVAL OF THE SPRINKLER SYSTEM SHALL BE OBTAINED FROM BUILDING DEPARTMENT, AND FIRE DEPARTMENT.

PART 2 - MATERIALS

2.01 GENERAL

A. THE SPRINKLER SYSTEM SHALL BE COMPLETE WITH ALL PIPE, FITTINGS, VALVES, DRAINAGE SYSTEM AND VALVES, HANGERS AND SUPPORTS, ALSO, MISCELLANEOUS WORK ITEMS, SUCH AS, SIGNS AS REQUIRED, VALVE TAGS, ETC., AND ALL OTHER RELATED EQUIPMENT, APPARATUS AND MATERIAL ITEMS NECESSARY FOR COMPLETE, APPROVED TYPE SYSTEM, READY FOR FUTURE EXTENSION

SPRINKLER SPECIFICATIONS

B. ALL PIPE, FITTINGS, HANGERS, SUPPORTS, SPRINKLER HEADS, ETC., SHALL CONFORM TO THE CITY BUILDING CODE AND NATIONAL FIRE PROTECTION ASSOCIATION'S REQUIREMENTS AS TO TYPES OF MATERIALS, ARRANGEMENT, SIZES AND INSTALLATION. PIPING PENETRATING FIRE RATED PARTITIONS SHALL HAVE OPENING SEALED WITH U.L. APPROVED FIREPROOF SEALANT.

2.02 SPRINKLER PIPING

A. ALL SPRINKLER PIPING SHALL BE SCHEDULE 40 IN ACCORDANCE WITH NFPA 13-2022. PIPE SHALL BE UL/FM APPROVED.

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

C. AS PER NFPA 13-2022, PIPE OR TUBE USED IN SPRINKLER SYSTEMS SHALL BE OF THE MATERIALS SPECIFIED IN SECTION 16.3.

D. AS PER NFPA 13-2022, FITTINGS USED IN SPRINKLER SYSTEMS SHALL BE OF THE MATERIALS LISTED IN TABLE 6.2.1 FITTING SHALL BE UL/FM APPROVED. CONTRACTOR.

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

2.03 CUTTING AND PATCHING

DO ALL CUTTING AND CORE DRILLING NECESSARY FOR THE INSTALLATION OF SPRINKLER WORK. ACCURATELY LAYOUT WORK FOR WHICH CUTTING IS REQUIRED. PATCH AND RESTORE ANY DAMAGE WORK TO LIKE NEW CONDITION.

2.04 CUTTING AND PATCHING

1. DO ALL CUTTING AND CORE DRILLING NECESSARY FOR THE INSTALLATION OF SPRINKLER WORK ACCURATELY LAYOUT WORK FOR WHICH CUTTING IS REQUIRED. PATCH AND RESTORE ANY DAMAGE WORK TO LIKE NEW CONDITION.
2. FOR REPLACEMENT OF THE WORK REMOVED, MATCH EXISTING IN NATURE, CONSTRUCTION AND FINISH.
3. MAINTAIN THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIAL OR RUBBISH COVERED BY THE WORK, REMOVE ALL SURPLUS MATERIALS, TOOLS ETC. AND LEAVE PREMISES CLEAN.

2.05 FIRE STOPPING

INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE MANUFACTURERS PUBLISHED DIRECTIONS AND PER FIRE TESTED DESIGNS, THAT HAVE BEEN ACCEPTED BY THE APPROPRIATE CODE AUTHORITY HAVING JURISDICTION.

2.06 PHASING

PHASING SHALL BE COORDINATED BETWEEN THE SPRINKLER CONTRACTOR AND GENERAL CONTRACTOR. SPRINKLER INSTALLATION SHALL BE PHASED IN A MANNER WHICH WILL ALLOW FULL OCCUPANCY OF THE EXISTING FACILITY WHILE THE INSTALLATION IS IN PROGRESS.

2.06 ALTERNATES/SUBSTITUTIONS

CONTRACTOR SHALL STATE IN THEIR PROPOSAL ANY CONTRACTOR PROPOSED SUBSTITUTIONS OF THE MATERIALS OR METHODS OF INSTALLATION FROM THAT SPECIFIED ,THESE ALTERATIONS SHALL BE LISTED ON THE PROPOSAL AS CONTRACTOR ALTERNATIVE.

2.07 LEAK DAMAGE

THE SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE DURING THE INSTALLATION AND TESTING PERIODS OF THE SPRINKLER SYSTEM FOR ANY LOSS OR DAMAGE TO THE WORK OF OTHERS, TO THE BUILDING, IT'S CONTENTS ETC. CAUSED BY LEAKS IN THE EQUIPMENT. BY UNPLUGGED OR DISCONNECTED PIPES, FITTINGS ETC. OR BY OVERFLOW, AND SHALL PAY FOR THE NECESSARY REPLACEMENTS OR REPAIRS TO THE WORK OF OTHERS, DAMAGED BY SUCH LEAKAGE.

2.08 INSERTS, HANGERS, ETC.

A. ALL SPRINKLER PIPING SHALL BE SUBSTANTIALLY SUPPORTED AND SHALL COMPLY WITH THE STANDARDS FOR THE NATIONAL FIRE PROTECTION ASSOCIATION FOR THE INSTALLATION OF SPRINKLER SYSTEMS AND AS REQUIRED BY THE CITY BUILDING CODE.

B. HANGERS AND THEIR COMPONENTS SHALL BE FERROUS. HANGERS SHALL BE ADJUSTABLE FLAT IRON TYPE OF CLEVIS TYPE.

C. SPRINKLER PIPING OR HANGERS SHALL NOT BE USED TO SUPPORT NON-SYSTEM COMPONENTS.

D. SPRINKLER PIPING SHALL BE SUBSTANTIALLY SUPPORTED FROM THE BUILDING STRUCTURE WHICH MUST SUPPORT THE ADDED LOAD OF THE WATER-FILLED PIPE PLUS A MINIMUM OF 250 LBS. APPLIED AT THE POINT OF HANGING. CONTRACTOR SHALL SUBMIT DETAIL OF SUPPORT FOR REVIEW AND APPROVAL.

E. SPRINKLER PIPING SHALL BE SUPPORTED INDEPENDENTLY OF THE CEILING SHEATHING.

F. WHEN SPRINKLER PIPING IS INSTALLED BELOW DUCTWORK, PIPING SHALL BE SUBSTANTIALLY SUPPORTED FROM THE BUILDING STRUCTURE, NOT FROM THE DUCTWORK.

G. MAXIMUM DISTANCE BETWEEN HANGERS SHALL NOT EXCEED 12 FT. FOR 1 AND 1-1/4" SIZES NOR 15' FOR SIZES 1-1/2" AND LARGER.

H. EXPANSION SHIELDS FOR SUPPORTING PIPES UNDER CONCRETE CONSTRUCTION MAYBE USED IN A HORIZONTAL POSITION IN THE SIDES OF BEAMS. IN CONCRETE HAVING GRAVEL OR CRUSHED STONE AGGREGATE, EXPANSION SHIELDS MAY BE USED IN THE VERTICAL POSITION TO SUPPORT PIPES 4" OR LESS IN DIAMETER.

2.09 ESCUTCHEONS

PROVIDE ESCUTCHEONS ON ALL EXPOSED PIPING PASSING THROUGH WALLS, PARTITIONS, FLOORS AND CEILINGS. ESCUTCHEON SHALL BE HELD IN PLACE BY INTERNAL TENSION OR SET SCREW.

2.10 AS-BUILT DRAWINGS

PREPARE AND SUBMIT "AS BUILT" DRAWINGS AT THE COMPLETION OF THE PROJECT.

2.11 SPRINKLER HEADS

A. SPRINKLERS SHALL BE RATED FOR ORDINARY TEMPERATURES (155°F) EXCEPT AS REQUIRED NEAR HEATERS OR LOCATIONS WHERE ELEVATED TEMPERATURES MAY NORMALLY BE EXPECTED OR AS OTHERWISE INDICATED ON THE CONTRACT DRAWINGS.

B. SPRINKLER HEADS SHALL BE BY TYCO SPRINKLER CO., INC. MANUFACTURE OR APPROVED EQUAL, UL AND FM APPROVED, AS FOLLOWS:

1. SPRINKLER HEADS IN FINISHED CEILINGS WITH CONCEALED PIPING SHALL BE SAME AS EXISTING SPRINKLER MODEL.
2. CONCEALED SPRINKLER HEADS SHOULD BE AUTOMATIC TYCO MODEL TY3531.
3. UPRIGHT SPRINKLER HEADS SHOULD BE AUTOMATIC TYCO MODEL TY3121.
4. PROVIDE SPARE SPRINKLER EMERGENCY CABINETS CONFORMING TO NFPA 13-2022.
5. SPRINKLER EMERGENCY CABINETS SHALL BE OF TYCO SPRINKLER CO., INC. OR APPROVED EQUAL, UL AND FM APPROVED.
6. CABINET SHALL BE CONSTRUCTED OF 22 GAUGE STEEL WITH PRIME COAT AND MANUFACTURER'S BAKED ENAMEL FINISH IN COLOR SELECTED BY THE ARCHITECT.
7. CABINET SHALL CONTAIN A MINIMUM OF 6 SPRINKLER HEADS OF EACH TYPE EMPLOYED.

2.12 PRESSURE GAUGE

A. ASHCROFT SERIES 1079, OR APPROVED OTHER, 4-1/2" DIAMETER, 0-300 P.S.I. RANGE, 5 P.S.I. INTERVALS.

PART 3 - EXECUTION

3.01 GUARANTEE

A. GUARANTEE FOR A PERIOD OF ONE (1) YEAR FORM THE DATE OF ACCEPTANCE BY THE OWNER, ALL MATERIALS, APPARATUS AND WORKMANSHIP WHETHER FURNISHED BY HIMSELF OR BY HIS SUBCONTRACTORS AND HE SHALL REPLACE OR REPAIR IN A MANNER APPROVED BY THE ARCHITECTS, WITHOUT COST TO THE OWNER, ANY PART OR PARTS OF THE WORK WHICH MAY PROVE DEFECTIVE OR UNSATISFACTORY WITH IN THE PERIOD OF THE GUARANTEE.

3.02 INSTALLATION

A. PIPING

1. INSTALL PIPING AS SHOWN ON THE CONTRACT DRAWINGS AND STRAIGHT AND DIRECT AS POSSIBLE, FORMING RIGHT ANGLES OR PARALLEL LINES WITH BUILDING WALLS, NEATLY SPACED, WITH RISERS PLUMB AND TRUE.
2. SPRINKLER PIPING SHALL BE INSTALLED SO THAT THE SYSTEM CAN BE DRAINED.
3. PIPE SHALL BE REMOVED BY REAMING.
4. BEFORE INSTALLING PIPE, THOROUGHLY CLEAN THE INSIDE FREE OF CUTTING AND FOREIGN MATTER. CUT ALL PIPE SQUARE AND SMOOTH AND MAKE UP ALL JOINTS TO REQUIRED LIMITS.

B. PIPE JOINTS

1. THREADED JOINTS SHALL BE MADE UP OF TIGHT USING PIPE JOINT TEFLON COMPOUND OR TAPE, APPLIED ON THE MALE THREADS ONLY.

SPRINKLER SCHEDULE

SYMBOL	NAME	COVERAGE	AREA	METAL	TEMPERATURE (°F)	RESPONSE	K-FACTOR	NPT	MFG	MODEL#	APPROVALS
● (N)	CONCEALED PENDENT	SAME AS EXISTING	LH/OH CEILING	SAME AS EXISTING							FM APPROVED
◉ (N)	UPRIGHT	SAME AS EXISTING	OPEN CEILING	SAME AS EXISTING							FM APPROVED

NOTE: 1. COORDINATE ALL SPRINKLER COLOR FINISHES WITH ARCHITECT.

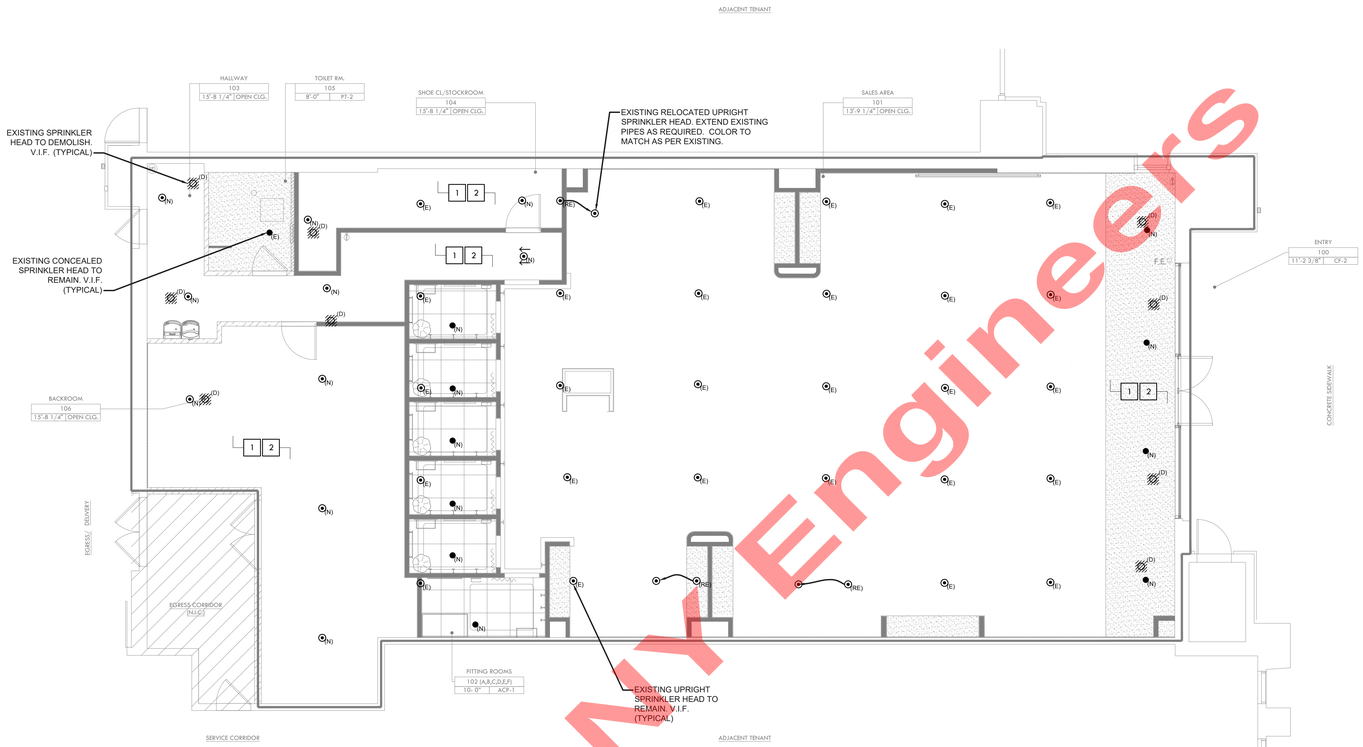
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EVEREVE

TITLE:
SPRINKLER NOTES, SYMBOLS AND SPECIFICATIONS

SHEET NUMBER:
SP-001

1	SCALE N.T.S	SPRINKLER NOTES, SYMBOLS AND SPECIFICATIONS



CONFIRM EXACT QUANTITIES AND LOCATION OF ALL EXISTING SPRINKLER HEADS IN FIELD PRIOR TO BID.

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

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY TO INSTALL ALL SPRINKLER HEADS TO BE MAX. 12" FROM CEILING.
2. ALL NEW SPRINKLER HEADS LOCATION TO BE COORDINATED WITH LIGHTING AND DIFFUSERS TO AVOID CONFLICT.
3. ALL SPRINKLER HEADS & PIPING TO BE COORDINATED OTHER TRADES.
4. ANY WORK SHOWN ON THE DRAWINGS AND NOT PARTICULARLY DESCRIBED IN THE SPECIFICATIONS OR DETAILS, OR ANY WORK WHICH MAY BE DEEMED NECESSARY TO COMPLETE THE CONTRACT SHALL BE PROVIDED BY THE CONTRACTOR AS PART OF THIS CONTRACT.
5. FOR PURPOSES OF CLEARNESS AND LEGIBILITY, SPRINKLER DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND SIZE AND LOCATION OF EQUIPMENT ARE DRAWN TO SCALE WHEREVER POSSIBLE. THE DRAWING INDICATE SIZE, CONNECTION POINTS, AND ROUTED OF PIPES. IT IS NOT INTENDED, HOWEVER, THAT ALL OFFSETS, RISES AND DROPS ARE SHOWN. PROVIDE PIPING AS REQUIRED TO FIT STRUCTURE, AVOID OBSTRUCTIONS, AND RETAIN CLEARANCES, HEADROOM OPENINGS AND PASSAGEWAYS.
   ALL PENDANT SPRINKLERS MUST BE SPACED AS FOLLOWS -

   MAXIMUM 7.5' FROM WALL
   MAXIMUM DISTANCE BETWEEN 2 SPRINKLER HEADS IS 15'.
   MINIMUM DISTANCE BETWEEN 2 SPRINKLER HEADS IS 6'.
6. COVERAGE AREA PER SPRINKLER SHALL BE MAX. 225 SQ.FT FOR LIGHT HAZARD AND 130 SQ.FT. FOR ORDINARY HAZARD.
7. ALL SPRINKLER HEADS MEET DESIGN CRITERIA PER COVERAGE.
8. AUXILIARY DRAIN SHALL BE PROVIDED AT THE TRAPPED SECTIONS.
9. FOR SPRINKLER WORK ONLY.
10. ALL BRANCH TAKE-OFF FOR EACH SPRINKLER TO BE MIN. 1".
11. ALL FIRE EQUIPMENT SHALL BE COMPATIBLE AND FULLY INTEGRATED INTO THE EXISTING LANDLORD SYSTEM.
12. ANY EXISTING SPRINKLER PIPING THAT IS SPECIFIED FOR REUSE SHALL BE VISUALLY INSPECTED FOR IMPAIRMENTS PRIOR TO BEING PLACED IN SERVICE.
13. DRAINING AND REFILLING OF THE SPRINKLER SYSTEM REQUIRED FOR THIS WORK SHALL BE COORDINATED WITH, AND COMPLETED IN CONJUNCTION WITH, THE ON-SITE BUILDING ENGINEERING STAFF.

KEYED NOTES:

1. CONTRACTOR TO PROVIDE NEW SPRINKLER PIPING AS PER SPRINKLER HEAD LOCATION SHOWN ON THE PLAN. CONTRACTOR TO MAKE SURE SPRINKLER PIPE SIZING AS PER NFPA 13.
2. CONTRACTOR SHALL ENSURE THERE ARE NO COMBUSTIBLE MATERIALS IN THE ABOVE CEILING SPACE TO PREVENT THE NEED FOR SPRINKLERS IN THAT AREA AS PER NFPA 13.

CONTRACTOR'S NOTE:

THE SPRINKLER SUBCONTRACTOR IS REQUIRED TO VISIT THE SITE DURING BIDDING AND VERIFY LOCATION(S) OF WHERE SPRINKLER PIPING/EQUIPMENT IS INDICATED TO BE PLACED, THEIR ROUTE(S) AND POSSIBLE INTERSECTION(S) WITH OTHER EQUIPMENT / WORK / STRUCTURE (I.E. STEEL BEAMS, ETC.) TO BE INSTALLED AND/OR "EXISTING TO REMAIN". THIS SUBCONTRACTOR IS TO VERIFY HEIGHTS "TO BE INSTALLED" TO MAINTAIN DESIGNED CEILING HEIGHTS AND HEAD ROOM. ANY DISCREPANCIES BETWEEN DESIGNED AND ACTUAL TO BE TOLD TO THE GENERAL CONTRACTOR AND INDICATED ON THE BID FORM.

HAZARD CLASSIFICATION AND DESIGN DENSITY

OCCUPANCY:	LIGHT HAZARD
MINIMUM DESIGN DENSITY:	0.10 GPM/SQ. FT.
OCCUPANCY:	ORDINARY HAZARD
MINIMUM DESIGN DENSITY:	0.15 GPM/SQ. FT.

SPRINKLER HEAD COUNT

NEW CONCEALED SPRINKLER	10
EXISTING CONCEALED SPRINKLER	1
EXISTING UPRIGHT SPRINKLER	27
NEW UPRIGHT SPRINKLER	10
RELOCATED UPRIGHT SPRINKLER	3
DEMOLISHED UPRIGHT SPRINKLER	4
DEMOLISHED CONCEALED SPRINKLER	5

SPRINKLER NOTE:

1. THE SPRINKLER HEAD LOCATIONS INDICATE ALIGNMENTS AND GENERAL QUANTITY, REFER TO SPRINKLER DRAWINGS FOR EXACT LOCATIONS AND SPACING.
2. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO SUBMIT PLANS FOR MODIFICATION OF THE FIRE SPRINKLER SYSTEM AS REQUIRED TO ACCOMMODATE THE NEW TENANT SPACE. G.C. MUST USE LANDLORD'S SPRINKLER CONTRACTOR FOR ALTERATIONS AS REQUIRED. SUBMIT SHOP DRAWINGS TO THE LANDLORD AND ARCHITECT FOR REVIEW PRIOR TO PERMITTING & INSTALLATION.

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CONTRACTOR'S NOTES:

WRITTEN DIMENSIONS HOLD PREFERENCE OVER SCALED DIMENSIONS. DO NOT SCALE THE DRAWINGS. THE CONTRACTORS MUST VISIT JOB SITE TO VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS BEFORE SUBMITTING BIDS. REPORT ANY DISCREPANCIES OF ANY CONDITIONS WHICH MAY INTERFERE WITH THE PROPER EXECUTION OF, THE CONTRACT TO THE TENANT'S REPRESENTATIVE. REPORT DISCREPANCIES DURING BIDDING PROCESS AND BEFORE START OF CONSTRUCTION. CHANGE ORDERS NEED TO BE APPROVED BY EVEREVE CONSTRUCTION MANAGER FOR ISSUES ARISING FROM THE FIELD CONDITIONS OR CONFLICTS BETWEEN THE PLANS AND THE EXISTING CONDITIONS PRIOR TO THE COMMENCEMENT OF WORK.

	DATE	ISSUE
	08/01/25	TEST FIT
	08/28/25	LL / CLIENT REVIEW SET
	09/05/25	LL REVIEW
	09/19/25	PERMIT SET
	10/24/25	PERMIT SET
1	10/24/25	B.D. COMMENTS
△	DATE	REVISION

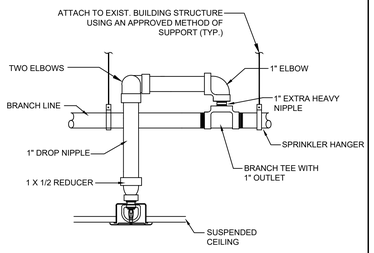
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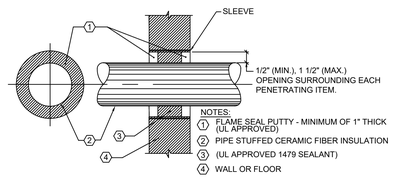
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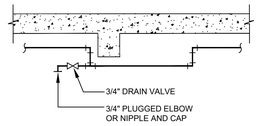
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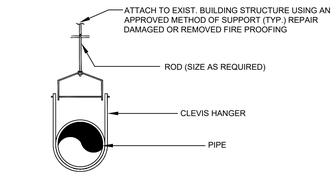
1	SCALE N.T.S.	NEW CONCEALED PENDENT SPRINKLER HEAD DETAIL



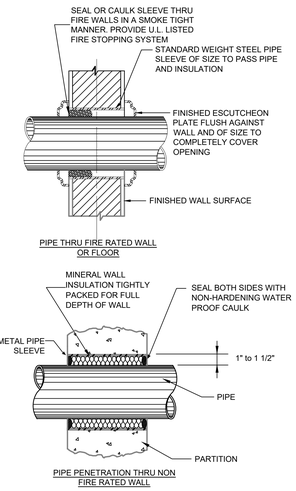
2	SCALE N.T.S.	FIRE STOPPING DETAIL FOR FIRE/ SMOKE RATED WALL/FLOOR OPENINGS



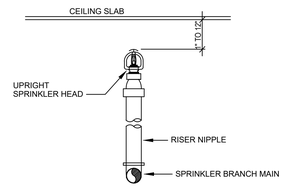
3	SCALE N.T.S.	TYPICAL DRAIN CONNECTION FOR TRAPPED LINES ON WET PIPE SPRINKLER SYSTEMS



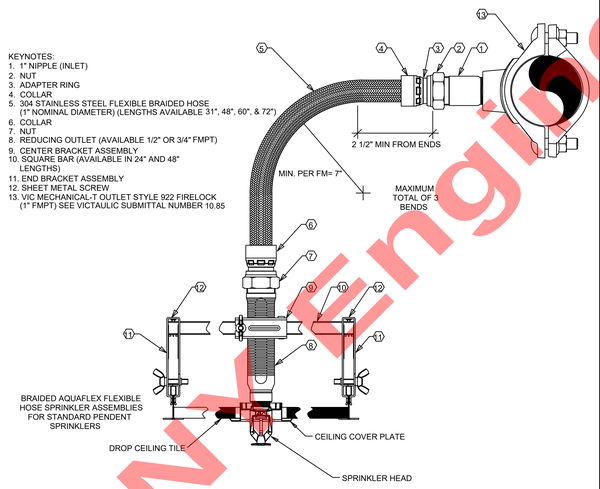
4	SCALE N.T.S.	HANGER DETAILS TYPICAL



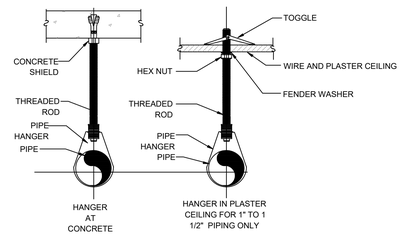
5	SCALE N.T.S.	PIPE SLEEVE THRU WALL SECTION



6	SCALE N.T.S.	UPRIGHT SPRINKLER HEAD DETAIL



7	SCALE N.T.S.	FLEXIBLE HOSE SPRINKLER ASSEMBLY DETAIL



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

8	SCALE N.T.S.	TYPICAL HANGER DETAIL AND ROD SCHEDULE

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TITLE:

SPRINKLER DETAILS

SHEET NUMBER:

SP-200